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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES MCWILLIAM, WILLIAM MICHAEL KARNES, KAREN LEIGH GALLEN, and KENT ELLINGTON

Appeal 2019-003167
Application 14/515,879
Technology Center 3700

Before LINDA E. HORNER, CHARLES N. GREENHUT, and MICHAEL J. FITZPATRICK, *Administrative Patent Judges.*

HORNER, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1, 2, 5–15, and 21–26.[2] We have jurisdiction under 35 U.S.C. § 6(b).

The Examiner rejected the claims on appeal as either anticipated by, or for obviousness over, the prior art. Appellant argues that the prior art

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Arthrex, Inc. Appeal Br. 3.

[2] Claims 3, 4, and 16–20 are canceled.

does not disclose or render obvious certain limitations recited in independent claims 1 and 10. For the reasons explained below, we agree with the Examiner that the prior art anticipates the claimed subject matter. We also agree with the Examiner that some of the prior art combinations render obvious the claimed subject matter, but we agree with Appellant that the Examiner erred in finding that one of the combinations renders obvious the claimed subject matter. Thus, we affirm in part.

CLAIMED SUBJECT MATTER

The claims are directed to an osteotomy wedge that can be implanted into a bone that has been cut to change the alignment of the bone. Spec. ¶¶ 1–2. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. An osteotomy wedge, comprising:
> an asymmetrical body that includes an outer perimeter established by a continuous, smooth surface, wherein the outer perimeter includes a concave surface, wherein the body includes a fore surface and a hind surface, wherein the outer perimeter of the body is asymmetrically shaped when viewed in a direction facing one of the fore surface and the hind surface, the fore surface and the hind surface each having a texture comprising a plurality of pyramid-shaped projections arranged in a crisscross pattern, and wherein the body is tapered such that a thickness of the body continuously decreases from a dorsal surface of the body to a plantar surface of the body.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Kohrs	US 6,855,166 B2	Feb. 15, 2005
Paul	US 7,137,997 B2	Nov. 21, 2006
Murillo et al.	US 2008/0077247 A1	Mar. 27, 2008

Spann	US 2012/0010472 A1	Jan. 12, 2012
Milz et al.	US 2012/0083852 A1	Apr. 5, 2012

REJECTIONS

The following rejections are on appeal:

1. Claims 1, 5–7, 10–12, 14, 15, 21–23, 25, and 26 are rejected under 35 U.S.C. § 102(a)(1) as anticipated by Spann.
2. Claims 1, 2, and 24 are rejected under 35 U.S.C. § 103 as unpatentable over Milz and Paul.
3. Claims 10–14 and 22 are rejected under 35 U.S.C. § 103 as unpatentable over Murillo and Paul.
4. Claims 8 and 9 are rejected under 35 U.S.C. § 103 as unpatentable over Spann and Kohrs.

OPINION

Anticipation Rejection based on Spann

Appellant argues the claims subject to this ground of rejection as a group. Appeal Br. 7–9. We select claim 1 as representative, and claims 5–7, 10–12, 14, 15, 21–23, 25, and 26 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2018).

Appellant argues that Spann does not disclose a wedge having a body that is "tapered such that a thickness of the body continuously decreases from a dorsal surface of the body to a plantar surface of the body" as recited in independent claim 1. Appeal Br. 7. Appellant contends that Spann's spinal implant is tapered from side-to-side and not from the dorsal surface to the plantar surface of the body, when "dorsal" and "plantar" are interpreted properly. *Id.* at 7–9. Appellant points to the use of the terms "dorsal" and "plantar" in the Specification and in the art to refer to surfaces

corresponding to the top and bottom surfaces, respectively, of the foot. *Id.* 7–8 (citing Spec. ¶¶ 35, 36, 50, Figs. 2A, 4; Ex. 2 ("The Anatomy of the Foot" (available at http://files.ali-cle.org/thumbs/datastorage/skoob/articles/BK40-CH15_thumb.pdf) at 206). Appellant further argues that the Examiner has misinterpreted the claimed "fore surface" and "hind surface," which Appellant contends "refer to front and rear surfaces, respectively." Appeal Br. 9.

