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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS M. BELL

Appeal 2014-009335
Application 13/050,752¹
Technology Center 3700

Before JOHN C. KERINS, AMANDA F. WIEKER, and
FREDERICK C. LANEY, *Administrative Patent Judges*.

LANEY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Thomas M. Bell (Appellant) appeals under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–9, 22, 23, and 25–34.² We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM, and enter NEW GROUNDS OF REJECTION.

¹ According to Appellant, the real party in interest is Cameron International Corporation. Appeal Br. 2 (filed April 7, 2014).

² Claims 10–21 and 24 have been canceled. *Id.*

INVENTION

Appellant's invention relates to a "pressure-regulating device for such systems that exhibits improved sensitivity and deadband performance."

Spec. ¶ 1.

Claims 1 and 25 are independent claims. Claims 1 and 25, reproduced below, are illustrative of the claimed subject matter:

1. A system comprising:
 - a spring-loaded hydraulic pressure regulator having a maximum deadband of less than 200 pounds per square inch when coupled to a source of pressurized fluid having a supply pressure of at least 1000 pounds per square inch, the spring-loaded hydraulic pressure regulator comprising:
 - a housing having first and second inner chambers;
 - a spring disposed within the second inner chamber;
 - a sensing piston disposed within the housing and responsive to pressure within the first inner chamber and to a biasing force generated by the spring; and
 - at least one supply seal ring disposed within the first inner chamber.

25. A system comprising:
 - a spring-loaded hydraulic pressure regulator, comprising:
 - a housing having first and second chambers;
 - a first spring disposed within the second chamber;
 - a single sensing piston disposed within the housing,wherein the single sensing piston comprises a portion extending into the second chamber, and the single sensing piston is responsive to a pressurized fluid within the first chamber and to a biasing force generated by the first spring; and
 - a first and second supply seal rings disposed within the first chamber, wherein the first and second supply seal rings are configured to selectively allow the pressurized fluid to enter the first chamber.

Appeal Br. 17, 19 (Claims App.).

REJECTIONS

The following rejections are before us for review:

- I. The Examiner rejected claims 1–6, 8, 22, and 23 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor regards as the invention.
- II. The Examiner rejected claims 25, 26, and 29–34 under 35 U.S.C. § 102(b) as anticipated or, in the alternative, regarding claim 26, as being unpatentable under 35 U.S.C. § 103(a), over Bell (US 2008/0011355 A1, pub. Jan. 17, 2008).
- III. The Examiner rejected claims 27 and 28 under 35 U.S.C. § 103(a) as being unpatentable over Bell and Geissinger (US 1,654,642, iss. Jan. 3, 1928).
- IV. The Examiner rejected claims 1–9, 22, and 23 under 35 U.S.C. § 102(b) as anticipated or, in the alternative, as being unpatentable under 35 U.S.C. § 103(a), over Bell alone or, a further alternative, unpatentable over Bell and Nakajima (US 6,176,256 B1, iss. Jan. 23, 2001).

ANALYSIS

Rejection I

For claim 1, the Examiner determines, reasonable artisans could disagree as to what limiting effect should be given to the limitation “having a maximum deadband of less than 200 pounds per square inch when coupled to a source of pressurized fluid having a supply pressure of at least 1000 pounds per square inch”. Particularly, it is unclear whether this

limitation should be treated as part of the preamble or as part of the body.

Final Act. 3 (emphasis omitted). We disagree. Appellant correctly asserts that the quoted language “is definite as it sets out and circumscribes a particular subject matter (i.e., a specific type of spring-loaded hydraulic pressure regulator) with a reasonable degree of clarity.” Appeal Br. 7.

The Examiner recognizes appropriately that the “recitation of ‘A system comprising[:]’ indicates that the [subsequently recited] limitation is part of the body of the claim.” Final Act. 3. Nevertheless, the Examiner finds ambiguity is created because “the ‘system’ is only claimed to comprise a regulator, it appears that the claim is drawn only to a regulator, rather than a system, and therefore that this limitation is part of the preamble.” *Id.* The plain meaning of “system,” however, simply connotes the following parts are intended to move and/or work together. *See System Definition*, MERRIAM-WEBSTER.COM, <http://www.merriam-webster.com/dictionary/system> (last visited on Sept. 23, 2016). Claim 1 clearly describes a regulator including a combination of parts that are intended to move and/or work together and, as such, there is nothing ambiguous with describing, in the preamble, the claimed regulator as a “system.” The element reciting, “a spring-loaded hydraulic pressure regulator having a maximum deadband of less than 200 pounds per square inch . . .” is clearly part of the claimed system. Therefore, we do not find a rational underpinning supports the Examiner’s rejection of claim 1 as indefinite.

