

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JAE-HO MOON, DAE-SOON LIM, and O-HYUN BAEK

Appeal No. 2005-0247
Application No. 10/171,657

HEARD: May 4, 2005

Before KRASS, BARRY, and SAADAT, *Administrative Patent Judges*.
BARRY, *Administrative Patent Judge*.

DECISION ON REQUEST FOR REHEARING

A patent examiner rejected claims 1-27. The appellants appealed. We affirmed.

Ex parte Moon, No. 2005-0247 (Bd.Pat.App. & Int. May 31, 2005). The appellants now asks us to reconsider our affirmance of the examiner's rejections. (Req. Reh'g¹ at 1.)

¹The appellants cite 37 C.F.R. § 41.50(b)(2)(2005), (Req. Reh'g at 1), which allows an appellant to request a rehearing when the Board has entered a new ground of rejection. Here, because we entered no such new ground, the request under § 41.50(b)(2) is improper. In the interest of economy, however, we treat the request as if it was made under 37 C.F.R. § 41.52(a)(1).

As a preliminary matter, we advise the appellants that copying the Statement of Real Party in Interest, Related Appeals and Interferences, Summary of the Invention, Status of Claims, Status of Amendments after Final Rejection, and Issues sections of the appeal brief into their request, (Req. Reh'g at 2-6), is neither required by, nor helpful to, the Board. That said, rather than reiterate our position and that of the appellants *in toto*, we focus on the appellants' two points of contention, viz.:

- grouping of claims 1, 6, 7, 9,11-19, 24, 25, and 27
- ink ejection.

A. GROUPING OF CLAIMS 1, 6, 7, 9,11-19, 24, 25, AND 27

The appellants allege, "The Board cites Note[sic] that the Applicant only presented arguments with respect to claim 1. . ." (Req. Reh'g at 7.) "[T]o assure separate review by the Board of individual claims within each group of claims subject to a common ground of rejection, an appellant's brief to the Board must contain a clear statement for each rejection: (a) asserting that the patentability of claims within the group of claims subject to this rejection do not stand or fall together, and (b) identifying which individual claim or claims within the group are separately patentable and the reasons why the examiner's rejection should not be sustained." *In re McDaniel*, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002) (citing 37 C.F.R. §1.192(c)(7) (2001)). "If the brief fails to meet either requirement, the Board is free to select a single claim from each group of claims subject to a common ground of rejection

as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim." *Id.*

Here, contrary to the appellants' allegation, they did not "only present[] arguments with respect to claim 1 . . ." (Req. Reh'g at 7.) Instead, they argued claims 1, 6, 7, 9, 11-19, 24, 25, and 27 as a group. (Appeal Br. at 7-9.) Such an argument left us free to select a single claim from the group of claims, which were subject to a common ground of rejection, as representative of all claims therein and to decide the appeal of that rejection based solely on the selected representative claim. We selected claim 13. *Moon*, at 4.

B. INK EJECTION

The appellants argue, "It is required by claim 13 . . . that ink *present in the virtual chamber be ejected, not -previously- present in the virtual chamber.*" (Req. Reh'g at 10.) "In addressing the point of contention, the Board conducts a two-step analysis. First, we construe the representative claim to determine its scope. Second, we determine whether the construed claim would have been obvious." *Ex Parte Massingill*, No. 2003-0506, 2004 WL 1646421, at *2 (Bd.Pat.App & Int. 2004).

1. Claim Construction

"Analysis begins with a key legal question — *what is the invention claimed?*"

Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). In answering the question, "the PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324, 72 USPQ2d 1209, 1211 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1668 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

Here, claim 13 recites in pertinent part the following limitations: "each of said heating elements generating an annular bubble with balanced distribution within said cavity, said annular bubbles each having a virtual chamber formed within the corresponding annular bubbles and ink present in the virtual chamber is ejected through a corresponding one of said nozzles." The examiner has correctly noted that "[w]hile the Specification does teach that ink ejection can occur when the virtual chamber still exists, . . . the Appellant [sic] has not claimed this feature." (Examiner's Answer at 9.) In other words, the representative claim does not require that the virtual chamber still exists at the moment ink is ejected. Giving claim 13 its broadest, reasonable

construction, the limitations merely require electing ink present in the middle space of an annular shaped bubble.

2. *Obviousness Determination*

"Having determined what subject matter is being claimed, the next inquiry is whether the subject matter would have been obvious." *Massingill*, at *3. The question of obviousness is "based on underlying factual determinations including . . . what th[e] prior art teaches explicitly and inherently. . ." *In re Zurko*, 1383, 59 USPQ2d 1693, 1696 (Fed. Cir. 2001) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966); *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed. Cir. 1999); *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995)).

Here, Campbell "provide[s] a thermal drop-on-demand ink jet print head. . ." Col. 2, I. 13. More specifically, the print head "comprises a suitable substrate member 10, upon one surface 11 of which is formed an array of resistive heater elements 12. . ." Col. 2, II. 49-51. "A second substrate 18 is fixed in position adjacent to substrate 10 so that a nozzle 19 is opposite each of the resistive heating elements 12. Substrate 18 is shaped to provide an ink flow channel 20 to distribute . . . ink to the print cavity 21 which holds a predetermined volume of ink between the resistive heater elements 12 and the corresponding nozzle 19." Col. 3, II. 7-13.