In the exemplary osteotomy wedge described in the Specification, the Specification uses the terms "dorsal" and "plantar," consistently with the meaning of the terms in the art, to refer to surfaces corresponding to the top and bottom surfaces, respectively, of the foot. In particular, the Specification describes an osteotomy wedge used during a medial cuneiform[3] osteotomy to correct a deformity in the foot. Spec. ¶ 2. The Specification describes, for example, that Figure 1 illustrates the bones of foot 20 "from a top (dorsal) perspective" having osteotomy wedge 32 implanted into medial cuneiform bone 28. *Id.* ¶ 35; *see also id.* ¶ 36 (describing that Figure 3 shows the wedge from "a top (dorsal) view"). In the example provided in the Figures and the Specification, dorsal surface 36 of osteotomy wedge 32 corresponds to the surface of the wedge facing upward from the foot, and plantar surface 44 corresponds to the surface of the wedge facing downward from the foot, when wedge 32 is implanted in the foot. *Id.* ¶¶ 38–39, 41, Figs. 1, 2A, 3, 4. Likewise, fore surface 52 and hind surface 54 of osteotomy wedge 32 correspond to the surfaces of the

[3] The medial cuneiform is a bone in the foot that lies between the navicular bone and the first metatarsal bone.

wedge facing the toe (or front of the foot) and heel (or rear of the foot), respectively.

The Specification is not limited, however, to use of the osteotomy wedge in the medial cuneiform bone, specifically, or even in the foot, generally. *Id.* ¶ 35 ("The osteotomy wedge 32 may have uses beyond the medial cuneiform bone 28."). The Specification describes that the terms "dorsal," "plantar," "fore," and "hind" are used "with reference to the normal attitude[4] of the human body, and in this case the foot . . . for purposes of explanation, and should not be considered otherwise limiting." *Id.* ¶ 50.

The preamble of claim 1 is directed to an "osteotomy wedge." It is not limited by the claim language to a medial cuneiform osteotomy wedge, specifically, or to an osteotomy wedge for use in the foot, generally. Further, the Specification explicitly suggests that the wedge can have uses elsewhere than in the medial cuneiform bone. Spec. ¶ 35. We do not read into the claim a limitation that the wedge must be capable of, or restricted to, use in the foot simply due to the use of "dorsal" and "plantar" terminology in the claims. This is particularly so in view of the explicit statement in the Specification that these terms are used with reference to the normal attitude of the human body for purposes of explanation and should not be considered otherwise limiting. *Id.* ¶ 50.

We acknowledge the terms "dorsal" and "plantar" have a meaning in the art in relation to a person's anatomy. Appeal Br. 7–8, Ex. 2, 206. That is why these terms were used in the Specification to identify particular

[4] Appellant does not explain further in the briefs or with reference to the Specification the meaning of the "normal" attitude of the human body.

surfaces of the exemplary medial cuneiform osteotomy wedge in relation to other surfaces and features of the wedge. We agree, however, with the Examiner that the names given to the various surfaces of the wedge do not structurally distinguish the claimed wedge from the prior art implant that is described with different labels. Ans. 7. Appellant's arguments go to the orientation of the osteotomy wedge within a patient's bone during an osteotomy procedure, and such orientation is not captured in the language of claim 1, which is directed solely to the structural aspects of the claimed wedge. For instance, the claim does not contain functional language on the method of use of the wedge, or limit the wedge to use in a particular bone or portion of a patient's body, from which we might infer a particular orientation of the wedge in use, or recite a method of implanting the wedge in a particular orientation. Nor is the claim directed to a combination of a medial cuneiform and osteotomy wedge implanted therein. Thus, under the broadest reasonable interpretation, the "dorsal," "plantar," "fore," and "hind" identifiers for the various surfaces used in the claims simply provide labels for each surface so as to identify the surfaces of the wedge body on which various features, e.g., projections, tapering, outer perimeter, etc., are located.

