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JOINT APPENDIX

2011-1120

IN THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

SEIKO EPSON CORPORATION,

Plaintiff/Counterclaim Defendant-Appellant,

and

EPSON RESEARCH AND DEVELOPMENT, INC.

and EPSON AMERICA, INC.,

Counterclaim Defendants,

v.

CORETRONIC CORPORATION,

Defendant/Counterclaimant-Appellee,

and

OPTOMA TECHNOLOGY, INC.,

Defendant-Appellee.

FILED
U.S. COURT OF APPEALS FOR
THE FEDERAL CIRCUIT

APR 21 2011

JAN HORBALY
CLERK

Appeal from the United States District Court for the
Northern District of California in 06-CV-6946,
Judge Marilyn Hall Patel.

JOINT APPENDIX

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April 21, 2011

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8 **UNITED STATES DISTRICT COURT**
9 **NORTHERN DISTRICT OF CALIFORNIA**
10

11 SEIKO EPSON CORPORATION,

12 Plaintiff,

13 v.

14 CORETRONIC CORPORATION and
15 OPTOMA TECHNOLOGY INC.,

16 Defendants.
17 _____/

No. C 06-6946 MHP

JUDGMENT
(Fed.R.Civ.P. 58)

18 This action having come before this court, the Honorable Marilyn Hall Patel, United States
19 District Judge presiding, and the issues having been duly presented and an order having been duly
20 filed May 15, 2009, declaring United States Patent Numbers 6,527,392 ("the '392 patent") and
21 6,742,899 ("the '899 patent") invalid on grounds of obviousness and an order having been duly filed
22 November 23, 2010, declaring United States Patent Number 6,203,158 ("the '158 patent") invalid on
23 the grounds of obviousness, and a request for entry of judgment under Federal Civil Rule 58(d)
24 having been filed stating that the above orders resolve all claims and issues pending in this case and
25 the court so finding; and, there being no just reason for delay,

26 IT IS ORDERED AND ADJUDGED that defendant/counter-claimant CORETRONIC
27 CORPORATION and OPTOMA TECHNOLOGY, INC.s' motions for summary judgment to
28 invalidate claims 1, 3, 4, 7, 9 and 10 of the '392 patent and to invalidate claims 1, 2 and 5 of the '158

1 patent are GRANTED and the action of plaintiff/counter-defendant SEIKO EPSON
2 CORPORATION is DISMISSED in its entirety.

3 IT IS FURTHER ORDERED AND ADJUDGED that plaintiff/counter-defendant SEIKO
4 EPSON CORPORATION's motion for summary judgment to invalidate claims 1, 2, 3, 7, 9 and 11
5 of the '899 patent is GRANTED and the counterclaim of CORETRONIC CORPORATION and
6 OPTOMA TECHNOLOGY, INC. for infringement of the '899 patent is DISMISSED in its entirety..
7
8

9 DATED: January 5, 2011



MARILYN HALL PATEL
Judge
United States District Court
Northern District of California

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

SEIKO EPSON CORPORATION

No. C 06-6946 MHP

Plaintiff,

v.

CORETRONIC CORPORATION and
OPTOMA TECHNOLOGY, INC.

Defendants,

MEMORANDUM & ORDER

**Re: Defendants' Renewed Motion for
Summary Judgment of Invalidity &
Plaintiff's Motion to Strike**

Plaintiff Seiko Epson Corporation brought this action against defendants Coretronic Corporation and Optoma Technology, Inc., alleging infringement of several United States patents. On May 15, 2009, the court granted defendants' motion for summary judgment, invalidating several claims of U.S. Patent No. 6,203,158 ("the '158 patent") and U.S. Patent No. 6,527,392 ("the '392 patent"), both owned by plaintiff. The United States Court of Appeals for the Federal Circuit vacated the court's judgment of invalidity as to the '158 patent and remanded for further proceedings. *Seiko Epson Corp. v. Coretronic Corp.*, 376 Fed. Appx. 23 (Fed. Cir. 2010). Now before the court is (1) defendants' renewed motion for summary judgment of invalidity as to claims 1, 2 and 5 of the '158 patent on the grounds of obviousness and (2) plaintiff's motion to strike defendants' revised final invalidity contentions and corresponding portions of defendants' summary judgment brief. Having considered the parties' arguments and submissions, and for the reasons set forth below, the court enters the following order.

1 BACKGROUND

2 The patent at issue concerns projectors. Projectors may use a high-brightness light source
 3 inside a casing to generate light. The light is modulated to create images. High-brightness light
 4 sources generate significant amounts of heat. Plaintiff's '158 patent claims improvements to
 5 projector designs that increase the effectiveness of projector cooling. The '158 patent was filed on
 6 July 29, 1999, as a continuation of U.S. Patent Application 08/943,730, filed on October 3, 1997.
 7 See Docket No. 402 (Biber Dec.), Exh. B. The '158 patent issued on March 20, 2001. See *id.* It
 8 "describes a projector that conducts air from outside the projector directly through the power unit in
 9 order to cool it more effectively." *Seiko Epson*, 376 Fed. Appx. at 24.

10 The asserted claims are claims 1, 2 and 5. Coretronic moves for summary judgment of
 11 invalidity on each of these claims. Claims 1 and 5 are independent claims. Claim 1 reads as
 12 follows:

13 1. A projector, comprising:

14 an optical unit including a light source lamp and a projection lens, the optical unit
 15 forming an optical image in response to image information by optically treating light
 16 beams emitted from the light source lamp and expansively projecting the optical
 17 image through the projection lens;

18 a power unit including a ventilating path provided inside the power unit for
 19 circulating air;

20 an outer case that stores the optical unit and the power unit;

21 a first cooling air intake port located on the outer case that provides cooling air from
 22 outside of the outer case to the optical unit; and

23 a second cooling air intake port located on the outer case that directly conducts
 24 cooling air from the outside of the outer case to the ventilating path, said second
 25 cooling air intake port comprising:

26 an inlet provided on the power unit, and

27 a duct connecting said second cooling air intake port and the air inlet.

28 '158 patent at 15:25-47. Independent claim 5 reads as follows:

5. A projector, comprising:

an optical unit including a light source lamp and a projection lens, the optical unit
 forming an optical image in response to image information by optically treating light

1 beams emitted from the light source lamp and expansively projecting the optical
2 image through the projection lens;

3 a power unit including an air inlet and an air outlet;

4 an outer case that stores the optical unit and the power unit;

5 a first cooling air intake port located on the outer case that provides cooling air from
6 outside of the outer case to the optical unit;

7 a second cooling air intake port located on the outer case that directly conducts
8 cooling air from the outside of the outer case to the air inlet; and

9 an exhaust vent provided on the outer case that directly conducts air exhausted from
10 the air outlet to the outside of the outer case.

11 *Id.* at 16:10-31. In its May 16, 2008 claim construction order, the court construed the phrase
12 “directly conducts cooling air” to mean “transmits cooling air without [increasing] its temperature to
13 that of the air inside the outer casing of the projector.” *See* Docket No. 183 at 24. The court
14 modified plaintiff’s proposal that the phrase mean “transmits cooling air without substantial
15 contamination by internal sources of heat,” because the patent’s advance over the prior art was to
16 cool the power supply with fresh air that is cooler than the air in the outer case of the projector, and
17 plaintiff’s construction was not limited to the air’s temperature. *Id.* at 19.

18 On May 15, 2009, the court granted Coretronic’s motion for summary judgment of invalidity
19 regarding the ‘158 patent. Docket No. 373. It found that a prior art Japanese patent application,
20 “Nakamura,” disclosed each and every limitation of claims 1 and 2 of the ‘158 patent. Nakamura
21 teaches a projector design with an embodiment containing two separate air inlets and one exhaust
22 vent. Air from the first inlet passes through several projector components before combining with
23 fresh air pulled in through the second inlet and cooling the power supply. *Id.* at 10. The court also
24 held that claim 5 was obvious as a matter of law in light of Nakamura. Although Nakamura
25 arguably lacked an “exhaust vent provided on the outside case that directly conducts air exhausted
26 from the air outlet [of the power supply] to the outside of the outer case,” the court determined that
27 “there are a limited number of components requiring cooling inside a projector casing, and such a
28 casing can contain only so many prior art passageways.” *Id.* at 16.

On appeal, the Federal Circuit disagreed with the court's construction of the phrase "directly conducts cooling air" and agreed with plaintiff that "air from outside of the case must be conducted directly to the power unit without substantial contamination by the air inside the case." 376 Fed. Appx. at 24-25. "Cooling air" does not refer to any form of air that is cooler than the air in the outer case but more specifically to "fresh air" brought in from the exterior of the projector case. *Id.* at 25. The Federal Circuit further held that Nakamura failed to satisfy this narrow construction:

Although Nakamura teaches a second air intake port located in the vicinity of the power unit, it does not provide an uninterrupted path from that port to the power unit. Instead, the figures in the Nakamura reference indicate that the fresh air entering through the second air intake port mixes with ambient air from inside the case before reaching the power unit. Consequently, the fresh air entering through the second air intake port is not directly conducted to the power unit as required by the '158 patent.

Id. at 25. The court did not address any other aspects of the court's '158 ruling. The Federal Circuit vacated this court's judgment as to the '158 patent, but it did not "rule out the possibility that other prior art, standing alone or in combination with the Nakamura reference, might sustain the district court's finding of invalidity." *Id.*

On October 4, 2010, defendants filed a renewed motion for summary judgment of invalidity based upon the Federal Circuit's superseding claim construction. Defendants argue that claims 1, 2 and 5 are invalid as obvious over Nakamura, in combination with U.S. Patent No. 5,297,005 ("Gourdine"), or alternatively over U.S. Patent No. 4,243,307 ("Rizzuto"). Plaintiff filed a motion to strike defendants' revised final invalidity contentions and portions of defendants' summary judgment briefs referencing Rizzuto.

LEGAL STANDARD

I. Summary Judgment

Summary judgment may be granted only when, drawing all inferences and resolving all doubts in favor of the non-moving party, there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); *see generally Anderson v.*

1 *Liberty Lobby, Inc.*, 477 U.S. 242, 247-255 (1986). A material fact is “genuine” if the evidence is
 2 such that a reasonable jury could return a verdict for the non-moving party. *Anderson*, 477 U.S. at
 3 248. The moving party bears the burden of identifying those portions of the pleadings, discovery
 4 and affidavits that demonstrate the absence of a genuine issue of material fact. *Celotex Corp. v.*
 5 *Catrett*, 477 U.S. 317, 323 (1986). Once the moving party meets its initial burden, the non-moving
 6 party must go beyond the pleadings and, by its own affidavits or discovery, set forth specific facts
 7 showing that there is a genuine issue for trial. Fed R. Civ. P. 56(e); *see Anderson*, 477 U.S. at 250.

8 II. Non-Obviousness

9 35 U.S.C. section 103(a) requires that a patent be non-obvious:

10 A patent may not be obtained though the invention is not identically disclosed or
 11 described as set forth in section 102 of this title, if the differences between the subject
 12 matter sought to be patented and the prior art are such that the subject matter as a
 13 whole would have been obvious at the time the invention was made to a person
 14 having ordinary skill in the art to which said subject matter pertains. Patentability
 15 shall not be negated by the manner in which the invention was made.

16 Once the patent issues, each claim in an issued patent is presumed valid. 35 U.S.C. § 282. To
 17 prevail in invalidating a patent on the basis of obviousness, the moving party must prove
 18 obviousness by clear and convincing evidence. *Oakley, Inc. v. Sunglass Hut Int’l*, 316 F.3d 1331,
 19 1339 (Fed. Cir. 2003).

20 The question of obviousness “is a question of law premised on underlying findings of fact.”
 21 *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1332 (Fed. Cir. 2005) (citing *Graham v. John*
 22 *Deere Co.*, 383 U.S. 1, 17-18 (1966)). These fact questions are: (1) the scope and content of the
 23 prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary
 24 skill in the art; and (4) secondary evidence of non-obviousness. *Graham*, 383 U.S. at 17-18; *see*
 25 *also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The relevant question “is not whether
 26 the combination was obvious to the patentee but whether the combination was obvious to a person
 27 with ordinary skill in the art.” *KSR*, 550 U.S. at 420.

28 The “combination of familiar elements according to known methods” is likely to be obvious
 when it “does no more than yield predictable results.” *KSR*, 550 U.S. at 416. If an ordinarily skilled
 artisan can implement a predictable variation of a work available in the same field of endeavor or a

1 different one, section 103 likely bars patentability of the variation. *Id.* at 417. If, however, the prior
 2 art teaches away from combining certain known elements, discovery of a successful means of
 3 combining them is more likely to be non-obvious. *Id.* at 416. In assessing non-obviousness,
 4 hindsight bias and *ex post* reasoning are to be avoided. *Id.* at 421.

5 To determine the issue of non-obviousness, it will often be necessary for a court “to look to
 6 interrelated teachings of multiple patents; the effects of demands known to the design community or
 7 present in the marketplace; and the background knowledge possessed by a person having ordinary
 8 skill in the art,” in order to determine “whether there was an apparent reason to combine the known
 9 elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418. To facilitate review,
 10 the trial court’s analysis should be made explicit. *Id.* However, the analysis “need not seek out
 11 precise teachings directed to the specific subject matter of the challenged claim, for a court can take
 12 account of the inferences and creative steps that a person of ordinary skill in the art would employ.”
 13 *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1262 (Fed. Cir. 2007) (quoting *KSR*, 550 U.S. at 418).
 14 “[T]he common sense of those skilled in the art demonstrates why some combinations would have
 15 been obvious where others would not.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157,
 16 1161 (Fed. Cir. 2007).

17 “[I]n appropriate cases, the ultimate inference as to the existence of a motivation to combine
 18 references may boil down to a question of ‘common sense,’ appropriate for resolution on summary
 19 judgment.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1240 (Fed. Cir. 2010). Summary judgment is
 20 appropriate where the content of the prior art, the scope of the patent claim and the level of ordinary
 21 skill in the art are not in material dispute. *KSR*, 550 U.S. at 427.

22 DISCUSSION

23 I. Nakamura in Combination with Gourdine

24 A. Claims 1 and 2

25 With the exception of the “directly conducts cooling air” element, the court has already
 26 found that Nakamura discloses every limitation of claim 1 of the ‘158 patent. The Federal Circuit
 27
 28

1 did not disturb these findings. Nevertheless, plaintiff again argues that Nakamura did not inherently
2 disclose a ventilating path inside a power supply unit. Although plaintiff expands upon the
3 argument it previously made before the court, *compare* Opp. at 10-13 with Docket No. 279 at 13-14,
4 it has provided no compelling reason for the court to reconsider its earlier decision rejecting this
5 argument. *See* Docket No. 373 at 10-11; *see also United States v. Alexander*, 106 F.3d 874, 876 (9th
6 Cir. 1997) (stating that a court abuses its discretion in failing to apply law of the case doctrine unless
7 “1) the first decision was clearly erroneous; 2) an intervening change in the law has occurred; 3) the
8 evidence on remand is substantially different; 4) other changed circumstances exist; or 5) a manifest
9 injustice would otherwise result”).

10 The sole issue at this juncture is whether it would have been obvious to modify Nakamura by
11 adding a dedicated cooling path between the outside of the projector case and the power supply
12 housing. Defendants argue that Gourdine discloses this modification. Gourdine was filed on
13 September 28, 1992 and issued on March 22, 1994 and is therefore prior art to the ‘158 patent. *See*
14 Biber Decl. at Exh. E. Gourdine relates to an apparatus and method for cooling electronic heat
15 generating components in a cabinet, specifically by isolating predetermined components and cooling
16 those components through an independent secondary air flow. The primary airflow cools various
17 non-isolated components in the cabinet and is then exhausted by an exhaust fan. The secondary
18 airflow passes from the exterior of the cabinet, through a flexible conduit, and into a hollow housing
19 for a heat-generating electrical component. The secondary airflow is then exhausted from the
20 housing through another flexible conduit and the exhaust fan. Gourdine is directed to solving heat
21 problems within personal computers, and the preferred embodiment describes isolating and cooling
22 an Intel 80486 microprocessor chip. Unlike Nakamura, Gourdine describes that “the heat generated
23 by the isolated components and non-isolated components is not mixed within the cabinet to
24 maximize cooling of all components within the cabinet.” *Id.* at 1:19-22.

25 Although Gourdine is directed to personal computers and the ‘158 patent is directed to
26 projectors, there is no genuine dispute that Gourdine is analogous art to the ‘158 patent. Plaintiff’s
27 expert stated in his 2008 declaration that, “[t]here are similarities in the cooling issues in computers
28

1 and projectors, and the ways of addressing those issues,” Docket No. 242 at ¶ 9, and at his 2010
 2 deposition stated that “I still believe it is correct.” Docket No. 410 (Huang Decl.), Exh. 6 (Keller
 3 Tr.) at 32:10. Plaintiff does argue, however, that a person of ordinary skill would not be motivated
 4 to combine Gourdine with Nakamura, because doing so would be inconsistent with the respective
 5 purposes of each invention and would yield unpredictable results. These arguments are meritless.

6 Plaintiff points out that the goal of Nakamura is to produce a projector that uses fewer intake
 7 and exhaust ports than the number of cooling fans used. *See* Biber Decl, Exh. D. The prior art
 8 projector addressed by Nakamura contained two exhaust ports, which imposed design restrictions,
 9 required installation in a location without obstructions next to each port, and created high fan noise
 10 levels. *Id.* Nakamura addressed each of these problems by providing a single exhaust port and
 11 using the same airflow to cool the power supply and the lamp. Plaintiff argues that isolating the
 12 power supply as taught by Gourdine would potentially undermine Nakamura’s intended purpose in
 13 at least two ways: (1) the isolation of the secondary cooling path would result in the loss of some
 14 cooling air for the fan, requiring the use of a stronger, noisier exhaust fan or “other changes to the
 15 projector to compensate for the loss of cooling air,” Docket No. 405 (Opp.) at 7; and (2) Gourdine
 16 discloses the use of an exhaust fan housing so as to provide sufficient vacuum for the secondary air
 17 path, thereby constraining design (i.e. a bulky housing requires a bigger projector) or requiring a
 18 noisier fan to maintain sufficient vacuum pressure. *Id.* at 7-8.

19 With regard to Gourdine, plaintiff points out that Gourdine is concerned particularly with the
 20 cooling of a microprocessor chip within a computer case, because that component is most sensitive
 21 to temperature issues and also generates the most heat. The power unit in the ‘158 patent, by
 22 contrast, is not the greatest heat producer in the projector (the liquid crystal display is) and plaintiff
 23 argues that a person of ordinary skill would apply Gourdine by isolating the liquid crystal display
 24 and/or the lamp, not the power supply. Additionally, plaintiff argues that isolating the power unit
 25 via the concepts taught by Gourdine would yield unpredictable results, because the disclosed Intel
 26 80486 chip only generate 4.5 watts, far less than the 25 to 60 watts of waste heat estimated by
 27 plaintiff’s expert. Opp. at 9; Keller Decl. ¶ 63.2. Plaintiff points out that defendants’ expert
 28

1 specifically testified that she might need to make the duct larger than in Gourdine to arrive at the
2 optimal airflow.

3 Although plaintiff has provided examples of how a literal combination of Gourdine and
4 Nakamura might not further the particular goals stated by each reference, neither reference “teaches
5 away” from the combination. “A reference may be said to teach away when a person of ordinary
6 skill, upon reading the reference, would be discouraged from following the path set out in the
7 reference, or would be led in a direction divergent from the path that was taken by the applicant . . .
8 A reference does not teach away, however, if it merely expresses a general preference for an
9 alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the
10 invention claimed.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327
11 (Fed. Cir. 2009) (citations omitted). For example, in *DePuy Spine*, defendant argued that a patent
12 was obvious over a combination of two prior art references, one of which disclosed the use of a rigid
13 screw in a spinal surgical device. *Id.* at 1324-26. The other prior art reference, however, expressly
14 warned that such a rigid screw would likely fall off within a human body, thereby discouraging the
15 proffered prior art combination. *Id.* By contrast, there is nothing in Nakamura that discourages the
16 use of a dedicated secondary cooling path for the power supply. Nakamura is simply directed at a
17 different problem presented by the prior art projectors than the problem addressed by the ‘158
18 patent. *See KSR*, 550 U.S. at 420; *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir.
19 2007) (“In the context of *KSR*, the Asano teachings and its obvious variants were relevant prior art,
20 even if that patent did address a different problem.”). The ‘158 patent is aimed at more efficiently
21 cooling a power supply in the midst of other heat-generating projector components, and Nakamura
22 does not “criticize, discredit or otherwise discourage” looking to the teachings Gourdine to solve this
23 problem.

24 Moreover, the fact that Gourdine describes isolating the hottest component with a dedicated
25 cooling air path does not render it nonobvious to apply this cooling technique to another heat-
26 generating component like a power supply. The problem addressed by the ‘158 patent is that the
27 power supply in the prior art projectors was inefficiently cooled because the air had *already* passed
28

1 through and been warmed by other heat-generating components. Biber Decl., Exh. B. at 2:26-31. In
2 other words, the problem articulated by the '158 patent was not that the hottest components were
3 insufficiently cooled, but rather that the air was too warm after cooling those units to efficiently cool
4 the power supply. Gourdine teaches a manner of increasing the flow of cool, fresh air to a
5 predetermined component, and this need was presented by prior art projectors. Regarding the
6 unpredictability of applying Gourdine to a component that generates more than the 4.5 watts of heat,
7 the Gourdine specification envisions application of the invention to chips generating heat in the
8 range of 15-30 watts, overlapping with plaintiff's heat-generating estimate for the projector power
9 supply. Biber Exh. E at 1:38. Moreover, Gourdine does not limit its teachings to this range of heat
10 generation.

11 Plaintiff's nonobviousness arguments too narrowly focus on what would result from a literal
12 fusion of the preferred embodiments disclosed in Nakamura and Gourdine. It may be the case that
13 isolating the secondary cooling path could potentially divert cooling air from the lamp described in
14 Nakamura, or that the installation of an exhaust fan housing would add bulk to the projector, or that
15 the increased heat from the power supply would require a duct larger than shown in Gourdine. The
16 obviousness inquiry, however, looks more broadly at whether a projector designer of ordinary skill
17 "facing the wide range of needs created by developments in the field of endeavor, would have seen a
18 benefit" to installing a dedicated air path to better cool the power supply. *KSR*, 550 U.S. at 424.
19 Gourdine's teaching that isolating a predetermined heat-generating component improves cooling of
20 that component has obvious benefit for a projector designer looking to more efficiently cool the
21 projector power supply. Some alterations might be necessitated in applying Gourdine's teachings to
22 the projector disclosed by Nakamura, but "a person of ordinary skill often will be able to fit the
23 teachings of multiple patents together like pieces of a puzzle." *Id.* at 420. This court previously
24 observed that "[s]eeking to increase the efficiency of cooling a power unit by arranging a prior art
25 design with air ducts such that an air duct goes directly through the power unit is obvious under the
26 'obvious to try' rationale approved by the Supreme Court and the Federal Circuit." Docket No. 373
27 at 16 (citing *In re Kubin*, 561 F.3d 1351, 1359 (Fed. Cir. 2009)). Gourdine buttresses this
28

1 conclusion by demonstrating that directing a cooling air passageway through a dedicated housing
2 unit is not merely “obvious to try,” but also expressly disclosed in the prior art.

3 The court concludes, as a matter of law, that claim 1 and its dependent claim 2 are obvious in
4 light of Nakamura and Gourdine.

5 B. Claim 5

6 Claim 5 differs from claim 1 in that claim 5’s power unit includes “an air inlet and an air
7 outlet” rather than a “ventilating path,” and that claim 5’s “second cooling air intake port” element
8 recites only an air inlet and no ventilating path or duct. In its May 15, 2009 memorandum and order,
9 the court concluded that these elements of claim 5 were present in Nakamura. Docket No. 373 at 13.
10 The court did find that there was a genuine issue of material fact as to whether Nakamura disclosed
11 the third element present only in claim 5, namely “an exhaust vent provided on the outer case that
12 directly conducts air exhausted from the air outlet to the outside of the outer case.” *Id.* Nonetheless,
13 the court found claim 5 to be obvious in light of Nakamura, even though the prior art advanced by
14 defendants did not disclose this final limitation. *Id.*

15 Although the Federal Circuit did not disturb this aspect of the court’s earlier ruling, the court
16 notes that its finding of obviousness with regard to claim 5 is further strengthened by the
17 combination of Nakamura and Gourdine. Gourdine describes using a conduit to directly exhaust the
18 secondary air flow to the exterior of the cabinet. As discussed above, it would be obvious to a
19 person of ordinary skill to combine the teachings of Gourdine with the projector disclosed by
20 Nakamura. Plaintiff proffers no argument why claim 5 should be treated differently than claim 1 in
21 this regard, and the court similarly concludes that claim 5 is obvious as a matter of law.

22
23 III. Rizzuto/Motion to Strike


24 Because the court determines that claims 1, 2 and 5 are obvious in light of Nakamura and
25 Gourdine, it need not address defendants’ arguments regarding Rizzuto. Accordingly, it also need
26 not address plaintiff’s motion to strike defendants’ revised invalidity contentions or the portions of
27 their summary judgment briefs addressing Rizzuto.

1
2 CONCLUSION

3 For the reasons stated above, defendants' motion to invalidate claims 1, 2 and 5 of the '158
4 patent is GRANTED on the basis of obviousness.

5
6 IT IS SO ORDERED.

7
8 Dated: November 22, 2010



MARILYN HALL PATEL
United States District Court Judge
Northern District of California

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

SEIKO EPSON CORPORATION,
Plaintiff/Counter-Defendant,

v.

CORETRONIC CORPORATION and
OPTOMA TECHNOLOGY, INC.,

Defendants/Counter-Claimants.

No. C 06-06946 MHP

OPINION

**Re: Cross-Motions for Summary Judgment
of Invalidity**

Plaintiff/counter-defendant Seiko Epson Corporation ("Seiko Epson") brought this action against defendant/counter-claimant Coretronic Corporation and Optoma Technology, Inc. (collectively "Coretronic"), alleging infringement of several United States patents, including U.S. Patent No. 6,203,158 ("the '158 patent") and U.S. Patent No. 6,527,392 ("the '392 patent"). Coretronic counterclaimed, alleging infringement of two United States patents, including U.S. Patent No. 6,742,899 ("the '899 patent"). Now before the court are the parties' cross-motions for summary judgment of invalidity of the '158, '392 and '899 patents. Having considered the parties' arguments and submissions, and for the reasons set forth below, the court enters the following order.

BACKGROUND

The patents-in-suit concern projectors. Projectors may use a high-brightness light source inside a casing to generate light. The light is modulated to create images. High-brightness light sources generate significant amounts of heat. Seiko Epson's '158 patent and Coretronic's '899

1 patent claim improvements to projector designs that increase the effectiveness of projector cooling.
 2 Seiko Epson's '392 patent addresses a different problem. It claims a design to ensure the proper
 3 alignment of a lamp with the surrounding projector structure so that the images are fully and
 4 uniformly illuminated.

5
 6 I. Seiko Epson's '158 Patent

7 The '158 patent was filed on July 29, 1999, as a continuation of U.S. Patent Application
 8 08/943,730, filed on October 3, 1997. See Docket No. 252 (Biber Dec.), Exh. B ("'158 Patent").
 9 The '158 patent issued on March 20, 2001. See id. It describes a design for cooling a projector by
 10 using multiple fans and ventilating paths. The specification teaches a design in which external air
 11 moves straight into and through the projector's power unit. The other heat-producing components of
 12 the projector are cooled via a separate air intake and ventilation path. The power unit is, therefore,
 13 cooled by air drawn immediately from the ambient air, rather than air that has already passed near
 14 other heat-producing components and thereby retained heat. The design purports to enhance the
 15 efficiency of cooling of the power unit.

16 The asserted claims are claims 1, 2 and 5. Coretronic moves for summary judgment of
 17 invalidity on each of these claims. Claims 1 and 5 are independent claims. Claim 1 reads as
 18 follows:

19 1. A projector, comprising:

20 an optical unit including a light source lamp and a projection lens, the optical unit
 21 forming an optical image in response to image information by optically treating light
 22 beams emitted from the light source lamp and expansively projecting the optical
 23 image through the projection lens;

24 a power unit including a ventilating path provided inside the power unit for
 25 circulating air;

26 an outer case that stores the optical unit and the power unit;

27 a first cooling air intake port located on the outer case that provides cooling air from
 28 outside of the outer case to the optical unit; and

a second cooling air intake port located on the outer case that directly conducts
 cooling air from the outside of the outer case to the ventilating path, said second

cooling air intake port comprising:

an inlet provided on the power unit, and

a duct connecting said second cooling air intake port and the air inlet.

Id. at 15:25-47. Independent claim 5 reads as follows:

5. A projector, comprising:

an optical unit including a light source lamp and a projection lens, the optical unit forming an optical image in response to image information by optically treating light beams emitted from the light source lamp and expansively projecting the optical image through the projection lens;

a power unit including an air inlet and an air outlet;

an outer case that stores the optical unit and the power unit;

a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit;

a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the air inlet; and

an exhaust vent provided on the outer case that directly conducts air exhausted from the air outlet to the outside of the outer case.

Id. at 16:10-31.

Coretronic asserts that the '158 patent is anticipated by both the D-400 projector manufactured by nVIEW ("the D-400") and Japanese Patent Application No. 4-271334 ("Nakamura"). See Baily Dec. (discussing the D-400); Biber Dec., Exh. D ("Nakamura").¹ The D-400 is a projector, and Nakamura is a patent on a design for cooling a liquid crystal projector that includes multiple fans and air ducts for cooling the projector's power unit and other components. Nakamura was published on September 28, 1992, before the critical date of the '158 patent. See id.

II. Seiko Epson's '392 Patent

The '392 patent was filed on February 25, 1999, and it issued on March 4, 2003. See Docket No. 251 (Payne Dec.), Exh. B ("392 Patent"). It describes a design for the mounting of a lamp within a lamp housing in such a way as to properly align the lamp. The lamp itself comprises a "light source lamp" such as a lightbulb and the larger conical reflector in which the light source

1 lamp is mounted. The patent specification describes the manufacturing of the lamp's exterior such
2 that the bottom and the side of the lamp are flat and fit flush against the bottom and side of the lamp
3 housing which surrounds the lamp. In a preferred embodiment, a firm wireform-type spring presses
4 the lamp down and sideways, as well as forward, against the lamp housing. In short, the spring
5 holds the lamp in place by pressing it against the surfaces on the lamp housing.

6 The asserted claims are claims 1, 3, 4, 7, 9 and 10. Coretronic moves for summary judgment
7 of invalidity on each of these claims. Claim 1 is the only independent claim asserted, and it reads as
8 follows:

9 1. A light source lamp unit, comprising:

10 a light source lamp;

11 a reflector that reflects light emitted from the light source lamp, the light source lamp
12 being attached to the reflector, the reflector having a main body that reflects light, the
13 main body having an opening on a light-emitting side through which reflected light
14 is transmitted, an outer surface of the light-emitting side of the reflector including a
first alignment reference surface that extends in a first direction and a second
alignment reference surface that extends in a second direction perpendicular to the
first direction;

15 a lamp housing to which the reflector is mounted, the lamp housing including a first
16 surface extending in the first direction and a second surface extending in the second
direction; and

17 a spring that presses the reflector against the lamp housing so that the first alignment
18 reference surface engages the first surface and the second alignment reference surface
engages the second surface.

19 Id. at 10:15-35.

20 Coretronic asserts that two pieces of prior art, Seiko Epson's ELP-5000XB projector and
21 U.S. Patent No. 4,660,128 ("Bergin"), each anticipate the '392 patent or render the '392 patent
22 obvious. The ELP-5000X is a projection device containing a lamp, lamp housing and wireform
23 spring. It was on sale in the United States before February 25, 1998, the critical date for the '392
24 patent. See Huang Dec., Exh. A (Responses to Requests for Admission (RFAs) Nos. 15-17). Bergin
25 describes a motor vehicle lighting assembly. Bergin issued on April 21, 1987, before the '392
26 critical date. See Payne Dec., Exh. G.

1 III. Coretronic's '899 Patent

2 The '899 patent was filed on April 14, 2003, and it issued on June 1, 2004. See Docket No.
3 242 (Keller Dec.), Exh. 2 ("899 Patent"). It describes a design for the cooling of a lamp holder
4 located inside a lamp casing. The specification describes a cooling system in which air is moved
5 through ducts located above and below the lamp holder. By moving air through the ducts, the
6 design allows air which has been heated by contact with the lamp holder to exit the projector, rather
7 than to convect heat from the lamp holder to the outer casing.

8 The asserted claims are claims 1, 2, 3, 7, 9 and 11. Seiko Epson moves for summary
9 judgment of invalidity on each of these claims. The only independent claim is claim 1, which reads
10 as follows:

- 11 1. A cooling apparatus for projector casing, comprising:
- 12 a casing having an interior;
- 13 a lamp holder fixed in the interior of the casing, and having at least one guiding
- 14 surface on the side near the lower edge of the lamp holder;
- 15 a ventilation outlet disposed on the casing and proximate the side of the lamp holder;
- 16 an upper sheet disposed at the top of the lamp holder and keeping a distance from the
- 17 casing to define an upper air duct;
- 18 a lower sheet disposed at the bottom of the lamp holder and keeping a distance from
- 19 the casing to define a lower air duct; and
- 20 a fan disposed adjacent to the lamp holder.

21 Id. at 4:12-26.

22 Seiko Epson asserts that three separate pieces of prior art each anticipate the '899 patent: the
23 Optoma EzPro 730 projector; the Epson ELP-3000 projector;² and Japanese Patent Publication No.
24 2000-36215 ("Koba"). Additionally, Seiko Epson asserts that the combination of Japanese Patent
25 Publication Nos. 2000-330206 ("Miyashita") and 2002-49098 ("Kobayashi") renders the '899
26 claims at issue obvious.

27 Miyashita describes a system that cools a projector in part by moving air through the spaces
28 between an inner and outer casing. See Utermohlen Dec., Exh. 2. Miyashita was published on

1 November 30, 2000, before the '899 patent critical date of April 14, 2002. See id., Exh. 4 (RFA No.
2 174). Kobayashi describes a lamp holder for a projector that includes a guiding surface for guiding
3 air beneath the lamp holder. See id., Exh. 3. Kobayashi was published on February 15, 2002, before
4 the '899 patent's critical date. See id.

5
6 IV. Relevant Procedural History

7 On November 6, 2006, Seiko Epson brought this action against Coretronic. Coretronic
8 answered and counterclaimed on November 27, 2006. On March 21, 2007, Coretronic amended its
9 answer and counterclaims, alleging, *inter alia*, infringement of the '899 patent. On May 16, 2008,
10 the court entered a claim construction memorandum and order. The parties filed the instant cross-
11 motions for summary judgment on September 28, 2008. Oral argument was heard on January 22,
12 2009.

13
14 LEGAL STANDARD

15 I. Summary Judgment

16 Summary judgment may be granted only when, drawing all inferences and resolving all
17 doubts in favor of the non-moving party, there are no genuine issues of material fact and the moving
18 party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); see generally Anderson v.
19 Liberty Lobby, Inc., 477 U.S. 242, 247-255 (1986). A material fact is "genuine" if the evidence is
20 such that a reasonable jury could return a verdict for the non-moving party. Anderson at 248. The
21 moving party bears the burden of identifying those portions of the pleadings, discovery and
22 affidavits that demonstrate the absence of a genuine issue of material fact. Celotex Corp. v. Catrett,
23 477 U.S. 317, 323 (1986). Once the moving party meets its initial burden, the non-moving party
24 must go beyond the pleadings and, by its own affidavits or discovery, set forth specific facts
25 showing that there is a genuine issue for trial. Fed. R. Civ. P. 56(e); see Anderson at 250.

II. Novelty

Novelty of a claimed invention is an explicit condition for patentability. 35 U.S.C. § 102; Aristocrat Tech. Australia Pty., Ltd. v. Int'l Game Tech., 543 F.3d 657, 660-61 (Fed. Cir. 2008). Section 102(b) provides that a patent claim is invalid if the patented invention is “described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.” 35 U.S.C. § 102(b); see Schering Corp. v. Geneva Pharm., Inc., 339 F.3d 1373, 1377 (Fed. Cir. 2003). A patent claim is invalid based on anticipation if “the four corners of a single, prior art document describe every element of the claimed invention.” Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000). Furthermore, such disclosure must be “enabling” in that it must be sufficient to permit a person having ordinary skill in the art to practice the invention. SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1342 (Fed. Cir. 2005). A patent is presumed valid, and the party asserting the affirmative defense of anticipation must prove the facts to establish invalidity of each claim by clear and convincing evidence. 35 U.S.C. § 282; Praxair, Inc. v. ATMI, Inc., 543 F.3d 1306, 1327 (Fed. Cir. 2008). “While anticipation is a question of fact, it may be decided on summary judgment if the record reveals no genuine dispute of material fact.” Leggett & Platt, Inc. v. VUTEk, Inc., 537 F.3d 1349, 1352 (Fed. Cir. 2008) (citation and internal quotations omitted).

III. Non-Obviousness

35 U.S.C. section 103(a) requires that a patent be non-obvious:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Once the patent issues, each claim in an issued patent is presumed valid. 35 U.S.C. § 282. As with anticipation, to prevail in invalidating a patent on the basis of obviousness, the moving party must

1 prove obviousness by clear and convincing evidence. Oakley, Inc. v. Sunglass Hut Int'l, 316 F.3d
2 1331, 1339 (Fed. Cir. 2003).

3 The question of obviousness "is a question of law premised on underlying findings of fact."
4 Eolas Techs. Inc. v. Microsoft Corp., 399 F.3d 1325, 1332 (Fed. Cir. 2005), citing Graham v. John
5 Deere Co., 383 U.S. 1, 17-18 (1966). These fact questions are: (1) the scope and content of the prior
6 art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in
7 the art; and (4) secondary evidence of non-obviousness. Graham, 383 U.S. at 17-18; see also KSR
8 Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). The relevant question "is not whether the
9 combination was obvious to the patentee but whether the combination was obvious to a person with
10 ordinary skill in the art." KSR, 550 U.S. at 420.

11 The "combination of familiar elements according to known methods" is likely to be obvious
12 when it "does no more than yield predictable results." KSR, 550 U.S. at 416. If an ordinarily skilled
13 artisan can implement a predictable variation of a work available in the same field of endeavor or a
14 different one, section 103 likely bars patentability of the variation. Id. at 417. If, however, the prior
15 art teaches away from combining certain known elements, discovery of a successful means of
16 combining them is more likely to be non-obvious. Id. at 416. In assessing non-obviousness,
17 hindsight bias and *ex post* reasoning are to be avoided. Id. at 421; see also Sanofi-Synthelabo v.
18 Apotex, Inc., 550 F.3d 1075, 1088 (Fed. Cir. 2008) (holding selection and undertaking of the
19 arduous separation of a particular racemate could be judged obvious only with hindsight knowledge
20 that a dextrorotatory enantiomer has certain desirable properties) .

21 To determine the issue of non-obviousness, it will often be necessary for a court "to look to
22 interrelated teachings of multiple patents; the effects of demands known to the design community or
23 present in the marketplace; and the background knowledge possessed by a person having ordinary
24 skill in the art," in order to determine "whether there was an apparent reason to combine the known
25 elements in the fashion claimed by the patent at issue." KSR at 418. To facilitate review, the trial
26 court's analysis should be made explicit. Id. However, the analysis "need not seek out precise
27 teachings directed to the specific subject matter of the challenged claim, for a court can take account
28

1 of the inferences and creative steps that a person of ordinary skill in the art would employ.” In re
2 Translogic Tech., Inc., 504 F.3d 1249, 1262 (Fed. Cir. 2007), quoting KSR at 418. “[T]he common
3 sense of those skilled in the art demonstrates why some combinations would have been obvious
4 where others would not.” Leapfrog Enters., Inc. v. Fisher-Price, Inc., 485 F.3d 1157, 1161 (Fed. Cir.
5 2007).

6 Summary judgment is appropriate where the content of the prior art, the scope of the patent
7 claim and the level of ordinary skill in the art are not in material dispute. KSR at 427.

8
9 DISCUSSION

10 I. Seiko Epson’s ‘158 Patent

11 Coretronic contends that the asserted claims of the ‘158 patent are anticipated by, or obvious
12 in light of, the D-400 and Nakamura. Seiko Epson has asserted two independent claims, claims 1
13 and 5, and a dependent claim, claim 2.

14
15 A. Prior Art Status of the D-400

16 Seiko Epson challenges the prior art status of the D-400. Coretronic’s expert has examined
17 and opined upon a D-400 projector manufactured after the critical date of the ‘158 patent, but
18 Coretronic has been unable to produce a D-400 that was on sale before the critical date. Coretronic
19 therefore seeks to establish that the D-400 examined by its expert is identical to those marketed in
20 the mid-1990s—before the critical date. To establish such identity, Coretronic relies upon the
21 testimony of one individual, N. Wayne Bailey, a former sales officer for nVIEW, the company that
22 marketed the D-400. The parties expend not inconsiderable effort in arguing over the appropriate
23 standard for invalidating a patent on the basis of oral testimony. Harkening back to the Barbed
24 Wire Patent Case, 143 U.S. 275 (1892), Seiko Epson asserts that corroboration is required of any
25 witness whose testimony alone is asserted to invalidate a patent. See also Finnigan Corp. v. Int’l
26 Trade Comm’n, 180 F.3d 1354, 1369 (Fed. Cir. 1999). For its part, Coretronic accuses Seiko Epson
27 of misstating the corroboration standard, arguing that the question is whether Bailey’s testimony is
28

1 “clear and satisfactory” in light of a multi-factor “rule of reason” test. See Eibel Process Co. v.
2 Minnesota & Ontario Paper Co., 261 U.S. 45, 60 (1923); Price v. Symsek, 988 F.2d 1187, 1195
3 (Fed. Cir. 1993).

4 It is unlikely that Bailey’s declaration would suffice under either standard. In any event,
5 deciding the status of the D-400 for the purposes of this motion does not call for reliance upon a
6 special corroboration standard. On summary judgment, Coretronic’s burden is at least to show by
7 clear and convincing evidence that there is no genuine issue of material fact regarding the D-400’s
8 status as prior art. Bailey is not held out to be an engineer or to have been involved in the design of
9 the D-400.³ He provides no technical documents supporting his assertions. He is but one witness.
10 The fact that he looked at the interiors of D-400s does not necessarily mean that he understood the
11 technical details of the D-400 or that his memory is sufficiently reliable after more than a decade.
12 Bailey’s testimony, standing alone, is insufficient to prove the equivalence of the D-400 produced in
13 2008 to the D-400 models observed in the mid-1990s for the purposes of summary judgment.
14 Accordingly, the D-400 is disregarded.

15
16 B. Nakamura and Anticipation of Claims 1 and 2

17 The Nakamura patent application was published in 1992, and there is no dispute as to its
18 status as prior art. Nakamura, which is not listed as a reference on the face of the ‘158 patent,
19 teaches a projector design with an embodiment containing two separate air inlets and one exhaust
20 vent. Air drawn into the projector through the first air inlet passes through several projector
21 components before traveling “through the vicinity” of the power supply. Before this air reaches the
22 power supply, however, it is joined by air pulled into the projector from outside the projector
23 through a second air inlet. The power supply is then cooled by the combined air from both inlets.
24 Upon passing out of the vicinity of the power supply, at least some of the air passes over or near a
25 light source before exiting the projector through the exhaust vent. The air is moved via the use of
26 two fans.

1 Claim 1 of the '158 patent requires an optical unit, which Nakamura undisputedly possesses.
2 Claim 1 also has the limitation of a power unit with a "ventilating path provided inside the power
3 unit for circulating cooling air." '158 Patent at 15:33-34. The court ruled in its claim construction
4 order that this limitation is to be construed as "a route in the power unit along which at least some
5 fresh air moves while cooling the power unit, the power unit being a portion of the projector that
6 comprises components that convert and regulate electrical power for use in the projector." Docket
7 No. 183 ("Claim Const. Order") at 24. Nakamura unambiguously discloses a path circulating
8 cooling air through the power unit. See Nakamura at 2 & 10, Figures 2 & 3. Seiko Epson is
9 incorrect in its assertion that the airflow shown in Figures 2 and 3 of Nakamura could just as easily
10 be flowing around the power unit as through it. The patent describes Figures 2 and 3 as different
11 views of the same embodiment. See id. at 8 (¶ 12). Figure 2, a view from above, shows the air path
12 going through the power unit, not around it. Figure 3, a view from the side, shows the air path going
13 both above and through the power unit, not only above or below it. Viewed together, these two
14 schematics of one embodiment show that some or most of the air path is traveling through the power
15 unit, not simply around it. Nothing in the claim language or claim construction suggests that a
16 ventilating path cannot be "inside" a power unit merely because some air passes over or around the
17 unit as well. While some of the language in the patent discloses a more general concept of
18 "traveling in the vicinity of" the power supply, Figures 2 and 3 clearly disclose a specific
19 embodiment in which the air travels through the power unit.

20 There is no dispute that Nakamura has "an outer case that stores the optical unit and power
21 unit." '158 Patent at 15:35-36. It also plainly has "a first cooling intake port on the outer case that
22 provides cooling air from outside the outer case to the optical unit." Id. at 15:37-39. Furthermore,
23 Nakamura has a second intake port. This intake port "directly conducts cooling air from the outside
24 of the outer case to the ventilation path." Figures 2 and 3 make it plain that the air brought in
25 through the second intake port travels immediately into the power unit. Seiko Epson's suggestion
26 that the air entering from the lower duct, after mixing with the warmer air, might be no cooler than
27 the ambient air, is misplaced. The issue is not whether the air mixture is cooler than the ambient air
28

(the air outside the outer casing); rather, the question is whether it is cooler than the air *inside* the outer casing of the projector. See Claim Const. Order at 24.⁴ Since the air already inside the projector is ambient air that has been heated by the process of cooling projector components, any air being brought in from the outside via a second intake port will lower the temperature of the air mixture. Accordingly, it is “cooling air.” See ‘158 Patent at 15:4-7 (“Direct introduction of fresh air into the ventilating path permits cooling of the interior of the power unit by fresh air, which is cooler than the air in the outer case . . .”). Furthermore, an air inlet is inherently disclosed in Nakamura. See Finnigan, 180 F.3d at 1365 (holding that an inherent characteristic must necessarily be present, and so recognized by persons of ordinary skill, in the thing described in the reference). The passage of air through an ordinary physical object necessitates that some inlet and outlet be present. Because the air passes through the power unit, there is necessarily “an air inlet provided on the power unit.” See ‘158 Patent at 15:44.⁵ Finally, there is a “duct connecting said second cooling air intake port and the air outlet.” Id. at 15:46-47. That phrase has been construed to mean a “structure that limits the direction of airflow between the intake port on the outer case and an opening leading to a ventilating path of the power unit so as to form an airflow passage.” Claim Const. Order at 24. In Nakamura, the airflow is limited by the outer case’s structure and duct 41. Nakamura at 8 & 10. These structures limit the direction of the airflow, directing it toward the power unit. As such, there is a duct.

In sum, Nakamura reads onto each and every limitation of claim 1. Accordingly, claim 1 and its dependent claim 2, which merely recites a ventilating fan, are invalid.

C. Nakamura and Obviousness of Claim 5

Claim 5’s limitations are identical to those of claim 1, with three exceptions. Firstly, claim 5’s power unit includes “an air inlet and an air outlet” rather than a “ventilating path.” As noted above, Nakamura discloses air moving through a power unit; therefore, an inlet and outlet for air are inherently disclosed. Secondly, claim 5 also differs from claim 1 in that the “second cooling air intake port” element recites only an air inlet and no ventilating path or duct. As discussed,

Nakamura discloses an air inlet on a power unit. Finally, claim 5 claims a final element not recited in claim 1: “an exhaust vent provided on the outer case that directly conducts air exhausted from the air outlet to the outside of the outer case.” There is no material dispute that Nakamura discloses an exhaust vent on the outer case or that the vent exhausts air from the power unit (and its inherent air outlet). There is a genuine issue of material fact, however, whether Nakamura’s exhaust vent “directly” conducts air out of the projector.⁶ Thus Nakamura—the only reference advanced by Coretronic which is clearly prior art—does not disclose as a matter of law the final limitation of claim 5 and does not anticipate the claim.

Must Coretronic’s motion for summary judgment of obviousness of claim 5 therefore necessarily also fail? Perhaps conflating novelty and non-obviousness analysis, it is sometimes stated that, for a claim to be held obvious, each and every claim limitation must be identified in the prior art. A recent post-KSR case took up this issue. The district court in Abbot Labs. v. Sandoz, Inc., 500 F. Supp. 2d 846 (N.D. Ill. 2007), wrote:

Prior to the issuance of the KSR opinion, Federal Circuit precedent taught that all the claim limitations of the invention at issue must be found to exist in the prior art references before it could be determined whether there was a teaching, motivation, or suggestion to combine those limitations. The KSR opinion only focused on the Federal Circuit’s strict use of the TSM test in performing the obviousness analysis; it did not mention or affect the requirement that each and every claim limitation be found present in the combination of the prior art references before the analysis proceeds.

Id. at 851-852 (internal citations omitted). That court denied an accused infringer of a pharmaceutical patent a stay of injunction pending appeal, finding, *inter alia*, no substantial question of obviousness. Id. at 853.

The district court in Abbot Labs. relied on three pre-KSR cases to support its contention that some version of an “each and every limitation” requirement for obviousness was established in Federal Circuit precedent prior to KSR. The first such case, Velander v. Garner, 348 F.3d 1359 (Fed. Cir. 2003), affirmed a Board of Patent Appeals and Interferences decision that a patent application in the field of bioengineering was obvious. The court noted in dicta, “If all the elements of an invention are found in a combination of prior art references, a proper analysis under § 103

1 requires, *inter alia*, consideration of two factors” Id. at 1363. In that case, all of the claim
 2 limitations had been identified in the prior art, and the question of whether each and every element
 3 must exist in prior art references was neither presented nor decided. The second case relied upon by
 4 the district court in Abbot Labs. is U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554 (Fed. Cir.
 5 1997). In that case, the court affirmed entry of judgment in favor of the accused infringer on the
 6 basis of patent invalidity due to obviousness. The court simply noted that the jury instruction used
 7 by the trial court included an instruction that “the prior art must show not only all of the elements of
 8 the claimed combination, but must contain some [teaching, etc.] to combine” Id. at 1564. The
 9 Court of Appeals found no error with the jury’s finding of obviousness under such an instruction.
 10 The question of whether the instruction stated too rigid a standard was not at issue. Finally, the
 11 district court in Abbot Labs. relied upon Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H.
 12 Patrick Co., 464 F.3d 1356 (Fed. Cir. 2006). Like Velander and U.S. Surgical Corp., the Dystar case
 13 affirmed a finding of obviousness. Focusing on the teaching-suggestion-motivation test, that
 14 opinion stated “Where, as here, all claim limitations are found in a number of prior art references,
 15 the factfinder must determine what the prior art teaches, whether it teaches away from the claimed
 16 invention, and whether it motivates a combination of teachings from different references.” Id. at
 17 1360 (citation and internal quotations omitted). Like the other cases, the rule as stated allows a
 18 finding of obviousness to be made through a combination of all prior art references and some
 19 teaching, suggestion, or motivation to combine; however, neither the holding nor the dicta supports
 20 the conclusion that a rigid “each and every limitation” rule stands as a requirement for any finding of
 21 obviousness.⁷

22 The Abbot Labs. case was appealed, and the Court of Appeals was presented with this issue.
 23 See Abbot Labs. v. Sandoz, 544 F.3d 1341 (2008) (affirming entry, and denying stay, of preliminary
 24 injunction). In that case, one circuit judge appeared to agree, albeit obliquely, with the district
 25 court’s assertions regarding the requirement that each and every element be present in the prior art.
 26 See id. at 1351 (Newman, C.J., concurring).⁸ Another circuit judge strongly disagreed, writing that
 27 “a given claim limitation may be obvious over the prior art even if no single reference had
 28

specifically disclosed that limitation.” See *id.* at 1377 (Gajarsa, C.J., dissenting). Judge Gajarsa cited cases in support of this conclusion, although the relevant language in these opinions is also dicta. See *Takeda Chem. Indus. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356 (Fed. Cir. 2007) (“[S]tructural similarity between claimed and prior art subject matter [structurally similar compounds], proved by combining references *or otherwise*, where the prior art gives a reason or motivation to make the claimed compositions, creates a prima facie case of obviousness.”) (citation omitted) (emphasis added); *Tegal Corp. v. Tokyo Electron Am., Inc.*, 257 F.3d 1331, 1349 (Fed. Cir. 2001) (stating that district court’s finding that the single prior art reference does not disclose “metal wall” claim term does not preclude finding of obviousness of asserted claims). See also *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1323 (Fed. Cir. 1999) (noting a party asserting invalidity must identify prior art references “which *alone or* combined with other references would have rendered the invention obvious to one of ordinary skill in the art at the time of invention”) (citations omitted) (emphasis added); Model Patent Jury Instructions for the Northern District of California (Oct. 9, 2007) § B.4.3b (“This means that . . . a person of ordinary skill in the field . . . who knew about all this prior art would have come up with the claimed invention.”).

It cannot be said that Federal Circuit precedent establishes that every single claim limitation must be identified in the prior art for a court to invalidate a patent claim on the basis of obviousness. Nor is it apparent that, even if there had been such a rule, *KSR* left it untouched. That unanimous Supreme Court decision dealt specifically with the teaching-suggestion-motivation test, but its reach was not explicitly limited to that issue; rather, the opinion set out principles implicating the non-obviousness analysis more generally. See, e.g., *KSR*, 550 U.S. at 401 (“*Graham* provided an expansive and flexible approach to the obviousness question that is inconsistent with the way the Federal Circuit applied its TSM test here.”). This court can discern no rigid “each and every limitation” rule in either the statutory language of section 103 or the flexible test set forth by the Supreme Court in *Graham* and reaffirmed in *KSR*. Accordingly, the fact that the final limitation of the ‘158 patent’s claim 5 is not disclosed in any piece of prior art here in evidence does not mean that the claim necessarily meets the requirement of non-obviousness.

1 Although the specific limitation of “an exhaust vent provided on the outer case that directly
2 conducts air exhausted from the air outlet to the outside of the outer case” has not been identified in
3 the prior art, the scope and content of the prior art and differences between the prior art and the
4 claims at issue, in light of the level of ordinary skill in the art, support a finding of obviousness.
5 Graham, 383 U.S. at 17-18. Nakamura draws ambient air into projectors and circulates and expels
6 such air in order to cool hot projector components. Nakamura’s cooling system uses the same
7 physical components used in the invention claimed by claim 5: two air intake ports, one or more
8 exhaust vents, an outer case, an air outlet and the like. Moreover, the conducting of air from one
9 part of the apparatus to another part, both directly and indirectly, is taught in Nakamura. Like the
10 invention of claim 5, Nakamura teaches the use of multiple ventilating paths with their
11 accompanying ducts and vents to cool a single projector. Claim 5 does not claim the specific spatial
12 arrangement within the casing, i.e., specifically that given elements are nestled next to each other or
13 are a certain shape or distance apart. The invention claimed by claim 5 is the arrangement of the
14 cooling airways such that one airway goes directly through the power unit, with the purpose of more
15 efficiently cooling it. See ‘158 Patent at 15:1-7.

16 There are a limited number of components requiring cooling inside a projector casing, and
17 such a casing can contain only so many prior art air passageways. Where, as here, there is a finite
18 number of identified, predictable solutions, success is likely the product not of innovation but
19 ordinary skill and common sense. KSR, 550 U.S. at 421.⁹ Seeking to increase the efficiency of
20 cooling a power unit by arranging a prior art design with air ducts such that an air duct goes directly
21 through the power unit is obvious under the “obvious to try” rationale approved by the Supreme
22 Court and the Federal Circuit. See In re Kubin, 561 F.3d 1351, 1359 (Fed. Cir. 2009) (explaining
23 permissible and impermissible applications of the “obvious to try” rationale).¹⁰ Dedicating an
24 airway to the power unit would have been obvious, and Seiko Epson has not offered evidence that
25 the prior art teaches away from such an arrangement.¹¹ Nor has Seiko Epson presented any evidence
26 of secondary considerations that would support non-obviousness, e.g., commercial success, long felt
27 but unsolved needs, or the failure of others. KSR, 550 U.S. at 406; Graham, 383 U.S. at 17-18; see

1 also Muniauction, Inc. v. Thomson Corp., 532 F.3d 1318, 1327 (Fed. Cir. 2008). In sum, there is no
2 genuine issue of material fact contradicting the conclusion that a person ordinarily skilled in the art,
3 when confronted with the problem of more efficiently cooling the power unit, would at the time of
4 invention have considered arranging a duct like those taught by Nakamura to directly cool the power
5 unit and to directly exhaust the air from the power unit out of the casing. The differences between
6 claim 5 and Nakamura are, as a matter of law, "such that the subject matter as a whole would have
7 been obvious at the time the invention was made to a person having ordinary skill in the art to which
8 said subject matter pertains." See 35 U.S.C. § 103. In light of Nakamura, claim 5 is obvious as a
9 matter of law.

10
11 II. Seiko Epson's '392 Patent

12 Coretronic argues that the asserted claims of the '392 patent are anticipated by both the
13 Bergin patent and Seiko Epson's ELP-5000XB projector or, alternatively, are obvious. Seiko Epson
14 does not dispute Coretronic's contention that both of these are prior art. Instead, Seiko Epson argues
15 that neither piece of prior art practices the invention, because (1) Bergin does not disclose a spring
16 or alignment reference surfaces; and (2) the ELP-5000XB's reflector is not pressed and does not
17 engage the accompanying lamp housing laterally. Seiko Epson also argues that Coretronic has not
18 proven obviousness, because Coretronic's expert does not indicate how the two references would be
19 combined or what would motivate a person of ordinary skill in the art to combine the references.

20
21 A. Anticipation

22 Bergin discloses a headlight assembly for use in an automobile. Like the ELP-5000XB,
23 Bergin discloses wireform springs (two separate ones in the preferred embodiment) to press a lamp
24 reflector against a lamp housing. See Payne Dec., Exh. G at 9:52-10:34. Bergin's wireform springs
25 also press the reflector forward, toward the center of the aperture, rather than to one side. See id.
26 The relevant difference between Bergin and the ELP-5000XB is that Bergin discloses an external,
27 projecting flange member having a plurality of protuberances around the front of the reflector. See

1 id. at 6:59-68. These protuberances line up with corresponding bosses located around the sides of
2 the front of the lamp holder. See id. at 6:68-7:2. Coretronic asserts that each protuberance has a
3 first and a second alignment surface that align with the corresponding boss. By engaging each
4 protuberance with its respective boss, the wireform spring or springs align the alignment surfaces as
5 required by claim 1, according to Coretronic. In this interpretation, there is not just one first
6 reference surface and one second reference surface; rather, there are as many first and second
7 reference surfaces as there are protuberances. Similarly, each boss possesses a first surface going in
8 one direction and a second surface going in another.

9 Coretronic's theory for finding that Bergin meets the claim limitation requiring a first and
10 second reference surface hinges upon, among other things, the notion that the reflector's
11 protuberances are somehow inserted into the bosses on the lamp holder. This could be the case if
12 Bergin's "bosses" were in fact depressions of some sort, such that the reflector's protuberances fit
13 within the depressions. Yet even Coretronic's own expert appears to recognize that a "boss" is
14 "something that juts out," rather than a depression. See Docket No. 340, Exh. B (Payne Depo.) at
15 150; see also Random House College Dictionary (1982) (defining "boss" as a "protuberance" or a
16 "stud"). Coretronic's theory appears to be, however, that the bosses, while themselves
17 protuberances, each contain a cavity within them into which the reflector's protuberances fit. This
18 theory is without merit, because the patent teaches no such cavities. While it might make apparent
19 sense to align protuberances with cavities, the fact remains that Bergin does not disclose such a
20 system. Indeed, it appears that the purpose of the protuberances and bosses may not have been to
21 themselves physically align the lamp but rather to provide "aiming pads" allowing a manufacturer to
22 determine the alignment and connect the reflector and the lamp housing in some other fashion. See
23 Bergin at 7:31-37. Bergin does not anticipate the claims.

24 The ELP-5000XB is a projector practicing almost all of the limitations of claim 1 of the '392
25 patent. For instance, the ELP-5000XB has a lamp assembly consisting of a light source lamp and a
26 reflector. The reflector is held in place within a lamp housing by a wireform spring. Seiko Epson
27 argues that the ELP-5000XB cannot anticipate claim 1 because it does not practice the limitation of
28

1 “a spring that presses the reflector against the lamp housing so that the first alignment reference
2 surface engages the first surface and the second alignment reference surface engages the second
3 surface.” Specifically, Seiko Epson contends that the reflector does not exert a lateral force against
4 the side of the lamp housing. According to Seiko Epson, the wireform spring supplies only
5 downward pressure to the ELP-5000XB’s reflector, pressing said reflector in one direction, rather
6 than along two reference surfaces extending in two different directions.

7 Indeed, Coretronic has provided no evidence that the ELP-5000XB’s wireform spring exerts
8 pressure in a direction other than the downward direction.¹² Coretronic instead argues that claim 1
9 does not contain a specific “lateral force” limitation.¹³ While this observation is, strictly speaking,
10 correct, the claim does specify that the reflector is engaged in two different directions. As
11 demonstrated by Coretronic’s own evidence, the ELP-5000XB’s spring aligns the reflector in the
12 center of the aperture, rather than against a side of the lamp housing. See Payne Dec., Exh. C.¹⁴
13 However, there is no material dispute that the ELP-5000XB practices the other limitations of the
14 claim.

15
16 B. Non-Obviousness

17 Coretronic urges that the ‘329 patent claims are, if not anticipated, obvious. “The
18 combination of familiar elements according to known methods is likely to be obvious when it does
19 no more than yield predictable results.” KSR, 550 U.S. at 416. Indeed, the prior art ELP-5000XB
20 contains every element of the ‘392 patent, except for the “presses the reflector against the lamp
21 housing so that the first alignment reference surface engages the first surface and the second
22 alignment reference surface engages the second surface” limitation. Engaging an object against two
23 parallel surfaces to hold it in place is neither novel nor non-obvious. The bricks of the Great
24 Pyramid at Giza were aligned by engaging multiple perpendicular surfaces of each brick against the
25 surfaces of surrounding bricks. A floor tile inset into a floor is aligned along two surfaces with
26 neighboring tiles to press it into the correct position. Common experience is replete with examples
27 of the pressing of surfaces of one object against the surfaces of another to hold the object in place.

1 A claim is less likely to be obvious if the prior art teaches away from combining the claimed
2 elements. KSR, 550 U.S. at 416. If, for instance, the prior art had taught that pressing the reflector
3 against the housing should be avoided due to some obstacle that technique posed—perhaps such a
4 design might make reflectors more vulnerable to damage caused by impacts, for instance—then a
5 technique for overcoming the obstacle and thereby allowing improved alignment would be non-
6 obvious. But that is not this patent. The ‘329 patent does not teach how to overcome any existing
7 obstacle to pressing the reflector against the housing. Instead, it claims a design the simply presses a
8 reflector against a housing. Seiko has presented no evidence that the prior art teaches away from a
9 design in which the reflector is pressed against the sides of its housing.

10 Moreover, there are only so many ways to secure a reflector within a lamp housing. See
11 KSR, 550 U.S. at 421. An ordinarily skilled artisan in this field is “one with a Bachelor’s degree in
12 physics, engineering, optics or other related field who also is familiar with the design of projectors.”
13 Claim Const. Order at 5. It is clear as a matter of law that an ordinarily skilled artisan using
14 common sense would consider adjusting her prior art wireform spring to press the reflector against
15 the surfaces of the housing.¹⁵ There was also an apparent reason to combine the known elements in
16 the fashion claimed by the ‘392 patent. See KSR, 550 U.S. at 418. The patent itself states that prior
17 art projectors required accurate positioning in relation to the optical axis to efficiently use their
18 luminous flux. ‘392 Patent at 1:30-36. The court’s non-obviousness analysis “need not seek out
19 precise teachings directed to the specific subject matter of the challenged claim, for a court can take
20 account of the inferences and creative steps that a person of ordinary skill in the art would employ.”
21 Id. An ordinarily skilled artisan in this field would have been motivated to optimize the alignment
22 of reflector and lamp housing and would have taken the step of modifying the reflector to press it up
23 against the sides of the housing for stability. Finally, it must be noted that Seiko Epson has not
24 offered any evidence regarding secondary considerations. See KSR, 550 U.S. at 406; Graham, 383
25 U.S. at 17-18. Claim 1 of the ‘392 patent is obvious as a matter of law. Dependent claims 3, 4, 7, 9
26 and 10 each recite some non-novel variant of claim 1 and are likewise invalid.

1 III. Coretronic's '899 Patent

2 Seiko Epson has pointed to five pieces of prior art that, it argues, either anticipate the
3 asserted claims of the '899 patent or render them obvious. None of these references were considered
4 by the U.S. Patent and Trademark Office (USPTO) during the initial examination of the patent.
5 Seiko Epson has also moved for a declaration that the '899 patent is unenforceable due to
6 Coretronic's failure to disclose its Optoma EzPro 730 projector to the USPTO during examination.
7 In light of the following discussion, it is unnecessary to reach the merits of the anticipation or
8 inequitable conduct arguments.

9 Seiko Epson contends that the combination of Miyashita and Kobayashi renders the '899
10 claims at issue obvious to a person having ordinary skill in the art. Miyashita describes a system in
11 which an image display device casing is provided with both an inner and outer structure. One way
12 in which the device is cooled is through the transmission of heat from the inner casing into coupling
13 members that transfer heat to specific locations on the outer casing. A second way in which the
14 device is cooled is through the movement of air by a fan through the "space between the first
15 casing . . . and the second casing." Utermohlen Dec., Exh. 2 ("Miyashita") at 1. The lamp is cooled
16 by outside air flowing between the inner casing and the outer casing. Air is clearly shown flowing
17 through the spaces bounded by the upper and lower surfaces of the inner lamp casing and the
18 respective parts of the outer casing to which they are coupled. See id. at Figure 1.

19 Every element of the '899 patent's claim 1, save one, can be found in Miyashita. The casing
20 disclosed in Miyashita has an interior. There is a ventilation outlet on the casing and proximate to
21 the side of the lamp assembly. The top and bottom of the inner casing define an upper air duct using
22 an upper sheet and a lower air duct using a lower sheet. There is a fan located adjacent to the lamp
23 holder. The missing element is "a lamp holder fixed in the interior of the casing, and having at least
24 one guiding surface on one side near the lower edge of the lamp holder." '899 Patent at 4:14-16.
25 While something must hold the lamp in position, Miyashita does not describe in detail any sort of
26 lamp holder.

1 Kobayashi teaches this other element. It discloses a removable lamp holder. The lamp is
2 cooled by air blown through a passage created between the cover of the aperture and a diagonal
3 surface, a guide rib present in the bottom of the lamp holder. "[A]n air passage . . . is formed
4 between the cover and the lamp holder so as to guide cooling air" Utermohlen Dec., Exh. 3
5 ("Kobayashi") at 6. In short, Kobayashi discloses a lamp holder with a guiding surface near the
6 lower edge of the lamp holder.

7 Accordingly, each of claim 1's elements is identifiable in the prior art. Moreover, an
8 ordinarily skilled artisan would be expected to consider the step of augmenting Miyashita with
9 Kobayashi's guiding surface or surfaces. Guiding surfaces have often been used in cooling ducts to
10 smooth out airflow (making it more laminar versus turbulent), reduce backpressure and provide for
11 more controlled and efficient cooling. See Keller Dec. ¶ 16.¹⁶ Anyone faced with designing an air
12 duct must, by the very nature of the activity, consider how to position surfaces so as to direct air
13 toward the desired target.¹⁷ Both parties have alluded in their papers to market incentives to create
14 projectors that dissipate heat more efficiently and effectively. Indeed, the broad range of prior art in
15 evidence shows that many inventors have sought to do just that. Furthermore, Coretronic has
16 presented no evidence that the prior art taught away from the modification of the Miyashita design
17 with a lamp holder having leading surfaces. A skilled artisan, when faced with the demand for more
18 efficient cooling, would without a doubt have considered such a modification.

19 Seiko Epson has clearly and convincingly established a prima facie case that claim 1 is
20 obvious as a matter of law. Coretronic has not attempted to rebut this showing with evidence of
21 secondary considerations. Instead, Coretronic argues that the combination of Miyashita and
22 Kobayashi cannot render the '899 patent obvious because neither of these patents was directed
23 toward the problem of cooling an outer casing. Precisely this sort of argument was addressed and
24 rejected by the Court in KSR: "The second error of the Court of Appeals lay in its assumption that
25 person of ordinary skill attempting to solve a problem will be led only to those elements of prior art
26 designed to solve the same problem." KSR at 420. As the Court noted, common sense teaches that
27 "familiar items may have obvious uses beyond their primary purposes." Id. Whether or not the
28

1 prior art in question was expressly directed toward cooling the outer casing cannot control the result
2 here.¹⁸

3 Claim 1 is invalid as a matter of law, and the '899 patent's dependent claims do not fare any
4 better. Claims 2, 3 and 9 merely address the position of the lower sheet and represent no
5 engineering innovation. Claims 7 and 11 are likewise minor variations of claim 1. This patent's
6 purported innovation hinges on claim 1. Each of the challenged claims is invalid under section
7 103(a) as a matter of law.

8
9 CONCLUSION

10 For the reasons stated above, the court rules as follows. Defendants/counter-claimants'
11 motion to invalidate claims 1 and 2 of the '158 patent is GRANTED on the basis of anticipation.
12 Defendants/counter-claimants' motion to invalidate claim 5 of the '158 patent is GRANTED on the
13 basis of obviousness. Defendants/counter-claimants' motion to invalidate claims 1, 3, 4, 7, 9 and 10
14 of the '392 patent is GRANTED on the basis of obviousness. Plaintiff/counter-defendant's motion
15 to invalidate claims 1, 2, 3, 7, 9 and 11 of the '899 patent is GRANTED on the basis of obviousness.

16
17
18 IT IS SO ORDERED.

19
20 Dated: May 15, 2009

21 
22 MARILYN HALL PATEL
23 United States District Court Judge
24 Northern District of California
25
26
27
28

ENDNOTES

1. Neither party has questioned the accuracy of any of the certified translations filed in connection with these motions.

2. Coretronic's Rule 56(f) motion to continue the hearing on Seiko Epson's motion for summary judgment, Docket No. 287, is DENIED as moot. The hearing on the cross-motions for summary judgment has already occurred, and this decision does not rely upon assertions of the ELP-3000 projector's status as prior art.

3. There has been no showing that determining specifications or finalizing marketing requirements, see Bailey Dec. ¶ 5, is the same as active participation in the design of the technology itself.

4. The parties jointly requested clarification of the court's construction of "directly conducts cooling air" as "transmits cooling air without *reducing* its temperature to that of the air inside the outer casing of the projector." See Docket No. 198 (Joint Request for Clarification); Docket No. 183 (Claim Const. Order). The parties are correct that use of the word "reducing" was in error and that the correct word is "increasing."

5. The location and nature of the inlet required by claim 1 of the '158 patent is described in only general terms in the specification. See '158 Patent at 14:57-67; 5:32-38.

6. On the one hand, as Seiko Epson's expert points out, text references in Nakamura describe air passing "through the vicinity" of the power supply and then the light source, cooling both of them before being exhausted. See Nakamura at 7-8 (¶¶ 10 & 13). This suggests that the air does not "directly" exit the projector casing after cooling the power supply. On the other hand, the drawings illustrating embodiments of the invention show an air path with some air passing from the power unit over or near the light source and some air passing in a direct line from the power unit to the exhaust vent. See id., Figures 2 & 3. The figures, at least, suggest that some air may pass directly out of the projector without cooling the light source.

7. Indeed, the tenor of these (pre-KSR) opinions suggests that where all elements had been identified in various prior art references, there was an *additional* requirement: a teaching, suggestion or motivation to combine. Where, on the other hand, obviousness was based on one piece of prior art, there was no need to identify a specific motivation to combine, since nothing was being combined.

Regarding claim 5, obviousness is apparent because the claim is an obvious extension of, or variant upon, Nakamura. The motivation to make such a variant is inherent to the nature of the goal expressly sought by the '158 patent and by the prior art: to achieve efficient cooling of projectors and their components.

8. Judge Newman wrote for a majority comprising herself and Judge Archer; however, Judge Archer did not join in Part I of the opinion, in which Judge Newman took up this issue. Judge Gajarsa dissented.

9. Designing configurations of familiar mechanical projector components does not involve the same level of unpredictability as, for example, the chemical arts. Cf. Eisai Co. Ltd. v. Dr. Reddy's Labs., Ltd., 533 F.3d 1353, 1359 (Fed. Cir. 2008).

10. It is impermissible to invalidate a claim under an "obvious to try" rationale where what was "obvious to try" was either (1) "to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful" or (2) "to explore a new technology or general approach that seemed to be a promising field of

1 experimentation, where the prior art gave only general guidance as to the particular form of the claimed
2 invention or how to achieve it.” Kubin, 561 F.3d at 1359.

3 11. It should also be noted that the final claim limitation of claim 5 “solves no stated problem and
4 would be an obvious matter of design choice within the skill of the art.” Application of Kuhle, 526 F.2d
5 553, 555 (C.C.P.A. 1975). The specification makes a number of references to the benefits of cooling
6 air being conducted directly from an intake port to cool the hot projector components. See, e.g., ‘158
7 Patent at 3:3-6; 13:19-22; 15:1-7. However, the patent contains no reference to any advantage to
8 directly conducting air exhausted from the air outlet to outside the outer case, as opposed to using it to
9 cool other components.

10 12. Coretronic did point to its expert’s opinion that a component of the lamp assembly which the
11 expert calls a “sheet metal spring” exerts lateral pressure on the lamp. In its opposition, Seiko Epson
12 responded by explaining, quite plausibly, that the item identified by Coretronic’s expert as a “sheet
13 metal spring” did not exert lateral force, as it was actually one of four metal strips used to secure a glass
14 cover over the lamp’s aperture. See Iechika Dec. ¶¶ 3-6 & Exhs. A-D. Coretronic did not dispute this
15 explanation in its reply, thus conceding the point.

