United States Court of Appeals for the Federal Circuit

IN RE: SMITH INTERNATIONAL, INC.,
Appellant

2016-2303

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 90/012,912.

Decided: September 26, 2017

JOHN R. KEVILLE, Winston & Strawn LLP, Houston, TX, argued for appellant. Also represented by ANDREW RYAN SOMMER, Washington, DC; RICHARD L. STANLEY, Law Office of Richard L. Stanley, Houston, TX.

MAI-TRANG DUC DANG, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for appellee Joseph Matal. Also represented by NATHAN K. KELLEY, FRANCES LYNCH.

Before LOURIE, REYNA, and HUGHES, *Circuit Judges.*

LOURIE, *Circuit Judge.*

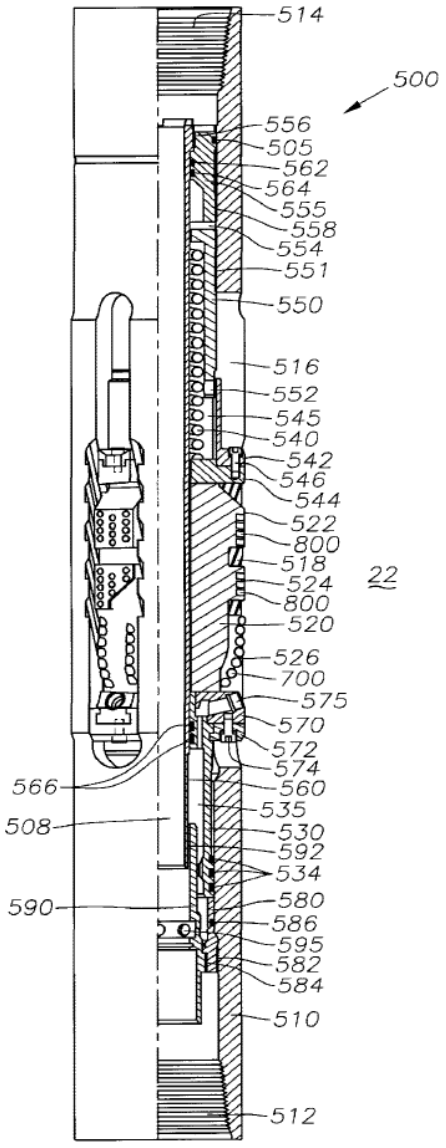
Smith International, Inc. ("Smith") appeals from a decision of the United States Patent and Trademark Office ("the PTO") Patent and Trial Appeal Board ("the Board") affirming the examiner's rejections of claims 28–36, 39–

46, 49, 50, 79–81, and 93–100[1] of U.S. Patent 6,732,817 ("the '817 patent") in an *ex parte* reexamination. *Ex parte Smith Int'l, Inc.*, No. 2015-008323, 2016 Pat. App. LEXIS 3764 (P.T.A.B. Apr. 29, 2016) ("*Board Decision*"). For the reasons that follow, we *reverse*.

BACKGROUND

This case primarily concerns what the word "body" means in the context of the '817 patent. Smith owns the '817 patent, entitled "Expandable Underreamer/Stabilizer," which is directed to a downhole drilling tool for oil and gas operations. '817 patent Abstract, col. 1 l. 30. The '817 patent describes an "expandable tool 500" having "a generally cylindrical tool body 510 with a flowbore 508 extending therethrough" and "one or more moveable, non-pivotable tool arms 520." *Id.* col. 7 l. 67–col. 8 l. 1, col. 8 ll. 9–10. A drilling tool described in the '817 patent is shown below:

[1] The Board's decision at times omitted the rejections of claims 49 and 100.



Id. fig. 4.