For claim 22, the Examiner determines, “it is unclear whether the plurality of supply seal rings of claim 22 include the supply ring of claim 1.” Final Act. 3. The Examiner further explains,

the issue is how many supply rings are required of claim 22. To explain, claim 22 could require a plurality of seal rings in addition to the at least one seal ring required of claim 1 (since claim 22 does not require --the at least one seal ring comprising a plurality of seal rings--, or the like). That is, claim 22 could be interpreted to require at least three seal rings, rather than at least two seal rings.

Ans. 13. Claims 1 and 22 recite, in relevant part, “at least one supply seal ring disposed within the first inner chamber,” and “a plurality of supply seal rings disposed within the first inner chamber and configured to selectively allow the pressurized fluid to enter the first inner chamber,” respectively. We do not agree claim 22 “could be interpreted to require at least three seal rings” because it is unambiguous that “a plurality of supply seal rings” recited in the dependent claim *necessarily* subsumes the “at least one supply seal ring” recited in the independent claim. In other words, a skilled artisan would readily understand claim 22 further limits claim 1 by requiring a regulator to have at least two supply seal rings disposed within the first chamber, among other things.

For the foregoing reasons, we do not sustain the Examiner’s rejection of claims 1–6, 8, 22, and 23 under 35 U.S.C. § 112, second paragraph, as being indefinite.

Rejection II

Claim 25 and 29–34

The Examiner finds Bell discloses each and every element of claim 25. Final Act. 4–5. Appellant is a named inventor on Bell. *See* Bell (76) (front page of patent, listing inventors). Appellant does not challenge the Examiner’s findings regarding claim 25, except as to whether Bell discloses, “a single sensing piston disposed within the housing.” Appeal Br. 10–11.

Appellant's argument is that the exemplary pressure regulator 24 in Bell has two pistons (i.e., a supply piston 64 and a vent piston 68), therefore, Bell fails to disclose the "single piston" configuration claim 25 requires. *Id.* To further the argument, Appellant asserts, "it would not be obvious [t]o combine the pistons 64 and 68 [of Bell] in a single piston" because "Bell teaches away from a single piston." *Id.* at 11. Appellant's argument is unpersuasive, for the following reasons.

To start, Appellant has already conceded Bell has a written description that clearly allows a skilled artisan to recognize a single piston design was within the scope of the disclosure. In claim 21 of Bell, Appellant (as a named inventor) *claims* a pressure regulator comprising, "*at least one piston* disposed within the interior volume and configured to move therein," "a supply seal ring coupled to the *at least one piston*," and "a vent seal ring coupled to the *at least one piston*." Bell para. 48 (claim 21) (emphasis added). To make that claim, and be faithful to the duty of candor, Appellant had to represent that the written disclosure clearly allows skilled artisans to recognize the invention includes a single-piston design. *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989) (holding that the written description of a patent must "clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed"). In other words, when Appellant sought the Bell patent, Appellant conceded that the written description of Bell discloses, to a skilled artisan, a single-piston pressure regulator including a supply/vent seal ring coupled to it, by claiming as much.

Now, before us, Appellant argues Bell does not disclose a single-piston pressure regulator, a single-piston pressure regulator would *not* have been obvious in view of Bell, and, in fact, Bell teaches away from a single-

piston pressure regulator. Appeal Br. 10–11. Appellant’s current position is meritless. Bell teaches that a commonly known type of hydraulic pressure regulator included “a control piston that moves back and forth to open and close both supply ports and vent ports of the regulator in response to the magnitude of pressure within the regulator.” Bell para. 5. Although the *exemplary* embodiment in Bell has a two-piston design, Bell teaches to a skilled artisan that the disclosure is equally applicable to a single-piston design:

However, in other embodiments, . . . the vent piston **68** may have a configuration in which *it does not extend through the supply piston 64 or the upper end cap 36* in full accordance with the present techniques.

Id. at para. 32 (emphasis added). To a skilled artisan, the above statement, in context, is describing an alternative embodiment that incorporates the disclosed techniques using the commonly known single-piston design, which has a vent piston that does not extend through the supply piston or the upper end cap. That fact is buttressed by the fact that Bell actually claims a pressure regulator comprising, “*at least one piston* disposed within the interior volume and configured to move therein,” “a supply seal ring coupled to the *at least one piston*,” and “a vent seal ring coupled to the *at least one piston*.” Bell para. 48 (claim 21).

Regarding the excerpts Appellant cites to suggest Bell teaches away from a single-piston design (*see* Appeal Br. 10–11 (citing Bell paras. 40–41)), it has been established that “[a] reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question of whether a reference ‘teaches away’ from the invention is inapplicable to an anticipation analysis.” *Bristol–Myers Squibb Co. v. Ben Venue Labs.*,

Inc., 246 F.3d 1368, 1378 (Fed. Cir. 2001) (alteration in original) (quoting *Celeritas Techs., Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998)). Although Bell describes some advantages gained with the exemplary two-piston embodiment over a single-piston embodiment (*see* Bell paras. 40–41), it does not criticize, discredit, or otherwise discourage using a single-piston design. “A known or obvious [product] does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Bell discloses all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989).