16 13. It may be noted that Coretronic opines, in its reply, that the springs in the ELP-5000XB lamp
17 assembly are “almost identical” to those in the ELP-7300, a device that Coretronic asserts to have been
18 admitted by Seiko Epson to be a commercial embodiment of the ‘392 patent. This being the case, the
19 ELP-5000XB must *ipso facto* practice the invention, according to Coretronic. Apparently, counsel for
20 Coretronic is unfamiliar with the old adage (doubtlessly coined by a judge): “‘Almost’ only counts in
21 horseshoes and hand grenades.”

22 14. The wireform spring appears to push the reflector both downward and foreword toward the
23 aperture. Coretronic has not argued that the lamp housing against which the front of the reflector is
24 being pressed (in the direction of the aperture) should be considered one of the two alignment reference
25 surfaces, perhaps because it does not “align” the reflector in any real sense.

26 15. It would also be well within the capability of the ordinarily skilled artisan to alter the surfaces
27 of the reflector as needed to press them firmly against the sides of the housing.

28 Claim 1 quite clearly represents something that is “obvious to try” in the sense of the term
approved by the Supreme Court and the Federal Circuit. See Kubin, 561 F.3d at 1359.

16. Coretronic did not rebut this testimony of Seiko Epson’s expert.

17. To state it another way, Coretronic has not shown that the combination of these elements yields
anything “more than one would expect from such an arrangement.” See Sundance, Inc. v. Merlot
Tarpaulin & Sidekit Mfg. Co., Inc., 550 F.3d 1356, 2008 U.S. App. LEXIS 26082 (Fed. Cir. Dec. 24,
2008), at *30, quoting Sakraida v. AG Pro, Inc., 425 U.S. 273, 282 (1976). The benefit of using a
guiding surface to guide air within a projector would have been inescapably obvious to an ordinarily
skilled artisan.

18. Coretronic also points out that Seiko Epson’s expert used a definition of a person of ordinary
skill in the art that differs slightly from that adopted by the court in claim construction, in developing
his opinion. The difference is insubstantial and does not affect the result here.

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

SEIKO EPSON CORPORATION,
Plaintiff/Counterclaim Defendant-Appellant,

and

EPSON RESEARCH AND DEVELOPMENT, INC.
and EPSON AMERICA, INC.,
Counterclaim Defendants-Appellees,

v.

CORETRONIC CORPORATION,
Defendant/Counterclaimant-
Cross Appellant,

and

OPTOMA TECHNOLOGY, INC.,
Defendant-Appellee.

2009-1439, -1440

Appeals from the United States District Court for the
Northern District of California in 06-CV-6946, Judge
Marilyn H. Patel.

Decided: May 20, 2010

WILLIAM J. UTERMOHLEN, Oliff & Berridge, PLC, of Alexandria, Virginia, argued for plaintiff/counterclaim defendant-appellant and counterclaim defendants-appellees. With him on the brief were JAMES A. OLIFF and JOHN W. O'MEARA.

STEVEN D. HEMMINGER, Alston and Bird LLP, of Palo Alto, California, argued for defendant/counterclaimant-cross appellant and defendant-appellee. On the brief were YITAI HU, MADISON C. JELLINS and ELIZABETH H. RADER.

Before MICHEL, *Chief Judge*, LOURIE, and BRYSON, *Circuit Judges*.

PER CURIAM.

Four patents are at issue in this case: U.S. Patent Nos. 6,527,392 and 6,203,158, asserted by Seiko Epson Corporation, and U.S. Patent Nos. 6,739,831 and 6,742,899, asserted on counterclaims by Coretronic Corporation. As to three of the patents, we find that the arguments raised by the parties on appeal have no merit. We therefore affirm the district court's judgments with respect to the '392, '831, and '899 patents for the reasons given by the district court.

The '158 patent presents a more difficult issue. The '158 patent describes a projector that conducts air from outside the projector directly through the power unit in order to cool it more effectively. Seiko Epson asserted

infringement of two independent claims. Claim 1 recites a projector comprising:

a power unit including a ventilating path provided inside the power unit for circulating cooling air;

an outer case that stores the optical unit and the power unit;

a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit; and

a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the ventilating path, said second cooling air intake port comprising:

an air inlet provided on the power unit, and a duct connecting said second cooling air intake port and the air inlet.

Similarly, claim 5 recites a projector comprising:

a power unit including an air inlet and an air outlet;

an outer case that stores the optical unit and the power unit;

a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit;

a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the air inlet; and

an exhaust vent provided on the outer case that directly conducts air exhausted from the air outlet to the outside of the outer case.

At the claim construction hearing, Seiko Epson proposed that the phrase “directly conducts cooling air” be construed to mean “transmits cooling air without substantial contamination by internal sources of heat.” The district court agreed in essence with Seiko Epson’s proposed construction, but modified it to “transmits cooling air without [increasing] its temperature to that of the air inside the outer casing of the projector.” The court explained that the change was necessary because Seiko Epson’s proposed construction was “not limited to the air’s temperature.” The court also noted that the modified construction was consistent with how the patent distinguished the prior art, which was described as being less efficient because the air used to cool the power unit “had already been heated by many other elements located in the outer case.”

We hold that the district court erred in its construction of “directly conducts cooling air,” and we adopt Seiko Epson’s narrower construction. Claims 1 and 5 recite that the second air intake port directly conducts not just “cooling air,” but “cooling air from the outside of the outer case.” The inclusion of that additional phrase indicates that air from outside of the case must be conducted di-

rectly to the power unit without substantial contamination by the air inside the case. Moreover, it reveals that the modifying term "cooling" is merely descriptive rather than definitional, since all air from outside of the case is presumed to be cooler than the air inside the case.

That interpretation is further supported by the specification, which clarifies that the term "cooling" is used in the patent solely in reference to "fresh" air from outside of the case. For instance, the abstract of the patent states that the second air intake port "directly conduct[s] fresh air into the ventilating path. Because the interior of the power unit is cooled by fresh air which is cooler than the air inside the outer case, cooling efficiency is enhanced." The Summary of the Invention section of the specification reiterates that the invention

directly conduct[s] fresh air from outside the outer case from the cooling air intake port to the inlet of the ventilating path. Because the cooling air conducting means directly conducts fresh air to the ventilating path, and because fresh air is cooler than the air in the outer case, the interior of the power unit can be cooled with high efficiency."

'158 patent, col. 2, line 67 to col. 3, line 6. The patent also notes that the duct recited in claim 1, which connects the second air intake port and the air inlet of the power unit, "only introduces fresh air from the cooling air intake port to the ventilating path . . . [and] prevents the air from the outer case, which is hotter than the fresh air, from entering into the ventilating path." *Id.*, col. 3, ll. 18-21. Those statements demonstrate that the thrust of the invention is not simply to pass any form of cooler air through the power unit, but rather to inject "fresh" air from outside the case directly into the ventilating path.

Because we are satisfied that “cooling air from the outside of the outer case” has a more limited meaning than “cooling air,” and that directly conducting such air to the power unit requires a narrower construction than the one provided by the district court, we vacate the district court’s grant of summary judgment as to the ’158 patent. On motion for summary judgment, the district court held that the asserted claims of the ’158 patent were invalid in light of Japanese Patent Application No. 4-271334 (“Nakamura”). The Nakamura reference, however, plainly fails to satisfy our construction of “directly conducts cooling air from the outside of the case.” Although Nakamura teaches a second air intake port located in the vicinity of the power unit, it does not provide an uninterrupted path from that port to the power unit. Instead, the figures in the Nakamura reference indicate that the fresh air entering through the second air intake port mixes with ambient air from inside the case before reaching the power unit. Consequently, the fresh air entering through the second air intake port is not directly conducted to the power unit as required by the ’158 patent.

While we vacate the district court’s judgment as to the ’158 patent and remand for further proceedings, we do not rule out the possibility that other prior art, standing alone or in combination with the Nakamura reference, might sustain the district court’s finding of invalidity. Our decision is limited to holding that the district court erred in its construction of “directly conducts cooling air” and that, under a narrower construction, the Nakamura reference fails to disclose the required structure.¹

¹ Seiko Epson moved this court to take judicial notice of the definitions of several terms in generally available references. We grant the motion to take judicial notice of the fact that those references define the terms as they do, although we do not take judicial notice of the correctness of those definitions.

**AFFIRMED IN PART, VACATED IN PART, and
REMANDED.**

ADRMOP, AO279, APPEAL, CLOSED, CONSOL, E-Filing, MEDTERM, PRVADR

**U.S. District Court
California Northern District (San Francisco)
CIVIL DOCKET FOR CASE #: 3:06-cv-06946-MHP**

Seiko Epson Corporation v. Optoma Technology, Inc.
Assigned to: Hon. Marilyn H. Patel
Referred to: Magistrate Judge Elizabeth D. Laporte
Member case: [\(View Member Case\)](#)
Case in other court: Federal Circuit, 08-01523
09-01439,-1440
11-01120
Cause: 35:271 Patent Infringement

Date Filed: 11/06/2006
Date Terminated: 01/05/2011
Jury Demand: Both
Nature of Suit: 830 Patent
Jurisdiction: Federal Question

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Date Filed	#	Docket Text
11/06/2006	<u>1</u>	COMPLAINT (with jury demand) against Coretronic Corporation, Optoma Technology, Inc. (Filing fee \$ 350, receipt number 5515731). Filed by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/6/2006) (Entered: 11/08/2006)
11/06/2006		CASE DESIGNATED for Electronic Filing. (cjl, COURT STAFF) (Filed on 11/6/2006) (Entered: 11/08/2006)
11/07/2006		Summons Issued as to Optoma Technology, Inc.. (cjl, COURT STAFF) (Filed on 11/7/2006) (Entered: 11/08/2006)
11/07/2006	<u>2</u>	ADR SCHEDULING ORDER: Case Management Statement due by 2/5/2007. Case Management Conference set for 2/12/2007 04:00 PM. (Attachments: # <u>1</u> Standing Order)(cjl, COURT STAFF) (Filed on 11/7/2006) (Entered: 11/08/2006)
11/08/2006		REPORT on the filing of an action regarding Patents (cc: form mailed to register). (cjl, COURT STAFF) (Filed on 11/8/2006) (Entered: 11/08/2006)
11/08/2006		Summons Issued as to Coretronic Corporation. (cjl, COURT STAFF) (Filed on 11/8/2006) (Entered: 11/08/2006)
11/09/2006	<u>3</u>	Executed Summons and Proof of Service Acknowledgement filed by Seiko Epson Corporation. (Ogden, Christopher) (Filed on 11/9/2006) Modified on 11/13/2006 (cjl, COURT STAFF). (Entered: 11/09/2006)
11/09/2006	<u>4</u>	MOTION for leave to appear in Pro Hac Vice Re: James A. Oliff (fee paid) filed by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>5</u>	Proposed Order re <u>4</u> MOTION for leave to appear in Pro Hac Vice Re: James A. Oliff by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>6</u>	MOTION for leave to appear in Pro Hac Vice Re: Tamir D. Damari (fee paid) filed by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>13</u>	Proposed Order re <u>6</u> MOTION for leave to appear in Pro Hac Vice Re: Tamir

		D. Damari by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>7</u>	MOTION for leave to appear in Pro Hac Vice Re: William J. Utermohlen (fee paid) filed by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>14</u>	Proposed Order re <u>7</u> MOTION for leave to appear in Pro Hac Vice Re: William J. Utermohlen by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>8</u>	MOTION for leave to appear in Pro Hac Vice Re: John W. O'Meara (fee paid) filed by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>15</u>	Proposed Order re <u>8</u> MOTION for leave to appear in Pro Hac Vice Re: John W. O'Meara by Seiko Epson Corporation. (cjl, COURT STAFF) (Filed on 11/9/2006) Additional attachment(s) added on 11/15/2006 (cjl, COURT STAFF). (Entered: 11/13/2006)
11/09/2006	<u>9</u>	ORDER by Judge Wayne D. Brazil granting <u>4</u> Motion for Pro Hac Vice Re: James A. Oliff. (cjl, COURT STAFF) (Filed on 11/9/2006) (Entered: 11/14/2006)
11/09/2006	<u>10</u>	ORDER by Judge Wayne D. Brazil granting <u>6</u> Motion for Pro Hac Vice Re: Tamir D. Damari. (cjl, COURT STAFF) (Filed on 11/9/2006) (Entered: 11/14/2006)
11/09/2006	<u>11</u>	ORDER by Judge Wayne D. Brazil granting <u>7</u> Motion for Pro Hac Vice Re: William J. Uterhohlen. (cjl, COURT STAFF) (Filed on 11/9/2006) (Entered: 11/14/2006)
11/09/2006	<u>12</u>	ORDER by Judge Wayne D. Brazil granting <u>8</u> Motion for Pro Hac Vice Re: John W. O'Meara. (cjl, COURT STAFF) (Filed on 11/9/2006) (Entered: 11/14/2006)
11/27/2006	<u>16</u>	ANSWER and Counterclaims of Optoma Technology Inc. (with Jury Demand), by Optoma Technology, Inc. (Rader, Elizabeth) (Filed on 11/27/2006) Modified on 11/28/2006 (cjl, COURT STAFF). (Entered: 11/27/2006)
11/27/2006	<u>17</u>	Corporate Disclosure Statement Pursuant to Fed. R. Civ. P. 7.1 by Optoma Technology, Inc. (Rader, Elizabeth) (Filed on 11/27/2006) Modified on 11/28/2006 (cjl, COURT STAFF). (Entered: 11/27/2006)
11/29/2006	<u>18</u>	NOTICE OF LAW FIRM NAME CHANGE by Seiko Epson Corporation, Seiko Epson Corporation. (van Keulen, Susan) (Filed on 11/29/2006) Modified on 11/30/2006 (cjl, COURT STAFF). (Entered: 11/29/2006)
12/04/2006	<u>19</u>	Seiko Epson Corporation's DISCLOSURE Statement. (Ogden, Christopher)

		(Filed on 12/4/2006) Modified on 12/5/2006 (cjl, COURT STAFF). (Entered: 12/04/2006)
12/06/2006	<u>20</u>	Ex Parte MOTION for Issuance of Letters Rogatory <i>directed to Coretronic Corporation, a Taiwanese corporation</i> filed by Seiko Epson Corporation, Seiko Epson Corporation. Motion Hearing set for 12/13/2006 01:30 PM in Courtroom 4, 3rd Floor, Oakland. (Ogden, Christopher) (Filed on 12/6/2006) (Entered: 12/06/2006)
12/06/2006	<u>21</u>	Proposed Order re <u>20</u> Ex Parte MOTION for Issuance of Letters Rogatory <i>directed to Coretronic Corporation, a Taiwanese corporation</i> PROPOSED REQUEST FOR INTERNATIONAL JUDICIAL ASSISTANCE by Seiko Epson Corporation, Seiko Epson Corporation. (Ogden, Christopher) (Filed on 12/6/2006) (Entered: 12/06/2006)
12/08/2006	<u>22</u>	ANSWER TO COUNTERCLAIM <i>REPLY TO COUNTERCLAIM OF OPTOMA TECHNOLOGY, INC.</i> by Seiko Epson Corporation. (Ogden, Christopher) (Filed on 12/8/2006) (Entered: 12/08/2006)
12/13/2006	<u>23</u>	Letter Rogatory. Signed by Judge Wayne D. Brazil on Decemeber 12, 2006. (cjl, COURT STAFF) (Filed on 12/13/2006) (Entered: 12/13/2006)
01/16/2007	<u>24</u>	Declination to Proceed Before a U.S. Magistrate Judge by Optoma Technology, Inc. <i>and Request for Reassignment to a United States District Judge.</i> (Rader, Elizabeth) (Filed on 1/16/2007) (Entered: 01/16/2007)
01/17/2007	<u>25</u>	CLERK'S NOTICE of Impending Reassignment to U.S. District Judge (wdble1, COURT STAFF) (Filed on 1/17/2007) (Entered: 01/17/2007)
01/17/2007	<u>26</u>	ORDER REASSIGNING CASE. Case reassigned to Judge Martin J. Jenkins for all further proceedings. Judge Wayne D. Brazil no longer assigned to the case. Signed by the Executive Committee on 01/18/07. (cjl, COURT STAFF) (Filed on 1/17/2007) (Entered: 01/18/2007)
02/07/2007	<u>27</u>	CERTIFICATE OF SERVICE re <u>2</u> ADR Scheduling Order, <u>1</u> Complaint <i>upon defendant Coretronic Corporation.</i> (slh, COURT STAFF) (Filed on 2/7/2007) (Entered: 02/07/2007)
02/15/2007	<u>28</u>	CERTIFICATE OF SERVICE by Seiko Epson Corporation re <u>1</u> Complaint, Summons Issued,, <u>2</u> ADR Scheduling Order PROOF OF SERVICE UPON DEFENDANT CORETRONIC CORPORATION (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C)(van Keulen, Susan) (Filed on 2/15/2007) (Entered: 02/15/2007)
03/05/2007	<u>29</u>	ANSWER to Complaint with Jury Demand, COUNTERCLAIM against Seiko Epson Corporation by Coretronic Corporation. (Rader, Elizabeth) (Filed on 3/5/2007) (Entered: 03/05/2007)
03/05/2007	<u>30</u>	NOTICE by Coretronic Corporation <i>Corporate Disclosure Statement Pursuant to Fed. R. Civ. P. 7.1</i> (Rader, Elizabeth) (Filed on 3/5/2007) (Entered: 03/05/2007)
03/21/2007	<u>31</u>	<i>Amended</i> ANSWER to Complaint with Jury Demand, COUNTERCLAIM against Seiko Epson Corporation by Coretronic Corporation. (Attachments: #

		<u>1</u> Exhibit A# <u>2</u> Exhibit B)(Rader, Elizabeth) (Filed on 3/21/2007) (Entered: 03/21/2007)
04/09/2007	<u>32</u>	MOTION to Dismiss <i>OR, IN THE ALTERNATIVE, TO STAY CORETRONIC'S FIRST AND SECOND COUNTERCLAIMS</i> filed by Seiko Epson Corporation, Seiko Epson Corporation(a Japanese corporation). Motion Hearing set for 5/15/2007 09:30 AM in Courtroom 11, 19th Floor, San Francisco. (Ogden, Christopher) (Filed on 4/9/2007) (Entered: 04/09/2007)
04/09/2007	<u>33</u>	Declaration of TOSHIHIKO KOBAYASHI in Support of <u>32</u> MOTION to Dismiss <i>OR, IN THE ALTERNATIVE, TO STAY CORETRONIC'S FIRST AND SECOND COUNTERCLAIMS</i> filed by Seiko Epson Corporation, Seiko Epson Corporation(a Japanese corporation). (Related document(s) <u>32</u>) (Ogden, Christopher) (Filed on 4/9/2007) (Entered: 04/09/2007)
04/09/2007	<u>34</u>	Proposed Order re <u>32</u> MOTION to Dismiss <i>OR, IN THE ALTERNATIVE, TO STAY CORETRONIC'S FIRST AND SECOND COUNTERCLAIMS</i> by Seiko Epson Corporation, Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 4/9/2007) (Entered: 04/09/2007)
04/11/2007	<u>35</u>	CLERK'S NOTICE - Case Management Conference in reassigned case set for 6/5/2007 02:00 PM. before the Hon. Martin J. Jenkins, Courtroom 11, 19th floor, San Francisco. Joint Case Management Statement due by 6/29/2007. (** CORRECTION TO DOCKET ENTRY **** 5/29/07, NOT 6/29/07) Attachments: # <u>1</u> Standing Order) (epb, COURT STAFF) (Filed on 4/11/2007) Modified on 4/12/2007 (epb, COURT STAFF). (Entered: 04/11/2007)
04/17/2007	<u>36</u>	NOTICE by Coretronic Corporation(a Taiwanese Corporation) <i>Notice of Pendency of Other Action Pursuant to L.R. 3-13</i> (Rader, Elizabeth) (Filed on 4/17/2007) (Entered: 04/17/2007)
04/23/2007	<u>37</u>	MOTION for Leave to File <i>Second Amended Answer and Counterclaims</i> filed by Coretronic Corporation. Motion Hearing set for 6/5/2007 09:30 AM in Courtroom 11, 19th Floor, San Francisco. (Rader, Elizabeth) (Filed on 4/23/2007) (Entered: 04/23/2007)
04/23/2007	<u>38</u>	Declaration of Elizabeth H. Rader in Support of <u>37</u> MOTION for Leave to File <i>Second Amended Answer and Counterclaims</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E# <u>6</u> Exhibit F# <u>7</u> Exhibit G# <u>8</u> Exhibit H)(Related document(s) <u>37</u>) (Rader, Elizabeth) (Filed on 4/23/2007) (Entered: 04/23/2007)
04/23/2007	<u>39</u>	Proposed Order re <u>37</u> MOTION for Leave to File <i>Second Amended Answer and Counterclaims</i> by Coretronic Corporation. (Rader, Elizabeth) (Filed on 4/23/2007) (Entered: 04/23/2007)
04/24/2007	<u>40</u>	Memorandum in Opposition re <u>32</u> MOTION to Dismiss <i>OR, IN THE ALTERNATIVE, TO STAY CORETRONIC'S FIRST AND SECOND COUNTERCLAIMS</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Rader, Elizabeth) (Filed on 4/24/2007) (Entered: 04/24/2007)

04/24/2007	<u>41</u>	Declaration of Elizabeth H. Rader in Support of <u>40</u> Memorandum in Opposition to <i>Seiko Epson's Motion to Dismiss or, in the Alternative, to Stay Coretronic's First and Second Counterclaims</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E# <u>6</u> Exhibit F# <u>7</u> Exhibit G# <u>8</u> Exhibit H# <u>9</u> Exhibit I# <u>10</u> Exhibit J# <u>11</u> Exhibit K# <u>12</u> Exhibit L# <u>13</u> Exhibit M# <u>14</u> Exhibit N# <u>15</u> Exhibit O# <u>16</u> Exhibit P# <u>17</u> Exhibit Q# <u>18</u> Exhibit R)(Related document(s) <u>40</u>) (Rader, Elizabeth) (Filed on 4/24/2007) (Entered: 04/24/2007)
04/30/2007	<u>42</u>	RESPONSE to <i>SEIKO EPSON CORPORATION'S OPPOSITION TO NOTICE OF PENDENCY OF OTHER ACTION</i> by Seiko Epson Corporation (a Japanese corporation). (Ogden, Christopher) (Filed on 4/30/2007) (Entered: 04/30/2007)
05/01/2007	<u>43</u>	Reply to Opposition <i>REPLY TO CORETRONIC'S OPPOSITION TO MOTION TO DISMISS OR, IN THE ALTERNATIVE, TO STAY CORETRONIC'S FIRST AND SECOND COUNTERCLAIMS</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 5/1/2007) (Entered: 05/01/2007)
05/01/2007	<u>44</u>	DECLARATION of TAMIR DAMARI <i>DECLARATION OF TAMIR DAMARI IN REBUTTAL TO CORETRONIC'S OPPOSITION TO SEIKO EPSON'S MOTION TO DISMISS OR STAY CORETRONIC'S COUNTERCLAIMS</i> filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit Exhibit A# <u>2</u> Exhibit Exhibit B# <u>3</u> Exhibit Exhibit C# <u>4</u> Exhibit Exhibit D# <u>5</u> Exhibit Exhibit E)(Ogden, Christopher) (Filed on 5/1/2007) (Entered: 05/01/2007)
05/11/2007	<u>45</u>	CLERK'S NOTICE - Continuing Motion Hearing. Motion Hearing of 5/15/07 vacated and reset for 6/5/2007 09:30 AM in Courtroom 11, 19th Floor, San Francisco, motion to dismiss/stay to be heard with motion for leave to amend. Case Management Conference of 6/5/07 vacated and reset for 7/10/07, 2:00 p.m. Joint Case Management Statement due 7 days prior.(epb, COURT STAFF) (Filed on 5/11/2007) (Entered: 05/11/2007)
05/15/2007	<u>46</u>	Memorandum in Opposition re <u>37</u> MOTION for Leave to File <i>Second Amended Answer and Counterclaims</i> filed by Seiko Epson Corporation. (Ogden, Christopher) (Filed on 5/15/2007) (Entered: 05/15/2007)
05/15/2007	<u>47</u>	Declaration of JIRO ITO in Support of <u>46</u> Memorandum in Opposition to <i>Coretronic's Motion for Leave to File Second Amended Counterclaims</i> filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E)(Related document(s) <u>46</u>) (Ogden, Christopher) (Filed on 5/15/2007) (Entered: 05/15/2007)
05/22/2007	<u>48</u>	Reply to Opposition re <u>37</u> MOTION for Leave to File <i>Second Amended Answer and Counterclaims</i> filed by Coretronic Corporation. (Rader, Elizabeth) (Filed on 5/22/2007) (Entered: 05/22/2007)
05/22/2007	<u>49</u>	Declaration of Elizabeth H. Rader in Support of <u>48</u> Reply to Opposition re <i>Motion for Leave to File Second Amended Answer and Counterclaims</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u>

		Exhibit C)(Related document(s) <u>48</u>) (Rader, Elizabeth) (Filed on 5/22/2007) (Entered: 05/22/2007)
06/04/2007	<u>50</u>	Letter from William J. Utermohlen <i>requesting leave to file copy of Memorandum filed in the District of Columbia regarding Motion to Transfer.</i> (Ogden, Christopher) (Filed on 6/4/2007) (Entered: 06/04/2007)
06/19/2007	<u>51</u>	ORDER by Judge Martin J. Jenkins denying <u>32</u> Plaintiff's Motion to Dismiss; granting <u>37</u> Defendant's Motion for Leave to File 2nd Amended Answer and Counterclaims. Court declines Plaintiff's request for leave to supplement the record here with a copy of its opposition papers filed in the District of Columbia <u>50</u> . Signed by Judge Martin J. Jenkins 6/19/07. (epb, COURT STAFF) (Filed on 6/19/2007) (Entered: 06/19/2007)
06/19/2007	<u>52</u>	STIPULATION and Proposed Order selecting Mediation by Coretronic Corporation (Rader, Elizabeth) (Filed on 6/19/2007) (Entered: 06/19/2007)
06/19/2007	<u>53</u>	ADR Certification (ADR L.R. 3-5b) of discussion of ADR options <i>filed by Defendant Coretronic Corporation</i> (Rader, Elizabeth) (Filed on 6/19/2007) (Entered: 06/19/2007)
06/21/2007	<u>54</u>	ADR Certification (ADR L.R. 3-5b) of discussion of ADR options <i>filed by Defendant Optoma Technology, Inc.</i> (Rader, Elizabeth) (Filed on 6/21/2007) (Entered: 06/21/2007)
06/26/2007	<u>55</u>	Letter dated 06/20/07: from Ningchuan Zhu Consular Officer, AIT, Taipei re Certificate of Service for the subject case in response to a letter rogatory signed by a judge in this court where the case is being tried. (aaa, Court Staff) (Filed on 6/26/2007) (Entered: 06/29/2007)
06/26/2007	<u>56</u>	CERTIFICATE OF SERVICE <i>re Seiko's 1st set of documents requests to def Optima; Def Coretronic Corp., 1st set of Interrogatories to def Coretronic Corp., Optoma Technology</i> (aaa, Court Staff) (Filed on 6/26/2007) (Entered: 06/29/2007)
07/03/2007	<u>57</u>	ANSWER TO COUNTERCLAIM <u>31</u> Answer to Complaint, Counterclaim <i>REPLY TO AMENDED COUNTERCLAIMS OF CORETRONIC CORPORATION - DEMAND FOR JURY TRIAL</i> by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 7/3/2007) (Entered: 07/03/2007)
07/03/2007	<u>58</u>	JOINT CASE MANAGEMENT STATEMENT filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit Proposed Case Schedule# <u>2</u> Exhibit Protective Order# <u>3</u> Appendix Undertaking For Protective Order Exhibit) (Rader, Elizabeth) (Filed on 7/3/2007) (Entered: 07/03/2007)
07/03/2007	<u>59</u>	<i>Second Amended</i> ANSWER to Complaint with Jury Demand, COUNTERCLAIM against Epson Research and Development, Inc., Seiko Epson Corporation by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B)(Rader, Elizabeth) (Filed on 7/3/2007) (Entered: 07/03/2007)
07/03/2007	<u>60</u>	ORDER REFERRING CASE to Mediation. Deadline within 90 days of the Court's claim construction order. Signed by Judge Martin J. Jenkins on 6/29/2007. (epb, COURT STAFF) (Filed on 7/3/2007) (Entered: 07/03/2007)

07/12/2007	<u>61</u>	Minute Entry: Initial Case Management Conference held on 7/10/2007 before Judge Martin J. Jenkins. Parties to submit Stipulated Pretrial Order by 7/13/07. Fact discovery deadline 12/17/07. Opening Claims Construction brief due 1/4/08; Response due 1/18/08; Reply due 1/25/08. Status Conference set for 11/13/2007 02:00 PM. Tutorial Hearing set for 2/1/2008 02:00 PM. Claims Construction Hearing set for 2/8/2008 09:30 AM. Discovery limits set. Further Status Conference, after claims construction hearing, set for 3/11/08 at 2:00 p.m. Trial date set for 9/15/2008 08:30 AM in Courtroom 11, 19th Floor, San Francisco.(Court Reporter : Not Reported.) (epb, COURT STAFF) (Date Filed: 7/12/2007) (Entered: 07/12/2007)
07/13/2007	<u>62</u>	Proposed Pretrial Order <i>and Case Management Schedule</i> by Seiko Epson Corporation. (Ogden, Christopher) (Filed on 7/13/2007) (Entered: 07/13/2007)
07/17/2007	<u>63</u>	Proposed Pretrial Order <i>and Case Management Schedule [Substituted]</i> by Coretronic Corporation. (Rader, Elizabeth) (Filed on 7/17/2007) (Entered: 07/17/2007)
07/18/2007	<u>64</u>	ANSWER TO COUNTERCLAIM <u>59</u> Answer to Complaint,, Counterclaim, <i>REPLY TO SECOND AMENDED COUNTERCLAIMS OF CORETRONIC CORPORATION</i> byEpson Research and Development, Inc., Seiko Epson Corporation. (Ogden, Christopher) (Filed on 7/18/2007) (Entered: 07/18/2007)
07/19/2007	<u>65</u>	CERTIFICATE OF SERVICE by Coretronic Corporation re <u>59</u> Answer to Complaint,, Counterclaim, (Rader, Elizabeth) (Filed on 7/19/2007) (Entered: 07/19/2007)
07/23/2007		Set/Reset [Internal] Hearings Settings: re: <u>61</u> Minute Entry Further Status Conference set for 3/11/2008 02:00 PM. Jury Trial set for 9/15/2008 08:30 AM in Courtroom 11, 19th Floor, San Francisco. (epb, COURT STAFF) (Filed on 7/23/2007) (Entered: 07/23/2007)
07/23/2007	<u>66</u>	[SUBSTITUTED] CASE MANAGEMENT AND PRETRIAL ORDER - Signed by Judge Martin J. Jenkins on 7/19/07. (epb, COURT STAFF) (Filed on 7/23/2007) (Entered: 07/23/2007)
07/25/2007	<u>67</u>	NOTICE of Appearance by Elizabeth Hannah Rader <i>for Gary C Ma as additional counsel of record</i> (Rader, Elizabeth) (Filed on 7/25/2007) (Entered: 07/25/2007)
07/26/2007	<u>68</u>	MOTION for Leave to File <i>Third Amended Answer and Counterclaims</i> filed by Coretronic Corporation. Motion Hearing set for 9/11/2007 09:30 AM in Courtroom 11, 19th Floor, San Francisco. (Rader, Elizabeth) (Filed on 7/26/2007) (Entered: 07/26/2007)
07/26/2007	<u>69</u>	Declaration of Elizabeth H. Rader in Support of <u>68</u> MOTION for Leave to File <i>Third Amended Answer and Counterclaims</i> filed byCoretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E# <u>6</u> Exhibit F# <u>7</u> Exhibit G)(Related document(s) <u>68</u>) (Rader, Elizabeth) (Filed on 7/26/2007) (Entered: 07/26/2007)

07/26/2007	<u>70</u>	Proposed Order re <u>68</u> MOTION for Leave to File <i>Third Amended Answer and Counterclaims</i> by Coretronic Corporation. (Rader, Elizabeth) (Filed on 7/26/2007) (Entered: 07/26/2007)
08/02/2007	<u>71</u>	Letter from William J. Utermohlen and Gary C. Ma <i>regarding the proposed PROTECTIVE ORDER</i> . (Ogden, Christopher) (Filed on 8/2/2007) (Entered: 08/02/2007)
08/20/2007	<u>72</u>	NOTICE of Change In Counsel by Christopher Lee Ogden <i>WITHDRAWAL BY TAMIR D. TAMARI AS PRO HAC VICE COUNSEL</i> (Ogden, Christopher) (Filed on 8/20/2007) (Entered: 08/20/2007)
08/21/2007	<u>73</u>	Statement of Non-Opposition re <u>68</u> MOTION for Leave to File <i>Third Amended Answer and Counterclaims</i> by Coretronic Corporation filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc.. (Related document(s) <u>68</u>) (Ogden, Christopher) (Filed on 8/21/2007) (Entered: 08/21/2007)
08/24/2007	<u>74</u>	STIPULATED PROTECTIVE ORDER. Signed by Judge Martin J. Jenkins on 8/13/2007. (tl, COURT STAFF) (Filed on 8/24/2007) (Entered: 08/24/2007)
08/25/2007	<u>75</u>	ORDER by Judge Martin J. Jenkins granting <u>68</u> Motion for Leave to File. Defendants shall file their Third Amended Answer and Counterclaims within five (5) days of the entry of this Order. The September 11, 2007 hearing in this matter is hereby VACATED. (mjjlc2, COURT STAFF) (Filed on 8/25/2007) (Entered: 08/25/2007)
08/27/2007	<u>76</u>	<i>Third Amended ANSWER</i> to Complaint with Jury Demand, COUNTERCLAIM against Seiko Epson Corporation by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B)(Rader, Elizabeth) (Filed on 8/27/2007) (Entered: 08/27/2007)
08/30/2007	<u>77</u>	MOTION to Compel <i>Coretronic's Compliance with Patent L.R. 3-2</i> filed by Epson America, Inc., Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc.. Motion Hearing set for 10/9/2007 09:30 AM in Courtroom 11, 19th Floor, San Francisco. (Attachments: # <u>1</u> Proposed Order Granting Counterdefendants' Motion to Compel Coretronics' Compliance with Patent L.R. 3-2)(Ogden, Christopher) (Filed on 8/30/2007) (Entered: 08/30/2007)
08/30/2007	<u>78</u>	Declaration of William J. Utermohlen in Support of <u>77</u> MOTION to Compel <i>Coretronic's Compliance with Patent L.R. 3-2</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D)(Related document(s) <u>77</u>) (Ogden, Christopher) (Filed on 8/30/2007) (Entered: 08/30/2007)
09/06/2007		Summons Issued as to Seiko Epson Corporation(a Japanese corporation). (slh, COURT STAFF) (Filed on 9/6/2007) (Entered: 09/11/2007)
09/10/2007	80	Summons Returned Unexecuted by Seiko Epson Corporation (slh, COURT STAFF) (Filed on 9/10/2007) (Entered: 09/17/2007)

09/10/2007		Summons Reissued as to <i>Epson America Inc.</i> (slh, COURT STAFF) (Filed on 9/10/2007) (Entered: 09/17/2007)
09/11/2007	<u>79</u>	ANSWER TO COUNTERCLAIM <i>REPLY TO THIRD AMENDED COUNTERCLAIMS OF CORETRONIC CORPORATION - DEMAND FOR JURY TRIAL</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 9/11/2007) (Entered: 09/11/2007)
09/18/2007	<u>81</u>	Memorandum in Opposition re <u>77</u> MOTION to Compel <i>Coretronic's Compliance with Patent L.R. 3-2</i> filed by Coretronic Corporation. (Ma, Gary) (Filed on 9/18/2007) (Entered: 09/18/2007)
09/18/2007	<u>82</u>	Declaration of Gary C. Ma in Support of <u>81</u> Memorandum in Opposition to <i>Motion to Compel Coretronic's Compliance with Patent L.R. 3-2</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E# <u>6</u> Exhibit F# <u>7</u> Exhibit G# <u>8</u> Exhibit H# <u>9</u> Exhibit I# <u>10</u> Exhibit J# <u>11</u> Exhibit K)(Related document(s) <u>81</u>) (Ma, Gary) (Filed on 9/18/2007) (Entered: 09/18/2007)
09/18/2007	<u>83</u>	Declaration of Feng-Ying Hsu in Support of <u>81</u> Memorandum in Opposition to <i>Motion to Compel Coretronic's Compliance with Patent L.R. 3-2</i> filed by Coretronic Corporation. (Related document(s) <u>81</u>) (Ma, Gary) (Filed on 9/18/2007) (Entered: 09/18/2007)
09/25/2007	<u>84</u>	Reply to Opposition re <u>77</u> MOTION to Compel <i>Coretronic's Compliance with Patent L.R. 3-2</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Ogden, Christopher) (Filed on 9/25/2007) (Entered: 09/25/2007)
09/25/2007	<u>85</u>	Declaration of William J. Utermohlen in Support of <u>84</u> Reply to Opposition, <i>RE: Motion to Compel Coretronic's Compliance with Patent L.R. 3-2</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B)(Related document(s) <u>84</u>) (Ogden, Christopher) (Filed on 9/25/2007) (Entered: 09/25/2007)
10/02/2007	<u>86</u>	ORDER by Judge Martin J. Jenkins vacating hearing on and denying <u>77</u> Motion to Compel (mjilc2, COURT STAFF) (Filed on 10/2/2007) (Entered: 10/02/2007)
10/03/2007	<u>87</u>	ORDER REFERRING CASE to a Magistrate Judge for Discovery purposes. Signed by Judge Martin J. Jenkins on 10/02/07. (rbe, COURT STAFF) (Filed on 10/3/2007) (Entered: 10/03/2007)
10/03/2007		CASE REFERRED to Magistrate Judge Elizabeth D. Laporte for All Discovery Purposes. (klh, COURT STAFF) (Filed on 10/3/2007) (Entered: 10/03/2007)
10/03/2007	<u>88</u>	ANSWER TO COUNTERCLAIM <u>76</u> Answer to Complaint, Counterclaim (<i>Third Amended Counterclaims of Coretronic Corporation</i>), COUNTERCLAIM : <i>Counterclaims</i> against Coretronic Corporation(a Taiwanese Corporation) by Epson America, Inc.. (Ogden, Christopher) (Filed on 10/3/2007) (Entered: 10/03/2007)

10/04/2007	<u>89</u>	ORDER RE DISCOVERY PROCEDURES - Signed by Judge Elizabeth D. Laporte on 10/04/07. (lmh, COURT STAFF) (Filed on 10/4/2007) (Entered: 10/04/2007)
10/16/2007	<u>90</u>	MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> filed by Coretronic Corporation. Motion Hearing set for 11/20/2007 09:00 AM in Courtroom E, 15th Floor, San Francisco. (Ma, Gary) (Filed on 10/16/2007) (Entered: 10/16/2007)
10/16/2007	<u>91</u>	Proposed Order re <u>90</u> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> by Coretronic Corporation. (Ma, Gary) (Filed on 10/16/2007) (Entered: 10/16/2007)
10/17/2007	<u>92</u>	Declaration of Gary C. Ma in Support of <u>90</u> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E# <u>6</u> Exhibit F# <u>7</u> Exhibit G# <u>8</u> Exhibit H# <u>9</u> Exhibit I# <u>10</u> Exhibit J# <u>11</u> Exhibit K# <u>12</u> Exhibit L# <u>13</u> Exhibit M# <u>14</u> Exhibit N# <u>15</u> Exhibit O# <u>16</u> Exhibit P# <u>17</u> Exhibit Q# <u>18</u> Exhibit R# <u>19</u> Exhibit S# <u>20</u> Exhibit T# <u>21</u> Exhibit U# <u>22</u> Exhibit V# <u>23</u> Exhibit W# <u>24</u> Exhibit X# <u>25</u> Exhibit Y# <u>26</u> Exhibit Z) (Related document(s) <u>90</u>) (Ma, Gary) (Filed on 10/17/2007) (Entered: 10/17/2007)
10/23/2007	<u>93</u>	ANSWER to Counterclaim <i>Coretronic Corporation's Answer to Epson America, Inc.'s Counterclaims</i> by Coretronic Corporation. (Rader, Elizabeth) (Filed on 10/23/2007) (Entered: 10/23/2007)
10/29/2007	<u>94</u>	STIPULATION re <u>90</u> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> STIPULATION TO CONTINUE HEARING DATE; PROPOSED ORDER THEREON by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Ogden, Christopher) (Filed on 10/29/2007) (Entered: 10/29/2007)
10/30/2007	<u>95</u>	STIPULATION AND ORDER AS MODIFIED re <u>94</u> Stipulation,, filed by Seiko Epson Corporation, Coretronic Corporation, Optoma Technology, Inc., Epson America, Inc., Epson Research and Development, Inc.. Signed by Magistrate Judge Elizabeth D. Laporte on October 30, 2007. (edllc2, COURT STAFF) (Filed on 10/30/2007) (Entered: 10/30/2007)
10/30/2007	<u>96</u>	MEMORANDUM in Opposition <i>TO CORETRONIC'S 90 MOTION FOR SANCTIONS</i> filed by Seiko Epson Corporation(a Japanese corporation).

		(Ogden, Christopher) (Filed on 10/30/2007) Modified on 11/1/2007 (slh, COURT STAFF). (Entered: 10/30/2007)
10/30/2007	<u>97</u>	Declaration of WILLIAM UTERMOHLEN <i>REGARDING SANCTIONS MOTION</i> filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit Exhibit A# <u>2</u> Exhibit Exhibit B# <u>3</u> Exhibit Exhibit C# <u>4</u> Exhibit Exhibit D# <u>5</u> Exhibit Exhibit E# <u>6</u> Exhibit Exhibit F# <u>7</u> Exhibit Exhibit G# <u>8</u> Exhibit Exhibit H# <u>9</u> Exhibit Exhibit I# <u>10</u> Exhibit Exhibit J# <u>11</u> Exhibit Exhibit K)(Ogden, Christopher) (Filed on 10/30/2007) (Entered: 10/30/2007)
10/30/2007	<u>98</u>	MOTION to Seal <i>ADMINISTRATIVE MOTION TO FILE UNDER SEAL</i> filed by Seiko Epson Corporation(a Japanese corporation). Motion Hearing set for 11/20/2007 09:30 AM in Courtroom 11, 19th Floor, San Francisco. (Ogden, Christopher) (Filed on 10/30/2007) (Entered: 10/30/2007)
10/30/2007	<u>99</u>	Proposed Order <i>SEALING DOCUMENTS PURSUANT TO CIV. LOCAL RULES 7-11 AND 79-5</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 10/30/2007) (Entered: 10/30/2007)
10/31/2007		Received Document re <u>98</u> : (Seiko Epson's Opposition to Coretronic's Motion for Sanctions) (slh, COURT STAFF) (Filed on 10/31/2007) (Entered: 11/05/2007)
10/31/2007		Received Document re <u>98</u> : (Declaration of William Utermohlen Regarding Sanctions Motion) (slh, COURT STAFF) (Filed on 10/31/2007) (Entered: 11/05/2007)
10/31/2007	<u>103</u>	CERTIFICATE OF SERVICE by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation re Received Document, Received Document (slh, COURT STAFF) (Filed on 10/31/2007) (Entered: 11/05/2007)
11/02/2007	<u>100</u>	MOTION for Extension of Time to File <i>a Supplemental Joint Claim Construction and Prehearing Statement</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Proposed Order [Proposed] Order)(Ma, Gary) (Filed on 11/2/2007) (Entered: 11/02/2007)
11/02/2007	<u>101</u>	Declaration of Yitai Hu in Support of <u>100</u> MOTION for Extension of Time to File <i>a Supplemental Joint Claim Construction and Prehearing Statement</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit A)(Related document(s) <u>100</u>) (Ma, Gary) (Filed on 11/2/2007) (Entered: 11/02/2007)
11/02/2007	<u>102</u>	STIPULATION , <i>JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT UNDER PATENT L.R. 4-3</i> by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B)(Ogden, Christopher) (Filed on 11/2/2007) (Entered: 11/02/2007)
11/06/2007	<u>104</u>	REPLY to Response to Motion re <u>90</u> MOTION for Sanctions <i>Pursuant TO Local Rules 7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power</i> MOTION for Sanctions <i>Pursuant TO Local Rules</i>

		7-8 and 37-3, Federal Rules of Civil Procedure 37(a)(4)(B) and the Court's Inherent Power filed by Coretronic Corporation. (Ma, Gary) (Filed on 11/6/2007) (Entered: 11/06/2007)
11/07/2007	<u>105</u>	RESPONSE in Support <i>RESPONSE TO CORETRONIC'S 100 MOTION FOR EXTENSION OF TIME TO FILE A SUPPLEMENTAL JOINT CLAIM CONSTRUCTION AND PREHEARING STATEMENT</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 11/7/2007) Modified on 11/8/2007 (slh, COURT STAFF). (Entered: 11/07/2007)
11/09/2007	<u>106</u>	JOINT CASE MANAGEMENT STATEMENT filed by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Ogden, Christopher) (Filed on 11/9/2007) (Entered: 11/09/2007)
11/12/2007	<u>107</u>	AFFIDAVIT re <u>98</u> MOTION to Seal <i>ADMINISTRATIVE MOTION TO FILE UNDER SEAL Declaration of Gary C. Ma in Response to Seiko Epson's Administrative Motion to File Under Seal Pursuant to Civil Local Rules 7-11 and 79-5</i> by Coretronic Corporation. (Ma, Gary) (Filed on 11/12/2007) (Entered: 11/12/2007)
11/12/2007	<u>108</u>	NOTICE by Epson America, Inc. <i>DISCLOSURE STATEMENT</i> (Ogden, Christopher) (Filed on 11/12/2007) (Entered: 11/12/2007)
11/12/2007	<u>109</u>	NOTICE by Epson Research and Development, Inc. <i>DISCLOSURE STATEMENT</i> (Ogden, Christopher) (Filed on 11/12/2007) (Entered: 11/12/2007)
11/13/2007	<u>110</u>	Minute Entry: Further Status Conference - Held (Date Filed: 11/13/2007). (Court Reporter not reported.) (tdm, COURT STAFF) (Date Filed: 11/13/2007) (Entered: 11/14/2007)
11/14/2007	<u>111</u>	ORDER by Magistrate Judge Elizabeth D. Laporte denying <u>98</u> Motion to Seal (edllc2, COURT STAFF) (Filed on 11/14/2007) (Entered: 11/14/2007)
11/14/2007	<u>112</u>	Memorandum in Opposition <i>TO CORETRONIC'S 90 MOTION FOR SANCTIONS</i> filed by Seiko Epson Corporation. (Ogden, Christopher) (Filed on 11/14/2007) Modified on 11/15/2007 (slh, COURT STAFF). (Entered: 11/14/2007)
11/14/2007	<u>113</u>	Declaration of WILLIAM UTERMOHLEN <i>REGARDING SANCTIONS MOTION</i> filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A# <u>2</u> Exhibit B# <u>3</u> Exhibit C# <u>4</u> Exhibit D# <u>5</u> Exhibit E# <u>6</u> Exhibit F# <u>7</u> Exhibit G# <u>8</u> Exhibit H# <u>9</u> Exhibit I# <u>10</u> Exhibit J# <u>11</u> Exhibit K)(Ogden, Christopher) (Filed on 11/14/2007) (Entered: 11/14/2007)
11/16/2007	<u>114</u>	Proposed Order [<i>PROPOSED</i>] <i>SUPPLEMENTAL CASE MANAGEMENT AND PRETRIAL ORDER</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 11/16/2007) (Entered: 11/16/2007)
11/16/2007	<u>115</u>	CLAIM CONSTRUCTION STATEMENT <i>Supplemental Joint Claim</i>

		<i>Construction and Prehearing Statement Under Patent L.R. 4-3</i> filed by Coretronic Corporation. (Ma, Gary) (Filed on 11/16/2007) (Entered: 11/16/2007)
11/27/2007	<u>116</u>	Minute Entry: Hearing held on 11/27/2007 before Elizbeth D. Laporte re Defendant Coretronic Corporation's Motion for Sanctions <u>90</u> . (Court Reporter Joan Columbini) (lmh, COURT STAFF) (Date Filed: 11/27/2007) (Entered: 11/27/2007)
11/29/2007	<u>117</u>	NOTICE of Appearance by Hsin-Yi Cindy Feng <i>on Behalf of Defendants Coretronic Corporation and Optoma Technology, Inc.</i> (Feng, Hsin-Yi) (Filed on 11/29/2007) (Entered: 11/29/2007)
11/30/2007	<u>118</u>	Letter from Christopher L. Ogden <i>Letter to Hon. Judge Laporte.</i> (Ogden, Christopher) (Filed on 11/30/2007) (Entered: 11/30/2007)
11/30/2007	<u>119</u>	Proposed Order <i>Proposed Order Denying Coretronic's Motion for Sanctions</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 11/30/2007) (Entered: 11/30/2007)
12/03/2007	<u>120</u>	ORDER by Magistrate Judge Elizabeth D. Laporte denying <u>90</u> Motion for Sanctions (edllc2, COURT STAFF) (Filed on 12/3/2007) (Entered: 12/03/2007)
12/11/2007	<u>121</u>	Joint MOTION to Relate Case <i>Joint Administrative Motion and Stipulation to Consider Whether Cases Should Be Related Pursuant to Local Rule 3-12</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Ma, Gary) (Filed on 12/11/2007) (Entered: 12/11/2007)
12/11/2007	<u>122</u>	Proposed Order re <u>121</u> Joint MOTION to Relate Case <i>Joint Administrative Motion and Stipulation to Consider Whether Cases Should Be Related Pursuant to Local Rule 3-12</i> by Coretronic Corporation, Optoma Technology, Inc.. (Ma, Gary) (Filed on 12/11/2007) (Entered: 12/11/2007)
12/12/2007	<u>123</u>	SUPPLEMENTAL CASE MANAGEMENT and PRETRIAL ORDER. Signed by Judge Martin J. Jenkins on 12/11/07. (rbe, COURT STAFF) (Filed on 12/12/2007) (Entered: 12/12/2007)
12/21/2007	124	MOTION/Application for leave to appear in Pro Hac Vice Lenny Huang (Filing fee \$ 210, receipt number 34611013859.) filed by Coretronic Corporation(a Taiwanese Corporation). (sv, COURT STAFF) (Filed on 12/21/2007) (Entered: 12/28/2007)
01/04/2008	<u>125</u>	Brief <i>Opening Claim Construction Brief on U.S. Patent Nos. 6,739,831 and 6,742,899</i> filed by Coretronic Corporation. (Rader, Elizabeth) (Filed on 1/4/2008) (Entered: 01/04/2008)
01/04/2008	<u>126</u>	Declaration of Gary C. Ma in Support of <u>125</u> Brief <i>Opening Claim Construction Brief on U.S. Patent Nos. 6,739,831 and 6,742,899</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit 1)(Related document(s) <u>125</u>) (Ma, Gary) (Filed on 1/4/2008) (Entered: 01/04/2008)
01/04/2008	<u>127</u>	CLAIM CONSTRUCTION STATEMENT -- <i>EPSON'S OPENING CLAIM CONSTRUCTION BRIEF</i> -- filed by Seiko Epson Corporation(a Japanese

		corporation), Epson Research and Development, Inc., Epson America, Inc.. (Ogden, Christopher) (Filed on 1/4/2008) (Entered: 01/04/2008)
01/04/2008	<u>128</u>	Declaration of William J. Utermohlen in Support of <u>125</u> Brief, <u>127</u> Claim Construction Statement <i>JOINT APPENDIX and DECLARATION OF WILLIAM J. UTERMOHLEN REGARDING INTRINSIC EVIDENCE</i> filed bySeiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A -- Index to Joint Appendix, # <u>2</u> Appendix U.S. Patent No. 6,203,158 part 1 -- pages 1-99, # <u>3</u> Appendix U.S. Patent No. 6,203,158 part 2 -- pages 100-192, # <u>4</u> Appendix U.S. Patent No. 6,558,004 -- pages 193-296, # <u>5</u> Appendix U.S. Patent No. 6,402,324 -- pages 297-432, # <u>6</u> Appendix U.S. Patent No. 6,742,899 -- pages 433-454, # <u>7</u> Appendix U.S. Patent No. 6,739,831 -- pages 455-508)(Related document(s) <u>125</u> , <u>127</u>) (Ogden, Christopher) (Filed on 1/4/2008) (Entered: 01/04/2008)
01/04/2008	<u>129</u>	Declaration of WILLIAM UTERMOHLEN in Support of <u>127</u> Claim Construction Statement <i>DECLARATION OF WILLIAM UTERMOHLEN REGARDING EXTRINSIC EVIDENCE</i> filed bySeiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L)(Related document(s) <u>127</u>) (Ogden, Christopher) (Filed on 1/4/2008) (Entered: 01/04/2008)
01/04/2008	<u>130</u>	Declaration of MATTHEW S. BRENNESHOLTZ in Support of <u>127</u> Claim Construction Statement filed bySeiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A)(Related document(s) <u>127</u>) (Ogden, Christopher) (Filed on 1/4/2008) (Entered: 01/04/2008)
01/08/2008	<u>131</u>	ORDER by Judge Martin J. Jenkins granting 124 Motion for Pro Hac Vice of Lenny Huang. (mat, COURT STAFF) (Filed on 1/8/2008) (Entered: 01/08/2008)
01/18/2008	<u>132</u>	CLERK'S NOTICE. Tutorial Hearing reset for 2/1/2008 09:30 AM. (See new time) (mat, COURT STAFF) (Filed on 1/18/2008) (Entered: 01/18/2008)
01/18/2008	<u>133</u>	Brief re <u>125</u> Brief <i>EPSON'S CLAIM CONSTRUCTION BRIEF IN RESPONSE TO CORETRONIC'S OPENING BRIEF</i> filed bySeiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Related document(s) <u>125</u>) (Ogden, Christopher) (Filed on 1/18/2008) (Entered: 01/18/2008)
01/18/2008	<u>134</u>	Declaration of WILLIAM UTERMOHLEN in Support of <u>133</u> Brief, <i>REGARDING RESPONSIVE EXTRINSIC EVIDENCE</i> filed bySeiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D)(Related document(s) <u>133</u>) (Ogden, Christopher) (Filed on 1/18/2008) (Entered: 01/18/2008)
01/18/2008	<u>135</u>	Declaration of KENTARO HIGUCHI in Support of <u>133</u> Brief, filed bySeiko Epson Corporation(a Japanese corporation), Epson Research and

		Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F)(Related document(s) <u>133</u>) (Ogden, Christopher) (Filed on 1/18/2008) (Entered: 01/18/2008)
01/18/2008	<u>136</u>	Brief <i>Defendant Coretronic Corporation's Responsive Claim Construction Brief</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Rader, Elizabeth) (Filed on 1/18/2008) (Entered: 01/18/2008)
01/18/2008	<u>137</u>	Declaration of Gary C. Ma in Support of <u>136</u> Brief <i>Defendant Coretronic Corporation's Responsive Claim Construction Brief</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B)(Related document(s) <u>136</u>) (Ma, Gary) (Filed on 1/18/2008) (Entered: 01/18/2008)
01/18/2008	138	TRANSCRIPT of Proceedings held on 11/27/07 before Judge Laporte. Court Reporter: Joan Columbini. (slh, COURT STAFF) (Filed on 1/18/2008) (Entered: 01/22/2008)
01/22/2008	<u>139</u>	MOTION to Compel / <i>PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO COMPEL CORETRONIC'S RESPONSE TO INTERROGATORIES</i> filed by Seiko Epson Corporation(a Japanese corporation). Motion Hearing set for 2/26/2008 09:00 AM in Courtroom E, 15th Floor, San Francisco. (Attachments: # <u>1</u> Proposed Order [PROPOSED] ORDER GRANTING PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO COMPEL CORETRONIC'S RESPONSE TO INTERROGATORIES)(Ogden, Christopher) (Filed on 1/22/2008) (Entered: 01/22/2008)
01/22/2008	<u>140</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>139</u> MOTION to Compel / <i>PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO COMPEL CORETRONIC'S RESPONSE TO INTERROGATORIES</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L, # <u>13</u> Exhibit M, # <u>14</u> Exhibit N)(Related document(s) <u>139</u>) (Ogden, Christopher) (Filed on 1/22/2008) (Entered: 01/22/2008)
01/25/2008	<u>141</u>	Brief re <u>136</u> Brief -- <i>Epson's CLAIM CONSTRUCTION BRIEF IN REPLY to Coretronic's Responsive Brief</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Related document(s) <u>136</u>) (Ogden, Christopher) (Filed on 1/25/2008) (Entered: 01/25/2008)
01/25/2008	<u>142</u>	Declaration of WILLIAM UTERMOHLEN in Support of <u>141</u> Brief, <i>REGARDING EXTRINSIC EVIDENCE FOR REPLY BRIEF</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E)(Related document(s) <u>141</u>) (Ogden, Christopher) (Filed on 1/25/2008) (Entered: 01/25/2008)
01/25/2008	<u>143</u>	Brief <i>Reply Claim Construction Brief</i> filed by Coretronic Corporation. (Rader,

		Elizabeth) (Filed on 1/25/2008) (Entered: 01/25/2008)
01/29/2008	<u>144</u>	CLERK'S NOTICE VACATING Tutorial and Claims Construction hearing dates. (mat, COURT STAFF) (Filed on 1/29/2008) (Entered: 01/29/2008)
02/05/2008	<u>145</u>	Memorandum in Opposition re <u>139</u> MOTION to Compel / <i>PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO COMPEL CORETRONIC'S RESPONSE TO INTERROGATORIES</i> filed byCoretronic Corporation. (Ma, Gary) (Filed on 2/5/2008) (Entered: 02/05/2008)
02/05/2008	<u>146</u>	Declaration of Vincent Lin in Support of <u>145</u> Memorandum in Opposition to <i>Seiko Epson's Motion to Compel</i> filed byCoretronic Corporation. (Related document(s) <u>145</u>) (Ma, Gary) (Filed on 2/5/2008) (Entered: 02/05/2008)
02/12/2008	<u>147</u>	Reply Memorandum re <u>139</u> MOTION to Compel / <i>PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO COMPEL CORETRONIC'S RESPONSE TO INTERROGATORIES</i> filed bySeiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 2/12/2008) (Entered: 02/12/2008)
02/12/2008	<u>148</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>147</u> Reply Memorandum, <i>Motion to Compel Coretronic's Response to Interrogatories</i> , filed bySeiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H)(Related document(s) <u>147</u>) (Ogden, Christopher) (Filed on 2/12/2008) (Entered: 02/12/2008)
02/15/2008	<u>149</u>	ORDER REASSIGNING CASE by The Executive Committee. Case reassigned to Judge Hon. Marilyn H. Patel for all further proceedings. Judge Hon. Martin J. Jenkins no longer assigned to case. (gba, COURT STAFF) (Filed on 2/15/2008). (Entered: 02/19/2008)
02/19/2008	<u>150</u>	CLERK'S NOTICE RESETTING Hearing re Plaintiff's Motion to Compel <u>139</u> to 02:30 PM on 2/26/2008 before Magistrate Judge Laporte. (lmh, COURT STAFF) (Filed on 2/19/2008) (Entered: 02/22/2008)
02/26/2008	<u>152</u>	Minute Entry: Hearing held on 2/26/2008 before Elizabeth D. Laporte re Plaintiff's Motion to Compel Coretronic's Response to Interragatories <u>139</u> . (Court Reporter Margo Gurule) (lmh, COURT STAFF) (Date Filed: 2/26/2008) (Entered: 02/28/2008)
02/27/2008	<u>151</u>	TRANSCRIPT of Proceedings held on 2/26/08 before Judge Laporte. Court Reporter: Margaret Gurule. (slh, COURT STAFF) (Filed on 2/27/2008) (Entered: 02/27/2008)
03/03/2008	<u>153</u>	Proposed Order re <u>139</u> MOTION to Compel / <i>PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO COMPEL CORETRONIC'S RESPONSE TO INTERROGATORIES</i> Granting-In-Part motion (filed jointly) by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Ogden, Christopher) (Filed on 3/3/2008) (Entered: 03/03/2008)
03/04/2008	<u>154</u>	Letter from William J. Utermohlen and Elizabeth H. Rader to the Hon. Judge

		<i>Marilyn Hall Patel (cc: Hon. Judge Charles R. Breyer) regarding reassignment of related case 3:07-cv-06055. (Attachments: # <u>1</u> Signature Attestation)(Ogden, Christopher) (Filed on 3/4/2008) (Entered: 03/04/2008)</i>
03/05/2008	<u>155</u>	ORDER by Magistrate Judge Elizabeth D. Laporte granting in part and denying in part <u>139</u> Motion to Compel (edllc2, COURT STAFF) (Filed on 3/5/2008) (Entered: 03/05/2008)
03/07/2008	<u>156</u>	CLERK'S NOTICE: Claims Construction Hearing set for 4/23/2008 09:00 AM before the Hon. Marilyn Hall Patel (awb, COURT-STAFF) (Filed on 3/7/2008) (Entered: 03/07/2008)
03/19/2008	<u>157</u>	ORDER RELATING CASE C 07-6055 CRB to this action; Signed by Judge Marilyn Hall Patel on 3/18/2008. (awb, COURT-STAFF) (Filed on 3/19/2008) (Entered: 03/19/2008)
03/19/2008	<u>158</u>	CLERK'S NOTICE: Case Management Conference set for 3/31/2008 03:00 PM before the Hon. Marilyn Hall Patel; Joint Case Management Statement due by 3/24/2008. (awb, COURT-STAFF) (Filed on 3/19/2008) (Entered: 03/19/2008)
03/24/2008	<u>159</u>	STATUS REPORT (<i>JOINT</i>) by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Ogden, Christopher) (Filed on 3/24/2008) (Entered: 03/24/2008)
04/01/2008	<u>160</u>	Minute Entry: Status Conference held on 3/31/2008 before the Hon. Marilyn Hall Patel; C 06-6946 MHP and C 07-6055 MHP CONSOLIDATED (Date Filed: 4/1/2008). (Court Reporter Sahar McVicker.) (awb, COURT-STAFF) (Date Filed: 4/1/2008) (Entered: 04/01/2008)
04/08/2008	<u>161</u>	MOTION to Compel <i>Defendants' Notice of Motion and Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents</i> filed by Coretronic Corporation, Optoma Technology, Inc.. Motion Hearing set for 5/13/2008 09:00 AM in Courtroom E, 15th Floor, San Francisco. (Ma, Gary) (Filed on 4/8/2008) (Entered: 04/08/2008)
04/08/2008	<u>162</u>	Declaration of Gary C. Ma in Support of <u>161</u> MOTION to Compel <i>Defendants' Notice of Motion and Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L, # <u>13</u> Exhibit M, # <u>14</u> Exhibit N, # <u>15</u> Exhibit O, # <u>16</u> Exhibit P, # <u>17</u> Exhibit Q, # <u>18</u> Exhibit R, # <u>19</u> Exhibit S, # <u>20</u> Exhibit T, # <u>21</u> Exhibit U)(Related document(s) <u>161</u>) (Ma, Gary) (Filed on 4/8/2008) (Entered: 04/08/2008)
04/08/2008	<u>163</u>	Proposed Order re <u>161</u> MOTION to Compel <i>Defendants' Notice of Motion and Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents</i> by Coretronic Corporation, Optoma Technology, Inc.. (Ma, Gary) (Filed on 4/8/2008) (Entered: 04/08/2008)

		04/08/2008)
04/08/2008	<u>164</u>	MOTION to File Papers in Support of Defendants' Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents Under Seal filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Ma, Gary) (Filed on 4/8/2008) (Entered: 04/08/2008)
04/08/2008	<u>165</u>	CERTIFICATE OF SERVICE by Coretronic Corporation, Optoma Technology, Inc. (Ma, Gary) (Filed on 4/8/2008) (Entered: 04/08/2008)
04/11/2008	<u>166</u>	NOTICE by Seiko Epson Corporation(a Japanese corporation) <i>PLAINTIFF SEIKO EPSON CORPORATION'S WITHDRAWAL (PER CIVIL L.R. 79-5(d)) OF THE CONFIDENTIALITY DESIGNATION FOR EXHIBITS "E" AND "O" TO THE DECLARATION OF GARY MA</i> (Ogden, Christopher) (Filed on 4/11/2008) (Entered: 04/11/2008)
04/16/2008	<u>167</u>	Notice of Withdrawal of Motion to <i>File Papers in Support of Defendants' Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents Under Seal</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Ma, Gary) (Filed on 4/16/2008) (Entered: 04/16/2008)
04/16/2008	<u>168</u>	Brief re <u>161</u> MOTION to Compel <i>Defendants' Notice of Motion and Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents (DOCKET NO. 161 RE-FILED IN THE PUBLIC VIEW)</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Related document(s) <u>161</u>) (Ma, Gary) (Filed on 4/16/2008) (Entered: 04/16/2008)
04/16/2008	<u>169</u>	EXHIBITS re <u>162</u> Declaration in Support,, <i>Exhibit E to Declaration of Gary C. Ma in Support of Defendants' Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents (RE-FILED IN THE PUBLIC VIEW)</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Related document(s) <u>162</u>) (Ma, Gary) (Filed on 4/16/2008) (Entered: 04/16/2008)
04/16/2008	<u>170</u>	EXHIBITS re <u>162</u> Declaration in Support,, <i>Exhibit O to Declaration of Gary C. Ma in Support of Defendants' Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents (RE-FILED IN THE PUBLIC VIEW)</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Related document(s) <u>162</u>) (Ma, Gary) (Filed on 4/16/2008) (Entered: 04/16/2008)
04/17/2008	<u>171</u>	MOTION FOR PERMISSION TO BRING EQUIPMENT INTO COURTROOM FOR CLAIM CONSTRUCTION HEARING OF APRIL 23, 2008 filed by Seiko Epson Corporation(a Japanese corporation). Motion Hearing set for 4/23/2008 09:00 AM in Courtroom 15, 18th Floor, San Francisco. (Attachments: # <u>1</u> Proposed Order)(Ogden, Christopher) (Filed on 4/17/2008) (Entered: 04/17/2008)
04/21/2008	<u>172</u>	Letter from WILLIAM J. UTERMOHLEN <i>regarding withdrawal of contentions regarding U.S. Patent No. 6,402,324.</i> (Ogden, Christopher) (Filed

		on 4/21/2008) (Entered: 04/21/2008)
04/22/2008	<u>173</u>	ORDER by Judge Marilyn Hall Patel granting <u>171</u> plaintiff's Motion for equipment (awb, COURT-STAFF) (Filed on 4/22/2008) (Entered: 04/22/2008)
04/22/2008	<u>174</u>	Memorandum in Opposition re <u>161</u> MOTION to Compel <i>Defendants' Notice of Motion and Motion to Prevent Further Destruction of Documents and to Compel SEC to Conduct a Complete Search for Documents</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 4/22/2008) (Entered: 04/22/2008)
04/22/2008	<u>175</u>	Declaration of YOSHIKI MINOWA in Support of <u>174</u> Memorandum in Opposition, filed by Seiko Epson Corporation. (Related document(s) <u>174</u>) (Ogden, Christopher) (Filed on 4/22/2008) (Entered: 04/22/2008)
04/22/2008	<u>176</u>	Declaration of ATSUSHI MIYAZAWA in Support of <u>174</u> Memorandum in Opposition, filed by Seiko Epson Corporation(a Japanese corporation). (Related document(s) <u>174</u>) (Ogden, Christopher) (Filed on 4/22/2008) (Entered: 04/22/2008)
04/22/2008	<u>177</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>174</u> Memorandum in Opposition, filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L, # <u>13</u> Exhibit M, # <u>14</u> Exhibit N, # <u>15</u> Exhibit O, # <u>16</u> Exhibit P, # <u>17</u> Exhibit Q, # <u>18</u> Exhibit R, # <u>19</u> Exhibit S)(Related document(s) <u>174</u>) (Ogden, Christopher) (Filed on 4/22/2008) (Entered: 04/22/2008)
04/22/2008	<u>178</u>	STIPULATION : <i>JOINT GLOSSARY FOR CLAIM CONSTRUCTION TUTORIAL of April 23, 2008</i> by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Attachments: # <u>1</u> G.O. 45 Signature Attestation)(Ogden, Christopher) (Filed on 4/22/2008) (Entered: 04/22/2008)
04/23/2008	<u>179</u>	Minute Entry: Claims Construction Hearing held on 4/23/2008 before Hon. Marilyn Hall Patel (Date Filed: 4/23/2008). (Court Reporter Kathy Wyatt.) (awb, COURT-STAFF) (Date Filed: 4/23/2008) (Entered: 04/23/2008)
05/12/2008	<u>180</u>	MOTION to Amend/Correct <i>Seiko Epson Corporation's Preliminary Infringement Contentions [REDACTED VERSION]</i> filed by Seiko Epson Corporation(a Japanese corporation). Motion Hearing set for 6/16/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Proposed Order)(Ogden, Christopher) (Filed on 5/12/2008) (Entered: 05/12/2008)
05/12/2008	<u>181</u>	Declaration of WILLIAM J. UTERMOHLEN <i>Regarding 180 Motion to Amend Preliminary Infringement Contentions</i> filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit 1 [REDACTED], # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3)(Ogden, Christopher) (Filed on 5/12/2008) (Entered: 05/12/2008)

05/12/2008	<u>182</u>	NOTICE by Seiko Epson Corporation of <i>Manual Filing of <u>180</u> Motion to Amend Its Preliminary Infringement Contentions, Including Exhibit A (Unredacted); and <u>181</u> Declaration of William J. Utermohlen (Unredacted)</i> (Ogden, Christopher) (Filed on 5/12/2008) (Entered: 05/12/2008)
05/16/2008	<u>183</u>	MEMORANDUM AND ORDER RE CLAIM CONSTRUCTION; Signed by Judge Marilyn Hall Patel on 5/16/2008. (awb, COURT-STAFF) (Filed on 5/16/2008) (Entered: 05/16/2008)
05/19/2008	<u>184</u>	Transcript of Proceedings held on 4/23/08, before Judge Marilyn Hall Patel. Court Reporter/Transcriber Katherine Wyatt, Telephone number 415-487-9834. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 8/14/2008. (kpw, COURT STAFF) (Filed on 5/19/2008) (Entered: 05/19/2008)
05/22/2008	<u>185</u>	Letter from Utermohlen. (Ogden, Christopher) (Filed on 5/22/2008) (Entered: 05/22/2008)
05/23/2008	<u>186</u>	Memorandum in Opposition re <u>180</u> MOTION to Amend/Correct <i>Seiko Epson Corporation's Preliminary Infringement Contentions [REDACTED VERSION]</i> MOTION to Amend/Correct <i>Seiko Epson Corporation's Preliminary Infringement Contentions [REDACTED VERSION]</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Rader, Elizabeth) (Filed on 5/23/2008) (Entered: 05/23/2008)
05/23/2008	<u>187</u>	Declaration of Elizabeth H. Rader in Support of <u>186</u> Memorandum in Opposition, filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5)(Related document(s) <u>186</u>) (Rader, Elizabeth) (Filed on 5/23/2008) (Entered: 05/23/2008)
05/23/2008	<u>188</u>	MOTION to File Papers in Support of Coretronic Corporation and Optoma Technology, Inc.'s Partial Opposition to Seiko Epson Corporation's Motion to Amend Its Preliminary Infringement Contentions Under Seal filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Rader, Elizabeth) (Filed on 5/23/2008) (Entered: 05/23/2008)
05/23/2008	<u>189</u>	CERTIFICATE OF SERVICE by Coretronic Corporation, Optoma Technology, Inc. (Rader, Elizabeth) (Filed on 5/23/2008) (Entered: 05/23/2008)
05/27/2008	<u>190</u>	ORDER by Judge Marilyn Hall Patel granting <u>188</u> defendant's Motion to seal exh 5 to declaration of Elizabeth Rader in support of defendant's partial opposition (awb, COURT-STAFF) (Filed on 5/27/2008) (Entered: 05/27/2008)
05/27/2008	344	EXHIBIT 5 to Declaration of Elizabeth H. Rader in support of Partial

