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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZIMMER HOLDINGS, INC.
and ZIMMER, INC.,
Petitioner,

v.

BONUTTI SKELETAL INNOVATIONS LLC,
Patent Owner.

Case IPR2014-00191
Patent 7,837,736 B2

Before WILLIAM V. SAINDON, MICHAEL R. ZECHER, and RICHARD E. RICE, *Administrative Patent Judges*.

RICE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73(b)

I. INTRODUCTION

Zimmer Holdings, Inc. and Zimmer, Inc. (collectively, "Zimmer") filed a corrected Petition (Paper 8, "Pet.") requesting an *inter partes* review of claims 15–28 and 31–36 of U.S. Patent No. 7,837,736 B2 (Ex. 1001, "the '736 Patent"). Zimmer included a Declaration of Arthur G. Erdman, Ph.D. (Ex. 1005), to support its positions.

On June 2, 2014, we instituted an *inter partes* review only as to claims 15–22, 26–28, and 31–36 on the single ground of anticipation under 35 U.S.C. § 102(b) by Walker.[1] Paper 12 ("Inst. Dec."), 17.

After institution of trial, the patent owner, Bonutti Skeletal Innovations LLC ("Bonutti"), filed a statutory disclaimer under 37 C.F.R. § 1.321(a) with respect to claims 15–20 and 26–28. Paper 26; Ex. 2005. As a result, only claims 21, 22, and 31–36 remain under review in this proceeding. *See* 37 C.F.R. § 42.107(e).

Bonutti filed a Patent Owner Response (Paper 25, "PO Resp.") with a Declaration of Scott D. Schoifet, M.D. (Ex. 2001) to support its positions. Bonutti did not depose Dr. Erdman. Zimmer deposed Dr. Schoifet and filed a Reply to Bonutti's Response (Paper 30, "Pet. Reply") with a transcript of Dr. Shoifet's deposition (Ex. 1022).

An oral hearing was held on January 9, 2015. The transcript of the oral hearing has been entered into the record. Paper 38 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

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[1] U.S. Patent No. 5,755,801, issued May 26, 1998 (Ex. 1002).

For the reasons explained below, Zimmer has shown, by a preponderance of the evidence, that claims 21, 22, and 31–36 of the '736 Patent are unpatentable.

A. Related Matters

Zimmer indicates that the '736 Patent has been asserted against it in *Bonutti Skeletal Innovations, LLC v. Zimmmer Holdings, Inc.*, No. 1:12-cv-01107-GMS, pending in the U.S. District Court for the District of Delaware. Pet. 1.

B. The '736 Patent (Ex. 1001)

The '736 Patent, titled "MINIMALLY INVASIVE SURGICAL SYSTEMS AND METHODS," issued November 23, 2010, from U.S. Patent Application No. 11/928,898, filed on October 30, 2007. Ex. 1001 at [54], [45], [21], [22]. The '736 Patent is a continuation of U.S. Patent Application No. 10/681,526, filed October 8, 2003, now U.S. Patent No. 7,635,390, which is a continuation of U.S. Patent Application No. 10/191,751, filed July 8, 2002, now U.S. Patent No. 7,104,996, and is a continuation-in-part of a number of earlier-filed applications. *Id.* at [63].

The '736 Patent discusses apparatus for use in knee replacement surgery, including self-centering mobile bearing implants. *Id.* at 2:50–53, 99:35–102:4. As described in the Specification, the implants are in the form of a prosthetic knee, comprising a femoral component secured to the femur and a tibial component secured to the tibia. *Id.* at 99:35–39, 101:6–13.

Figure 90 of the ’736 Patent is reproduced below.

Fig. 90

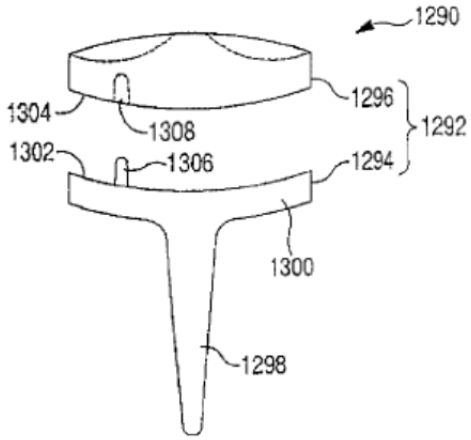


Figure 90 is a schematic illustration of tibial component 1292 of rotating platform knee implant 1290. *Id.* at 9:66–67, 101:6–10. As depicted in Figure 90, tibial component 1292 comprises tray 1294 and bearing insert 1296. *Id.* at 101:14–15. Tray 1294 includes plate member 1300. *Id.* at 101:15–16. The Specification discloses that plate member 1300 has a concave, spherically-shaped plateau surface (superior surface 1302), and that bearing insert 1296 has a spherically-shaped inferior surface 1304, such that the interface between tibial tray 1294 and bearing insert 1296 is defined by cooperating spherically shaped surfaces that enable sliding motion. *Id.* at 101:18–25. Superior surface 1302 is provided with post 1306, which cooperates with recess 1308 located on bearing insert 1296 to permit rotation of bearing insert 1296 with respect to tibial tray 1294. *Id.* at 101:28–31.

