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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/355,028	01/20/2012	Miguelangelo J. Perez-Cruet	MI4-00013DA	3075
68779	7590	11/29/2016	EXAMINER	
MILLER IP GROUP, PLC MI4 SPINE, LLC 42690 WOODWARD AVE. SUITE 300 BLOOMFIELD HILLS, MI 48304			MERENE, JAN CHRISTOP L	
			ART UNIT	PAPER NUMBER
			3733	
			MAIL DATE	DELIVERY MODE
			11/29/2016	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MIGUELANGELO J. PEREZ-CRUET and JOHN R. PEPPER

Appeal 2015-000926
Application 13/355,028
Technology Center 3700

Before JENNIFER D. BAHR, GEORGE R. HOSKINS, and
FREDERICK C. LANEY, *Administrative Patent Judges*.

HOSKINS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Miguelangelo J. Perez-Cruet and John R. Pepper (“Appellants”)¹ appeal under 35 U.S.C. § 134 from the Examiner’s decision rejecting claims 1–20 in this application. The Board has jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

¹ The Appeal Brief identifies MI4Spine, LLC as the real party in interest. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The independent claims are claims 1, 9, and 17. Claim 1 illustrates the subject matter on appeal, and it recites:

1. A method for placement of a pedicle screw and rod system, said method comprising:
 - providing a pedicle screw including a body and a ball-shaped head;
 - providing a cannulated post including a tube portion and a head portion attached thereto, said head portion including an opening and a planar portion;
 - positioning the head portion of the cannulated post on the ball-shaped head of the pedicle screw so that the cannulated post is mounted to the pedicle screw in a multi-axial engagement;
 - providing a rod having a slot; and
 - sliding the rod down the cannulated post so that the tube portion extends through the slot and the head portion is positioned within the slot so that the planar portion of the head portion causes the post to be locked within the slot.

Appeal Br. 14 (Claims App.).

REJECTIONS ON APPEAL²

Claims 1–3, 5–11, 13–17, 19, and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Lim (US 2008/0021458 A1, pub. Jan. 24, 2008), Richelsoph (US 2004/0193160 A1, pub. Sept. 30, 2004), and Pond (US 2007/0191840 A1, pub. Aug. 16, 2007). *See* Non-Final Act. 6–24.³

² The rejection of claim 16 under 35 U.S.C. § 112, second paragraph, as being indefinite, has been withdrawn. *See* Ans. 23.

³ The office action on appeal is the Non-Final Office Action mailed January 27, 2014.

Claims 4, 12, and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Lim, Richelsoph, Pond, and Jackson (US 6,716,214 B1, iss. Apr. 6, 2004). *See* Non-Final Act. 25–27.

ANALYSIS

A. *Obviousness based on Lim, Richelsoph, and Pond— Claims 1–3, 5–11, 13–17, 19, and 20*

Independent Claims 1, 9, and 17

Appellants argue for the patentability of independent claims 1, 9, and 17 together as a group. Appeal Br. 9–11. Accordingly, we select claim 1 to decide the appeal of the rejection of these claims, with claims 9 and 17 standing or falling with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

In rejecting claim 1, the Examiner finds Lim’s Figures 2 and 3 illustrate a pedicle screw having a body (bone engaging portion 54a) and a head (not shown in the Figures). Non-Final Act. 6–7; *see* Lim ¶ 27. The Examiner finds Lim discloses a cannulated post (receiver 52a) including a head portion having an opening that is positioned on the screw head in a multi-axial engagement. Non-Final Act. 6–7 (citing Lim ¶¶ 20, 27 as indicating “the head portion of the screw is pivotally received in the opening” of the post head portion in a multi-axial engagement⁴). The Examiner finds Lim discloses a rod (connecting member 10) having a slot (window 22) that receives post 52a. *Id.*; Ans. 24; *see* Lim ¶ 23. The

⁴ Lim’s paragraph 27 correspondingly indicates bone engaging portion 54a “can include a proximal head (not shown) *pivotally captured in a lower receptacle of*” receiver 52a, so that portion 54a “is pivotal about an axis and/or along a plane to assume any one of a plurality or infinite number of orientations relative to receiver 52a.” Lim ¶ 27 (emphasis added).