		Opposition to plaintiff's Motion to Amend its Preliminary Infringement Contentions filed by Coretronic Corporation, Optoma Technology, Inc.. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 5/27/2008) (Entered: 01/29/2009)
05/28/2008	<u>191</u>	MOTION for Admission of Attorney Richard E. Rice Pro Hac Vice (Filing fee \$ 210.00, receipt number 34611019627) filed by Seiko Epson Corporation. (gba, COURT STAFF) (Filed on 5/28/2008) (Entered: 05/28/2008)
05/28/2008	<u>192</u>	Received Order re <u>191</u> MOTION for leave to appear in Pro Hac Vice (Filing fee \$ 210.00, receipt number 34611019627) by Seiko Epson Corporation. (gba, COURT STAFF) (Filed on 5/28/2008) (gba, COURT STAFF). (Entered: 05/28/2008)
05/29/2008	<u>193</u>	ORDER by Judge Marilyn Hall Patel granting (191) plaintiff's Motion for attorney Richard E Rice to appear Pro Hac Vice in case 3:06-cv-06946-MHP (awb, COURT-STAFF) (Filed on 5/29/2008) (Entered: 05/29/2008)
05/29/2008	<u>194</u>	MEMORANDUM AND ORDER of CLARIFICATION re <u>185</u> Letter filed by Seiko Epson Corporation; Signed by Judge Marilyn Hall Patel on 5/29/2008. (awb, COURT-STAFF) (Filed on 5/29/2008) (Entered: 05/29/2008)
06/02/2008	<u>195</u>	Reply to <u>186</u> Defendants' Partial Opposition to Motion to Amend its Preliminary Infringement Contentions filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 6/2/2008) Modified on 6/3/2008 (gba, COURT STAFF). (Entered: 06/02/2008)
06/02/2008	<u>196</u>	Declaration of William J. Utermohlen in support of <u>195</u> Reply Brief on Motion to Amend Preliminary Infringement Contentions filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit Order Granting in Part Plaintiff's Motion to Compel Coretronic's Response to Interrogs, # <u>2</u> Exhibit Defendant's Objections and Responses to Plaintiff's First Set of Interrogs, # <u>3</u> Exhibit Email to W. Utermohlen from G. Ma dtd 5-23-08, # <u>4</u> Exhibit Letter to G. Ma from W. Utermohlen dtd 5-30-08)(Ogden, Christopher) (Filed on 6/2/2008) Modified on 6/3/2008 (gba, COURT STAFF). (Entered: 06/02/2008)
06/09/2008	<u>197</u>	NOTICE of Change In Counsel by Elizabeth Hannah Rader <i>re Gary C Ma</i> (Rader, Elizabeth) (Filed on 6/9/2008) (Entered: 06/09/2008)
06/11/2008	<u>198</u>	STIPULATION re <u>183</u> Order : <i>JOINT REQUEST FOR CLARIFICATION OF CLAIM CONSTRUCTION ORDER</i> by Coretronic Corporation(a Taiwanese Corporation), Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Attachments: # <u>1</u> Signature Attestation)(Ogden, Christopher) (Filed on 6/11/2008) (Entered: 06/11/2008)
06/13/2008	<u>199</u>	STIPULATION <i>Joint Report on Proposed Invalidity Summary Judgment Schedule and Pending Discovery Disputes</i> by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit Exhibit 1, # <u>2</u> Exhibit Exhibit 2, # <u>3</u> Exhibit Exhibit 3(1), # <u>4</u> Exhibit Exhibit 3(2), # <u>5</u> Exhibit

		Exhibit 4)(Ogden, Christopher) (Filed on 6/13/2008) (Entered: 06/13/2008)
06/16/2008	<u>200</u>	Minute Entry: Motion Hearing held on 6/16/2008 before Hon. Marilyn Hall Patel (Date Filed: 6/16/2008) re <u>180</u> MOTION to Amend/Correct Seiko Epson Corporation's Preliminary Infringement Contentions; Fact discovery re invalidity to close on 7/31/2008; Motions to be filed by 8/15/2008; Responses due by 9/8/2008; Replies due by 9/22/2008; Motion Hearing set for 10/6/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Court Reporter Jim Yeomans.) (awb, COURT-STAFF) (Date Filed: 6/16/2008) (Entered: 06/17/2008)
06/23/2008	<u>201</u>	MEMORANDUM AND ORDER by Judge Marilyn Hall Patel granting <u>180</u> plaintiff's Motion to Amend preliminary infringement contentions (awb, COURT-STAFF) (Filed on 6/23/2008) (Entered: 06/23/2008)
07/01/2008	<u>202</u>	Transcript of Proceedings held on 06/16/08, before Judge Marilyn Hall Patel. Court Reporter/Transcriber James Yeomans, Telephone number (415) 863-5179. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 9/26/2008. (jjy, COURT STAFF) (Filed on 7/1/2008) (Entered: 07/01/2008)
07/09/2008	<u>203</u>	STIPULATION <i>STIPULATION AND [PROPOSED] ORDER DISMISSING CLAIMS RELATING TO U.S. PATENT NOS. 6,402,324 & 6,644,817</i> by Seiko Epson Corporation. (Ogden, Christopher) (Filed on 7/9/2008) (Entered: 07/09/2008)
07/09/2008	<u>204</u>	STIPULATION <i>and Proposed Order Entering Judgment of Noninfringement of 831 patent</i> by Coretronic Corporation(a Taiwanese Corporation). (Rader, Elizabeth) (Filed on 7/9/2008) (Entered: 07/09/2008)
07/14/2008	<u>205</u>	MOTION to Strike <i>Part of Coretronic's Final Infringement Contentions</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/14/2008) (Entered: 07/14/2008)
07/14/2008	<u>206</u>	Proposed Order Granting <u>205</u> Seiko Epson's Motion to Strike Part of Coretronic's Final Infringement Contentions by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/14/2008) Modified on 7/22/2008 (gba, COURT STAFF). (Entered: 07/14/2008)
07/14/2008	<u>207</u>	Declaration of Daniel Oey filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/14/2008) (Entered: 07/14/2008)
07/14/2008	<u>208</u>	Declaration of William J. Utermohlen <i>Regarding 205 Motion to Strike Part of Coretronic's Final Infringement Contentions</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/14/2008) Modified on 7/22/2008 (gba, COURT STAFF). (Entered: 07/14/2008)

07/14/2008	<u>209</u>	MOTION Seiko Epson's Administrative Motion to File Document Under Seal, MOTION for Leave to File filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/14/2008) (Entered: 07/14/2008)
07/14/2008	<u>210</u>	Proposed Order <i>Granting 209 Seiko Epson's Administrative Motion to File Document Under Seal</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/14/2008) Modified on 7/22/2008 (gba, COURT STAFF). (Entered: 07/14/2008)
07/14/2008	<u>211</u>	Declaration of Atsushi Miyazawa in Support of <u>205</u> MOTION to Strike <i>Part of Coretronic's Final Infringement Contentions</i> filed by Seiko Epson Corporation. (Related document(s) <u>205</u>) (Ogden, Christopher) (Filed on 7/14/2008) (Entered: 07/14/2008)
07/14/2008	345	EXHIBITS A and E to the Declaration of William J. Utermohlen regarding motion to strike part of Coretronic's Final Infringement Contentions filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 7/14/2008) (Entered: 01/29/2009)
07/15/2008	<u>212</u>	ADR Clerks Notice Appointing Karen Boyd as Mediator. (af, COURT STAFF) (Filed on 7/15/2008) (Entered: 07/15/2008)
07/15/2008	<u>213</u>	STIPULATION AND ORDER ENTERING JUDGMENT OF NONINFRINGEMENT OF US PAT. 6,739,831 and DISMISSING without prejudice counterdefendant's counterclaims for declaratory judgment on the '831 patent re invalidity and unenforceability; Signed by Judge Marilyn Hall Patel on 7/14/2008. (awb, COURT-STAFF) (Filed on 7/15/2008) (Entered: 07/15/2008)
07/15/2008	<u>214</u>	STIPULATION AND ORDER DISMISSING CLAIMS RELATING TO US PATENT NOS 6,402,324 & 6,644,817 without prejudice; Signed by Judge Marilyn Hall Patel on 7/14/2008. (awb, COURT-STAFF) (Filed on 7/15/2008) (Entered: 07/15/2008)
07/15/2008	<u>215</u>	ORDER by Judge Marilyn Hall Patel granting <u>209</u> plaintiffs' Motion to seal Exh A to declaration of William Utermohlen, Exh E to declaration of William Utermohlen (awb, COURT-STAFF) (Filed on 7/15/2008) (Entered: 07/15/2008)
07/25/2008	<u>216</u>	STIPULATION <i>and Proposed Order Amending Invalidity Briefing Schedule</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/25/2008) (Entered: 07/25/2008)
07/25/2008	<u>217</u>	STIPULATION <i>and Proposed Order Modifying Mediation Process</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 7/25/2008) (Entered: 07/25/2008)
07/28/2008	<u>218</u>	MEMORANDUM in Opposition re <u>205</u> MOTION to Strike <i>Part of Coretronic's Final Infringement Contentions</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Related document(s) <u>205</u>) (Rader, Elizabeth) (Filed on 7/28/2008) (Entered: 07/28/2008)

07/28/2008	<u>219</u>	Declaration of Elizabeth Rader in Support of <u>218</u> Memorandum in Opposition to Plaintiff's Motion to Strike Part of Coretronic's Final Infringement Contentions filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C)(Related document (s) <u>218</u>) (Rader, Elizabeth) (Filed on 7/28/2008) (Entered: 07/28/2008)
08/01/2008	<u>220</u>	STIPULATION ORDER REFERRING CASE vacating appointment of Mediator AND referring consolidated actions to Private ADR, to be completed by 11/3/2008; Signed by Judge Marilyn Hall Patel on 7/30/2008. (awb, COURT-STAFF) (Filed on 8/1/2008) (Entered: 08/01/2008)
08/01/2008	<u>221</u>	STIPULATION AND ORDER MODIFYING INVALIDITY BRIEFING SCHEDULES:Motions to be filed by 9/26/2008; Oppositions to be filed by 10/20/2008; Replies to be filed by 11/3/2008; Motion Hearing set for 11/17/2008 02:00 PM; Signed by Judge Marilyn Hall Patel on 7/30/2008. (awb, COURT-STAFF) (Filed on 8/1/2008) (Entered: 08/01/2008)
08/01/2008	<u>222</u>	NOTICE of Change In Counsel by Elizabeth Hannah Rader <i>Notice of Change of Affiliation of Counsel</i> (Rader, Elizabeth) (Filed on 8/1/2008) (Entered: 08/01/2008)
08/04/2008	<u>223</u>	Reply to Opposition <i>PLAINTIFF SEIKO EPSON'S REPLY TO CORETRONIC'S OPPOSITION TO MOTION TO STRIKE PART OF CORETRONIC'S FINAL INFRINGEMENT CONTENTIONS</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 8/4/2008) (Entered: 08/04/2008)
08/04/2008	<u>224</u>	NOTICE by Seiko Epson Corporation(a Japanese corporation) <i>PLAINTIFF SEIKO EPSON'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL</i> (Ogden, Christopher) (Filed on 8/4/2008) (Entered: 08/04/2008)
08/04/2008	<u>225</u>	Proposed Order <i>GRANTING PLAINTIFF SEIKO EPSON'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 8/4/2008) (Entered: 08/04/2008)
08/06/2008	<u>226</u>	ORDER granting Plaintiff Seiko Epson Corporation's Administrative Motion to File Document Under Seal. Signed by Judge Marilyn H. Patel on 8/6/2008. (mat, COURT STAFF) (Filed on 8/6/2008) (Entered: 08/07/2008)
08/08/2008	<u>227</u>	NOTICE by Seiko Epson Corporation(a Japanese corporation) <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL</i> (Ogden, Christopher) (Filed on 8/8/2008) (Entered: 08/08/2008)
08/08/2008	<u>228</u>	Proposed Order <i>GRANTING PLAINTIFF SEIKO EPSON'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 8/8/2008) (Entered: 08/08/2008)
08/08/2008	<u>229</u>	NOTICE by Seiko Epson Corporation(a Japanese corporation) <i>SEIKO EPSON'S REPORT ON DISCOVERY DISPUTE</i> (Attachments: # <u>1</u> Exhibit

		Exhibit A, # <u>2</u> Exhibit Exhibit B, # <u>3</u> Exhibit Exhibit C, # <u>4</u> Exhibit Exhibit D, # <u>5</u> Exhibit Exhibit E)(Ogden, Christopher) (Filed on 8/8/2008) (Entered: 08/08/2008)
08/08/2008	<u>230</u>	NOTICE OF APPEAL as to <u>183</u> Order, <u>194</u> Order, <u>213</u> Stipulation and Order by Coretronic Corporation. Filing fee \$ 455; Receipt no. 34611022280. (slh, COURT STAFF) (Filed on 8/8/2008)(USCA Case No. 2008-1523) (Entered: 08/12/2008)
08/08/2008	352	NOTICE of Report on Discovery Dispute (Exhibits A and E) by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation FILED UNDER SEAL (gba, COURT STAFF) (Filed on 8/8/2008) (Entered: 01/31/2009)
08/12/2008		Transmission of Notice of Appeal and Docket Sheet to US Court of Appeals, Federal Circuit re <u>230</u> Notice of Appeal. (slh, COURT STAFF) (Filed on 8/12/2008) (Entered: 08/12/2008)
08/12/2008		Copy of Notice of Appeal and Docket sheet mailed to all counsel. (slh, COURT STAFF) (Filed on 8/12/2008) (Entered: 08/12/2008)
08/19/2008	<u>231</u>	Minute Entry: Motion Hearing held on 8/18/2008 before Hon. Marilyn Hall Patel (Date Filed: 8/19/2008) re <u>205</u> MOTION to Strike (Court Reporter Belle Ball.) (awb, COURT-STAFF) (Date Filed: 8/19/2008) (Entered: 08/19/2008)
08/20/2008	<u>232</u>	Transcript of Proceedings held on August 18, 2008, before Judge Marilyn Hall Patel. Court Reporter/Transcriber Belle Ball, CSR, RMR, CRR, e-mail belle_ball@cand.uscourts.gov, Telephone number (415)373-2529. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 11/17/2008. (Ball, Belle) (Filed on 8/20/2008) (Entered: 08/20/2008)
08/21/2008	<u>233</u>	USCA Case Number 2008-1523 Federal Circuit for <u>230</u> Notice of Appeal filed by Coretronic Corporation. (slh, COURT STAFF) (Filed on 8/21/2008) (Entered: 08/21/2008)
08/22/2008	<u>234</u>	MRMORANDUM AND ORDER by Judge Marilyn Hall Patel granting in part and denying in part <u>205</u> plaintiff's Motion to Strike (awb, COURT-STAFF) (Filed on 8/22/2008) (Entered: 08/22/2008)
08/25/2008	<u>235</u>	Transcript Designation and Ordering Form filed by Coretronic Corporation (gba, COURT STAFF) (Filed on 8/25/2008) (Entered: 08/25/2008)
08/28/2008	<u>238</u>	MOTION for Admission of Attorney Ryan W. Koppelman Pro Hac Vice (Filing fee \$ 210.00, receipt number 34611022871) filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (gba, COURT STAFF) (Filed on 8/28/2008) (Entered: 09/16/2008)
08/29/2008	<u>236</u>	ORDER granting Coretronic Corp and Optoma Electronics application for

		attorney Ryan W Koppleman to appear pro hac vice; Signed by Judge Marilyn Hall Patel on 8/29/2008. (awb, COURT-STAFF) (Filed on 8/29/2008) (Entered: 08/29/2008)
09/04/2008	<u>237</u>	ORDER granting <u>227</u> plaintiff's request to seal report on discovery dispute, Exhs A, E; Signed by Judge Marilyn Hall Patel on 9/3/2008. (awb, COURT-STAFF) (Filed on 9/4/2008) (Entered: 09/04/2008)
09/25/2008	<u>239</u>	STIPULATION and Proposed Order Dismissing Claims Relating to U.S. Patent No. 6,558,004 by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Ogden, Christopher) (Filed on 9/25/2008) (Entered: 09/25/2008)
09/26/2008	<u>240</u>	MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. Motion Hearing set for 11/17/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Ogden, Christopher) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>241</u>	Declaration of William J. Utermohlen in Support of <u>240</u> MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit Exhibit 1, # <u>2</u> Exhibit Exhibit 2, # <u>3</u> Exhibit Exhibit 3, # <u>4</u> Exhibit Exhibit 4, # <u>5</u> Exhibit Exhibit 5, # <u>6</u> Exhibit Exhibit 6, # <u>7</u> Exhibit Exhibit 7, # <u>8</u> Exhibit Exhibit 8, # <u>9</u> Exhibit Exhibit 9, # <u>10</u> Exhibit Exhibit 10, # <u>11</u> Exhibit Exhibit 11, # <u>12</u> Exhibit Exhibit 12)(Related document(s) <u>240</u>) (Ogden, Christopher) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>242</u>	Declaration of Kurtis Keller in Support of <u>240</u> MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit Exhibit 1, # <u>2</u> Exhibit Exhibit 2, # <u>3</u> Exhibit Exhibit 3, # <u>4</u> Exhibit Exhibit 4, # <u>5</u> Exhibit Exhibit 5, # <u>6</u> Exhibit Exhibit 6)(Related document(s) <u>240</u>) (Ogden, Christopher) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>243</u>	Declaration of kathy mester in Support of <u>240</u> MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent</i> DECLARATION OF KATHY MESTER filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D) (Related document(s) <u>240</u>) (VanKeulen, Susan) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>244</u>	Declaration in Support of <u>240</u> MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent</i> DECLARATION OF JIRO ITO filed by Seiko Epson Corporation. (Related document(s) <u>240</u>) (VanKeulen, Susan) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>245</u>	MOTION to Seal PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5) filed by Seiko Epson Corporation. Motion Hearing set for 11/17/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (VanKeulen, Susan)

		(Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>246</u>	Proposed Order re <u>245</u> MOTION to Seal <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5)</i> MOTION to Seal <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5) [PROPOSED]</i> ORDER GRANTING PLAINTIFF <i>SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL (L.R. 79-5)</i> by Seiko Epson Corporation. (VanKeulen, Susan) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>247</u>	MOTION Administrative Motion to File Exhibits D and E to the Declaration of Lenny Huang in Support of Coretronic and Optoma's Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392 Under Seal, MOTION to Seal Document filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Huang, Lenny) (Filed on 9/26/2008) (Entered: 09/26/2008)
09/26/2008	<u>248</u>	Declaration of Lenny Huang <i>in Support of <u>250</u> Coretronic Corporation and Optoma Technology, Inc.'s Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D and E, # <u>5</u> Exhibit F, # <u>6</u> Exhibit G, # <u>7</u> Exhibit H)(Rader, Elizabeth) (Filed on 9/26/2008) Modified on 9/29/2008 (gba, COURT STAFF). (Entered: 09/27/2008)
09/26/2008	<u>346</u>	EXHIBITS D and E to Declarattion of Lenny Huang in support of Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392 filed by Coretronic Corporation. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 9/26/2008) (Entered: 01/31/2009)
09/27/2008	<u>249</u>	Declaration of N. Wayne Bailey <i>in Support of <u>250</u> Coretronic's Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L, # <u>13</u> Exhibit M, # <u>14</u> Exhibit N, # <u>15</u> Exhibit O, # <u>16</u> Exhibit P, # <u>17</u> Exhibit Q)(Rader, Elizabeth) (Filed on 9/27/2008) Modified on 9/29/2008 (gba, COURT STAFF). (Entered: 09/27/2008)
09/27/2008	<u>250</u>	MOTION for Summary Judgment of <i>Invalidity of U.S. Patents Nos. 6,203,158 and 6,527,392</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order Proposed Order)(Rader, Elizabeth) (Filed on 9/27/2008) (Entered: 09/27/2008)
09/27/2008	<u>251</u>	Declaration of David G. Payne <i>in Support of <u>250</u> Coretronic Corporation and Optoma Technology, Inc.'s Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, #

		<u>7</u> Exhibit G, # <u>8</u> Exhibit H)(Rader, Elizabeth) (Filed on 9/27/2008) Modified on 9/29/2008 (gba, COURT STAFF). (Entered: 09/27/2008)
09/27/2008	<u>252</u>	Declaration of Catharina R. Biber, Ph.D. in Support of <u>250</u> Coretronic and Optoma's Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392 filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G)(Rader, Elizabeth) (Filed on 9/27/2008) Modified on 9/29/2008 (gba, COURT STAFF). (Entered: 09/27/2008)
09/27/2008	<u>253</u>	CERTIFICATE OF SERVICE by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc. (Rader, Elizabeth) (Filed on 9/27/2008) (Entered: 09/27/2008)
09/27/2008	<u>254</u>	Proposed Order re <u>240</u> MOTION for Summary Judgment of Invalidity and Unenforceability Re Coretronic's 899 Patent (Proposed Order Granting Motion) by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Ogden, Christopher) (Filed on 9/27/2008) (Entered: 09/27/2008)
09/28/2008	<u>255</u>	Table of Contents and Table of Authorities in support of <u>250</u> Coretronic and Optoma's Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392 filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Rader, Elizabeth) (Filed on 9/28/2008) Modified on 9/29/2008 (gba, COURT STAFF). (Entered: 09/28/2008)
09/29/2008	<u>256</u>	STIPULATION AND ORDER dismissing claims related to US Patent NO. 6,558,004; Signed by Judge Marilyn Hall Patel on 9/29/2008. (awb, COURT-STAFF) (Filed on 9/29/2008) (Entered: 09/29/2008)
10/02/2008	<u>257</u>	ORDER by Judge Marilyn Hall Patel granting <u>245</u> plaintiff's Motion (AS AMENDED BY COURT) to Seal exhs 8, 9, 11, and 12 to declaration of William Utermohlen; Epson's Motion for summary judgment on invalidity (awb, COURT-STAFF) (Filed on 10/2/2008) (Entered: 10/02/2008)
10/02/2008	<u>258</u>	ORDER by Judge Marilyn Hall Patel granting <u>247</u> defendant's Motion to Seal exhs D, E of declaration of Lenny Huang (awb, COURT-STAFF) (Filed on 10/2/2008) (Entered: 10/02/2008)
10/10/2008	<u>259</u>	MOTION to Continue Coretronic's Motion Pursuant to FRCP 56(F) to Continue Hearing on Epson Parties' Motion for Summary Judgment or, in The Alternative, to Strike Mester and Ito Declarations (Public Version) filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Hu, Yitai) (Filed on 10/10/2008) (Entered: 10/10/2008)
10/10/2008	<u>260</u>	Declaration of Lenny Huang in Support of Coretronic's Motion Pursuant to FRCP 56(F) to Continue Hearing on Epson Parties Summary Judgment Motion or, In The Alternative, to Strike Mester and Ito Declarations (Public Version) filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C,

		# <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H - MFN)(Huang, Lenny) (Filed on 10/10/2008) (Entered: 10/10/2008)
10/10/2008	<u>261</u>	CERTIFICATE OF SERVICE by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc. (Huang, Lenny) (Filed on 10/10/2008) (Entered: 10/10/2008)
10/10/2008	<u>262</u>	MOTION to Seal Document <i>Coretronic Corporation's Administrative Motion to File Exhibit H to the Declaration of Lenny Huang in Support of Coretronic's Motion Pursuant to FRCP 56(F) to Continue Hearing on Epson Parties Summary Judgment Motion or, in the Alternative, to Strike Mester and Ito Declarations Under Seal</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Huang, Lenny) (Filed on 10/10/2008) (Entered: 10/10/2008)
10/10/2008	<u>263</u>	MOTION to Shorten Time <i>Coretronic Corporation's Motion Pursuant to L.R. 6-1 and 6-3 for an Order Shortening Time for Hearing on Coretronic's Motion Pursuant to FRCP 56(F) to Continue Hearing on Epson Parties' Motion for Summary Judgment or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Hu, Yitai) (Filed on 10/10/2008) (Entered: 10/10/2008)
10/10/2008	347	EXHIBIT H to Declaration of Lenny Huang in support of Motion to continue hearing on Epson parties Summary Judgment Motion or, in the alternative, to Strike Mester and Ito Declarations filed by Coretronic Corporation, Optoma Technology, Inc.. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 10/10/2008) (Entered: 01/31/2009)
10/11/2008	<u>264</u>	Declaration of Lenny Huang <i>in Support of Coretronic Corporation's Motion Pursuant to L.R. 6-1 and 6-3 for an Order Shortening Time for Hearing on Coretronic's Motion Pursuant to FRCP 56(F) to Continue Hearing on Epson Parties' Motion for Summary Judgment or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D)(Huang, Lenny) (Filed on 10/11/2008) (Entered: 10/11/2008)
10/11/2008	<u>265</u>	MOTION for Certificate of Appealability <i>Coretronic and Optoma's Petition for Rule 54(b) Certification</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order, # <u>2</u> Proposed Order)(Hu, Yitai) (Filed on 10/11/2008) (Entered: 10/11/2008)
10/11/2008	<u>266</u>	Declaration of Elizabeth H. Rader <i>in Support of Coretronic and Optoma's Petition for Rule 54(b) Certification</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C)(Rader, Elizabeth) (Filed on 10/11/2008) (Entered: 10/11/2008)
10/14/2008	<u>267</u>	ORDER by Judge Marilyn Hall Patel DENYING <u>262</u> defendant's Motion to Seal Exhibit H to declaration of Lenny Huang (awb, COURT-STAFF) (Filed on 10/14/2008) (Entered: 10/14/2008)

10/14/2008	<u>268</u>	NOTICE by Seiko Epson Corporation(a Japanese corporation) <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL</i> (Ogden, Christoper) (Filed on 10/14/2008) (Entered: 10/14/2008)
10/14/2008	<u>269</u>	Proposed Order re <u>268</u> Notice (Other) (<i>PROPOSED</i>) <i>ORDER GRANTING PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENT UNDER SEAL</i> by Seiko Epson Corporation (a Japanese corporation). (Ogden, Christoper) (Filed on 10/14/2008) (Entered: 10/14/2008)
10/14/2008	<u>270</u>	Memorandum in Opposition <i>EPSON PARTIES' OPPOSITION TO MOTION TO SHORTEN TIME</i> filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christoper) (Filed on 10/14/2008) (Entered: 10/14/2008)
10/14/2008	<u>271</u>	DECLARATION of WILLIAM J. UTERMOHLEN in Opposition to <u>270</u> Memorandum in Opposition <i>DECLARATION OF WILLIAM J. UTERMOHLEN SUPPORTING OPPOSITION TO MOTION TO SHORTEN TIME (PUBLIC VERSION)</i> filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K)(Related document(s) <u>270</u>) (Ogden, Christoper) (Filed on 10/14/2008) (Entered: 10/14/2008)
10/15/2008	<u>272</u>	ORDER by Judge Marilyn Hall Patel denying defendants' <u>259</u> Motion to Continue; denying <u>263</u> defendants' Motion to Shorten Time; Parties to file 56 (F) requests with oppositions; The Court will determine if further 56(F) discovery is needed. (awb, COURT-STAFF) (Filed on 10/15/2008) (Entered: 10/15/2008)
10/16/2008	<u>273</u>	STATUS REPORT <i>Coretronic Corporation's Report on Discovery Disputes and Request for Appointment of a Discovery Master</i> by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Hu, Yitai) (Filed on 10/16/2008) (Entered: 10/16/2008)
10/16/2008	<u>274</u>	*** EXHIBIT Y FILED IN ERROR. DOCUMENT LOCKED. DOCUMENT TO BE REFILED LATER. *** Appendix re <u>273</u> Status Report <i>Coretronic Corporation's Report on Discovery Disputes and Request for Appointment of a Discovery Master</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L, # <u>13</u> Exhibit M, # <u>14</u> Exhibit N, # <u>15</u> Exhibit O, # <u>16</u> Exhibit P, # <u>17</u> Exhibit Q, # <u>18</u> Exhibit R, # <u>19</u> Exhibit S, # <u>20</u> Exhibit T, # <u>21</u> Exhibit U, # <u>22</u> Exhibit V, # <u>23</u> Exhibit W, # <u>24</u> Exhibit X, # <u>25</u> Exhibit Y, # <u>26</u> Exhibit Z, # <u>27</u> Exhibit AA, # <u>28</u> Exhibit BB)(Related document(s) <u>273</u>) (Hu, Yitai) (Filed on 10/16/2008) Modified on 10/22/2008 (feriab, COURT STAFF). (Entered: 10/16/2008)
10/17/2008	<u>275</u>	NOTICE by Seiko Epson Corporation <i>NOTICE OF FIRM NAME CHANGE</i> (Ogden, Christoper) (Filed on 10/17/2008) (Entered: 10/17/2008)

10/17/2008	<u>276</u>	Reply Memorandum <i>SEIKO EPSON CORPORATION'S INTERIM RESPONSE TO CORETRONC CORPORATION'S OCTOBER 16 REPORT ON DISCOVERY DISPUTES</i> filed by Seiko Epson Corporation. (Ogden, Christoper) (Filed on 10/17/2008) (Entered: 10/17/2008)
10/20/2008	<u>277</u>	Memorandum in Opposition to <u>250</u> MOTION FOR SUMMARY JUDGMENT OF INVALIDITY RE 392 AND 158 PATENTS filed by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christoper) (Filed on 10/20/2008) Modified on 10/21/2008 (gba, COURT STAFF). (Entered: 10/20/2008)
10/20/2008	<u>278</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>277</u> Memorandum in Opposition filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A-1, # <u>2</u> Exhibit A-2, # <u>3</u> Exhibit A-3, # <u>4</u> Exhibit A-4, # <u>5</u> Exhibit B, # <u>6</u> Exhibit C-1, # <u>7</u> Exhibit C-2, # <u>8</u> Exhibit C-3, # <u>9</u> Exhibit C-4, # <u>10</u> Exhibit C-5, # <u>11</u> Exhibit C-6, # <u>12</u> Exhibit C-7, # <u>13</u> Exhibit C-8, # <u>14</u> Exhibit C-9, # <u>15</u> Exhibit C-10, # <u>16</u> Exhibit D, # <u>17</u> Exhibit E)(Related document(s) <u>277</u>) (Ogden, Christoper) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>279</u>	Declaration of KURTIS KELLER in Support of <u>277</u> Memorandum in Opposition <i>DECLARATION OF KURTIS KELLER REGARDING DEFENDANTS' SUMMARY JUDGMENT MOTION</i> filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4)(Related document(s) <u>277</u>) (Ogden, Christoper) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>280</u>	Declaration of HISASHI IECHIKA in Support of <u>277</u> Memorandum in Opposition filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D) (Related document(s) <u>277</u>) (Ogden, Christoper) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>281</u>	Declaration of HISASHI IECHIKA (<i>CORRECTED-- 280 FILED IN ERROR</i>) filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A IECHIKA, # <u>2</u> Exhibit B IECHIKA, # <u>3</u> Exhibit C IECHIKA, # <u>4</u> Exhibit D IECHIKA)(Ogden, Christoper) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>282</u>	Declaration of MICHAEL WALLER in Support of <u>277</u> Memorandum in Opposition filed by Seiko Epson Corporation(a Japanese corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E)(Related document(s) <u>277</u>) (Ogden, Christoper) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>283</u>	Memorandum in Opposition to <u>240</u> <i>Epson Parties Motion for Summary Judgment of Invalidity & Unenforceability- 899 Patent</i> filed by Coretronic Corporation. (Rader, Elizabeth) (Filed on 10/20/2008) Modified on 10/21/2008 (gba, COURT STAFF). (Entered: 10/20/2008)
10/20/2008	<u>284</u>	Declaration of Shang Hsuang Wu in Support of <u>283</u> Memorandum in Opposition to <i>Epson Parties Motion for Summary Judgment of Invalidity & Unenforceability- 899 Patent</i> filed by Coretronic Corporation. (Related

		document(s) <u>283</u>) (Rader, Elizabeth) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>285</u>	DECLARATION of Catharina Biber in Opposition to <u>283</u> Memorandum in Opposition to <i>Epson Parties' Motion for Summary Judgment of Invalidity & Unenforceability- 899 Patent</i> filed by Coretronic Corporation. (Attachments: # <u>1</u> Exhibit Exhibit A- CV of Catharina Biber PhD)(Related document(s) <u>283</u>) (Rader, Elizabeth) (Filed on 10/20/2008) (Entered: 10/20/2008)
10/20/2008	<u>286</u>	Declaration of Elizabeth H. Rader in Support of <u>283</u> Memorandum in Opposition To <i>Epson Parties' Motion For Summary Judgment Of Invalidity And Unenforceability Re Coretronic's 899 Patent</i> filed by Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D Part 1, # <u>5</u> Exhibit D Part 2, # <u>6</u> Exhibit E)(Related document(s) <u>283</u>) (Rader, Elizabeth) (Filed on 10/20/2008) (Entered: 10/21/2008)
10/21/2008	<u>287</u>	MOTION to Continue <i>Hearing on Epson Parties' Motion for Summary Judgment to Allow for Discovery Re ELP-3000 or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Coretronic Corporation(a Taiwanese Corporation). (Attachments: # <u>1</u> Proposed Order)(Hu, Yitai) (Filed on 10/21/2008) (Entered: 10/21/2008)
10/21/2008	<u>288</u>	Declaration in Support of <u>287</u> MOTION to Continue <i>Hearing on Epson Parties' Motion for Summary Judgment to Allow for Discovery Re ELP-3000 or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I) (Related document(s) <u>287</u>) (Hu, Yitai) (Filed on 10/21/2008) (Entered: 10/21/2008)
10/24/2008	<u>289</u>	RESPONSE to re <u>273</u> Status Report, <u>276</u> Reply Memorandum to <i>Coretronic's Report on Discovery Disputes</i> by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit, # <u>2</u> Exhibit, # <u>3</u> Exhibit, # <u>4</u> Exhibit, # <u>5</u> Exhibit, # <u>6</u> Exhibit)(Ogden, Christoper) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>290</u>	MOTION to Seal <i>Document</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Ogden, Christoper) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>291</u>	Proposed Order re <u>289</u> Response (Non Motion), Response (Non Motion), <u>290</u> MOTION to Seal <i>Document (Exhibit F) to Response to Report on Discovery Dispute</i> by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Ogden, Christoper) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>292</u>	MOTION to Remove Incorrectly Filed Document filed by Coretronic Corporation(a Taiwanese Corporation), Epson Research and Development, Inc., Epson America, Inc., Optoma Technology, Inc.. (Attachments: # <u>1</u> Proposed Order)(Huang, Lenny) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>293</u>	Declaration of Lenny Huang in Support of <u>292</u> MOTION to Remove

		Incorrectly Filed Document filed by Coretronic Corporation (a Taiwanese Corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C) (Related document(s) <u>292</u>) (Huang, Lenny) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>294</u>	ERRATA re <u>274</u> Appendix,,, <i>CORRECTION OF DOCKET # 274-25 - Exhibit Y (Manual Filing Notification) to Coretronic Corporations' Report on Discovery Disputes and Request for Appointment of a Discovery Master</i> by Coretronic Corporation (a Taiwanese Corporation), Optoma Technology, Inc.. (Huang, Lenny) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>295</u>	CERTIFICATE OF SERVICE by Coretronic Corporation (a Taiwanese Corporation) (Huang, Lenny) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>296</u>	MOTION Coretronic Corporation's Administrative Motion to File Corrected Exhibit Y to the Report on Discovery Disputes and Request for Appointment of a Discovery Master [Docket No. 273] Under Seal, MOTION to Seal Document filed by Coretronic Corporation (a Taiwanese Corporation). (Attachments: # <u>1</u> Proposed Order) (Huang, Lenny) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/24/2008	<u>297</u>	Declaration of Lenny Huang in Support of <u>296</u> MOTION Coretronic Corporation's Administrative Motion to File Corrected Exhibit Y to the Report on Discovery Disputes and Request for Appointment of a Discovery Master [Docket No. 273] Under Seal MOTION Coretronic Corporation's Administrative Motion to File Corrected Exhibit Y to the Report on Discovery Disputes and Request for Appointment of a Discovery Master [Docket No. 273] Under Seal MOTION to Seal Document filed by Coretronic Corporation (a Taiwanese Corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C) (Related document(s) <u>296</u>) (Huang, Lenny) (Filed on 10/24/2008) (Entered: 10/24/2008)
10/27/2008	<u>298</u>	Memorandum in Opposition EPSON PARTIES' OPPOSITION TO PETITION FOR RULE 54(b) CERTIFICATION filed by Seiko Epson Corporation (a Japanese corporation). (Ogden, Christopher) (Filed on 10/27/2008) (Entered: 10/27/2008)
10/27/2008	<u>299</u>	Declaration of WILLIAM J. UTERMOHLEN SUPPORTING OPPOSITION TO RULE 54(b) PETITION filed by Seiko Epson Corporation (a Japanese corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C) (Ogden, Christopher) (Filed on 10/27/2008) (Entered: 10/27/2008)
10/29/2008	<u>300</u>	RESPONSE to re <u>289</u> Response (Non Motion), Response (Non Motion) Coretronic Corporation and Optoma Technology, Inc.'s Interim Response to Seiko Epson Corporation's Report on Discovery Disputes by Coretronic Corporation (a Taiwanese Corporation), Optoma Technology, Inc.. (Hu, Yitai) (Filed on 10/29/2008) (Entered: 10/29/2008)
11/03/2008	<u>301</u>	Reply to Opposition re <u>265</u> MOTION for Certificate of Appealability Coretronic and Optoma's Petition for Rule 54(b) Certification MOTION for Certificate of Appealability Coretronic and Optoma's Petition for Rule 54(b) Certification filed by Coretronic Corporation. (Rader, Elizabeth) (Filed on 11/3/2008) (Entered: 11/03/2008)

11/03/2008	<u>302</u>	REPLY to Response to Motion re <u>250</u> MOTION for Summary Judgment of <i>Invalidity of U.S. Patents Nos. 6,203,158 and 6,527,392</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Rader, Elizabeth) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>303</u>	Declaration in Support of <u>302</u> Reply to Response to Motion, <i>Declaration of Elizabeth H. Rader In Support of Coretronic and Optoma's Motion for Summary Judgment of Invalidity of U.S. Patent Nos. 6,203,158 and 6,527,392</i> filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G)(Related document (s) <u>302</u>) (Rader, Elizabeth) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>304</u>	MOTION to Seal Document <i>SEVEN DOCUMENTS LODGED BY HAND UNDER SEAL (redacted versions e-filed herewith)</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Proposed Order)(Ogden, Christopher) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>305</u>	Reply Memorandum re <u>240</u> MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent [REDACTED VERSION]</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Ogden, Christopher) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>306</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>305</u> Reply Memorandum, <i>[REDACTED VERSION]</i> filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B [FILED UNDER SEAL], # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E)(Related document(s) <u>305</u>) (Ogden, Christopher) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>307</u>	Declaration of KURTIS KELLER in Support of <u>305</u> Reply Memorandum, <i>[REDACTED VERSION]</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A [LODGED UNDER SEAL], # <u>2</u> Exhibit B, # <u>3</u> Exhibit C)(Related document (s) <u>305</u>) (Ogden, Christopher) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>308</u>	Declaration of KATHY MESTER in Support of <u>305</u> Reply Memorandum, filed by Seiko Epson Corporation(a Japanese corporation), Epson Research and Development, Inc., Epson America, Inc.. (Related document(s) <u>305</u>) (Ogden, Christopher) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>309</u>	Declaration of CHRISTOPHER L. OGDEN in Support of <u>305</u> Reply Memorandum, filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B)(Related document(s) <u>305</u>) (Ogden, Christopher) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>310</u>	Memorandum in Opposition re <u>287</u> MOTION to Continue <i>Hearing on Epson Parties' Motion for Summary Judgment to Allow for Discovery Re ELP-3000 or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson

		Corporation. (Ogden, Christoper) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>311</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>310</u> Memorandum in Opposition, filed byEpson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E (LODGED UNDER SEAL), # <u>6</u> Exhibit F (LODGED UNDER SEAL))(Related document(s) <u>310</u>) (Ogden, Christoper) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/03/2008	<u>312</u>	Declaration of KATHY MESTER in Support of <u>310</u> Memorandum in Opposition, filed byEpson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. (Related document(s) <u>310</u>) (Ogden, Christoper) (Filed on 11/3/2008) (Entered: 11/03/2008)
11/04/2008	<u>314</u>	Administrative MOTION to File Documents Under Seal (L.R. 79-5) filed by Seiko Epson Corporation. (gba, COURT STAFF) (Filed on 11/4/2008) (Entered: 11/05/2008)
11/04/2008	<u>315</u>	Received Order re <u>314</u> MOTION to File Documents Under Seal (L.R. 79-5) by Seiko Epson Corporation. (gba, COURT STAFF) (Filed on 11/4/2008) (gba, COURT STAFF). (Entered: 11/05/2008)
11/04/2008	<u>316</u>	CERTIFICATE OF SERVICE by Seiko Epson Corporation re <u>314</u> MOTION to File Documents Under Seal (L.R. 79-5), <u>315</u> Received Order (gba, COURT STAFF) (Filed on 11/4/2008) (Entered: 11/05/2008)
11/04/2008	348	Reply Brief re <u>240</u> MOTION for Summary Judgment of <i>Invalidity and Unenforceability Re Coretronic's 899 Patent</i> filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 11/4/2008) (Entered: 01/31/2009)
11/04/2008	349	Declaration of Kurtis Keller in Support of 348 Reply Brief filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. FILED UNDER SEAL (Related document(s) 348) (gba, COURT STAFF) (Filed on 11/4/2008) (Entered: 01/31/2009)
11/04/2008	350	Declaration of William J. Utermohlen supporting opposition to 10/21/08 motion pursuant to FRCP 56(f) filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 11/4/2008) (Entered: 01/31/2009)
11/04/2008	351	Declaration of William J. Utermohlen in Support of 348 Reply Brief filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. FILED UNDER SEAL (Related document(s) 348) (gba, COURT STAFF) (Filed on 11/4/2008) (Entered: 01/31/2009)
11/05/2008	<u>313</u>	CLERKS NOTICE: Cross Motions for summary judgment rescheduled from 11/17/2008 to 11/20/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (awb, COURT-STAFF) (Filed on 11/5/2008) (Entered: 11/05/2008)
11/05/2008	<u>317</u>	RESPONSE to <i>SEIKO EPSON CORPORATION'S REPORT ON DISCOVERY DISPUTES</i> by Coretronic Corporation(a Taiwanese

		Corporation), Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D)(Hu, Yitai) (Filed on 11/5/2008) (Entered: 11/05/2008)
11/06/2008	<u>318</u>	Motion for Admission of Attorney E. Brian Alexander Pro Hac Vice (Fee Paid \$210.00; Receipt Number 34611025360). (Ogden, Christopher) (Filed on 11/6/2008) Modified on 11/7/2008 (gba, COURT STAFF). (Additional attachment(s) added on 11/17/2008: # <u>1</u> Filing Fee) (gba, COURT STAFF). Modified on 11/17/2008 (gba, COURT STAFF). (Entered: 11/06/2008)
11/06/2008	<u>319</u>	Proposed Order <i>Granting Appliction for Admission of Attorney Pro Hac Vice</i> by Seiko Epson Corporation(a Japanese corporation). (Ogden, Christopher) (Filed on 11/6/2008) (Entered: 11/06/2008)
11/10/2008	<u>320</u>	Reply Memorandum re <u>287</u> MOTION to Continue <i>Hearing on Epson Parties' Motion for Summary Judgment to Allow for Discovery Re ELP-3000 or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Coretronic Corporation(a Taiwanese Corporation). (Hu, Yitai) (Filed on 11/10/2008) (Entered: 11/10/2008)
11/10/2008	<u>321</u>	Declaration of Lenny Huang in Support of <u>320</u> Reply Memorandum, <i>in Support of Coretronic Corporation's Motion Pursuant to FRCP 56(f) to Continue Hearing on Epson Parties' Motion for Summary Judgment to Allow for Discovery re ELP-3000 or, in the Alternative, to Strike Mester and Ito Declarations</i> filed by Coretronic Corporation(a Taiwanese Corporation). (Attachments: # <u>1</u> Exhibit A)(Related document(s) <u>320</u>) (Hu, Yitai) (Filed on 11/10/2008) (Entered: 11/10/2008)
11/13/2008	<u>322</u>	CLERKS NOTICE: Cross Motions for Summary Judgment continued to 12/10/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco, before the Hon. Marilyn Hall Patel (awb, COURT-STAFF) (Filed on 11/13/2008) (Entered: 11/13/2008)
11/19/2008	<u>323</u>	ORDER by Judge Marilyn H. Patel granting (314) Motion to file documents under seal in case 3:06-cv-06946-MHP. (rbe, COURT STAFF) (Filed on 11/19/2008) (Entered: 11/19/2008)
11/20/2008	<u>324</u>	NOTICE of Change of Address by Susan Gregory van Keulen <i>NOTICE OF CHANGE OF AFFILIATION OF COUNSEL</i> (van Keulen, Susan) (Filed on 11/20/2008) (Entered: 11/20/2008)
11/20/2008	<u>325</u>	NOTICE of Change In Counsel by Susan Gregory van Keulen <i>NOTICE OF CHANGE IN COUNSEL</i> (van Keulen, Susan) (Filed on 11/20/2008) (Entered: 11/20/2008)
11/20/2008	<u>326</u>	ORDER by Judge Marilyn Hall Patel granting (318) plaintiff's Motion for attorney E. Brian Alexander to appear Hac Vice in case 3:06-cv-06946-MHP (awb, COURT-STAFF) (Filed on 11/20/2008) (Entered: 11/20/2008)
11/25/2008	<u>327</u>	CLERK'S NOTICE: Hearing for cross motions for summary judgment reset from 12/10/2008 to 12/15/2008 02:00 PM in Courtroom 15, 18th Floor, San Francisco, before the Hon. Marilyn Hall Patel (awb, COURT-STAFF) (Filed on 11/25/2008) (Entered: 11/25/2008)

12/05/2008	<u>328</u>	STIPULATION <i>Joint Stipulation and [Proposed] Order To Reschedule Motions Hearing Dates To January 5, 2009</i> by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Huang, Lenny) (Filed on 12/5/2008) (Entered: 12/05/2008)
12/10/2008	<u>329</u>	*** FILED IN ERROR, SEE DOC <u>330</u> *** STIPULATION AND ORDER re <u>240 250</u> MOTIONS for Summary Judgment: Motion Hearing reset for 1/22/2009 02:00 PM in Courtroom 15, 18th Floor, San Francisco; Signed by Judge Marilyn Hall Patel on 12/9/2008. (awb, COURT-STAFF) (Filed on 12/10/2008) Modified on 12/23/2008 (awb, COURT-STAFF). (Entered: 12/10/2008)
12/23/2008	<u>330</u>	STIPULATION AND ORDER RESETTING <u>240 250</u> MOTION HEARING TO 1/22/2009 AT 2:00 p.m; Signed by Judge Marilyn Hall Patel on 12/9/2008. (awb, COURT-STAFF) (Filed on 12/23/2008) (Entered: 12/23/2008)
12/29/2008	<u>331</u>	ORDER of USCA for the Federal Circuit dismissing appeal as to <u>230</u> Notice of Appeal filed by Coretronic Corporation (gba, COURT STAFF) (Filed on 12/29/2008) (Entered: 12/30/2008)
12/30/2008	<u>332</u>	CLERKS Letter Spreading Mandate to Counsel (gba, COURT STAFF) (Filed on 12/30/2008) (Entered: 12/30/2008)
01/09/2009	<u>333</u>	MOTION to Withdraw <i>ADMINISTRATIVE MOTION TO WITHDRAW COUNSEL AND [PROPOSED] ORDER</i> filed by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 1/9/2009) (Entered: 01/09/2009)
01/09/2009	<u>334</u>	NOTICE of Change In Counsel by Susan Gregory van Keulen <i>NOTICE OF CHANGE OF AFFILIATION OF COUNSEL AND NOTICE OF CHANGE IN COUNSEL</i> (van Keulen, Susan) (Filed on 1/9/2009) (Entered: 01/09/2009)
01/13/2009	<u>335</u>	ORDER by Judge Marilyn Hall Patel granting (333) Motion to Withdraw in case 3:06-cv-06946-MHP; granting (31) Motion to Withdraw in case 3:07-cv-06055-MHP (awb, COURT-STAFF) (Filed on 1/13/2009) (Entered: 01/13/2009)
01/15/2009	<u>336</u>	MOTION <i>JOINT MISCELLANEOUS ADMINISTRATIVE MOTION FOR PERMISSION TO BRING EQUIPMENT INTO COURTROOM FOR SUMMARY JUDGMENT MOTION HEARING OF JANUARY 22, 2009</i> filed by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 1/15/2009) (Entered: 01/15/2009)
01/15/2009	<u>337</u>	Proposed Order <i>[PROPOSED] ORDER GRANTING JOINT MISCELLANEOUS ADMINISTRATIVE MOTION FOR PERMISSION TO BRING EQUIPMENT INTO COURTROOM FOR SUMMARY JUDGMENT MOTION HEARING OF JANUARY 22, 2009</i> by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 1/15/2009) (Entered: 01/15/2009)
01/16/2009	<u>338</u>	ORDER by Judge Marilyn Hall Patel granting (336) joint Motion for Equipment Order (awb, COURT-STAFF) (Filed on 1/16/2009) (Entered: 01/16/2009)
01/20/2009	<u>339</u>	MOTION to Withdraw <u>265</u> MOTION for Certificate of Appealability

		<i>Coretronic and Optoma's Petition for Rule 54(b) Certification</i> MOTION for Certificate of Appealability <i>Coretronic and Optoma's Petition for Rule 54(b) Certification</i> filed by Coretronic Corporation. Motion Hearing set for 1/22/2009 01:00 PM in Courtroom 15, 18th Floor, San Francisco. (Rader, Elizabeth) (Filed on 1/20/2009) (Entered: 01/20/2009)
01/21/2009	<u>340</u>	ERRATA re <u>278</u> Declaration in Support,, <i>NOTICE OF ERRATA RE DECLARATION OF WILLIAM J. UTERMOHLEN</i> by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit B PART 1, # <u>2</u> Exhibit B PART 2, # <u>3</u> Exhibit B PART 3, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E)(van Keulen, Susan) (Filed on 1/21/2009) (Entered: 01/21/2009)
01/21/2009	<u>341</u>	ERRATA re <u>340</u> Errata, <i>AMENDED NOTICE OF ERRATA RE DECLARATION OF WILLIAM J. UTERMOHLEN</i> by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit D, # <u>2</u> Exhibit E)(van Keulen, Susan) (Filed on 1/21/2009) (Entered: 01/21/2009)
01/23/2009	<u>342</u>	Minute Entry: Motion Hearing held on 1/22/2009 before Hon. Marilyn Hall Patel (Date Filed: 1/23/2009) re <u>240</u> <u>250</u> MOTION for Summary Judgment of Invalidity ; <i>Further Status Conference set for 3/30/2009 03:00 PM in Courtroom 15, 18th Floor, San Francisco. (Court Reporter Margo Garule.) (awb, COURT-STAFF) (Date Filed: 1/23/2009) (Entered: 01/23/2009)</i>
01/28/2009	<u>343</u>	EXHIBITS re <u>250</u> MOTION for Summary Judgment of Invalidity of U.S. Patents Nos. 6,203,158 and 6,527,392 Defendants' Presentation Materials Used In Motion Hearing filed by Coretronic Corporation(a Taiwanese Corporation), Optoma Technology, Inc.. (Related document(s) <u>250</u>) (Rader, Elizabeth) (Filed on 1/28/2009) (Entered: 01/28/2009)
02/03/2009	<u>353</u>	Transcript of Proceedings held on 01/22/09, before Judge MARILYN H. PATEL. Court Reporter/Transcriber MARGARET "MARGO" GURULE, Telephone number 415-504-4204 or margolargo@gmail.com. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 5/1/2009. (mng, COURT STAFF) (Filed on 2/3/2009) (Entered: 02/03/2009)
03/10/2009	<u>354</u>	MOTION for Leave to File <i>Motion For Reconsideration of Claim Construction Order re '831 Patent</i> filed by Coretronic Corporation(a Taiwanese Corporation). Motion Hearing set for 4/20/2009 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Rader, Elizabeth) (Filed on 3/10/2009) (Entered: 03/10/2009)
03/10/2009	<u>355</u>	Declaration of Elizabeth H. Rader in Support of <u>354</u> MOTION for Leave to File <i>Motion For Reconsideration of Claim Construction Order re '831 Patent</i> filed by Coretronic Corporation(a Taiwanese Corporation). (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G)(Related document(s) <u>354</u>) (Rader, Elizabeth) (Filed on 3/10/2009) (Entered: 03/10/2009)

03/11/2009	<u>356</u>	Proposed Order re <u>354</u> MOTION for Leave to File <i>Motion For Reconsideration of Claim Construction Order re '831 Patent</i> by Coretronic Corporation(a Taiwanese Corporation). (Rader, Elizabeth) (Filed on 3/11/2009) (Entered: 03/11/2009)
03/11/2009	<u>357</u>	Letter from WILLIAM J. UTERMOHLEN. (van Keulen, Susan) (Filed on 3/11/2009) (Entered: 03/11/2009)
03/18/2009	<u>358</u>	MEMORANDUM in Opposition re <u>354</u> MOTION for Leave to File <i>Motion For Reconsideration of Claim Construction Order re '831 Patent EPSON PARTIES' OPPOSITION TO CORETRONIC'S MOTION FOR LEAVE TO FILE A MOTION FOR RECONSIDERATION</i> filed by Seiko Epson Corporation. (Related document(s) <u>354</u>) (van Keulen, Susan) (Filed on 3/18/2009) (Entered: 03/18/2009)
03/23/2009	<u>359</u>	STATUS REPORT <i>JOINT SUPPLEMENTAL CASE STATUS REPORT</i> by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A)(van Keulen, Susan) (Filed on 3/23/2009) (Entered: 03/23/2009)
03/24/2009	<u>360</u>	Reply to Opposition re <u>354</u> MOTION for Leave to File <i>Motion For Reconsideration of Claim Construction Order re '831 Patent</i> filed by Coretronic Corporation(a Taiwanese Corporation). (Rader, Elizabeth) (Filed on 3/24/2009) (Entered: 03/24/2009)
03/24/2009	<u>361</u>	*** FILED IN ERROR. PLEASE SEE DOCKET # <u>362</u> . *** Declaration of Elizabeth H. Rader in Support of <u>360</u> Reply to Opposition filed by Coretronic Corporation(a Taiwanese Corporation). (Attachments: # <u>1</u> Exhibit H to Declaration of Elizabeth H. Rader, # <u>2</u> Exhibit I to Elizabeth H. Rader Declaration)(Related document(s) <u>360</u>) (Rader, Elizabeth) (Filed on 3/24/2009) Modified on 3/25/2009 (ewn, COURT STAFF). (Entered: 03/24/2009)
03/24/2009	<u>362</u>	Declaration of Elizabeth H. Rader in Support of <u>360</u> Reply to Opposition <i>CORRECTION OF DOCKET # <u>361</u> , [361-2] and [361-3]</i> filed by Coretronic Corporation(a Taiwanese Corporation). (Attachments: # <u>1</u> Exhibit H to Elizabeth H. Rader Declaration, # <u>2</u> Exhibit I to Elizabeth H. Rader Declaration)(Related document(s) <u>360</u>) (Rader, Elizabeth) (Filed on 3/24/2009) (Entered: 03/24/2009)
03/25/2009	<u>363</u>	CLERKS NOTICE: Status Conference reset for 4/8/2009 09:00 AM before the Hon. Marilyn Hall Patel (awb, COURT-STAFF) (Filed on 3/25/2009) (Entered: 03/25/2009)
05/05/2009	<u>364</u>	Letter from WILLIAM J. UTERMOHLEN AND LENNY HUANG. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H, # <u>9</u> Exhibit I, # <u>10</u> Exhibit J, # <u>11</u> Exhibit K, # <u>12</u> Exhibit L, # <u>13</u> Exhibit M, # <u>14</u> Exhibit N, # <u>15</u> Exhibit O, # <u>16</u> Exhibit P, # <u>17</u> Exhibit Q, # <u>18</u> Exhibit R, # <u>19</u> Exhibit S, # <u>20</u> Exhibit T, # <u>21</u> Exhibit U, # <u>22</u> Exhibit V, # <u>23</u> Exhibit W)(van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)
05/05/2009	<u>365</u>	Proposed Order re <u>364</u> Letter,, <i>[PROPOSED] ORDER OF REFERENCE</i> by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)

		05/05/2009)
05/05/2009	<u>366</u>	Proposed Order re <u>364</u> Letter,, <i>[PROPOSED] ORDER APPOINTING SPECIAL MASTER</i> by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)
05/05/2009	<u>367</u>	MOTION to Seal <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5)</i> filed by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)
05/05/2009	<u>368</u>	Declaration in Support of <u>367</u> MOTION to Seal <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5) DECLARATION OF WILLIAM J. UTERMOHLEN IN SUPPORT OF PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5)</i> filed by Seiko Epson Corporation. (Related document(s) <u>367</u>) (van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)
05/05/2009	<u>369</u>	Proposed Order re <u>367</u> MOTION to Seal <i>PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5) [PROPOSED] ORDER GRANTING PLAINTIFF SEIKO EPSON CORPORATION'S ADMINISTRATIVE MOTION TO FILE DOCUMENTS UNDER SEAL (L.R. 79-5)</i> by Seiko Epson Corporation. (van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)
05/05/2009	<u>370</u>	CERTIFICATE OF SERVICE by Seiko Epson Corporation re <u>364</u> Letter,, <i>PROOF OF SERVICE BY FEDERAL EXPRESS</i> (van Keulen, Susan) (Filed on 5/5/2009) (Entered: 05/05/2009)
05/06/2009	<u>371</u>	ORDER by Judge Marilyn Hall Patel granting <u>367</u> plaintiff's Motion to Seal Exhs A,E, and N re 5/5/2009 Joint letter (awb, COURT STAFF) (Filed on 5/6/2009) (Entered: 05/06/2009)
05/06/2009	372	EXHIBITS A, E and N re 5/5/09 Joint Letter filed by Epson Research and Development, Inc., Epson America, Inc., Seiko Epson Corporation. FILED UNDER SEAL (gba, COURT STAFF) (Filed on 5/6/2009) (Entered: 05/07/2009)
05/15/2009	<u>373</u>	OPINION by Judge Marilyn Hall Patel: Defendants/counter-claimants' motion to invalidate claims 1 and 2 of the '158 patent is GRANTED on the basis of anticipation. Defendants/counter-claimants' motion to invalidate claim 5 of the 158 patent is GRANTED on the basis of obviousness. Defendants/counter-claimants motion to invalidate claims 1, 3, 4, 7, 9 and 10 of the 392 patent is GRANTED on the basis of obviousness. Plaintiff/counter-defendants motion to invalidate claims 1, 2, 3, 7, 9 and 11 of the 899 patent is GRANTED on the basis of obviousness. (awb, COURT STAFF) (Filed on 5/15/2009) (Entered: 05/15/2009)
05/26/2009	<u>374</u>	MEMORANDUM AND ORDER DENYING defendants' Motion for Leave to File Reconsideration Motion; Signed by Judge Marilyn Hall Patel on 5/22/2009. (awb, COURT STAFF) (Filed on 5/26/2009) (Entered: 05/26/2009)

05/26/2009	<u>375</u>	JUDGMENT; Signed by Judge Marilyn Hall Patel on 5/22/2009. (awb, COURT STAFF) (Filed on 5/26/2009) (Entered: 05/26/2009)
06/24/2009	<u>376</u>	NOTICE OF APPEAL as to <u>374</u> Order Dismissing Case, <u>375</u> Judgment by Epson America, Inc., Epson Research and Development, Inc., Seiko Epson Corporation. Filing fee \$ 455; Receipt No. 34611033628. (slh, COURT STAFF) (Filed on 6/24/2009) (Entered: 06/29/2009)
06/24/2009	<u>377</u>	CERTIFICATE OF SERVICE by Epson America, Inc., Epson Research and Development, Inc., Seiko Epson Corporation re <u>376</u> Notice of Appeal. (slh, COURT STAFF) (Filed on 6/24/2009) (Entered: 06/29/2009)
06/24/2009	<u>378</u>	Transmission of Notice of Appeal and Docket Sheet to US Court of Appeals for the Federal Circuit re <u>376</u> Notice of Appeal. (slh, COURT STAFF) (Filed on 6/24/2009) (Entered: 06/29/2009)
06/25/2009	<u>379</u>	NOTICE OF APPEAL as to <u>374</u> Order Dismissing Case, <u>375</u> Judgment by Coretronic Corporation. Filing fee \$ 455; Receiept No. 34611033638. (slh, COURT STAFF) (Filed on 6/25/2009) (Entered: 06/29/2009)
06/25/2009	<u>380</u>	Transmission of Notice of Appeal and Docket Sheet to US Court of Appeals for the Federal Circuit re <u>379</u> Notice of Appeal. (slh, COURT STAFF) (Filed on 6/25/2009) (Entered: 06/29/2009)
06/29/2009		Copy of Notices of Appeal and Docket sheet mailed to all counsel (slh, COURT STAFF) (Filed on 6/29/2009) (Entered: 06/29/2009)
07/09/2009	<u>381</u>	Transcript Designation and Ordering Form filed by Coretronic Corporation. (slh, COURT STAFF) (Filed on 7/9/2009) (Entered: 07/10/2009)
07/10/2009	<u>382</u>	Transcript Designation and Ordering Form for proceedings held on 00/00/00 before Judge Marilyne H. Patel, re <u>376</u> Notice of Appeal Transcript due by 7/20/2009. (Moore, James) (Filed on 7/10/2009) (Entered: 07/10/2009)
07/20/2009	<u>383</u>	Acknowledgment of Receipt re <u>376</u> Notice of Appeal from USCA Federal Circuit. (slh, COURT STAFF) (Filed on 7/20/2009) (Entered: 07/21/2009)
07/27/2009	<u>384</u>	USCA Case Number 2009-1439,-1440 for <u>379</u> Notice of Appeal filed by Coretronic Corporation <u>376</u> Notice of Appeal filed by Seiko Epson Corporation, Epson America, Inc., Epson Research and Development, Inc.. (gba, COURT STAFF) (Filed on 7/27/2009) (Entered: 07/30/2009)
08/02/2010	<u>385</u>	USCA JUDGMENT Affirmed in Part, Vacated in Part and REMANDED as to <u>379</u> Notice of Appeal filed by Coretronic Corporation, <u>376</u> Notice of Appeal filed by Seiko Epson Corporation, Epson America, Inc., Epson Research and Development, Inc. (gba, COURT STAFF) (Filed on 8/2/2010) (Entered: 08/03/2010)
08/03/2010	<u>386</u>	CLERKS Letter Spreading Mandate to Counsel (gba, COURT STAFF) (Filed on 8/3/2010) (Entered: 08/03/2010)
08/24/2010	<u>387</u>	CLERKS NOTICE: Further Case Management Conference set for 9/20/2010 03:00 PM in Courtroom 15, 18th Floor, San Francisco before the Hon. Marilyn Hall Patel; Joint supplemental Case Management Statement due by

		9/13/2010. (awb, COURT STAFF) (Filed on 8/24/2010) (Entered: 08/24/2010)
08/30/2010	<u>388</u>	NOTICE of Change of Address by Elizabeth Hannah Rader (Rader, Elizabeth) (Filed on 8/30/2010) (Entered: 08/30/2010)
09/13/2010	<u>389</u>	JOINT CASE MANAGEMENT STATEMENT (<i>SUPPLEMENTAL</i>) filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B)(van Keulen, Susan) (Filed on 9/13/2010) (Entered: 09/13/2010)
09/22/2010	<u>390</u>	Minute Entry: Further Case Management Conference held on 9/20/2010 before Hon. Marilyn Hall Patel (Date Filed: 9/22/2010); Motions to be filed by 10/4/2010; Responses due by 10/18/2010; Replies due by 10/25/2010; Motion Hearing set for 11/15/2010 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Court Reporter Kathy Wyatt.) (awb, COURT STAFF) (Date Filed: 9/22/2010) (Entered: 09/22/2010)
09/23/2010	<u>391</u>	Transcript of Proceedings held on 9-20-10, before Judge Marilyn Hall Patel. Court Reporter/Transcriber Katherine Wyatt, Telephone number 925-212-5224. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 12/22/2010. (kpw, COURT STAFF) (Filed on 9/23/2010) (Entered: 09/23/2010)
09/23/2010		***Deadlines terminated. Case Management Statement Due date of 09/13/2010 Date Terminated <u>387</u> Clerks Notice. (gba, COURT STAFF) (Filed on 9/23/2010) (Entered: 09/23/2010)
10/04/2010	<u>392</u>	MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158</i> filed by Coretronic Corporation, Optoma Technology, Inc.. Motion Hearing set for 11/15/2010 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Rader, Elizabeth) (Filed on 10/4/2010) (Entered: 10/04/2010)
10/04/2010	<u>393</u>	Declaration of Elizabeth H. Rader in Support of <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5)(Related document(s) <u>392</u>) (Rader, Elizabeth) (Filed on 10/4/2010) (Entered: 10/04/2010)
10/04/2010	<u>394</u>	*** FILED IN ERROR. PLEASE SEE DOCKET # <u>402</u> . *** Declaration of Catharina R. Biber, Ph.D. in Support of <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158</i> filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G)(Related document(s) <u>392</u>) (Rader, Elizabeth) (Filed

		on 10/4/2010) Modified on 10/19/2010 (ewn, COURT STAFF). (Entered: 10/04/2010)
10/08/2010	<u>395</u>	NOTICE of Appearance by Anne Elizabeth Huffsmith <i>SEIKO EPSON CORPORATION'S NOTICE OF APPEARANCE OF ANNE E. HUFFSMITH</i> (Huffsmith, Anne) (Filed on 10/8/2010) (Entered: 10/08/2010)
10/08/2010	<u>396</u>	Letter from WILLIAM J. UTERMOHLEN REGARDING APPOINTMENT OF SPECIAL MASTER. (Huffsmith, Anne) (Filed on 10/8/2010) (Entered: 10/08/2010)
10/12/2010	<u>397</u>	STIPULATION <i>STIPULATED REQUEST TO ENLARGE TIME FOR SEIKO EPSON CORPORATION TO FILE OPPOSITION TO CORETRONIC AND OPTOMA'S RENEWED MOTION FOR SUMMARY JUDGMENT</i> by Seiko Epson Corporation. (Huffsmith, Anne) (Filed on 10/12/2010) (Entered: 10/12/2010)
10/12/2010	<u>398</u>	Declaration of WILLIAM J. UTERMOHLEN in Support of <u>397</u> Stipulation <i>Stipulated Request to Enlarge Time for Seiko Epson Corporation to File Opposition to Coretronic and Optoma's Renewed Motion for Summary Judgment</i> filed by Seiko Epson Corporation. (Related document(s) <u>397</u>) (Huffsmith, Anne) (Filed on 10/12/2010) (Entered: 10/12/2010)
10/18/2010	<u>399</u>	MOTION to Strike <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE CORETRONIC'S REVISED FINAL INVALIDITY CONTENTIONS AND PORTIONS OF ITS SUMMARY JUDGMENT BRIEF</i> filed by Seiko Epson Corporation. Motion Hearing set for 11/22/2010 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (Huffsmith, Anne) (Filed on 10/18/2010) (Entered: 10/18/2010)
10/18/2010	<u>400</u>	Declaration of William Utermohlen in Support of <u>399</u> MOTION to Strike <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR</i> filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5) (Related document(s) <u>399</u>) (Huffsmith, Anne) (Filed on 10/18/2010) (Entered: 10/18/2010)
10/18/2010	<u>401</u>	Proposed Order re <u>399</u> MOTION to Strike <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR</i>

		<i>MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR by Seiko Epson Corporation. (Huffsmith, Anne) (Filed on 10/18/2010) (Entered: 10/18/2010)</i>
10/18/2010	<u>402</u>	Declaration of Catharina R. Biber, Ph.D. in Support of <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 filed by Coretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B, # <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G)(Related document(s) <u>392</u>) (Rader, Elizabeth) (Filed on 10/18/2010) (Entered: 10/18/2010)
10/19/2010	<u>403</u>	STIPULATION AND ORDER extending time to 10/25/2010 for plaintiff to file responsive pleading; Signed by Judge Marilyn Hall Patel on 10/18/2010. (awb, COURT STAFF) (Filed on 10/19/2010) (Entered: 10/19/2010)
10/19/2010	<u>404</u>	AMENDED Motion to Strike re <u>392</u> Motion for Summary Judgment by Seiko Epson Corporation re <u>399</u> MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR MOTION to Strike <u>392</u> MOTION for Summary Judgment Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158 PLAINTIFF SEIKO EPSON CORPORATION'S MOTION TO STRIKE COR (Huffsmith, Anne) (Filed on 10/19/2010) Modified on 10/21/2010 (gba, COURT STAFF). (Entered: 10/19/2010)
10/21/2010		Set/Reset Deadlines as to <u>404</u> MOTION to Strike. Motion Hearing set for 11/15/2010 02:00 PM in Courtroom 15, 18th Floor, San Francisco. (gba, COURT STAFF) (Filed on 10/21/2010) (Entered: 10/21/2010)
10/25/2010	<u>405</u>	Memorandum in Opposition to <u>392</u> Defendants' Second Summary Judgment Motion of Invalidity of U.S. Patent No. 6,203,158 filed by Seiko Epson Corporation. (Huffsmith, Anne) (Filed on 10/25/2010) Modified on 10/26/2010 (gba, COURT STAFF). (Entered: 10/25/2010)
10/25/2010	<u>406</u>	DECLARATION of William J. Utermohlen filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A)(Huffsmith, Anne) (Filed on 10/25/2010) (Entered: 10/25/2010)
10/25/2010	<u>407</u>	Declaration of Kurtis Keller in Support of <u>405</u> Memorandum in Opposition filed by Seiko Epson Corporation. (Attachments: # <u>1</u> Exhibit A, # <u>2</u> Exhibit B,

		# <u>3</u> Exhibit C, # <u>4</u> Exhibit D, # <u>5</u> Exhibit E, # <u>6</u> Exhibit F, # <u>7</u> Exhibit G, # <u>8</u> Exhibit H)(Related document(s) <u>405</u>) (Huffsmith, Anne) (Filed on 10/25/2010) (Entered: 10/25/2010)
11/01/2010	<u>408</u>	Memorandum in Opposition re <u>404</u> MOTION to Strike // <i>Coretronic and Optoma's Opposition to Seiko Epson Corporation's Motion to Strike Coretronic's Revised Final Invalidity Contentions and Portions of its Summary Judgment Brief</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Hu, Yitai) (Filed on 11/1/2010) (Entered: 11/01/2010)
11/01/2010	<u>409</u>	Declaration of Elizabeth H. Rader in Support of <u>408</u> Memorandum in Opposition, // <i>Declaration of Elizabeth H. Rader in Support of Coretronic and Optoma's Opposition to Seiko Epson Corporation's Motion to Strike Coretronic's Revised Final Invalidity Contentions and Portions of its Summary Judgment Brief</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Related document(s) <u>408</u>) (Rader, Elizabeth) (Filed on 11/1/2010) (Entered: 11/01/2010)
11/01/2010	<u>410</u>	Declaration of HSIN-YI (CINDY) HUANG in Support of <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Exhibit 5, # <u>6</u> Exhibit 6, # <u>7</u> Exhibit 7)(Related document(s) <u>392</u>) (Feng, Hsin-Yi) (Filed on 11/1/2010) (Entered: 11/02/2010)
11/02/2010	<u>411</u>	Reply Memorandum re <u>392</u> MOTION for Summary Judgment <i>Coretronic and Optoma's Notice of Motion and Renewed Motion for Summary Judgment of Invalidity of U.S. Patent No. 6,203,158</i> filed byCoretronic Corporation, Optoma Technology, Inc.. (Rader, Elizabeth) (Filed on 11/2/2010) (Entered: 11/02/2010)
11/05/2010	<u>412</u>	Reply to Opposition re <u>404</u> MOTION to Strike <i>Coretronic's Revised Final Invalidity Contentions and Portions of Its Summary Judgment Brief</i> filed bySeiko Epson Corporation. (Huffsmith, Anne) (Filed on 11/5/2010) (Entered: 11/05/2010)
11/09/2010		***Deadlines terminated. Response Deadline date of 10/18/2010 Date Terminated: Reply Deadline date of 10/25/2010 Date Terminated: <u>390</u> Case Management Conference - Further, Set Motion and R&R Deadlines/Hearings. (gba, COURT STAFF) (Filed on 11/9/2010) (Entered: 11/09/2010)
11/15/2010	<u>413</u>	Minute Entry: Motion Hearing held on 11/15/2010 before Hon. Marilyn Hall Patel (Date Filed: 11/15/2010) <u>392</u> MOTION for Summary Judgment (Court Reporter Kathy Wyatt.) (awb, COURT STAFF) (Date Filed: 11/15/2010) (Entered: 11/15/2010)
11/23/2010	<u>414</u>	MEMORANDUM AND ORDER by Judge Marilyn Hall Patel: Defendants' motion to invalidate claims 1, 2 and 5 of the 158 patent is GRANTED on the basis of obviousness (awb, COURT STAFF) (Filed on 11/23/2010) (Entered: 11/23/2010)
11/25/2010	<u>415</u>	Transcript of Proceedings held on 11-15-10, before Judge Marilyn Hall Patel.

		Court Reporter/Transcriber Katherine Wyatt, Telephone number 925-212-5224. Per General Order No. 59 and Judicial Conference policy, this transcript may be viewed only at the Clerks Office public terminal or may be purchased through the Court Reporter/Transcriber until the deadline for the Release of Transcript Restriction. After that date it may be obtained through PACER. Any Notice of Intent to Request Redaction, if required, is due no later than 5 business days from date of this filing. Release of Transcript Restriction set for 2/23/2011. (kpw, COURT STAFF) (Filed on 11/25/2010) (Entered: 11/25/2010)
12/06/2010	<u>416</u>	MOTION for Entry of JUDGMENT UNDER RULE 58(d) filed by Seiko Epson Corporation. (Huffsmith, Anne) (Filed on 12/6/2010) Modified on 12/7/2010 (gba, COURT STAFF). (Entered: 12/06/2010)
12/07/2010	<u>417</u>	NOTICE OF APPEAL to the United States Court of Appeals for the Federal Circuit as to <u>414</u> Order on Motion for Summary Judgment, Order on Motion to Strike by Seiko Epson Corporation. Filing fee \$ 455.00., receipt number 34611053662. (gba, COURT STAFF) (Filed on 12/7/2010) (Entered: 12/07/2010)
12/07/2010	<u>418</u>	Transmission of Notice of Appeal and Docket Sheet to US Court of Appeals for the Federal Circuit re <u>417</u> Notice of Appeal, (Attachments: # <u>1</u> Notice of Appeal Notification Form) (gba, COURT STAFF) (Filed on 12/7/2010) (Additional attachment(s) added on 12/7/2010: # <u>2</u> Docket Sheet) (gba, COURT STAFF). (Entered: 12/07/2010)
12/07/2010		Copy of Notice of Appeal and Docket sheet mailed to all counsel (gba, COURT STAFF) (Filed on 12/7/2010) (Entered: 12/07/2010)
12/15/2010	<u>419</u>	USCA Case Number 2011-1120 for <u>417</u> Notice of Appeal, filed by Seiko Epson Corporation. (gba, COURT STAFF) (Filed on 12/15/2010) (Entered: 12/16/2010)
12/17/2010	<u>420</u>	NOTICE by Seiko Epson Corporation <i>Transcript Purchase Order</i> (Huffsmith, Anne) (Filed on 12/17/2010) (Entered: 12/17/2010)
01/05/2011	<u>421</u>	JUDGMENT: IT IS ORDERED AND ADJUDGED that defendant/counter-claimant CORETRONIC CORPORATION and OPTOMA TECHNOLOGY, INC.s' motions for summary judgment to invalidate claims 1, 3, 4, 7, 9 and 10 of the '392 patent and to invalidate claims 1, 2 and 5 of the '158 patent are GRANTED and the action of plaintiff/counter-defendant SEIKO EPSON CORPORATION is DISMISSED in its entirety. IT IS FURTHER ORDERED AND ADJUDGED that plaintiff/counter-defendant SEIKO EPSON CORPORATION's motion for summary judgment to invalidate claims 1, 2, 3, 7, 9 and 11 of the '899 patent is GRANTED and the counterclaim of CORETRONIC CORPORATION and OPTOMA TECHNOLOGY, INC. for infringement of the '899 patent is DISMISSED in its entirety.. Signed by Judge Marilyn Hall Patel on 1/5/2011. (awb, COURT STAFF) (Filed on 1/5/2011) (Entered: 01/05/2011)

PACER Service Center



US006203158B1

(12) **United States Patent**
Furuhata et al.