Because a preponderance of the evidence supports the Examiner’s finding that Bell discloses a single-piston pressure regulator, in full accordance with the techniques illuminated through the exemplary two-piston design, Appellant has not shown persuasively the Examiner rejected claim 25 improperly. Therefore, we sustain the Examiner’s rejection of claim 25 as anticipated by Bell. Appellant does not allege any other patentable distinctions for claims 29–34 and, as a result, we likewise sustain the Examiner’s anticipation rejection of those claims.

Because our decision may be viewed as including new rationale, and to ensure Appellant is provided a fair opportunity to respond, we designate our affirmance of the anticipation rejection of claims 25 and 29–34 as a NEW GROUND OF REJECTION pursuant to 37 C.F.R. § 41.50(b).

Claim 26

In addition to the argument made for claim 25, Appellant contends claim 26 is patentable because Bell fails to disclose, or render obvious, a single sensing piston including “a first aperture *completely through* the single sensing piston,” which is “configured to receive the first and second *supply seal rings*.” Appeal Br. 11–12. In Bell, the exemplary embodiment discloses a vent seal ring (108) configuration having an aperture completely through the piston to receive the *vent* seal rings, but the *supply* seal ring (84) configuration has two apertures, each partially through the piston, that receive the supply seal rings. *See* Bell Fig. 5. Both configurations rely on a spring to create a driving force against the seal ring enabling it to block the flow of a fluid from an associated port (i.e., 94, 118) and, as such, are interchangeable equivalents. *See, e.g., id.* at paras. 35–37. Appellant argues that it would not have been obvious to make the supply seal ring configuration the same as the vent seal ring configuration because it would cause the spring between the supply seal rings to contact the shaft of the vent piston (68) and increase the frictional forces on the vent piston, which would reduce the sensitivity of, as well as possibly damage, the vent piston. Appeal Br. 12. Again, Appellant points out that Bell teaches an advantage of the two-piston design is the reduced frictional forces on the vent piston movement, thereby enhancing its sensitivity. *Id.* (citing Bell para. 40). Appellant does not identify any other reason a skilled artisan would not have viewed the modification as simply a design choice substituting one known configuration for another known configuration that performs the same function in a similar application.

As noted above regarding claim 21, we reject Appellant's argument that a skilled artisan would have viewed Bell as only disclosing a two-piston design. As such, Appellant's sole argument regarding the potentially adverse implication the Examiner's proposed modification would have on the two-piston design is unpersuasive. In the context of the single-piston design Bell discloses, a skilled artisan would not have perceived any of the adverse effects Appellant alleges because "the vent piston **68** . . . [would] *not extend through the supply piston 64 or the upper end cap 36* in full accordance with the present techniques." See Bell para. 32 (italics emphasis added). Absent the concern of interfering with the vent piston, modifying the supply real ring configuration to be the same as the vent seal ring configuration would have been rudimentary, a known alternative well within the grasp of a skilled artisan at the time of the invention. Therefore, we sustain the Examiner's obviousness rejection of claim 26.

Because our decision may be viewed as including new rationale, and to ensure Appellant is provided a fair opportunity to respond, we designate our affirmance of claim 26 as a NEW GROUND OF REJECTION pursuant to 37 C.F.R. § 41.50(b).

Rejection III

Appellant does not raise a separate argument of patentability for claims 27 and 28, but instead relies on the alleged deficiencies of Bell for claim 25. For the reasons discussed above (*supra* Rejection II), we do not agree Bell is deficient. Therefore, we sustain the Examiner's rejection of

claims 27 and 28 and designate our affirmance as a NEW GROUND OF REJECTION.

Rejection IV

For claim 1, Appellant contends the Examiner has failed to establish a prima facie showing that the prior art discloses, “a spring-loaded hydraulic pressure regulator having a maximum deadband of less than 200 pounds per square inch when coupled to a source of pressurized fluid having a supply pressure of at least 1000 pounds per square inch.” Appeal Br. 13. Appellant asserts that language is not part of the preamble, but instead an unconditional functional requirement defining the characteristics of the claimed “spring-loaded hydraulic pressure regulator.” *Id.* at 13–14. We agree with Appellant. Appellant is “free to recite features of an apparatus either structurally or functionally,” but choosing to use functional language comes with a risk. *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997).