The Specification asserts that “unlike prior art mobile bearing knee implants that rely on a post mechanism to control the rotational movement, the articulating surfaces are not flat,” but rather “are mating curved surfaces.” *Id.* at 101:38–43. The curvature is described as a “a self-

centering mechanism that draws bearing insert 1296 back to the center of post 1306 (also resisting posterior rollback), the lowest point in tibial tray 1294 when they are at rest." *Id.* at 101:49–53.

As illustrated in Figure 90, "post 1306 is offset medially toward the medial compartment of the knee." *Id.* at 101:56–57, Fig. 90. "In prior art rotating platform designs," according to the Specification, "the post is substantially in line with the central keel." *Id.* at 101:58–59. The Specification asserts that "[o]ffsetting post 1306 more toward the medial compartment of the knee recreates the natural pivoting motion o[f] the knee, with less translation medially, a more stable joint medially, and more rotational arc or more movement laterally." *Id.* at 101:63–67.

Bonutti directs our attention to the dashed line depicting recess 1308 in Figure 90. *E.g.*, Tr. 20:9–13. Bonutti notes that the dashes indicate a hidden line, and asserts that recess 1308 is a "hidden member," i.e., a "hole," that is hidden from view in Figure 90. *Id.* at 20:14–20 (citing Manual of Patent Examining Procedure § 608.02(IX), which provides a table of drawing symbols for use in patent application drawings, including a dashed line symbol for indicating a hidden line).

C. Illustrative Claims

Claims 21 and 22 depend from claim 15,[2] claim 31 is independent, and claims 32–36 depend from claim 31. Claims 15, 21, and 22 are reproduced below:

> 15. A device to replace an articulating surface of a first side of a joint in a body, the joint

[2] As discussed above, claim 15 has been disclaimed. Paper 26; Ex. 2005.

> having first and second sides, comprising:
>
> a base component, including a bone contacting side connectable with bone on the first side of the joint, and a base sliding side on an opposite side of said base component relative to said bone contacting side;
>
> a movable component, including a movable sliding side, said movable sliding side being matably positionable in sliding engagement with said base sliding side, and an articulating side on an opposite side of said movable component relative to said movable sliding side, shaped to matingly engage an articulating surface of the second side of the joint;
>
> a protrusion extending from one of said base sliding side or movable sliding side, said protrusion substantially offset with respect to a midline of the first side of a joint;
>
> a recess sized to receive said protrusion, disposed in the other of said base sliding side or movable sliding side, said protrusion and recess matable to constrain movement of said first and second components relative to each other, thereby promoting movement of the joint within desired anatomical limits.

Ex. 1001, 114:5–27.

> 21. The device of claim 15, wherein said protrusion and recess engage to permit relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion.

Id. at 114:48–51.

> 22. The device of claim 15, wherein said protrusion is a pin, and said recess is a hole sized to receive said pin.

Id. at 114:52–53.

D. The Instituted Ground

We instituted an *inter partes* review of claims 15–22, 26–28, and 31–36 under § 102(b) as anticipated by Walker. Inst. Dec. 17. Bonutti subsequently disclaimed claims 15–20 and 26–28. Paper 26; Ex. 2005. The following ground remains to be decided:

Reference	Basis	Claims Challenged
Walker	§ 102(b)	21, 22, and 31–36

II. ANALYSIS

A. Claim Interpretation

In an *inter partes* review, we give claim terms in an unexpired patent their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1281–82 (Fed. Cir. 2015) ("Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation."). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504

F.3d 1249, 1257 (Fed. Cir. 2007). Further, "the specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal." *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (citing *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)). The standards for lexicography and disavowal are exacting, and require clear intent to define or narrow a term. *Thorner*, 669 F.3d at 1365–66. Any special definition for a claim term must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

1. "Hole"

Claim 22 depends from claim 15 and recites that "said recess is a hole." Ex. 1001, 114:52–53. Bonutti proposes to construe the term "hole" as "a cavity in a solid" based on a dictionary definition. PO Resp. 12 (quoting Ex. 2002 (THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (3d ed. 1992)), 862). Bonutti argues that a "hole" is distinguishable from a "notch" and contends that the Specification supports that distinction. *See, e.g., id.* at 13–15 (citing Ex. 1001, 17:24–30, 92:20–21, Figs. 8, 31, 89, 90).

In response, Zimmer argues that under Bonutti's proposed construction the term "hole" encompasses a "cavity" or "hollow area." Pet. Reply. 7 (citing Ex. 2002, 306, 862); *see also* Tr. 10:4 (arguing that "essentially a hole or cavity is a hollow area"). Zimmer further argues that Bonutti's asserted distinction between a "hole" and a "notch" is not

supported by the Specification or the evidence of record, and that the distinction is irrelevant in any event. Pet. Reply 9–10.