(10) **Patent No.:** **US 6,203,158 B1**
(45) **Date of Patent:** **Mar. 20, 2001**

(54) **PROJECTOR**

(75) Inventors: **Mutsuya Furuhata; Takeshi Takizawa; Motoyuki Fujimori; Akitoshi Kuroda; Shinji Haba; Kiyoshi Miyashita**, all of Suwa (JP)

5,418,586 5/1995 Fujimori et al. 353/122
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FOREIGN PATENT DOCUMENTS

(73) Assignee: **Seiko Epson Corporation**, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

0 526 653 A1 2/1993 (EP) .
7-225379 8/1995 (JP) .
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(21) Appl. No.: **09/362,660**

(22) Filed: **Jul. 29, 1999**

Related U.S. Application Data

(63) Continuation of application No. 08/943,730, filed on Oct. 3, 1997, now Pat. No. 5,951,136.

(30) Foreign Application Priority Data

Oct. 4, 1996 (JP) P8-264951
Oct. 28, 1996 (JP) P8-285690
Aug. 26, 1997 (JP) P9-229541

(51) Int. Cl.⁷ **G03B 21/00; G03B 21/26**

(52) U.S. Cl. **353/31; 353/34**

(58) Field of Search **353/31, 33, 34, 353/52, 57, 61, 122**

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Primary Examiner—Russell Adams

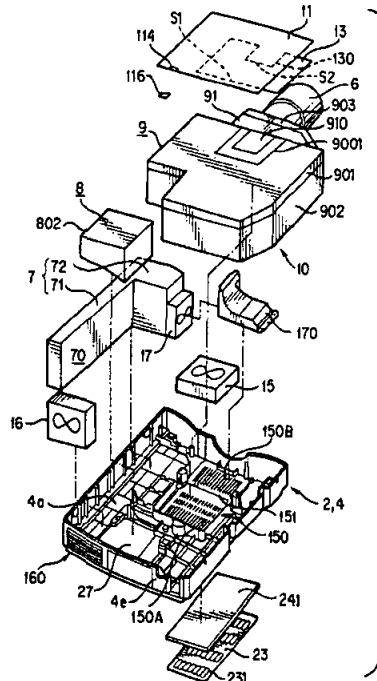
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(57) ABSTRACT

A projection display device capable of improving cooling efficiency of the power unit includes a light source lamp unit, a projection lens unit, an exhaust fan provided near the light source lamp unit for ventilating an outer case, and a ventilating path provided inside the power unit. A suction fan is provided at the inlet of the ventilating path which is connected to the cooling air intake port through a duct cover to directly conduct fresh air into the ventilating path. Because the interior of the power unit is cooled by fresh air which is cooler than the air inside the outer case, cooling efficiency is enhanced.

9 Claims, 7 Drawing Sheets



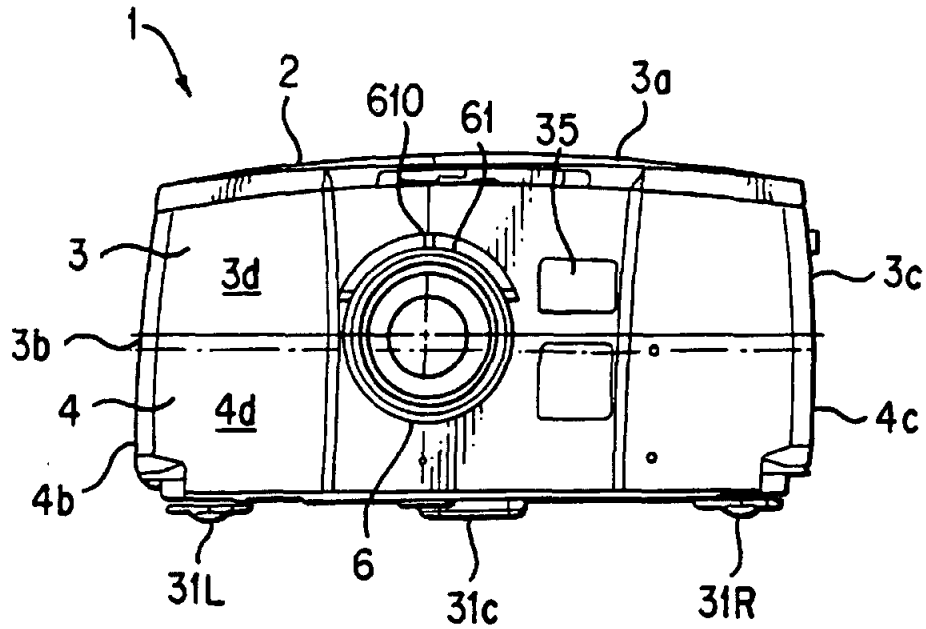


FIG. 1 (A)

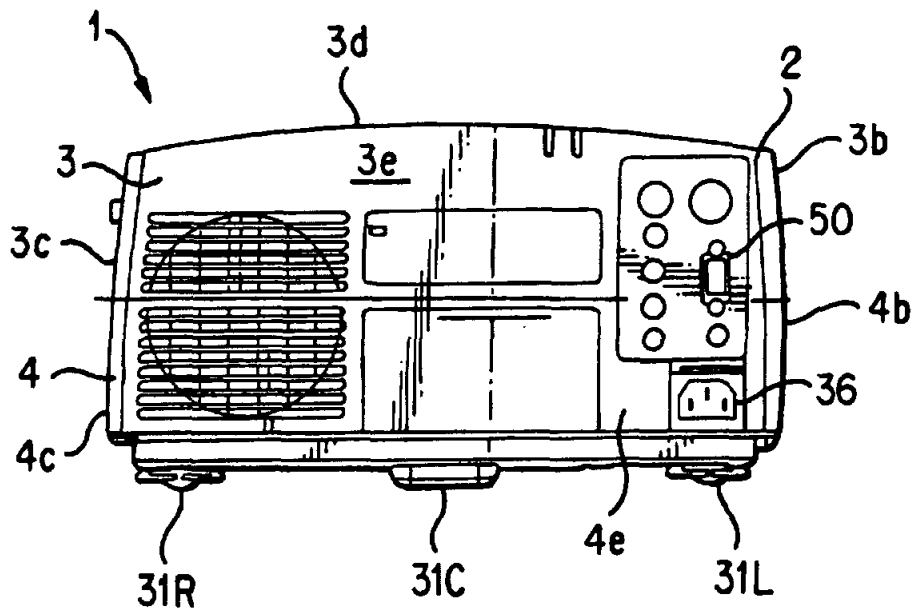


FIG. 1 (B)

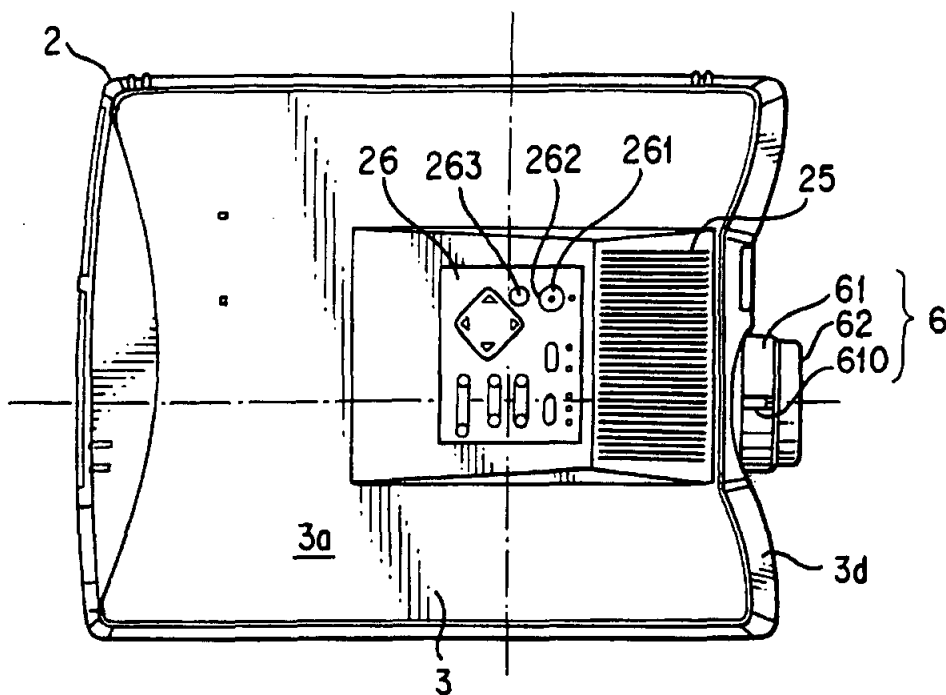


FIG. 2(A)

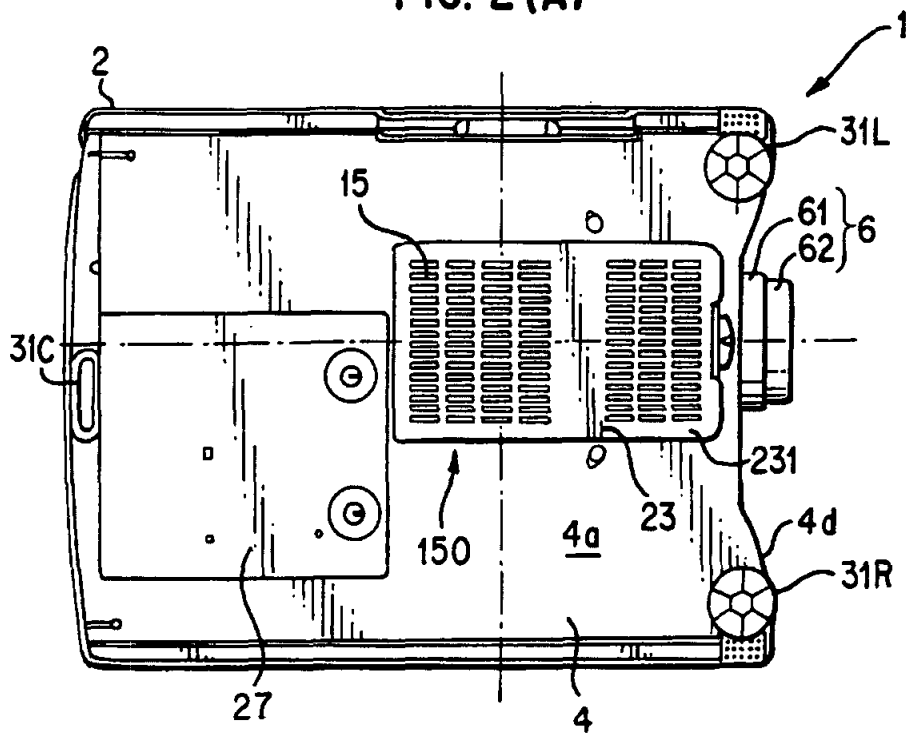


FIG. 2(B)

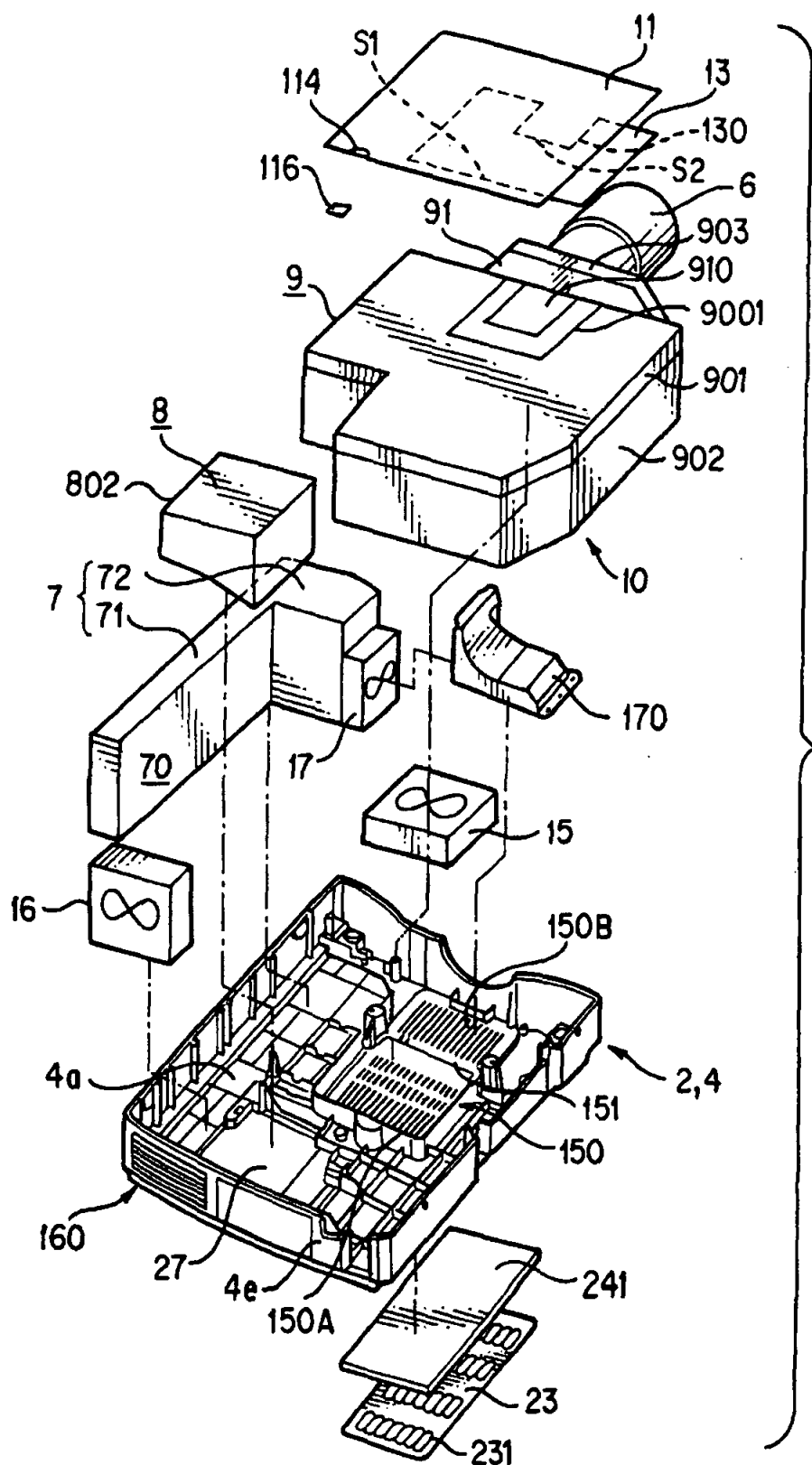


FIG. 3

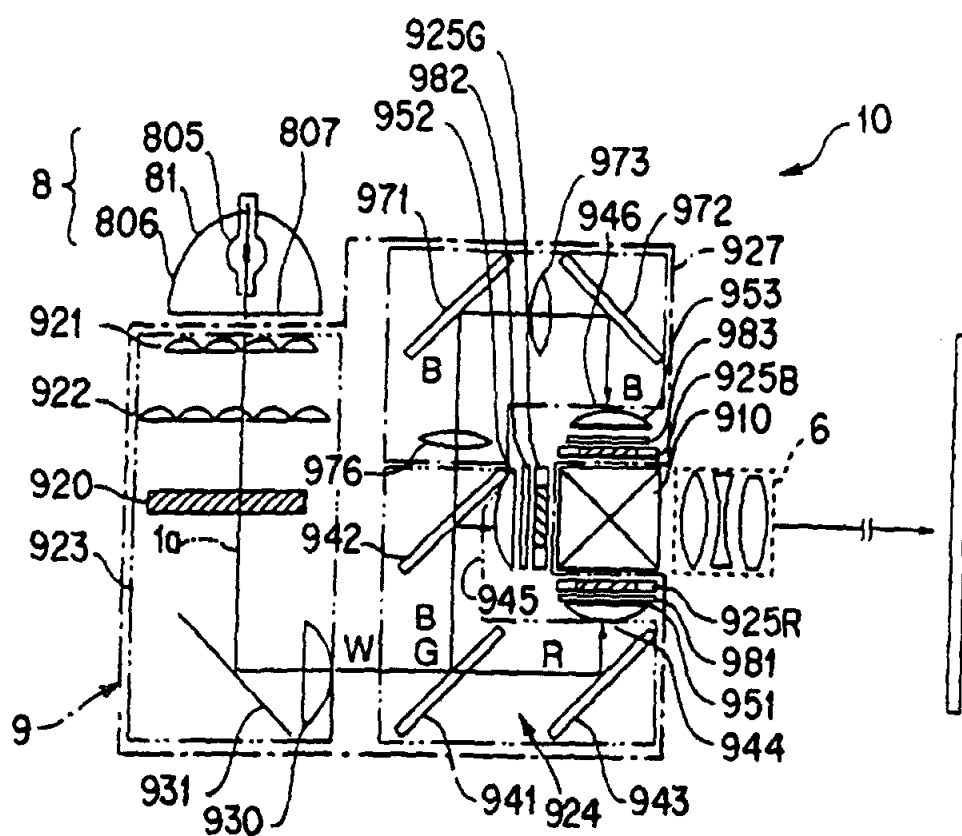
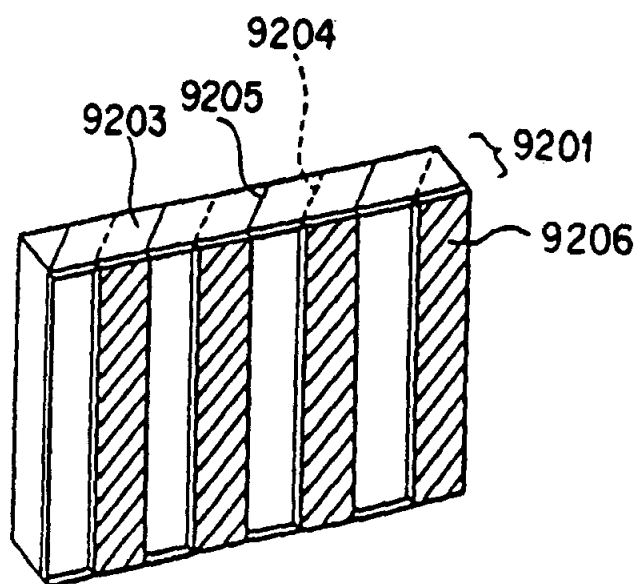
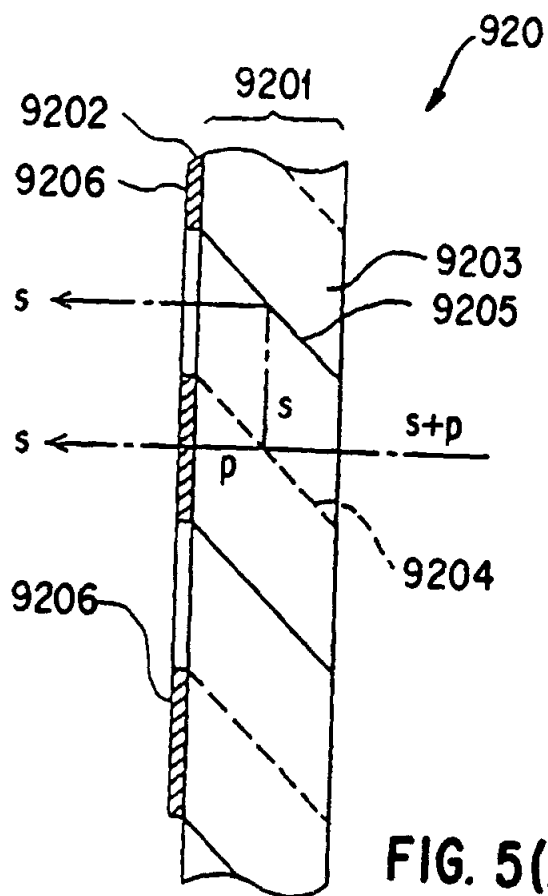


FIG. 4



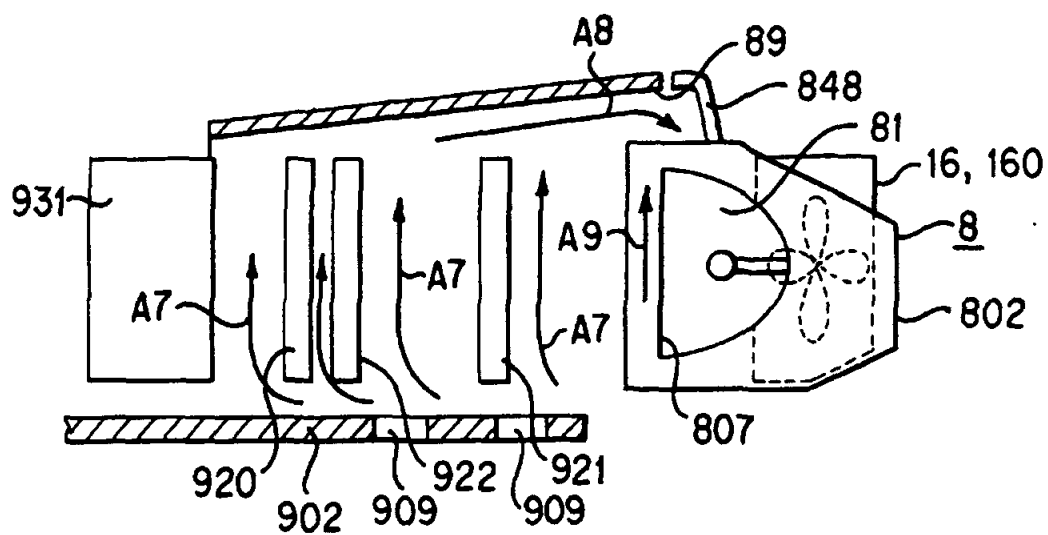


FIG. 8

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PROJECTOR

This is a Continuation of application Ser. No. 08/943,730 filed Oct. 3, 1997 now U.S. Pat. No. 5,951,136. The entire disclosure of the prior applications is hereby incorporated by reference herein in its entirety.

BACKGROUND OF THE INVENTION**1. Field of Invention**

The invention relates to a projection display apparatus which separates light beams from a light source into red, blue and green light beams. The display apparatus modulates the red, blue and green light beams through light valves provided in a liquid crystal panel in response to image information. The modulated red, blue and green light beams are combined and expansively projected through a projection lens on a projection screen. In particular, the invention relates to a cooling system for efficiently and cleanly cooling the components of a projection display device that separates, modulates combines and projects light beams.

2. Description of Related Art

Conventional projection display devices include an optical unit which optically treats light beams emitted from a light source lamp unit to synthesize a color image in response to image information. The synthesized light beams are projected on a screen through the use of a projection lens unit, a power unit, and a circuit board unit including control circuits and similar devices.

The optical unit separates light beams emitted from the light source lamp unit into red, blue and green color light beams. The optical unit modulates these color light beams with light valves provided in a liquid crystal panel in response to image information. The modulated color light beams are recombined with a cross dichroic prism or similar devices, and are projected on a screen.

Japanese Patent Publication No. 7-225379 discloses a projection display apparatus provided with a polarized light conversion device for aligning the polarization direction of light beams emitted from a light source lamp unit. The polarized light conversion device has a polarized beam splitter array provided with a plurality of sets of polarized light separating films and reflection films which are parallel to each other. The polarized beam splitter array separates incident light beams into two types of straight polarized light components, and aligns the polarization direction of these two types of straight polarized light components.

Some elements of the projection display apparatus, e.g. the polarized light conversion device and the optical unit, are stored in an outer case. A projection side of the projection lens unit is disposed in the outer case such that it protrudes from the front face of the outer case. The outer case is provided with an operating section including a power switch, a light-receiving window for remote control, and an input/output terminal group for sending and receiving signals to and from external devices.

Conventional projection display devices include optical devices in the light source lamp unit, a power unit and an optical unit, all of which are sources of heat. The liquid crystal light valves and their respective polarization plates are major heat sources because they absorb part of the transmitted light beams.

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In order to cool the heat sources, the projection display apparatus is provided with a cooling system.

The cooling system introduces fresh air into the outer case through an intake port by a suction fan. The introduced air is circulated through the outer case and exhausted through an air outlet provided on the outer case by an exhaust fan.

In such a cooling system, the power unit, which often become very hot, is provided with a suction fan to introduce the air in the outer case to the interior of the power unit for cooling.

The power unit includes a primary active filter, a power supply, and a ballast. A transmitter FET may be mounted on the circuit board of the primary active filter. A rectifier diode bridge, an oscillating transistor for a D/D converter and a triode regulator for a D/D converter may be mounted on the circuit board of the power supply. Also, devices such as a driving FET for a chopper circuit and a reverse-current preventing diode for a chopper circuit may be mounted on the circuit board of the ballast. Because these devices are heat sources, heat sinks are fixed to them to enhance cooling efficiency. Air introduced with the suction fan cools the heat sinks.

By the time that air is introduced to the power unit in the outer case, it has already been heated by many other elements located in the outer case. Thus, the air introduced to the power unit is hotter than the fresh air introduced into the outer case, and is less efficient in cooling the power unit.

Also, when the air in the outer case is drawn with the suction fan, fresh air containing dust may be introduced through openings of the outer case, e.g., the gap between the projection lens unit and the outer case. As a result, dust may adhere to the optical system and deteriorate the display quality, which reduces the reliability of the apparatus.

The polarized light conversion device is heated because the polarized light separating film and the reflection film absorb some of the incident light. The device has no separate cooling means even though it must be cooled. The polarized light conversion device is therefore cooled by the air circulating from the suction fan to the outlet. Thus, the device may not be efficiently cooled due to insufficient circulation of the cooling air in some apparatus configurations.

SUMMARY OF THE INVENTION

It is therefore an object of the invention to provide a projection display apparatus that includes a cooling system that efficiently cools the power unit and polarized light conversion device while preventing airborne debris from contaminating the apparatus.

In accordance with a first embodiment of the invention, a projection display apparatus includes an optical unit for forming an optical image in response to image information by optically treating light beams emitted from a light source lamp unit and for expansively projecting the optical image on a projection area through a projection lens. The projection display device includes a power unit with a ventilating path provided inside the power unit for circulating cooling air. An outer case stores the optical unit and the power unit. The projection display apparatus further includes a cooling air intake port formed on the outer case and a cooling air conducting means for directly conducting fresh air from

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outside the outer case from the cooling air intake port to the inlet of the ventilating path.

Because the cooling air conducting means directly conducts fresh air to the ventilating path, and because fresh air is cooler than the air in the outer case, the interior of the power unit can be cooled with high efficiency.

A ventilating fan for ventilating the interior of the outer case is preferably provided near the light source lamp unit. The air in the outer case, including the air exhausted from the ventilating path, is collected near the light source lamp unit before being exhausted to the exterior. Thus, the heated light source lamp unit can be securely cooled.

It is preferred that the cooling air conducting means include a duct section connecting the cooling air intake port and the inlet of the ventilating path. Accordingly, the duct section only introduces fresh air from the cooling air intake port to the ventilating path. The duct section also prevents the air from the outer case, which is hotter than the fresh air, from entering into the ventilating path. The interior of the power unit can therefore be more efficiently cooled.

The cooling air conducting means may also include a suction fan provided at the inlet of the ventilating path for drawing fresh air into the ventilating path. A large volume of fresh air can therefore be stably supplied to the ventilating path, and the power unit can be securely cooled with high efficiency.

The duct section securely prevents the suction fan from drawing dust into the outer case through openings in the outer case such as the gap between the projection lens unit and the outer case. Dust can therefore be prevented from adhering onto the optical system, which provides high image display quality and satisfactory reliability.

Although the power unit provided with the suction fan does not have to be located inside the outer case, the optical path from the light source lamp unit to the projection lens unit must be provided within the narrow space in the outer case of the projection display apparatus. The power unit is preferably arranged so that the suction fan is located in the free space in the outer case in order to effectively use the space in the outer case.

The projection lens may be provided so as to have an edge protrude from the outer case. The suction fan may be located on the base end of the projection lens unit, and the cooling air intake port may be formed in a region of the bottom wall of the outer case which includes the lower side of the projection lens unit.

In the optical unit, the projection lens unit may protrude from the light source lamp unit and the optical devices so that the combined light from the optical device is incident on the base end of the projection lens. When the projection lens unit is arranged so as to have a front end protrude from the outer case, a dead space is formed at the side of the base end of the projection lens.

Because the power unit has a suction fan located on the base end of the projection lens unit, the apparatus can be miniaturized as a result of the effective use of space in the outer case.

Further, because the cooling air intake port is formed in a region of the lower side of the projection lens unit, the duct section can be provided in the dead space running from the

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lower side of the projection lens unit to the side of its base end. Accordingly, space in the outer case is effectively used.

In accordance with another aspect of the invention, a projection display apparatus includes an optical unit including a light source lamp unit and a projection lens unit for forming an optical image in response to image information. The apparatus optically treats light beams emitted from the light source lamp unit and expansively projects the optical image on a projection screen through the projection lens unit. An outer case for storing the optical unit and a power unit includes a ventilating fan for ventilating the interior of the outer case near the light source lamp unit. The projection display apparatus further includes a polarized light conversion device facing an emitting surface of the light source lamp unit for separating the light beams emitted from the light source lamp unit into two types of straight polarized light components and for aligning the polarizing direction of the straight polarized light components. A ventilating path is provided inside the outer case for circulating cooling air along at least one face among a light incident face and a light emerging face of the polarized light conversion device.

Because the ventilating path circulates the cooling air along at least one face among the light incident face and the light emerging face of the polarized light conversion device, the cooling air can securely circulate near the polarized light conversion device to achieve satisfactory cooling effects regardless of the configuration of the apparatus.

A guide is preferably provided for introducing the cooling air circulated along at least one face among the light incident face and light emerging face of the polarized light conversion device to the light source lamp unit.

In such an apparatus, the guide introduces the cooling air after cooling the polarized light conversion device to the light source lamp unit to effectively cool the light source lamp unit. The lamp life is therefore prolonged, and replacement of the lamp is required less frequently.

The outer case may be provided with an operating section having a plurality of switches including a main on/off switch for main power. A protruding section may protrude from the main switch between the main switch and the switch adjacent to the main switch. Such a structure prevents erroneous operation of the main switch.

The protruding section is preferably provided along the periphery of the main switch. This structure also prevents careless contact with the main switch and thus securely prevents erroneous operation of the switch.

A circuit board may be provided on the optical unit. A temperature-sensing element may be connected to the circuit board and located near the light source lamp unit to monitor the temperature of the lamp.

Such a structure effectively monitors the temperature of the light source lamp unit while obviating wiring between the temperature-sensing element and the circuit board because the temperature-sensing element is directly mounted on the circuit board.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other aspects and advantages of the invention will become apparent from the following detailed description of preferred embodiments when taken in conjunction with the accompanying drawings, in which:

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FIG. 1(A) is a front view and FIG. 1(B) is a rear elevational view of a projection display apparatus in accordance with a preferred embodiment of the invention;

FIG. 2(A) is a top view and FIG. 2(B) is a bottom view of the projection display apparatus in accordance with the preferred embodiment of the invention;

FIG. 3 is an exploded perspective view showing the optical system and the power unit in accordance with the preferred embodiment of the invention;

FIG. 4 is a schematic representation of the optical system in accordance with the preferred embodiment of the invention;

FIG. 5(A) is a cross-sectional view and FIG. 5(B) is an isometric view of the polarized light conversion device in accordance with the preferred embodiment of the invention;

FIG. 6 is a planar cross-sectional view showing the stream of cooling air in the projection display apparatus in accordance with the preferred embodiment of the invention;

FIG. 7 is a cross-sectional view showing the stream of cooling air in the projection display apparatus in accordance with the preferred embodiment of the invention; and

FIG. 8 is a cross-sectional view showing the stream of cooling air in the projection display apparatus in accordance with the preferred embodiment of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

While the invention will hereinafter be described in connection with preferred embodiments thereof, it will be understood that it is not intended to limit the invention to those embodiments. On the contrary, it is intended to cover all alternatives, modifications and equivalents that may be included within the spirit and scope of the invention as defined by the appended claims.

For a general understanding of the features of the invention, reference is made to the drawings. In the drawings, like reference numerals have been used throughout to designate identical elements.

FIGS. 1(A) and 1(B) are a front view and a rear elevation view, respectively, of a projection display apparatus in accordance with a preferred embodiment of the invention. FIGS. 2(A) and 2(B) are a plan view and a bottom view, respectively, of the projection display apparatus in accordance with the preferred embodiment of the invention.

As shown in FIGS. 1(A)–2(B), the projection display apparatus 1 in accordance with the preferred embodiment has a rectangular parallelepiped outer case 2. The outer case 2 may include an upper case 3 and a lower case 4. The rear wall of the outer case 2 is provided with an AC inlet 36 for supplying external power to the apparatus and an input/output terminal group 50. The apparatus is user-friendly because no signal cables or similar devices are placed on the side at which users generally stand.

The upper case 3 of the outer case 2 includes a rectangular top wall 3a, left and right side walls 3b and 3c, a front wall 3d and a rear wall 3e. The front wall 3d and rear wall 3e extend vertically from the four sides of the upper wall toward the lower side. The lower case 4 includes a rectangular bottom wall 4a, left and right side walls 4b and 4c, a

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front wall 4d and a rear wall 4e. The front wall 4d and rear wall 4e vertically extend from the four sides of the bottom wall.

The front wall 3d and the front wall 4d are dented on slightly left portion of the center as shown in FIG. 2. The front end of a projection lens unit 6 extends toward the front side of the apparatus from a circular opening formed thereon, and the top of the projection lens unit protrudes from the front face of the outer case 2.

A zoom ring 61 holding a zoom lens in the protruding section of the outer case 2 has a protuberance 610, such as a linear knob, extending to the axis line direction. The zoom ring 61 and a focus ring 62 can therefore be tactily distinguished from each other and easily rotated. The protuberance 610 may be provided on the focus ring 62 as long as it does not prevent motion of the focus ring 62.

As shown in FIG. 1(A), a light-receiving window 35 is provided on the front wall 3d of the upper case 3 on the right of the projection lens unit 6. The receiving window 35 is provided for receiving control light beams passing through a remote controller not shown in the drawings.

As shown in FIG. 2(A), a number of holes 25 are formed in the center of the front side of the top wall 3a of the upper case 3. A self-contained speaker (not shown in the drawings) may be located behind the top wall 3a.

The center of the front side of the top wall 3a is also provided with an operating switch section 26. A main switch 261 for turning on/off the main power includes a protuberance section 262 provided between the main switch 261 and the adjacent switch 263 among switches formed on the operating switch section 26. The protuberance section 262 protrudes from the main switch 261 and has an arc shape along the periphery of the circular main switch 261. The protuberance is preferably located along the periphery of the main switch 261 along a 90 degree arc. Because the arc protuberance 262 protrudes from the top of the main switch 261, other switches can be operated without erroneously touching the main switch 261. Erroneous operation of the main switch can therefore be securely prevented.

A foot 31C is provided in the center of the rear end of the bottom wall 4a of the lower case 4, and feet 31R and 31L are provided on the left and right sides of the front end. The height of the left and right feet 31R and 31L, as measured from the bottom wall 4a, is adjustable by turning the feet.

FIG. 3 shows an arrangement of individual components inside the outer case 2 of the projection display apparatus 1. The outer case 2 is provided with an optical unit 10 including the above-mentioned projection lens unit 6 and a power unit 7 adjacent to each other therein. A control board 13 for controlling the apparatus and a video board 11 are stacked on the optical unit 10.

The optical unit 10 includes a light source lamp unit 8 that includes a light source lamp 81 (shown in FIG. 4) stored in a housing 802. An optical lens unit 9 optically treats the light beams emitted from the light source lamp unit 8 and forms an optical image in response to image information. A projection lens unit 6 expansively projects the optical image onto a projection screen. The optical unit 10 occupies at least the right half of the internal space of the outer case 2.

The optical lens unit 9 includes a prism unit 910 and upper and lower light guides 901 and 902 containing various

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optical devices as described below. The upper and lower light guides 901 and 902 are fixed to the upper case 3 and the lower case 4 shown in FIGS. 1(A) and 2(B), respectively, with fixing screws.

A rectangular cutout 9001 in the plan view shown in FIG. 3 is formed in the center on the front side of the light guides 901 and 902 to facilitate assembly of the prism unit 910.

The prism unit 910 is attached to a thick diecast head plate 903 formed of magnesium or aluminum, and is fixed to the light guides 901 and 902 via the head plate 903.

The head plate 903 is L-shaped which includes a vertical wall 91 along the width direction of the apparatus and a bottom wall 92 (shown in FIG. 7) horizontally extending from the bottom of the vertical wall 91. The prism unit 910 is fixed on the bottom wall 92. In the center of the vertical wall 91, a rectangular opening (not shown) is provided as a passageway for the light emerging from the prism unit 910. The base end of the projection lens unit 9 is fixed to the rectangular opening. The prism unit 910 and the projection lens unit 6 are fixed to the optical lens unit 9 so as to sandwich the stiff vertical wall 91 therebetween after the optical system is aligned. These units are therefore formed integrally, and misalignment of the optical system due to strong impact will rarely occur.

The base end of the projection lens unit 6 is located in the center of the front side of the optical lens unit 9, and a gap in response to the protruded length of the projection lens unit 6 from the outer case 2 is formed on the side of the base end, i.e., between the head plate 903 and the front walls 3d and 4d of the outer case 2.

The corner portion of the rear section of optical lens unit 9 at the side of the power unit 7 includes an indent, and the light source lamp unit 8 is assembled in the indent. That is, the light source lamp unit 8 is provided at a rectangular area formed by the rear end of the power unit 7 and the indent in the optical lens unit 9.

A lamp-replacement cover 27 is fixed with a screw to the bottom of wall 4a of the lower case 4. A lamp can be replaced by loosening the screw and removing the cover 27 to expose the light source lamp unit.

A control board 13 for controlling the apparatus is fixed with screws on the upper face of the optical lens unit 9. A video board 11 including a video signal treating circuit is provided on the control board 13.

Because the control board 13 is fixed to the upper face of the optical unit 10 with screws, the control board 13 and the optical unit 10 can be tested using external power even when the whole assembly is not completed, such as in OEM production in which the control board 13 and the optical unit 10 are fixed. The control board 13 has a cutout section 130 at a location corresponding to, and overlapping with, the prism unit 910. The boards 11 and 13 are electrically connected to each other through connectors 114 and 116.

The power unit 7 is disposed on the left side of the optical unit 10 in the left side of the outer case 2 in the rear view of the display apparatus 1 as shown in FIG. 3.

The power unit 7 has an L shape to match the shape of the space between the outer case 2 and the optical unit 10. The power unit includes a main body 71 located from the rear to the front of the apparatus and includes an extension 72

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bending from the front end of the main body 71. The extension 72 is located at the side of the base end of the projection lens unit 6.

The gap at the side of the base end of the projection lens unit 6, which increases as the protruded length of the projection lens unit 6 from the front end of the outer case 2 decreases, is filled with the extension 72 of the power unit 7. The interior of the outer case 2 is therefore effectively used to miniaturize the projection display apparatus 1.

The power unit 7 contains various electronic parts in an L-shaped metallic shield case 70. The shield case 70 acts as a ventilating path for circulating cooling air in the power unit 7. Also, the shield case 70 prevents leakage of electrical and magnetic noises generated in the power unit 7, and shields AC input and output lines accompanied with the power unit 7 to shut out noises generated from them.

The shield case 70 stores a primary active filter, a power supply, and a ballast or similar device not shown in the drawings. These devices may include circuit boards including various electronic components. For example, the circuit board of the primary active filter includes components such as a transmission FET. The circuit board of the power supply includes a rectifier diode bridge, an oscillating transistor for a D/D converter and a triode regulator for a D/D converter. The circuit board of the ballast includes a driving FET for a chopper circuit and a reverse-current preventing diode for a chopper circuit. Because these devices are heat sources, they are fixed to heat sinks to enhance cooling efficiency.

Various optical parts are densely packed in the outer case 2 so as not to form a dead space. It is therefore difficult to provide a conventional metallic chassis over the entire outer case 2. A flexible shielding sheet (not shown) can cover the entire case without forming a dead space.

The optical system assembled in the optical unit 10 is described with reference to FIG. 4. The optical system in accordance with this embodiment includes an illuminating optical system 923 that includes a light source lamp unit 8, integrator lenses 921 and 922 and a polarized light conversion device 920. The optical system includes a color-separating optical system 924 for separating the light beams W emerging from the illuminating optical system 923 into red (R), green (G) and blue (B) light beams. Three liquid crystal light valves 925R, 925G and 925B modulate the color light beams. A prism unit 910 recombines the modulated light beams and a projection lens unit 6 expansively projects the recombined light beams on a screen.

The light source lamp 81 of the light source lamp unit 8 is provided with a lamp 805 such as a halogen lamp, a reflector 806 and a glass face 807 adhered to the front surface of the reflector 806. The light source lamp 81 is stored in a housing 802 so as to expose the glass face 807 (see FIGS. 3 and 8). The light from the lamp 805 emerges toward the integrator lens 921 of the optical lens unit 9 through the glass face 807 in the direction perpendicular to the direction of the apparatus 1.

The light source lamp 81 may be a halogen lamp, a metal halide lamp, a xenon lamp or the like.

The illuminating optical system 923 includes two integrator lenses 921 and 922, each of which includes a matrix of fine lenses. A polarized light conversion device 920 is

disposed parallel to the integrator lenses 921 and 922 and a collective lens 930 is disposed perpendicular to the polarized light conversion device 920. A reflection mirror 931 is provided in front of the collective lens 930, i.e., between the polarized light conversion device 920 and the collective lens 930. The reflection mirror 931 perpendicularly reflects the central optical axis 1a from the light source lamp 81 toward the front section of the apparatus.

The integrator lens 921 divides the light beams from the light source lamp unit 8 into a plurality of partial light beams which are collected near the integrator lens 922.

The integrator lens 922 arranges central optical paths of partial light beams from the integrator lens 921 so as to be parallel to the optical axis 1a. When light beams from the light source lamp unit 8 are perfectly parallel to the optical axis 1a, the central optical path of each partial light beam from the integrator lens 921 is also parallel to the optical axis 1a. Therefore, the integrator lens 922 may be omitted when the light beams from the light source lamp unit 8 are highly parallel to the optical axis 1a.

The collective lens 930 collects partial light beams onto the light valves 925R, 925G and 925B.

As described above, in the projection display apparatus 1 in accordance with this embodiment, the light beams from the light source lamp unit 8 are divided into a plurality of partial light beams with the integrator lens 921. The partial light beams are collected onto the liquid crystal light valves 925R, 925G and 925B by the collective lens 930. Therefore, the liquid crystal light valves 925R, 925G and 925B can be illuminated with substantially uniform light, resulting in an image having less irregular illumination.

The polarized light conversion device 920 includes an integration of a polarized light separation film and a $\lambda/2$ phase plate in which the incident light is separated into P-polarized light and S-polarized light and then unified into S-polarized light. As shown in FIG. 5, the polarized light conversion device 920 is provided with a polarized beam splitter array 9201 and a selective phase plate 9202. The polarized beam splitter array 9201 includes a plurality of pillar transparent plates 9203 each bonded to each other and having a cross-section in the form of a parallelogram. Polarized light separation films 9204 and reflection films 9205 are alternately disposed between the transparent plates. The polarized beam splitter array 9201 is made by bonding a plurality of glass plates having these films so as to alternately arrange the polarized light separation films 9204 and reflection films 9205. The glass plates are obliquely cut at a given angle.

The unpolarized light from the integrator lenses 921 and 922 (shown in FIG. 4) is separated into S-polarized light and P-polarized light with the polarized light separation film 9204. The S-polarized light is substantially vertically reflected by the polarized light separation film 9204 and vertically reflected by the reflection film 9205. The P-polarized light passes through the polarized light separation film 9204. The selective phase plate 9202 comprises a $\lambda/2$ phase layer 9206 formed on the surface of the transparent plate 9203 which transmits the light passing through the polarized light separation film 9204. The $\lambda/2$ phase layer is not formed on the surface of the transparent plate 9203

which transmits the light reflected from the reflection film 9205. The P-polarized light passing through the polarized light separation film 9204 therefore emerges after being converted to S-polarized light by the $\lambda/2$ phase layer 9206. As a result, substantially S-polarized light beams emerge from the polarized light conversion device 920.

The use of only the S-polarized light improves color separation characteristics of dichroic mirrors 941 and 942 (shown in FIG. 4) of the color separating optical system 924 described below in relation to use of unpolarized light. Further, the S-polarized light has a higher reflectance than that of the P-polarized light to the mirror, and thus light loss by reflection can be suppressed.

Referring to FIG. 4, the color separating optical system 924 includes a blue and green light reflecting dichroic mirror 941, a green light reflecting dichroic mirror 942 and a reflection mirror 943.

In the color separating optical system 924, light beams (W) are radiated to the blue and green light reflecting dichroic mirror 941, and the red light beam passing through the mirror 941 is perpendicularly reflected by a rear reflection mirror 943 and emerges from a red light emerging section 944 toward a prism unit 910.

Blue light beams (B) and green light beams (G) in the light beams (W) are perpendicularly reflected by the blue and green light reflecting dichroic mirror 941 toward the green light reflecting dichroic mirror 942. Only green light beams are perpendicularly reflected by the green light reflecting dichroic mirror 942 and emerge from a green light emerging section 945 toward the prism unit 910. The blue light beams (B) passing through the green light reflecting dichroic mirror 942 emerge from a blue light emerging section 946 through a light-guiding system 927 toward the prism unit 910.

The light-guiding system 927 leads the blue light beams (B) to the corresponding liquid crystal light valve 925B and includes an incident side reflection mirror 971, an emerging side reflection mirror 972, an intermediate lens 973 provided therebetween and a collective lens 976 provided ahead of the incident side reflection mirror 971. The distance to the blue (B) light emerging section 946 is the longest among distances from the illuminating optical system 923 to red (R), green (G) and blue (B) light emerging sections 944, 945 and 946. Provision of the light-guiding system 927 prevents light loss.

Red (R) and blue (B) light emerging sections 944 and 945 of the color separating optical system 924 are provided with collective lenses 951 and 952, respectively. Red light beams (R) and green light beams (G) emerging from their respective emerging sections 944 and 945 are paralleled by their respective collective lenses 951 and 952.

Parallel red light beams (R) and green light beams (G) are incident on liquid crystal light valves 925R and 925G through polarizing plates 981 and 982 and are modulated into image information. A driving means (not shown) switches the light valves 925R and 925G in response to the image information to modulate color light beams passing through.

As with the red and green light beams (R) and (G), the blue light beams (B) passing through the light-guiding

system 927 are paralleled by the collective lens 953 provided at the blue (B) light emerging section 946. The blue light beams are incident on the liquid crystal valve 925B through a polarizing plate 983, and are modulated in response to the image information.

The liquid crystal valves 925R, 925G and 925B may use a polysilicon TFT as a switching device.

The modulated color light beams from the liquid crystal panels 925R, 925G and 925B are incident on the prism unit 910, which includes a dichroic prism, and are recombined. The recombined color image is expansively projected through the projection lens unit 6 onto a projection screen provided at a given position.

In the optical unit 10 in accordance with this embodiment, the illuminating optical system 923, the color separating optical system 924, the liquid crystal light valves 925R, 925G and 925B, the polarizing plates 981 to 983, and the light-guiding system 927 are arranged in the above-mentioned light guides 901 and 902 (shown in FIG. 3) after the optical axis is aligned.

In this embodiment, light beams emitted from the light source lamp unit 8 are reflected by the reflection mirror 931, travel a long L-shaped optical path and reach the prism unit 910 through the color separating optical system 924. The optical path is therefore preferred to be as long as possible, since individual optical parts are arranged in the narrow region. Thus, the light beams from the light source lamp unit 8 are paralleled and transmitted to the liquid crystal valves 925R, 925G, and 925B while lenses having low F values are used and positioning space of the integrator lenses 921 and 922 and the polarized light conversion device 920 are sufficiently secured. Since a wide space is secured for the integrator lenses 921 and 922, the number of division of the lenses can be increased. The integrator lenses 921 and 922, therefore, can be arranged close to each other, resulting in miniaturization of the apparatus.

The structure for cooling the projection display apparatus in accordance with the embodiment is described with reference to FIGS. 3, 6 and 7. In the apparatus 1, fresh air (cooling air) drawn from a cooling air intake port 150 formed in the outer case 2 is circulated in the outer case 2 to cool heat sources in the case 2. The air is exhausted from an air outlet 160 on the rear end of the outer case 2.

The cooling air intake port 150 includes a plurality of vent holes 151 formed on the bottom wall 4a of the lower case 4 shown in FIG. 3. These vent holes 151 are formed over the region 150A under the prism unit 910 and the region 150B under the base end of the projection lens unit 6.

A spongy air filter 241 covers the entire regions 150A and 150B having the vent holes 151. An air filter cover 23 is fixed with screws to the exterior of the bottom wall 4a of the lower case 4 to enclose the spongy filter 241. The air filter cover 23 also has a number of vent holes 231. The air filter is provided so as to cover both regions 150A of the optical lens unit 9 and 150B of the projection lens unit 6. A single cover structure saves labor for exchanging the air filter 241 and improves dust control.

The second half of the cooling air intake port 150, i.e., the region 150A under the prism unit 910, is provided with a suction fan 15 as shown in FIG. 7. The suction fan 15 is fixed

to the lower face of the bottom wall 92 of the head plate 903 mounting the prism unit 910. The bottom wall 92 of the head plate 903 is provided with a vent hole (not shown) for circulating the cooling air.

The first half of the cooling air intake port 150, i.e., the region 150B under the projection lens unit 6, is formed near the extension 72 of the power unit 7 which is located on the base end of the projection lens unit 6. As shown FIG. 6, the end of the extension 72, i.e., the end of the shield case 70 at the side of the projection lens unit 6, is used as an inlet for a ventilating path formed in the case 70. The rear end of the main body 71 or the end of the shield case 70 is used as an outlet of the ventilating path.

The inlet of the ventilating path is provided with an auxiliary cooling fan 17 which acts as a cooling air conducting means, i.e., a suction fan for introducing cooling air into the power unit 7. The auxiliary cooling fan 17 introduces air into the ventilating path through the inlet at the front section of the shield case 70. The air in the ventilating path is exhausted from the outlet at the rear section of the case 70.

The auxiliary cooling fan 17 and the region 150B under the projection lens unit 6 are connected to each other by a duct cover 170. The duct cover 170 forms a duct section defining an air path as shown in FIG. 3 to directly introduce fresh air from the cooling air intake port 150 to the power unit 7.

An air outlet 160 with an exhaust fan 16 are provided at the rear end of the apparatus, i.e., behind the power unit 7 and the light source lamp unit 8. The air outlet is provided at the rear end of the apparatus so that air is not exhausted onto users. The exhaust fan 16 is attached to the housing 802 so as to cover the opening formed on the side face of the housing 802 of the light source lamp unit 8 and exhausts the air in the outer case 2 through the housing 802.

In the above-mentioned projection apparatus 1, the cooling air intake port 150 may include a suction fan 15 provided under the prism unit 910. The prism unit 910 may be surrounded on three sides with liquid crystal light valves 925R, 925G and 925B at given distances. The front side of the prism unit 910 faces the projection lens unit 6. The control board 13 covers the upper face of the optical unit 10 and has a cutout section 130 at the position corresponding to the prism unit 910. A video board 11 may be overlaid upon the control board 13.

Air introduced from the cooling air intake port 150 is drawn to the exhaust fan 16 and rises along the side faces of the prism unit 910 as shown by arrow A1 of FIG. 7 to cool the prism unit 910, the liquid crystal valves 925R, 925G and 925B, and the polarizing plates 981-983. The cooling air that reaches the upper portion of the prism unit 910 is drawn by the exhaust fan 16 toward the light source lamp unit 8 through the space between the video board 11 and the control board 13, as shown by arrow A2 in FIG. 7. The air cools the light lamp unit 8 and is exhausted from the air outlet 160. The circuits on the boards 11 and 13 can therefore be cooled by the cooling air introduced from the bottom wall of the outer case 2 to the air path. Because the cooling air cools the hot light source lamp unit 8 after cooling the boards 11 and 13, a high cooling efficiency can be achieved.

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The cooling air from the cooling air intake port 150 provided at the bottom wall of the outer case 2 cools at least the prism unit 910, the liquid crystal light valves 925R, 925G and 925B, the polarizing plates 981-983 and the light source lamp unit 8. Because these parts are densely arranged in the narrow region, they can be effectively cooled, resulting in improved reliability of the optical elements.

The cooling air (fresh air) is also drawn from the cooling air intake port 150 by means of the auxiliary cooling fan 17 provided on the power unit 7. The air is introduced into the power unit 7 through the duct cover 170, i.e., the ventilating path in the shield case 70 as shown by arrow A3 of FIG. 6. The cooling air is drawn by the exhaust fan 16 through the interior of the power unit 7 from the extension 72 to the main body 71 in order to cool the power unit 7, and is exhausted from the air outlet 160.

The heat sinks provided on the electronic components in the power unit 7 must also be cooled. Because the cooling air (fresh air) from the cooling air intake port 150 is directly introduced to the ventilating path in the shield case 70, the heat sinks can be effectively and securely cooled. Direct supply of the low-temperature fresh cooling air to the power unit 7 efficiently dissipates heat from the heat sinks as compared with the introduction of air that has already cooled other parts.

Because the auxiliary cooling fan 17 and the first half of the cooling air intake port 150 are connected to each other through the duct cover 170, only fresh air can be introduced from the exterior of the outer case 2 to the ventilating path in the shield case 70. Thus, the power unit 7 is efficiently cooled.

The use of the auxiliary cooling fan 17 enables a stable supply of a large volume of fresh air to the ventilating path, ensuring efficient cooling of the power unit 7.

Further, the auxiliary cooling fan 17 is connected to the cooling air intake port 150 through the duct cover 170. Such a configuration securely prevents dust from being sucked through the space between the projection lens unit 6 and the outer case 2 when the fan 17 is operated. Dust is prevented from adhering onto the optical system and a high quality display image is obtained with high reliability.

As shown in FIGS. 3 and 6, temperature-sensing elements S1 and S2 are directly mounted on the control board 13 near heating sources, i.e., the prism unit 910, the liquid crystal light valves 925R, 925G and 925B, and the light source lamp unit 8. The temperature sensing elements S1 and S2 monitor extraordinary temperature fluctuations of the air heated by the heat sources. Direct mount of the temperature-sensing elements S1 and S2 on the control board 13 eliminates the need for additional wiring.

In the optical unit 10 in this embodiment as shown in FIG. 8, ventilating paths that include vertical gaps are provided between the two integrator lenses 921 and 922 and between the integrator lens 922 and the polarized light conversion device 920. A plurality of intake ports 909 are provided at regions below the integrated lenses 921 and 922 and the polarized light conversion device 920. These gaps and intake ports 909 form optical paths which also circulate cooling air along at least one face of the light incident face and the light emerging face of each of the integrator lenses 921 and 922 and the polarized light conversion device 920.

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A guide plate 89 is provided above the integrator lenses 921 and 922 and the polarized light conversion device 920 to introduce cooling air. The cooling air is circulated along at least one face of the light incident face and the light emerging face of each optical element to a hood 848 which is provided on a housing 802 of the light source lamp unit 8.

The integrator lenses 921 and 922 and the polarized light conversion device 920 are cooled with the cooling air drawn from the cooling air intake port 150 by the suction fan 15.

The cooling air introduced from the cooling air intake port 150 into the outer case 2 is drawn by the exhaust fan 16 provided behind the light source lamp unit 8 and introduced into the optical lens unit 9 through the intake ports 909 of the lower light guide 902. The cooling air rises in the ventilating paths along the light incident face and emerging face of the integrator lenses 921 and 922 and the polarized light conversion device 920 as shown by arrows A7 of FIG. 8.

Because the polarized light conversion device 920 partially absorbs incident S-polarized light through the polarized light separation film 9204 and the reflection film 9205 (see FIG. 5), it becomes heated. Accordingly, ventilating paths are provided along the polarized light conversion device 920 to securely cool it with circulating cooling air.

The cooling air which rises between the polarized light conversion device 920 and the integrator lenses 921 and 922 is introduced to the hood 848 of the housing 802 along the guide plate 89, as shown by arrow A8 of FIG. 8. The air that has risen then enters into the housing 802 to cool the light source lamp 81 and is exhausted via the air outlet 160.

Because the cooling air which cools the polarized light conversion device 920 and the integrator lenses 921 and 922 is conducted to the light source lamp unit 8 by the guide plate 89, it can securely and effectively cool the light source lamp unit 8.

A portion of the cooling air that is introduced into the optical lens unit 9 is drawn toward the light source lamp unit 8 by the exhaust fan 16 and rises along the glass face 807 of the light source lamp unit 81 to cool the glass face 807, as shown by arrow A9 of FIG. 8. The air which cools the glass face 807 is drawn into the housing 802 through the hood 848 of the housing 802 and is also drawn into the gaps between the light source lamp 81 and the housing 802 to cool the light source lamp 81. The air is then exhausted through the air outlet 160.

Accordingly, the light source lamp 81 and the optical elements are efficiently maintained at a cool temperature, resulting in more reliability for the lamp 81 and the optical elements and requiring less frequent changing of the light source lamp 81.

Although the above-mentioned embodiment describes an apparatus in which the inlet of the ventilating path of the power unit 7 is formed on the end face of the shield case 70 at the side of the projection lens unit 6, the inlet may be provided on many alternative surfaces, for example, on the front side face of the shield case at the projection face. In this case, the cooling air intake port may be provided on the side face of the outer case 2 at the projection face side to directly connect the cooling air intake port with the inlet of the ventilating path.

15

The power unit 7 is cooled with great efficiency because a cooling air conducting means is provided for directly introducing fresh air into a ventilating path provided inside the power unit. Direct introduction of fresh air into the ventilating path permits cooling of the interior of the power unit by fresh air, which is cooler than the air in the outer case 2, and accordingly results in greater cooling efficiency.

Also, a ventilating path is provided to direct the cooling air along the polarized light conversion device in the outer case 2. The ventilating path securely circulates the cooling air near the polarized light conversion device regardless of the structure of the projection display apparatus, resulting in a satisfactory cooling effect.

While the invention has been described in conjunction with specific embodiments thereof, it is evident that many alternatives, modifications and variations may be apparent to those skilled in the art. Accordingly, the preferred embodiments of the invention as set forth herein are intended to be illustrative, not limiting. Various changes may be made without departing from the spirit and scope of the invention as defined in the following claims.

What is claimed is:

1. A projector, comprising:

an optical unit including a light source lamp and a projection lens, the optical unit forming an optical image in response to image information by optically treating light beams emitted from the light source lamp and expansively projecting the optical image through the projection lens;

a power unit including a ventilating path provided inside the power unit for circulating cooling air;

an outer case that stores the optical unit and the power unit;

a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit; and

a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the ventilating path, said second cooling air intake port comprising:

an air inlet provided on the power unit, and

a duct connecting said second cooling air intake port and the air inlet.

2. The projector according to claim 1, further including a ventilating fan that ventilates an interior portion of said outer case.

3. The projector according to claim 1, said second cooling air intake port further comprising:

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a suction fan provided at the air inlet that draws in the air.

4. The projector according to claim 3, the projection lens having an edge that protrudes from the outer case,

the suction fan being located on a base end of the projection lens in the power unit, and

the second cooling air intake port being formed in a region of a bottom wall of said outer case that includes a lower side of the projection lens.

5. A projector, comprising:

an optical unit including a light source lamp and a projection lens, the optical unit forming an optical image in response to image information by optically treating light beams emitted from the light source lamp and expansively projecting the optical image through the projection lens;

a power unit including an air inlet and an air outlet;

an outer case that stores the optical unit and the power unit;

a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit;

a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the air inlet; and

an exhaust vent provided on the outer case that directly conducts air exhausted from the air outlet to the outside of the outer case.

6. The projector according to claim 5, further including a ventilating fan provided between the air outlet and the exhaust vent.

7. The projector according to claim 5, said second cooling air intake port further comprising:

a duct connecting said second cooling air intake port and the air inlet.

8. The projector according to claim 5, said second cooling air intake port further comprising:

a suction fan provided at the air inlet that draws in the air.

9. The projector according to claim 8, the projection lens having an edge that protrudes from the outer case,

the suction fan being located on a base end of the projection lens in the power unit, and

the second cooling air intake port being formed in a region of a bottom wall of said outer case that includes a lower side of the projection lens.

* * * * *

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

SEIKO EPSON CORPORATION,

No. C 06-06946 MHP

Plaintiff,

MEMORANDUM & ORDER

v.

CORETRONIC CORPORATION and
OPTOMA TECHNOLOGY, INC.,

**Re: Claim Construction Memorandum and
Order for United States Patent Nos.
6,739,831; 6,742,899; 6,203,158; and
6,558,004.**

Defendants.

On November 6, 2006 plaintiff Seiko Epson Corporation ("Seiko" or "plaintiff") brought this action against Coretronic Corporation and Optoma Technology, Inc. (collectively "Coretronic" or "defendants") alleging infringement of U.S. Patents Nos. 6,203,158 ("the '158 patent"), 6,402,324 ("the '324 patent"),¹ 6,527,392 ("the '392 patent"), 6,558,004 ("the '004 patent") and 6,644,817 ("the '817 patent"). On November 27, 2006 defendants answered and counterclaimed. On March 21, 2007 Coretronic amended its answer and counterclaims to allege infringement of U.S. Patents Nos. 6,739,831 ("the '831 patent") and 6,742,899 ("the '899 patent"). Now before the court are the parties' claim construction briefs, filed pursuant to Patent Local Rule 4-5. Having considered the parties' arguments and submissions, and for the reasons set forth below, the court construes the disputed terms as follows.

BACKGROUND

The patents-in-suit concern projectors. Projectors generally use a high-brightness light source inside a casing to generate light, and create images by modulating that light. High-brightness light sources, however, generate large amounts of heat. Accordingly, in projector design, it is vital to use systems and devices that properly cool the lamp and surrounding areas. The inventions

disclosed in the patents-in-suit provide improvements that cool projector devices effectively and efficiently while also enhancing their lifetime, performance and reliability. Each specific patent-in-suit is discussed in greater detail in the discussion section, alongside the claims to be construed from that patent.

LEGAL STANDARD

Under Markman v. Westview Instruments, Inc., 517 U.S. 370, 389–90 (1996), the court construes the scope and meaning of disputed patent claims as a matter of law. The first step of this analysis requires the court to consider the words of the claims. Teleflex, Inc. v. Ficosca N. Am., 299 F.3d 1313, 1324 (Fed. Cir. 2002). According to the Federal Circuit, the court must “indulge a ‘heavy presumption’ that a claim term carries its ordinary and customary meaning.” CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). To determine the ordinary meaning of a disputed term, the court may review a variety of sources including the claims themselves, other intrinsic evidence such as the written description and prosecution history, and dictionaries and treatises. Teleflex, 299 F.3d at 1325. The court must conduct this inquiry not from the perspective of a lay observer, but rather “from the standpoint of a person of ordinary skill in the relevant art.” Id. (citing Zelinski v. Brunswick Corp., 185 F.3d 1311, 1316 (Fed. Cir. 1999)).

Among the sources of intrinsic evidence, the specification is “the single best guide to the meaning of a disputed term.” Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). By expressly defining terms in the specification, an inventor may “choose[] to be his or her own lexicographer,” thereby limiting the meaning of the disputed term to the definition provided in the specification. Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999). In addition, “[e]ven when guidance is not provided in explicit definitional format, ‘the specification may define claim terms ‘by implication’ such that the meaning may be ‘found in or ascertained by a reading of the patent documents.’” Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004) (quoting Bell Atl. Network Servs., Inc v. Covad Commc’ns Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001)). “The specification may also assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack

1 sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” Teleflex,
 2 299 F.3d at 1325. At the same time, the Federal Circuit has cautioned that the written description
 3 “should never trump the clear meaning of the claim terms.” Comark Comms., Inc. v. Harris Corp.,
 4 156 F.3d 1182, 1187 (Fed. Cir. 1998) (citations omitted); see also Tate Access Floors, Inc. v.
 5 Maxess Techs., Inc., 222 F.3d 958, 966 (Fed. Cir. 2000) (“Although claims must be read in light of
 6 the specification of which they are part, . . . it is improper to read limitations from the written
 7 description into a claim . . .”).

8 Likewise, the prosecution history may demonstrate that the patentee intended to deviate from
 9 a term’s ordinary and accustomed meaning. Teleflex, 299 F.3d at 1326. “Arguments and
 10 amendments made during the prosecution of a patent application and other aspects of the
 11 prosecution history, as well as the specification and other claims, must be examined to determine the
 12 meaning of terms in the claims.” Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576
 13 (Fed. Cir. 1995), cert. denied, 516 U.S. 987 (1995). “In particular, ‘the prosecution history (or file
 14 wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been
 15 disclaimed or disavowed during prosecution in order to obtain claim allowance.’” Teleflex, 299
 16 F.3d at 1326 (quoting Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985)).

17 Dictionary definitions and other objective reference materials available at the time that the
 18 patent was issued may also provide evidence of the ordinary meaning of a claim. Phillips v. AWH
 19 Corp., 415 F.3d 1303, 1322 (Fed. Cir. 2005) (en banc); Texas Digital Sys., Inc. v. Telegenix, Inc.,
 20 308 F.3d 1193, 1202 (Fed. Cir. 2002). A dictionary “has the value of being an unbiased source,
 21 accessible to the public in advance of litigation.” Phillips, 415 F.3d at 1322 (internal quotation
 22 omitted). Thus, district courts “are free to consult such resources at any time in order to better
 23 understand the underlying technology and may also rely on dictionary definitions when construing
 24 claim terms, so long as the dictionary definition does not contradict any definition found in or
 25 ascertained by a reading of the patent documents.” Vitronics, 90 F.3d at 1584 n.6. A court should
 26 be cautious, however, not to place too much reliance on dictionaries, as the resulting construction
 27 may be too broad. Phillips, 415 F.3d at 1321.

1 Federal Circuit decisions take a less favorable view of other forms of extrinsic evidence,
 2 such as expert testimony and prior art not cited in the specification or the prosecution history, noting
 3 that “claims should preferably be interpreted without recourse to extrinsic evidence, other than
 4 perhaps dictionaries or reference books, and that expert testimony should be received only for the
 5 purpose of educating the judge.” EMI Group N. Am., Inc. v. Intel Corp., 157 F.3d 887, 892 (Fed.
 6 Cir. 1998), cert. denied, 526 U.S. 1112 (1999). Although “extrinsic evidence in general, and expert
 7 testimony in particular, may be used . . . to help the court come to a proper understanding of the
 8 claims[,] it may not be used to vary or contradict the claim language Indeed, where the patent
 9 documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no
 10 weight.” Vitronics, 90 F.3d at 1584.

11 The Federal Circuit recently revisited the basic approach to claim construction in Phillips.
 12 415 F.3d 1303. Although Phillips consists largely of an affirmation of ten years of claim
 13 construction jurisprudence, it provides at least two pieces of additional guidance. First, the Federal
 14 Circuit rejected a line of cases suggesting that claim interpretation must begin with a dictionary
 15 definition of the disputed terms. Id. Second, the Federal Circuit emphasized that claim terms must
 16 be interpreted in light of their context, especially the language used in other claims and the
 17 specification. Id. at 1321. Taken as a whole, Phillips appears to signal a small retreat from
 18 formalism and bright-line rules in claim construction. As a result, the court will focus primarily on
 19 the intrinsic record before it. Cases cited by the parties in support of fixed “rules” of claim
 20 construction will accordingly be given somewhat less weight.

21 DISCUSSION

22 I. Level of Ordinary Skill

23 “Factors that may be considered in determining level of ordinary skill in the art include:
 24 (1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art
 25 solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the
 26 technology; and (6) educational level of active workers in the field.” Envtl. Designs, Ltd. v. Union
 27 Oil Co., 713 F.2d 693, 696 (Fed. Cir. 1983) (citing Orthopedic Equip. Co. v. All Orthopedic

1 Appliances, Inc., 707 F.3d 1376, 1381–82 (Fed. Cir. 1983)). These factors are not exhaustive and
 2 merely provide guidance when determining the level of ordinary skill in the art.

3 The art involved in these patents is the manipulation of the properties of light, heat and air to
 4 improve projector design and life. The parties do not seem to have an argument regarding the level
 5 of ordinary skill of one in the art. Neither party has presented a standard, nor argued for the same.
 6 Based on the factors outlined above, the court holds that one of ordinary skill in the art is: “one with
 7 a Bachelor’s degree in physics, engineering, optics or other related field who also is familiar with the
 8 design of projectors.”

10 II. Claim Construction

11 A. The ‘831 patent

12 The ‘831 patent discloses and claims a cooling device for projectors. The claims protect the
 13 heat-susceptible parts of a projector from excessive heat by using a fan to remove hot air created by
 14 the light source in the projector. ‘831 patent at 2:23–41. Specifically, the patent contemplates a
 15 mechanism whereby hot air is directed toward the fan’s blades, not the center of the fan, in order to
 16 protect the fan’s motor located at the center. This mechanism avoids exceeding the fan’s maximum
 17 operating temperature and thereby increases the fan’s life and reliability. Id. at 1:43–65.

18 Claim 1 is the only independent claim of the ‘831 patent and contains both of the claim terms
 19 at issue. Claim 1 is reproduced below with the disputed terms underlined:

20 1. A cooling device for a projector, comprising:

21 a light source, providing light to a projector;

22 a second exhaust fan, comprising a second fan hub and a plurality of second fan
 23 blades, said second fan hub being installed at a center of the second exhaust fan, the
 24 second fan blades being respectively connected to a periphery of the second fan hub,
 the second fan hub controlling the second fan blades to rotate, exhausting air from the
 vicinity of the second fan blades inside the projector through the second fan blades to
 the outside of the projector; and

25 an air duct, extending at least from the light source to the second exhaust fan,
 26 exhausting air from the vicinity of the light source through the second fan blades to
 the outside of the projector;

27 characterized in that, the air duct is in a closed status and is positioned adjacent to a
 28 periphery of the light source to concentrate the direction of exhausted air, and the
 outlet of the air duct is squarely and exclusively aligned with the second fan blades.

Consequently, based on the foregoing discussion, the court finds no reason to construe “guiding surface.”⁶

C. The ‘158 patent

The ‘158 patent is also directed at cooling projectors. The specification explains how cooling efficiency can be enhanced if a projector’s power unit is cooled by using fresh air from outside the projector which is cooler than the air inside the projector’s case. The summary describes a projector where the outer case of the projector has a cooling air intake port to let in fresh air from outside the outer case. The projector also includes a means for directly conducting that fresh air from the intake port to the inlet of the ventilating path. This ventilating path is “provided inside the power unit for circulating cooling air.” ‘158 patent at 2:60–3:2. When this cooler air is used to cool the power unit, cooling efficiency is achieved.

Two independent claims have been asserted: Claims 1 and 5. Both recite an optical unit, a power unit, an outer case, and first and second cooling air intake ports. The terms to be construed in Claim 1 are underlined in the claim limitations reproduced below:

1. A projector, comprising:

an optical unit including a light source lamp and a projection lens, the optical unit forming an optical image in response to image information by optically treating light beams emitted from the light source lamp and expansively projecting the optical image through the projection lens;

a power unit including a ventilating path provided inside the power unit for circulating cooling air;

an outer case that stores the optical unit and the power unit;

a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit; and

a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the ventilating path, said second cooling air intake port comprising:

an air inlet provided on the power unit, and

a duct connecting said second cooling air intake port and the air inlet.

‘158 patent at 15:26–47. Similarly, Claim 5 with the disputed terms underlined reads:

5. A projector, comprising:

1 an optical unit including a light source lamp and a projection lens, the optical unit
2 forming an optical image in response to image information by optically treating light
3 beams emitted from the light source lamp and expansively projecting the optical
4 image through the projection lens;

5 a power unit including an air inlet and an air outlet;

6 an outer case that stores the optical unit and the power unit;

7 a first cooling air intake port located on the outer case that provides cooling air from
8 outside of the outer case to the optical unit;

9 a second cooling air intake port located on the outer case that directly conducts
10 cooling air from the outside of the outer case to the air inlet; and

11 an exhaust vent provided on the outer case that directly conducts air exhausted from
12 the air outlet to the outside of the outer case.

13 Id. at 16:10–30.

14 1. “ventilating path provided inside the power unit for circulating cooling air”

15 Seiko argues that this phrase from the ‘158 patent be construed as “a route in the power unit
16 along which air moves while cooling the power unit, the power unit being the portion of the
17 projector that includes components that convert and regulate electrical power for use in the
18 projector.” Coretronic argues that the phrase be construed as “a path for circulating fresh air
19 inside an enclosed unit that provides power, wherein air may flow into and out of the unit only
20 through the air inlet and the air outlet of the enclosed unit.”

21 There is no argument that “cooling air” in the claims means that fresh air from *outside* of the
22 outer case cools the interior of a power unit. The parties’ dispute focuses on whether the power unit
23 must be enclosed and whether the construction should include the “air outlet” limitation.

