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REPLY BRIEF

2011-1195
(Serial No. 11/161,741)

United States Court of Appeals

FOR THE FEDERAL CIRCUIT

IN RE JIE XIAO

Appeal from the United States Patent and Trademark Office,
Board of Patent Appeals and Interferences

REPLY BRIEF OF APPELLANT

JIE XIAO

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

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1. Modifying Gray's lock to come up with Applicant's lock as claimed requires specific motivation; The PTO fails to provide the required specific motivation

In its Brief, the PTO contends that “the blank position-labels in Gray could be wild-card position-labels, and reducing the number of blank position-labels to [only] one per tumbler ring ... is a ‘predictable variation’ that improves Gray by making the device smaller” (Red Br. at 11). Appellant respectfully disagrees.

The motivation of making Gray's lock smaller all by itself will not lead to the claimed invention. In Gray's lock, each of the blank spaces is a division between two letters. As Gray stated:

[E]ach of these revolving rings has an alphabet of twenty-six letters upon it, and a space, or division, between each letter equal to that occupied by the letter, and there are, of course, fifty-two such divisions, the letters occupying each alternate division (A210, Col.1, ll.49-55)

As the blank spaces serve as divisions for the letters, the blank spaces equal to the number of the letters on each revolving ring of Gray's lock. Gray made such arrangement to also serve another purpose. As Gray stated:

[i]n constructing the rings I make the blank spaces on one portion of them to coincide with the notches on their interior; and the letters on the other portion to coincide with said notches (A210, Col.2, ll.71-76).

If one tries to reduce the size of Gray's lock to 10 letters, there will be 10 letters and 10 blank space divisions, so as the blank spaces on one portion of rings to coincide with the notches and the letters on the other portion to coincide with the notches. Alternatively, if one wants to take off blank space divisions, one would take off all blank space divisions. On the other hand, if one wants to keep only one blank space on each tumbler ring, some of the letters would have no division between them. In addition, if the number of the blank spaces does not equal to the number of the letters, this only one blank space can not serve Gray's original purpose. As stated in MPEP 2143.01(V), if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See, *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984).

There is no apparent reason to keep just one blank space on each tumbler ring of Gray's lock. Appellant's lock as claimed has only one non-alphabetical position-label and less than twenty-six letter position-labels on each of the tumbler rings. It takes specific modifications to change Gray's lock to Appellant's lock as claimed. There must be some specific motivation to prompt people to make such specific modifications. The PTO has merely provided the motivation to make a lock smaller and it has not provided the required specific motivation to come up with Appellant's lock as claimed.

The PTO's assertion that "the blank position-labels in Gray could be wild-card position-labels" (Red Br. at 11) is based on a hindsight observation which is quite similar to "the Examiner's [hindsight] observation, echoed by the Board" (see Red Br. at 16), because there are no prior art references that have taught or suggested the idea of using a blank position-label on Gray's lock as a "wild-card" for representing other alphabetical letters. The PTO has not provided a motivation for using a "wild-card" on each of the tumbler rings (see Blue Br. at 10-13).

Finally, policy analysis supports the conclusion that Appellant's lock is not obvious. Gray's lock was invented in 1841. If the motivation of making Gray's lock smaller exists now for the reason that the decreased size constitutes an adaptation for gaining "commonly understood benefits"(Red Br. at 19), then, the same motivation would also exist in 1841. Thus, if Appellant's lock as claimed were indeed obvious, such lock would have already been invented during the ordinary course of business of more than 160 years. While "[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress" *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (U.S. 2007). Appellant's lock did not occur in the ordinary course and it also has advantageous usages (Blue Br. at 6, 24). There is no readily identifiable reason supporting a proposition that granting patent protection to

Appellant's lock would retard progress. Appellant's lock is not the type of invention that needs to be excluded from patent protection under 35 U.S.C. §103(c).

2. The combination of Gray and Fiegenger fails to suggest Appellant's lock as claimed

The PTO further contends "replacing one of the alphabetical-letter position-labels on Gray's tumbler rings with a non-alphabetical-letter position-label as taught by Fiegenger involves the alteration of 'a structure already known in the prior art ... by the mere substitution of one element for another known in the field' that does no more than yield a predictable result" (Red Br. at 11). Appellant respectfully disagrees. With all the blank spaces on Gray's lock, merely substituting Gray's alphabetical letters with Fiegenger's non-alphabetical symbols would not result in a device with each tumbler ring having only one non-alphabetical position-label, because each tumbler ring would still have blank spaces in addition to the Fiegenger's non-alphabetical symbols.