We are persuaded by Bonutti that the Specification uses the term "hole" in accordance with its ordinary meaning as "a cavity in a solid." *See* PO Resp. 13–14 (citing Ex. 1001, 17:24–30, Fig. 8). We determine that the broadest reasonable interpretation consistent with the Specification of the term "hole," as used in claim 22, is a cavity in a solid.

2. "Cavity"

Claim 31 recites a "cavity." Ex. 1001, 115:38. Bonutti proposes to construe the term "cavity" based on the following dictionary definitions (PO Resp. 12): "*1.* [a] hollow; a hole" and "*2.* [a] hollow area within the body: a *sinus cavity*." Ex. 2002, 306. Zimmer does not dispute Bonutti's proposed construction, but argues that the terms "hole" and "cavity" are synonymous. Pet. Reply 7.

The use of the term "cavity" in the Specification accords with Bonutti's asserted dictionary definitions. Ex. 1001, 17:24, 93:33. We determine that the broadest reasonable interpretation consistent with the Specification of the term "cavity" in claim 31 is a hollow or hole.

3. "Pin" or "post"

Claim 22, which depends from claim 15, recites that "said protrusion is a pin." *Id.* at 114:52–53. Claim 31 recites a "post." *Id.* at 115:37–38. Bonutti does not distinguish between the term "pin" and "post" in arguing that a person of ordinary skill in the art would have understood that a pin or post typically is used in cooperation with a hole or cavity to fix or align:

> As explained by Dr. Schoifet, *in orthopedics a pin or post is typically used to fix or align one device (or bone) to another device (or bone) by drilling (or passing through) a hole cavity through the two devices (or bones)*, and a person of ordinary skill in the art would not use an abutment such as abutment 50 of Walker to fix or align one device (or bone) to another device (or bone) nor would an abutment reside within a hole or cavity as claimed.

PO Resp. 17 (emphasis added) (citing Ex. 2001 ¶¶ 45–46).

Zimmer responds, and we agree, that the claims do not limit the terms "pin" and "post" to the function of fixing or aligning as Bonutti contends. Pet. Reply 3. Zimmer argues that the ordinary meaning of the term "post" is a structure set upright to serve as a support, and that the term is used in the Specification in accordance with its ordinary meaning. *Id.* at 4–5 (citing Ex. 1023 (THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (3d ed. 1992)), 1414; Ex. 1001, 101:28–31). Zimmer further argues that Bonutti and Dr. Schoifet do not differentiate between the terms "pin" and "post." *Id.* at 5–6 (citing PO Resp. 5 (referring to "[p]in/post 1306 of Figure 90" of the '736 Patent); Ex. 2001 ¶ 27 (ditto); Ex. 1022, 130:9–12 (acknowledging no differentiation)).

We determine that the broadest reasonable interpretation consistent with the Specification of the term "post" is a structure set upright to serve as a support. *See* Ex. 1001, 101:28–34, 44–66, Fig. 90 (describing post 1306).

Similarly, we determine that the broadest reasonable interpretation consistent with the Specification of the term "pin" is a post-like protrusion. *See, e.g.*, Ex. 1001, 23:7–8, 38:53, 99:45, Figs. 16, 31 (describing pins 196 and 198), Fig. 89 (describing fixation pins 1264).

4. "Relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion"

Claim 21 recites "relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion." Ex. 1001, 114:49–51. Neither party proposes an express construction for this limitation.

Bonutti implicitly argues, however, that "an axis" in claim 21 requires a fixed or single axis of rotation. PO Resp. 18–19. More specifically, Bonutti attempts to distinguish claim 21 from the Walker prior art reference by arguing that "there is no rotation about 'an axis of said protrusion' because Walker is quite explicit in pointing out that the protrusion is located in the notch to allow for *translational* movement." *Id.* at 18. Bonutti also argues with respect to Walker that "there is not [a single] axis of the protrusion about which the movable sliding s[]ide 44 *rotates* relative to base sliding side 41." *Id.* at 19 (citations omitted; emphasis supplied by Bonutti). Further, according to Bonutti, "rotation 'about an axis of said protrusion'" does not encompass "translational/rotational movement." *Id.* at 19 (citing Ex. 2001 ¶¶ 51–53).

Zimmer argues that claim 21 does not require "relative rotation of the claimed base sliding side of the base component and the claimed movable sliding side of the movable component to be about an axis of rotation." Pet. Reply 12–13. Zimmer contends that "claim 21 merely requires rotation 'about an axis of said protrusion.'" *Id.* at 13.

We are not persuaded that Bonutti's implicit claim construction is consistent with the Specification. In the embodiment depicted in Figure 90 of the '736 Patent, the mating surfaces are not flat, but rather are mating

curved surfaces that function as "a self-centering mechanism that draws bearing insert 1296 back to the center of post 1306 (also resisting posterior rollback), the lowest point in tibial tray 1294 when they are at rest." *Id.* at 101:49–53. Bonutti has not explained adequately why a person of ordinary skill in the art would have understood post 1306 to be a fixed or single axis in light of the description in the Specification that a centering mechanism is utilized to draw bearing insert 1296 back to the center of post 1306. *Id.* at 101:50–51. Nor has Bonutti explained adequately how bearing insert 1296 can move away from the center of post 1306, so as to require being drawn back, unless there is sufficient looseness between post 1306 and recess 1308 to allow some translational/rotational movement.