24 The power unit is described by Claim 1 as “including a ventilating path provided inside the
25 power unit for circulating cooling air.” The path is provided cooling air by the second cooling air
26 intake port which comprises “an air inlet provided on the power unit, and a duct connecting said
27 second cooling air intake port and the air inlet.” The power unit in Claim 5 is merely described as
28 “including an air inlet and an air outlet.”

Neither description characterizes the power unit as enclosed or unenclosed. Coretronic states
that the disputed phrase requires that the ventilating path be *inside* the power unit. Indeed, the
specification explains that “[b]ecause the cooling air conducting means directly conducts fresh air to

1 the ventilating path, and because fresh air is cooler than the air in the outer case, the interior of the
 2 power unit can be cooled with high efficiency.” Id. at 3:3–6; see also id. at 3:21–22 (“The interior of
 3 the power unit can therefore be more efficiently cooled.”). Further, the claim also requires that the
 4 location of the air inlet into the power unit be somewhere *on* the power unit. Read together,
 5 Coretronic argues, the claim requires a projector having an air inlet on an *enclosed* power unit that
 6 has a ventilating path therein.

7 This reading is not supported by the claim language. The relevant feature of the power unit
 8 described in the specification is not its structure, but that it is a source of heat, which therefore needs
 9 to be cooled. See id. at 1:62–2:2. The focus of the invention is on cooling the power unit with fresh
 10 outside air, rather than using the already-heated air that has been circulating within the case:

11 The power unit 7 is cooled with great efficiency because a cooling air conducting
 12 means is provided for directly introducing fresh air into a ventilating path provided
 13 inside the power unit. Direct introduction of fresh air into the ventilating path
 permits cooling of the interior of the power unit by fresh air, which is cooler than the
 air in the outer case 2, and accordingly results in greater cooling efficiency.

14 Id. at 15:1–7. Indeed, the whole patent is aimed at achieving greater cooling efficiency. This
 15 efficiency is achieved when cooler air is used to cool the power unit. There is no requirement that
 16 the power unit be enclosed in order for the efficiency benefits to be realized. As one of ordinary
 17 skill in the art would surely recognize, the power unit may be more efficiently cooled if cooler air is
 18 used to perform the cooling. This patent simply provides a mechanism whereby cooler air from the
 19 outside is introduced into a path inside the power unit.⁷

20 Coretronic argues that the specification describes the power unit as containing “various
 21 electronic parts in an L-shaped metallic shield case 70.” Id. at 8:11–12. This preferred embodiment,
 22 even if it does imply a completely enclosed power unit, does not disavow power units that are not
 23 enclosed or only partially enclosed. Coretronic argues that nothing in the specification suggests that
 24 other embodiments leave the power unit unenclosed. Indeed, the specification teaches that, in other
 25 embodiments, the air inlet may be on another surface of the shield case, such as the shield case’s
 26 front side face, rather than on its end face. Id. at 14:57–67. Rather than implying that the shield
 27 case is optional, they argue this language demonstrates that the patent contemplates other
 28 embodiments that *also* use a shield case to enclose the power unit. Nevertheless, the mere fact that

1 the patent specification only discusses power units that are enclosed does not mean that the power
2 unit must be enclosed in order to benefit from the efficiency enhancing technique taught by the
3 claims. Indeed, no language in the claims limits the patent to enclosed power units only. The patent
4 specification describes the power unit as including a variety of power-related components, such as a
5 power supply, a ballast and other devices. *Id.* at 2:12–21. There is no further detail, apart from the
6 preferred embodiment, as to the structure of this unit other than as a collection of components.

7 Coretronic incorrectly argues that Seiko seeks a construction so broad that the “ventilating
8 path” encompasses *any* air flow that cools power components within a projector. This is incorrect
9 because the ventilating path here is necessarily limited by the other limitations of the claim which
10 require that the air in the ventilating path comprise of cooling air from the outside. See generally id.,
11 Claim 1. A construction of “ventilating path” that does not require an enclosure around the power
12 unit does not read “inside” out of the claim. Indeed, the path can be inside the power unit even if the
13 power unit itself does not have an enclosure because the unit may nevertheless have delineated
14 boundaries. For instance, a property boundary may be delineated in many ways other than a
15 boundary fence, such as maintenance or landscaping up to the boundary. The same rationale applies
16 to technological components arranged within a projector’s outer case. Seiko’s proposed
17 construction, which includes “a route in the power unit along which air moves while cooling the
18 power unit,” appropriately accounts for the “inside” language of the claim.

19 The above rationale also applies to “air inlet provided on the power unit.” The inlet may be
20 at a boundary of the power unit, which eliminates the need for the power unit to be enclosed. For
21 instance, a stream entering one’s land does not require a boundary fence be in place—it can still be
22 considered a water inlet onto one’s land. Here, the summary of the invention describes a “cooling
23 air means for directly conducting fresh air from outside the outer case from the cooling air intake
24 port to the *inlet* of the ventilating path.” *Id.* at 2:66–3:2 (emphasis added). This inlet could be
25 located on a boundary and need not necessarily be an inlet through an enclosure.

26 Without an enclosure, Coretronic argues that the heated air within the outer case cannot be
27 kept separate from the fresh air used to cool the power unit components. This requirement—that
28 only fresh air cool the power unit components—is not stated in the claim language, but is part of an

1 optional addition contemplating the use of a closed air duct that “prevents the air from the outer
2 case, which is hotter than the fresh air, from entering into the ventilating path.” *Id.* at 3:19–21.
3 Thus, there is no requirement that the hot and cool air be kept separate, just that air that is generally
4 cooler than the air inside the projector—because some of it came from outside the projector—be
5 used in the ventilating path. It would be clear to one of ordinary skill in the art that a greater
6 concentration of cooler air would lead to greater efficiency gains. Further, one of ordinary skill in
7 the art would also know how to position component parts within a projector in order to maximize the
8 availability of fresh air to the path inside the power unit without necessarily providing for an
9 enclosure around the power unit.

10 Coretronic confuses the reasons as to why the ventilating path is placed inside the power
11 unit. The path is placed there in order to cool the unit, not in order to prevent the air from within the
12 outer case from entering the ventilating path. The summary section of the patent specification
13 makes clear that it is the *optional* closed duct section that “prevents the air from the outer case,
14 which is hotter than the fresh air, from entering into the ventilating path.” *Id.* at 3:17–21. Thus, it is
15 the optional closed duct section that precludes the hotter air from entering the ventilating path, not
16 the fact that the power unit is enclosed.

17 Finally, Coretronic seeks to insert an “air outlet” limitation into this construction that is
18 simply not present in Claim 1.

19 In sum, in light of the above discussion, the court adopts most of Seiko’s proposed
20 construction to construe this term as “a route in the power unit along which at least some fresh air
21 moves while cooling the power unit, the power unit being the portion of the projector that comprises
22 components that convert and regulate electrical power for use in the projector.”⁸

23 2. “directly conducts cooling air”

24 Seiko argues that this phrase from the ‘158 patent be construed as “transmits cooling air
25 without substantial contamination by internal sources of heat.” Coretronic argues for “directly
26 guides the cooling air.” Coretronic’s construction is akin to no construction at all. It merely
27 substitutes “guides” for “conducts.”
28

1 The patent language states that “[b]ecause the cooling air (fresh air) from the cooling air
2 intake port 150 is directly introduced to the ventilating path in the shield case 70, the heat sinks can
3 be effectively and securely cooled.” *Id.* at 13:19–22. Indeed, the inventive step in the patents is the
4 introduction of fresh air, which is cooler than the air within the outer casing of the projector, to cool
5 the power unit more efficiently. The patent specifically states that the virtue of fresh, outside air is
6 that such air “is cooler than the air in the outer case.” *Id.* at 3:3–6. To that end, the phrase “directly
7 conducts cooling air” must make clear that the fresh air retains some of its relatively cool character
8 until it reaches the power unit.

9 Seiko’s proposed construction is therefore preferable. That construction, however, is not
10 limited to the air’s temperature. Therefore, the court modifies that construction to construe “directly
11 conducts cooling air” as “transmits cooling air without reducing its temperature to that of the air
12 inside the outer casing of the projector.”

13 The court notes that this construction does not read out “directly” from the claim term. That
14 word is explicated to explain to the fact-finder that directly means “without reducing its temperature
15 to that of the air inside the outer casing of the projector.” Indeed, this is how this invention
16 distinguishes itself from the prior art. In the prior art:

17 By the time that air is introduced to the power unit in the outer case, it has already
18 been heated by many other elements located in the outer case. Thus, the air
19 introduced to the power unit is hotter than the fresh air introduced into the outer case,
20 and is less efficient in cooling the power unit.

21 *Id.* at 2:26–30. Thus, the efficiency gains are realized when the fresh air is cooler than the air
22 inside the outer case of the projector, which is captured by the above construction.

23 3. “duct connecting said second cooling intake port and the air inlet”

24 Seiko argues that this phrase from the ‘158 patent be construed as “structure that limits the
25 direction of airflow between the intake port on the outer case and an opening leading to a ventilating
26 path of the power unit so as to form an airflow passage.” Coretronic argues for “an enclosed passage
27 for conveying air, the passage providing a sealed connection between the second cooling air intake
28 port and the air inlet.” The parties’ dispute focuses on whether the duct needs to be enclosed or may
be open.⁹ This boils down to the fundamental dispute between the parties as to whether this patent
merely states a mechanism whereby exclusively fresh air is introduced into an enclosed power unit

1 or whether the patent states a mechanism to improve cooling efficiency by cooling the power unit
2 with some amount of cooler fresh air as opposed to air already present within the outer casing of the
3 projector.

4 In common parlance, duct means a tube or a passageway. Dictionary definitions provided by
5 both parties note that ducts are “often enclosed,” but do not require enclosure. One of ordinary skill
6 in the art would know that he could create a duct that leads fresh air to the ventilating path in the
7 power unit without creating an enclosure around the duct. Indeed, one of skill in the art could place
8 projector components in a configuration such that ducts are naturally created by the placement of the
9 components. One of ordinary skill in the art would also realize, as stated in the summary section of
10 the patent specification, that this duct—the cooling air conducting means—*could* be an enclosed
11 duct section, which would prevent the mixture of hot air inside the projector with the cooler air in
12 the duct and also eliminate the possibility of drawing dust into the outer case. *Id.* at 3:14–35. The
13 cooling air conducting means involving an enclosed duct section, however, is merely a preferred
14 alternative stated in the patent. *Id.* at 3:14 (“It is preferred that the cooling air conducting means
15 include a duct section . . .”). Coretronic’s argument that an embodiment prefers an enclosed duct is
16 unpersuasive to import that limitation into the claim language.¹⁰ In light of no other evidence in the
17 patent specification or claims that requires an enclosed duct, the court is unwilling to import that
18 limitation into the claim.

19 In sum, Seiko’s construction is preferable. Consequently, the court construes “duct
20 connecting said second cooling intake port and the air inlet” as “structure that limits the direction of
21 airflow between the intake port on the outer case and an opening leading to a ventilating path of the
22 power unit so as to form an airflow passage.”

23
24 D. The ‘004 patent

25 The ‘004 patent is directed to a projector that cools its light-source lamp efficiently while
26 concurrently suppressing noise. This is achieved through the combination of a sirocco fan and an
27 axial-flow fan, rather than two axial-flow fans or a single large axial-flow fan. The sirocco fan,
28 which is quieter than an axial-flow fan, but delivers less air pressure, cools the base side of the light

side of the light-source lamp” to be “direct all or substantially all of the air flow to cool the side of the light source lamp opposite to the side from which light emerges.”¹¹


CONCLUSION

For the foregoing reasons, the court construes the disputed terms as follows:

Term	Construction
“second exhaust fan”	“fan, in addition to one other fan somewhere else in the projector, at the end of the cooling path for drawing air out of the projector”
“the air duct is in a closed status and is positioned adjacent to the periphery of the light source to concentrate the direction of exhausted air”	No construction necessary.
“guiding surface”	No construction necessary.
“ventilating path provided inside the power unit for circulating cooling air”	“a route in the power unit along which at least some fresh air moves while cooling the power unit, the power unit being the portion of the projector that comprises components that convert and regulate electrical power for use in the projector”
“directly conducts cooling air”	“transmits cooling air without reducing its temperature to that of the air inside the outer casing of the projector”
“duct connecting said second cooling intake port and the air inlet”	“structure that limits the direction of airflow between the intake port on the outer case and an opening leading to a ventilating path of the power unit so as to form an airflow passage”
“intensively cool the base side of the light-source lamp”	“direct all or substantially all of the air flow to cool the side of the light source lamp opposite to the side from which light emerges”

IT IS SO ORDERED.

Dated: May 16, 2008


 MARILYN HALL PATEL
 United States District Court Judge
 Northern District of California

ENDNOTES

1. On April 21, 2008 Seiko withdrew its assertions based on the '324 patent. See Docket No. 172.
2. Furthermore, in the office action of November 4, 2003, the Patent and Trademark Office examiner indicated that his willingness to allow claims was "based on the assumption that there actually is a first fan in the system which Applicant inadvertently left out in claim 1." Utermohlen Dec., Exh. A (hereinafter "Joint Appendix") at 482. In response to that office action, the applicant made no change to the "second exhaust fan" language and indicated no disagreement with the examiner's understanding that a first fan was implicit in claim 1. See id. at 501-03. Although not determinative, the court does consider the applicant's silence in response to the examiner's statements.
3. Since the intrinsic evidence clearly demonstrates the location of the second exhaust fan in these claims, the court finds no reason to rely on extrinsic evidence in the form of statements made by Nien-Hui Hsu, an inventor of the '831 patent.
4. Seiko argues that Coretronic did not state a construction for this term when the parties exchanged proposed claim constructions and therefore Coretronic should be barred from advancing a construction at this time. However, Coretronic is merely arguing against Seiko's proposed construction by proposing that the plain and ordinary meaning of the phrase be used. Since Coretronic is not advancing an alternate construction, Seiko's objection is overruled.
5. In light of this analysis, the court finds it unnecessary to refer to the prosecution of related patents in Japan.
6. Seiko argues that the guiding surface must be related to an air flow. Indeed, the guiding surface is designed to guide air in a particular direction. The context of the limitations in the claims, and the patent as a whole, make it clear that the guiding surface guides an air flow. See '899 patent at 3:45-47, 1:65-2:18. Consequently, adding this limitation into the construction is unnecessary.
7. The '158 patent also discloses ventilating paths in the *optical lens* unit that are not enclosed. See '158 patent at 14:12-19.
8. The court has replaced the word "includes" in Seiko's proposed construction with the word "comprises" since the power unit limitation connotes some set of cohesive components.
9. The '831 patent avoids this issue by using the phrase "closed status" to indicate an enclosed duct.
10. According to the patent, use of an enclosed duct also removes the possibility that airborne debris will damage the optical lens unit. Nevertheless, the patent nowhere requires an enclosed duct. Indeed, the debris problem, which seems to only apply to the optical lens unit, see, e.g., '831 patent, Fig. 8, can also be solved by removing or screening the debris when the air is initially inserted into the projector.
11. The court finds no reason to insert the "outside of a reflector" language suggested by Coretronic.

1 Mechanical Engineer for 3rdTech, and from 2003 to the present I have been President and
2 Chief Technology Officer ("CTO") of InnerOptic Technology Inc., both in Chapel Hill, North
3 Carolina.

4 5. I am the co-inventor of two issued United States patents. I am also the co-
5 inventor of four pending United States patent applications, as well as pending applications in
6 foreign countries. Most of those patents and patent applications cover inventions pertaining to
7 projectors for medical use. I have been involved in the preparation and prosecution of my
8 patent applications. For example, I participated in interviews with the United States Patent
9 Office Examiners handling my applications. I understand the function of patent claims.

10 6. I have been involved in the design of projectors, including their cooling and
11 mechanical alignment systems, for many years. I have designed various custom projectors,
12 from some as small as one inch square to some as big as a small suitcase. Most of these
13 projectors were funded by the National Science Foundation and the National Institutes of
14 Health.

15 7. In addition to designing projectors, I have evaluated many projectors for use by
16 the Computer Science Department of the University of North Carolina. I studied the structure,
17 performance and operation of those projectors.

18 8. I have designed cooling and other mechanical systems for graphic super
19 computers. For example, I was the head mechanical engineer for a project, PXFL, with
20 Hewlett-Packard in which I was in charge of the mechanical systems, including the thermal
21 design of that project.

22 9. I have been studying and designing the mechanical systems for computers and
23 projectors since 1989, including the cooling systems. There are similarities in the cooling
24 issues in computers and projectors, and the ways of addressing those issues. Computers and
25 projectors both have electronic components that generate heat in compact, crowded spaces, and
26 that heat must be dissipated by various methods, tailored to the particular product, as efficiently
27 as possible.

MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

U.S. Patent No. 6,203,158 (“the ’158 patent”) addresses the transport of fresh air from outside a projector case to cool the components inside the projector case. This Court previously held that a single prior art reference, “Nakamura,” anticipated claims 1 and 2 of the ’158 patent because it disclosed each and every claim limitation as the Court had construed it. The Court also previously concluded that claim 5 has only three differences from claim 1 and that these differences were either also disclosed by Nakamura or were variations that would have been obvious to one of ordinary skill in the art in light of Nakamura’s various teachings and the ordinary knowledge of one of ordinary skill. Although the Federal Circuit modified the claim construction, the Court’s reasoning is still sound and the new construction does not change the fact that the ’158 patent is obvious in view of the prior art references.

Nothing in the Federal Circuit’s decision criticized this Court’s application of the law of obviousness with respect to any of the patents. With respect to the ’158 patent, the Federal Circuit held that the Court’s construction of a single claim element and limitation, “second air intake port located on the outer case that *directly conducts cooling air*” was overbroad and instead held that a narrower construction was warranted by the specification. Because this Court’s determinations of anticipation and obviousness with respect to the ’158 patent were based on a claim construction the Federal Circuit panel deemed too broad, and because it concluded that Nakamura alone does not disclose a second air intake port that “transmits cooling air without substantial contamination by internal sources of heat,” the Federal Circuit vacated this Court’s grant of summary judgment and remanded for further proceedings. The Federal Circuit’s opinion on appeal in no way criticizes or undermines this Court’s findings that other elements and limitations of the asserted claims were disclosed by Nakamura or obvious over Nakamura. On the contrary, the Federal Circuit expressly left open the possibility that other prior art, alone or in combination with Nakamura, might sustain this Court’s holding of invalidity.

For this motion, Coretronic describes and relies primarily upon two such references: U.S. Patent 5, 297,005 to Gourdine (“Gourdine” or “the ’005 patent”) and U.S. Patent 4,243,307 to

1 Rizzuto (“Rizzuto” or “the ’307 patent”). As set forth below, applying the Federal Circuit’s claim
 2 construction and its determination with respect to “directly conducts cooling air” Nakamura
 3 discloses all but one limitation in asserted claims 1 and 2 and all but two limitations in claim 5.
 4 Gourdine discloses these limitations. Likewise, Rizzuto teaches the use of two independent
 5 cooling air paths, with separate intakes and exhausts, for the power unit and the optical unit, and
 6 also discloses the use of a duct to prevent air in a dedicated path from mixing with ambient air in
 7 the projector cabinet. These are minor variations of the Nakamura projector that would be obvious
 8 to one of ordinary skill in the art considering how to more efficiently cool a projector’s power unit
 9 in a compact projector, applying the teachings of Rizzuto itself, common knowledge and common
 10 sense. As such, each of the asserted claims is obvious as a matter of law, and thus invalid under
 11 35 U.S.C. § 103. Accordingly, Coretronic is entitled to summary judgment that the ’158 patent is
 12 invalid as obvious.

13 II. STATEMENT OF FACTS

14 Seiko Epson Corporation (“SEC”) sued Coretronic and Optoma alleging infringement of
 15 five patents, of which only one remains. The ’158 patent describes a design for cooling a
 16 projector by using multiple fans and ventilating paths. The alleged invention includes a power
 17 unit with a ventilating path “provided inside the power unit for circulating cooling air.”
 18 Declaration of Catharina Biber (“Biber Decl.”), Ex. B at 2:61-64. The outer case has two cooling
 19 air intake ports to let in fresh air from outside the outer case. The projector may also include a
 20 duct for directly conducting fresh air from the second intake port to the inlet of the ventilating path
 21 for the power unit. *Id.* at 2:60-3:2. “[T]he duct section only introduces fresh air from the cooling
 22 air intake port to the ventilating path” and also “prevents air from the outer case from entering the
 23 ventilating path.” *Id.* at 3:17-21. After the *Markman* hearing, the Court construed the claim term
 24 “directly conducts cooling air” to mean “transmits cooling air without [increasing] its temperature
 25 to that of the air inside the outer casing of the projectors.” Declaration of Elizabeth H. Rader,
 26 (“Rader Decl.”) Ex. 1 (Docket No. 183) at 19:9-12.

27 On May 15, 2009, the Court granted Coretronic’s motion for summary judgment of
 28 invalidity regarding the ’158 patent. Specifically, the Court found that a prior art Japanese patent

1 application, "Nakamura," discloses each and every limitation of claim 1 of the '158 patent and that
 2 accordingly claims 1 and 2 are invalid. Rader Decl., Ex. 2 (Docket No. 373) at 12:19-20. The
 3 Court also held that Claim 5 was obvious, as a matter of law, in light of Nakamura. *Id.* at 16:16-
 4 17:9. As the Court previously observed, "there are a limited number of components requiring
 5 cooling inside a projector casing, and such a casing can contain only so many prior art
 6 passageways." *Id.* at 16:17. "Where...there is a finite number of identified, predictable solutions,
 7 success is likely the product not of innovation but ordinary skill and common sense." *Id.* at 17-19
 8 (citing *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007)).

9 On appeal, the Federal Circuit vacated the Court's claim construction of "directly conducts
 10 cooling air" and adopted Seiko's narrower construction, "transmits cooling air without substantial
 11 contamination by internal sources of heat." See Rader Decl., Ex. 3 (Federal Circuit Opinion) at 4.
 12 Applying the narrower construction, the Federal Circuit determined that Nakamura does not
 13 satisfy that construction because the figures in Nakamura show that fresh air entering through the
 14 second air intake port mixes with ambient air from inside the case before reaching the power unit.
 15 The Federal Circuit therefore vacated this Court's ruling that Nakamura invalidates the '158
 16 patent, and remanded the action to this court for further proceedings.

17 **III. ARGUMENT**

18 **A. Legal Standard**

19 Summary judgment is granted to a moving party when "there is no genuine issue as to any
 20 material fact" and the "movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c).
 21 Summary judgment is just as reasonable in a patent case as in any other case. See *Barmag Barmer*
 22 *Maschinenfabrik AG v. Murata Mach., Ltd.*, 731 F.2d 831, 835 (Fed. Cir. 1984). Once a party has
 23 made an initial showing that summary judgment is warranted, the opposing party may not rest
 24 upon pleadings; rather, "the non-moving party must designate specific facts showing that there is a
 25 genuine issue for trial." *Tinoco v. Belshe*, 916 F. Supp. 974, 979 (N.D. Cal. 1995) (quoting
 26 *Celotex Corp. v. Catrett*, 477 U.S. 317, 324 (1986) (internal quotations omitted)). Summary
 27 judgment for Coretronic is appropriate if SEC's evidence "is merely colorable, or is not
 28 significantly probative." *Tinoco*, 916 F. Supp. at 979 (quoting *Anderson v. Liberty Lobby, Inc.*,

1 477 U.S. 242, 249-250 (1986)).

2 A claim is invalid for obviousness under 35 U.S.C. § 103(a) if the differences between the
3 subject matter sought to be patented and the prior art are such that the subject matter as a whole
4 would have been obvious at the time of the invention was made to one of ordinary skill in the art
5 to which the subject matter pertains. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17
6 (1966). Simply arranging old elements with each performing the same function it is already
7 known to perform is not patentable. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 427 (2007);
8 *Sakraida v. Ag Pro. Inc.*, 425 U.S. 273, 282 (1976); *Great Atl. & Pac. Tea Co. v. Supermarket*
9 *Equip. Corp.*, 340 U.S. 147, 152 (1950); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*,
10 396 U.S. 57, 61 (1969). Obviousness is a question of law based on underlying questions of fact.
11 *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). Where “the content of
12 the prior art, the scope of the patent claim, and the level of ordinary skill in the art are not in
13 material dispute, and the obviousness of the claim is apparent in light of these factors, summary
14 judgment is appropriate.” *KSR*, 550 U.S. at 427. To prove that a patent is invalid as obvious, the
15 moving party must identify prior art references “which alone or combined with other references
16 would have rendered the invention obvious to one of ordinary skill in the art at the time of
17 invention.” *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1323 (Fed. Cir. 1999).

18 In *KSR*, the Supreme Court clarified the test for obviousness, specifically the analysis on
19 whether there is “teaching, suggestion or motivation” to combine prior art references, which had
20 been a requirement for a finding of obviousness. The Supreme Court made it clear that “the
21 analysis need not seek out precise teachings directed to the specific subject matter of the
22 challenged claim, for a court can take account of inferences and creative steps that a person of
23 ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418. The Supreme Court also pointed
24 out the need for courts to value “common sense” over “[r]igid preventative rules.” *Id.* at 421. *See*
25 *also Leapfrog Enters, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (affirming
26 obviousness finding based on *KSR*); *Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1343-44
27 (Fed. Cir. 2008) (vacating and reversing jury verdict of non-obviousness based on *KSR*); *In re*
28 *Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007) (affirmed finding of obviousness and

1 noting that “obvious variants of prior art references are themselves part of the public domain”).

2 Indeed, since this Court issued its May 15, 2008 Opinion granting summary judgment of
3 invalidity with respect to the three patents then in suit, the Federal Circuit has repeatedly endorsed
4 district courts using common sense in addition to evidence of record as to the knowledge of skilled
5 artisans in analyzing obviousness. *See Perfect Web Techs., Inc. v. Infousa, Inc.*, 587 F.3d 1324,
6 1328-29 (Fed. Cir. 2009) (fact finders may use common sense in addition to evidence of record);
7 *Ball Aerosol & Specialty Container, Inc. v. Limited Brands, Inc.*, 555 F.3d 984, 993 (Fed. Cir.
8 2009) (candle-tin design obvious where advantage of claimed design would have been entirely
9 predictable and grounded in common sense).

10 **B. With the Exception of the “Directly Conducts Cooling Air” Limitation, The**
11 **Federal Circuit Left Undisturbed This Court’s Conclusions That Nakamura**
Discloses The Elements and Limitations of Claims 1 and 2.

12 The ’158 patent claims priority to U.S. Patent Application No. 08/943,730 filed October 3,
13 1997. Thus the critical date is October 3, 1996. Japanese Patent No. 4-271334 (“Nakamura”) was
14 filed on February 27, 1991 and published on September 28, 1992. *See* Biber Decl. Ex. D.
15 (certified translation). Accordingly, there is no dispute that Nakamura is prior art to the ’158
16 patent. *See* Rader Decl., Ex. 2 at 10:16-19.

17 **1. Nakamura Discloses Every Other Element of Claim 1.**

18 Claim 1 is directed to a projector and reads as follows:

19 A projector, comprising:
20 an optical unit including a light source lamp and a projection lens, the
optical unit forming an optical image in response to image
21 information by optically treating light beams emitted from the light
source lamp and expansively projecting the optical image through
the projection lens;
22 a power unit including a ventilating path provided inside the power unit
for circulating cooling air;
23 an outer case that stores the optical unit and the power unit;
24 a first cooling air intake port located on the outer case that provides
cooling air from outside of the outer case to the optical unit; and
25 a second cooling air intake port located on the outer case that directly
conducts cooling air from the outside of the outer case to the
ventilating path, said second cooling air intake port comprising:
26 an air inlet provided on the power unit, and
27 a duct connecting said second cooling air intake port and the air inlet.

28 As the Court has already observed, Nakamura discloses a design for cooling a projector

1 that includes multiple fans and air ducts. Rader Decl., Ex. 2 at 3:19-20 and 10:18-26. The first
 2 element of Claim 1 is “an optical unit including a light source lamp and a projection lens, the
 3 optical unit forming an optical image in response to image information by optically treating light
 4 beams emitted from the light source lamp and expansively projecting the optical image through
 5 the projection lens.” Biber Decl. Ex. B (’158 patent) at 15:26-32. This Court previously
 6 determined that Nakamura “undisputably” possesses an optical unit. Rader Decl. Ex. 2 at 11:1.¹
 7 The next requirement of claim 1 is a power unit including a “ventilation path provided inside the
 8 power unit for circulating cooling air.” Biber Decl. Ex. B at 15:33-34. This Court previously
 9 concluded that “Nakamura unambiguously discloses a path circulating cooling air through the
 10 power unit.” Rader Decl., Ex. 2 at 11:7-8, citing Nakamura at 2 & 10, Figures 2 & 3.

11 Claim 1 further requires “an outer case that stores the optical unit and the power unit.”
 12 Biber Decl. Ex. B at 15:35-36. This Court has already held that “there is no dispute that
 13 Nakamura has ‘an outer case that stores the optical unit and power unit.’” Rader Decl. Ex. 2 at
 14 11:20-21. *See also* Biber Decl. ¶ 14 and Ex. D, Fig. 2 at CORE031429; [0003] at CORE031422-
 15 423.

16 The next element of claim 1 is “a first cooling air intake port located on the outer case that
 17 provides cooling air from outside of the outer case to the optical unit.” Biber Decl., Ex. B at
 18 15:37-39. This Court has already held that Nakamura has such a first cooling air intake port.
 19 Rader Decl., Ex. 2 at 11:21-23.

20 In addition to the first air intake port, claim 1 requires a second air intake port on the outer
 21 case that “directly conducts cooling air from outside to the ventilating path.” Biber Decl., Ex. B at
 22 15:40-42. This is the element which the Federal Circuit re-construed and found was not disclosed,
 23 under the narrower construction, in Nakamura because while Nakamura has a second intake port
 24 located in the vicinity of the power unit,² it “does not provide an uninterrupted path from that port
 25 to the power unit” and, rather, the fresh air from outside the case mixes with ambient air from
 26 inside the case before reaching the power unit. Rader Decl., Ex. 3 at 6. This limitation is

27 ¹ *See* Biber Decl., ¶ 12.

28 ² Nakamura discloses another air intake port 42 on the bottom surface of the chassis case 1.

discussed in detail in Section III C *infra*.

The next element of claim 1 is “an air inlet provided on the power unit.” This Court previously determined that Nakamura inherently discloses an air inlet on the power unit because “the passage of air through an ordinary physical object necessitates that some inlet and outlet be present.” Rader Decl., Ex. 2 at 12:7 and n. 5, citing the ’158 patent at 15:44 and observing that “the location and nature of the inlet required by claim 1 of the ’158 patent is described in only general terms in the specification.” *See also* Biber Decl. at ¶ 17. Accordingly, Nakamura discloses the limitation of “an air inlet provided on the power unit” as recited in claim 1. Finally, there is no dispute that Nakamura discloses “a duct connecting said cooling air intake port and the air inlet,” the last element of Claim 1. The Court construed this phrase to mean a “structure that limits the direction of airflow between the intake port on the outer case and an opening leading to a ventilating path of the power unit so as to form an airflow passage.” Rader Decl., Ex. 1 at 24:20-23. This Court has already determined that, in Nakamura, the airflow is limited by the outer case’s structure and duct 41, which limit the airflow and direct it toward the power unit. Rader Decl., Ex. 2 at 12:15-18.³ *See also* Biber Decl. at ¶ 17. As such, Nakamura discloses the required duct.

1. Nakamura Discloses the Additional Ventilating Fan Element in Claim 2.

As the Court noted in its May 15, 2008 Opinion, dependent Claim 2 merely recites a ventilating fan. *Id.* at 12:20. Nakamura discloses a cooling fan 35 to draw fresh air into the chassis case 1 which passes through the liquid crystal display panels 21, 23 and 26. *See* Biber Decl. at ¶ 18 and Ex. D [0009]-[0010]. Nakamura also has a cooling fan, 32, that draws air from air intake port 36 into the light source chamber and exhausts air through exhaust port 31. *See* Figure 2. Accordingly, the Court concluded that if Claim 1 is invalid, claim 2 is likewise invalid. Rader Decl., Ex. 2 at 12:19-20.

2. Nakamura Discloses the Additional “Air Inlet,” “Air Outlet” and “Exhaust Vent” Elements In Claim 5

Claim 5 is also directed to a projector and reads as follows:

³ The air intake port 42 allows cooling air from outside to flow into the case and directly move along the route that passes through the power supply 15. Biber Decl., Ex. B, Figs. 2 and 3 at CORE031429; [0013] at CORE031427.

1 A projector, comprising:
 2 an optical unit including a light source lamp and a projection lens, the
 3 optical unit forming an optical image in response to image
 4 information by optically treating light beams emitted from the light
 5 source lamp and expansively projecting the optical image through
 6 the projection lens;
 7 a power unit including an air inlet and an air outlet;
 8 an outer case that stores the optical unit and the power unit;
 9 a first cooling air intake port located on the outer case that provides
 10 cooling air from outside of the outer case to the optical unit.
 11 a second cooling air intake port located on the outer case that directly
 12 conducts cooling air from the outside of the outer case to the air
 13 inlet; and
 14 an exhaust vent provided on the outer case that directly conducts air
 15 exhausted from the air outlet to the outside of the outer case.

16 As the Court observed in its May 15, 2009 Opinion, claim 5 requires the same elements
 17 and limitations as claim 1, with three exceptions. First, claim 5's power unit includes "an air inlet
 18 and an air outlet" rather than a "ventilating path." As set forth above, and as the Court has already
 19 found, "Nakamura discloses air moving through a power unit; therefore an inlet and outlet for air
 20 are inherently disclosed." Rader Decl., Ex. 2 at 12:23-26. Second, in claim 5 the "second cooling
 21 air intake port" element recites only an air inlet, not a ventilating path or duct. As the Court
 22 previously concluded, "Nakamura discloses an air inlet on a power unit." *Id.* at 13:1. The third
 23 difference between claim 1 and claim 5 is that claim 5 requires an additional element, "an exhaust
 24 vent provided on the outer case that directly conducts air exhausted from the air outlet to the
 25 outside of the outer case." This Court previously held that there is no material dispute that
 26 Nakamura discloses an exhaust vent on the outer case or that the vent exhausts air from the power
 27 unit and its inherent air outlet. *Id.* at 13:3-5 and n. 6.⁴ The only issue in dispute with respect to
 28 Nakamura's disclosure of claim 5 is whether the exhaust vent in Nakamura "directly conducts air
 exhausted from the air outlet to the outside of the outer case."

23 **C. Claim 1 of the '158 Patent Is Obvious over Nakamura Because Another Prior**
 24 **Art Reference, Gourdine, Expressly Discloses The One Limitation Lacking in**
 25 **Nakamura As Construed by the Federal Circuit**

26 The Federal Circuit vacated this Court's grant of summary judgment of invalidity because

27 ⁴ Nakamura discloses an exhaust port 31 that allows portions of the air exhausted from the end
 28 opening of the power supply 15 to flow outside of the chassis case. Biber Decl. at ¶ 25 and Ex. D,
 Fig. 2 at CORE031429; [0013] at CORE031427.

1 it held that the proper construction of “directly conducts cooling air” was that proposed by SEC
 2 and it further determined that Nakamura does not disclose this limitation as properly construed.
 3 Rader Decl., Ex. 3 at 6. The narrower construction substituted by the Federal Circuit on appeal is
 4 “transmits cooling air without substantial contamination by internal sources of heat.” *Id.* at 4.

5 As discussed above, Nakamura discloses every element and limitation except a second
 6 cooling air intake port that “transmits cooling air without substantial contamination by internal
 7 source of heat.” The Federal Circuit left undisturbed the Court’s earlier findings that Nakamura
 8 discloses every other element and limitation. The Federal Circuit’s new claim construction,
 9 however, does not render the ’158 patent nonobvious over what was already known. Various prior
 10 art patents disclose cooling air intake ports that transmit cooling air to the components to be
 11 cooled without substantial contamination by internal sources of heat.

12 As discussed below, one of ordinary skill in the art seeking to more efficiently cool
 13 components in a compact projector would be motivated to combine the teachings of Nakamura
 14 with the teaching of Gourdine to use exclusively fresh air from outside the outer case as the
 15 cooling air and to directly conduct that fresh outside air to the ventilating path inside the power
 16 unit.

17 **1. U.S. Patent No. 5,297,005 to Gourdine Discloses A Second**
 18 **Cooling Air Intake Port That Directly Conducts Cooling Air**
From the Outside of the Outer Case to The Ventilating Path.

19 Gourdine, or the ’005 patent, was filed on September 28, 1992 and issued on March 22,
 20 1994. It is therefore prior art to the ’158 patent. The ’005 patent relates to an apparatus and
 21 methods for cooling electronic heat generating components within a cabinet, in which specific
 22 components are isolated from other components in the cabinets and the “isolated” components are
 23 independently cooled by a secondary air flow. *See* Biber Decl., Ex. E (005) at 1:8-22. Figure 3 of
 24 the ’005 patent is reproduced below.

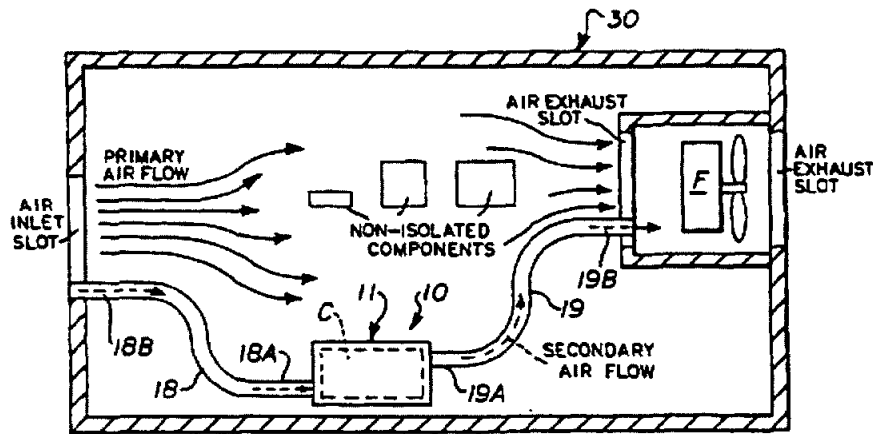


FIG. 3

Unlike Nakamura, the '005 patent expressly describes that the primary and secondary airflow paths are independent and that the heat generated by the isolated and the non-isolated components *does not mix* within the cabinet, in order to maximize cooling of all the components. *See id.* at 1:8-22. Moreover, the '005 patent discloses the structure required by the “second cooling air intake port” element and the “directly conducts cooling air” limitation in claim 1. The portion of the air inlet slot adjacent to the end of the duct, labeled 18B, in Figure 3 is “a second cooling air intake port located on the outer case.” *See id.* at Fig. 3. The specification describes that “the free end 18B of the conduit 18 is adapted to be releasably attached to the side wall of a cabinet 30 ... and in fluid communication with at least one inlet slot of the cabinet through which fresh air normally enters.” *See id.* at 4:61-66. The duct therefore directly conducts cooling air from the outside of the outer case to a ventilating path inside a unit containing components to be cooled. The air inlet and air outlet in the ventilating path are 16 and 17. In addition, the conduit 18 is “a duct connecting said second cooling air intake port and the air inlet.” As such, there can be no dispute that the '005 supplies the disclosure for the only limitation missing from Nakamura under the Federal Circuit’s claim construction, transmitting “cooling air without substantial contamination by internal sources of heat.”

Although the '005 patent is directed to solving heat problems in personal computers, the disclosure is not so limited. One skilled in the art would have looked to this area of the technology in attempting to solve heat problems with projectors. This is because computers and

1 projectors present the same problem to be solved, the need to cool heat-producing electronic
 2 components in a compact outer case. *See* Biber Decl. at ¶ 27. Indeed, SEC's expert, Mr. Keller,
 3 made this point in his September 26, 2008 declaration submitted in connection with SEC's Motion
 4 for Summary Judgment with respect to Coretronic's '899 patent.

5 There are similarities in the cooling issues in computers and
 6 projectors, and the ways of addressing those issues. Computers and
 7 projectors both have electronic components that generate heat in
 compact, crowded spaces, and that heat must be dissipated by various
 methods, tailored to the particular product, as efficiently as possible.

8 Rader Decl., Ex. 4, Docket No. 242 at ¶ 9. Moreover, in an April 18, 2000 office action, the
 9 examiner cited U.S. Patent 5,287,244, a patent directed to cooling a computer (not a projector) as
 10 one of the prior art references combined to render the '158 patent obvious. Rader Decl., Ex. 5
 11 (office action) and Biber Decl. Ex. F ('244 patent). The Federal Circuit has held that a prior art
 12 reference should be considered analogous art if it is reasonably pertinent to the problem to be
 13 solved. *Wyers v. Master Lock Co.*, 2010 WL 2901839 * 5 (Fed. Cir. 2010)(citing *KSR* for the
 14 reasoning that "familiar items may have obvious uses beyond their primary purposes, and a person
 15 of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a
 16 puzzle."

17 The '005 patent also contains an express teaching that the "secondary air flow" structure
 18 disclosed can be used to modify an existing design, after the fact, where more cooling of specific
 19 components is required, such as when replacing a low-powered chip with a high-powered chip
 20 without having to change the existing thermal management equipment. *See* Biber Decl., Ex. E. at
 21 2:59-67. As such, one of ordinary skill seeking to enhance cooling of a specific component, such
 22 as the power unit, in a projector, would find it obvious to use the "secondary cooling air flow"
 23 isolated from the primary air flow path, described in the '005 patent. Furthermore, one of ordinary
 24 skill would be reasonably certain that retrofitting the projector of Nakamura with a second cooling
 25 air intake port located on the outer case that directly conducts cooling air from outside of the outer
 26 case would result in better cooling. The '005 specification describes testing of Intel computers
 27 with and without the independent, isolated secondary air flow path, at various airspeeds, and
 28 reports that "the test results demonstrate that by isolating the [components] and subjecting the

1 component to a separate secondary air flow greatly improves cooling and is a very cost-effective
 2 method of improving the thermal management system of cabinets containing heat-generating
 3 components.” *Id.* at 7:4-8:14. For this reason, one of ordinary skill in the art would find it
 4 obvious to modify the Nakamura projector with the isolated secondary air flow path of the ’005
 5 patent to arrive at the projector of claim 1 of the ’158 patent. *See* Biber Decl. at ¶ 32.

6 As the Court has recognized, the claimed inventions in the ’158 patent are not rocket
 7 science. The general idea of using fans to cool that which is hot is well known, as is the idea that
 8 fresh outside air can efficiently cool things in the interior of an enclosures.⁵ The inventors of the
 9 ’158 patent simply combined old elements in the prior art, each performing the same purpose as it
 10 performed in prior art projectors. This is not sufficient for patentability. *Sakraida*, 425 U.S. at
 11 282; *Great Atl. & Pac. Tea*, 340 U.S. at 152; *KSR*, 550 U.S. at 417. The optical unit in claim 1
 12 serves the same purpose as optical units in prior art projectors like that claimed in the Nakamura
 13 patent: forming an optical image in response to image information. Biber Decl. at ¶ 33 and Ex. B
 14 at 15:27-32. The ventilating paths perform the same function as ventilating paths in Nakamura or
 15 the Gourdine cooling system for electronic components: allowing cooling air to circulate among
 16 heat-generating components. *Id.* at 2:1-11 and 15:33-34. The cooling air intake ports perform the
 17 same function: allowing fresh cooling air from outside the case to flow inside the case where it can
 18 cool the hot components. *Id.* at 11:43-47. The differences between Nakamura, Gourdine and the
 19 claimed invention are obvious and claim 1 should therefore again be held invalid. *See, e.g., Ball*
 20 *Aerosol*, 555 F.3d at 993 (holding combination obvious where it would have been “predictable and
 21 grounded in common sense).

22 **D. Claim 2 of ’158 Patent Is Likewise Obvious over Nakamura in light of the ’005**
 23 **Patent Because Nakamura Discloses A Ventilating Fan, which Is Also An**
 24 **Obvious Variation to One of Ordinary Skill in the Art.**

25 As the Court noted in its May 15, 2008 Opinion, the difference between Claim 1 and its
 26 dependent Claim 2 is that Claim 2 further requires “a ventilating fan that ventilates an interior
 27 portion of [the] outer case.” Nakamura discloses a cooling fan 35 to draw fresh air into the chassis

28 ⁵ A common household window fan introduces cool fresh air from outside a building to cool an interior space that is warmer inside than the outside air.

1 case 1 which passes through the liquid crystal display panels 21, 23 and 26. *See* Biber Decl. at ¶
 2 18, Ex. D [0009]-[0010] at CORE031426. As such, Nakamura discloses a ventilating fan that
 3 ventilates an interior portion of said outer case. The '005 patent also discloses an exhaust fan (F)
 4 at the end of the primary and secondary cooling paths that creates air flow for ventilation. *See*
 5 Biber Decl., Ex. E at Fig. 3. Moreover, a ventilating fan in a projector is obvious. The ventilating
 6 fan simply performs the expected function: moving air to accomplish ventilation. Nothing could
 7 be more obvious to a person of ordinary skill faced with the need to provide for or increase
 8 ventilation than to include a ventilating fan. *See* Biber Decl. at ¶ 35. The Court should again find
 9 claim 2 invalid as obvious.

10 **E. Claim 5 of '158 Patent Is Likewise over Nakamura Combined with Gourdine,**
 11 **Because Gourdine Discloses An Exhaust Vent That Directly Conducts Air**
 12 **Exhausted From the Air Outlet to the Outside of the Outer Case.**

13 Claim 5 adds the element of “an exhaust vent that directly conducts air exhausted from the
 14 air outlet to the outside of the outer case.” The Court previously held that there is a genuine issue
 15 of fact as to whether Nakamura’s exhaust vent “directly” conducts air out of the projector. Rader
 16 Decl., Ex. 2 at 13:5-6 and n. 6. Therefore, in deciding Coretronic’s previous summary judgment
 17 motion, the Court, taking the evidence in the light most favorable to the nonmoving party,
 18 assumed that Nakamura does not disclose the exhaust vent element and limitation. The Court
 19 concluded, however, that the differences between what Nakamura discloses and what claim 5
 20 recites would be obvious to one of ordinary skill in the art. *Id.* at 17:1-9. Again, the idea of a vent
 21 to allow hot air to exit a box is an obvious solution to the problem of cooling components in the
 22 interior of that box. Nothing in the Federal Circuit’s opinion undermines or criticizes that
 23 determination. On the contrary, in affirming the Court’s obviousness analyses with respect to
 24 other patents, the Federal Circuit implicitly approved of the Court’s statement and application of
 the Federal Circuit’s recent precedents concerning obviousness.

25 The Court can also conclude, however, that the '005 patent to Gourdine discloses, without
 26 any doubt and as a matter of law, the required exhaust vent and that the combination of Nakamura
 27 and the '005 patent therefore renders claim 5 invalid as obvious. As explained above, the '005
 28 patent discloses a conduit or duct that defines a dedicated, isolated secondary airway expressly for

1 cooling predetermined heat-producing components, while all other components are cooled by a
2 primary air flow path. Both paths are exhausted via the same exhaust vent but the specification
3 describes that “the secondary air flow is isolated from the primary air flow through the cabinet”
4 and that the “isolated components” and “non-isolated components” are cooled independently by
5 the primary air flow and secondary air flow, respectively and the heat from the two air flow paths
6 does not mix. *See* Biber Decl., Ex. E at Abstract and 3:27-32. The figures show that the “isolated
7 components” are in a box with a distinct air inlet (16) and air outlet (17) and show a conduit or
8 duct (19) that directs the air flow from the air outlet of the enclosure of the isolated heat-
9 generating component directly to an exhaust fan that exhausts it to the outside of the outer case.
10 *See, e.g.*, Figs. 3 and 7. No other components are cooled by the secondary air flow before the air
11 is exhausted to the outside of the outer case. *See* Biber Decl. at ¶ 36.

12 For the reasons discussed above with respect to claim 1, one of ordinary skill would be
13 motivated to combine the teachings of the '005 patent, including the exhaust vent for the dedicated
14 secondary air flow path, with the projector design of Nakamura and arrive at the projector of claim
15 5. *See* Biber Decl. at ¶ 37. As such, the Court should once again hold that claim 5 is invalid as
16 obvious.

17 **F. Claim 1 is Obvious over U.S. Patent No. 4,243,307 to Rizzuto In View of the**
18 **Knowledge and Common Sense of One of Ordinary Skill in the Art.**

19 U.S. Patent No. 4,243,307 (“Rizzuto”) was filed on December 11, 1978 and issued on
20 January 6, 1981. *See* Biber Decl., Ex. G. Therefore, Rizzuto is prior art to the '158 patent.
21 Figures 1 and 2 of Rizzuto are reproduced below.
22
23
24
25
26
27
28

FIG. 1

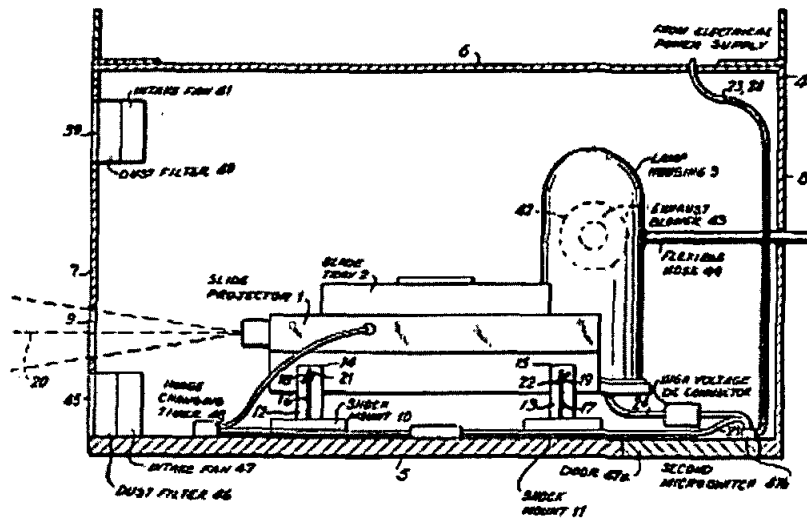
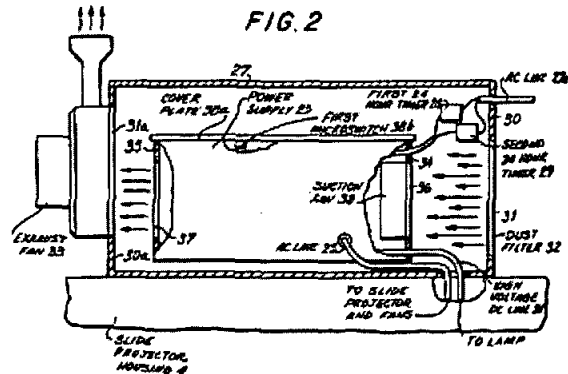


FIG. 2



As set forth above, Claim 1 of the '158 patent is directed to a projector. Rizzuto discloses a projector. *See id.* at Figs. 1 and 2; 1:5-8; 3:64-66. Claim 1 requires an optical unit including a light source lamp and a projection lens. The optical unit processes the light beams emitted from the light source lamp, forms an optical image and projects it through the projection lens. Rizzuto discloses an optical unit 1 that includes a light source lamp (Xenon lamp) and a projection lens, which is inherent in the slide projector 1, forming an optical image in response to image information by optically treating light beams emitted from the light source lamp and expansively projecting the optical image through the projection lens. *See, e.g.,* Figs. 1, 6; 4:8-13; 5:4-9; 6:49-55; Biber Decl. at ¶ 40.

The next requirement of claim 1 is a power unit including "a ventilating path provided inside the power unit for circulating cooling air." The Court previously construed the phrase "a

1 ventilating path provided inside the power unit for circulating cooling air” to mean “a route in the
 2 power unit along which at least some fresh air moves while cooling the power unit, the power unit
 3 be the portion of the projector that comprises components that convert and regulate electrical
 4 power for use in the projector.” Rader Decl., Ex. 1 at 24:14-17. Rizzuto discloses a power supply
 5 (power unit) 25 that includes a ventilating path provided inside the power unit for circulating
 6 cooling air, which is drawn into the power supply housing 27 and therefore into the power supply
 7 25 by a suction fan 38 and drawn out by an exhaust fan 33. *See, e.g.*, Biber Decl., Ex. G Fig. 2;
 8 5:10-12, 47-50, 56-59; Biber Decl. at ¶ 41.

9 Claim 1 additionally requires an outer case that stores the optical unit and the power unit.
 10 Rizzuto discloses a power unit 25 in the power supply housing which is mounted to the system
 11 housing 4 that stores optical unit 1. *See* Biber Decl. Ex. G Figs. 1 and 2; 5:10-59; Biber Decl. at ¶
 12 42. Claim 1 requires a first cooling air intake port on the outer case to let in fresh air to cool the
 13 optical unit. Rizzuto discloses at least two holes, 39 and 45, or air intake ports, that provide air to
 14 the slide projector 1. *See, e.g.*, Biber Decl., Ex. G Fig. 1; 5:66-6:10; 6:16-24; Biber Decl. at ¶ 43.

15 Claim 1 requires a second cooling air intake port on the outer case that “directly conducts
 16 cooling air” from outside to the ventilating path in the power supply. As discussed above, the
 17 Federal Circuit has construed the phrase “directly conducts cooling air” to mean “transmits
 18 cooling air without substantial contamination by internal sources of heat.” Rader Decl. Ex. 3 at 4.
 19 Rizzuto discloses a second cooling air intake port (hole 31) in the power supply housing 27; Biber
 20 Decl. at ¶ 44 and Ex. G at 5:34-36. Rizzuto makes use of two independent cooling air paths, with
 21 separate intakes and exhausts, for the optical and power units. Biber Decl. at ¶ 44. It would have
 22 been obvious to one skilled in the art that a cooling air intake positioned on the power supply
 23 housing may likewise be positioned on the outer case. *Id.* at ¶ 45. Besides, the first wall of the
 24 power unit 25 is mounted “in proximity” to the housing opening 31. *Id.* at ¶ 44. As such, Rizzuto
 25 teaches providing a dedicated ventilation path for the power unit with an air intake port that
 26 directly conducts fresh air from outside the outer case to the ventilating path inside the power unit,
 27 for cooling the power unit.

28 //

1 Claim 1 requires an “air inlet provided on the power unit.” Rizzuto discloses a hole (36)
 2 formed through the first wall 34 of the power unit 25. *See* Biber Decl. at ¶ 45 and Ex. G Fig 2 and
 3 5:32-50.

4 The final requirement of Claim 1 is a duct connecting the second cooling air intake port
 5 and the air inlet. Even though Rizzuto does not specifically disclose this kind of duct for the
 6 cooling air intake, it does disclose a flexible hose 44 that connects the exhaust blower 43 to the
 7 back 8 of the housing system 4 to the area outside the housing. Biber Decl. at ¶ 46 and Ex. G at
 8 6:12-15. Rizzuto applies the duct idea to the hottest air in the system to separate it from the
 9 optical system cooling air so that it does not mix with incoming cooling air. *Id.*

10 That Rizzuto discloses a duct (flexible hose 44) applied to the optical subsystem and not to
 11 the power supply matters little. Rizzuto does disclose an exhaust duct (flexible hose 44) to
 12 directly conduct air to the exterior of the system housing. Thus, the use of ducts could easily be
 13 extended to an intake duct as well. The duct is applied where it is most needed. The solution of
 14 Rizzuto to the problem of hot exhaust air mixing with cabinet air teaches that the solution may be
 15 applied to power unit cooling as needed. *See* Biber Decl. at ¶ 47. One of ordinary skill in the art
 16 seeking to more effectively cool the power unit would be motivated to apply the teaching of the
 17 Rizzuto patent and use fresh cooling air from outside the outer case to cool the power unit without
 18 mixing with ambient air from inside the projector. As discussed above, the idea of using only
 19 fresh air from outside a closed space to cool heat generating components inside an enclosed space
 20 is not new. As such, claim 1 is invalid as obvious over Rizzuto. *See* Biber Decl. at ¶ 48.

21 **G. Claim 2 is Obvious over U.S. Patent No. 4,243,307 to Rizzuto In View of the**
 22 **Knowledge and Common Sense of One of Ordinary Skill in the Art.**

23 As the Court noted in its May 15, 2008 Opinion, the difference between Claim 1 and its
 24 dependent Claim 2 is that Claim 2 further requires “a ventilating fan that ventilates an interior
 25 portion of [the] outer case.” Rizzuto discloses intake fans 41 and 47, exhaust blower 43, suction
 26 fan 38 and exhaust fan 33. *See id.* at ¶ 49 and Ex. G, Figs 1 and 2. As such, claim 2 is likewise
 27 invalid as obvious over Rizzuto. *See* Biber Decl. at ¶ 50.
 28

H. Claim 5 is Obvious over U.S. Patent No. 4,243,307 to Rizzuto In View of the Knowledge and Common Sense of One of Ordinary Skill in the Art.

Claim 5 requires the power unit to include “an air inlet and an air outlet.” Rizzuto discloses that a hole 36 (air inlet) is formed through the first wall 34 of the power unit 25 and a hole 37 (air outlet) is formed through the first wall 34 of the power unit 25 and a hole 37 (air outlet) is formed through the second wall 35 of the power unit 25. *See* Biber Decl. at ¶ 51 and Ex. G at Fig. 2; 5:10-12, 47-50. Claim 5 requires a second air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the air inlet. As set forth above, Rizzuto disclosed a second cooling air intake port (hole 31). *See* Biber Decl., Ex. G Fig. 2. The first wall 34 of the power unit is mounted “in proximity” to the housing opening 31 (second air intake port). *Id.* at 3:23-33. Rizzuto makes use of two independent cooling air paths, with separate intakes and exhausts, for the optical and power units. It would be obvious to one skilled in the art that a cooling air intake positioned on the power supply housing may likewise be positioned on the outer case. As such, the Rizzuto patent teaches an air intake port that directly conducts fresh air from outside the outer case to the air inlet of the power unit, for cooling the power unit. *See* Biber Decl. at ¶ 52.

Claim 5 also adds the element of “an exhaust vent that directly conducts air exhausted from the air outlet to the outside of the outer case.” Rizzuto discloses that a hole 37 (air outlet) is formed through the second wall 35 of the power unit 25. *See* Biber Decl. at ¶ 53, Ex. G Fig. 2; 47-50. The second wall 35 of power unit 25 is mounted “in proximity” to the housing opening 31a (exhaust vent). *Id.* at 3:23-33. An exhaust fan 33 is mounted in the power supply housing 27 over the hole 31a of the second wall 30a of the housing to draw air out of the power supply housing through the hole 31a. *See id.* Fig. 2, 5:39-44. No other components are cooled by the air flow from hole 37 before the air is exhausted to the outside of the housing. *See* Biber Decl. at ¶ 53. Accordingly, claim 5 of the ’158 patent is invalid as obvious over Rizzuto. *Id.* at ¶ 54.

IV. CONCLUSION

For the reasons set forth above, Coretronic respectfully requests that the Court grant its renewed motion for summary judgment that all of the asserted claims of U.S. Patent No.

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OPTOMA TECHNOLOGY, INC.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SEIKO EPSON CORPORATION, a Japanese
corporation,

Plaintiff,

v.

CORETRONIC CORPORATION, a Taiwanese
corporation, and OPTOMA TECHNOLOGY,
INC., a California corporation,

Defendants.

Case No: 3:06-cv-06946-MHP

**DECLARATION OF CATHARINA R.
BIBER, PH.D. IN SUPPORT OF
CORETRONIC CORPORATION AND
OPTOMA TECHNOLOGY INC.' S
RENEWED MOTION FOR SUMMARY
JUDGMENT OF INVALIDITY OF U.S.
PATENT NO. 6,203,158**

Date: November 15, 2010
Time: 2:00 p.m.
Courtroom: Courtroom 15, 18th Floor
Judge: Marilyn Hall Patel

I, Catharina R. Biber, Ph.D., declare and state as follows:

1. I have personal knowledge of the facts set forth in this Declaration and, if called as a witness, would testify competently, under oath, to the facts stated below:

2. I have been retained by Coretronic Corporation ("Coretronic") in this lawsuit. In this Declaration, I am providing my opinions regarding the validity of claims 1, 2 and 5 of U.S. Patent No. 6,203,158 ("the '158 patent").

3. In sum, after analyzing prior art references pertinent to these patents, it is my opinion that each of the above claims in the '158 patent is invalid as obvious.

1 **I. BACKGROUND AND QUALIFICATIONS**

2 4. I am presently the principal of Biber Thermal Design, Ltd., a consulting company in
3 thermal architecture, analysis and modeling. I hold a Ph.D. in Mechanical Engineering from the
4 Massachusetts Institute of Technology ("MIT"), and an M.S. and B.S. degrees in Mechanical
5 Engineering, also from MIT.

6 5. My consulting service is focused on thermal processing and system cooling issues
7 for various systems including display electronic systems. I also have had substantial involvement in
8 the design of projectors. I worked as Senior Thermal Engineer at InFocus Corporation from 1998 to
9 2002, and focused on thermal designs for multimedia projectors. As a consequence of my
10 experience, I am intimately familiar with the technological issues and state of the art in this field
11 from 1995 until the present. I have four patents, three of which are related to heat dissipation for a
12 projector lamp. A copy of my current CV is attached as Exhibit A.

13 **II. SCOPE OF WORK**

14 6. In reaching the opinions in this Declaration, I reviewed the following:

- 15 • U.S. Patent No. 6,203,158, its file history and cited references;
- 16 • Other publications attached as exhibits to this declaration;
- 17 • The Court's Claim Construction Order dated May 16, 2008 ("Claim
18 Construction Order"), construing certain claim terms recited in the '158
19 patent; and
- 20 • Slip Opinion of the Court of Appeals for the Federal Circuit in *Seiko Epson*
21 *Corp v. Coretronic*, No. 2009-1439, 1440 dated May 20, 2010.

22 **III. INVALIDITY ANALYSIS**

23 7. To arrive at my opinions, I have reviewed certain prior art references to determine
24 whether any of them, or a combination of them, discloses each and every limitation in the asserted
25 claims of the '158 patent to one of ordinary skill in the art. To the extent a single reference may not
26 contain such an identical disclosure, I reviewed other references indicative of the scope of the prior
27 art at the time of the invention to determine whether the claimed invention was known or obvious in
28 light of those references. In determining obviousness, it is my understanding that (i) the scope and

1 content of the prior art are to be determined; (ii) the differences between the prior art and the claims
 2 at issue are to be ascertained; and (iii) the level of ordinary skill in the pertinent art is to be resolved.
 3 It is my understanding that the Court has determined that one of ordinary skill in the art is one with
 4 a Bachelor's degree in physics, engineering, optics or other related field who also is familiar with
 5 the design of projectors.

6 **A. The '158 Patent**

7 8. A copy of the '158 patent is attached as Exhibit B. The '158 patent is directed at
 8 cooling projectors. The specification explains how cooling efficiency can be enhanced if a
 9 projector's power unit is cooled by using fresh air from outside the projector which is cooler than
 10 the air inside the projector's case. The summary describes a projector where the outer case of the
 11 projector has a cooling air intake port to let in the fresh air from outside the outer case. The
 12 projector also includes a means for directly conducting that fresh air from the intake port to the inlet
 13 of the ventilating path. This ventilating path is "provided inside the power unit for circulating
 14 cooling air." See '158 patent at 2:60-3:2. When this cooler air is used to cool the power unit,
 15 cooling efficiency is achieved.

16 9. **Nakamura**. A copy of Japanese Patent Application No. 4-271334 to Nakamura et al.
 17 ("Nakamura") is attached as Exhibit C. A certified translation of Nakamura is attached as Exhibit
 18 D.

19 10. Nakamura was published on September 28, 1992, more than one year prior to the
 20 U.S. filing date of the parent application from which the '158 patent claimed priority.

21 11. Claim 1 is directed to a projector. Nakamura discloses a projector. Ex. D. [0001] at
 22 CORE031422.

23 12. Claim 1 requires an optical unit including a light source lamp and a projection lens.
 24 The optical unit processes the light beams emitted from the light source lamp, forms an optical
 25 image and projects it through the projection lens. Nakamura discloses an optical unit because it
 26 discloses a light source 14, liquid crystal display panels 21, 23 and 26, and a projection lens 27. *Id.*
 27 [0003] at CORE031422-423. The liquid crystal panels 21, 23 and 26 process the light emitted from
 28

1 the light source 14 to form an optical image which is then magnified and projected by the projection
2 lens 27. *Id.* [0002] and [0004] at CORE031422-424.

3 13. The next requirement of Claim 1 is a power unit including “a ventilating path
4 provided inside the power unit for circulating cooling air.” I understand that the Court, in its Claim
5 Construction Order, at page 24, construed the phrase “a ventilating path provided inside the power
6 unit for circulating cooling air” to mean “a route in the power unit along which at least some fresh
7 air moves while cooling the power unit, the power unit being the portion of the projector that
8 comprises components that convert and regulate electrical power for use in the projector.”
9 Nakamura discloses a power supply 15. The details of the power supply are not shown, however,
10 ones skilled in the art would have understood that any power supply would include vents in the
11 enclosure to allow cooling air to enter and exit in order to cool the components of the power supply.
12 This is further understood by the inclusion of the air flow path in Figs. 2 and 3 which show the air
13 flow going through and over the power supply that includes a route inside. *Id.* Fig. 2 at
14 CORE031429. This cooling air moves along the air flow route to cool the power supply 15. *Id.*
15 Fig. 2 at CORE031429.

16 14. Claim 1 requires an outer case that stores the optical unit and the power unit.
17 Nakamura discloses a chassis case 1, the interior of which includes the light source 14, the liquid
18 crystal display panels 21, 23 and 26, the projection lens 27, and the power supply 15. *Id.* Fig. 2 at
19 CORE031429; [0003] at CORE031422-423.

20 15. Claim 1 requires a cooling air intake port on the outer case to let in fresh air to cool
21 the optical unit. Nakamura discloses an air intake port 36 on the chassis case 1. *Id.* [0003] at
22 CORE031422-423. The air intake port 36 allows cooling air from outside of the chassis case 1 to
23 flow into liquid crystal display panel chamber 4 which stores the liquid crystal display panels 21, 23
24 and 26. *Id.* Fig. 2 at CORE031429; [0004] at CORE031423-424; [0010] at CORE031426. As
25 shown by the air flow path in Fig. 2 the air passes directly over the LCD display panels 21, 26, 23.

26 16. Claim 1 requires a second cooling air intake port on the outer case that “directly
27 conducts cooling air” from outside to the ventilating path in the power supply. I understand that the
28 Federal Circuit has construed the phrase “directly conducts cooling air” to mean “transmits cooling

1 air without substantial contamination by internal sources of heat.” Slip Opinion at 4. I also
2 understand that the Federal Circuit has held that Nakamura does not disclose this particular claim
3 limitation.

4 17. Claim 1 also requires an air inlet on the power unit and “a duct connecting said
5 second cooling intake port and the air inlet.” As explained above, the power supply 15 includes an
6 inlet that allows air from the second air intake 42 to pass through the power supply on its way to the
7 outlet fan 32 and exhaust port 31. I understand that the Court, in its Claim Construction Order, at
8 page 24, construed the phrase “a duct connecting said second cooling intake port and the air inlet”
9 to mean “structure that limits the direction of airflow between the intake port on the outer case and
10 an opening leading to a ventilating path of the power unit so as to form an airflow passage.” As
11 explained above, Nakamura discloses a passage formed by and between the bottom of the duct 41
12 and the chassis case 1 that limit the direction of the airflow from the air intake port 42 to the
13 opening on the power supply 15, as shown by the airflow path in Figs. 2 and 3. Nakamura at Figs. 2
14 and 3 at CORE031429; [0013] at CORE031427.

15 18. Claim 2 requires all the limitations recited in claim 1 and further requires a
16 ventilating fan. Nakamura discloses two ventilating fans, a cooling fan 35 and an exhaust fan 32.
17 Each of these fans draws cooling air into the chassis case 1. *Id.* Fig. 2 at CORE031429; [0010] at
18 CORE031426. As a result, Nakamura discloses each and every limitation in claim 2 of the ’158
19 patent except the limitation “directly conducts cooling air.”

20 19. Many elements of claim 5 are the same as the elements of claim 1. Claim 5 is
21 directed to a projector. Nakamura discloses a projector. *Id.* [0001] at CORE031422.

22 20. Claim 5 requires an optical unit including a light source lamp and a projection lens.
23 The optical unit processes the light beams emitted from the light source lamp, forms an optical
24 image and projects it through the projection lens. Nakamura discloses an optical unit including a
25 light source 14, liquid crystal display panels 21, 23 and 26, and a projection lens 27. *Id.* [0003] at
26 CORE031422-423. The liquid crystal panels 21, 23 and 26 process the light emitted from the light
27 source 14 to form an optical image which is then magnified and projected by the projection lens 27.
28 *Id.* [0002] and [0004] at CORE031422-424.

1 21. Claim 5 requires a power unit including an air inlet and an air outlet. Nakamura
2 discloses a power supply 15, which, as explained above, includes a front opening to allow air to
3 flow in and an end opening to allow air to flow out. *Id.* Figs. 2 and 3 at CORE031429.

4 22. Claim 5 requires an outer case that stores the optical unit and the power unit.
5 Nakamura discloses a chassis case 1, the interior of which house the light source 14, the liquid
6 crystal display panels 21, 23 and 26, the projection lens 27, and the power supply 15. *Id.* Fig. 2 at
7 CORE031429; [0003] at CORE031422-423.

8 23. Claim 5 requires a cooling air intake port on the outer case to let in fresh air to cool
9 the optical unit. Nakamura discloses an air intake port 36 on the chassis case 1. *Id.* [0003] at
10 CORE031422-423. The air intake port 36 allows cooling air from outside of the chassis case 1 to
11 flow into liquid crystal display panel chamber 4 past the liquid crystal display panels 21, 23 and 26
12 as described above. *Id.* Fig. 2 at CORE031429; [0004] at CORE031423-424; [0010] at
13 CORE031426.

14 24. Claim 5 requires a second cooling air intake port on the outer case that “directly
15 conducts cooling air” from outside to the air inlet on the power unit. As explained above,
16 Nakamura has been held to not disclose this claim limitation.

17 25. Claim 5 also requires an exhaust vent on the outer case that directly conducts air
18 from the air outlet in the power supply to the outside of the air outlet. Nakamura discloses an
19 exhaust fan 32 in exhaust port 31 to conduct the air exhausted from the air outlet opening of the
20 power supply 15 to flow to the outside of the chassis case 1. *Id.* Fig. 2 at CORE031429; [0013] at
21 CORE031427.

22 26. **Gourdine**: The Gourdine reference is U.S. Patent No. 5,297,005, filed on September
23 28, 1992 and issued on March 22, 1994. It is prior art to the '158 patent. A copy of Gourdine is
24 attached as Exhibit E.

25 27. Gourdine is generally directed to solving heat problems in personal computers. I am
26 of the opinion that one skilled in the art would have looked to this area of the technology to solve
27 heat problems with projectors. This is because computers and projectors present the same problem
28 to be solved -- the need to cool heat-producing electronic components in a compact outer case. My

opinion is consistent with the file history of the '158 patent. As an example, in an April 18, 2000 office action, the Examiner cited U.S. Patent 5,287,244 (Exhibit F), a patent directed to cooling a computer (not a projector) as one of the prior art references combined to render the '158 patent application obvious.

28. Gourdine is related to an apparatus and methods for cooling electronic heat generating components within a cabinet, in which specific components are isolated from other components in the cabinets and the "isolated" components are independently cooled by a secondary air flow. Figure 3 of the patent is reproduced below.

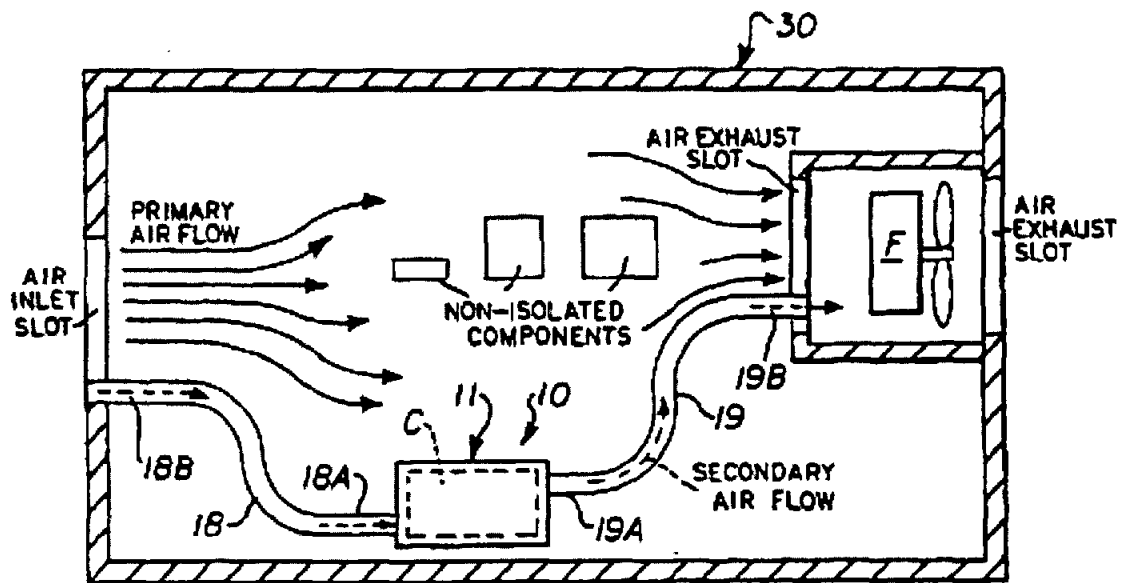


FIG. 3

29. Gourdine expressly describes a primary airflow path and a secondary airflow path. These airflow paths are independent of one another. Therefore, the heat generated by the isolated and the non-isolated components does not mix within the cabinet, in order to maximize cooling of all the components. Ex. E at 1:8-22.