In addition, regardless of whether the blank position-labels or the letters in Gray's lock could constitute the "wild-card" labels, the PTO has not provided any apparent reason to the alleged substitution of known elements or to combine just one non-alphabetical-letter position-label with alphabetical-letter

position-labels on each tumbler ring of a combination lock (see Blue Br. at 10-13, 24-25). Furthermore, Appellant's lock as claimed involves an "improvement [that] is more than the predictable use of prior art elements according to their established functions" *KSR, at 417* (see Blue Br. at 23-26).

3. The PTO fails to satisfy its burden to prove that "the position labels in the claimed invention are not functionally related to the tumbler rings or the lock as a whole in any new and unobvious way" (Red. Br. at 12)

The PTO's contends that "the position labels in the claimed invention are not functionally related to the tumbler rings or the lock as a whole in any new and unobvious way **because** the combination of Gray and Fiegenger would have suggested the use of multiple alphabetical-letter position-labels and [only] one non-alphabetical-letter position-label [on each of the tumbler rings]" (emphasis added) (Red Br. at 12). Appellant has previously repetitively argued that the combination of Gray and Fiegenger fails to teach or suggest the use of multiple alphabetical-letter position-labels and only one non-alphabetical-letter position-label one each tumbler ring (see Blue Br. at 24-25, 10-13; Gray Br. at 1-5).

Therefore, the PTO's assertion that "the position labels in the claimed invention are not functionally related to the tumbler rings or the lock as a whole in any new and unobvious way" (Red Br. at 12) is incorrect.

4. The PTO is required to give “patentable weight” to the “wild-card position label”

In Red Br. at 11, the PTO cites *Gulack* which states that “when ‘printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from the prior art in terms of patentability’ *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983)”. In Red Br. at 13, the PTO reasons that “the use of the non-alphabetical-letter position-label as a ‘wild-card’ to represent an alphabetical letter occurs only in the human mind and bears no functional relationship to the structure of the lock” and “[a]ccordingly, characterizing the non-alphabetical-letter position-label as a ‘wild-card’ does not patentably distinguish the claimed invention from the prior art. *See Gulack*, 703 F.2d 1385.” The PTO’s such reasoning is erroneous, because it is not supported by any established rules.

The PTO’s reasoning in Red Br. at 13 raises the question of what is the correct test or correct rules for determining the condition when “printed matter will not distinguish the invention from the prior art in terms of patentability” *Gulack*, at 1385. The PTO’s statement of the applicable law (see Red Br. at 11) is that, under *Gulack*, when “printed matter is not functionally related to the substrate, the printed matter will not distinguish the invention from the prior art in terms of patentability.” *Id.* Under the current law, the threshold question of

whether printed matter is functionally related to the substrate under *Gulack* is determined under the test established by *In re Ngai*, 367 F.3d 1336 (Fed. Cir. 2004); in other words, the Gulack-functional-relationship between printed matter and the substrate is determined by an *Ngai* test. The *Ngai* test asks two questions: (1) whether “the printed matter and the circularity of the band were interrelated, so as to produce a new product useful for [specific] purposes.” *Ngai*, at 1339; and (2) whether “the printed matter would not achieve its [specific] purposes without the band, and the band without the printed matter would similarly be unable to produce the desired result.” *Id.* The PTO’s inquiry of whether “the use of the non-alphabetical-letter position-label as a ‘wild-card’ to represent an alphabetical letter occurs only in the human mind and bears no functional relationship to the structure of the lock” (Red Br. at 13) is irrelevant to the determination of whether “the printed matter will not distinguish the invention from the prior art in term of patentability.” *Gulack*, at 1385. While Gulack-functional-relationship is determined by the *Ngai* test, the PTO’s inquiry of whether the use of the non-alphabetical-letter position-label as a wild-card “occurs only in the human mind” (Red Br. at 13) is inconsistent with the *Ngai* test. In any event, The PTO’s conclusion that “characterizing the non-alphabetical-letter position-label as a ‘wild-card’ does not patentably distinguish the claimed invention from the prior art” (Red Br. at13) is not

supported by the rules in *Gulack* and *Ngai*, and such conclusion is not supported by any established rules.