We determine that the broadest reasonable construction consistent with the Specification of the limitation "relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion" requires rotation about an axis of the protrusion; however, it does not require rotation about a fixed or single axis, nor does it exclude translational/rotational movement.

5. "Said tibial tray insert rotationally moves with respect to said tibial tray, about said post"

Claim 31 recites "said tibial tray insert rotationally moves with respect to said tibial tray, about said post." Ex. 1001, 115:50–51. Neither party proposes an express construction for this limitation.

Bonutti implicitly argues, however, that the requirement for "rotation about a post" excludes "translational/rotational movement." PO Resp. 19–20 (citing Ex. 2001 ¶¶ 48–53). Zimmer responds that "[c]laim 31 does not recite an axis, let alone that the claimed tibial tray insert rotationally moves

with respect to the claimed tibial tray about an axis of rotation" (Pet. Reply 12), and that "[c]laim 31 merely requires rotation 'about said post'" (*id.* at 13).

For the reasons discussed above in connection with claim 21 (*see supra* section II.A.4), we determine that the broadest reasonable construction consistent with the Specification of the limitation "said tibial tray insert rotationally moves with respect to said tibial tray, about said post" requires rotation about the post; however, it does not require rotation about a fixed or single axis, nor does it exclude translational/rotational movement.

B. Anticipation by Walker

Zimmer challenges claims 21, 22, and 31–36 of the '736 Patent as anticipated by Walker. Pet. 28–30, 32–36 (claim chart). To anticipate a patent claim under 35 U.S.C. § 102, "a single prior art reference must expressly or inherently disclose each claim limitation." *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008). The evidentiary standard in this case is a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Upon consideration of the parties' arguments and evidence, we determine that Zimmer has established, by a preponderance of the evidence, that Walker anticipates each of these challenged claims, for the reasons explained below.

1. Overview of Walker

Walker relates to prostheses for knee replacement, and discloses several embodiments. Ex. 1002, 1:6, 2:33–35. A "second" embodiment comprises a femoral component having at least one condylar bearing surface; a tibial component having a tibial platform and an anterior-posterior

center line; a meniscal component located between the condylar bearing surface and the tibial platform; and a stud upstanding from the platform. *Id.* at 1:56–66. The stud is

> engaged in a recess in the meniscal component in such a way as to permit relative movement between the meniscal component and said stud and guide means, (normally remote from said stud and said recess), for guiding movement of the meniscal component relative to said platform in an arc which is cent[er]ed on an axis which is substantially at right angles to the tibial platform, and is displaced medially from the anterior-posterior cent[er] line of the platform.

Id. at 1:66–2:8. Walker discloses that "guide means for guiding the meniscal component about an arc cent[er]ed on a[n] axis medially of the cent[er] line of the tibial platform, are preferably formed by suitably engaging surfaces on the tibial platform and meniscal component." *Id.* at 2:23–26. Further, Walker discloses that "[p]referably, the guidance is such that the axis about which the meniscal component rotates is cent[er]ed at the edge of the tibial platform or beyond its physical extent." *Id.* at 2:23–25, 29–32.

In the "Description of the Invention" section, Walker discloses a "second" embodiment that is depicted in Figures 2–2c. Ex. 1002, 4:3–4. With respect to the second embodiment, Walker states that the upper surface of tibial platform 41 is substantially flat, except for upstanding stud 42, which is received in slot 43 of meniscal component 44. *Id.* at 4:10–14. Figure 2a of Walker is reproduced below.

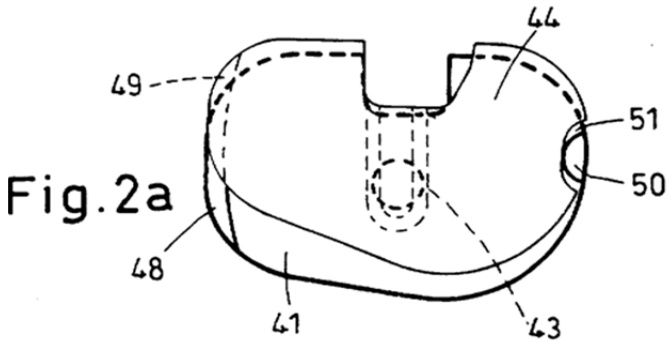
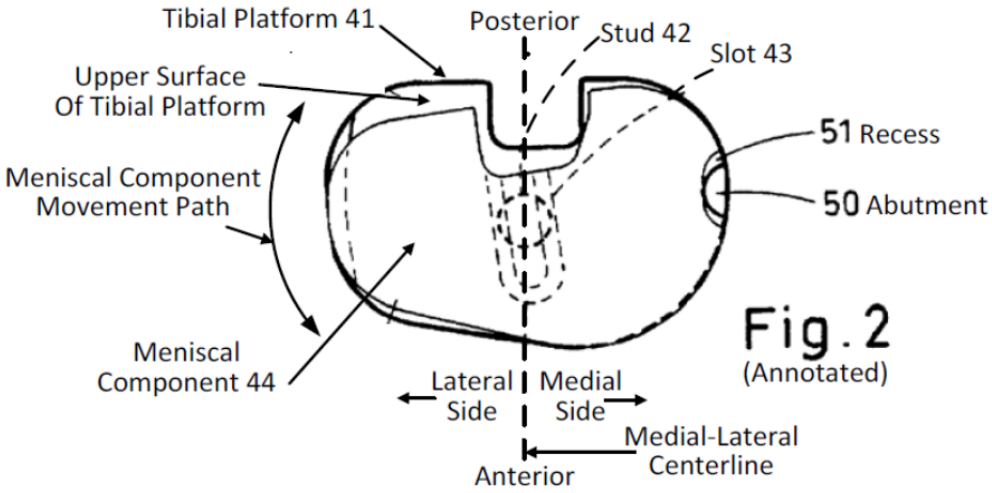