Examiner determines Lim does not disclose, as required by claim 1: its screw head being “ball-shaped;” or its post having “a tube portion” and “a planar portion;” or the action of sliding rod 10 down post 52a “so that [a] tube portion extends through the slot and the [post] head portion is positioned within the slot so that the planar portion of the head portion causes the post to be locked within the slot.” Non-Final Act. 8; Ans. 25.

The Examiner finds Richelsoph’s Figures 10, 12A, and 12B illustrate a pedicle screw (screw 12) having a ball-shaped head (head 14). Non-Final Act. 9. The Examiner finds Richelsoph discloses a cannulated post having a head portion (fixing mechanism 18), with the head portion including a seating portion (rod seating mechanism 28) and a planar portion (flexible portion 46). *Id.* The Examiner finds Richelsoph’s seating portion 28 and planar portion 46 allow operative engagement of screw head 14 with rod 16 within seating portion 28. *Id.*

The Examiner finds Pond’s Figures 1–3 illustrate a pedicle screw (anchor 120a) attached to a cannulated post, wherein the post has a head portion (distal implantation portion 52) attached to a tube portion (proximal guide portion 54). Non-Final Act. 9. The Examiner also finds tube portion 54 guides placement of connecting member 100 to a position adjacent vertebra V1–V3 of a spinal column, and tube portion 54 is then broken off via a weakened portion. *Id.* at 9–10.

The Examiner determines it would have been obvious to configure the head of Lim’s screw 54a which is received in cannulated post 52a to be ball shaped as taught by Richelsoph, and further to modify Lim’s cannulated post 52a to include Richelsoph’s seating portion and planar portion. Non-Final Act. 10. This would have been done, according to the Examiner,

“because a ball shaped head is a known way to provide polyaxial movement between a head portion and [a] screw, [and Richelsoph’s] seating portion and planar portion allows operative engagement and locking of the screw head and mounting portion.” *Id.* The Examiner determines it would have been obvious, further, to modify the combined assembly of Lim and Richelsoph to include a tube portion as disclosed in Pond, “because it allows one to guide the placement of a mounting member . . . to a position adjacent the spinal column that is broken off after use.” *Id.* The Examiner further determines, with this combination, “the tube portion would extend through and above the slot, [and] the head portion would be in the slot.” *Id.*

Appellants object to the Examiner’s reliance on Lim, on the basis that “Lim does not disclose that the heads of the [screws 54a] can be ball-shaped heads or that the heads of the [screws 54a] provide a multi-axial engagement to any device.” Appeal Br. 10. These arguments are not persuasive of Examiner error. Lim’s failure to disclose screws 54a having ball-shaped heads is not responsive to the rejection, which expressly finds Lim’s screws 54a do not have ball-shaped heads, and determines the use of ball-shaped heads would have been an obvious modification of Lim in light of Richelsoph’s ball-shaped heads 14 on screws 12. Non-Final Act. 8, 10. Further, a preponderance of the evidence supports the Examiner’s finding that Lim’s screw 54a heads—even though not expressly described as ball-shaped—provide a multi-axial engagement to receivers 52a. *See* Lim ¶¶ 20, 27.

Appellants further argue “nowhere in Lim does it teach or suggest any type of cannulated post, i.e., a post having a central opening extending therethrough, and especially a cannulated post having a tube portion and a

head portion as claimed.” Appeal Br. 10. These arguments are not persuasive of Examiner error. A preponderance of the evidence supports the Examiner’s finding that Lim’s receiver 52a is a post having a central opening extending therethrough to receive screw 54a. *See* Lim ¶¶ 20, 27 (screw 54a is “pivotally captured in a lower receptacle of” receiver 52a). Lim’s failure to disclose receiver 52a having a tube portion is not responsive to the rejection, which expressly finds Lim’s receiver 52a does not have a tube portion, and determines the use of a tube portion would have been an obvious modification of Lim in light of Pond’s disclosure of tube portion 54. Non-Final Act. 6–10; Ans. 25–28.