"An[] embodiment of resistive heater elements 12 is shown in FIG. 3 in which the elongated portions 31 are curved and are joined by end portions 32 to form a small elongated opening 30. Thin conductive strips 33 are formed at spaced intervals on elongated portions 31. The conductive strips 33 extend radially on curved elongated portions 31 to force the electrical current path to follow the curvature and avoid current crowding problems." Col. 4, ll. 20-29. Furthermore, Figure 3 shows that the curved elongated portions 31 and the end portions 32 collectively form an annular shaped heating element 12, with an opening 30 in the middle.

"[A] data pulse is supplied to control electrode 16 to energize the associated resistive heater element 12. . ." Col. 3, ll. 8-9. "[B]ubbles will nucleate normally on both elongated portions . . . to form bubbles 26a and on both end portions 24 to form bubbles 26b. . ." *Id.* at ll. 50-52. "Due to a slight variation in current density, bubble 26b will be formed with a slight delay from bubble 26a. These bubbles 26a and 26b continue to grow and coalesce or stick together at the perimeter . . . during bubble growth." *Id.* at ll. 52-57. Because the heating element 12 is annular, with the opening 30 in its middle, we agree with the examiner's finding that "[a]t some point in time, the bubbles [26a and 26b] will have formed around the perimeter of the heat[ing element 12]," (Examiner's Answer at 7), i.e., along the elongated portions 31 and the

end portions 32, "but will not have reached sufficient size to fill-in the open[ing 30]. . . ."

(*Id.*) We further agree with him that "[a]t this time, the claimed virtual chamber would exist." (*Id.*) More specifically, the opening in the middle of the growing bubbles would constitute a "virtual chamber" as claimed. At oral hearing, moreover, the appellants' attorney conceded the brief existence of such a chamber during growth of the bubbles in Campbell. *Moon*, at 9. Because the heater element 12 is located in the ink-filled print cavity 21, Fig. 1, we find that the virtual chamber will contain ink.

Later during growth, the bubbles will "coalesce or stick together . . . at the center during bubble growth. The bubbles 26a, 26b grow into a single pillow-shaped bubble 22 (see FIG. 2) so that the momentum is directed toward the nozzle 19. . . . " Col. 3, ll. 55-59. Bounded by the surface 11 of the substrate 10 on the bottom, and the pressure from ink in the ink flow channel 20 on the sides, that momentum will force the ink present in the virtual chamber toward the nozzle so that it is "ejected in an energy-efficient manner," *id.* at l. 60, therefrom.

The appellants argue, "A review of Campbell finds no discussion of 'pressure from ink flowing into the print cavity 21 via the ink flow channel 20 on the sides'." (Req. Reh'g at 9.) "'Every patent application and reference relies to some extent upon knowledge of persons skilled in the art to complement that [which is] disclosed. . . .'"

In re Bode, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977) (quoting *In re Wiggins*, 488 F.2d 538, 543, 179 USPQ 421, 424 (CCPA 1973)). Those persons "must be presumed to know something" about the art "apart from what the references disclose." *In re Jacoby*, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962).

Here, as aforementioned, Campbell "provide[s] an ink flow channel 20 to distribute . . . ink to the print cavity 21. . . ." Col. 3, ll. 3-5. Persons skilled in the art would have realized that ink in the ink flow channel would exert a pressure on its surroundings.

The appellants also allege that the ink from Campbell's virtual chamber "will clearly not rise past all the ink between nozzle 19 and bubble 22 to be the ink ejected." (Req. Reh'g at 10.) "[A]rgument of counsel cannot take the place of evidence." *In re Budnick*, 537 F.2d 535, 537, 190 USPQ 422, 424 (CCPA 1976) (citing *In re Schulze*, 346 F.2d 600, 145 USPQ 716 (CCPA 1965); *In re Cole*, 326 F.2d 769, 140 USPQ 230 (CCPA 1964)). Here, the appellants offer no evidence to support their allegation that ink from the reference's virtual chamber will not be ejected. Because the purpose of Campbell's drop-on-demand ink jet print head is to eject ink, and the ink has nowhere else to go once the chamber disappears, we maintain our affirmance of the

rejection of claim 13 and of claims 1, 6, 7, 9, 11, 12, 14-19, 24, 25, and 27, which fall therewith.

Rather than arguing the rejections of claims 2-5, 8, 10, 20-23, and 26 separately, the appellants relied on the arguments in their appeal brief. (Appeal Br. at 9-10.) Unpersuaded by these arguments, we also maintain our affirmance of the rejections of claims 2-5, 8, 10, 20-23, and 26.

"Any arguments or authorities not included in the brief will be refused consideration by the Board of Patent Appeals and Interferences. . . ." 37 C.F.R. § 1.192(a). Accordingly, our affirmance is based only on the arguments made in the briefs. Any arguments or authorities omitted therefrom are neither before us nor at issue but are considered waived. *Cf. In re Watts*, 354 F.3d 1362, 1367, 69 USPQ2d 1453, 1457 (Fed. Cir. 2004) ("[I]t is important that the applicant challenging a decision not be permitted to raise arguments on appeal that were not presented to the Board.") No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

DENIED

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