Fig.2a

Figure 2a shows the position of meniscal component 44 rotated 10° externally on tibial platform 41. Ex. 1002, 2:53–54, 4:34–36. As shown in Figure 2a, slot 43 of meniscal component 44 is closed at one end, which "provide[s] a stop for movement of the meniscal component in the posterior direction." *Id.* at 4:17–19. As also shown in Figure 2a, "[a] stop or brake for movement in the opposite direction is provided by a rail 48 which engages in a corresponding recess 49 of the meniscal component." *Id.* at 4:19–21.

Zimmer focuses on Walker's description of the second embodiment as depicted in Figure 2. Pet. 15–18. Zimmer's annotated version of Figure 2 of Walker is reproduced below.



Zimmer's Annotated Version of Figure 2 of Walker

Id. at 17; Ex. 1005 (Erdman declaration) ¶ 45.

Walker states with respect to the second embodiment that "[r]otation of the meniscal component 44 about an axis X at the edge of the tibial platform is controlled by a semi-circular abutment 50 which is upstanding at the medial side of the platform." Ex. 1002, 4:22–25. Walker further states that "[a] recess or notch 51 is formed in the corresponding portion of the meniscal component and is rounded as shown to allow approximately 2 mms movement in an anterior and posterior direction." *Id.* at 4:25–28, Fig. 2. Walker also states:

> In all the embodiments, the meniscal component is assymetric about the [centerline] P-Q. This ensures that when the meniscal component rotates about a medially displaced axis, any ligaments which extend through the posterior cut-away portion in the tibial base plate are not trapped between the meniscal component and the base plate.

Id. at 5:38–43; *see* Fig. 1 (depicting centerline P-Q).

2. Anticipation Analysis

Claims 21 and 22 each incorporate the limitations of disclaimed claim 15, including a base component having a protrusion (or a recess), and a movable component having a recess (or a protrusion). Ex. 1001, 114:5–27. As recited in claim 15, the protrusion is "offset with respect to a midline of the first side of a joint," and the protrusion and recess are "mat[e]able to constrain movement of said first and second components relative to each other, thereby promoting movement of the joint within desired anatomical limits." *Id.* at 114:20–21, 114:24–27.

Claim 21 specifies that "said protrusion and recess engage to permit relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion." Ex. 1001, 114:48–51. Claim 22 specifies that "said protrusion is a pin, and said recess is a hole sized to receive said pin." *Id.* at 114:52–53.

Independent claim 31 is directed to a knee arthroplasty device, including a tibial tray having a post (or a cavity), and a tibial tray insert having a mating cavity (or a mating post). Ex. 1001, 115:35–55. As recited in claim 31, the mating post (or mating cavity) is "offset from at least one of a medial-lateral centerline and an anterior-posterior centerline of said tibial tray," and "said tibial tray insert rotationally moves with respect to said tibial tray, about said post . . . such that the rotation of the tibial tray insert is asymmetric with respect to at least one of the medial-lateral centerline and the anterior-posterior centerline of said tibial tray." *Id.* at 115:38–40, 50–55.

Claims 32 and 33 specify that the offset is medial with respect to a medial-lateral centerline of the tibial tray and the tibial tray insert,

respectively. Ex. 1001, 115:56–116:4. Claims 34 and 35 both recite "the tibial tray has a keel with a central axis"; claim 34 additionally recites "said post or cavity of said tibial tray is offset from the central axis of said keel"; and claim 35 additionally recites "said mating post or mating cavity of said tibial tray insert is offset from the central axis of said keel." *Id.* at 116:5–12. Claim 36 recites "a proximal surface of said tibial tray insert includes a mound interposing a medial condyle receiver and a lateral condyle receiver." *Id.* at 116:13–16.

