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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ALBERT BINDER, MICHAEL WIERER, and
CHRISTOPH HAKENHOLT¹

Appeal 2018-005047
Application 13/918,683
Technology Center 3700

Before MICHAEL L. HOELTER, JAMES P. CALVE, and
JEFFREY A. STEPHENS, *Administrative Patent Judges*.

CALVE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Office Action rejecting claims 1–15. Appeal Br. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

¹ Hilti Aktiengesellschaft is identified as the real party in interest (Appeal Br. 1) and also is the applicant pursuant to 37 C.F.R. § 1.46.

CLAIMED SUBJECT MATTER

Claim 1, the sole independent claim, is reproduced below.

1. A machine tool, comprising:
 - a tool holder, wherein a chiseling tool is holdable in the tool holder such that the chiseling tool is movable along an axis of movement;
 - an actuator arranged around the axis of movement and comprising a first magnetic coil and a second magnetic coil;
 - and
 - a striking mechanism disposed within the actuator, wherein the striking mechanism includes an air spring, a striker, and a die;
 - wherein the air spring has a ventilation opening which is only open when the striker is in close proximity to the die.

Appeal Br. 13 (Claims App.).

REJECTIONS

Claims 3, 10, 11, and 15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1–4, 8–13, and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Schad (US 2010/0206593 A1, pub. Aug. 19, 2010) and Hoffman (US 4,466,851, iss. Aug. 21, 1984).²

Claims 5–7 are rejected under 35 U.S.C. § 103(a) as unpatentable over Schad, Hoffman, and Arnold (US 4,004,258, iss. Jan. 18, 1977).

Claim 14 is rejected under 35 U.S.C. § 103(a) as unpatentable over Schad, Hoffman, and Sugiyama (US 2012/0024555 A1, pub. Feb. 2, 2012).

Claims 1, 4–9, and 12 are rejected on the grounds of nonstatutory double patenting over claims 1, 2, 4–8, and 12 of Application 13/916,184.

² The caption does not list claim 15, but the rejection includes findings for claim 15. Non-Final Act. 6.

ANALYSIS

Claims 3, 10, 11, and 15 For Indefiniteness

Claims 3 and 15

Claim 3 recites “wherein the ventilation opening has a surface cross-section such that at most 10% of *an amount of air* from the air spring flows through the ventilation opening in one second.” Appeal Br. 13 (Claims App.) (emphasis added). Claim 15 recites “wherein the ventilation opening has a surface cross-section such that at most 10% of *a total amount of air* from the air spring flows through the ventilation opening in one second.” Appeal Br. 15 (Claims App.) (emphasis added).

The Examiner finds that “**an** amount of air” does not specify what amount of air is intended and is indefinite. Non-Final Act. 2. The Examiner reasons that the amount of air in the air spring changes constantly while the ventilation opening is uncovered so “**an** amount” may be interpreted as any chosen amount, which renders claim 3 indefinite. *Id.* at 16. The Examiner finds that it is unclear what this amount of air is referring to. Ans. 7.

In response, Appellant argues that “an amount of air” and “a total amount of air” refer to air “from the air spring” and this amount of air is not indefinite. Appeal Br. 11. Appellant also argues that claim 3 claims what amount of air is intended.

“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112(b). For claims in an application that has not issued as a patent, “[a] claim is indefinite when it contains words or phrases whose meaning is unclear.” *In re Packard*, 751 F.3d 1307, 1310, 1314 (Fed. Cir. 2014).

During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. . . . The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed. . . . An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.

In re Zletz, 893 F.2d 319, 321–22 (Fed. Cir. 1989) (quoted in *Packard*, 751 F.3d at 1313). Because applicants are in the best position to resolve any ambiguity in the patent claims, patent examiners should demand that they do so in appropriate circumstances so the application can be amended during prosecution rather than attempting to resolve the ambiguity in litigation. *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1255 (Fed. Cir. 2008) (quoted in *Packard*, 751 F.3d at 1313).