Spann discloses a spinal disc implant for use in an intervertebral space of a subject. Spann ¶ 98. The Examiner identifies the embodiment disclosed in Figures 11A, 11B, and 11C of Spann as having anticipated the claimed subject matter. Final Act. 3. These Figures are reproduced below.

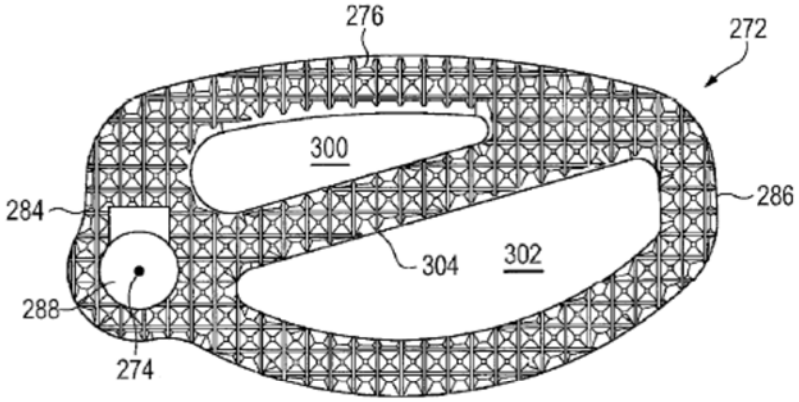

FIG.11A

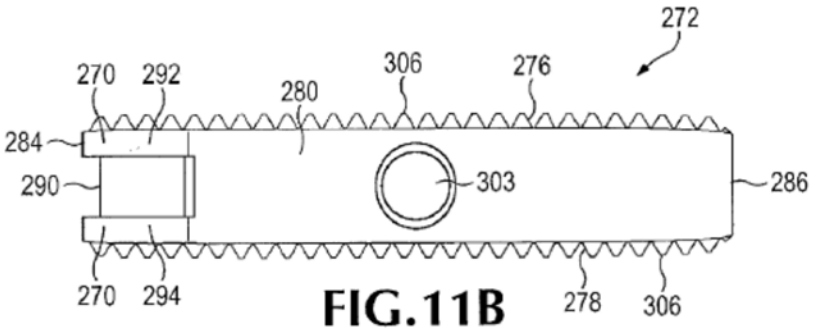

FIG.11B

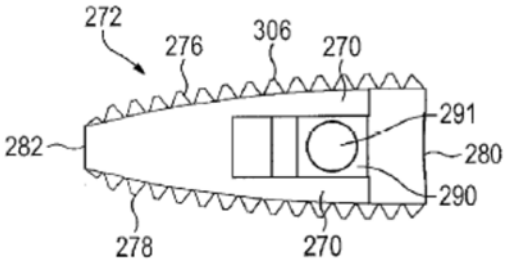

FIG.11C

Figures 11A, 11B, and 11C show a top view, a front view, and a side view, respectively, of implant 272. Spann describes that implant 272 has top bearing face 276, bottom bearing face 278, front face 280, rear face 282, ipsilateral face 284, and contralateral face 286. Spann ¶ 101. Thus, as shown above in Figure 11C, the taper of the body of implant 272 is such that a thickness of the body continuously decreases from front face 280 to rear

face 282. Indeed, the Examiner annotated Figure 11C to identify front face 280 as the claimed "dorsal surface" and rear face 282 as the claimed "plantar surface." Final Act. 3. Appellant argues that when Spann's implant is inserted between vertebral discs of a patient, top bearing face 276 corresponds to the claimed "dorsal surface" and bottom bearing face 278 corresponds to the claimed "plantar surface." Appeal Br. 8–9.