Appellant may be required to prove the prior art does not possess the claimed functional characteristics when the Examiner provides a sound basis for believing the functional limitations may, in fact, be an inherent characteristic of the prior art. *Id.* (citing *In re Swinehart*, 439 F.2d 210, 213 (CCPA 1971)). The Examiner may establish a sound basis for such a belief by demonstrating the structural elements performing the functional limitations in the claimed apparatus are the same as those disclosed in the prior art. *Id.* (holding the Examiner was “justified” in concluding that the functional limitations were inherently disclosed because the prior art structure was shown to be “the same general shape” as the claimed structure recited to perform the functional limitations). Moreover, a sound basis does not turn on absolute certainty; rather, a sound basis requires the Examiner

“to make sufficient factual findings, such that it can reasonably infer that the prior art product and that of the patent at issue are the same.” *Howmedica Osteonics Corp. v. Zimmer Inc.*, ___ F.3d ___, 2016 WL 760552, at *7 (Fed. Cir. Feb. 26, 2016). “Such a burden-shifting framework is fair because of ‘the PTO’s inability to manufacture products or to obtain and compare prior art products.’” *Id.* at *6.

We are not persuaded the Examiner erred by finding Bell anticipates claim 1 because the Examiner provides a sound basis for believing the functional limitations are an inherent characteristic of Bell. Significantly, Appellant does not dispute any of the Examiner’s factual findings (*see* Final Act. 8) regarding how Bell discloses the structural features claim 1 recites. Appeal Br. 13–14. The Examiner has thus established that the structural elements performing the functional limitations in claim 1 are the same as those disclosed in the prior art. Therefore, the Examiner has made the necessary factual findings to reasonably infer the pressure regulator of Bell and the pressure regulator of claim 1 are the same. *See Howmedica Osteonics Corp.*, ___ F.3d ___, 2016 WL 760552, at *7.

As a result, the Examiner made a *prima facie* case Bell anticipates claim 1 and shifted the burden to Appellant to prove the prior art does not possess the claimed functional characteristics. Appellant has offered no evidence that the pressure regulator of Bell does not have “a maximum deadband of less than 200 pounds per square inch when coupled to a source of pressurized fluid having a supply pressure of at least 1000 pounds per square inch.” Shifting the burden in this case is especially appropriate since Appellant is also a named inventor of Bell and particularly well situated to

have access to evidence, if any exists, showing Bell does not possess the claimed functional characteristics.

Appellant contends the Examiner acknowledges that Bell does not appear to disclose that characteristic. Appeal Br. 13 (citing Final Act. 7–8). We disagree with Appellant’s interpretation of the Examiner’s remarks. We understand the Examiner as finding Bell does not expressly *describe* those characteristics, rather than suggesting the structure of Bell does not possess the claimed functional characteristics. Consistent with our understanding, the Examiner represents in the Answer that there are no distinguishing structural features between Bell and the structural recitations of claim 1. Ans. 15. The Examiner further notes “if all claim limitations are found in the art as applied, the applied art would be seen as meeting the functional language to the same extent as applicant’s device as claimed.” *Id.*

For the foregoing reasons, we are not persuaded the Examiner’s finding that Bell anticipates claim 1 was erroneous. Appellant does not separately argue the patentability of dependent claims 2–7, 9, 22, and 23, instead electing to group them with claim 1. Appeal Br. 13–14. Therefore, we sustain the Examiner’s finding that Bell anticipates claims 1–7, 9, 22, and 23.

Regarding claim 8, Appellant argues the Examiner’s rejection was improper because “Bell does not disclose, ‘only a single sensing piston.’” *Id.* at 15–16. For the reasons discussed above regarding claim 25 (*see supra*, Rejection II), we do not agree Bell fails to make that disclosure. Therefore, we also sustain the Examiner’s finding that Bell anticipates claim 8.

Because our decision may be viewed as including new rationale, and to ensure Appellant is provided a fair opportunity to respond, we designate

our affirmance of claims 1–9, 22, and 23 as a NEW GROUND OF REJECTION pursuant to 37 C.F.R. § 41.50(b).

DECISION

We reverse the Examiner’s indefiniteness rejection of claims 1–6, 8, 22, and 23.

We affirm the Examiner’s anticipation rejection of claims 25, 26, and 29–34, but we designate our affirmance as a NEW GROUND OF REJECTION pursuant to 37 C.F.R. § 41.50(b).

We affirm the Examiner’s obviousness rejection of claims 27 and 28, but we designate our affirmance as a NEW GROUND OF REJECTION pursuant to 37 C.F.R. § 41.50(b).

We affirm the Examiner’s anticipation rejection of claims 1–9, 22, and 23, but we designate our affirmance as a NEW GROUND OF REJECTION pursuant to 37 C.F.R. § 41.50(b).

37 C.F.R. § 41.50(b) provides that “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.” 37 C.F.R. § 41.50(b) also provides that Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED; 37 C.F.R. § 41.50(b)