Furthermore, in the Reply Brief submitted to the Board, Appellant has already established that the non-alphabetical-letter position-label is functionally related to the tumbler ring of the lock (see A190-A191, A185). The PTO's failure to respond to Appellant's request to "distinguish between the device in *Gulack* and the combination lock in the instant case" (A191) establishes that Appellant's non-alphabetical-letter position-label on each of the tumbler rings is functionally related to the tumbler ring of the lock under *Gulack* and "[the PTO is] required to give 'patentable weight' to the 'wild-card position-label'" (A190).

5. The PTO fails to establish a *prima facie* case of obvious under PTO's own statement of the law

In its statement of the law, the PTO cites *Ngai* for the proposition that "when printed matter is functionally related to the substrate, the critical question [in an obviousness analysis] is whether there exists any new and unobvious functional relationship between the printed matter and the substrate" *Ngai*, at 1338 (Red Br. at 11-12).

The PTO fails to satisfy its burden to prove that “there is no new and unobvious functional relationship between the wild-card position-label and the lock in Xiao’s claimed invention” (Red. Br. at 15), for the reason that (1) Appellant has established that the position labels in the claimed invention are functionally related to the lock (see Gray Br. at 7-8) and (2) The PTO fails to satisfy its burden to prove that “the position labels in the claimed invention are not functionally related to the tumbler rings or the lock as a whole in any new and unobvious way” (Red Br. at 12) (see Gray Br. at 5). Therefore, the PTO fails to establish a *prima facie* case of obvious under PTO’s own statement of the law.

Under *Lowry*, “the burden of establishing the absence of a novel, nonobvious functional relationship rests with the PTO. ‘If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent.’” *In re Lowry*, 32 F.3d 1579, 1584 (Fed. Cir. 1994).

6. The PTO fails to distinguish Appellant’s lock from the measuring receptacle in *Miller* for the purpose of determining unobviousness

In Red Br. at 14-15, the PTO alleged that the distinction between Appellant’s lock and measuring receptacle in *In re Miller*, 418 F.2d 1392

(C.C.P.A. 1969) is based upon an assertion that “there is no new and unobvious functional relationship between the wild-card position-label and the lock in Xiao’s claimed invention” (Red Br. at 15). Because this assertion relied upon by the PTO is incorrect (see Gray Br. at 8-9), the alleged distinction also fails.

While the PTO fails to distinguish Appellant’s lock from the measuring receptacle in *Miller* for the purpose of determining unobviousness (see Blue Br. at 21-23), Appellant has clearly explained why Appellant’s lock should be deemed as unobvious for the similar reasons of why the measuring receptacle in *Miller* is unobvious and why the famous “Post It” note is unobvious (see Blue Br. at 17-21).

7. The Board’s reasoning is clearly based on impermissible hindsight

In Red Br. at 17, the PTO affirmed the Board’s following reasoning:

The Board found that it was known in the art to use [**any number of**] non-alphabetical-letter position-labels on [**any of tumbler rings of**] combination locks and that Fiegenger expressly teaches the use of a combination of letters and symbols as position indicia. Thus, Fiegenger itself suggests substituting [**only one**] non-alphabetical-letter position-label for [**only one**] alphabetical-letter position-label [**on each of the tumbler rings**] in Gray. (Edited by Appellant, emphases added)

The Board’s such reasoning is incorrect. Without relying upon hindsight reasoning, the Board has no reason to select the Appellant’s lock as claimed

from very large number of possible locks that can be derived from the combination of Gray and Fiegener (see Blue Br. at 24-25).

8. Appellant's lock as claimed involves an improvement that is more than the predictable use of prior art elements according to their established function

First, the motivation "to improve Gray by making it smaller" (Red Br. at 19) as provided by the PTO is insufficient to satisfy the PTO's burden "to identify a reason ... to combine the elements in the way the claimed new invention does" as required by *KSR*, at 418 (see Gray Br. at 1-4; see Blue Br. at 10-13). Even with the motivation of making Gray's lock smaller, there are still large number of possible remaining combinations that can be derived from Gray and Fiegener, and the PTO is still left with the burden to provide an apparent reason to explain why one particular combination needs to be selected from such large number of possible remaining combinations (see Blue Br. at 24-25).

Second, characterizing the numerous possible combinations that can be derived from the cited references as involving "a combination of a small, finite number of prior art elements" (Red Br. at 20) still would not relieve the PTO from its duty to provide an apparent reason to explain why one particular combination needs to be selected. There are numerous DNA molecules, but all DNA molecules are from a combination of only four nucleotides -- A, G, C, and

T. Many DNA molecules are unobvious or unpredictable. In the instant case, regardless of whether the number of prior art elements is small or finite, the numerous possible combinations that can be derived from these prior art elements would require the PTO to provide an apparent reason for selecting one particular combination.