As explained above, the terms used to identify the surfaces of the osteotomy wedge do not limit the claimed features with respect the surfaces when used in a particular orientation within the body. The Examiner's reading of the claimed "dorsal" and "plantar" surfaces onto Spann's front face 280 and rear face 282 is not in error. The Examiner's reading of the claim terms onto the prior art is not inconsistent with the use of the terms "dorsal" and "plantar" in the claim language and in the Appellant's Specification and is not based on an unreasonably broad interpretation of these terms in light of the Specification. Likewise, we do not find error in the Examiner's reading of the terms "fore" and "hind" onto Spann's top bearing face 276 and bottom bearing face 278.

We do not adopt the Examiner's finding that Spann's spinal implant 272, if turned vertically, can be used as an osteotomy wedge implant for the foot. Ans. 6. We have insufficient evidence on the record to substantiate the Examiner's finding that Spann's implant, which is designed, shaped, and sized to fit between adjacent vertebra in the spine, would be capable of being used as an osteotomy wedge in a patient's foot without some structural modifications to the wedge to make it appropriately designed, shaped, and sized for such use. Thus, the Examiner's finding that Spann's spinal implant is capable of use as an osteotomy wedge implant for the foot is not based on sound reasoning. This deficiency does not necessitate reversal of the

rejection, however, because (1) the claim language is not limited to an osteotomy wedge for a foot, and (2) as discussed above, the claim language, under its broadest reasonable interpretation, reads on the structure of Spann's implant.

For these reasons, we sustain the rejection of claims 1, 5–7, 10–12, 14, 15, 21–23, 25, and 26 under 35 U.S.C. § 102(a)(1) as anticipated by Spann.

Obviousness Rejection of Dependent Claims 8 and 9 over Spann and Kohrs

Claims 8 and 9 depend from claim 1. The Examiner rejected these claims as unpatentable over Spann, as modified by Kohrs's teaching that it was known in the art to make spinal implants from porous titanium. Final Act. 8–9. Appellant relies exclusively on the arguments presented for claim 1 in support of the patentability of these dependent claims. Appeal Br. 12 (arguing that the dependent claims should be allowed based on their dependency from an allowable base claim). For the reasons discussed above in our analysis of the rejection of claim 1 as anticipated by Spann, we likewise sustain the rejection of claims 8 and 9 under 35 U.S.C. § 103 as unpatentable over Spann and Kohrs.

Obviousness Rejection of Claims 1, 2, and 24 over Milz and Paul

The Examiner also rejected claim 1 as unpatentable over Milz, as modified by Paul's teaching of a tapered spinal implant to facilitate installation of the implant in the treated area in lordosis. Final Act. 5–6. Appellant presents substantially the same argument addressed above. Specifically, Appellant argues that even when combined, the references do not disclose the claimed taper because the modified implant "would be tapered from side-to-side, not from a dorsal surface to a plantar surface as

claimed." Appeal Br. 10. For the same reasons discussed above with respect to the Examiner's reading of the claimed surfaces onto the spinal implant of Spann, we likewise do not find error in the Examiner's reading of the claimed "dorsal" and "plantar" surfaces on the side surfaces of the modified spinal implant of Milz. *See* Ans. 9 (Figures from Milz and Paul annotated by the Examiner). Thus, we sustain the rejection of claim 1 under 35 U.S.C. § 103 as unpatentable over Milz and Paul.

Appellant does not present separate arguments for dependent claims 2 and 24. Thus, these claims fall with independent claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2018).

Obviousness Rejection of Claims 10–14 and 22 over Murillo and Paul

The Examiner also rejected claim 10 as unpatentable over Murillo, as modified by Paul's teaching of a tapered spinal implant to facilitate installation of the implant in the treated area in lordosis. Final Act. 6–8. Appellant presents substantially the same argument addressed above. Specifically, Appellant argues that even when combined, the references do not disclose the claimed taper because the modified implant "would still not be tapered from top to bottom as claimed." Appeal Br. 11. For the same reasons discussed above with respect to the Examiner's reading of the claimed surfaces onto the spinal implant of Spann, we likewise do not find error in the Examiner's reading of the claimed "dorsal" and "plantar" surfaces on the side surfaces of the modified spinal implant of Murillo. *See* Ans. 9 (Figure from Paul annotated by the Examiner).