30. Gourdine discloses the structure required by the "second cooling air intake port" element and the "directly conducts cooling air" limitation in claim 1. The portion of the air inlet slot adjacent to the end of the duct, labeled 18B, in Figure 3, is "a second cooling air intake port located on the outer case." See Fig. 3. The specification describes that "the free end 18B of the conduit 18 is adapted to be releasably attached to the side wall of a cabinet 30 ... and in fluid

1 communication with at least one inlet slot of the cabinet through which fresh air normally enters.”
2 *Id.* at 4:61-66. Figure 2 further depicts an air inlet 16 and an air outlet 17 in the ventilating path.
3 The duct therefore directly conducts cooling air from the outside of the outer case to a ventilating
4 path inside a unit containing components to be cooled. The conduit 18 is thus “a duct connecting
5 said second cooling air intake port and the air inlet” as required by the claim. Gourdine therefore
6 discloses the claim element “transmit[ting] cooling air without substantial contamination by internal
7 sources of heat.”

8 31. Gourdine also contains an express teaching that the “secondary air flow” structure
9 disclosed can be used to modify an existing design, after the fact, where more cooling of specific
10 components is required, such as when replacing a low-powered chip with a high-powered chip
11 without having to change the existing thermal management equipment. *Id.* at 2:59-67. As such, one
12 of ordinary skill seeking to enhance cooling of a specific component, such as the power unit, in a
13 projector, would find it obvious to use the “secondary cooling air flow” isolated from the primary
14 air flow path, described in Gourdine.

15 32. It is also my opinion that one of ordinary skill would be reasonably certain that
16 retrofitting the projector of Nakamura with a second cooling air intake port located on the outer case
17 that directly conducts cooling air from outside of the outer case would result in better cooling for
18 the power supply. Gourdine describes testing of Intel computers with and without the independent,
19 isolated secondary air flow path, at various airspeeds, and reports that “the test results demonstrate
20 that by isolating the [components] and subjecting the component to a separate secondary air flow
21 greatly improves cooling and is a very cost-effective method of improving the thermal management
22 system of cabinets containing heat-generating components.” *Id.* at 7:4-8:14. For this reason, one of
23 ordinary skill in the art would find it obvious to modify the Nakamura projector with the isolated
24 secondary air flow path of Gourdine to arrive at the projector of claim 1 of the ’158 patent.

25 33. It is further my opinion that the optical unit in claim 1 serves the same purpose as
26 optical units in prior art projectors. The ventilating paths perform the same function as ventilating
27 paths in Nakamura or the Gourdine cooling system for electronic components: allowing cooling air
28 to circulate among heat-generating components. *Id.* at 2:1-11 and 15:33-34. The cooling air intake

1 ports perform the same function: allowing fresh cooling air from outside the case to flow inside the
2 case where it can cool the hot components. *Id.* at 11:43-47. The differences between Nakamura,
3 Gourdine and the claimed invention are obvious.

4 34. It is therefore my opinion that claim 1 of the '158 patent is invalid as obvious over
5 Nakamura in view of Gourdine.

6 35. Claim 2 of the '158 patent depends on claim 1. For the reasons set forth above, I am
7 also of the opinion that claim 2 is invalid as obvious over Nakamura in view of Gourdine.

8 Moreover, a ventilating fan in a projector is obvious. The ventilating fan simply performs the
9 expected function: moving air to accomplish ventilation. Nothing could be more obvious to a
10 person of ordinary skill faced with the need to provide for or increase ventilation than to include a
11 ventilating fan.

12 36. Claim 5 of the '158 patent adds the element of "an exhaust vent that directly
13 conducts air exhausted from the air outlet to the outside of the outer case." The Gourdine patent
14 discloses a conduit or duct that defines a dedicated, isolated secondary airway expressly for cooling
15 predetermined heat-producing components, while all other components are cooled by a primary air
16 flow path. Both paths are exhausted via the same exhaust vent. The specification describes that
17 "the secondary air flow is isolated from the primary air flow through the cabinet" and that the
18 "isolated components" and "non-isolated components" are cooled independently by the primary air
19 flow and secondary air flow, respectively and the heat from the two air flow paths does not mix.
20 *See id.* Figs. 3 and 7; 3:27-32. The figures show that the "isolated components" are in a box with a
21 distinct air inlet (16) and air outlet (17) and show a conduit or duct (19) that directs the air flow
22 from the air outlet of the enclosure of the isolated heat-generating component directly to an exhaust
23 fan that exhausts it to the outside of the outer case. *See id.* Figs. 3 and 7; 4:66-5:3; 6:1-7, 35-37,
24 56-62. No other components are cooled by the secondary air flow before the air is exhausted to the
25 outside of the outer case.

26 37. Also for the reasons already set forth above, I am of the opinion that claim 5 is
27 invalid as obvious over Nakamura in view of Gourdine.
28

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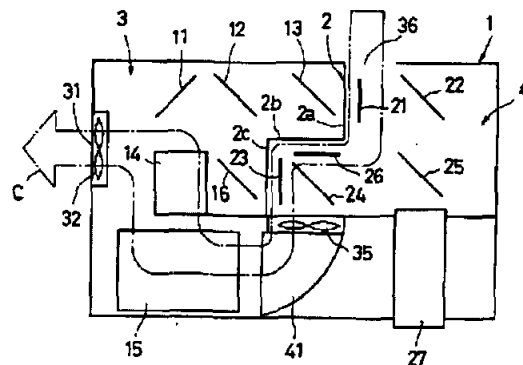
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(54) 【発明の名称】 液晶プロジェクタ

(57) 【要約】

【目的】 冷却用ファンの使用数よりも排気口および吸気口の数と共に少なくする。

【構成】 本体ケース1内において光源室3と液晶表示室4との間に第2の冷却用ファン35を設け、そして矢印Cで示すように、第2の冷却用ファン35の駆動により吸気口36から液晶表示室4内に吸い込まれた空気が3つの液晶表示パネル21、26、23の各近傍を通過してこれらを冷却した後、第2の冷却用ファン35からダクト41内に送出され、この送出された空気が第1の冷却用ファン32の駆動により光源室3内に吸い込まれ、この吸い込まれた空気が電源15および光源14の各近傍を通過してこれらを冷却した後、排気口31から排出されるようにした。



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【特許請求の範囲】

【請求項1】 複数の冷却用ファンを備えた液晶プロジェクトにおいて、前記複数の冷却用ファンのうち少なくとも1つを本体ケース内に設け、残りの冷却用ファンに対応して前記本体ケースに排気口を設けてなることを特徴とする液晶プロジェクト。

【請求項2】 本体ケースの内部を少なくとも一部が透明な隔板によって光源室と液晶表示パネル室とに分離してなる液晶プロジェクトにおいて、前記液晶表示パネル室側の前記本体ケースに吸気口を設け、前記光源室側の前記本体ケースに排気口を設け、この排気口に対応して前記本体ケースに第1の冷却用ファンを設け、前記本体ケース内において前記光源室と前記液晶表示パネル室との間に第2の冷却用ファンを設け、てなることを特徴とする液晶プロジェクト。

【請求項3】 本体ケースの内部を少なくとも一部が透明な隔板によって光源室と液晶表示パネル室とに分離してなる液晶プロジェクトにおいて、前記液晶表示パネル室側の前記本体ケースに吸気口を設け、前記光源室側の前記本体ケースに吸気口を設け、この排気口に対応して前記本体ケースに第1の冷却用ファンを設け、前記本体ケース内において前記光源室と前記液晶表示パネル室との間に第2の冷却用ファンを設け、この第2の冷却用ファンの排気側における前記光源室側の前記本体ケースに排気口を設け、てなることを特徴とする液晶プロジェクト。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 この発明は液晶プロジェクトに関する。

【0002】

【従来の技術】 液晶プロジェクトには、1つの光源からの光をR（赤）成分、G（緑）成分、B（青）成分の3つの光に分散し、それぞれ対応する透過型の液晶表示パネルに照射させ、各液晶表示パネルにR、G、Bの3色に分解されて表示されたテレビジョン等の各カラー画像をスクリーンに重畳させて拡大投影し、同時に光源および液晶表示パネル等を空冷するようにしたものがある。

【0003】 図4は従来のこのような液晶プロジェクトの一例の概略構成を示したものである。この液晶プロジェクトは長方形の本体ケース1を備えている。本体ケース1の内部は、ガラス板等からなる透明な隔板2によって光源室3と液晶表示パネル室4とに分離されている。隔板2は、本体ケース1の一方の長辺と直交する第1の隔板部2aと、この第1の隔板部2aの一端部から本体ケース1の長辺と平行する方向に延びる第2の隔板部2bと、この第2の隔板部2bの一端部から本体ケース1の他方の長辺と直交する方向に延びる第3の隔板部2cとからなっている。光源室3の本体ケース1の一方の長辺側には、左側から右側に向かって、第1の反射ミ

ラー11、第1のダイクロイックミラー12および第2のダイクロイックミラー13がこの順で設けられている。光源室3の本体ケース1の他方の長辺側の左側には光源14およびその電源15が設けられ、右側には第2の反射ミラー16が設けられている。液晶表示パネル室4の本体ケース1の一方の長辺側の左側にはR用液晶表示パネル21が設けられ、右側には第3の反射ミラー22が設けられている。液晶表示パネル室4の本体ケース1の他方の長辺側には、左側から右側に向かって、B用液晶表示パネル23、第3のダイクロイックミラー24および第4のダイクロイックミラー25がこの順で設けられている。液晶表示パネル室4の第3の隔板部2cの近傍にはG用液晶表示パネル26が設けられている。本体ケース1の他方の長辺の第4のダイクロイックミラー25と対応する所定の個所には投影レンズ27が設けられている。本体ケース1の左側の短辺の光源14と対応する所定の個所には排気口31が設けられ、この排気口31の内側には第1の冷却用ファン32が設けられている。本体ケース1の底面の電源15と対応する所定の個所には吸気口33が設けられている。本体ケース1の他方の長辺のB用液晶表示パネル23と対応する所定の個所には排気口34が設けられ、この排気口34の内側には第2の冷却用ファン35が設けられている。本体ケース1の一方の長辺のR用液晶表示パネル21と対応する所定の個所には吸気口36が設けられている。

【0004】 そして、光源14からの光のうちR成分の光は、第1の反射ミラー11で反射され、第1のダイクロイックミラー12、第2のダイクロイックミラー13、第1の隔板部2aおよびR用液晶表示パネル21を透過し、第3の反射ミラー22で反射され、第4のダイクロイックミラー12を透過し、投影レンズ27に入射される。G成分の光は、第1の反射ミラー11、第1のダイクロイックミラー4および第2の反射ミラー16で反射され、第3の隔板部2c、G用液晶表示パネル23および第3のダイクロイックミラー24を透過し、第4のダイクロイックミラー12で反射され、投影レンズ27に入射される。B成分の光は、第1の反射ミラー11で反射され、第1のダイクロイックミラー12を透過し、第2のダイクロイックミラー13で反射され、第2の隔板部2bおよびB用液晶表示パネル26を透過し、第3のダイクロイックミラー24および第4のダイクロイックミラー25で反射され、投影レンズ27に入射される。投影レンズ27に入射されたR、G、Bの各成分の光、つまり各液晶表示パネル21、26、23にR、G、Bの3色に分解されて表示されたテレビジョン等の各カラー画像に対応する各光像は、投影レンズ27によって図示しないスクリーンに重畳されて拡大投影される。一方、第1の冷却用ファン32が駆動すると、図4において矢印Aで示すように、吸気口33から光源室3内に吸い込まれた空気が電源15および光源14の各

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近傍を通過した後、排気口31から外部に排出され、電源15および光源14が冷却される。第2の冷却用ファン35が駆動すると、図4において矢印Bで示すように、吸気口36から液晶表示パネル室4内に吸い込まれた空気がR用液晶表示パネル21、G用液晶表示パネル26およびB用液晶表示パネル23の各近傍を通過した後、排気口34から外部に排出され、各液晶表示パネル21、26、23が冷却される。

【0005】

【発明が解決しようとする課題】しかしながら、従来のこのような液晶プロジェクトでは、光源室3側に第1の冷却用ファン32およびその吸気口33、排気口31を設け、液晶表示パネル室4側に第2の冷却用ファン35およびその吸気口36、排気口34を設けているので、それぞれ独立した2組の吸排気装置が必要になり、次に述べるような問題があった。すなわち、光源室3および液晶表示パネル室4にそれぞれ排気口31、34を設けているので、排気口が2つとなり、設計に制約を受け、また各排気口31、34が他の装置や壁等の障害物と対向しない位置に配置する必要があり、したがって配置位置にも制約を受け、さらに騒音が大きという問題があった。また、光源室3および液晶表示パネル室4にそれぞれ吸気口33、36を設けているので、吸気口が2つとなり、設計に制約を受け、また各吸気口33、36にそれぞれ防塵フィルタを設けることになるので、コスト高となるばかりでなく、防塵フィルタのクリーニングが面倒であるという問題があった。この発明の目的は、冷却用ファンの使用数よりも排気口の数进行少なくすることのできる液晶プロジェクトを提供することにある。また、この発明の他の目的は、冷却用ファンの使用数よりも吸気口の数进行少なくすることのできる液晶プロジェクトを提供することにある。

【0006】

【課題を解決するための手段】請求項1記載の発明は、複数の冷却用ファンを備えた液晶プロジェクトにおいて、複数の冷却用ファンのうち少なくとも1つを本体ケース内に設け、残りの冷却用ファンに対応して本体ケースに排気口を設けるようにしたものである。請求項2記載の発明は、本体ケースの内部を少なくとも一部が透明な隔板によって光源室と液晶表示パネル室とに分離してなる液晶プロジェクトにおいて、液晶表示パネル室側の本体ケースに吸気口を設け、光源室側の本体ケースに排気口を設け、この排気口に対応して本体ケースに第1の冷却用ファンを設け、本体ケース内において光源室と液晶表示パネル室との間に第2の冷却用ファンを設けるようにしたものである。請求項3記載の発明は、本体ケースの内部を少なくとも一部が透明な隔板によって光源室と液晶表示パネル室とに分離してなる液晶プロジェクトにおいて、液晶表示パネル室側の本体ケースに吸気口を設け、光源室側の本体ケースに排気口を設け、この排気

口に対応して本体ケースに第1の冷却用ファンを設け、本体ケース内において光源室と液晶表示パネル室との間に第2の冷却用ファンを設け、この第2の冷却用ファンの排気側における光源室側の本体ケースに吸気口を設けるようにしたものである。

【0007】

【作用】請求項1～3記載の発明によれば、本体ケース内に設けた冷却用ファンによって液晶表示パネル室内の空気を光源室内に流入させ、この流入された空気によって光源室内を冷却することにより、冷却用ファンの使用数よりも排気口の数进行少なくすることができる。また、請求項2記載の発明によれば、第2の冷却用ファンの駆動により吸気口から液晶表示パネル室内に吸い込まれた空気が光源室内に流入され、この流入された空気が第1の冷却用ファンの駆動により排気口から外部に排出されることになるので、冷却用ファンの使用数よりも吸気口の数进行少なくすることができる。

【0008】

【実施例】図1はこの考案の一実施例における液晶プロジェクトの概略構成を示したものである。この図において、図4と同一名称部分には同一の符号を付し、その説明を適宜省略する。

【0009】この液晶プロジェクトでは、図4に示す従来の液晶プロジェクトと比較して、光源室3側の吸気口33および液晶表示パネル室4側の排気口34が設けられていない。その代わりに、第2の冷却用ファン35が本体ケース1内において光源室3と液晶表示パネル室4との間に設けられている。また、本体ケース1内における第2の冷却用ファン35の排気側には、第2の冷却用ファン35から送出される空気を光源室3内の電源15および光源14の各近傍にスムーズに導くためのダクト41が設けられている。

【0010】この液晶プロジェクトでは、第1および第2の冷却用ファン32、35が駆動すると、図1において矢印Cで示すように、第2の冷却用ファン35の駆動により吸気口36から液晶表示パネル室4内に吸い込まれた空気がR用液晶表示パネル21、G用液晶表示パネル26およびB用液晶表示パネル21の各近傍を通過してこれらを冷却した後、第2の冷却用ファン35からダクト41内に送出され、この送出された空気が第1の冷却用ファン32の駆動により光源室3内に吸い込まれ、この吸い込まれた空気が電源15および光源14の各近傍を通過してこれらを冷却した後、排気口31から外部に排出される。

【0011】このように、この液晶プロジェクトでは、液晶表示パネル室4側のみに吸気口36を設け、光源室3側のみに排気口31を設け、本体ケース1内に設けた第2の冷却用ファン35によって液晶表示パネル室4内の空気を光源室3内に流入させているので、冷却用ファン32、35が2つであっても、吸気口36および排気

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口31を共に1つとすることができる。

【0012】図2および図3はこの考案の他の実施例における液晶プロジェクタの概略構成を示したものである。これらの図において、図1と同一名称部分には同一の符号を付し、その説明を適宜省略する。

【0013】この液晶プロジェクタでは、ダクト41の下方における本体ケース1の底面の所定の個所に吸気口42が設けられている。そして、図2および図3において矢印Dで示すように、第1の冷却用ファン32の駆動により、第2の冷却用ファン35からダクト41内へ送出された空気と共に、吸気口42からの空気が光源室3内に吸い込まれ、この吸い込まれた空気が電源15および光源14の各近傍を通過してこれらを冷却した後、排気口31から外部に排出されるようになっている。したがって、この液晶プロジェクタでは、図1に示す液晶プロジェクタと比較して、電源15および光源14に対する冷却効果を高めることができる。

【0014】

【発明の効果】以上説明したように、請求項1～3記載の発明によれば、本体ケース内に設けた冷却用ファンによって液晶表示パネル室内の空気を光源室内に流入させ、この流入された空気によって光源室内を冷却するようにしているので、冷却用ファンの使用数よりも排気口の数を少なくすることができ、したがって設計が比較的自由となり、また配置位置も比較的自由となり、さらに騒音を低減することができる。また、請求項2記載の発明によれば、第2の冷却用ファンの駆動により吸気口か

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ら液晶表示パネル室内に吸い込まれた空気が光源室内に流入され、この流入された空気が第1の冷却用ファンの駆動により排気口から外部に排出されるようにしているので、冷却用ファンの使用数よりも吸気口の数を少なくすることができ、したがって設計が比較的自由となり、また防塵フィルタの使用数も少なくなり、コストを低減することができるばかりでなく、防塵フィルタのクリーニングが容易となる。

【図面の簡単な説明】

【図1】この考案の一実施例における液晶プロジェクタの概略構成を示す平面図。

【図2】この考案の他の実施例における液晶プロジェクタの概略構成を示す平面図。

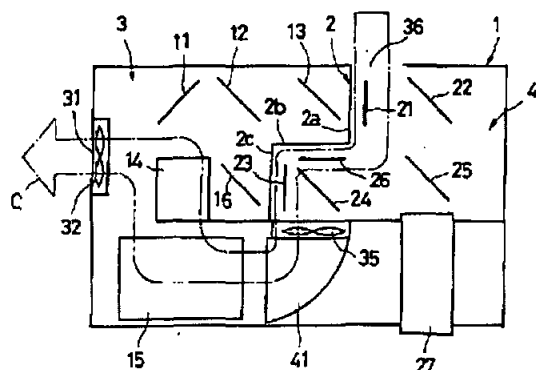
【図3】図2に示す液晶プロジェクタの正面図。

【図4】従来の液晶プロジェクタの一例の概略構成を示す平面図。

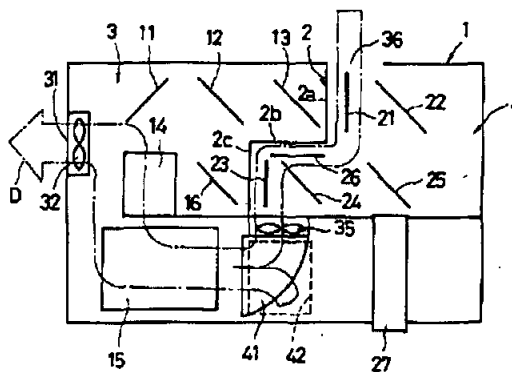
【符号の説明】

- 1 本体ケース
- 2 隔板
- 3 光源室
- 4 液晶表示パネル室
- 31 排気口
- 32 第1の冷却用ファン
- 35 第2の冷却用ファン
- 36 吸気口
- 41 ダクト
- 42 吸気口

【図1】



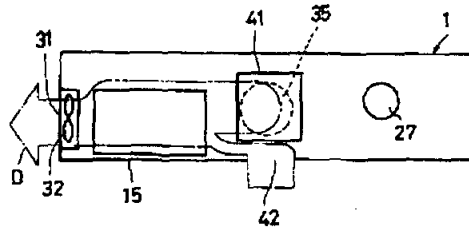
【図2】



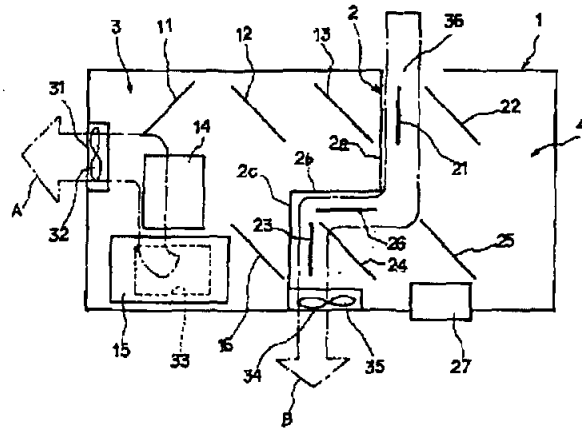
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【図3】



【図4】





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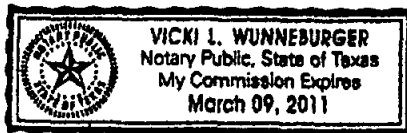
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We certify that the English translation conforms essentially to the original Japanese language.

Kim Vitray

Kim Vitray
Operations Manager

Subscribed and sworn to before me this 30th day of August, 2007.



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LIQUID CRYSTAL PROJECTOR

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[There are no amendments to this patent.]

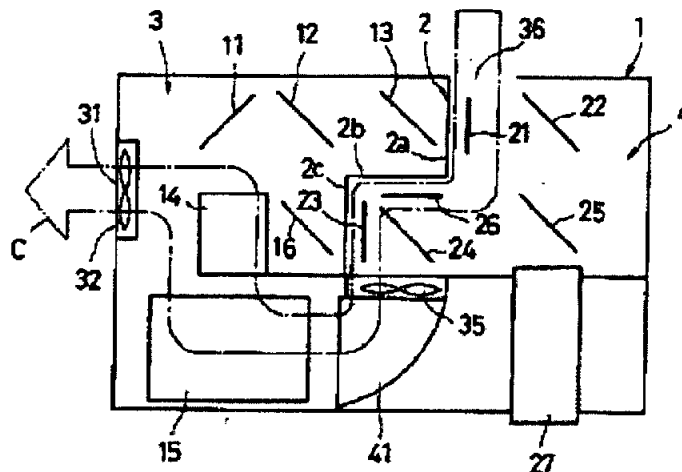
Abstract

Objective

To make the number of both the air intake ports and the exhaust ports less than the number of cooling fans used.

Constitution

A second cooling fan 35 is disposed between a light source chamber 3 and a liquid crystal display chamber 4 inside a chassis case 1, then, as shown by arrow C, air that has been drawn from an air intake port 36 into the liquid crystal display chamber 4 by the operation of the second cooling fan 35 passes through the vicinity of each of 3 liquid crystal display panels 21, 26, 23, cooling them, after which, it is discharged from the second cooling fan 35 into a duct 41, and this discharged air is drawn into the light source chamber 3 by the operation of a first cooling fan 32, which discharged air then passes through the vicinity of each of a power supply 15 and a light source 14, cooling them, after which, it is exhausted from an exhaust port 31.

Claims

1. A liquid crystal projector that is equipped with a multiplicity of cooling fans, wherein the liquid crystal projector is characterized in that at least one of the aforementioned multiplicity of cooling fans is disposed inside a chassis case, and an exhaust port is disposed in the aforementioned chassis case corresponding to the remaining cooling fans.
2. A liquid crystal projector in which at least a portion of the interior of the chassis case is divided by a transparent partition into a light source chamber and a liquid crystal display panel chamber, wherein the liquid crystal projector is characterized by being constituted with an air

intake port disposed in the aforementioned chassis case on the side of the aforementioned liquid crystal display panel chamber, an exhaust port disposed in the aforementioned chassis case on the side of the aforementioned light source chamber, a first cooling fan disposed inside the aforementioned chassis case corresponding to this exhaust port, and a second cooling fan disposed inside the aforementioned chassis case between the aforementioned light source chamber and the aforementioned liquid crystal display panel chamber.

3. A liquid crystal projector in which at least a portion of the interior of the chassis case is divided by a transparent partition into a light source chamber and a liquid crystal display panel chamber, wherein the liquid crystal projector is characterized by being constituted with an air intake port disposed in the aforementioned chassis case on the side of the aforementioned liquid crystal display panel chamber, an air intake [sic; exhaust] port disposed in the aforementioned chassis case on the side of the aforementioned light source chamber, a first cooling fan disposed inside the aforementioned chassis case corresponding to this exhaust port, and a second cooling fan disposed inside the aforementioned chassis case between the aforementioned light source chamber and the aforementioned liquid crystal display panel chamber, and with an exhaust port disposed in the aforementioned chassis case on the side of the aforementioned light source chamber on the exhaust side of this second cooling fan.

Detailed explanation of the invention

[0001]

Industrial application field

The present invention pertains to a liquid crystal projector.

[0002]

Prior art

Liquid crystal projectors are available wherein the light from a single light source is divided into three lights of a R (red) component, G (green) component, and B (blue) component, which are then shone on respective corresponding transparent liquid crystal display panels, and then various color television or the like images, which have been divided into the 3 R, G, and B colors on various liquid crystal display panels, are enlarged and projected overlaid on a screen, while at the same time, the light source and liquid crystal display panels, etc. are air-cooled.

[0003]

Figure 4 shows the schematic structure of an example of this kind of prior art liquid crystal projector. This liquid crystal projector is equipped with a rectangular chassis case 1. The interior of the chassis case 1 is divided by a transparent partition 2 made from glass plates, or the like, into a

light source chamber 3 and a liquid crystal display panel chamber 4. The partition 2 comprises a first partition segment 2a that is perpendicular to one of the long sides of the chassis case 1, a second partition segment 2b that extends from one end of this first partition segment 2a in a direction that is parallel with the long side of the chassis case 1, and a third partition segment 2c that extends from one end of this second partition segment 2b in a direction that is perpendicular to the other long side of the chassis case 1. A first reflecting mirror 11, first dichroic mirror 12, and second dichroic mirror 13 are disposed in that order from left to right on one long side of the chassis case 1 in the light source chamber 3. A light source 14 and its power supply 15 are disposed to the left, and a second reflecting mirror 16 is disposed to the right on the other long side of the chassis case 1 in the light source chamber 3. An R liquid crystal display panel 21 is disposed to the left on one long side of the chassis case 1 in the liquid crystal display panel chamber 4, with a third reflecting mirror 22 disposed to its right. A B liquid crystal display panel 23, third dichroic mirror 24, and fourth dichroic mirror 25 are disposed in that order from left to right on the other long side of the chassis case 1 in the liquid crystal display panel chamber 4. A G liquid crystal display panel 26 is disposed near the third partition segment 2c in the liquid crystal display panel chamber 4. Projection lenses 27 are disposed at a specified location corresponding to the fourth dichroic mirror 25 on the other long side of the chassis case 1. An exhaust port 31 is disposed at a specified location corresponding to the light source 14 to the right on the short side of the chassis case 1, and a first cooling fan 32 is disposed inside this exhaust port 31. An air intake port 33 is disposed at a specified location corresponding to the power supply 15 in the bottom surface of the chassis case 1. An exhaust port 34 is disposed at a specified location corresponding to the B liquid crystal display panel 23 on the other long side of the chassis case 1, and a second cooling fan 35 is disposed inside this exhaust port 34. An air intake port 36 is disposed at a specified location corresponding to the R liquid crystal display panel 21 in one long side of the chassis case 1.

[0004]

Thus, the R component light of the light from the light source 14 is reflected by the first reflecting mirror 11, transmitted by the first dichroic mirror 12, second dichroic mirror 13, first partition segment 2a, and R liquid crystal display panel 21, then reflected by the third reflecting mirror 22, then transmitted through the fourth dichroic mirror 12 [sic; 25] and then enters the projection lens 27. The G component light is reflected by the first reflecting mirror 11, first dichroic mirror 4 [sic; 12], and second reflecting mirror 16, transmitted by the third partition segment 2c, G liquid crystal display panel 23, and third dichroic mirror 24, and then reflected by the fourth dichroic mirror 12 [sic; 25] and enters the projection lens 27. The B component light is reflected by the first reflecting mirror 11, transmitted by the first dichroic mirror 12, reflected by the second dichroic mirror 13, transmitted by the second partition segment 2b and B liquid crystal

display panel 26, and then reflected by the third dichroic mirror 24 and fourth dichroic mirror 25 and enters the projection lens 27. The various R, G, and B component lights incident onto the projection lens 27, i.e., the various light images corresponding the respective color television and the like images that have been divided into 3 colors R, G, and B and displayed on respective liquid crystal display panels 21, 26, 23, are enlarged and projected overlaid on a screen, not shown, by the projection lens 27. Meanwhile, as the first cooling fan 32 is driven, air drawn from the air intake port 33 into the light source chamber 3, after passing through the various vicinities of the power supply 15 and light source 14, is exhausted to the exterior from the exhaust port 31, as shown by the arrow A in Figure 4, cooling the power supply 15 and the light source 14. As the second cooling fan is driven, air drawn from the air intake port 36 into the liquid crystal display panel chamber 4, after passing through the various vicinities of the R liquid crystal display panel 21, G liquid crystal display panel 26, and B liquid crystal display panel 23, is exhausted to the exterior from the exhaust port 34, as shown by the arrow B in Figure 4, cooling the various liquid crystal display panels, 21, 26, 23.

[0005]

Problems to be solved by the invention

However, since a first cooling fan 32 and its air intake port 33 and exhaust port 31 are disposed on the light source chamber 3 side, and a second cooling fan 35 and its air intake port 36 and exhaust port 34 are disposed on the liquid crystal display panel chamber 4 side, in this kind of prior art liquid crystal projector, two independent air intake/exhaust devices are respectively required and the problems described below are present. Namely, since respective exhaust ports 31, 34 are disposed in the light source chamber 3 and liquid crystal display panel chamber 4, there are two exhaust ports, which imposes restrictions on the design, and requires installation in locations in which obstructions, such as other equipment or walls, etc., are not present opposite each of the exhaust ports 31, 34, so that the installation location consequently also is subject to restrictions, and there is a further problem with the high noise level. Additionally, since respective air intake ports 33, 36 are disposed in the light source chamber 3 and the liquid crystal display panel chamber 4, not only is the cost increased, but there is also a problem in that it is difficult to clean the dust filters. The objective of this invention is to provide a liquid crystal projector in which the number of exhaust ports is less than the number of cooling fans used. Another objective of this invention is to provide a liquid crystal projector in which the number of air intake ports is less than the number of cooling fans used.

[0006]

Means to solve the problems

The invention disclosed in Claim 1 is a liquid crystal projector that is equipped with a multiplicity of cooling fans, wherein at least one of the aforementioned multiplicity of cooling fans is disposed inside a chassis case, and an exhaust port is disposed in the aforementioned chassis case corresponding to the remaining cooling fans. The invention disclosed in Claim 2 is a liquid crystal projector in which at least a portion of the interior of the chassis case is divided by a transparent partition into a light source chamber and a liquid crystal display panel chamber, which is constituted with an air intake port disposed in the aforementioned chassis case on the side of the aforementioned liquid crystal display panel chamber, an exhaust port disposed in the aforementioned chassis case on the side of the aforementioned light source chamber, a first cooling fan disposed inside the aforementioned chassis case corresponding to this exhaust port, and a second cooling fan disposed inside the aforementioned chassis case between the aforementioned light source chamber and the aforementioned liquid crystal display panel chamber. The invention disclosed in Claim 3 is a liquid crystal projector in which at least a portion of the interior of the chassis case is divided by a transparent partition into a light source chamber and a liquid crystal display panel chamber, which is constituted with an air intake port disposed in the aforementioned chassis case on the side of the aforementioned liquid crystal display panel chamber, an exhaust port disposed in the aforementioned chassis case on the side of the aforementioned light source chamber, a first cooling fan disposed inside the aforementioned chassis case corresponding to this exhaust port, and a second cooling fan disposed inside the aforementioned chassis case between the aforementioned light source chamber and the aforementioned liquid crystal display panel chamber, and with an exhaust port disposed in the aforementioned chassis case on the side of the aforementioned light source chamber on the exhaust side of this second cooling fan.

[0007]

Operation of the invention

The number of exhaust ports can be set less than the number of cooling fans used by causing air inside the liquid crystal display panel chamber to flow into the light source chamber by means of a cooling fan disposed inside the chassis case, thereby cooling the inside of the light source chamber with this inflowing air according to the invention disclosed in Claims 1-3. In addition, the number of air intake ports can be set less than the number of cooling fans used since air drawn from the air intake port into the liquid crystal display panel chamber is impelled to flow into the light source chamber by operation of the second cooling fan, and this inflowing air is exhausted outside the exhaust port by operation of the first cooling fan, according to the invention disclosed in Claim 2.

[0008]

Example embodiments

Figure 1 shows the schematic structure of a liquid crystal projector in an example embodiment of this device. In this figure, the same keys are used for identically named components as in Figure 4, and their descriptions have been appropriately omitted.

[0009]

In this liquid crystal projector, compared with the existing liquid crystal projector shown in Figure 4, an air intake port 33 is not disposed on the light source chamber 3 side and an exhaust port 34 is not disposed on the liquid crystal display panel chamber 4 side. Instead, a second cooling fan 35 is disposed inside the chassis case 1 between the light source chamber 3 and the liquid crystal display panel chamber 4. In addition, a duct 41 is disposed inside the chassis case 1 on the exhaust side of the second cooling fan 35 to smoothly guide the air drawn from the second cooling fan 35 to the vicinity of the power supply 15 and light source 14 inside the light source chamber 3.

[0010]

In this liquid crystal projector, when the first and second cooling fans 32, 35 are driven, as shown by the arrow C in Figure 1, air that has been drawn from an air intake port 36 into the liquid crystal display chamber 4 by operation of the second cooling fan 35 passes through the vicinity of each of the R liquid crystal display panel 21, G liquid crystal display panel 26, and B liquid crystal display panel 21 [sic; 23], cooling them, after which, it is discharged from the second cooling fan 35 into the duct 41, and this discharged air is drawn into the light source chamber 3 by the operation of a first cooling fan 32, said discharged air then passes through the vicinity of each of a power supply 15 and a light source 14, cooling them, after which, it is exhausted outside from the exhaust port 31.

[0011]

Thus, since an air intake port 36 is disposed only on the liquid crystal display panel chamber 4 side, an exhaust port 31 is disposed only on the light source chamber 3 side, and air inside the liquid crystal display panel chamber 4 is impelled to flow into the light source chamber 3 by a second cooling fan 35 disposed inside the chassis case 1 in this liquid crystal projector, while there are two cooling fans 32, 35, only one air intake port 36 and one exhaust port 31 are required.

[0012]

Figures 2 and 3 show the schematic structure of a liquid crystal projector in another embodiment of this device. In these figures, the same keys are used for identically named components as in Figure 1, and their descriptions have been appropriately omitted.

[0013]

In this liquid crystal projector, an air intake port 42 is disposed at an appropriate location in the bottom surface of the chassis case 1 beneath the duct 41. Thus, this is constituted, as shown in Figures 2 and 3, so that air from the air intake port 42 is drawn, together with air drawn from the second cooling fan 35 into the duct 41, into the light source chamber 3 by operation of the first cooling fan 32, said drawn air passes through the vicinity of each of the power supply 15 and the light source 14, cooling them, after which, it is exhausted from the exhaust port 31 to the outside. Consequently, the cooling effect on the power supply 15 and light source 14 can be increased compared with the liquid crystal projector shown in Figure 1.

[0014]

Effect of the invention

Since air inside the liquid crystal display panel chamber is impelled to flow into the light source chamber by a cooling fan disposed inside the chassis case, whereby the inside of the light source chamber is cooled by air inside the liquid crystal display panel chamber, according to the invention disclosed in Claims 1-3, the number of exhaust ports can be less than the number of cooling fans used and, consequently, there is relatively more freedom in design, there is relatively *more freedom in disposition location, and furthermore noise is reduced. In addition, since air* drawn into the liquid crystal display panel chamber from the air intake port by the operation of the second cooling fan is impelled to flow into the light source chamber, and since that inflowing air is exhausted outside from the exhaust port by the operation of the first cooling fan according to the invention disclosed in Claim 2, the number of air intake ports can be less than the number of cooling fans used and, consequently, not only is there relatively more freedom in design and costs can be reduced, but cleaning the dust filter is easier.

Brief description of the figures

Figure 1 is a plan-view drawing showing the schematic structure of a liquid crystal projector in one example embodiment of this device.

Figure 2 is a plan-view drawing showing the schematic structure of a liquid crystal projector in another example embodiment of this device.

Figure 3 is a front-view drawing of the liquid crystal projector in Figure 2.

Figure 4 is a plan-view drawing showing the schematic structure of an example of an existing liquid crystal projector.

Explanation of the reference symbols

- 1 Chassis case
- 2 Partition
- 3 Light source chamber
- 4 Liquid crystal display panel chamber
- 31 Exhaust port
- 32 First cooling fan
- 35 Second cooling fan
- 36 Air intake port
- 41 Duct
- 42 Air intake port

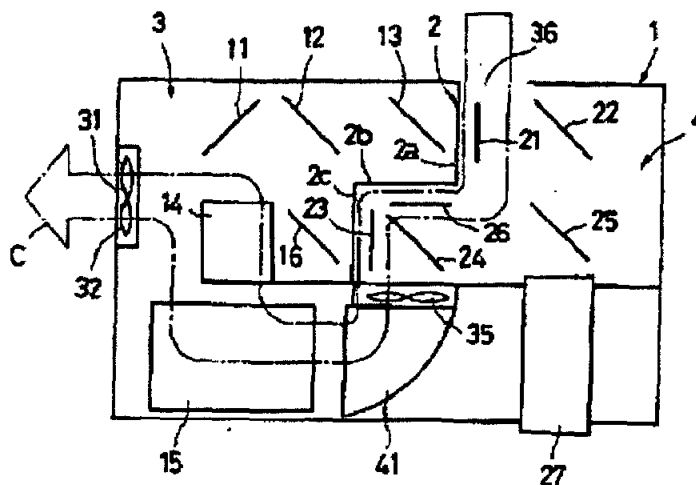


Figure 1

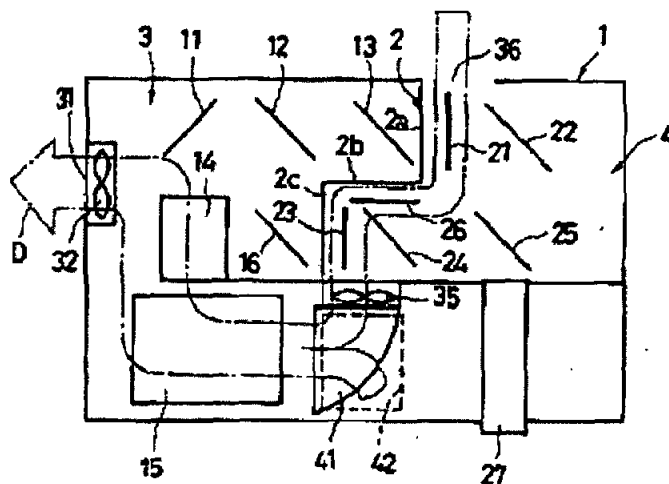


Figure 2

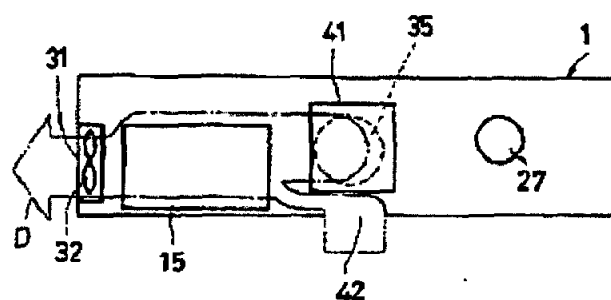


Figure 3

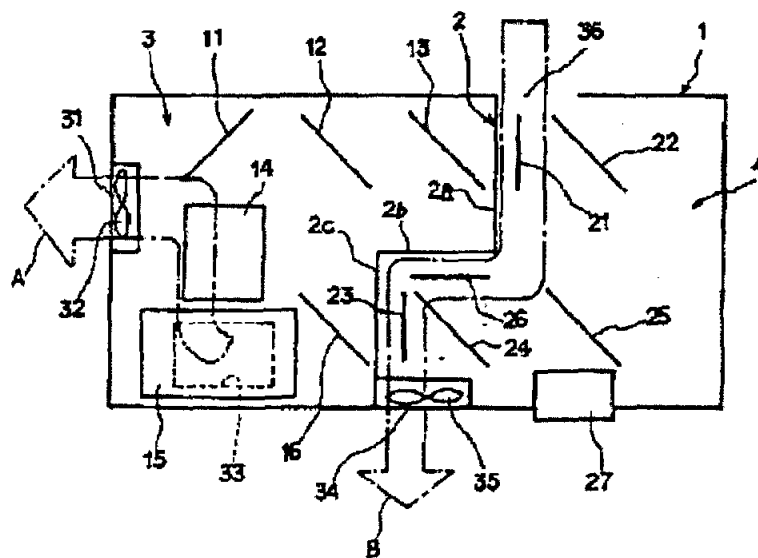


Figure 4

US005297005A

United States Patent [19]

[11] Patent Number: 5,297,005

Gourdine

[45] Date of Patent: Mar. 22, 1994

[54] APPARATUS AND METHOD FOR COOLING HEAT GENERATING ELECTRONIC COMPONENTS IN A CABINET

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[73] Assignee: Energy Innovations, Inc., Houston, Tex.

[21] Appl. No.: 952,308

[22] Filed: Sep. 28, 1992

[51] Int. Cl.⁵ H05K 7/20

[52] U.S. Cl. 361/697; 361/695

[58] Field of Search 361/380-386, 361/390, 395, 399

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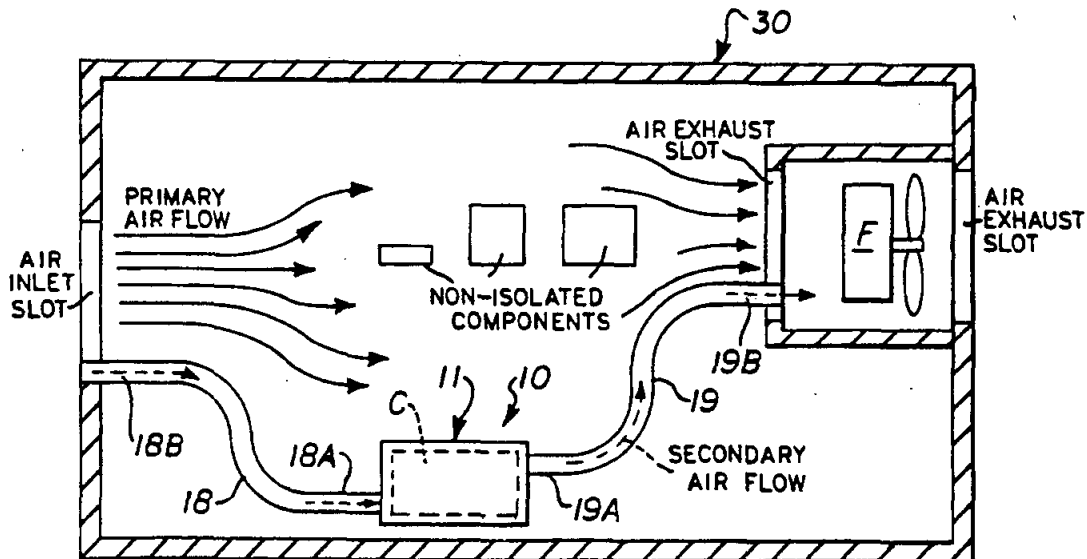
Primary Examiner—Gregory D. Thompson

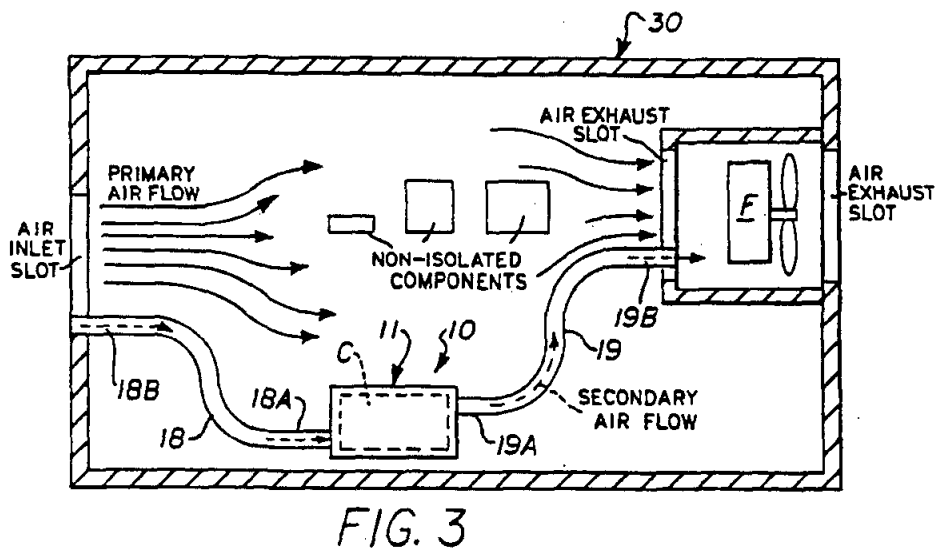
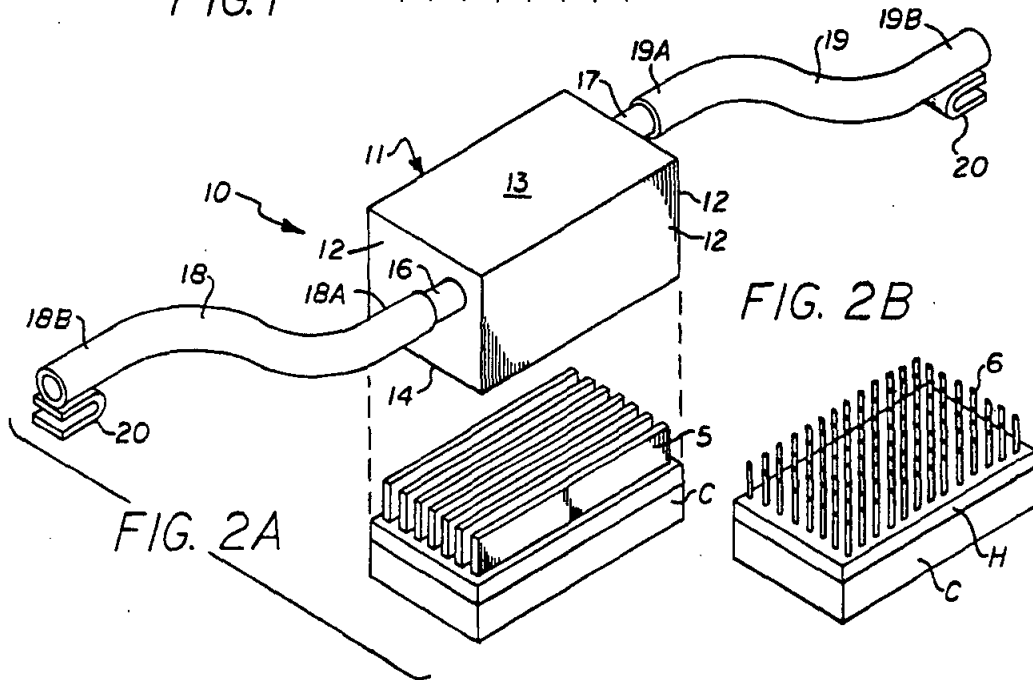
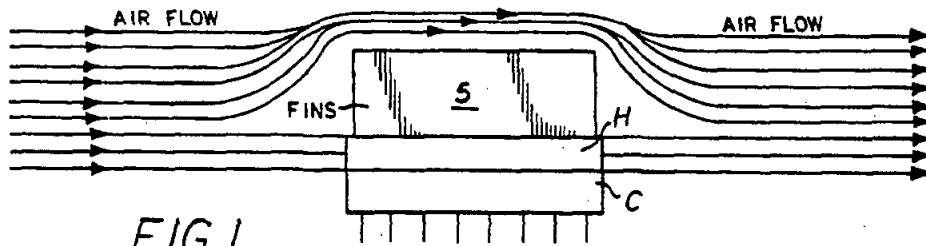
Attorney, Agent, or Firm—Kenneth A. Roddy

[57] ABSTRACT

Electronic components in a cabinet having an exhaust fan that creates a primary air flow across the components are cooled by a cooling enclosure which encloses predetermined heat generating electronic components to isolate them from other electronic components in the cabinet. An air inlet conduit connects the cooling enclosure with the air inlets in the cabinet and an air outlet conduit connects the enclosure with the air outlets of the cabinet and the exhaust fan. The conduits and enclosure define a secondary air flow pathway across the isolated electronic components to the air outlets and exhaust fan. The secondary air flow is isolated from the primary air flow through the cabinet. The exhaust fan creating the primary air flow across the non-isolated components simultaneously creates a separate secondary air flow through the secondary air flow pathway across the isolated heat generating components whereby the non-isolated components and the isolated components are independently cooled by the primary air flow and secondary air flows, respectively, and the heat generated by the isolated components and non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet. The cooling enclosure may also contain a heat sink.

24 Claims, 2 Drawing Sheets





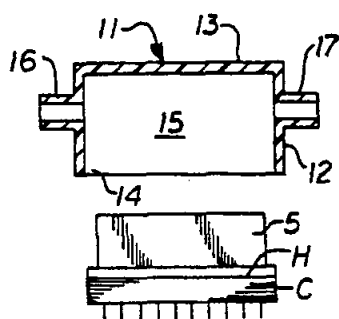


FIG. 4

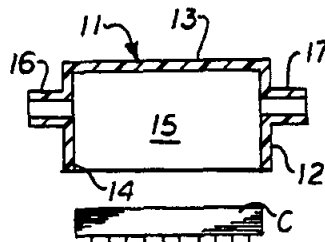


FIG. 5

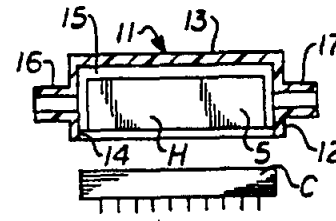


FIG. 6

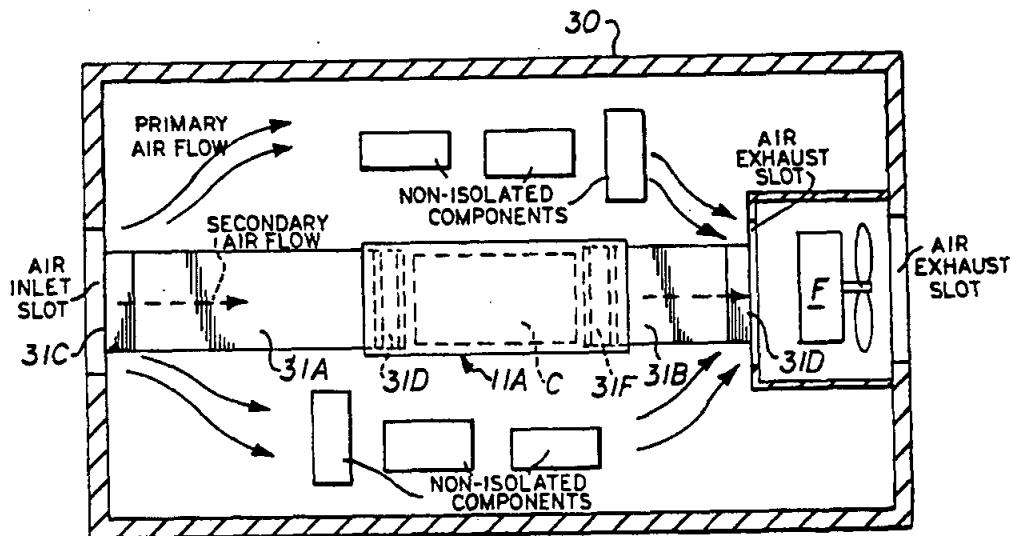


FIG. 7B

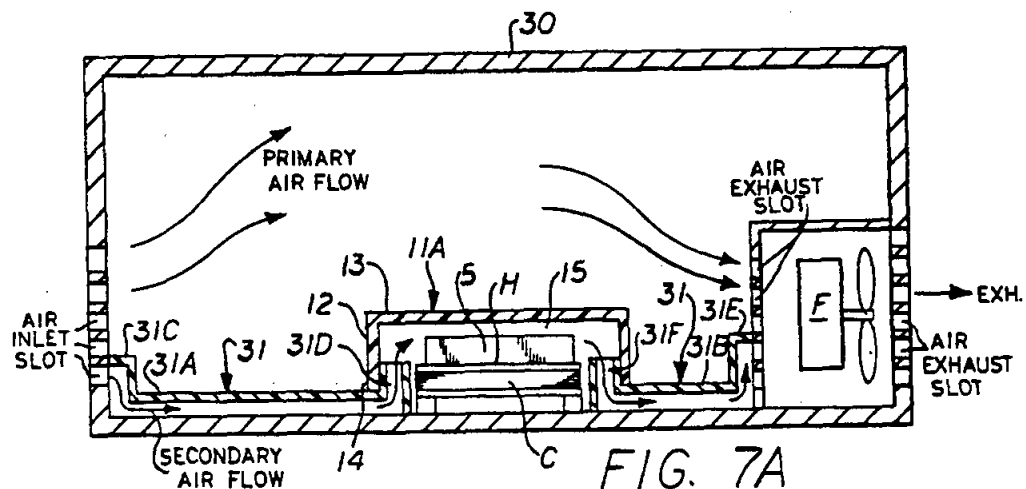


FIG. 7A

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APPARATUS AND METHOD FOR COOLING HEAT GENERATING ELECTRONIC COMPONENTS IN A CABINET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to apparatus and methods for cooling electronic heat generating components within a cabinet and more particularly to a method and apparatus for cooling electronic components wherein predetermined heat generating electronic components are isolated from other electronic components in the cabinet and the isolated components are cooled by a secondary air flow isolated from the primary air flow through the cabinet such that the non-isolated components and the isolated components are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the isolated components and non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

2. Brief Description of the Prior Art

A common problem in electronic packaging is that the heat generated by the electronic components in the cabinet is detrimental to the components themselves, particularly integrated circuits and microprocessor chips in computer cabinets. Heat is normally removed by circulating air across the components by one or more low powered exhaust fans mounted in or on the computer cabinet.

The microprocessor chip in a computer generates a relatively large amount of heat and is susceptible to error or damage caused by overheating. For example, the Intel 80486 microprocessor chip generates 4.5 watts in normal operation and must be maintained below 85° C. or it can introduce error as well as reduce its operating life. Even newer chips will generate 15-30 watts. To assist heat removal from an integrated circuit chip, a heat sink is often mounted on the top surface of the chip. Heat sinks are metal devices that have a plurality of fins or pins extending from a base which is mounted on the chip surface to radiate or transmit heat from the chip to the circulating air. The fins are usually aligned longitudinally with the prevalent direction of air flow and when the air flow direction is uncertain, pin-type heat sinks may be used.

The exhaust fan in a computer cabinet usually develops a single air flow path wherein air from the cabinet exterior is drawn in through inlet slots in the cabinet wall flows across the components including the heat sink and is exhausted through exhaust slots in the fan motor housing in another wall of the cabinet. Although the heat sink is useful in cooling the microprocessor chip, the heat generated by the heat sink is mixed with the heat generated by the other components in the cabinet such that the effective cooling of all the components including the ones having heat sinks is diminished.

Others have attempted to solve the heating problem by mounting a small supplementary fan on the heat sink, and mounting liquid cooling devices (water jackets) or devices utilizing the Peltier effect on the chip to be cooled.

The present invention overcomes the heating problem by isolating predetermined heat generating electronic components which may include those with heat sinks from other electronic components in the cabinet and providing a secondary air flow pathway from the

air inlets across the isolated electronic components to the air outlets and exhaust fan. The secondary air flow is isolated from the primary air flow. The exhaust fan in or on the cabinet creates a primary air flow across the non-isolated components between the air inlets and air outlets in the cabinet and exhausts the air to the cabinet exterior, and simultaneously creates a separate secondary air flow through the secondary air flow pathway across the isolated heat generating components between the air inlets and air outlets in the cabinet and exhausts the secondary air flow to the cabinet exterior. Thus, the non-isolated components and the isolated components are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the isolated components and non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide an apparatus and method for effectively cooling heat generating electronic components in a cabinet.

It is another object of this invention to provide an apparatus and method for effectively cooling heat generating electronic components in a cabinet which isolates predetermined heat generating electronic components which may include those with heat sinks from other electronic components in the cabinet and provides a secondary air flow pathway from the cabinet exterior across only the isolated electronic components.

Another object of this invention is to provide an apparatus and method for effectively cooling heat generating electronic components in a cabinet which isolates predetermined heat generating electronic components from other electronic components in the cabinet and provides a primary air flow across the non-isolated components, and simultaneously creates a separate secondary air flow through the secondary air flow pathway across the isolated heat generating components whereby the non-isolated components and the isolated components are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the isolated components and non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

Another object of this invention is to provide a cabinet for housing electronic components which includes ductwork and an enclosure to enclose heat generating components and provide the enclosed components with a secondary air flow pathway across the isolated heat generating components whereby the non-isolated components and the isolated components are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the isolated components and non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

Another object of this invention is to provide a cooling apparatus which can be installed quickly and easily on heat generating electronic components within a cabinet without modification to the existing equipment.

Another object of this invention is to provide a cooling apparatus that can be installed quickly and easily on integrated circuit chips including those with heat sinks which allows upgrading and replacement of low powered chips with high powered chip without having to change the existing thermal management equipment.

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A further object of this invention is to provide a cooling apparatus which will improve the thermal management system of cabinets containing heat generating electronic components.

A still further object of this invention is to provide a cooling apparatus for installation on heat generating electronic components which is simple in construction and inexpensive to manufacture.

Other objects of the invention will become apparent from time to time throughout the specification and claims as hereinafter related.

The above noted objects and other objects of the invention are accomplished by an apparatus and method for cooling electronic components which isolates predetermined heat generating electronic components which may include those with heat sinks from other electronic components in a cabinet and provides a secondary air flow pathway from the cabinet exterior across the isolated electronic components which is isolated from the primary air flow through the cabinet. The exhaust fan in or on the cabinet which creates a primary air flow across the non-isolated components between air inlets and outlets in the cabinet simultaneously draws air through the secondary air flow pathway across the isolated heat generating components and exhausts the secondary air flow to the cabinet exterior. Thus, the non-isolated components and the isolated components are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the isolated components and non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic elevation view of an integrated circuit chip with a heat sink mounted thereon showing the air flow path around the heat sink.

FIG. 2A is an exploded isometric view of an embodiment of the apparatus in accordance with the present invention being placed over an integrated circuit chip with a heat sink mounted thereon.

FIG. 2B is an isometric view of a heat sink having pins.

FIG. 3 is a schematic plan view of a computer cabinet with the apparatus in accordance with the present invention installed over a component to be cooled.

FIG. 4 is a side view in partial cross section of the component cooling enclosure being installed on an integrated circuit chip with a heat sink mounted thereon.

FIG. 5 is a side view in partial cross section of the component cooling enclosure being installed on an integrated circuit chip without a heat sink.

FIG. 6 is a side view in partial cross section of the component cooling enclosure being installed on an integrated circuit chip wherein the heat sink is mounted within the cooling enclosure and the assembly is installed as a unit.

FIG. 7A is a schematic side view in partial cross section of a cabinet having ductwork built into the cabinet with the cooling enclosure installed on the component to be cooled.

FIG. 7B is a schematic top view of the cabinet of FIG. 7A.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Integrated circuit chips, such as microprocessor chips generate a relatively large amount of heat and are susceptible to error or damage caused by overheating.

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For example, the Intel 80486 microprocessor chip generates 4.5 watts in normal operation and must be maintained below 85° C. or it can introduce error as well as reduce its operating life due to overheating. The integrated circuit chip is usually mounted with many other components on a circuit board in a cabinet which has a fan that draws air in from the cabinet exterior, circulates the air across all the electronic components, and then exhausts the air to the cabinet exterior in a single air flow path to cool the components. To assist heat removal from an integrated circuit chip, a heat sink is often mounted on the top surface of the chip by thermal adhesive, mechanical slots, or a combination thereof.

The conventional heat sink is a metal device having a plurality of fins or pins extending from a base which is mounted on the chip surface to radiate or transmit heat from the chip to the circulating air. The fins are usually aligned longitudinally with the prevalent direction of air flow and when the air flow direction is uncertain, pin-type heat sinks may be used.

Referring to the drawings by numerals of reference, there is shown schematically in FIG. 1, the air flow path through and around an integrated circuit chip C with a conventional heat sink H mounted thereon to assist heat removal from the integrated circuit chip. In FIG. 2A the heat sink H is shown with fins 5, and FIG. 2B shows a heat sink with pins 6.

As indicated by arrows in FIG. 1, some of the air flow is deflected around the heat sink H due to friction exerted on the flow as it passes through the fins 5 or pins 6. Part of the heat in the heat sink is carried away by the relatively high speed flow of air through the closely spaced fins or pins (convection), while the rest of the heat is conducted to the relatively slow speed flow above the heat sink. Convective heat transfer is generally more effective than conductive heat transfer.

Although mounting heat sinks to these types of chips will facilitate cooling of the chip to some extent, the heat generated by the heat sink is mixed with the heat generated by the other components in the cabinet such that the effective cooling of all the components including the ones having heat sinks is diminished.

Referring now to FIGS. 2A and 4, there is shown a cooling apparatus 10 in accordance with the present invention. The cooling apparatus 10 has a hollow housing 11 formed of electrically non-conductive material configured to enclose the heat generating electronic component C. In the illustrated embodiment, the housing 11 is a box-like enclosure having opposed side walls 12, a top wall 13, and an open bottom end 14 defining an interior cavity 15. An inlet port 16 is provided through one side wall and an outlet port 17 is provided through another side wall. A length of flexible conduit 18 is connected at one end 18A to the inlet port 16 and another length of flexible conduit 19 is connected at one end 19A to the outlet port 17. For purposes of illustration only one component C is shown, however, it should be understood that the housing 11 may be sized to enclose more than one component.

As best seen in FIG. 3, the free end 18B of the conduit 18 is adapted to be releasably attached to the side wall of a cabinet 30 in which the component C to be cooled is mounted and in fluid communication with at least one inlet slot of the cabinet through which fresh air normally enters. The free end 19B of the conduit 19 is adapted to be releasably attached to the housing of the exhaust fan F in or on the cabinet in which the compo-

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ment to be cooled is mounted and in fluid communication with at least one exhaust slot of the fan housing through which cabinet air is exhausted. Suitable mounting hardware, such as clips 20, may be secured to the free ends of the conduits 18 and 19 for attaching their free ends to the cabinet side wall and fan housing, respectively. In some instances, depending upon the size of the cabinet and fan housing slots, the free ends 18B and 19B of the conduits 18 and 19 may be simply inserted in the inlet and exhaust slots without requiring mounting hardware.

FIG. 4 shows an embodiment of the cooling enclosure 11 wherein the component to be enclosed is an integrated circuit chip C having a heat sink H with fins 5 mounted thereon. The open bottom end 14 of the housing or cooling enclosure 11 is configured to engage the top surface or sides of the component C to be cooled and the interior cavity 15 is sized to enclose the component leaving a space between the top of the component and the top wall 13 of the enclosure. The inlet and outlet ports 16 and 17 may be axially offset from one another to facilitate circulation of the air in the cavity 15. If the component C to be cooled has a heat sink H mounted thereon, the height of the inlet and outlet ports 16 and 17 are located relative to the heat sink to direct most of the air flow through the fins 5 or pins 6 rather than around the fins or pins to achieve greater cooling. The open bottom end 14 of the cooling enclosure 10 may be dimensioned to frictionally engage the sides of the component to be cooled, or may be installed on the component using a suitable flexible thermal adhesive.

FIG. 5 shows an embodiment of the cooling enclosure 11 wherein the component to be enclosed is an integrated circuit chip C without a heat sink. In this application, the open bottom end 14 of the enclosure 11 is configured to engage the sides of the chip C. A suitable thermal adhesive may be applied to the chip C to secure the enclosure 11 thereon.

FIG. 6 shows an embodiment of the cooling enclosure 11 wherein a heat sink is installed in the enclosure cavity 15 and the enclosure and heat sink assembly is supplied as a single unit to be mounted on the component to be cooled (integrated circuit chip C). In this application, the heat sink H is secured within the open end 14 of the enclosure 11 with its fins 5 or pins 6 extending upwardly into the cavity 15 of the enclosure. With a fin-type heat sink, the fins are aligned longitudinally with the prevalent direction of air flow between the inlet and outlet ports 16 and 17. In some applications, a pin-type heat sink as shown in FIG. 2D, may be installed in the enclosure 11. With the embodiment of FIG. 6, the flat bottom of the heat sink H is mounted on the top surface of the chip C by conventional means, such as a suitable thermal adhesive, mechanical slots, or a combination thereof.

It should be understood that although a box-like configuration has been illustrated as an example of a preferred embodiment, the cooling enclosure 11 may be cylindrical or configured otherwise to conform to the shape of the component to be cooled. It should also be understood that while flexible conduits are described in the preferred embodiment, that the conduits 18 and 19 may be rigid, or that air passageways may be built into the cabinet chassis and connected to the component enclosure.

Referring again to FIG. 3, when the cabinet exhaust fan F is operating, a major portion of the outside air flows over the non-isolated components in the cabinet

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and through the exhaust slots in the fan housing. Simultaneously, a small portion of outside air, or secondary air flow, is drawn into the free end 18B of the conduit 18 from the air inlet slot in the cabinet and passes through the conduit into the enclosure 11 and across the isolated component C and through the outlet conduit 19 to be exhausted by the fan. The secondary air flow entering the enclosure 11 flows over the isolated component, and if the component has a heat sink, the air flows directly through the fins 5 or pins 6 of the heat sink.

Sufficient air flow is drawn across the isolated component C and through the fins or pins of the heat sink to achieve improved cooling of the isolated component without jeopardizing the cooling effects of the outside air circulating across the other non-isolated components (primary air flow). As a result, cooling of the other non-isolated components by the circulating air outside of the enclosure is improved because the primary air flow through the cabinet is not mixed with the secondary hot air emerging from the isolated component or heat sink. Also the air of the secondary air flow which cools the isolated component or heat sink is not mixed with heat from the other warm non-isolated components inside the cabinet. Thus, a double benefit is achieved by the separate primary and secondary cooling flows of air.

FIGS. 7A and 7B show a cabinet 30 which has air passageways built into the cabinet chassis to form the secondary air passageway. In this embodiment, the component C to be cooled is mounted on a circuit board in the cabinet 30 or other means conventional in the art. The cabinet 30 is provided with a system of conduit or hollow ductwork 31. The conduit or ductwork 31 has an air intake portion 31A which extends from the side wall of the cabinet containing the air inlet slots and an air outlet portion 31B which extends from the component C to the housing of the exhaust fan F. The air intake portion 31A of the ductwork 31 has one open end 31C positioned in fluid communication with at least one air inlet slot of the cabinet and another open end 31D positioned adjacent the component C. The air outlet portion 31B of the ductwork 31 has an open end 31E positioned in fluid communication with the housing of the exhaust fan F such that the fan will draw air through the ductwork and another open end 31F positioned adjacent the component C.

In the embodiment of FIG. 7A and 7B, the cooling enclosure 11A has side walls 12, a top wall 13, an open bottom end 14, and an interior cavity 15 configured to enclose the component C to be cooled. The side walls 12 of the enclosure are configured to surround the open ends 31D and 31F of the ductwork 31 adjacent the component C to be cooled. When the exhaust fan F is in operation, a major portion of the outside air flows over the non-isolated components in the cabinet and through the exhaust slots in the fan housing. Simultaneously, a secondary air flow, is drawn into the open end 31C of the ductwork from the air inlet slot in the cabinet and passes through the ductwork into the enclosure 11A covering the isolated component C and through the outlet portion of the ductwork to be exhausted by the fan. The secondary air flow entering the enclosure flows over the isolated component C, and if the component has a heat sink H, the air flows directly through the fins 5 or pins 6 of the heat sink.

It should be understood that the enclosure 11A may have inlet and outlet ports through the side walls, as previously described, which can be connected to the

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open ends of the ductwork. The enclosure 10A may also have a heat sink mounted in the interior cavity 15 and be installed as a unit on the component to be cooled.

The effectiveness of the present focused flow technique in providing greater cooling was tested by removing a microprocessor chip generating only 0.4 W from a PC computer and replacing it with a simulated Intel 80486 microprocessor chip (Intel Corporation) and heat sink generating 4.5 W. A conventional metal finned heat sink was mounted atop the simulated 80486 chip. The chip and heat sink was enclosed by a box-like cooling enclosure similar to that shown in FIG. 2.

A first temperature was obtained with the inlet and outlet conduits disconnected. With the computer and fan running and no air flow through the component enclosure, the temperature of the chip and heat sink rose to a temperature T_s of 80° C. With the inlet tube and outlet conduits connected to an inlet slot on the cabinet housing and an exhaust slot on the fan housing, respectively, to direct a flow of air through the enclosure, the temperature fell to 55.5° C. As the safe operating temperature for the 80486 chip is 85° C., this experiment demonstrates the feasibility of upgrading computers by replacing a low powered chip with a high powered chip without the necessity of having to change the existing thermal management equipment (the exhaust fan).

The simulated 80486 chip and heat sink with the component cooling enclosure was also installed in a test fixture where the speed of air "u" approaching the heat sink fins could be measured. The temperature of the chip and heat sink T_s was then measured, with an inlet air temperature T_i of about 25° C. The tabulated results are shown in the chart below along with comparable data provided by Intel Corporation for the same chip and heat sink. It was found that for every value of air speed used, the chip and heat sink temperature is lower when the component cooling enclosure is used. It was also found that when the enclosed chip and heat sink were in the computer cabinet, the chip and heat sink temperature T_s was lowered to approximately 55° C., and the speed of the air was 0.16 m/s corresponding to a mass flow rate of 0.00012 kg/s.

AIR SPEED "u" m/s	TEMPERATURE OF CHIP		
	Without Heat Sink	With Intel Heat Sink	With Heat Sink & Focusing Device
0.16	98° C.	76° C.	55° C.
0.5	95° C.	70° C.	38° C.
0.9	90° C.	61° C.	36° C.
1.25	87° C.	56° C.	32° C.

The following table summarizes the thermodynamic efficiency and performance results obtained with the simulated chip and heat sink (4.5 Watts) with an ambient temperature T_i of approximately 25° C. at various air flow rates:

where T_o =the outlet air temperature,

where Q =4.5 Watts, and

where Heat Capacity of Air, c =approx. 10^3 Joules/kg-C,

Thermodynamic Efficiency $E_f=(T_o-T_i)/(T_s-T_i)$, and

Convection Efficiency $E_c=Q_c/Q$.

T_s °C.	T_i °C.	T_o °C.	m kg/s	E_f	E_c	Pressure Drop N/m ²	$\Delta T_s/Q$ °C./W
55.5	25.7	43.3	0.00012	0.59	0.46	20	6.6
38.6	24.8	31.2	0.00035	0.46	0.51	97	3.0
36.0	24.8	29.9	0.00064	0.45	0.73	274	2.4
32.2	24.3	27.4	0.00088	0.39	0.60	685	1.7

The test results demonstrate that by isolating the chip and heat sink and subjecting the component to a separate secondary air flow greatly improves cooling and is a very cost effective method of improving the thermal management system of cabinets containing heat generating components. The present apparatus does not require modification of the existing equipment. By preventing the mixing of the hot air from the isolated component with the rest of the air circulating through the cabinet, both air flows cool the surfaces they contact more effectively, thereby increasing the overall effectiveness of cooling by the exhaust fan. Additional benefits of the improved cooling method include; the reduction of errors in integrated circuit chips due to chip overheating, increased useful life of the chip, and the capability of operating at higher chip speeds without overheating.

While this invention has been described fully and completely with special emphasis upon a preferred embodiment, it should be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described herein.

I claim:

1. A method of cooling electronic components within a cabinet having an exhaust fan which creates a primary air flow across the components between air inlets and air outlets in the cabinet and exhausts the air to the cabinet exterior, comprising the steps of;

enclosing at least one predetermined heat generating electronic component to isolate it from other electronic components in the cabinet, and

providing a secondary air flow pathway from the air inlets across the enclosed heat generating electronic component to the air outlets and exhaust fan, the secondary air flow being isolated from the primary air flow, such that

the fan in operation creates the primary air flow across the non-isolated components between the air inlets and air outlets in the cabinet and exhausts the air to the cabinet exterior, and

simultaneously creates a separate secondary air flow through said secondary air flow pathway across the enclosed heat generating electronic component between the air inlets and air outlets in the cabinet and exhausts the secondary air flow to the cabinet exterior, whereby

the non-isolated components and the enclosed heat generating electronic component are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the enclosed heat generating electronic component and the non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

2. A method of cooling electronic components according to claim 1 including the steps of;

prior to enclosing the predetermined heat generating electronic component, mounting a heat sink member in thermal contact with the heat generating

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electronic component to be enclosed, the heat sink member having heat conduction means for conducting heat generated by the component to be enclosed; then

enclosing the heat generating electronic component 5 with the heat sink member mounted thereon to isolate it from other electronic components in the cabinet, and

providing a secondary air flow pathway from the air inlets across the enclosed electronic component 10 and heat sink member heat conduction means to the air outlets and exhaust fan, the secondary air flow being isolated from the primary air flow, such that

the non-isolated components and the enclosed heat 15 generating electronic component with the heat sink member are independently cooled by the primary air flow and secondary air flow, respectively, and the heat generated by the enclosed heat generating electronic component with the heat sink member 20 and the non-isolated components is not mixed within the cabinet to maximize cooling of all components within the cabinet.