For each of challenged claims 21, 22, and 31–36, and relying on the claim interpretations discussed above (*see supra* section II.A), we analyze below the parties' competing arguments and evidence with respect to the ground on which we instituted trial—unpatentability for anticipation by Walker.

a. Claim 21

Zimmer contends that Walker discloses every limitation of claim 21. *See* Pet. 28–30, 32 (claim chart). Citing Walker's second embodiment and pertinent portions of Dr. Erdman's Declaration as supporting evidence, Zimmer asserts, for example, as follows:

> Abutment 50 upstanding from the tibial platform 41 is engaged by the recess 51 in the meniscal component 44 to enable rotation of the upper surface of the tibial platform with respect to the undersurface of the meniscal component about the axis of the abutment. The meniscal component 44 rotates about a medially displaced axis.

Id. at 32 (citing Ex. 1002, 4:22–28, 5:38–40, Figs. 2a–2b; Ex. 1005 ¶¶ 45, 46, 57).

Zimmer contends that meniscal component 44 of Walker's second embodiment rotates relative to tibial platform 41 along an arcuate path about the medially displaced axis of abutment 50. Pet. 17. In that regard, Dr. Erdman testifies that "meniscal component 44 . . . rotates about an abutment 50 (i.e., a projection or post) on the medial side of the tibial platform 41." Ex. 1005 ¶ 45. Dr. Erdman further testifies that "meniscal component 44 is fitted to the tibial platform 41 by engaging the abutment 50 in a recess or notch 51 in the medial side of the meniscal component," and that "abutment 50 and recess 51 that define the axis of rotation of the meniscal component 44 are on the edge of the medial side of the prosthesis." *Id.* ¶¶ 45, 46. According to Dr. Erdman, "abutment 50 and recess 51 constrain or limit the movement of the meniscal component 44 with respect to the tibial platform 41 to rotational movement about the axis defined by the abutment." *Id.* ¶ 46.

In response, Bonutti argues that, "in Walker, there is no rotation about 'an axis of said protrusion' because Walker is quite explicit in pointing out that the protrusion is located in the notch to allow for *translational* movement," and, "[a]ccordingly, there is not [a single] axis of the protrusion about which the movable sliding s[]ide 44 *rotates* relative to base sliding side 41." PO Resp. 18–19 (citations omitted; emphasis supplied by Bonutti). Bonutti further argues that "[a] person of ordinary skill in the art at the time of the invention would understand Walker as describing a translational/rotational movement, and would not consider that as being a rotation 'about an axis of said protrusion' as claimed." *Id.* at 19 (citing Ex. 2001 ¶¶ 51–53).

Bonutti's argument is unpersuasive because it relies fundamentally on an erroneous claim construction. As discussed above, the claim limitation "relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion," recited in claim 21, does not require rotation about a fixed or single axis, nor does it exclude translational/rotational movement. *See supra* section II.A.4.

Bonutti also disputes Zimmer's assertion that meniscal component 44 of Walker's second embodiment rotates about an axis of abutment 50. *See, e.g.*, PO Resp. 18–19 (citing Ex. 2001 ¶¶ 51–53). In reference to Walker's disclosure that "[r]otation of the meniscal component 44 about *an axis X at the edge of the tibial platform* is controlled by a semi-circular abutment 50" (Ex. 1002, 4:22–24) (emphasis added), Bonutti argues that "no axis X appears in Walker" and "the alleged axis is described at the *edge* of the tibial platform 41, not at the abutment 50." PO Resp. 18. Bonutti, however, did not cross-examine Dr. Erdman. Nor did Bonutti provide evidence with its Patent Owner Response to challenge specifically Dr. Erdman's testimony that abutment 50 defines an axis of rotation at the edge of tibial platform 41. *See* Ex. 1005 ¶ 46. Dr. Schoifet's declaration testimony that "[i]n Walker, there is no rotation about 'an axis of said protrusion' . . . and the tibial tray insert does not move 'rotationally . . . about said post'" is conclusory and unsupported. *See* Ex. 2001 ¶ 51. In particular, that testimony does not acknowledge or address Walker's disclosure that the meniscal component rotates about an axis at the edge of the tibial platform and that abutment 50, which is located at the edge of the tibial platform, controls the rotation. Ex. 1002, 4:22–28, Fig. 2.

Zimmer cross-examined Dr. Schoifet in this proceeding, and we have considered Dr. Schoifet's cross-examination testimony in reaching our decision in this case. Dr. Schoifet testified on cross-examination that the axis of rotation in Walker's second embodiment is not in abutment 50. For convenience, the relevant portions of Dr. Schoifet's cross-examination testimony are reproduced below:

> Q. What's axis X?
>
> A. Axis X is the rotational axis that the meniscal component rotates about at the edge of the -- does it say -- tibial platform.
>
> Q. So what would that be in Figure 2?
>
> A. Somewhere out past the edge or at the edge of the tibial platform.
>
> Q. Okay. I'm going to hand you a pen. Can you please identify axis X with an X for us [on a copy of Figure 2 of Walker marked as Exhibit 1020]?
>
> A. I cannot.
>
> Q. Why not?
>
> A. Because it's at the edge of the tibial platform and the tibial platform edge is very extensive.