Appellant further argues that the Examiner erred in finding that Murillo's implant comprises a body with an asymmetrical outer perimeter. Appeal Br. 11–12. In support of this argument, Appellant provides a dictionary definition of the term "asymmetric" as meaning "not identical on

both sides of a central line; unsymmetrical; lacking symmetry." Ex. 1 (definition from dictionary.com, available at http://www.dictionary.com/browse/asymmetric, viewed on February 8, 2018). Appellant argues that the outer perimeter of Murillo's implant is identical on both sides of a central line drawn vertically through the implant shown in Figure 3G of Murillo. In response, the Examiner identifies a line extending along the length of the longitudinal axis of Murillo's spinal implant about which the implant is not symmetric. Ans. 10 (providing Figure 3G of Murillo annotated by the Examiner with a horizontal line).[5]

The plain meaning of "asymmetric" refers to object that has no lines of symmetry. Ex. 1. For example, a diamond or kite-shaped polygon is considered symmetric because it has one line of symmetry, i.e., a vertical center line, even though this shape is not symmetric about a horizontal center line. The description provided in Appellant's Specification of the asymmetrical shape of the body is consistent with this plain meaning. The Specification describes that "when viewed from the forefoot or hindfoot directions, it is *not possible to draw an axis through a center of mass M of the body 33 such that the body 33 would be symmetrical about that axis*." Spec. ¶ 37 (emphasis added).

We agree with Appellant that the Examiner erred in finding that the outer perimeter of Murillo's implant is asymmetric. We are not persuaded that because the Examiner is able to identify a single line about which the

[5] The Examiner initially found that Murillo's implant was asymmetric because it is thicker on the right end than on the left. Final Act. 6 (referencing Murillo's Figures 1B, 1C, 2B, 2C, and 3C). The Examiner appears to have changed positions in the Answer in light of Appellant's argument that the claim specifically requires the "outer perimeter" of the body to be asymmetric. Appeal Br. 11–12.

outer perimeter of the prior art implant is asymmetric that the implant discloses an asymmetric outer perimeter. Because the outer perimeter of the implant of Murillo has at least one line of symmetry about the vertical centerline shown in the annotated Figure on page 11 of the Appeal Brief, Murillo's outer perimeter is not asymmetric, as recited in claim 10.

Thus, we do not sustain the rejection of claim 10 and its dependent claims 11–14 and 22 under 35 U.S.C. § 103 as unpatentable over Murillo and Paul.

CONCLUSION

We sustain the Examiner's anticipation rejection under 35 U.S.C. § 102(a)(1) over Spann and the Examiner's obviousness rejections under 35 U.S.C. § 103 over Spann and Kohrs and over Milz and Paul. We do not sustain the Examiner's obviousness rejection under 35 U.S.C. § 103 over Murillo and Paul.

More specifically, the Examiner's decision on unpatentability of claims 1, 2, 5–12, 14, 15, and 21–26 is affirmed, and the Examiner's decision on unpatentability of claim 13 is reversed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s) /Basis	Affirmed	Reversed
1, 5–7, 10–12, 14, 15, 21–23, 25, 26	102(a)(1)	Spann	1, 5–7, 10–12, 14, 15, 21–23, 25, 26	
1, 2, 24	103	Milz, Paul	1, 2, 24	
10–14, 22	103	Murillo, Paul		10–14, 22
8, 9	103	Spann, Kohrs	8, 9	
Overall Outcome			1, 2, 5–12, 14, 15, 21–26	13

TIME PERIOD FOR RESPONSE

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 IN PART