3. Apparatus for cooling electronic components within a cabinet of the type having air inlets and air 25 outlets and an exhaust fan which creates a primary air flow across the components between the air inlets and air outlets in the cabinet and exhausts the air to the cabinet exterior, said apparatus comprising;

an enclosure formed of electrically non-conductive 30 material having an interior cavity configured to enclose at least one predetermined heat generating electronic component and isolate it from other electronic components in the cabinet,

air inlet means on said enclosure connected with the 35 air inlets of the cabinet and air outlet means on said enclosure connected with the air outlets of the cabinet and the exhaust fan, and

said air inlet means, said enclosure, and said air outlet means defining a secondary air flow pathway from 40 the air inlets of the cabinet across the enclosed heat generating electronic component to the air outlets and exhaust fan of the cabinet which is isolated from the primary air flow,

the fan in operation creating the primary air flow 45 across the non-isolated components between the air inlets and air outlets of the cabinet and exhausting the air to the cabinet exterior, and

simultaneously creating a separate secondary air flow through said secondary air flow pathway across 50 the enclosed heat generating electronic component between the air inlets and air outlets of the cabinet and exhausting the secondary air flow to the cabinet exterior, such that

the non-isolated components and the enclosed heat 55 generating electronic component are independently cooled by the primary air flow and said secondary air flow, respectively, and the heat generated by the enclosed heat generating electronic component and the non-isolated components is not 60 mixed within the cabinet to maximize cooling of all components within the cabinet.

4. The apparatus according to claim 3 wherein; said enclosure has at least one side wall and a top wall defining said interior cavity. 65

5. The apparatus according to claim 3 wherein; said enclosure has four side walls and a top wall defining said interior cavity.

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6. The apparatus according to claim 3 wherein; the predetermined heat generating electronic component includes a heat sink component, and said enclosure interior cavity is configured to enclose the predetermined heat generating electronic component and heat sink component and isolate them from other electronic components in the cabinet.

7. The apparatus according to claim 3 wherein; said air inlet means and said air outlet means include an air inlet port and an air outlet port on said enclosure each in fluid communication with said interior cavity for directing air through said interior cavity of said enclosure, and

conduit means connecting said air inlet port on said enclosure with the air inlets of the cabinet and said air outlet port of said enclosure with the air outlets of the cabinet and the exhaust fan to isolate said secondary air flow pathway from the primary air flow pathway.

8. The apparatus according to claim 7 wherein; said conduit means is formed of flexible tubular material.

9. The apparatus according to claim 7 wherein; said conduit means comprises a tubular section of conduit connected at one end to said air inlet port on said enclosure and having releasable fastener means at its opposite end for releasable connection to the air inlets of the cabinet.

10. The apparatus according to claim 7 wherein; said conduit means comprises a tubular section of conduit connected at one end to said air outlet port on said enclosure and having releasable fastener means at its opposite end for releasable connection to the air outlets of the cabinet through which air is exhausted by the fan.

11. The apparatus according to claim 7 wherein; said conduit means comprises a first tubular section of conduit connected at one end to said air inlet port on said enclosure and having releasable fastener means at its opposite end for releasable connection to the air inlets in the cabinet, and

a second tubular section of conduit connected at one end to said air outlet port on said enclosure and having releasable fastener means at its opposite end for releasable connection to the air outlets of the cabinet through which air is exhausted by the fan.

12. The apparatus according to claim 3 including; a heat sink element having heat conduction means disposed within said interior cavity of said enclosure, and

said enclosure with said heat sink element disposed therein is configured to be mounted on the predetermined heat generating electronic component with said enclosure enclosing the predetermined heat generating electronic component and said heat sink element and isolating them from other electronic components in the cabinet.

13. The apparatus according to claim 12 wherein; said heat sink element conduction means comprises a series of parallel spaced fins aligned longitudinally between said air inlet means and said air outlet means on said enclosure to allow said secondary air flowing through said secondary air flow pathway to flow between said fins.

14. The apparatus according to claim 12 wherein; said heat sink element conduction means comprises a series of upstanding pin elements positioned between said air inlet means and said air outlet means

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to allow said secondary air flowing through said secondary air flow pathway to flow between said pin elements.

15. The apparatus according to claim 3 wherein; said air inlet means and said air outlet means on said enclosure include a system of hollow ductwork connecting said enclosure interior cavity in fluid communication with the air inlets of the cabinet and with the air outlets of the cabinet and the exhaust fan to create said secondary air flow pathway across the enclosed heat generating electronic component.
16. A cabinet for containing and cooling heat generating electronic components comprising;
- a cabinet housing having mounting means for mounting electronic components thereon and air inlets and air outlets for allowing air to pass through the cabinet interior in a primary air flow pathway across said mounting means.
 - a plurality of electronic components including heat generating electronic components mounted on said mounting means;
 - an exhaust fan connected with said housing inlets and outlets to create said primary air flow pathway across said mounting means and said components mounted thereon between said air inlets and air outlets in said cabinet housing and exhaust the air to the housing exterior;
 - secondary air duct means in said cabinet housing configured to enclose at least one predetermined heat generating electronic component and isolate it from other components mounted therein and to connect said enclosed component in fluid communication with said air inlets, said air outlets, and said exhaust fan;
 - said secondary air duct means isolated from said primary air flow pathway to define a separate secondary air flow pathway therethrough from said air inlets across said enclosed heat generating electronic component to said air outlets and said exhaust fan;
 - said exhaust fan in operation creating said primary air flow pathway across the non-isolated components between said air inlets and said air outlets in said cabinet housing and exhausting the air to the cabinet exterior, and
 - simultaneously creating said separate secondary air flow pathway through said secondary air duct means across said enclosed heat generating component between said air inlets and said air outlets in said cabinet housing and exhausting the secondary air flow to the cabinet exterior, such that the non-isolated components and said enclosed heat generating electronic component are independently cooled by the primary air flow pathway and said secondary air flow pathway, respectively, and the heat generated by said enclosed heat generating component and the non-isolated components is not mixed within said cabinet housing to maximize cooling of all components within said cabinet housing.
17. The cabinet according to claim 16 wherein; said secondary air duct means includes a heat sink component.

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18. The cabinet according to claim 17 wherein; said at least one predetermined heat generating electronic component includes a heat sink component, and
- said secondary air duct means has an interior cavity configured to enclose said at least one predetermined heat generating electronic component and said heat sink component and isolate them from other electronic components mounted within said cabinet housing.
19. The cabinet according to claim 17 wherein; said secondary air duct means includes an enclosure formed of electrically non-conductive material having an interior cavity configured to enclose said predetermined heat generating electronic component and isolate it from other electronic components in the cabinet.
20. The cabinet according to claim 20 wherein; said enclosure is removably connected with said secondary air duct means, and
- said enclosure has at least one side wall and a top wall defining an interior cavity configured to enclose said predetermined heat generating electronic component.
21. The cabinet according to claim 20 wherein; said enclosure has four side walls and a top wall defining an interior cavity configured to enclose said predetermined heat generating electronic component.
22. The cabinet according to claim 16 wherein; said secondary air duct means comprises a first hollow duct having one end in fluid communication with said air inlets in said cabinet housing and another end positioned adjacent to said mounting means, and
- a second hollow duct having one end positioned adjacent said mounting means and another end in fluid communication with said air outlets in said cabinet housing through which air is exhausted by said fan.
23. The cabinet according to claim 22 wherein; said secondary air duct means includes a removable enclosure formed of electrically non-conductive material having an interior cavity configured to removably enclose said predetermined heat generating electronic component mounted on said mounting means and isolate it from other electronic components in said cabinet housing, and to encompass the ends of said first and second ducts and adjacent said mounting means, such that air flowing through said first and second ducts flow across said enclosed heat generating component between said air inlets and said air outlets in said cabinet housing and is exhausted to exterior of said cabinet housing.
24. The cabinet according to claim 23 wherein; said enclosure includes a heat sink element in said cavity having heat conduction means, and
- said enclosure with said heat sink element is configured to be mounted on said predetermined heat generating electronic component with said enclosure enclosing said heat sink element and isolating said heat sink element from other electronic components in the cabinet.

* * * * *

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1 PATENTS IN THE CASE, BUT RIGHT NOW THERE'S ONLY ONE.

2 **THE COURT:** SO NOW 90 TO 120 SOUNDS REASONABLE?

3 **MR. HU:** YES.

4 **THE COURT:** OKAY. OKAY. WELL, I THINK YOU SHOULD GO
5 AHEAD AND START DOING -- EVEN WITH SUMMARY JUDGMENT ON
6 INVALIDITY, WHICH I AM GOING TO ALLOW, BUT YOU SHOULD GO AHEAD
7 AND DO DISCOVERY ON THE INFRINGEMENT SO AT LEAST SOME WORK CAN
8 BE DONE ON IT.

9 AND MAYBE WHAT IS SORT OF THE EASIEST, THE LEAST
10 EXPENSIVE. MAYBE DEFER DEPOSITIONS UNTIL WE'VE HAD THE SUMMARY
11 JUDGMENT MOTION. AND UNLESS EVERYTHING HAS BEEN DONE BUT
12 DEPOSITIONS. IS THAT --

13 **MR. UTERMOHLEN:** WELL, ACTUALLY, YOUR HONOR, I MEAN
14 THAT BRINGS UP ANOTHER TOPIC. WE HAD A LOT OF -- AT THE TIME THE
15 MOTIONS WERE GRANTED, A LOT OF OUTSTANDING DISCOVERY DISPUTES,
16 WHICH THE PARTIES HAD DISCUSSED AMONG THEMSELVES AND PROPOSED
17 APPOINTING A SPECIAL MASTER TO GET THOSE RESOLVED.

18 **THE COURT:** YOU HEARD ME EARLIER. YOU KNOW THE
19 ROUTINE, RIGHT?

20 **MR. UTERMOHLEN:** WELL, I HEARD THAT YOU DON'T LIKE
21 TO SEND THEM OUT TO MAGISTRATE JUDGES, ALTHOUGH --

22 **THE COURT:** BECAUSE THEIR TIME IS VALUABLE.

23 **MR. UTERMOHLEN:** YES.

24 **THE COURT:** AND THEY HAVE GOT A LOT OF WORK.

25 **MR. UTERMOHLEN:** YES.

KATHERINE WYATT, OFFICIAL REPORTER, CSR, RMR (925) 212-5224

1 **MR. HU:** RIGHT. YOUR HONOR, THE FINAL INVALIDITY
2 CONTENTIONS ARE BASED ON YOUR HONOR'S RULINGS. IT WASN'T BASED
3 ON --

4 **THE COURT:** OKAY. THEY WERE.

5 **MR. HU:** RIGHT.

6 **THE COURT:** OKAY. OKAY.

7 **MR. HU:** IT WASN'T BASED ON THEIR CONTENTIONS.

8 **THE COURT:** OKAY. OKAY. WELL, HOW MUCH ADDITIONAL
9 PRIOR ART DO YOU THINK THERE MIGHT BE, IF ANY?

10 **MR. HU:** ONE, JUST SORT OF THE MOTIVATION TO COMBINE
11 CERTAIN REFERENCES. SO WE CAN GET THEM FILED IN TWO WEEKS, GET
12 THEM EXCHANGED. AND IF IT'S NOT FILED WITH THE COURT WE CAN
13 SURE OUR FINAL INVALIDITY CONTENTIONS IN TWO WEEKS, AND WE CAN
14 FILE OUR SUMMARY JUDGMENT MOTION TWO WEEKS AFTER THAT.

15 **MR. UTERMOHLEN:** YOUR HONOR, I DO OBJECT TO ADDING
16 NEW PRIOR ART AT THIS STAGE THREE YEARS AFTER CORETRONIC KNEW
17 WHAT WE SAID THE CLAIM CONSTRUCTION WAS.

18 **THE COURT:** I UNDERSTAND. BUT IF, IN FACT, THE
19 MOTION WAS BASED UPON THE CLAIM CONSTRUCTION THE COURT DID, AND
20 IF THERE IS SOMETHING THAT'S IMPLICATED THAT BY VIRTUE OF THE
21 FED CIRCUIT'S CONSTRUCTION, THEN, YOU KNOW, THAT -- THEY ARE
22 GOING TO BE ALLOWED TO RAISE IT, YOU KNOW. AND SO WE SHOULD GO
23 THROUGH ALL OF THIS AT TRIAL UNNECESSARILY?

24 WHAT I WANT YOU TO DO IS FILE YOUR SUMMARY JUDGMENT
25 MOTION WITH, WITH YOUR AMENDED CLAIM -- OR RATHER AMENDED

1 INVALIDITY CONTENTIONS. BUT IT IS TO BE LIMITED TO THAT ONE
2 PRIOR ART REFERENCE, RIGHT?

3 MR. HU: YES.

4 THE COURT: AND THEN, YOU CAN TAKE A LOOK. IF YOU
5 NEED TO DO ANY DISCOVERY, LIMITED DISCOVERY IN RESPONSE, THEN
6 LET US KNOW HOW MUCH TIME YOU NEED TO DO THAT DISCOVERY BEFORE
7 YOU FILE YOUR RESPONSE TO HIS MOTION ON FOR SUMMARY JUDGMENT.
8 OKAY?

9 AND SO, YOU KNOW, THIS IS TRYING TO TRUNCATE THINGS
10 BUT AT THE SAME TIME GIVE YOU A LITTLE TIME TO DO SOME
11 DISCOVERY. SO IF YOU -- HOW SOON, THEN, CAN YOU GET YOUR MOTION
12 FILED?

13 MR. HU: THREE WEEKS. I CAN CHECK WITH THE CLERK AND
14 THEN SEE ABOUT A HEARING DATE.

15 THE COURT: WELL, LET'S TRY TO FIGURE IT OUT NOW. SO
16 THREE WEEKS WOULD TAKE IT OUT -- YOU COULDN'T DO IT IN TWO
17 WEEKS?

18 MR. HU: WE COULD.

19 THE COURT: YES. WELL, DO IT IN TWO WEEKS, THEN.
20 WHAT WOULD THAT BE?

21 THE CLERK: OCTOBER 4TH.

22 THE COURT: OCTOBER 4TH.

23 NOW, IN THE ORDINARY COURSE YOUR OPPOSITION WOULD BE
24 DUE OCTOBER THE 21ST, IS IT?

25 THE CLERK: EIGHTEENTH.

1 Q. Do you recall those?
2 A. Yes.
3 Q. Were there any other patents that you looked at
4 in connection with this declaration?
5 A. Yes.
6 Q. And what were they?
7 A. Well, I think one of them was called Masasiko.
8 There's one that looked like a jet engine picture.
9 There was the overhead projector style patent whose name
10 I don't recall.
11 MR. UTERMOHLEN: Counsel, can you provide us
12 with whatever Dr. Biber reviewed?
13 MS. RADER: I can take that under advisement.
14 I think she's talking about other patents that were in
15 our invalidity contentions.
16 BY MR. UTERMOHLEN:
17 Q. Are you familiar with the invalidity
18 contentions of Coretronic filed in this case or served?
19 A. I believe I briefly reviewed it.
20 Q. Mm-hmm. Did you review any patents that aren't
21 listed in those contentions?
22 A. I don't -- I don't recall that kind of detail.
23 MR. UTERMOHLEN: Well, we will -- we will ask
24 that you identify anything she reviewed in connection
25 with this declaration.

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1 ordinary skill in the art, but I've worked with many
2 people who do and I keep that in mind when I draw my
3 conclusions.
4 Q. In what respect do you not have ordinary skill
5 in the art?
6 A. I believe I'm an expert in thermal design.
7 Q. And the '158 patent is a thermal design patent?
8 A. Could be construed as such since some of the
9 claims refer to cooling.
10 Q. Are you an expert in projector design?
11 A. I may be more skilled than most in projector
12 design. Maybe not an expert.
13 Q. Are you of ordinary skill in the art in
14 projector design?
15 A. No.
16 Q. What is your understanding of the role of
17 inherency in the obviousness determination?
18 A. I have no idea.
19 Q. What do you understand inherent to mean?
20 MS. RADER: Objection. Calls for a legal
21 conclusion.
22 THE WITNESS: I would read in here just the
23 common meaning.
24 BY MR. UTERMOHLEN:
25 Q. And what -- what do you understand the common

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1 MS. RADER: We can do that.
2 BY MR. UTERMOHLEN:
3 Q. Now, in paragraph 7 you indicate that what you
4 were attempting to do is determining where the claimed
5 invention was known or obvious; is that correct?
6 A. Yes.
7 Q. What's your understanding of how one goes about
8 determining obviousness?
9 A. To a large -- to a large extent I believe
10 common sense plays a large role.
11 Q. Can you elaborate what the procedure is to
12 determine obviousness?
13 MS. RADER: Objection. Calls for a legal
14 conclusion.
15 You can answer.
16 THE WITNESS: You asked can I elaborate or --
17 BY MR. UTERMOHLEN:
18 Q. Yeah, my -- my question is: What's the
19 procedure someone is to go through to determine
20 obviousness?
21 A. Well, from a legal standpoint I don't know.
22 Q. All you can say is that it has something to do
23 with common sense?
24 A. Common sense. There's that phrase about
25 ordinary skill in the art. Obviously I don't have

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1 meaning to be?
2 A. Of inherent?
3 Q. Mm-hmm.
4 A. Would you give me an example?
5 Q. Well, I would imagine that you've used it in
6 this declaration. Let me see if I can find an example.
7 Before we do that, why don't you just tell me
8 what the ordinary meaning means to you as a general
9 thing without a particular context.
10 A. Well, for example, something that's inherent in
11 a projector would be the elements that make it a
12 projector: for example, a projection lens, an image
13 display system and a light source, for example. Those
14 would be inherent in a projector.
15 Q. What makes them inherent?
16 A. Well, it's not a projector if you don't have
17 all those things.
18 Q. So if someone refers to a projector, you think
19 it's required that it have those three elements?
20 A. Yes.
21 Q. Can anything be optional in a projector and
22 still be inherent in a projector?
23 A. I don't think so.
24 MR. UTERMOHLEN: Let's go off the record for a
25 second.

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1 (Recess.)
 2 BY MR. UTERMOHLEN:
 3 Q. All right. Let me direct you to Exhibit 79,
 4 Dr. Biber, which is the '158 patent. And first I'll
 5 refer you to column 5, which includes a list of figures.
 6 Do you see that?
 7 A. Yes.
 8 Q. And there's Figures 1 through 8 referenced, and
 9 specifically Figure 4 is described as:
 10 "A schematic representation of the
 11 optical system in accordance with the
 12 preferred embodiment of the invention."
 13 A. Yes.
 14 Q. Do you see schematic used or referenced in any
 15 of the other figures?
 16 A. No.
 17 Q. What's your understanding of what a schematic
 18 representation means?
 19 A. It portrays the essential characteristics of
 20 the general arrangement without including a lot of
 21 detail like screws or screw holes or specific vent
 22 patterns.
 23 Q. So --
 24 A. It --
 25 Q. -- it shows the relevant function without

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1 necessarily showing the physical structure?
 2 A. Yes, that sounds good.
 3 Q. And in referring to Figure 4, can you give any
 4 examples of the sense in which this is schematic?
 5 A. Well, it shows none of the mechanical retaining
 6 elements to keep the optical elements aligned.
 7 Q. Anything else?
 8 A. It doesn't show the configuration for any type
 9 of housing. It shows a light beam as a single line
 10 rather than the complex collection of rays that it is.
 11 Q. Mm-hmm. For example, elements 922 and 921,
 12 rays would go through all the little bumps on those
 13 elements?
 14 A. That's correct.
 15 MR. UTERMOHLEN: Let me mark another exhibit.
 16 (Deposition Exhibit 81 marked by the
 17 court reporter.)
 18 BY MR. UTERMOHLEN:
 19 Q. Dr. Biber, placing Exhibit 81 in front of you,
 20 is that an English translation of the Nakamura reference
 21 that you've discussed in your declaration?
 22 A. Yes.
 23 Q. Let me refer you to paragraph 12 which is on
 24 page 8. Do you see there where it says:
 25 "Figures 2 and 3 show the schematic

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1 structure of a liquid crystal projector."
 2 A. Yes.
 3 Q. What does it mean that Figures 2 and 3 show the
 4 schematic structure?
 5 MS. RADER: Objection. Calls for speculation.
 6 THE WITNESS: I read that as showing the
 7 general arrangements of the elements.
 8 BY MR. UTERMOHLEN:
 9 Q. Without necessarily showing the physical
 10 detail?
 11 A. Right.
 12 Q. So let's turn to Figures 2 and 3, which are on
 13 the last page of the exhibit.
 14 You see on Figure 2 there's an airflow shown as
 15 coming in through intake port 36 and then passing over
 16 to three liquid crystal panels?
 17 A. Yes.
 18 Q. Is there any structure shown as -- that would
 19 cause that airflow to make right angle turns like it
 20 does?
 21 A. There's no structure showing that.
 22 Q. So in that sense, would you say it's a
 23 schematic diagram that shows the function of cooling
 24 without necessarily showing the detailed structure of
 25 the flow?

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1 A. Yes.
 2 Q. Would you say that Figures 2 and 3 are
 3 inconsistent in how they show the combining of the flows
 4 from intake 42 and the flow that's coming through duct
 5 41?
 6 MS. RADER: Objection. Vague.
 7 THE WITNESS: Could you rephrase that?
 8 BY MR. UTERMOHLEN:
 9 Q. You see in Figure 2 there's a flow coming up
 10 from intake port 42, right? Do you see a flow shown
 11 there?
 12 A. Figure 2, flow from -- yes.
 13 Q. Okay. And as you can see in Figure 3, that
 14 flow is underneath duct 41 when it first comes into the
 15 projector?
 16 A. Yes.
 17 Q. And then to the left it mixes with the flow
 18 that's come through 41 from fan 35?
 19 A. Yes.
 20 Q. Isn't there an inconsistency in how those two
 21 flows are shown in the vicinity of duct 41 between the
 22 two figures? And specifically, isn't -- in Figure 2 the
 23 two flows are shown as about equal in dimension; is that
 24 right?
 25 A. Could you give me one part of the question at a

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<p>1 time, please?</p> <p>2 Q. In Figure 2 are the two flows, the flow that</p> <p>3 originates in intake port 36 and the flow that</p> <p>4 originates in intake port 42, shown as about equal in</p> <p>5 dimension?</p> <p>6 A. Yes.</p> <p>7 Q. However, in Figure 3 the flow through duct 41</p> <p>8 is shown as significantly larger than the flow that</p> <p>9 comes in intake port 42?</p> <p>10 A. Yes.</p> <p>11 Q. So isn't that an unrealistic aspect of these</p> <p>12 figures?</p> <p>13 A. No.</p> <p>14 Q. Why not?</p> <p>15 A. Because they're shown in two different</p> <p>16 dimensions.</p> <p>17 Q. So you're saying in the width dimension they</p> <p>18 could be equal, but in the height dimension they could</p> <p>19 be unequal?</p> <p>20 A. Schematically speaking, yes.</p> <p>21 Q. Mm-hmm. What do you mean by schematically</p> <p>22 speaking?</p> <p>23 A. Well, it's what the patent filer had in mind</p> <p>24 that the flow would do.</p> <p>25 Q. How so?</p> <p style="text-align: right;">Page 17</p>	<p>1 A. That's right.</p> <p>2 Q. Do you see that the dimension of the flow</p> <p>3 changes from the right-hand side of the power supply to</p> <p>4 the left-hand side?</p> <p>5 A. Yes.</p> <p>6 Q. Do you know what structure has caused that?</p> <p>7 A. No.</p> <p>8 Q. Let me -- let me refer you also to</p> <p>9 paragraph 13. Unfortunately, this is a complicated</p> <p>10 sentence. But the second sentence of the</p> <p>11 paragraph refers to the air from air intake port 42 as</p> <p>12 well as the air drawn from the second cooling fan 35</p> <p>13 into the duct 41. Correct?</p> <p>14 A. Yes, it says that.</p> <p>15 Q. And it says:</p> <p>16 "...said drawn air passes through the</p> <p>17 vicinity of each of the power supply 15 and</p> <p>18 the light source 14, cooling them."</p> <p>19 A. Yes.</p> <p>20 Q. It does not say that the air passes through the</p> <p>21 power supply 15 or through the lamp 14, correct?</p> <p>22 A. It does not say that.</p> <p>23 Q. So isn't it possible, consistent with the use</p> <p>24 of the term "vicinity," that they don't pass through it?</p> <p>25 A. It's possible.</p> <p style="text-align: right;">Page 19</p>
<p>1 A. This is what they thought it would do. It's</p> <p>2 schematic.</p> <p>3 Q. You mean it's to show the general function of</p> <p>4 the flow?</p> <p>5 A. That's right.</p> <p>6 Q. In Figure 2, you see duct 41 in that figure.</p> <p>7 It has a curved outer perimeter, correct?</p> <p>8 A. That's correct.</p> <p>9 Q. And the flow that's passing through duct 41 is</p> <p>10 not filling that duct, correct?</p> <p>11 A. That's the way it's drawn.</p> <p>12 Q. Yes. But, in fact, is that an unrealistic</p> <p>13 depiction of the flow?</p> <p>14 A. I don't think it would do that, no.</p> <p>15 Q. It would fill -- it would fill the duct?</p> <p>16 A. Most likely.</p> <p>17 Q. How do we know when Nakamura's depictions of</p> <p>18 these flows are realistic and when they're not?</p> <p>19 A. I think it takes experience.</p> <p>20 Q. You can't -- you can't tell just by looking at</p> <p>21 the figures?</p> <p>22 A. I don't believe so.</p> <p>23 Q. Farther down where the -- in Figure 2 where the</p> <p>24 flow passes through the area marked 15, that's the power</p> <p>25 supply, correct?</p> <p style="text-align: right;">Page 18</p>	<p>1 MR. UTERMOHLEN: Let me mark another exhibit.</p> <p>2 (Deposition Exhibit 82 marked by the</p> <p>3 court reporter.)</p> <p>4 BY MR. UTERMOHLEN:</p> <p>5 Q. Dr. Biber, Exhibit 82 is the Gourdine patent</p> <p>6 that you reviewed in connection with your declaration,</p> <p>7 correct?</p> <p>8 A. Yes.</p> <p>9 Q. This patent relates to cooling a microprocessor</p> <p>10 chip in a computer; is that right?</p> <p>11 A. Yes.</p> <p>12 Q. Computers, do they have power supplies?</p> <p>13 A. Yes.</p> <p>14 Q. And this patent doesn't disclose cooling a</p> <p>15 power supply, does it?</p> <p>16 A. No.</p> <p>17 Q. Do projectors have integrated circuit chips?</p> <p>18 A. Yes.</p> <p>19 Q. Why -- let me first refer you to a portion of</p> <p>20 the patent. You're familiar with Figure 3, which is</p> <p>21 also shown on the front of the patent?</p> <p>22 A. Yes.</p> <p>23 Q. Let me first, in connection with column 1 of</p> <p>24 the patent, refer you to the paragraph that's from about</p> <p>25 lines 32 to 47.</p> <p style="text-align: right;">Page 20</p>

1 Do you see that paragraph?
 2 A. Yes.
 3 Q. It refers to an Intel 80486 microprocessor chip
 4 as being something that a computer that generates
 5 relatively large amounts of heat and is susceptible to
 6 air or damage caused by overheating. Is that correct?
 7 A. Partially.
 8 Q. Okay. In what ways should my statement be
 9 corrected?
 10 A. It doesn't generate large amounts of heat.
 11 Q. Even though sentence one says that it generates
 12 a relatively large amount of heat?
 13 A. I guess sentence one says that.
 14 Q. But you disagree with sentence one?
 15 A. For the time it's possible that that was a
 16 large amount of heat.
 17 Q. 4.5 watts?
 18 A. Yes.
 19 Q. Is it your understanding that object C in
 20 Figure 3 that's being cooled is such a microprocessor
 21 chip?
 22 A. Yes, that's my understanding.
 23 Q. Why -- why does it cool that chip as opposed to
 24 some other component in the cabinet?
 25 A. Why does what cool?

Page 21

1 Q. Why does Gourdine disclose cooling such a
 2 microprocessor chip as opposed to some other component
 3 in the cabinet?
 4 A. Apparently because that was the highest heat
 5 chip in the unit.
 6 Q. What component in a projector is the hottest?
 7 A. The lamp.
 8 Q. What's the wattage of the lamp --
 9 MS. RADER: Objection, vague.
 10 BY MR. UTERMÖHLEN:
 11 Q. -- typically?
 12 A. A typical projector lamp could be in the area
 13 of 100 watts.
 14 Q. How about a power supply, what's the wattage of
 15 a power supply in a projector?
 16 A. It would be lower than that in the context of a
 17 projector.
 18 Q. Lower than 100 watts?
 19 A. Yes.
 20 Q. Do you have any sense of the range?
 21 A. Typical power supply efficiency is around 80 to
 22 90 percent. So it would be ten to 20 percent of the
 23 lamp power.
 24 Q. So you're saying about ten to 20 watts?
 25 A. Somewhere in the neighborhood.

Page 22

1 Q. Now, it's my understanding that your opinion is
 2 that the '158 patent is obvious over a combination of
 3 Gourdine Exhibit 82 with Nakamura Exhibit 81, correct?
 4 A. Yes.
 5 Q. If you were to combine those two, how would you
 6 do it?
 7 A. Combine them for what objective?
 8 Q. If you were to combine them to form a
 9 projector, what -- what would one of ordinary skill in
 10 the art do to the Nakamura reference to incorporate the
 11 structures shown in the Gourdine reference?
 12 A. With the idea of solving which problem?
 13 Q. Well, what problem were you addressing in your
 14 declaration when you talked about putting the two
 15 together?
 16 A. Power supply cooling. So in that case I would
 17 make sure the power supply gets plenty of good clean
 18 air.
 19 Q. But Gourdine doesn't disclose cooling the power
 20 supply, right?
 21 A. Discloses cooling other electronics.
 22 Q. So you would apply that to cooling of power
 23 supply in Nakamura?
 24 A. Yes.
 25 Q. Is that consistent with Nakamura's structure?

Page 23

1 A. Consistent in what way?
 2 Q. Well, before we go to that, why don't you first
 3 tell me exactly what you would do to the Figure 2 and 3
 4 embodiment in Nakamura to incorporate Gourdine's
 5 disclosure.
 6 A. I wouldn't blow warm air from the objects into
 7 the power supply.
 8 Q. Why not?
 9 A. It's preheated air.
 10 Q. So -- so you're looking at the structure shown
 11 here in Figure 3. How would that be incorporated in the
 12 Figure 2 and 3 embodiment of Nakamura?
 13 A. So constraining the airflow from the lower vent
 14 into the power supply so that it can't mix with the warm
 15 air from the optics fan would be a good first step.
 16 Q. So how specifically would you do that?
 17 A. With a duct.
 18 Q. Like that shown in Gourdine?
 19 A. That's one possible way.
 20 Q. Well, would you put the duct of Gourdine in
 21 there or would you put some other duct in there?
 22 A. I might put some other duct.
 23 Q. Why a different duct?
 24 A. The shape of the Gourdine duct is not
 25 necessarily appropriate to the shape of the power supply

Page 24

1 in Nakamura.
 2 Q. What's wrong with the shape of the Gourdine
 3 duct?
 4 A. Quite small diameter.
 5 Q. You're referring to the conduit 18?
 6 A. 18 and 19, yes.
 7 Q. Mm-hmm. In order to get that air -- how --
 8 well, let me phrase it this way: How does Gourdine get
 9 sufficient airflow through those conduits?
 10 A. There's suction from the fan.
 11 Q. Is there a plenum space formed by the fan
 12 housing to assist with that?
 13 A. It seems -- the schematic seems to show that.
 14 Q. And if you applied that same type of duct into
 15 Figure 2 of Nakamura, wouldn't you also have to have
 16 some sort of housing for the fan to get sufficient draw
 17 through the duct?
 18 A. Not necessarily.
 19 Q. Why not?
 20 A. Because if the diameter is larger, then the
 21 pressure drop balance may be sufficient without needing
 22 to use a second duct on the exhaust.
 23 Q. So if you applied Gourdine's duct, you would
 24 need a housing, but if you applied a modified duct you
 25 might not?

Page 25

1 A. That's correct.
 2 Q. So would you direct all the air from duct 42 --
 3 excuse me, not duct 42, but air intake port 42 into the
 4 power supply?
 5 A. Let me make sure I'm seeing the correct figure.
 6 MS. RADER: Duct 42, you're referring to Figure
 7 2 and 3 of Nakamura?
 8 MR. UTERMOHLEN: I corrected myself not to mean
 9 duct 42, but air intake port 42. Yes, I'm talking about
 10 Figures 2 and 3 in Nakamura. Let me restate the
 11 question.
 12 Q. The question is: Would you use all the air --
 13 let me restate it again.
 14 Would one of ordinary skill in the art applying
 15 Gourdine to Nakamura use all the air that is coming into
 16 the projector through air intake port 42 to cool power
 17 supply 15?
 18 A. Not necessarily.
 19 Q. How much would they use?
 20 A. I don't know.
 21 Q. Is there any structure in Gourdine that shows a
 22 duct that you would use in Nakamura?
 23 A. By structure, what do you mean?
 24 Q. Are there any examples that you would borrow
 25 directly to cool the power supply of Nakamura?

Page 26

1 A. I might use the idea of the housing 13.
 2 Q. Which figure are you referring to?
 3 A. Figure 2A, I guess. In Figure 3 it would be
 4 11. I'm not sure the difference between 11 and 13.
 5 Q. 13 is just the housing and not the conduit or
 6 duct directing the air, correct?
 7 A. 13 is the housing, yes.
 8 Q. Is there any disclosure of a duct or conduit in
 9 Gourdine that you would borrow directly to use in
 10 Nakamura?
 11 A. What do you mean by directly?
 12 Q. Without modifying it.
 13 A. Really it depends on the situation.
 14 Q. What does it depend on?
 15 A. The strength of the fans, the amount of heat to
 16 be removed, the existing flow pattern.
 17 Q. Well, can we assume that the projector we're
 18 modifying is the one shown in Figures 2 and 3 of
 19 Nakamura?
 20 A. We can assume that, yes, and then?
 21 Q. Does that provide you with enough information
 22 to determine whether there's any structure in Nakamura
 23 for a duct that you would borrow? Excuse me, any
 24 structure in Gourdine that you would borrow?
 25 A. I would borrow the concepts.

Page 27

1 Q. But not the specifically disclosed structure?
 2 A. Well, there's -- there's no dimensions given on
 3 the specifically disclosed structure --
 4 Q. Mm-hmm.
 5 A. -- so it's hard to say.
 6 Q. Well, suppose it was sized as it is there in
 7 Figure 2 and that the housing 13 was large enough to
 8 contain the power supply 15, would you borrow the
 9 conduit shown there?
 10 A. It's something I might try.
 11 Q. Would you expect it to work?
 12 A. In my personal experience, I might want to make
 13 the conduits a little larger.
 14 Q. So you think it might not work with the
 15 dimensions shown here?
 16 A. It's schematic.
 17 Q. What's schematic?
 18 A. The Gourdine drawing is schematic.
 19 Q. If you look at Figure 3 -- not Figure 3, column
 20 3 of Gourdine, it refers to Figure 2 as an exploded
 21 isometric view of an embodiment; do you see that? 2A,
 22 rather.
 23 A. Column 3?
 24 Q. Under the figures -- you see the listing of
 25 figures in column 3 of Gourdine?

Page 28

<p>1 A. Yeah.</p> <p>2 Q. And it refers to Figure 2A as an exploded</p> <p>3 isometric view of an embodiment?</p> <p>4 A. Yes.</p> <p>5 Q. What's your understanding of what that means?</p> <p>6 A. It's the viewpoint of the drawing with respect</p> <p>7 to the axis position.</p> <p>8 Q. What do you mean by axis position?</p> <p>9 A. The X, Y, Z axis of a drawing.</p> <p>10 Q. What does isometric mean in that context?</p> <p>11 A. It refers to the angle with which you're</p> <p>12 viewing the origin.</p> <p>13 Q. And what does isometric tell you about that</p> <p>14 angle?</p> <p>15 A. I'm not -- I don't know exactly what the angle</p> <p>16 is.</p> <p>17 Q. It's not a plan view, I suppose it means, then,</p> <p>18 like an isometric triangle? It's not a 90-degree</p> <p>19 triangle?</p> <p>20 A. You're thinking isosceles.</p> <p>21 Q. You're right. I am. All right. Never mind.</p> <p>22 So what makes you say it's a schematic view</p> <p>23 since it's not described as a schematic view?</p> <p>24 A. There's no dimensions given.</p> <p>25 Q. Is that all it takes to make something</p> <p style="text-align: right;">Page 29</p>	<p>1 42 and dedicate it to the power supply, you will not</p> <p>2 then be able to use that air to cool the lamp, correct?</p> <p>3 A. I don't know.</p> <p>4 Q. Why do you mean you don't know?</p> <p>5 A. I don't know where the vents are in the power</p> <p>6 supply.</p> <p>7 Q. What is it that you mean by taking the concept</p> <p>8 of Gourdine and applying it to Nakamura?</p> <p>9 A. It could take any number of forms. You could</p> <p>10 use some or all of the duct work. You could use the</p> <p>11 housing in any combination.</p> <p>12 Q. So you're saying that one of ordinary skill in</p> <p>13 the art would not necessarily borrow a conduit system</p> <p>14 like that shown in Gourdine to modify Nakamura?</p> <p>15 A. They would use as much of it as was needed.</p> <p>16 Q. And would that include a dedicated air intake</p> <p>17 duct upstream of the power supply and a dedicated</p> <p>18 exhaust duct downstream of the power supply?</p> <p>19 A. It could include whatever is necessary.</p> <p>20 Q. And then would that be something that was</p> <p>21 necessary?</p> <p>22 A. I don't know.</p> <p>23 Q. So you don't know if one of ordinary skill in</p> <p>24 the art would adopt that structure?</p> <p>25 MS. RADER: Objection. Argumentative.</p> <p style="text-align: right;">Page 31</p>
<p>1 schematic is not giving a dimension?</p> <p>2 A. No, we discussed schematic earlier.</p> <p>3 Q. All right. But we didn't define what was</p> <p>4 the -- what necessarily made something schematic.</p> <p>5 A. It conveys the idea, the essential idea, the</p> <p>6 essential components without giving a lot of specifics.</p> <p>7 Q. So how much air would you take from air intake</p> <p>8 port 42 if you applied Gourdine to the structure of the</p> <p>9 Figures 2 and 3 embodiment of Nakamura?</p> <p>10 A. You're asking what I would do?</p> <p>11 Q. What one of ordinary skill in the art would</p> <p>12 have done applying Gourdine in the fashion that you say</p> <p>13 should have been done in your declaration?</p> <p>14 A. I don't know the answer to that a priori.</p> <p>15 Q. So one of ordinary skill in the art wouldn't</p> <p>16 have known how much air to take?</p> <p>17 A. They would not know how much, no.</p> <p>18 Q. Isn't the structure of Figures 2 and 3 of</p> <p>19 Nakamura to take the air from air intake 42 and use it</p> <p>20 to cool both the power supply and the lamp?</p> <p>21 A. I believe that's the idea.</p> <p>22 Q. That's the schematic function shown in the --</p> <p>23 in the figures?</p> <p>24 A. Yes.</p> <p>25 Q. And whatever air you take from air intake port</p> <p style="text-align: right;">Page 30</p>	<p>1 THE WITNESS: Engineers use as much as they</p> <p>2 need to and no more.</p> <p>3 BY MR. UTERMOHLEN:</p> <p>4 Q. So they might not use the structure shown in</p> <p>5 Gourdine, then, to modify Nakamura?</p> <p>6 A. They might not.</p> <p>7 Q. Well, is it your testimony or not your</p> <p>8 testimony that they would have used the structure in</p> <p>9 Gourdine to modify Nakamura's Figure 2 and 3 embodiment?</p> <p>10 A. My testimony is not that they would have, it's</p> <p>11 that they could have.</p> <p>12 Q. Would they have been motivated to do that?</p> <p>13 A. Yes.</p> <p>14 Q. What would have motivated them to borrow the</p> <p>15 structure of Gourdine to modify Nakamura?</p> <p>16 A. If they had an issue with power supply cooling,</p> <p>17 they would have looked for other solutions.</p> <p>18 Q. Such as that in Gourdine?</p> <p>19 A. For example.</p> <p>20 Q. And if Gourdine's approach was applied, then</p> <p>21 the air that was taken from 42 would cool the power</p> <p>22 supply and then be exhausted to the outside, correct?</p> <p>23 A. Yes.</p> <p>24 Q. And that air would then not be available to</p> <p>25 cool the lamp, correct?</p> <p style="text-align: right;">Page 32</p>

1 A. It's possible.
2 Q. What do you mean it's possible? Why would
3 it -- how would it be possible that it would still be
4 available to cool the lamp?

5 A. Again, it depends on the pressures and the
6 specific structure.

7 Q. If you took the air from 42 and used it to cool
8 the power supply, using the structures shown in
9 Gourdine, how could you then use it also to cool the
10 lamp?

11 A. You would still be relying on the other airflow
12 that came from the optics vent to cool the lamp.

13 Q. That would be the airflow that's cooling the
14 lamp in that structure, correct?

15 A. More likely.

16 Q. And isn't that fundamentally different than the
17 structure that Nakamura uses?

18 MS. RADER: Objection. Vague.

19 THE WITNESS: Fundamentally?

20 BY MR. UTERMOHLEN:

21 Q. All right. Isn't it different than the
22 structure shown in Nakamura in that there's less cool
23 air available to cool the lamp?

24 A. I'm not certain that it would be less.

25 Q. Why would it not be less?

Page 33

1 A. Airflow is a mysterious thing.
2 Q. So you can't predict what the airflow would be?
3 A. Not necessarily.
4 Q. So you think that the air from air intake port
5 42 could be removed from cooling the lamp and the lamp
6 would still be cooled equally as what's shown in Figures
7 2 and 3 of Nakamura; is that your testimony?

8 A. It's possible that it could be. I don't know
9 for sure.

10 Q. How would it be possible?

11 A. Again, back pressures in fans, it's kind of --
12 it's a hydrodynamic thing and what -- if I needed to
13 find the answer for that question, I would want to use
14 airflow modeling to figure it out.

15 Q. So you can't tell me sitting here how that
16 would happen, yet you maintain that it could happen?

17 A. It could, but I don't know exactly how the
18 pressures would distribute.

19 Q. If you removed part of the air that's now used
20 to cool the lamp, why would the lamp -- the cooling air
21 applied to the lamp remain the same?

22 A. Well, for one thing, a large amount of lamp
23 cooling is radiative, and for another thing when there's
24 lots of airflow, taking a little bit away has almost no
25 effect on the cooling.

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1 Q. How can you tell how much airflow is in
2 Nakamura's Figure 2 and 3 embodiment?

3 A. I can't tell.

4 Q. So you don't know if that would be the result
5 or not?

6 A. I don't know that, no.

7 Q. Normally when you have something that you're
8 cooling with an airflow and you take that airflow away,
9 doesn't that reduce the cooling of the thing that's
10 being cooled?

11 A. If you take --

12 MS. RADAR: Objection. Incomplete.

13 THE WITNESS: If you take all the airflow away,
14 yes, then it will cool less.

15 BY MR. UTERMOHLEN:

16 Q. Or if you take part of the airflow away?

17 A. I have seen cases where you take part of the
18 airflow away and it's just the same.

19 Q. And what causes it to be just the same?

20 A. The airflow as it is in the reduced state is
21 still sufficient to cool the object.

22 Q. It may be sufficient, but isn't there less
23 cooling airflow in that situation?

24 A. What do you mean by less? Shall we say
25 imperceptibly different.

Page 35

1 Q. So are there any other modifications that you
2 would make to Nakamura to borrow the system of Gourdine
3 other than what you've described?

4 A. For what purpose?

5 Q. For the purpose of cooling the power supply.

6 A. I think that's too general a question. Can you
7 be more specific?

8 Q. Would any modifications of Nakamura be
9 necessary to borrow the concepts of Gourdine, and if so,
10 what would those modifications be to produce the same
11 thing that Nakamura shows?

12 A. I'm sorry, I'm not following that.

13 Q. Well, Nakamura shows a fan 32, correct?

14 A. Yes.

15 Q. And it's not contained in a housing?

16 A. I don't know.

17 Q. What do you mean you don't know?

18 A. There's -- it's a schematic drawing.

19 Q. So there could be a housing there and we don't
20 see it?

21 A. That's possible.

22 Q. Is that housing inherent in Nakamura?

23 A. Not necessarily.

24 Q. Why not?

25 A. Sometimes you just put a fan right on the

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SEIKO EPSON CORPORATION,
a Japanese Corporation,

Plaintiff,

vs.

No. C 06-06946 MHP
C 07-06055 MHP

CORETRONIC CORPORATION, a
Taiwanese corporation, and
OPTOMA TECHNOLOGY, INC., a
California corporation,

Defendants.

AND RELATED COUNTERCLAIMS.

AFFIDAVIT BY REPORTER OF CORRECTIONS
TO THE DEPOSITION OF
CATHARINA R. BIBER, Ph.D.

Reported by:

SUZANNE F. BOSCHETTI

CSR No. 5111

Job No. 147329

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1 I, SUZANNE F. BOSCHETTI, a Certified Shorthand
2 Reporter of the State of California, CSR No. 5111, do
3 hereby declare as follows:
4

5 That I was the Certified Shorthand Reporter who
6 reported the deposition of CATHARINA R. BIBER, Ph.D., in
7 the aforementioned case on Tuesday, October 19, 2010.
8 Due to an error in transcription, the following
9 corrections should be made:

10 Page 6, line 14: "1985" should be changed to
11 "1995."

12 Page 23, line 21 should have the word "it"
13 inserted at the beginning of answer to read "It
14 discloses..."

15 Page 24, line 6 should read "from the optics,"
16 not "from the objects."
17

18 I declare under penalty of perjury that the
19 foregoing is true and correct.

20 Signed on October 25, 2010, in Novato,
21 California.
22
23
24

25

Suzanne F. Boschetti
CSR No. 5111

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Attorneys for Seiko Epson Corporation

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
(San Francisco Division)

SEIKO EPSON CORPORATION,)	
Plaintiff,	)	Case No. C06-6946 MHP
)	
v.	)	DECLARATION OF KURTIS KELLER
	)	REGARDING DEFENDANTS'
CORETRONIC CORPORATION and	)	SECOND SUMMARY JUDGMENT
OPTOMA TECHNOLOGY, INC.,	)	MOTION
Defendants.)	

1 a first cooling air intake port located on the outer case that provides cooling air from
2 outside of the outer case to the optical unit;

3 a second cooling air intake port located on the outer case that directly conducts cooling
4 air from the outside of the outer case to the air inlet; and

5 an exhaust vent provided on the outer case that directly conducts air exhausted from the
6 air outlet to the outside of the outer case.

7 **B. Ordinary Skill in the Art**

8 23. I understand that the patent application that issued as the 158 patent was filed on
9 July 29, 1999 as a continuation of an earlier U.S. application filed on October 3, 1997, and that
10 those U.S. applications claim priority to three Japanese patent applications filed on October 4,
11 1996, October 28, 1996 and August 26, 1997.

12 24. In my opinion, the art that is most relevant to the 158 patent concerns the
13 mechanical engineering aspects of display projectors with respect to cooling. It is my
14 understanding that the Court's claim construction opinion treats a person of ordinary skill as:
15 "one with a Bachelor's degree in physics, engineering, optics or other related field who also is
16 familiar with the design of projectors."

17 25. It is further my understanding that what a prior art reference discloses, and
18 whether an issued patent would have been obvious, is to be evaluated from the perspective of
19 one of ordinary skill in the art as of the date of the invention, which, as to the 158 patent, I
20 understand to be the effective filing date of the patent application that issued as the 158 patent.
21 That date is October 4, 1996. In making such an evaluation, I understand that use of hindsight
22 gleaned from the disclosure of the invention in the inventor's application is not permitted.

23 26. A person of ordinary skill as of October 4, 1996 engaged in designing projectors
24 would have been aware of many factors affecting the design, including the different cooling
25 needs of the different components of the projector, the need to minimize the size and weight of
26 the projector, the need to avoid leakage of light from the projector and the need to minimize
27 projector noise. Many of those design goals would have conflicted with one another.
28 Achieving a balance between those goals would have influenced the design choices made by

1 such a projector designer. The number of different projector configurations that might have
2 been chosen by such a projector designer is immeasurably large.

3 27. Except as otherwise noted, all my comments below about the features of the
4 prior art references on which Coretronic relies reflect how one of ordinary skill in the art would
5 have understood those references, or the motivation to combine or alter them, as of the priority
6 date of the 158 patent.

7 **C. The Combination of Nakamura and Gourdine**

8 **1. Japanese Published Patent Appl. No. 4-271334 (Nakamura)**

9 28. The first basis for Coretronic's second summary judgment motion contending
10 that the 158 patent would have been obvious is a combination of Japanese Published Patent
11 Application No. 4-271334 (Nakamura; Biber Dec., Ex. D, Dkt. 394-4) with U.S. Patent No.
12 5,297,005 (Gourdine; Biber Dec., Ex. E, Dkt. 394-5). Coretronic claims that Nakamura has all
13 but one limitation of claim 1 of the 158 patent and that Gourdine would have been combined
14 with Nakamura to furnish the missing limitation. In my opinion, Nakamura is missing multiple
15 limitations of the claims, and one of ordinary skill would not have been motivated to combine
16 Gourdine with Nakamura.

17 29. Nakamura discloses a projector divided into a liquid crystal display panel
18 chamber 4 and a light source chamber 3. Coretronic relies on the embodiment disclosed in
19 Figures 2 and 3 (shown below), which embodiment includes two air paths. One path brings air
20 into liquid crystal display panel chamber 4 through air intake port 36, where it is first used to
21 cool liquid crystal display panels 21, 26 and 23. The air in that path is then discharged by the
22 second cooling fan 35 into light source chamber 3 through duct 41. That air next "passes
23 through the vicinity of each of a power supply 15 and a light source 14," after which it is
24 exhausted from the exhaust port 31 by first cooling air fan 32. Nakamura, ¶¶ 9-10. The second
25 path brings air in through air intake port 42, which is partially beneath the duct 41, which air
26 then mixes with the air from the first path that has circulated through the light crystal display
27
28

panel chamber 4, before passing "through the vicinity of each of the power supply 15 and the light source 14, cooling them." *Id.* at ¶ 13.

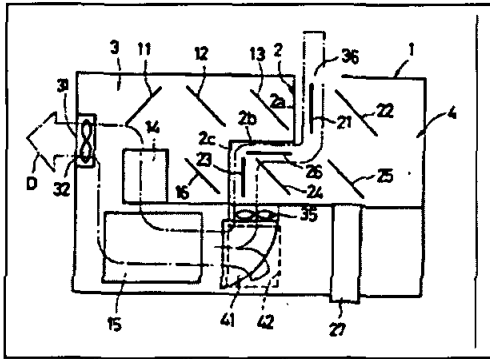


Figure 2

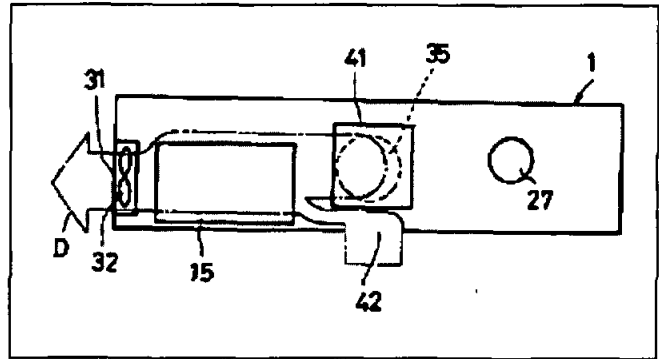


Figure 3

a) Power Supply 15

30. Coretronic contends that Nakamura discloses claim 1's "power unit including a ventilating path provided inside the power unit for circulating cooling air" and "air inlet provided on the power unit," as well as claim 5's "power unit including an air inlet and an air outlet," in reliance on the district court's finding to that effect in its ruling on Coretronic's first motion for summary judgment.

31. It respectfully remains my opinion that one of ordinary skill in the art would not have inferred those features to be disclosed in Nakamura and that the district court has misunderstood Nakamura's drawings, which are schematic in nature.

32. It is apparent from review of Figures 2 and 3 of Nakamura that no inlet nor outlet is shown on the power supply 15. Rather, power supply 15 is shown as a featureless rectangular box.

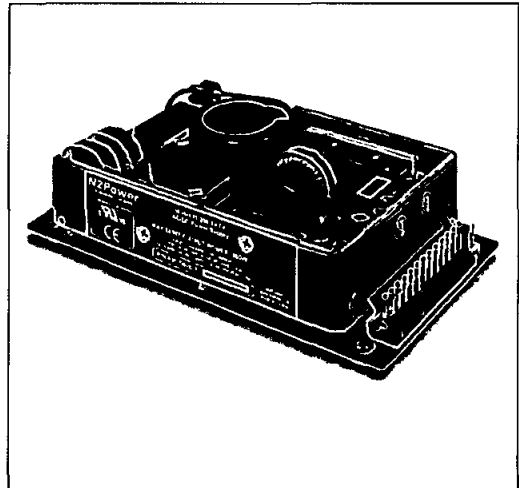
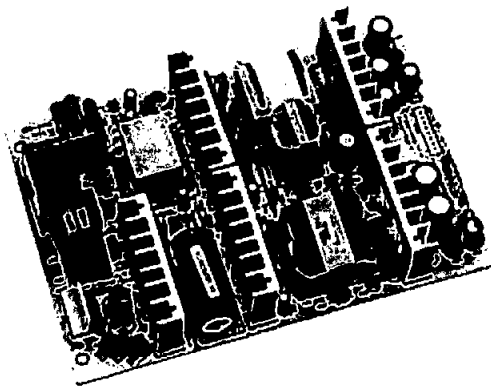
33. It is further my understanding that, in patent law, what is "inherently" disclosed in a prior art reference must necessarily be present. In other words, the mere possibility that a prior art reference could accommodate or contain a structure does not constitute an inherent disclosure of such a structure.

34. The district court found the power supply inherently to have an air inlet and outlet (and implicitly also an "inside"): "Furthermore, an air inlet is inherently disclosed in

1 Nakamura. . . . The passage of air through an ordinary physical object necessitates that some
2 inlet and outlet be present. Because the air passes through the power unit, there is necessarily
3 'an air inlet provided on the power unit.'" Opinion at 12:7-11.

4 35. Even if one accepts the premise that a comparison of Figures 2 and 3 shows air
5 passing through the box that is labeled power supply 15, that does not necessarily mean that the
6 power supply has an air inlet or an air outlet. An "inlet" is "an opening providing a means of
7 entrance." American Heritage Dictionary 663 (2nd college ed. 1991; Exhibit B hereto). For a
8 power supply to have either an inlet or an outlet, it must have structure creating those features.

9 36. As of both September 28, 1992 (the date that Nakamura was published) and
10 October 4, 1996 (the priority date claimed by the 158 patent), "open-frame" power supplies
11 were common that had no cover or enclosure and no structure forming an "inlet" or "outlet."
12 Examples of open power supplies are shown below.



21
22 37. Nakamura discloses power supply 15, but does not disclose a specific structure
23 for that power supply, let alone a structure that encompasses an enclosure with an air inlet and
24 air outlet. Nakamura makes clear that Figures 2 and 3 are only schematic in nature: "Figures 2
25 and 3 show the schematic structure of a liquid crystal projector in another embodiment of this
26 device." Nakamura, p. 8, ¶ 12.

1 38. A schematic drawing is one that shows the functional features of a system, as
 2 opposed to the physical structure of the system. For example, Wikipedia defines "schematic"
 3 as follows (Exhibit C hereto):

4 A **schematic** is a diagram that represents the elements of a system using abstract,
 5 graphic symbols rather than realistic pictures. A schematic usually omits all details that
 6 are not relevant to the information the schematic is intended to convey, and may add
 7 unrealistic elements that aid comprehension.

8 Similarly, the McGraw-Hill Encyclopedia of Science & Technology (8th ed. 1997; Exhibit D
 9 hereto) defines a "schematic drawing" as:

10 Concise, graphical symbolism whereby the engineer communicates to others the
 11 functional relationship of the parts in a component and, in turn, of the components of a
 12 system. The symbols do not attempt to describe in complete detail the characteristics or
 13 physical form of the elements, but they do suggest the functional form which the
 14 ensemble of elements will take in satisfying the functional requirements of the
 15 component.

16 These meanings of "schematic" and "schematic drawing" have been understood by engineers of
 17 ordinary skill in the art since well before the priority date of Nakamura.

18 39. This understanding of the meaning of "schematic" is consistent with that used in
 19 the 158 patent. The 158 patent includes eight figures, of which only Figure 4 is described as a
 20 "schematic representation." C5/L1-28. While the other figures depict components of the
 21 preferred embodiment realistically (*see, e.g.*, Figs. 1-3), Figure 4 is a more conceptual
 22 representation of the optical system of the projector. The functional interrelationship of the
 23 components of that system is shown, but the actual physical shape of the components is shown
 24 only very roughly. For example, not all light rays emanating from the lamp are shown.

25 40. Review of Figures 2 and 3 of Nakamura confirms that they are meant to disclose
 26 the functional relationship of the components of the disclosed projector and not the physical
 27 structure of the components and airflows, consistent with Nakamura's description of them as
 28 "schematic." A number of obviously unrealistic features are shown. For example:

- The depiction of the airflow in the vicinity of duct 41 is inconsistent between
 Figures 2 and 3. In Figure 3, the airflow coming from liquid crystal display panel
 chamber 4 fills duct 41. In Figure 2, in contrast, the airflow through duct 41 only

1 flows through the inner portion of that duct. In addition, in Figure 2, the flow from
2 intake port 42 is much narrower than the width of that intake port, while in Figure 3,
3 the inflow is shown as filling the intake port.

- 4 • The airflow through liquid crystal display panel chamber 4 is shown as passing
5 through a solid object: mirror 24.
- 6 • The airflow through liquid crystal display panel chamber 4 makes right angle turns
7 with no structure shown that could produce such turns.

8 41. The depicted interface between power supply 15 and the airflow that cools it is
9 not consistent with use of an enclosed power supply. The airflow that cools power supply 15
10 does not come in one side of the power supply and exit the other side, as would be expected if
11 Dr. Biber's statement that power supply 15 "includes a front opening to allow air to flow in and
12 an end opening to allow air to flow out" (Biber Dec. ¶ 21) were correct. Rather, the airflow
13 curves near the middle of power supply 15 and exits over the corner of the power supply "box."
14 No structure is shown that would produce such a turn. Such a mid-power supply turn is more
15 consistent with an open, rather than enclosed, power supply, in that an open power supply
16 arrangement would allow the airflow to be pulled, as shown, in the direction of exhaust fan 32.
17 Moreover, the airflow in the vicinity of power supply 15 is shown as widening as it passes over
18 power supply 15, which further suggests that no enclosure is present that would constrain such
19 change in profile.

20 42. It is also significant that Nakamura does not describe the airflow as passing
21 through power supply 15. Instead, Nakamura describes the airflow as cooling power supply 15
22 by passing through its "vicinity": "[T]his is constituted, *as shown in Figures 2 and 3*, so that air
23 from the air intake port 42 is drawn, together with air drawn from the second cooling fan 35
24 into the duct 41, into the light source chamber 3 by operation of the first cooling fan 32, *said*
25 *drawn air passes through the vicinity of each of the power supply 15 and the light source 14,*
26 *cooling them*, after which, it is exhausted from the exhaust port 31 to the outside." Nakamura
27 p. 8, ¶ 13 (emphasis added).

1 43. "Vicinity" means "A nearby, surrounding, or adjoining region; a neighborhood."
 2 American Heritage Dictionary 1347 (2nd college ed. 1991; Exhibit B hereto). Thus,
 3 Nakamura's description of the airflow as passing "through the vicinity of . . . the power supply
 4 15" further indicates that the airflow is not necessarily passing through the power supply 15,
 5 but near it, consistent with an open power supply or a purely functional disclosure.

6 44. For all the above reasons, it is my opinion that one of ordinary skill in the art
 7 would not have understood Nakamura as disclosing a power supply air inlet, power supply air
 8 outlet or a ventilating path inside a power supply, within the meaning of the 158 patent.

9 **b) "A Duct Connecting Said Second Cooling Intake Port And**
 10 **The Air Inlet"**

11 45. Claim 1 of the 158 patent recites a second air intake port assembly that directly
 12 conducts cooling air from outside of the outer case to the ventilating path of the power unit,
 13 incorporating a duct connecting said air intake port on the outer case to the air inlet of the
 14 power unit:

15 a second cooling air intake port located on the outer case that directly conducts cooling air
 16 from the outside of the outer case to the ventilating path, said second cooling air intake
 17 port comprising:

18 an air inlet provided on the power unit, and

19 a duct connecting said second cooling air intake port and the air inlet.

20 46. The Federal Circuit has now held that Nakamura discloses no such second
 21 cooling air intake port because "cooling air from the outside of the outer case" is not furnished
 22 to the power unit (slip op. at 6):

23 The Nakamura reference, however, plainly fails to satisfy our construction of "directly
 24 conducts cooling air from the outside of the case." Although Nakamura teaches a second air
 25 intake port located in the vicinity of the power unit, it does not provide an uninterrupted
 26 path from that port to the power unit. Instead, the figures in the Nakamura reference
 27 indicate that the fresh air entering through the second air intake port mixes with ambient air
 28 from inside the case before reaching the power unit. Consequently, the fresh air entering
 through the second air intake port is not directly conducted to the power unit as required by
 the '158 patent.

47. Notwithstanding this holding, Coretronic and Dr. Biber continue to contend that
 the "duct connecting said second cooling air intake port and the air inlet" is present in

1 Nakamura. Motion at 7:8-10; Biber Dec. ¶ 17. I do not agree that one of ordinary skill in the
 2 art would have considered Nakamura to disclose such a duct. Indeed, the Federal Circuit
 3 understood the duct of claim 1 to furnish *only* fresh air to the power unit (slip op. at 5):

4 The patent also notes that the duct recited in claim 1, which connects the second air intake
 5 port and the air inlet of the power unit, "only introduces fresh air from the cooling air intake
 6 port to the ventilating path . . . [and] prevents the air from the outer case, which is hotter
 7 than the fresh air, from entering into the ventilating path." *Id.*, col. 3, ll. 18-21.

8 Nakamura does not have such a duct: the air from air intake port 42 mixes with hot air coming
 9 from liquid crystal display panel chamber 4 before the mixed air reaches power supply 15.

10 48. The district court construed "a duct connecting said second cooling intake port
 11 and the air inlet," as "structure that limits the direction of airflow between the intake port on the
 12 outer case and an opening leading to a ventilating path of the power unit so as to form an
 13 airflow passage."

14 49. Dr. Biber states that Nakamura discloses "a passage formed by and between the
 15 bottom of the duct 41 and the chassis case 1 that limit [*sic*] the direction of the airflow from the
 16 air intake port 42 to the opening on the power supply 15, as shown by the airflow path in Figs.
 17 2 and 3." Biber Dec. ¶ 17.

18 50. The district court accepted that conclusion in its ruling on Coretronic's first
 19 summary judgment motion (Opinion at 12:15-18):

20 In Nakamura, the airflow is limited by the outer case's structure and duct 41. Nakamura
 21 at 8 & 10. These structures limit the direction of the airflow, directing it toward the
 22 power unit. As such, there is a duct.

23 51. No structure is disclosed as limiting the direction of airflow between the air
 24 intake port 42 and the power unit 15 to form either a "duct" or an "airflow passage." Dr. Biber
 25 claims that bottom of duct 41 and the chassis case limit the direction of airflow "as shown by
 26 the airflow path in Figs. 2 and 3," an assumption the district court appears to have adopted.
 27 Nakamura is inconsistent with Dr. Biber's assumption. Nakamura discloses that the airflow
 28 shown in Figures 2 and 3 is created by the suction from the exhaust fan 32, downstream of the
 power supply: "*air from the air intake port 42 is drawn, together with air drawn from the*

1 second cooling fan 35 into the duct 41, into the light source chamber 3 *by operation of the first*
 2 *cooling fan 32.*" Nakamura p. 8, ¶ 13 (emphasis added).

3 52. There is no disclosed structure that creates an "airflow passage" between air
 4 intake port 42 and power supply 15. The bottom of duct 41 certainly does not create such a
 5 passage. That duct only overhangs a portion of air intake port 42 and the bottom duct surface is
 6 orthogonal to the incoming air, neither directing it to the left nor the right. No structure limits
 7 the airflow to either the left or the right in Figure 3. The airflow is shown as moving left
 8 because it is drawn by first cooling fan 32, as mentioned above.

9 53. Duct 41 only marginally overhangs the edge of air intake port 42. After the
 10 airflow passes the edge of duct 41 in the direction of power supply 15, there is a significant
 11 distance in which there is no structure limiting its flow whatsoever, other than the casing itself.
 12 There is no confining structure to create a duct.

13 54. Treating the open area between air intake port 42 and power supply 15 as a
 14 "duct" and "airflow passage" is inconsistent with both the ordinary meanings of those words
 15 and the district court's claim construction of "duct." It is also inconsistent with the teaching of
 16 the 158 patent, reflected in the structure of claim 1, which makes clear that the purpose of the
 17 duct is to direct the outside air into the power unit without significant contamination from
 18 already heated air circulating within the projector. As the 158 patent states: "It is preferred that
 19 the cooling air conducting means include a duct section connecting the cooling air intake port
 20 and the inlet of the ventilating path. Accordingly, the duct section *only* introduces fresh air
 21 from the cooling air intake port to the ventilating path." C3/L15-20 (emphasis added).

22 **c) "Directly Conducts Cooling Air From The Outside Of The**
 23 **Outer Case"**

24 55. As noted above, the Federal Circuit has held that Nakamura does not disclose "a
 25 second cooling air intake port located on the outer case that directly conducts cooling air from
 26 the outside of the outer case to the ventilating path/air inlet [of the power unit]," which is a
 27 limitation of both independent claim 1 and independent claim 5.

d) Air is Not Directly Conducted From the Power Unit to the Outside

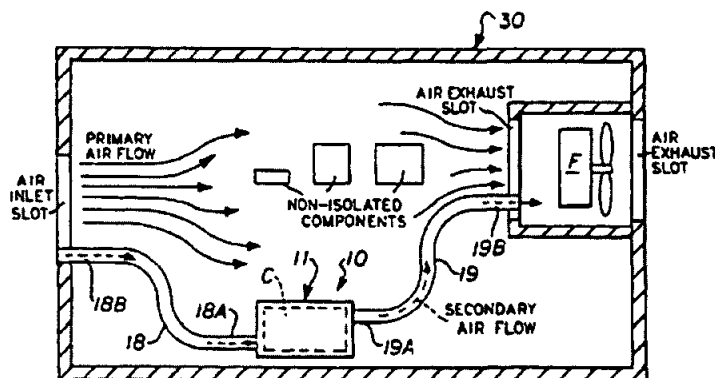
56. Nakamura also does not disclose "an exhaust vent provided on the outer case that directly conducts air exhausted from the air outlet [of the power unit] to the outside of the outer case," as recited in claim 5 of the 158 patent.

57. Nakamura consistently states that the airflow "passes through the vicinity of each of a power supply 15 and a light source 14, cooling them" before being drawn out of the projector by exhaust fan 32. Nakamura, ¶¶ 10 & 13. Figure 2 of Nakamura also shows the airflow downstream of power supply 15 passing over the back side of the light source 14. It was well-known by one of ordinary skill in the art that the light source is the greatest source of heat in the projector. Accordingly, the air that has cooled power supply 15 is reused to cool light source 14 and is not directly conducted to the outside of the outer case.

58. While not all of the air that has cooled power supply 15 is shown as passing directly over light source 14, one of ordinary skill in the art would have understood that all of the air in the depicted airflow serves to cool light source 14. That is because the heat from light source 14 is convected into the surrounding air and conveying that heated air away through the use of a cooler air flow assists in cooling the light source, even if portions of the airflow do not directly contact the light source.

2. U.S. Patent No. 5,297,005 (Gourdine)

59. Gourdine discloses electronic components in a computer cabinet being cooled by both a primary and secondary airflow. The primary airflow cools various non-isolated components in the cabinet. A secondary airflow passes through a flexible conduit 18 into a hollow housing 11, which is configured to enclose a heat generating electronic component C. The air that has cooled electronic component C is then exhausted through another flexible conduit 19 and an exhaust fan F.



60. Gourdine describes the problem it solves as originating with integrated circuits and microprocessor chips in computer cabinets:

The microprocessor chip in a computer generates a relatively large amount of heat and is susceptible to error or damage caused by overheating. For example, the Intel 80486 microprocessor chip generates 4.5 watts in normal operation and must be maintained below 85° C. or it can introduce error as well as reduce its operating life.

C1/L32-38. The only example in Gourdine of a component to be cooled is an integrated circuit chip. The alleged benefits of the invention focus on integrated circuit chips: "the reduction of errors in integrated circuit chips due to chip overheating, increased useful life of the chip, and the capability of operating at higher chip speeds without overheating." C8/L21-26.

61. A combination of Gourdine with Nakamura would not have yielded a separate cooling path for the power supply of Nakamura. Gourdine is primarily directed to computers, which have power supplies, yet Gourdine does not provide separate cooling for the power supply. Gourdine instead cools a single integrated circuit: the microprocessor chip.

62. If one of ordinary skill would have looked to Gourdine for guidance in designing the projector of Nakamura, Gourdine would not have suggested isolated cooling of the power supply. Gourdine is concerned with cooling the microprocessor chip for two reasons: (1) it is the component described as most sensitive to temperature issues and (2) it generates the most heat, thereby having the greatest effect on other components. In a liquid crystal display projector context, like that of Nakamura, the components that are most sensitive to temperature issues are the liquid crystal display panels. The component in liquid crystal

1 display projectors that generates the most heat is the lamp. Accordingly, one of ordinary skill
2 in the art applying the teachings of Gourdine to Nakamura would have, at most, provided
3 separate cooling for the liquid crystal display panels and/or the lamp.

4 63. Furthermore, using Gourdine's housing and conduits to isolate Nakamura's
5 power supply would have been inconsistent with the design of the embodiment of Figures 2
6 and 3 of Nakamura.

- 7 1. Nakamura cools the power supply and the lamp with the same airflow. This was
8 conventional in projectors at the time the 158 patent inventors made their invention.
9 If a projector designer were to have incorporated a Gourdine housing and conduits
10 to isolate the Nakamura power supply, that would have removed a significant
11 portion of the coolest air being used to cool the lamp, thus reducing the
12 effectiveness of lamp cooling or requiring other changes to the projector to
13 compensate for the loss of cooling air. Running the exhaust fan at a higher speed in
14 compensation to pull more air past the lamp would have generated more noise,
15 which is inconsistent with the purpose of Nakamura to minimize fan noise. *See*
16 Nakamura ¶¶ 5 & 14.
- 17 2. The scale and type of cooling for a small 4.5 watt microprocessor chip, like that in
18 Gourdine, is much different than that for a large projector power supply. As
19 reflected in U.S. Patent Nos. 5,995,284 and 5,721,465, as well as the Projector
20 Central listing for the ELP-3000 projector, which I understand was first sold in 1995
21 (attached hereto as Exhibits E-G), projector lamp wattages in the 1996 time frame
22 ranged from about 150 to 500 watts. A typical value was 250 to 300 watts. Power
23 supply efficiencies ranged from about 78% to close to 90%. Accordingly, the waste
24 heat (inefficient portion) produced by a typical projector power supply ranged from
25 about 25 to more than 60 watts.
- 26 3. An airflow adequate to cool a projector power supply could probably not be
27 obtained through the narrow conduit 18 of Gourdine. This problem would be worse
28

1 with respect to the duct 31 of Figure 7 of Gourdine, as such duct has many right
2 angles that would increase air resistance. In order to provide sufficient airflow,
3 Gourdine creates a plenum space around the exhaust fan by partially enclosing that
4 fan in a housing, thereby narrowing the opening available to the primary air flow at
5 the exhaust side and creating sufficient vacuum within the plenum to pull air
6 through the secondary air path. Nakamura does not have such a structure, but uses
7 an exhaust fan without a housing. In order to attempt to use the airflow isolation
8 system of Gourdine in Nakamura, it would have been necessary to add such a bulky
9 exhaust fan housing to Nakamura to obtain sufficient airflow. This would have used
10 valuable space inside the projector and substantially constrained the design (i.e.,
11 required a bigger projector), contrary to the purpose of Nakamura, which criticizes
12 use of two exhaust ports as "impos[ing] restrictions on the design, and requir[ing]
13 installation in locations in which obstructions, such as other equipment or walls,
14 etc., are not present opposite each of the exhaust ports." Nakamura, ¶ 5; *see also*
15 ¶ 14. In addition, maintaining the vacuum pressure in the plenum area would have
16 changed Nakamura's design in ways that would be contrary to Nakamura's goals of
17 reducing noise and providing adequate cooling to the components. For example,
18 providing multiple exhaust fans or running the exhaust fan at a higher speed would
19 have increased the ambient noise.

- 20 4. If a designer were to dispense with Gourdine's narrow conduit system and attempt to
21 fashion some different duct arrangement, it is unpredictable whether such a duct
22 could be enlarged sufficiently to dispense with the fan housing and plenum of
23 Gourdine. In any event, it would be necessary, in any such approach, to balance the
24 pressure of the primary and secondary airflows, which would necessitate narrowing
25 the airflow past the lamp. This would drastically reduce the cooling of the lamp,
26 particularly because the most important issue in cooling the lamp is the volume of
27 air available for cooling.

64. For all the above reasons, in my opinion one of ordinary skill in the art at the time of the 158 patent invention would not have been motivated or otherwise had a reason to combine Nakamura with Gourdine.