Ex. 1022, 54:19–55:11.

> Q. But it also says it's controlled by the semi-circular abutment 50.
>
> A. Correct.

> Q. That doesn't help you in any way?
>
> A. Well, the semi-circular abutment allows 2 millimeters of movement, so that allows the axis to move as well. So without being a mathematician, with the 2 millimeters of translation and the axis being at the edge of the tibial component, it would be very difficult for me to pick out exactly where on the edge of the platform axis X is.
>
> Q. So it's your sworn testimony that the component 44 does not rotate about the abutment 50?
>
> A. My testimony is that the abutment controls the rotation about an axis at the edge of the platform based on the 2 millimeters of translation. That will allow that axis to move and that axis is located somewhere at the edge of the tibial platform. Walker did not indicate exactly where it was, but he said approximately where it was; and that approximation is the edge of the tibial platform.

Id. at 56:6–57:11.

> Q. But you also agree that the abutment does help for the rotation?
>
> THE WITNESS: I believe that the rail also -- the rail will guide the rotation and the abutment has the 2 millimeters of movement which determines where the axis is. It's a very complicated, moving structure. There's anterior-posterior motion, the rail guides it, the post, the axis of rotation. It's not one object and *the axis of rotation is not in the abutment. It is in the lateral platform. It states it in Walker*.

Id. at 64:14–65:6 (emphasis added).[3]

[3] At the deposition, Patent Owner objected to this question. Patent Owner, however, did not preserve the objection via a motion to exclude. *See* 37

We are not persuaded by Dr. Schoifet that Walker "states" that the axis of rotation "is not in the abutment." *Id.* at 65:4–6. Similar to his declaration testimony, Dr. Schoifet's cross-examination testimony does not acknowledge or address Walker's corresponding description of abutment 50 in relation to Figure 2. As we explained above, Walker discloses that the meniscal component rotates about an axis at the edge of the tibial platform and that abutment 50, which is located at the edge of the tibial platform, controls the rotation. Ex. 1002, 4:22–28, Fig. 2. For that reason, we do not credit Dr. Schoifet's testimony on the axis-of-rotation issue. Rather, we credit Dr. Erdman's testimony on the axis-of-rotation issue because it is consistent with Walker's description of abutment 50, and we determine that Zimmer has established, by a preponderance of the evidence, that Walker discloses that meniscal component 44 rotates abut an axis of abutment 50. *See* Ex. 1005 ¶¶ 46, 57; Pet. Reply 11–15.

Having reviewed Zimmer's Corrected Petition and Reply, Bonutti's Response, and the evidence cited therein, we determine that Zimmer has established, by a preponderance of the evidence, that Walker anticipates claim 21 of the '736 Patent.

b. Claim 22

Zimmer contends that Walker discloses every limitation of claim 22. *See* Pet. 28–30, 32–33 (claim chart). Citing Walker's second embodiment and pertinent portions of Dr. Erdman's Declaration as supporting evidence, Zimmer asserts, for example, that "[a]butment 50 is a pin and recess 51 is a

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C.F.R. § 42.64(c).

hole sized to receive the abutment." *Id.* at 33 (citing Ex. 1002, 4:22–33, Fig. 2; Ex. 1005 ¶¶ 45,46, 58).

In response, Bonutti contends that "[n]otch 51 . . . is not a 'hole'" as required by claim 22. PO Resp. 9. Bonutti argues that "'recess 51' of Walker is described and illustrated as a notch, and a notch is not a hole or cavity, even considered under the broadest reasonable construction standard." *Id.* at 11. Bonutti also argues that "a person of ordinary skill in the art at the time of the invention would understand that a notch is not a hole or a cavity." *Id.* at 12 (citing Ex. 1005 ¶¶ 39–44).

Walker expressly discloses that element 51 is a "recess or notch." Ex. 1002, 4:25–28 ("A recess or notch 51 is formed in the corresponding portion of the meniscal component and is rounded as shown to allow approximately 2 mms movement in an anterior and posterior direction."). Bonutti's arguments based on narrowly characterizing element 51 only as a "notch" are not persuasive.

We have interpreted the term "hole" in claim 22 as a cavity in a solid. *See supra* section II.A.1. We agree with Zimmer that Walker's "recess or notch 51" is a cavity in a solid and, therefore, a "hole" as required by claim 22 under our claim interpretation. *See* Pet. Reply 6–11.

Bonutti also contends that abutment 50 is not a "pin" as required by claim 22. PO Resp. 17. Bonutti argues that a person of ordinary skill in the art would not have considered abutment 50 to be a pin because, in orthopedics, a pin or post typically is used in cooperation with a hole or cavity to fix or align one device (or bone) to another device (or bone). *Id.* (citing Ex. 1005 ¶¶ 45, 46). As discussed above, we are not persuaded by Bonutti's argument because the claim does not limit the term "pin" to the

function of fixing or aligning. *See supra* section II.A.3. We agree with Zimmer that abutment 50 of Walker is a post-like protrusion and, therefore, a "pin" as required by claim 22 under our claim interpretation. *See* Pet. Reply 2–6; *supra* section II.A.3.