Appellants object to the Examiner’s reliance on Richelsoph, on the basis that “nowhere in Richelsoph does it teach or suggest a cannulated post and especially a cannulated post including a tube portion and a head portion.” Appeal Br. 10. The Examiner finds Richelsoph’s fixing mechanism 18 and rod seating mechanism 28 together form a cannulated post having, as claimed, a head portion including an opening (gripping portion 22 of mechanism 18 that receives screw head 14) and a planar portion (flexible portion 46 of mechanism 28). Non-Final Act. 9. Appellants’ conclusory objection to that finding fails to apprise us of Examiner error—for example, Appellants do not provide any reason why two separate components may not together form the claimed cannulated post. Richelsoph’s fixing mechanism 18 has a tube-shaped receptacle for receiving screw head 14, and is therefore cannulated. *See* Richelsoph Figs. 2, 10. Further, Richelsoph’s failure to disclose a tube portion is not responsive to the rejection, which expressly finds Richelsoph’s cannulated post does not have a tube portion, and determines the use of a tube portion

would have been an obvious modification in light of Pond's disclosure of tube portion 54. Non-Final Act. 10; Ans. 25–27.

Appellants object to the Examiner's reliance on Pond, on the basis that Pond's receivers 50 are not cannulated posts. Appeal Br. 11. Appellants particularly contend "receivers 50 accept the rod 100 internal thereto, which at least for medical nomenclature makes the [receivers] not cannulated." *Id.* Appellants also contend that, because Pond's rod 100 is received internally to receivers 50, Pond fails to meet the claim limitations reciting "a slotted rod" that is "positioned over the cannulated post so that the head portion of the post is within the rod and is positioned within the slot in a locking engagement." *Id.*

These arguments are not persuasive of Examiner error. As discussed at length above, a preponderance of the evidence supports the Examiner's finding that the combination of Lim and Richelsoph discloses a cannulated post meeting all the requirements of claim 1, except for the tube portion. The Examiner relies on Pond as disclosing the usefulness of an elongated tube portion 54 to guide the placement of a member, such as connecting member 100, to connect posts 52 together. Non-Final Act. 9–10. We appreciate Pond's posts 52 have slots for receiving connecting member 100 (*see* Pond Fig. 7), rather than posts 52 being "positioned within" a slot of connecting member 100, as claim 1 requires. Nonetheless, as noted by the Examiner, Lim's posts 52 have head portions "positioned within" slot 22 of connecting rod 10. Non-Final Act. 6–8; *see* Lim Figs. 2, 4. Appellants have not shown error in the Examiner's determination that, when modifying Lim's posts 52 to include a guiding tube portion, "the tube portion would extend through and above the slot [of rod 10, and] the head portion [of

post 52] would be in the slot.” Non-Final Act. 10; *see In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”).

For the foregoing reasons, we sustain the rejection of independent claims 1, 9, and 17 as unpatentable over Lim, Richelsoph, and Pond.

Dependent Claims 6 and 14

Appellants argue for the patentability of dependent claims 6 and 14 separately from their respective parent claims, and together as a group.

Appeal Br. 12. Accordingly, we select claim 6 to decide the appeal of the rejection of these claims, with claim 14 standing or falling with claim 6.

37 C.F.R. § 41.37(c)(1)(iv).

Claim 6 depends from claim 1, and adds “the rod includes a transverse bar extending across the slot.” Appeal Br. 15 (Claims App.). The Examiner finds Lim’s Figure 2 discloses such a bar as mounting portion 26 in slot 22. Non-Final Act. 11. Appellants argue “the mounting portion 26 is not a bar that extends across a slot in [the] rod as claimed.” Appeal Br. 12. The Examiner answers that Lim’s Figure 1 shows mounting portion 26 “is a cylindrically shaped bar that extends at least partially across the slot along the longitudinal axis ‘A,’” and claim 6 does not specify “the direction in which the bar extends” or “that the bar ‘extends completely across the slot.’” Ans. 28.

We are not persuaded of Examiner error. We agree with the Examiner’s understanding of the scope of claim 6, which Appellants do not dispute. With that understanding, Lim’s mounting portion 26 satisfies the

requirements of claim 6. We therefore sustain the rejection of claims 6 and 14 as unpatentable over Lim, Richelsoph, and Pond.