We agree with the Examiner that claims 3 and 15 are indefinite. The meaning of the disputed limitations in both claims is unclear. As to claim 3, it is unclear what is meant by “an amount of air.” The limitation “10% of an amount of air” is ambiguous because it is unclear what “an amount of air” comprises. The Examiner finds that “an amount of air” could mean the total amount of air in the air spring. Final Act. 2. However, it also could mean some other amount of air in the air spring. *See id.*³ Furthermore, under either interpretation, it is also unclear when such amount is determined.

³ In addition, we note that claim 3 recites “10% of an amount of air *from* the air spring.” This phrase is ambiguous because it appears to indicate that the claimed “amount” is an amount of air coming *from* the air spring as opposed to an amount of air located *in* the air spring, as described in the Specification. *See* Spec. ¶ 5. Claim 15 similarly refers only to air “from” the spring.

Unlike claim 3, claim 15 recites “a total amount of air.” This phrase highlights the ambiguity in claim 3. Under the basic principles of claim construction, different claim language generally requires a different meaning to be given to different phrases and terms. *PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC*, 815 F.3d 747, 752 (Fed. Cir. 2016). Thus, it appears that “an amount of air” in claim 3 is a different amount than “a total amount of air” but it is unclear what “an amount of air” may be. It also is unclear how “a total amount of air” may differ from the total amount of air in the air spring, and when the claimed “total” is determined for purposes of calculating ten percent of that amount.

Claims 10 and 11

Claim 10 recites “wherein the ventilation opening is only open when the striker is at a position that is less than 5% of a stroke of the striker.” Claim 11 recites “wherein the close proximity [of claim 1] is within 5% of a stroke of the striker.” Appeal Br. 15 (Claims App.).

The Examiner determines that these claims are indefinite because it is unclear what is meant by “within 5% of a stroke.” Non-Final Act. 2. The Examiner correctly finds that “a stroke” is ambiguous because it could mean the total stroke of the striker or a stroke of some other undefined length(s). *Id.* The Specification discloses that the stroke of striker 4 is “limited by a control method, in order to adjust the volume and pressure of the pneumatic chamber 34 at the upper turning point 15 to a target value.” Spec. ¶ 25. Thus, the trajectory of striker 4 is *adjusted* adaptively. *Id.* ¶ 47. However, the striker also may have a maximum stroke 18. *Id.* ¶ 24. Claim 10 thus defines a position of the ventilation opening in terms of a striker stroke that can be variable in length. Clarification is required.

For the foregoing reasons, we sustain the rejection of claims 3, 10, 11, and 15 as being indefinite.

Claims 1–4, 8–13, and 15 Unpatentable over Schad and Hoffman

Regarding claim 1, the Examiner finds that Schad teaches all of the features of the claimed machine tool, including air spring 80 (Figs. 2, 3) formed by a pneumatic space, but the air spring lacks a ventilation opening. Non-Final Act. 3. The Examiner finds that Hoffman teaches a similar reciprocating tool with an air spring having a ventilation opening which is only open when the striker is in close proximity to the die as claimed. *Id.* at 4.

The Examiner reasons that it would have been obvious to implement Hoffman’s ventilation opening in the air spring of Schad “to replenish ambient air into the air spring for the purposes of returning the spring to ambient pressure when the striker is at or near its full stroke . . . while at the same time maintaining a more compact design.” *Id.* at 4; Ans. 2–3.

Appellant argues that a skilled artisan would not have been motivated to use exhaust ports 18 of Hoffman in Schad’s pressure-tight air spring 80 because Schad’s air spring 80 would not be pressure-tight according to its intended principle of operation. Appeal Br. 4. Appellant also argues that because Schad’s air spring 80 is pressure-tight, there would be no reason to replenish ambient air into this pressure-tight air space. *Id.* at 5. Appellant further argues that Schad teaches a ventilation system but does not teach the use of ventilation openings in the pressure-tight air spring 80 and such usage would conflict with Schad’s clear teachings of a pressure-tight air spring and pneumatic space 80. *Id.* at 6. We agree.

The Examiner is correct that Hoffman's machine tool includes an air spring that operates during retraction of piston 17 after striking impact head 12 and blade 43 when exhaust ports 18 are blocked by piston 17. Hoffman, 3:62–4:4; Ans. 2–3. The Examiner also is correct that when exhaust ports 18 are uncovered by piston 17, they open piston chamber on the valve side of the piston to the atmosphere. Hoffman, 3:47–49; *see* Ans. 3.