Having reviewed Zimmer's Corrected Petition and Reply, Bonutti's Response, and the evidence cited therein, we determine that Zimmer has established, by a preponderance of the evidence, that Walker anticipates claim 22 of the '736 Patent.

c. Claim 31

Zimmer contends that Walker discloses every limitation of claim 31. *See* Pet. 28, 34–35 (claim chart). Zimmer asserts, for example, that "[t]he meniscal component 44 rotates with respect to the tibial platform 41 about the abutment 50 when the prosthesis is implanted in a patient." *Id.* at 35 (citing Ex. 1002, 2:13–16, 4:22–36, Figs. 2a, 2b). With respect to the "post" limitation, Zimmer asserts that "[a]butment 50 is upstanding on the medial side of the upper surface of the tibial platform 41." *Id.* at 34 (citing Ex. 1002, 4:22–28, Figs. 2a, 2b). With respect to the "cavity" limitation, Zimmer asserts that "[t]he meniscal component 44 has a rounded recess 51 that is engaged by (i.e., mates with) the abutment 50." *Id.* (citing Ex. 1002, 4:3–33, Fig. 2).

In response, Bonutti argues that Walker does not disclose the "post"/"cavity" limitations of claim 31. PO Resp. 7–18. Bonutti makes essentially the same arguments with respect to the "post"/"cavity" limitations that we rejected in connection with the "pin"/"hole" limitations of claim 22, discussed above. *See supra* section II.B.2.b. For example, Bonutti argues that "'recess 51' of Walker is described and illustrated as a

notch, and a notch is not a hole or cavity, even considered under the broadest reasonable construction standard." PO Resp. 11. For essentially the same reasons discussed above in the context of claim 22, Bonutti's arguments directed to claim 31 are not persuasive.

We have determined that the term "cavity" means a hollow or hole and the term "post" 31 means a structure set upright to serve as a support. *See supra* sections II.A.2 and II.A.3. We agree with Zimmer that recess 51 is a hollow or hole and, therefore, a "cavity" as required by claim 31 under our claim construction. *See* Pet. Reply 6–11. We also agree with Zimmer that abutment 50 is a structure set upright to serve as a support and, therefore, a "post" as required by claim 31 under our claim construction. *See id.* at 2–6.

Bonutti additionally argues that "[a] person of ordinary skill in the art at the time of the invention would understand Walker as describing a translational/rotational movement, and would not consider that as being a rotation about a post as required by claim 31." PO Resp. 19–20 (citing Ex. 2001 ¶¶ 48–53). Bonutti's argument is unpersuasive because it relies fundamentally on an erroneous claim construction. As discussed above, the claim limitation "said tibial tray insert rotationally moves with respect to said tibial tray, about said post," recited in claim 31, does not exclude translational/rotational movement. *See supra* section II.A.5.

Having reviewed Zimmer's Corrected Petition and Reply, Bonutti's Response, and the evidence cited therein, we determine that Zimmer has established, by a preponderance of the evidence, that Walker anticipates claim 31 of the '736 Patent.

d. Claims 32–36

Zimmer contends that Walker discloses every limitation of claims 32–36. *See* Pet. 28, 35–36 (claim chart). With respect to claims 32 and 33, Zimmer asserts that abutment 50 and recess 51 are offset medially with respect to a medial-lateral centerline of the tibial tray and the tibial tray insert, respectively. *Id.* at 35 (citing Ex. 1002, 4:22–28, Fig. 2; Ex. 1005 ¶¶ 45, 46, 65, 66). With respect to claims 34 and 35, Zimmer asserts that abutment 50 and recess 51 are each offset medially with respect to the central axis of keel P. *Id.* at 35–36 (citing Ex. 1002, 5:26–28, Figs. 1a, 1b, 2; Ex. 1005 ¶¶ 45, 46, 67, 68) . With respect to the requirement of claim 36 that "a proximal surface of said tibial tray insert includes a mound interposing a medial condyle receiver and a lateral condyle receiver," Zimmer cites thickened central part 24 of meniscal component 44 and depressions 23 on opposite sides of the central part. *Id.* at 36 (claim chart citing Ex. 1002, 3:37–45, Fig. 1e; Ex. 1005 ¶¶ 45–46, 69).

Bonutti relies for patentability of claims 32–36 on their dependence from claim 31, and does not argue the patentability of claims 32–36 separately. PO Resp. 20.

Having reviewed Zimmer's Corrected Petition and Reply, Bonutti's Response, and the evidence cited therein, we determine that Zimmer has established, by a preponderance of the evidence, that Walker anticipates each of claims 32–36 of the '736 Patent.

III. CONCLUSION

Zimmer has proved, by a preponderance of the evidence, that claims 21, 22, and 31–36 of the '736 Patent are unpatentable as anticipated under 35 U.S.C. § 102(b) by Walker.

IV. ORDER

For the reasons given, it is

ORDERED that claims 21, 22, and 31–36 of the '736 Patent are determined to be unpatentable.

This is a Final Decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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