D. Rizzuto

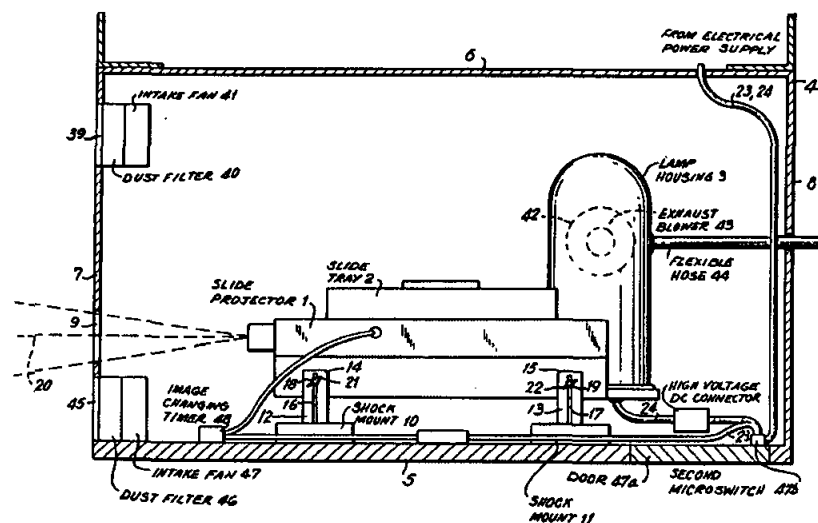
65. Coretronic and Dr. Biber also contend that claims 1-2 and 5 of the 158 patent would have been obvious from U.S. Patent No. 4,243,307 (Rizzuto; Biber Dec., Ex. G, Dkt. 394-7).

66. Rizzuto is not directed to a projector, but an image projection system that incorporates a projector (i.e., a projector in a box):

The principal object of the invention is to provide an image projection system for projecting images on a screen in a high ambient light environment such as, for example, a subway platform, a bus terminal, a commercial establishment of any type, and the like.

C1/L9-13. The slide projector 1 disclosed is preferably the Kodak Carousel projector manufactured by the Kodak Company of Rochester, N.Y. C3/L64-C4/L3.

FIG. 1



67. The internal structure of slide projector 1 is not disclosed. However, projectors like the Kodak Carousel had both an internal lamp and power supply, as they were stand alone projectors capable of operating on standard household electrical current. See Kodak Carousel

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inlet (in'let, -lit) *n.* 1. A bay, cove, or other recess along a coast. 2. A stream or bay leading inland, as from the ocean; estuary. 3. A narrow passage of water, as between two islands. 4. A drainage passage, as to a culvert. 5. An opening providing a means of entrance.

in-lier (in't'or) *n.* An older rock formation completely surrounded by newer strata.

in-line (in'lin) *adj.* Having the parts arranged in a straight line. —*adv.* Being arranged in an in-line manner.

in lo-co pa-ren-tis (in ló'kó pá-rén'tis) *adv.* In the position or place of a parent. [Lat.]

in-ly (in'le) *adv.* Inwardly.

in-mate (in'mát) *n.* 1. A resident in a building or dwelling. 2. A person confined to an institution, as a prison or hospital.

in-me-dí-as res (in mé'dé-as rás) *adv.* In or into the middle of a sequence of events. [Lat., in the middle of things.]

in-me-mo-ri-am (in mé-mór'é-ám, -mór-) *prep.* In memory of; as a memorial to. Used in epitaphs. [Lat.]

in-most (in'móst) *adj.* Innermost.

inn (in) *n.* 1. A public lodging house serving food and drink to travelers; hotel. 2. A tavern or restaurant. 3. *Chiefly Brit.* Formerly, a residence hall for students. [ME < OE.]

in-nards (in'órdz) *pl.n.* Informal. 1. Internal bodily organs; viscera. 2. The inner parts, as of a machine. [Alteration of INWARDS.]

in-nate (i-nát, in'át) *adj.* 1. Possessed at birth; inborn. 2. Possessed as an essential characteristic; inherent. 3. Of or produced by thought as distinguished from experience. [ME *innat* < Lat. *innatus*, p.part. of *innasci*, to be born in: *in-*, in + *nasci*, to be born.] —*in-nate-ly* *adv.* —*in-nate-ness* *n.*

Synonyms: *innate, inborn, inbred, congenital, hereditary.* These adjectives mean belonging by nature or from birth rather than through acquisition at a later time. *Innate, inborn, and inbred* are often used interchangeably with reference to persons. *Inborn* is strongest in implying possession of something from birth. What is *inbred* is either present from birth or developed through one's earliest training or associations, and what is *innate* seems essential to the nature or make-up of the person or thing in question. *Congenital* is applied principally to physical characteristics, especially to defects acquired during fetal development. *Hereditary* refers to what is genetically transmitted, or the term can describe what is handed down by right of inheritance. **in-ner** (in'ar) *adj.* 1. Located or occurring farther inside; *an inner room*. 2. Less apparent; deeper: *the inner meaning of a poem*. 3. Of or pertaining to the spirit or mind: "*Beethoven's manuscript looks like a bloody record of a tremendous inner battle*" (Leonard Bernstein). 4. More exclusive, influential, or important: *the inner circles of government*. [ME < OE *innera*.]

inner city *n.* The older, central part of a city, esp. when characterized by crowded low-income neighborhoods.

in-ner-di-rected (in'ar-dí-rék'tíd, -dí-) *adj.* Guided, as in thought and behavior, by one's own set of values rather than by societal standards or norms.

inner ear *n.* The internal ear.

in-ner-most (in'ar-móst) *adj.* 1. Situated or occurring farthest within. 2. Most intimate: *innermost feelings*.

inner product *n.* Math. Scalar product.

inner space *n.* 1. Space at or near the earth's surface, esp. space beneath the sea. 2. The inner, esp. the subconscious or spiritual, part of the self.

in-nervate (i-núrvát, in'ar-) *tr.v.* -vated, -vating, -vates. 1. To supply (a bodily part) with nerves. 2. To stimulate (a nerve or bodily part). —*in-nerv-a-tion* *n.*

in-nerve (i-núrv) *tr.v.* -nerved, -nerv-ing, -nerves. To give nervous energy to; stimulate.

in-ning (in'ing) *n.* 1. *a. Baseball.* One of nine divisions or periods of a regulation game, in which each team has a turn at bat as limited by three outs. *b. Innings.* (used with a sing. verb) The division or period of a cricket game during which one team is at bat. 2. Often *innings*. An opportunity to act or speak out; turn. 3. *Archaic.* The reclamation of flooded or marshy land. [< IN.]

in-keeper (in'ké-por) *n.* One who owns or manages an inn.

in-no-cence (in'ó-sens) *n.* 1. The state, quality, or virtue of being innocent. 2. Bluntness.

in-no-cent (in'ó-sent) *adj.* 1. Uncorrupted by evil, malice, or wrongdoing; sinless: *an innocent child*. 2. Not guilty of a specific crime; legally blameless: *found innocent of all charges*. 3. Not dangerous or harmful; innocuous: *an innocent prank*. 4. Not experienced or worldly; naive: *innocent tourists*. 5. Not exposed to or familiar with something specified; unaware or ignorant. 6. Betraying or suggesting no deception or guile; artless: *an innocent smile*. —*n.* 1. A person, esp. a child, who is free of evil or sin. 2. A simple, guileless, inexperienced, or unsophisticated person. 3. A very young child. [ME < OFr. < Lat. *innocens*: *in-*, not + *nocens*, p.part. of *nocere*, to harm.] —*in-no-cent-ly* *adv.*

in-no-cu-ous (i-nók'yó-ás) *adj.* 1. Having no adverse effect; harmless. 2. Lacking significance or impact; inoffensive: *an innocuous speech*. [Lat. *innocuus*: *in-*, not + *nocuus*, harmful < *nocere*, to harm.] —*in-no-cu-ous-ly* *adv.* —*in-no-cu-ous-ness* *n.*

in-nom-i-nate (i-nóm'á-nít) *adj.* 1. Having no name.

2. Anonymous. [LLat. *innominatus*: Lat. *in-*, not + *nomi-natus*, p.part. of *hominare*, to name < *nomen*, name.]

innominate artery *n.* An artery that arises from the aortic arch and divides into the right subclavian and right carotid arteries.

innominate bone *n.* A large flat bone forming the lateral half of the pelvis.

innominate vein *n.* One of a pair of veins each formed by the union of the internal jugular and subclavian veins that join to form the superior vena cava.

in-no-vate (in'ó-vát) *v.* -vated, -vating, -vates. —*tr.* To begin or introduce (something new). —*intr.* To begin or introduce something new; be creative. [Lat. *innovare*, *innovat*, to renew: *in-* (intensive) + *novus*, new.] —*in-no-vá-tive* *adj.* —*in-no-vá-tor* *n.*

in-no-vá-tion (in'ó-vá'shán) *n.* 1. The act of innovating. 2. Something newly introduced. —*in-no-vá-tion-al* *adj.*

Inns of Court *pl.n.* 1. The four legal societies in England founded about the beginning of the 14th century and having the exclusive right to confer the degree of barrister on law students. 2. The buildings housing the Inns of Court.

in-nu-en-do (in'yóó-én-dó) *n., pl. -does*. 1. An indirect or subtle and usually derogatory implication in expression; insinuation. 2. *Law.* a. A plaintiff's interpretation, in a libel suit, of allegedly libelous or slanderous material. b. An explanation of a word or charge. [Lat. *innuendo*, by hinting < *innuendū*, gerund of *innuere*, to nod to.]

in-nu-it (in'yóó-ít) *n., pl. innuits or -its*. 1. An Eskimo of North America and Greenland as distinguished from one of Asia and the Aleutian Islands. 2. The language of the Innuits. [Eskimo, people, pl. of *innuk*, person.]

in-nu-mer-a-ble (i-nóó-mar-á-bol, i-nýóó-) *adj.* Too many to be counted or numbered. —*in-nu-mer-a-ble-ness* *n.* —*in-nu-mer-a-bly* *adv.*

in-nu-mer-ous (i-nóó-mor-ás) *adj.* Innumerable.

in-nu-tri-tion (in'nóó-trí'shán, -nyóó-) *n.* Lack of nutrition; poor nourishment. —*in-nu-trí-tious* *adj.*

in-ob-er-vance (in'áb-zúr-váns) *n.* 1. Lack of heed or attention; disregard. 2. Nonobservance, as of a law or custom. —*in-ob-er-vant* *adj.*

in-ob-tru-sive (in'áb-trú-sív) *adj.* Not noticeable; unobtrusive.

in-oc-u-late (i-nók'yá-lá-bol) *adj.* 1. Transmissible by inoculation. 2. Susceptible to a disease transmitted by inoculation. —*in-oc-u-lá-tí-bí-ty* *n.*

in-oc-u-lant (i-nók'yá-lánt) *n.* Inoculum.

in-oc-u-late (i-nók'yá-lát) *tr.v.* -lated, -lating, -lates. 1. To communicate a disease to by transferring its virus or other causative agent into the body. 2. To introduce the virus of a disease or other antigenic material into in order to immunize, cure, or experiment. 3. To implant microorganisms or infectious material into (a culture medium). [ME *inoculaten*, to graft a scion < Lat. *inoculare*: *in-*, in + *oculus*, eye, bud.] —*in-oc-u-lá-tive* *adj.* —*in-oc-u-lá-tor* *n.*

in-oc-u-la-tion (i-nók'yá-lá'shán) *n.* 1. The act or process of an instance of inoculating. 2. Inoculum.

in-oc-u-lum (i-nók'yá-lém) *n.* The material used in an inoculation. [NLat. < Lat. *inoculare*, to graft a scion. —see IN-OCULATE.]

in-o-dor-ous (in'ó-dar-ás) *adj.* Having no odor.

in-of-fen-sive (in'ó-fén-sív) *adj.* 1. Giving no offense; unobjectionable. 2. Causing no harm; harmless. —*in-of-fen-sive-ly* *adv.* —*in-of-fen-sive-ness* *n.*

in-of-fi-cious (in'ó-fí'sh-ús) *adj.* Law. Contrary to natural affection or moral duty. Used of a will in which the testator disinherits his rightful heirs without sufficient reason. [Lat. *inofficiosus*, undutiful: *in-*, not + *officiosus*, dutiful < *officium*, duty.]

in-op-er-a-ble (in'óp-er-á-bol, -óp-er-) *adj.* 1. Not operable. 2. Not susceptible to surgery. —*in-op-er-a-bly* *adv.*

in-op-er-a-tive (in'óp-er-á-tív, -óp-er-) *adj.* Not working or functioning. —*in-op-er-a-tive-ness* *n.*

in-op-er-cu-late (in'óp-ér-kyá-lít) *adj.* Biol. Lacking an operculum. —*in-op-er-cu-late* *n.*

in-op-por-tune (in'óp-ér-í-tóon, -tyóon) *adj.* Not opportune; ill-timed. —*in-op-por-tune-ly* *adv.* —*in-op-por-tune-ness* *n.*

in-or-di-nate (in'ór-dín-ít) *adj.* 1. Exceeding reasonable limits; immoderate. 2. Not regulated; disorderly. [ME *inordinat* < Lat. *inordinatus*: *in-*, not + *ordinatus*, p.part. of *ordinare*, to set in order < *ordo*, order.] —*in-or-dí-ná-cy*, *in-or-dí-nate-ness* *n.* —*in-or-dí-ná-té-ly* *adv.*

in-or-gan-ic (in'ór-gán'ík) *adj.* 1. a. Involving neither organic life nor the products of organic life. b. Not composed of organic matter. 2. Of or relating to the chemistry of compounds not usually classified as organic. 3. Not arising in normal growth; artificial. 4. Lacking system or structure. —*in-or-gan-ic-ity* *n.*

in-os-cu-late (in'ós-kyá-lát) *v.* -lated, -lating, -lates. —*tr.* 1. To unite (blood vessels, for example) by small openings. 2. To make continuous; blend. —*intr.* 1. To open into one another. 2. To unite so as to be continuous; blend. [IN- + Lat. *osculare*, *osculat*, to provide with an opening < *osculum*, dim. of *os*, mouth.] —*in-os-cu-lá-tion* *n.*

in-ós-i-tol (i-nóó-sí-tól, -tól) *n.* Any of nine isomeric alcohols, C₆H₁₂(OH)₆, esp. one found in plant and animal tissue

vicar. 2. Acting as or having the position of a vicar. 3. Serving in the place of someone or something else.

vicariate (vī-kār'ē-ſt, -ār-, vī-) *n.* 1. The office or authority of a vicar. 2. The district under a vicar's jurisdiction. [Med. Lat. *vicarius* < Lat. *vicarius*, a substitute. —see VICAR.]

vicarious (vī-kār'ē-ſs, -kār-, vī-) *adj.* 1. Endured or done by one person substituting for another: *vicarious punishment*. 2. Acting in place of someone or something else. 3. Felt or undergone as if one were taking part in the experience or feelings of another: *read about mountain climbing and experienced vicarious thrills*. 4. Physiol. Occurring in or performed by a part of the body not normally associated with a certain function. [Lat. *vicarius*. —see VICAR.] —**vicariously** *adv.* —**vicariousness** *n.*

Vicar of Christ *n.* *Rom. Cath. Ch.* The pope.

vicarship (vī-kār'shīp) *n.* The office or tenure of a vicar.

vices (vīs) *n.* 1. *a.* An evil, degrading, or immoral practice or habit. *b.* A serious moral failing. 2. Wicked or evil conduct or habits; corruption. 3. Sexual immorality, esp. prostitution. 4. A slight personal failing; foible: *the vice of untidiness*. 5. A flaw or imperfection; defect. 6. A physical defect or weakness. 7. Abnormal behavior in a domestic animal. 8. *vices*. *a.* A character representing generalized or particular vice in English morality plays. *b.* A jester; buffoon. [ME < OFr. < Lat. *vitium*.]

vice (vīs) *n.* & *v.* Variant of *vise*.

vice (vīs) *n.* One who acts in the place of another; deputy: *the vice-chairman*. —*prep.* **vice** (vī'sē). In place of; replacing. [< Lat. *vice*, ablative of *vicis*, change.]

vice admiral *n.* An officer in the Navy or Coast Guard ranking next below an admiral.

vice-admiralty (vīs-ād'mīr-əl-tē) *n., pl. -ties*. The office, rank, or command of a vice admiral.

vice chancellor *n.* 1. *Law*. A judge in equity courts ranking below a chancellor. 2. A deputy or assistant chancellor in a university. 3. A deputy or substitute for a head of state or official bearing the title chancellor. —**vice-chancellorship** (vīs-chān's-lar'shīp, -chāns'tār-) *n.*

vice consul *n.* A consular officer who is subordinate to and a deputy of a consul or consul general. —**vice-consular** (vīs-kōn'sul-ər) *adj.* —**vice-consulate** (-səl'tē) *n.* —**vice-consulate** (-səl'shīp) *n.*

vicegerency (vīs-jī'r-ən-sē) *n., pl. -cies*. 1. The position, function, or authority of a vicegerent. 2. A district under a vicegerent's jurisdiction.

vicegerent (vīs-jī'r-ənt) *n.* A person appointed by a ruler or head of state to act as an administrative deputy. [Med. Lat. *vicegerens* < Lat. *vice*, ablative of *vicis*, change + Lat. *gerens*, governing. —see GERENT.] —**vicegerental** (vīs-jī'r-əl) *adj.*

vicenary (vīs-ə-nēr'ē) *adj.* 1. Consisting of or pertaining to 20. 2. Designating a notation system based on 20. [Lat. *vicenarius* < *viceni*, twenty each < *viginti*, twenty.]

vicennial (vīs-ēn'ē-əl) *adj.* 1. Happening once every 20 years. 2. Existing or lasting for 20 years. [< Lat. *vicennium*, period of twenty years: Lat. *viceni*, twenty times + Lat. *annus*, year.]

vice president *n.* 1. An officer ranking next below a president, usually empowered to assume the president's duties under such conditions as absence, illness, or death. 2. A deputy of a president, esp. in a corporation, in charge of a separate department or location: *vice president of sales*. —**vice-presidency** (vīs-prēz'ē-dēn-sē, -dēn-ē) *n.* —**vice-presidential** (-dēn'shəl) *adj.*

vice-regal (vīs-rē'gəl) *adj.* Of or pertaining to a viceroy. —**vice-regality** *n.*

vice regent *n.* One who acts as a regent's deputy. —**vice-regency** (vīs-rē'jēn-sē) *n.*

vice-reine (vīs'rān') *n.* 1. The wife of a viceroy. 2. A woman who functions as a viceroy. [Fr.: *vice*, vice + *reine*, queen < Lat. *regina*, fem. of *rex*, king.]

vice-roi (vīs'roi) *n.* 1. A governor of a country, province, or colony, ruling as the representative of a sovereign. 2. An orange and black North American butterfly, *Limenitis archippus*, resembling but somewhat smaller than the monarch. [Fr.: *vice*, vice + *roi*, king < Lat. *rex* < *regere*, to rule.]

vice-royalty (vīs'roi-əl-tē, vīs'roi-) *n., pl. -ties*. 1. The office, authority, or term of service of a viceroy. 2. A district or province governed by a viceroy.

vice-royship (vīs'roi'shīp) *n.* Viceroyalty.

vice squad *n.* A police division charged with the control of vice.

vice versa (vīs vōr'so, vīs) *adv.* With the order or meaning reversed; conversely. [Lat., the position being reversed.]

vichyssoise (vīsh'ē-swāz', vīsh'ē-) *n.* A thick, creamy potato soup flavored with leeks, onions, and chicken stock that is usually served cold. [Fr. < fem. of *vichyssois*, of Vichy, a town in France.]

Vichy water (vīsh'ē, vīsh'ē) *n.* 1. A naturally effervescent mineral water from the springs at Vichy, France. 2. A sparkling mineral water resembling Vichy water.

vicinage (vīs-ə-nij) *n.* 1. *a.* A limited region around a particular area; vicinity. *b.* A number of places situated near each other and considered collectively. 2. The residents of a particular neighborhood. 3. The state of living in a neigh-

borhood; proximity. [ME *vesinage* < OFr. *visenage* < Lat. *vicinus*, neighboring. —see VICINITY.]

vicinal (vīs-ə-nəl) *adj.* 1. Of, belonging to, or restricted to a limited area or neighborhood; local. 2. Designating a local road as opposed to a highway. 3. Approximating, resembling, or taking the place of a fundamental crystalline form or face. 4. *Chem.* Designating the consecutive positions of substituted elements or radicals on a benzene ring. [Lat. *vicinalis* < *vicinus*, neighboring. —see VICINITY.]

vicinity (vī-sīn'ē-tē) *n., pl. -ties*. 1. The state of being near in space or relationship; proximity: *two restaurants in close vicinity*. 2. A nearby, surrounding, or adjoining region; neighborhood. 3. An approximate degree or amount: *houses priced in the vicinity of \$200,000*. [Lat. *vicinitas* < *vicinus*, neighboring < *vicus*, village.]

vicious (vīsh'as) *adj.* 1. Having the nature of vice, evil, or immorality; depraved. 2. Addicted to vice, immorality, or depravity; evil. 3. Characterized by spite or malice: *vicious gossip*. 4. Failing to meet a standard or criterion; having a fault, flaw, or defect. 5. Impure; foul. 6. Characterized by violence or ferocity: *a vicious storm*. 7. Savagely aggressive; dangerous: *a vicious shark*. [ME < OFr. *vitiosus* < *vitium*, vice.] —**viciously** *adv.* —**viciousness** *n.*

vicious circle *n.* 1. A situation in which the solution of one problem in a chain of circumstances creates a new problem and increases the difficulty of solving the original problem. 2. A condition in which a disorder or disease gives rise to another that subsequently affects the first. 3. *Logic*. A circle (sense 10).

vici-sal-tude (vī-sī'sl'it-ūd', -tē-ūd') *n.* 1. Often *vici-sal-tudes*. *a.* A change or variation. *b.* The quality of being changeable; mutability. 2. One of the sudden or unexpected changes or shifts often encountered in one's life, activities, or surroundings. [OFr. < Lat. *vicissitudo* < *vicissim*, in turn < *vicis*, change.]

vici-sal-tu-di-nary (vī-sī'sl'it-ūd'n-ēr'ē, -tē-ūd'n-) *adj.* Also **vici-sal-tu-di-nous** (-tē-ūd'n-s, -tē-ūd'n-) *adj.* Characterized by, full of, or subject to vicissitudes.

victim (vīk'tim) *n.* 1. Someone who is harmed or killed by another: *the muggers and their elderly victims*. 2. A living creature slain and offered as a sacrifice to a deity or as part of a religious rite. 3. One who is harmed by or made to suffer from an act, circumstance, agency, or condition: *victims of war*. 4. A person who suffers injury, loss, or death as a result of a voluntary undertaking: *a victim of his own scheming*. 5. A person who is tricked, swindled, or taken advantage of: *the victim of a cruel hoax*. [Lat. *vicima*.]

victim-ize (vīk'tīm-īz') *tr.v.* -ized, -iz-ing, -iz-es. 1. To subject to swindle or fraud. 2. To make a victim of. —**victim-ization** *n.* —**victim-izer** *n.*

victim-less (vīk'tīm-lis) *adj.* Having or involving no victim: *a victimless crime*.

victim-ology (vīk'tīm-ō-lō-jē) *n.* The study of the roles played by victims in the crimes committed against them. —**victim-ologist** *n.*

victor (vīk'tor) *n.* One who defeats or vanquishes an adversary; the winner in a fight, battle, contest, or struggle. [ME < Lat. < *vincere*, to conquer.]

victoria (vīk'tōr'ē-ə, -tōr-) *n.* 1. A low, light four-wheeled carriage for two with a folding top and an elevated driver's seat in front. 2. A touring car with a folding top usually covering only the rear seat. [After Queen Victoria of England (1819-1901).]

Victoria Cross *n.* A bronze Maltese cross, Britain's highest military award for conspicuous valor.

victorian (vīk'tōr'ē-ən, -tōr-) *adj.* 1. Of, pertaining to, or belonging to the period of the reign of Queen Victoria of England: *a Victorian novel*. 2. Exhibiting qualities, as moral severity or hypocrisy, middle-class stuffiness, and pompous conservatism, that are usually associated with the time of Queen Victoria. 3. Being in the highly ornamented, massive style of architecture, decor, and furnishings popular in 19th-century England. —*n.* A person belonging to or exhibiting characteristics typical of the Victorian period.

victorianism (vīk'tōr'ē-ən'iz-əm, -tōr-) *n.* Material or a collection of materials of, relating to, or characteristic of the Victorian era.

victorian-ize (vīk'tōr'ē-ən-īz', -tōr-) *tr.v.* -ized, -iz-ing, -iz-es. To make Victorian, as in character or style. —**victorianization** *n.*

victorious (vīk'tōr'ē-əs, -tōr-) *adj.* 1. Being the winner in a contest or struggle: *the victorious team*. 2. Characteristic of or expressing a sense of victory or fulfillment: *a victorious cheer*. [ME < Lat. *victoriosus* < *victoria*, victory.] —**victoriously** *adv.* —**victoriousness** *n.*

victory (vīk'tōr'ē) *n., pl. -ries*. 1. Final and complete defeat of the enemy in a military engagement. 2. A successful struggle against an opponent or obstacle. 3. The state of having triumphed. [ME < OFr. *victorie* < Lat. *victoria* < *victor*, victor.]

Synonyms: *victory, conquest, triumph*. These nouns refer to the fact of winning, as in war or in a competition. *Victory*, the general term, is broadly interchangeable with

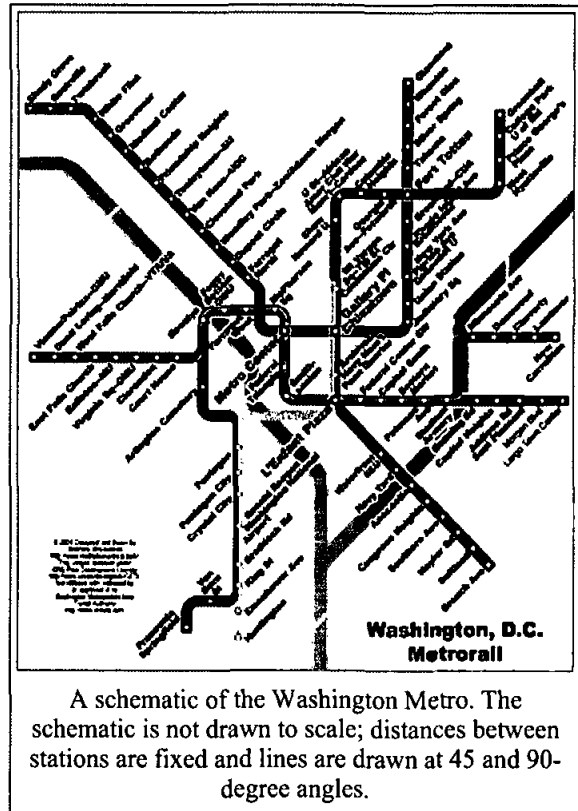
Schematic

From Wikipedia, the free encyclopedia

A **schematic** is a diagram that represents the elements of a system using abstract, graphic symbols rather than realistic pictures. A schematic usually omits all details that are not relevant to the information the schematic is intended to convey, and may add unrealistic elements that aid comprehension. For example, a subway map intended for riders may represent a subway station with a dot; the dot doesn't resemble the actual station at all but gives the viewer the information she or he needs without unnecessary visual clutter. A schematic diagram of a chemical process uses symbols to represent the vessels, piping, valves, pumps, and other equipment of the system, emphasizing their interconnection paths and suppressing physical details. In an electronic circuit diagram, the layout of the symbols may not resemble the layout in the physical circuit. In the schematic diagram, the symbolic elements are arranged to be more easily interpreted by the viewer.

Contents

- 1 Electrical and electronic industry
- 2 Schematics in repair manuals
- 3 See also
- 4 External links

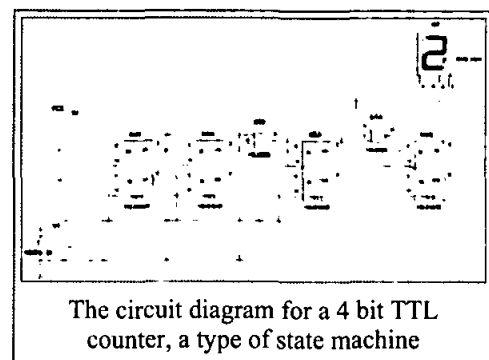


Electrical and electronic industry

Main article: circuit diagram

In electronic design automation, until the 1980s schematics were virtually the only formal representation for circuits. More recently, with the progress of computer technology, other representations were introduced and specialized computer languages were developed, since with the explosive growth of the complexity of electronic circuits, traditional schematics are becoming less practical. For example, hardware description languages are indispensable for modern digital circuit design.

Schematics for electronic circuits are prepared by designers using EDA (Electronic Design Automation) tools called schematic capture tools or schematic entry tools. These tools go beyond simple drawing of devices and



connections. Usually they are integrated into the whole IC design flow and linked to other EDA tools for verification and simulation of the circuit under design.

In electric power systems design, a schematic drawing called a one-line diagram is frequently used to represent substations, distribution systems or even whole electrical power grids. These diagrams simplify and compress the details that would be repeated on each phase of a three-phase system, showing only one element instead of three.

Schematics in repair manuals

Schematic diagrams are used extensively in repair manuals to help users understand the relative position of parts and to provide graphical instruction to assist in taking apart and rebuilding mechanical assemblies. Many automotive and motorcycle repair manuals devote a significant number of pages to schematic diagrams.

See also

- Circuit diagram
- Energy Systems Language
- chart, diagram
- straight-line diagram
- Topological map
- Transit map

External links

- WebEE Schematics and Projects Many Circuits and Electronic Projects.
- Free Electronic Circuits and Schematics Largest collection of circuit schematics.
- Discover Circuits Large collection of electronic circuit schematics.

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EXHIBIT D

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16

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(tactite) associated with garnet, diopside, tremolite, epidote, wollastonite, sphene, molybdenite, and fluorite, with minor amounts of pyrite and chalcopyrite. It also occurs in small amounts in vein deposits. The most important scheelite deposit in the United States is near Mill City, Nevada. See TUNGSTEN.

Edward C. T. Chao

Schematic drawing

Concise, graphical symbolism whereby the engineer communicates to others the functional relationship of the parts in a component and, in turn,

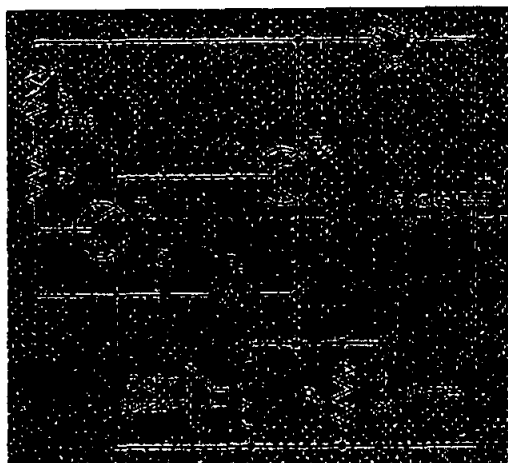


Fig. 1. Simple transistorized code practice oscillator, using standard symbols. (After J. Markus, *Sourcebook of Electronic Circuits*, McGraw-Hill, 1968)

of the components in a system. The symbols do not attempt to describe in complete detail the characteristics or physical form of the elements, but they do suggest the functional form which the ensemble of elements will take in satisfying the functional requirements of the component. They are different from a block diagram in that schematics describe more specifically the physical process by which the functional specifications of a block diagram are satisfied. Rather than expressing a mathematical relationship between, for example, an input and an output variable as in a block diagram, a schematic illustrates the physical principles and techniques by which the mathematical requirements of the element are realized. For instance, the schematic indicates whether electrical, hydraulic, mechanical, or pneumatic techniques are employed, and suitable symbols indicate the appropriate elements, such as batteries, resistors, valves, gearing, vacuum tubes, and motors.

Electrical schematic. An electrical schematic is a functional schematic which defines the interrelationship of the electrical elements in a circuit, equipment, or system. The symbols describing the electrical elements are stylized, simplified, and standardized to the point of universal acceptance (Figs. 1 and 2).

The simple character of the element symbol makes it possible to represent in a small area the interrelationship of the electrical elements in complex systems. This has the double advantage of economy of space and an increased facility of understanding, because one experienced in the symbolism can easily follow the various functional paths in the electrical schematic. The tracing of

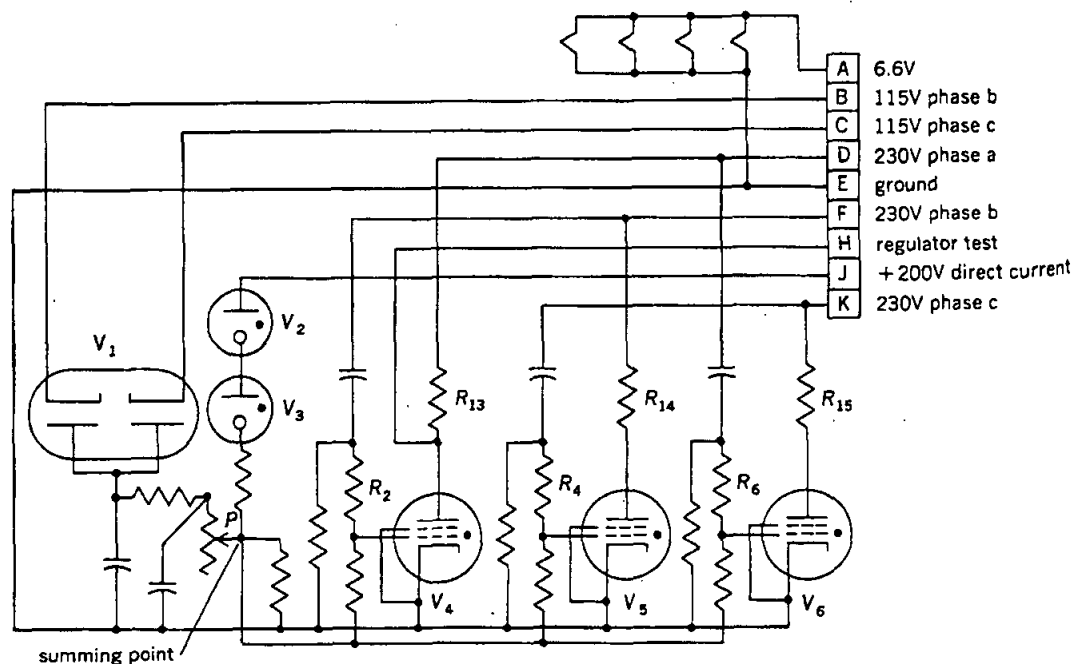


Fig. 2. Electrical schematic of voltage regulator.

a signal path through an electrical schematic is considerably enhanced by the existence of more or less accepted rules with regard to the arrangement of the symbols and of the interconnections between the symbols, all contrived to make more lucid the functional interrelationship of the elements.

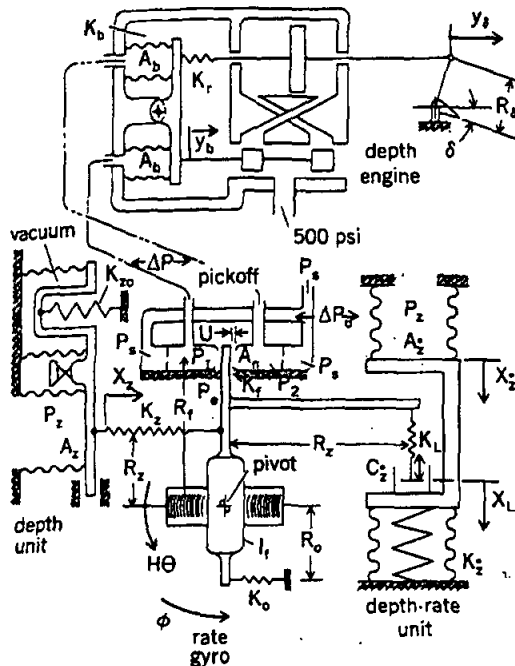


Fig. 3. Mechanical schematic of the depth-control mechanism of a torpedo.

Mechanical schematic. A mechanical schematic is also a functional schematic. The graphical descriptions of elements of a mechanical system are more complex and more intimately interrelated than the symbolism of an electrical system and so the graphical characterizations are not nearly as well standardized or simplified (Fig. 3). However, a mechanical schematic illustrates such features as components, acceleration, velocity, position force sensing, and viscous damping devices. The symbols are arranged in such a manner and with such simplification as to economize on space and to facilitate an understanding of the functional interrelationship of the various components which make up the system. See DRAFTING; ENGINEERING DRAWING.

Robert W. Mann

Schist

Medium- to coarse-grained, mica-bearing metamorphic rock with well-developed foliation termed schistosity. Schist is derived primarily from fine-grained, mica-bearing rocks such as shales and slates. The schistosity is formed by rotation, recrystallization, and new growth of mica; it is deformational in origin. The planar to wavy foliation is defined by the strong preferred orientation of platy minerals, primarily muscovite, biotite, and chlorite. The relatively large grain size of these minerals (up to a centimeter) produces the characteristic strong reflection when light shines on the rock. See BIOTITE; CHLORITE; MUSCOVITE; SCHISTOSITY.

The metamorphic grade of schists typically is in the middle to upper part (~660–930°F or ~350–500°C) of the greenschist facies and the lower part (~930–1100°F or ~500–600°C) of the amphibolite facies. In the amphibolite facies, micas react to form the mineral feldspar, which results in a coarsely foliated rock type called a gneiss. The wavy foliation pattern that is common in many schists reflects the presence of large, secondary minerals (such as garnet, staurolite, and chloritoid), which are grouped under the term porphyroblast. See AMPHIBOLITE; FACIES (GEOLOGY); FELDSPAR; GNEISS; MICA SCHIST; PORPHYROBLAST; SHALE; SLATE.

Schists are named by the assemblage of minerals that is most characteristic in the field; for example, a garnet-biotite schist contains porphyroblasts of garnet and a schistosity dominated by biotite. Under the microscope, schists commonly show a crenulation fabric, reflecting the presence of an older foliation that may be depositional in origin or may represent an earlier deformation history. See PETROFABRIC ANALYSIS.

Schists can provide important information on the relationship between metamorphism, the occurrence of mineral reactions in response to changing pressure and temperature conditions, and deformation. When porphyroblasts grow, minerals that are either not involved in the reaction (accessory minerals such as graphite, zircon, and monazite) or minerals that are left over because the rock no longer contains the right mix of ingredients (such as quartz and feldspar) may become inclusions. These inclusions may form trails in the porphyroblast defining an internal foliation. The relationship between the internal foliation and the foliation in the matrix surrounding the blast, which is called the external foliation, gives information on the temporal relationship between deformation and metamorphism.

Predeformational metamorphism is characterized by an internal foliation whose shape is unrelated to the external foliation, and typically the two do not connect at the porphyroblast-matrix boundary. At the other extreme lies postdeformational metamorphism, in which an external foliation connects with the internal foliation within the grain with-

I. INTRODUCTION

In its arguments that the Nakamura, Gourdine and Rizzuto references cannot render the asserted claims of the '158 patent obvious over Nakamura, once again, Seiko Epson Corporation ("SEC") materially misunderstands the legal concept of obviousness. Prior art references can render a patent claim obvious without the hypothetical one of ordinary skill in the art literally combining exact prior art devices or patent figures like a tinkerer building a new machine from used parts of two different older machines. Rather, the prior art references both disclose old elements that can serve a specific purpose and teach broader concepts and principles that one of ordinary skill will find obvious to apply to similar engineering challenges. A careful reading of the seminal cases on obviousness reveals this theme over and over.

Here, Gourdine does not merely disclose a method of cooling a microprocessor chip in a computer cabinet; it discloses a concept, including a dedicated fresh cooling air flow path, for cooling any component in an enclosed cabinet that gets hot and requires more effective cooling. Similarly, Rizzuto does not merely disclose use of two independent cooling air paths, with separate intakes and exhausts, for the optical and power units, and an exhaust duct for air from the optical system, in a particular projector system for a specialized use. Rather, it discloses the concepts, applicable in multiple situations, of independent cooling paths to more efficiently cool components that need cooling within an enclosure, and of the use of ducts to convey cooling air from outside to inside or inside to outside while preventing that air from mixing with other air inside the enclosure. Gourdine and Rizzuto are analogous because they are reasonably pertinent to the problem that the inventor of the '158 patent was trying to solve: providing fresh air to heating elements without mixing hot air from other components.

II. ARGUMENT

A. The Law of the Case Doctrine Precludes SEC from Re-arguing that Nakamura is Missing Limitations Other Than "Directly Conducts Cooling Air."

SEC argues, for the third time in these proceedings, that elements and limitations the Court has already found disclosed by Nakamura are not disclosed and that the Court "misread" Nakamura to find that an air inlet and air outlet are inherently present in the power supply of

1 Nakamura. Opp'n. at 11:8-15:16 and Keller Decl. (Docket No. 407) at ¶¶ 31-32. Indeed, SEC
 2 espoused exactly these arguments both in its opposition to Coretronic's previous motion for
 3 summary judgment and, later, in its appeal to the Federal Circuit of the Court's holding that the
 4 '158 patent is invalid. The law of the case doctrine precludes a court from reconsidering an issue
 5 that it has already resolved, unless the Court finds that one of five very specific exceptions applies.
 6 *Messinger v. Anderson*, 225 U.S. 436, 444 (1912); *United States v. Alexander*, 106 F.3d 874, 876
 7 (9th Cir. 1997)¹. The law of the case doctrine is well-established in patent jurisprudence. *See*,
 8 *e.g.*, *Smith Intl. v. Hughes Tool Co.*, 759 F.2d 1572, 1577 (Fed. Cir. 1985); *Ormco Corp. v. Align*
 9 *Tech. Inc.*, 498 F.3d 1307, 1319 (Fed. Cir. 2007).

10 Here, SEC raises the same arguments that Nakamura does not disclose several limitations
 11 that it made two years ago and that the Court rejected. *See* Declaration of Hsin-Yi (Cindy) Huang
 12 in Support of Coretronic and Optoma's Reply in Support of Renewed Motion for Summary
 13 Judgment of Invalidity of U.S. Patent No. 6,203,158 ("Huang Decl.") Exs. 1 and 2; and Rader
 14 Decl. (Docket No. 393) Ex. 2. (May 15, 2009 Order). SEC could timely have sought leave
 15 pursuant to Local Rule 7-9 (a) to file a motion for reconsideration of the Court's 2009 order
 16 granting summary judgment but did not. Instead it made these arguments again to the Federal
 17 Circuit, where they fared no better. *See* Huang Decl. at Ex. 3 (Opening September 11, 2009
 18 appeal brief) at pages 42-49. SEC even filed a motion asking the Federal Circuit to take judicial
 19 notice of the dictionary and Wikipedia definitions of "schematic" that are now exhibits to Mr.
 20 Keller's declaration. Huang Decl., Ex. 4 (SEC's motion for judicial notice). SEC argues that the
 21 Court "misread" Nakamura, but even if that were true, it would not render the Court's previous
 22 decision that Nakamura discloses all but one limitation "clearly erroneous." SEC now offers these
 23 arguments yet again, perhaps thinking that it can wear down the Court with repetition. But the
 24 Court need not spend time reconsidering tired arguments and revisiting issues that the Court has

25
 26 ¹ A court may have discretion to depart from the law of the case where: 1) the first decision was
 27 clearly erroneous; 2) an intervening change in the law has occurred; 3) the evidence on remand is
 28 substantially different; 4) other changed circumstances exist or 5) a manifest injustice would
 otherwise result. *Alexander*, 106 F.3d at 876. None of these circumstances is applicable here.
 Failure to apply the doctrine of the law of the case absent one of the requisite conditions
 constitutes an abuse of discretion. *Id.*

1 already decided.

2 SEC also argues that the Federal Circuit did not endorse the Court's findings regarding
3 Nakamura but failed to address them due to its claim construction holding. Opp at 1:20-22. This
4 argument strains credulity. The Federal Circuit clearly considered the Court's findings regarding
5 Nakamura because it reversed the Court's holding of invalidity over Nakamura, finding Nakamura
6 does not disclose the "directly conducts cooling air" limitation of the '158 patent.

7 Coretronic will not belabor the point by repeating its earlier arguments, both here and at
8 the Federal Circuit, about why Nakamura discloses the elements and limitations other than the
9 "directly conducts cooling air" limitation of the '158 patent. Instead, Coretronic incorporates by
10 reference those arguments in its November 3, 2008 Reply in support of its previous motion for
11 summary judgment. *See* Huang Decl., Ex. 5.

12 **B. SEC Simply Misunderstands and Misapplies the Supreme Court's and**
13 **Federal Circuit's Jurisprudence on Obviousness**

14 The reason that patent law requires that a patented invention be not only new but also
15 nonobvious is that granting patents on obvious inventions would actually remove knowledge
16 otherwise available to one of ordinary skill from the public domain, hindering innovation instead
17 of promoting it. *Hotchkiss v. Greenwood*, 52 U.S. 248, 267 (1850) (mere substitution of materials
18 to create an improved product is "the work of the skilful mechanic, not that of the inventor");
19 *Great A & P Tea Co. v. Supermarket Corp.*, 340 U.S. 147, 152 (1950) ("a patent for a combination
20 which only unites old elements with no change in their respective functions...obviously withdraws
21 what is already known into the field of its monopoly and diminishes the resources available to
22 skillful men."); *Lincoln Eng'g. Co. of Illinois v. Stewart-Warner Corp.*, 303 U.S. 545, 549-50
23 (1938) ("the improvement of one part of an old combination gives no right to claim that
24 improvement in combination with other old parts which perform no new function in the
25 combination;" *Sakraida v. Ag Pro*, 425 U.S. 273, 282 (1976) (reversing court of appeals and
26 finding patent obvious as a mere combination of old elements, exploiting the principle of gravity
27 but "adding nothing to the sum of useful knowledge."); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S.
28 398, 416 (2007). Section 103 of the 1952 patent act was intended to codify the concept of

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1 THE WITNESS: They should be quite similar.

2 BY MR. HU:

3 Q They're almost identical, right?

4 MR. UTERMOHLEN: Objection. Vague.

5 THE WITNESS: They're a little different, but
6 they're pretty much the same.

7 BY MR. HU:

8 Q Now, in paragraph 9 of Exhibit 100, you have
9 one sentence where you stated, "I have been studying
10 the design and mechanical systems for computers and
11 projectors since 1989, including the cooling systems,"
12 correct?

13 A Yes.

14 Q And you have that same paragraph -- same
15 sentence in paragraph 9 of Exhibit 101, correct?

16 A Yes.

17 Q The paragraph 9 of Exhibit 101 continues with
18 two additional sentences, correct?

19 A Yes.

20 Q And those are, The similarities in the
21 cooling issues in computers and projectors and the
22 ways of addressing those issues -- strike that.

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1 "There are similarities in the cooling issues
2 in computers and projectors and the ways of addressing
3 those issues. Computers and projectors both have
4 electronic components that generate heat in compact
5 crowded spaces, and the heat must be dissipated by
6 various methods tailored to the particular products as
7 efficiently as possible."

8 Now, Mr. Keller, are the two sentences I just
9 read accurate?

10 MR. UTERMOHLEN: Objection. Vague.

11 THE WITNESS: Pretty much so.

12 BY MR. HU:

13 Q And they're accurate from the engineering
14 standpoint -- point of view, correct?

15 A Yes.

16 Q Why did you take them out from -- when you
17 prepared your updated report in -- strike that.

18 Why did you delete those two sentences from
19 Exhibit 100?

20 A I didn't feel it was as important.

21 Q As important to what?

22 A To what I was going to be discussing.

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1 Q You didn't change anything else from
2 paragraphs 1 through 8?

3 A Yes. Paragraph 6 I changed.

4 Q The updated --

5 A Yes.

6 Q -- paragraph 6?

7 A So that is a change.

8 Q Whose suggestion was it to delete those two
9 sentences in paragraph 9 of Exhibit 101?

10 A I do not know.

11 Q What do you mean you don't know?

12 A I do not know.

13 Q It's your report.

14 A Yes.

15 MR. UTERMOHLEN: We have agreement that
16 drafts aren't to be addressed. So I object to this
17 line of questioning.

18 THE WITNESS: What is your question?

19 BY MR. HU:

20 Q Did you delete those two sentences yourself
21 or were you asked to delete those two sentences?

22 A I do not remember.

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1 Q Do you know they were deleted from your
2 report, Exhibit 100?

3 MR. UTERMOHLEN: I object to any more
4 questions about what was in the draft versus not in
5 the draft.

6 MR. HU: Bill, who is talking about the
7 drafted? I'm talking about Exhibit 100 and 101.
8 Those are both --

9 MR. UTERMOHLEN: You were talking about --

10 MR. HU: -- submitted declarations.

11 MR. UTERMOHLEN: -- deleting it from a
12 report. These are two different documents.

13 BY MR. HU:

14 Q Mr. Keller, do you remember?

15 A The question?

16 Q Who asked you to delete those two sentences?

17 MR. UTERMOHLEN: Objection. Asked and
18 answered.

19 THE WITNESS: I don't believe -- I do not
20 remember them being deleted.

21 BY MR. HU:

22 Q Well, how was paragraph 9 of Exhibit 100

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1 prepared?

2 MR. UTERMOHLEN: I object to that, too,
3 because that's a question about drafts of the report.
4 And I'll instruct the witness not to answer.

5 MR. HU: On what ground?

6 MR. UTERMOHLEN: On the ground that we have
7 an agreement that we're not going to change exhibits
8 of the report and -- a question asking how the exhibit
9 was prepared and what was changed from earlier drafts
10 is essentially the same thing and within that
11 agreement.

12 MR. HU: Counsel, I'm not talking about the
13 earlier draft. I'm talking about two declarations
14 that Mr. Keller submitted to this court in which he
15 changed one statement from the other statement. I
16 have every right to go into why he made those changes.
17 We're not talking about drafts here.

18 MR. UTERMOHLEN: No, you were. Your question
19 was specifically about how was paragraph 9 was
20 prepared.

21 MR. HU: I'm not interested in an argument.
22 If you stand by your objection, we'll just go to the

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1 Court.

2 MR. UTERMOHLEN: All right.

3 MR. HU: Do you stand by your objection?

4 MR. UTERMOHLEN: Yes.

5 BY MR. HU:

6 Q So other than the fact that you don't
7 remember who asked you to delete those two sentences
8 that were originally present in Exhibit 101, is there
9 any other reason you can think of that would lead you
10 to believe those two sentences are not relevant to the
11 present declaration?

12 A Restate, please.

13 Q Why do you believe that those two sentences,
14 as we talked about in Exhibit 101, are not relevant to
15 your current declaration that is Exhibit 100?

16 A It appears to be the wrong place to install
17 opinions. I should be stating, as I did in 101, what
18 I have done.

19 Q Well, did you realize that when you
20 originally submitted your report that's Exhibit 101?

21 A No.

22 Q When did you come to that realization?

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1 A When this was written, Number 100, I did not
2 remember that those -- that we had those sentences.

3 Q Well, one of the prior references relied upon
4 by Coretronic in the current summary judgment motion
5 is directed to computer components, correct?

6 A Correct.

7 Q So you don't believe that your declaration
8 about computer components is relevant to the issue
9 here?

10 A I still believe it is correct.

11 Q You stated you believe the accuracy of those
12 two sentences.

13 A Yes.

14 Q My question is, why did you delete them?

15 A I do not remember deleting them.

16 Q Well, you agree they're not in your current
17 declaration, right?

18 MR. UTERMOHLEN: Objection. Asked and
19 answered.

20 BY MR. HU:

21 Q Did you give an answer?

22 A Yes.

1 NOVEMBER 15, 2010

2:00 O'CLOCK P.M.

3 P R O C E E D I N G S

4 THE CLERK: CALLING CIVIL 06-6946, SEIKO EPSON
5 CORPORATION VERSUS CORETRONIC CORPORATION.

6 THE COURT: YOUR APPEARANCES, PLEASE.

7 MR. UTERMÖHLEN: GOOD AFTERNOON, YOUR HONOR. WILLIAM
8 UTERMÖHLEN OF OLIFF & BERRIDGE ON BEHALF OF THE PLAINTIFF.

9 THE COURT: GOOD AFTERNOON.

10 MR. UTERMÖHLEN: AND ME IS EDWARD WALKER OF OUR FIRM,
11 AND ALSO SUSAN VAN KEULEN OF O'MELVENY & MYERS.

12 THE COURT: GOOD AFTERNOON.

13 MR. HU: GOOD AFTERNOON, YOUR HONOR. YITAI HU,
14 ALSTON & BIRD, FOR THE DEFENDANTS CORETRONIC AND OPTOMA. WITH
15 ME IS ELIZABETH RADER.

16 THE COURT: YES, GOOD AFTERNOON.

17 WELL, WHO'S GOING TO BE HEARD ON THIS MOTION?

18 MR. HU: I WILL ON BEHALF OF CORETRONIC.

19 THE COURT: YOU WILL?

20 AND HOW ABOUT ON BEHALF OF SEIKO?

21 MR. UTERMÖHLEN: I'LL ARGUE ON BEHALF OF SEIKO, YOUR
22 HONOR.

23 THE COURT: OKAY. I SHOULD MAKE IT CLEAR: I'M NOT
24 GOING TO GO BACK AND REVISIT ANYTHING THAT IS NOT CALLED INTO
25 QUESTION BY THE FED. CIRCUIT'S OPINION, AND ESSENTIALLY THEIR

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1 CONSTRUCTION OF THE TERM "DIRECTLY CONDUCTS COOLING AIR," RIGHT?

2 AND SO WITH THAT CONSTRUCTION AND NOW WITH THE -- I
3 GUESS IT'S PRONOUNCED GOURDINE?

4 **MR. UTERMOHLEN:** I'M NOT SURE. WE'RE CALLING IT
5 "GOURDINE," YOUR HONOR.

6 **THE COURT:** IT'S AN "R," OKAY. WHY DID I THINK IT WAS
7 A "U"? WELL, IN ANY EVENT -- OH, THERE IS AN "R" IN THE NAME.
8 OKAY, GOURDINE.

9 I MEAN, ESSENTIALLY, DOES NOT THAT -- LOOKING AT
10 THE FED. CIRCUIT'S CONSTRUCTION:

11 "AIR FROM OUTSIDE THE CASE MUST BE CONDUCTED
12 DIRECTLY TO THE POWER UNIT WITHOUT SUBSTANTIAL
13 CONTAMINATION BY THE AIR INSIDE THE CASE."

14 IN OTHER WORDS, THEY WANT A DIRECT PATH, WHETHER IT
15 BE THROUGH A DUCT OR SOME OTHER WAY OF CONDUCTING IT WITHOUT
16 HAVING IT, YOU KNOW, MIXED IN WITH OTHER INTERNAL AIR, RIGHT?
17 THAT MAY BE HEATING OTHER ELEMENTS OR MAY BE DOING SOMETHING
18 ELSE.

19 **MR. UTERMOHLEN:** YES. THE FEDERAL CIRCUIT
20 CONSTRUCTION IS THAT OUTSIDE AIR HAS TO DIRECTLY REACH THE POWER
21 SUPPLY OR POWER UNIT.

22 **THE COURT:** WELL, LOOKING AT GOURDINE -- AND, I MEAN,
23 ISN'T WHAT IT'S TEACHING IS -- LET'S SEE IF I CAN GET TO -- YOU
24 KNOW, ESSENTIALLY THE SAME KIND OF CONCERN. THERE IS A HEATING
25 ELEMENT THAT NEEDS TO BE -- HAVE SOME COOLING KIND OF APPARATUS

ORIGINAL

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CLERK, U.S. DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
(San Francisco Division)

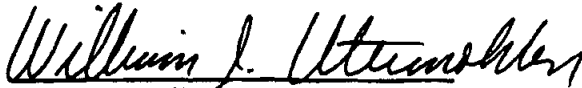
SEIKO EPSON CORPORATION,	)	Case No. C06-6946 MHP
Plaintiff,)	
	)	NOTICE OF APPEAL TO
v.	)	THE UNITED STATES
	)	COURT OF APPEALS FOR
CORETRONIC CORPORATION and	)	THE FEDERAL CIRCUIT
OPTOMA TECHNOLOGY, INC.,)	
Defendants.)	

Notice is hereby given that plaintiff Seiko Epson Corporation appeals to the United States Court of Appeals for the Federal Circuit from the final judgment of the district court and all interlocutory orders giving rise to that judgment, including but not limited to the May 19, 2009 Opinion Re: Cross-Motions for Summary Judgment of Invalidity, and the November 23, 2010 Memorandum and Order Re: Defendants' Renewed Motion for Summary Judgment of Invalidity and Plaintiff's Motion to Strike.

NOTICE OF APPEAL TO THE COURT OF APPEALS FOR THE FEDERAL CIRCUIT; Case No. C06-6946 MHP

1
2 Dated: December 7, 2010

Respectfully submitted,

3 

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1 HAVING FUNCTION TO DO.

2 SO WITH THAT, WE'VE ADDRESSED THE '899 AND '831. SO
3 UNLESS YOUR HONOR HAS QUESTIONS, THAT'S OUR PRESENTATION.

4 THE COURT: DO YOU HAVE ANY QUESTIONS?

5 MR. UTERMOHLEN: OKAY. THANK YOU, YOUR HONOR.

6 THE COURT: OKAY. THANK YOU. THAT WINDS IT UP?

7 MR. HU: MAY I QUICKLY ADDRESS THE CFR THAT COUNSEL
8 JUST PASSED OUT?

9 THE COURT: YES, VERY QUICKLY.

10 MR. HU: VERY TWO QUICK POINTS. ONE, THIS IS NOT
11 LAW. THIS IS REGULATIONS WITH THE U.S. PTO. THE FEDERAL CIRCUIT
12 HAS BEEN VERY CLEAR THAT THE CFR WILL NOT BIND THE FEDERAL
13 COURT, THE DISTRICT COURT. AND COUNSEL DOESN'T CITE TO ANY
14 FEDERAL CIRCUIT DECISIONS THAT SAYS THIS PARTICULAR CFR IS THE
15 LAW IN TERMS OF CLAIM CONSTRUCTION.

16 THANK YOU.

17 THE COURT: OKAY. THANK YOU.

18 NOW, DO WE HAVE FUTURE DATES IN THIS CASE?

19 MR. UTERMOHLEN: YOUR HONOR, THE ONLY THING THAT'S
20 ACTUALLY SCHEDULED AT THE MOMENT IS THE TRIAL DATE SEPTEMBER 15.

21 THE COURT: AND WHAT DO YOU CONTEMPLATE? I MEAN, I
22 DON'T KNOW TO WHAT EXTENT CLAIM CONSTRUCTION AFFECTS OTHER
23 ISSUES THAT -- OTHER THAN, OF COURSE, INFRINGEMENT CLAIMS.

24 BUT IS THERE ANYTHING WITH RESPECT TO ANY INVALIDLY
25 DEFENSES THAT EITHER SIDE INTENDS TO PURSUE?

KATHERINE WYATT, OFFICIAL REPORTER, CSR, RMR (415) 487-9834

1 **MR. HU:** FOR US, YES. I THINK WE ARE PURSUING A
2 NUMBER OF ISSUES. A COUPLE OF THINGS WE'RE WAITING FOR, OF
3 COURSE, GUIDANCE ON SOME OF THESE TERMS.

4 **THE COURT:** AND THAT WOULD SOMEHOW AFFECT, YOU KNOW,
5 YOUR DECISIONS WITH REGARD TO INVALIDITY?

6 **MR. HU:** WELL, IN TERMS OF WHETHER WE HAVE AN
7 INVALIDITY DEFENSE OR AN INFRINGEMENT DEFENSE, DEPENDING ON THE
8 CLAIM CONSTRUCTION, OBVIOUSLY.

9 **THE COURT:** WELL, THE NONINFRINGEMENT, YES.

10 **MR. HU:** YES.

11 **THE COURT:** INFRINGEMENT OR NONINFRINGEMENT,
12 OBVIOUSLY. IT'S GOING TO HAVE SOME -- THAT WILL HAVE SOME
13 IMPACT. OTHERWISE, WHY ARE WE DOING ALL OF THIS?

14 **MR. HU:** RIGHT. RIGHT.

15 **THE COURT:** BUT WITH RESPECT TO INVALIDITY, WHAT
16 THEORIES OF INVALIDITY, IF ANY, DO EITHER OF YOU INTEND TO
17 PURSUE?

18 **MR. HU:** WE HAVE BROUGHT FORTH A NUMBER OF THEORIES,
19 THE FOREMOST BEING THE ON-SALE BAR. THAT WE BELIEVE A NUMBER OF
20 THEIR PRODUCTS SUPPOSEDLY PRACTICED THE INVENTION EMBODIED IN
21 SOME OF THESE PATENTS HAVE BEEN ON SALE FOR MORE THAN ONE YEAR
22 BEFORE THEY ACTUALLY FILED FOR PATENTS.

23 WE'RE PURSUING THAT RIGHT NOW. ALSO, WE'RE PURSUING
24 A NUMBER OF PRIOR ART THAT WERE SOLD BY OTHER COMPANIES, UNDER
25 102B, AS WELL.

1 **THE COURT:** AND DO YOU HAVE ANY CONTENTIONS AT ALL?

2 **MR. UTERMOHLEN:** YES. WE EXPECT ACTUALLY TO MOVE FOR
3 SUMMARY JUDGMENT ON INVALIDITY GROUNDS WITH RESPECT TO BOTH THE
4 '831 AND '899 PATENT.

5 **THE COURT:** AND ON WHAT THEORY?

6 **MR. UTERMOHLEN:** I DON'T REMEMBER ALL THE PRIOR ART,
7 BUT IN THE CASE OF THE '899, FOR EXAMPLE, THEIR IMMEDIATE PRIOR
8 PRODUCT HAS, WE BELIEVE, DUCTS ABOVE AND BELOW THE LAMP AND THE
9 GUIDING SURFACE TO HELP THE AIR MOVE IT IN AND OUT OF THE DUCT.

10 ON THE '831 PATENT, THAT JAPANESE ART THAT I WAS
11 REFERRING TO. AND THERE'S A COUPLE MORE BEYOND THAT WE THINK DO
12 SHOW -- ANTICIPATE THE CLAIMS.

13 IN ADDITION, WE HAVE AN INEQUITABLE CONDUCT ARGUMENT
14 BECAUSE NONE OF THAT ART WHICH WAS -- WHICH WAS CITED AGAINST
15 THEM AT THE TIME THE U.S. APPLICATION WAS PENDING WAS PUT IN
16 PLAY IN THE U.S. APPLICATION.

17 **THE COURT:** ARE THERE INVALIDITY CONTENTIONS BASED ON
18 OBVIOUSNESS? OR ARE WE TALKING ABOUT ANTICIPATION?

19 **MR. UTERMOHLEN:** WELL, IF IT WEREN'T --

20 **THE COURT:** IT'S A LOT EASIER TO --

21 **MR. UTERMOHLEN:** TO THE EXTENT THAT THEY WOULDN'T BE,
22 WE THINK THEY ARE ANTICIPATION, YES, YOUR HONOR, TO THE
23 EXTENT --

24 **THE COURT:** YOU THINK THEY ARE ANTICIPATION, NOT
25 OBVIOUSNESS.

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1 MR. UTERMOHLEN: YES. THAT'S WHAT WE THINK. OF
2 COURSE, OBVIOUSNESS WOULD BE A BACKUP CONTENTION, BUT --

3 THE COURT: YES.

4 MR. UTERMOHLEN: BUT --

5 THE COURT: THIS STRIKES ME IN READING THESE PATENTS
6 THE IDEA OF FANS TO COOL THAT WHICH IS HOT OR GETS OVERHEATED OR
7 WHATEVER IS NOT LIKE ROCKET SCIENCE.

8 MR. HU: TO A CERTAIN EXTENT WE AGREE, YOUR HONOR.

9 THE COURT: AND THAT PERSONS OF ORDINARY SKILL IN THE
10 ART WOULD HAVE THOUGHT OF THESE VARIOUS METHODS OF COOLING AND
11 MOVING AIR ABOUT AND SO FORTH.

12 AND I NOTICE THAT IN ONE OF THE -- I WONDER IF I CAN
13 FIND IT NOW. YES, HERE IT IS.

14 ONE OF THE EXAMINERS' REJECTIONS IN THE '004
15 CONCLUDES ON PAGE 38 OF YOUR SUBMISSION:

16 "THEREFORE, IT WOULD HAVE BEEN OBVIOUS TO REPLACE
17 THE AXIAL FAN SHOWN IN FUSE FOR VENTILATING THE FACE
18 OF THE DISCHARGE LAMP WITH A SIROCCO FAN," ET CETERA,
19 ET CETERA.

20 BUT IT JUST -- IT JUST STRIKES ME THAT PEOPLE SKILLED
21 IN THE ART WOULD KNOW THAT YOU USE VARIOUS KINDS OF FANS FOR
22 EXHAUST, AND INTAKE FANS AND SIROCCO FANS OR WHATEVER KIND OF
23 FANS ARE AVAILABLE.

24 THEY KNOW WHAT IS OUT THERE AND WHAT EFFECT THEY
25 WOULD HAVE BOTH IN THEIR PLACEMENT AND JUST TINKERING AROUND

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1 WITH THEM:

2 "WELL, IF IT DOESN'T WORK HERE, YOU PUT IT
3 HERE," AND THAT KIND OF THING.

4 I MEAN, MAYBE I'M OVERSIMPLIFYING THINGS BUT --

5 **MR. UTERMOHLEN:** WELL, I THINK AT LEAST WITH RESPECT
6 TO THE EPSON PATENTS WHICH GENERALLY WE ARE EARLIER IN TIME,
7 PROJECTORS REALLY CAME INTO THEIR OWN IN SORT OF THE MID-'90'S.

8 SO THESE ARE AMONG THE EARLY PROJECTORS. THE
9 PREVIOUS PROJECTORS WERE LARGER. AND SOME OF THESE INVENTIONS
10 WERE REALLY BEING DONE FOR THE FIRST TIME AND AGAINST WHAT WAS
11 UNDERSTOOD TO BE THE NORMAL WAY OF DOING THINGS AT THE TIME.

12 **THE COURT:** WELL, WE WILL HAVE TO SEE. BUT I THINK
13 WHAT WE OUGHT TO DO AT LEAST IS SCHEDULE A DATE BY WHICH SOME OF
14 THESE INVALIDITY OR ALL OF THESE INVALIDITY MOTIONS ARE BROUGHT,
15 BRIEFED AND SO FORTH.

16 AND, I MEAN, LOOK AT THE CLAIM CONSTRUCTION. I THINK
17 WE'RE GOING TO DO THAT VERY SOON. THEY ARE FAIRLY DISCRETE, AND
18 YOU CAN COME UP WITH A WHOLE SLEW OF TERMS. OF COURSE, WE TRY
19 TO PREVENT THAT, ANYWAY, AS YOU KNOW WITH THOSE NUMERICAL
20 LIMITATIONS.

21 BUT I APPRECIATE THE FACT THAT YOU'VE KEPT THEM TO A
22 VERY REASONABLE NUMBER. SO, THE QUESTION IS: HOW SOON CAN YOU
23 BRING THESE IN WHATEVER ORDER MAKES SENSE?

24 **MR. UTERMOHLEN:** WELL, WE WERE CONTEMPLATING BRINGING
25 MOTIONS IN SOME CASES ON INFRINGEMENT AS WELL AS ON VALIDITY.

1 **THE COURT:** LET'S STICK WITH INVALIDITY FIRST.

2 **MR. UTERMOHLEN:** OKAY.

3 **THE COURT:** BECAUSE IF YOU DON'T GET PAST THAT HURDLE
4 THEN -- OR IF YOU GET PAST, YOU KNOW, IF THEY ARE INVALID, THE
5 PATENTS ARE INVALID YOU CAN HARDLY HAVE INFRINGEMENT ON THEM.

6 **MR. HU:** WELL, YOUR HONOR, AS YOUR HONOR KNOWS UNDER
7 THE PATENT LOCAL RULES AFTER YOU RENDER YOUR CLAIM CONSTRUCTION
8 ORDER, THEN I BELIEVE WE HAVE 60 DAYS TO SUBMIT THE FINAL
9 INVALIDITY CONTENTIONS, I THINK, AT WHICH POINT THEN WE WOULD BE
10 READY TO FILE SUMMARY JUDGMENT MOTIONS.

11 **THE COURT:** YOU CAN SPEED THEM UP. I MEAN, THESE ARE
12 NOT COMPLICATED PATENTS AS SOME OF THESE PATENTS GO. IF WE CAN
13 SPEED THAT UP THAT WOULD BE FINE.

14 **MR. HU:** AT LEAST ONE OF THE ISSUES THAT WE'VE RUN
15 INTO IS THAT WE'RE FILING MOTIONS TO COMPEL AGAINST SEIKO EPSON
16 FOR SOME OF THE PRIOR SALE OF THEIR PRODUCT WE BELIEVE THAT
17 OCCURRED.

18 AND WE'VE FOUND EVIDENCE OF THAT. WE SIMPLY HAVEN'T
19 GOTTEN ANY INFORMATION, SO WE HAVE TO FILE MOTION TO COMPEL
20 AGAINST THEM TO GET --

21 **THE COURT:** OKAY. WE'RE NOT GOING TO DO THAT. I DON'T
22 WANT TO DEAL WITH DISCOVERY MOTIONS. LET'S FIND A WAY TO
23 RESOLVE THAT. CAN WE DO THAT RIGHT NOW?

24 **MR. UTERMOHLEN:** I'M NOT --

25 **MR. HU:** I'LL BE HAPPY TO.

1 **MR. UTERMOHLEN:** I'M NOT SURE WHAT THE ISSUE IS.

2 **THE COURT:** THIS IS ON THE ON-SALE BAR ISSUE.

3 **MR. HU:** YES. WE ACTUALLY FOUND IN PUBLISHED
4 MAGAZINES IN WHICH SOME OF THE PROJECTORS THAT THEY CLAIM THAT
5 PRACTICE THEIR INVENTION WAS ADVERTISED. AND WE BROUGHT TO
6 COUNSEL, TO HIS ATTENTION ABOUT THESE. AND WE ASKED FOR
7 INFORMATION RELATING TO THE FIRST OFFER-FOR-SALE DATE AND ALL
8 THE DATES RELATING TO THE ON-SALE BAR.

9 THE RESPONSE WE GOT FROM COUNSEL WAS THAT:

10 "WELL, IT DOESN'T GO BACK ONE YEAR, THEREFORE
11 YOU'RE NOT ENTITLED TO THIS INFORMATION."

12 NOW, THAT'S BASED SOLELY ON HIS REPRESENTATION. WE
13 DON'T KNOW WHAT DOCUMENT MAY HAVE EXISTED. WE JUST CAME ACROSS
14 THAT MAGAZINE ADVERTISEMENT SORT OF BY CHANCE.

15 WE'RE ENTITLED TO DISCOVERY ABOUT EXACTLY HOW FAR
16 THEY HAVE BEEN SORT OF PUBLISHING OR PUBLICIZING THOSE
17 PROJECTORS.

18 **THE COURT:** WELL, LET'S DO THIS.

19 CAN YOU GET YOUR INVALIDITY CONTENTIONS EXCHANGED BY
20 30 DAYS OF THE DATE OF THE COURT'S CLAIM CONSTRUCTION?

21 **MR. HU:** THAT SHOULD NOT BE A PROBLEM.

22 **MR. UTERMOHLEN:** I'M SURE WE CAN.

23 **THE COURT:** AND THEN, YOU KNOW, SHORTLY THEREAFTER,
24 JUST SO THEY UNDERSTAND WHAT THE RESPECTIVE INVALIDITY
25 CONTENTIONS ARE ON EACH SIDE, THEN DO SOME DISCOVERY ON THOSE

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1 PARTICULAR INVALIDITY CONTENTIONS. AND CERTAINLY IF ONE OF YOUR
2 CONTENTIONS IS GOING TO BE THE ON-SALE BAR ISSUE, THEN YOU WILL
3 HAVE SPELLED OUT AT LEAST TO SOME EXTENT WHAT YOUR CONTENTIONS
4 ARE. AND YOU CAN SEE WHAT THEY ARE. AND YOU CAN DIRECT
5 DISCOVERY TO THOSE AS WELL AS ANY OF THE OTHER INVALIDITY CLAIMS
6 THAT ARE INVOLVED, AND REALLY FOCUS THE DISCOVERY FOR THAT NEXT
7 PERIOD OF TIME.

8 I DON'T KNOW HOW MUCH TIME YOU NEED, BUT 60, 90 DAYS?

9 MR. HU: AT LEAST FOR US I THINK WE WOULD NEED
10 BETWEEN 60 TO 90 BECAUSE WE ARE -- WE HAVE ISSUED A NUMBER OF
11 SUBPOENAS AGAINST COMPANIES THAT ARE IN -- A COUPLE ARE IN
12 OREGON, SO THAT MIGHT TAKE SOME TIME. BUT HOPEFULLY --

13 THE COURT: AND WHAT DOES THAT PLUG INTO, THE ON-SALE
14 BAR ISSUE?

15 MR. HU: INVALIDITY, YES. YES.

16 THE COURT: BUT ON THE ON-SALE BAR ISSUE?

17 MR. HU: YES.

18 MR. UTERMOHLEN: WELL, YOUR HONOR, THAT DISCOVERY
19 THEY JUST STARTED RECENTLY. I THINK THEY SHOULD PROCEED WITH
20 IT. I DON'T SEE WHY WE NEED 60 MORE DAYS OR 90 MORE DAYS AFTER
21 THE INVALIDITY CONTENTIONS ARE IN.

22 THE COURT: OKAY. FINE. FINE. THEN, PROCEED WITH
23 YOUR DISCOVERY. BUT FOCUS IT RIGHT NOW ON INVALIDITY ISSUES AND
24 THEN WE WILL SEE WHERE WE STAND AFTER THAT. OKAY?

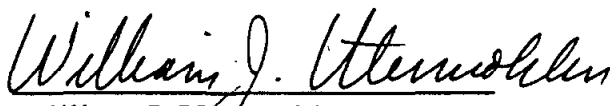
25 MR. HU: IF WE CAN ACTUALLY PROCEED AGAINST THE ONES

CERTIFICATE OF SERVICE

I hereby certify that two copies of the foregoing **JOINT APPENDIX** were served this 21st day of April, 2011, as follows:

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