Dependent Claims 7 and 15

Claim 7 depends from claim 1, and adds “the rod includes open end portions.” Appeal Br. 15 (Claims App.). The Examiner finds Lim’s Figure 2 illustrates rod 10 as including “open end portions (top and bottom end portions, as seen in [the Figure]).” Non-Final Act. 11. Appellants argue Lim’s Figure 2 does not illustrate the claimed open end portions. Appeal Br. 13. The Examiner does not address claim 7 in the Answer.

We determine the Examiner has applied an overly broad construction of claim 7. In particular, the Examiner finds the top and bottom openings of Lim’s slot 22 correspond to the open end portions of claim 7. This overlooks that claim 1, from which claim 7 depends, recites that the tube portion “extends through” the slot so the head portion is positioned within the slot. Appeal Br. 14 (Claims App.). In order for the tube portion to extend through the slot, as claimed, the slot must have two open ends. Thus, in order for claim 7 to add a limitation to its parent claim 1, the open end portions must be something different from the open ends of the slot. This understanding is consistent with Appellants’ Specification. *See Spec.*, Fig. 8, ¶¶ 21, 30.

Thus, we do not sustain the rejection of claim 7 as unpatentable over Lim, Richelsoph, and Pond. Claim 15 includes the same limitation as claim 7, so we likewise do not sustain the rejection of claim 15.

Dependent Claims 8, 16, and 20

Claims 8, 16, and 20 depend from different independent claims and add “the planar portion of the head portion includes opposing flat surfaces.” Appeal Br. 15, 16, 17 (Claims App.). Appellants admit Richelsoph’s rod seating mechanism 28 “includes opposing flat surfaces 46,” but contend mechanism 28 “is not a cannulated post including a head portion as claimed.” Appeal Br. 13. That is, Appellants merely incorporate their arguments against the independent claim rejections. For the reasons provided above, those arguments are not persuasive, and we sustain the rejection of claims 8, 16, and 20 as unpatentable over Lim, Richelsoph, and Pond.

Dependent Claims 2, 3, 5, 10, 11, 13, and 19

Appellants do not argue for the patentability of dependent claims 2, 3, 5, 10, 11, 13, and 19 separately from their respective parent claims. For the reasons provided above, we sustain the rejection of these claims as unpatentable over Lim, Richelsoph, and Pond.

*B. Obviousness based on Lim, Richelsoph, Pond, and Jackson—
Claims 4, 12, and 18*

Claim 4 depends from claim 1, and adds that the screw head includes tabs which are “snap fitt[ed]” into slots in the post. Appeal Br. 14 (Claims App.). The Examiner finds Jackson correspondingly discloses a screw including tabs 24 which are snap fitted into slots 62 in a post. Non-Final Act. 25 (citing Jackson, Fig. 1, 7:60–68, 8:1–15, 9:32–10:20). According to the Examiner, Jackson discloses a snap fit because retainer ring 8 (in which slots 62 are formed) has “sufficient ‘resiliency’ and ‘elasticity’ to provide snap fit arrangement when engaged with the ball shaped head.” Ans. 28.

The Examiner determines it would have been obvious, in light of such disclosures in Jackson, to incorporate tabs being snap fitted into slots in the combined system of Lim, Richelsoph, and Pond. Non-Final Act. 25.

Appellants argue Jackson fails to disclose “snap fitting tabs into slots,” because Jackson’s “splines 24 and . . . recesses 62 appear to provide an alignment mechanism and not a snap fit locking mechanism.” Appeal Br. 12. We agree with Appellants. While we appreciate that Jackson’s ring 8 is made of a resilient and elastic material, it does not appear that such properties play a role in the fitting of tabs 24 into slots 62. *See* Jackson, 7:60–68, 8:1–15, 9:32–10:20. Thus, the Examiner’s finding that Jackson discloses the claimed snap fit connection is not supported by a preponderance of the evidence.

For the foregoing reasons, we do not sustain the rejection of claim 4 as unpatentable over Lim, Richelsoph, Pond, and Jackson. Claims 12 and 18 include the same limitation as claim 4, so we likewise do not sustain the rejection of those claims.

DECISION

The Examiner’s decision to reject claims 1–20 is affirmed as to claims 1–3, 5, 6, 8–11, 13, 14, 16, 17, 19, and 20, and is reversed as to claims 4, 7, 12, 15, and 18.

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