However, we are not persuaded that a skilled artisan would have been motivated to employ Hoffman's exhaust ports 18 on Schad's air spring 80 because Schad teaches that the pneumatic space that forms air spring 80 is “delimited *pressure-tight* by the striking element **2**, the stop **25** and the sleeve **16**.” Schad ¶ 45 (emphasis added).

The Examiner has not explained sufficiently why a skilled artisan would have wanted to add openings to Schad's air spring 80 and open it to the ambient atmosphere when Schad teaches to make the air spring *pressure-tight*. *See supra*. Hoffman uses exhaust ports 18 to remove air from behind piston 17 while increasing pressure in front of piston 17 so piston 17 retracts away from impact head 12 in preparation for the next power stroke. Hoffman, 3:42–4:4, Figs. 2, 3. Schad does not use this mode of operation such that any of Hoffman's benefits would accrue to Schad.

The Examiner is correct that Schad teaches a ventilation system with openings 92, 93 that lead into first and second sections 30, 31 of working space 10. Schad ¶ 44; Ans. 3. However, Schad does not disclose openings 92, 93 as being formed in sleeve 16 or otherwise connected to air spring 80. In Schad's drawings, lead lines for openings 92, 93 end at solid sleeve 16, which forms a pressure tight pneumatic air space for air spring 80. Schad ¶ 45, Figs. 2, 3.

Therefore, any finding that the optional ventilation system voids the pressure-tight seal around air spring 80 or connects the pressure-tight air spring 80 to the ventilation system is speculative when Schad's teachings indicate that air spring 80 is pressure-tight and intended to operation that way. *Id.* Because Schad's air spring 80 is pressure-tight, it is not amenable to the modification proposed by the Examiner, i.e., to allow air to flow out of air spring 80.

Thus, we do not sustain the rejection of claim 1 and dependent claims 2, 4, 8, 9, 12, and 13. We reverse *pro forma* the rejection of claims 3, 10, 11, and 15 under 35 U.S.C. § 103(a) due to their indefiniteness. *See In re Steele*, 305 F.2d 859, 862–63 (CCPA 1962) (holding that prior art rejection under 35 U.S.C. § 103(a) cannot be resolved when the claims are indefinite because to do so would involve considerable speculation and assumptions as to the scope of the claims).

Claims 5–7 Unpatentable over Schad, Hoffman, and Arnold

The Examiner's reliance on Arnold to teach permanent and radially magnetized ring magnet as recited in claims 5–7 (Non-Final 6–6) does not cure the deficiencies of Schad and Hoffman as to claim 1 from which these claims depend. Accordingly, we do not sustain the rejection of claims 5–7.

Claim 14 Unpatentable over Schad, Hoffman, and Sugiyama

The Examiner's reliance on Sugiyama to teach features recited in claim 14 (Non-Final Act. 7–8) does not overcome the deficiencies of Schad and Hoffman as to claim 1 from which claim 14 depends. Accordingly, we do not sustain the rejection of claim 14.

Claims 1, 4–9, and 12 For Double Patenting

The Examiner provisionally rejected claims 1, 4–9, and 12 on the ground of non-statutory double patenting over claims 1, 2, 4–8, and 12 of application number 13/916,184, which is co-pending. Non-Final Act. 9. Appellant reserves the right to address this rejection but otherwise presents no argument.⁴ Appeal Br. 12. Thus, we summarily sustain this rejection.

DECISION

We affirm the rejection of claims 3, 10, 11, and 15 under 35 U.S.C. § 112, second paragraph, as being indefinite.

We reverse the prior art rejections of claims 1–15 under 35 U.S.C. § 103(a) with the reversal of claims 3, 10, 11, and 15 being *pro forma* due to their indefiniteness.

We affirm the rejection of claims 1, 4–9, and 12 on the ground of non-statutory double patenting.

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

AFFIRMED-IN-PART

⁴ Application No. 13/916,184 was the subject of Appeal 2018-004072, which was mailed on Dec. 26, 2018.