In Red Br. at 19, the PTO disagrees with the Appellant's argument that the use of only one non-alphabetical symbol on each of the tumbler rings is not "a predictable use of prior art elements according to their established function" *KSR*, at 417 (see Blue Br. at 24-25). Despite that Appellant's new use of this only one non-alphabetical symbol on each of the tumbler rings creates an advantageous new User Interface for a machine (i.e., the lock) (see Blue Br. at 22-23), the PTO refuses to consider the advantages of this new User Interface for the obviousness inquiry; specifically, the PTO dismisses the advantage of a convenient, simple and intuitive way for using any desired word as the "password" (see Blue Br. at 14) by characterizing it as something "occurs only in the user's mind and is not functionally related to the lock"(Red Br. at 20). The PTO's such refusal to evaluate the advantages of Appellant's lock can not be correct, because according to the general principle of *Graham v. John Deer Co.*, 383 U.S. 1 (1966), all advantages of a claimed invention need to be considered.

The PTO also dismisses the advantages of Appellant's lock for the reason that "the user's ability to select a password does not appear in the language of the claims" (Red Br. at 20). Appellant respectfully disagrees. There is no legal requirement that the advantages of the claimed invention must be explicitly cited in the claim languages. If the invention defined by the claim languages has certain advantages, these advantages should be evaluated by the PTO regardless of whether such advantages are explicitly cited in the claim languages (see A152-153; see Specifications A19-24, A55).

Finally, the PTO's analysis in Red Br. at 13 fails to prove that the additional function of using the non-alphabetical position-label as the "wild-card" does not create advantageous usages and unexpected results (see Blue Br. at 24-26). In the example as selected by the PTO, because of the "wild-card" position-label "*", even if there is no position-label of "R" or "M" on the fourth tumbler ring, one can still conveniently select any desired word (e.g., "DOOR" or "DOOM") as the password to open the lock. At least for a group of users who are familiar with the old fashioned Microsoft DOS operating system or the UNIX operating system, they may find Appellant's lock provides a convenient, simple and intuitive way for using any desired word as the "password" on a combination lock (see Blue Br. at 25-26).

9. There are factual evidences supporting the conclusion that Appellant's lock is unobvious

Appellant disagrees with the PTO that "the record contains no actual evidence that the claimed invention satisfied a long-felt need" (Red Br. at 22). See detailed argument in Blue Br. at 14. See additional secondary consideration in A193-194.

In addition, the PTO's repetitive failures to appreciate the advantages of the invention provide factual evidences supporting the conclusion that Appellant's lock is unobvious. One example of the factual evidence is the Examiner's statement that "Gray is capable of making any 'password' that the applicant's device is capable of and **more** since Gray includes more letters than the applicant's invention" (emphasis added) (A74).

Appellant disagrees with the PTO that the "lack of appreciation of the advantages of the invention by the Examiner would not provide any objective evidence of nonobviousness" (Red Br. at 23). The Federal Circuit has stated that examiners and administrative patent judges on the Board are "persons of scientific competence in the fields in which they work" *In re Berg*, 320 F.3d 1310, 1315 (Fed. Cir. 2003). Thus, the PTO's repetitive failures to appreciate the advantages of the invention would certainly provide objective evidence of nonobviousness (see Blue Br. at 14-16). The PTO's repetitive failures to

establish a *prima facie* case of obviousness should also provide objective evidence of nonobviousness (see Blue Br. at 27).

Contrary to the PTO's assertion, the Appellant never admitted that the Examiner's "lack of appreciation...carried little weight" (Red Br. at 23) (see Blue Br. at 16). Even if evidence does not constitute conclusive evidence, it can still carry significant weight.

Respectfully Submitted,



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UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT
2011-1195 – IN RE XIAO


PROOF OF SERVICE

I, Jie Xiao, hereby certified that I served one original copy and eleven facsimile copies of Appellant's Reply Brief to the United States Court of Appeals for the Federal Circuit on June 13, 2011.

I hereby certified that I also served two copies of the Appellant's Reply Brief to Office of the Solicitor, U.S. Patent and Trademark Office on June 13, 2011 by priority mail at US post office, addressed as follows:

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