The '817 patent describes that "one or more pocket recesses 516," which "include angled channels 518," are "formed in the body 510" to "provide a drive mechanism for the moveable tool arms 520 to move axially upwardly

and radially outwardly into the expanded position" in response to a "[h]ydraulic force . . . due to the differential pressure of the drilling fluid between the flowbore . . . and the annulus." *Id.* col. 8 ll. 4–5, 20–23, col. 9 ll. 36–39. As the drilling fluid flows through the tool, "the piston 530 engages the drive ring 570," "causing the drive ring 570 to move axially upwardly against the moveable arms 520," which in turn causes "[t]he arms 520" "to move axially upwardly in pocket recesses 516." *Id.* col. 9 ll. 40–54. The '817 patent also describes an "inner mandrel 560," which is "the innermost component within the tool 500," and which can be replaced by "a stinger assembly" "comprising an upper inner mandrel," "a middle inner mandrel," and "a lower inner mandrel." *Id.* col. 8 ll. 36–37, col. 12 ll. 5–7. The '817 patent was originally granted with 73 claims.

In 2012, Smith's corporate parents, Schlumberger Holdings Corp. and Schlumberger N.V. (together, "Schlumberger"), sued Baker Hughes Inc. ("Baker Hughes") in the United States District Court for the Southern District of Texas for, *inter alia*, infringement of the '817 patent. Baker Hughes requested *ex parte* reexamination of claims 28–37, 39–46, 49, and 50 of the '817 patent. The PTO granted the request for *ex parte* reexamination, which is the subject of appeal in this case.

In 2016, Smith also sued Baker Hughes in the United States District Court for the District of Delaware for, *inter alia*, infringement of the '817 patent. Baker Hughes petitioned for two *inter partes* review ("IPR") proceedings challenging certain claims of the '817 patent, but the PTO denied institution noting that the substantive overlap between the IPR petitions and the reexamination on appeal in this case favored denial of institution for reasons of judicial economy. *Baker Hughes Oilfield Operations, Inc. v. Smith Int'l, Inc.*, IPR 2016-01450, 2016 WL 8115502 (P.T.A.B. Dec. 22, 2016); *Baker Hughes Oilfield*

Operations, Inc. v. Smith Int'l, Inc., IPR 2016-01451, 2016 WL 8115503 (P.T.A.B. Dec. 22, 2016).

During the *ex parte* reexamination, Smith added and cancelled claims 74–78 and 92, cancelled claim 37, amended claims 28, 35, 36, and 43, added and amended claims 82–84, 87, and 89–91, and added claims 79–81, 85, 86, 88, and 93–102. Claims 28, 43, and 93 are the independent claims.

Claim 28, as amended, reads as follows:

> 28. An expandable downhole tool for use in a drilling assembly positioned within a wellbore having an original diameter borehole and an enlarged diameter borehole, comprising:
>
> *a body*; and
>
> *at least one non-pivotable, moveable arm* having at least one borehole engaging pad adapted to accommodate cutting structures or wear structures or a combination thereof and *having angled surfaces that engage said body* to prevent said arm from vibrating in said second position;
>
> wherein said at least one arm is moveable between a first position defining a collapsed diameter, and a second position defining an expanded diameter approximately equal to said enlarged diameter borehole.

J.A. 15–16 (emphases and line changes added).

Claim 43, as amended, reads as follows:

> 43. A method of underreaming a wellbore to form an enlarged borehole and controlling the directional tendencies of a drilling assembly within the enlarged borehole, comprising:

> using a drill bit to drill the wellbore;
>
> disposing a first expandable tool having at least one arm including at least one borehole engaging pad, the pad being configured for underreaming directly above the drill bit and the *at least one arm having angled surfaces that engage a body* of the first expandable tool;
>
> using the first expandable tool to form the enlarged borehole;
>
> disposing a second expandable tool having at least one arm configured for stabilizing above the first expandable tool; and
>
> using the second expandable tool to control the directional tendencies of the drilling assembly within the enlarged borehole;
>
> wherein both the first expandable tool and the second expandable tool operate between a collapsed position and an expanded position.

J.A. 17–18 (emphasis and line changes added).

Claim 93 reads as follows:

> 93. An expandable downhole tool for use in a drilling assembly positioned within a wellbore having an original diameter borehole and an enlarged diameter borehole, comprising:
>
> *a body* defining an outermost diameter of the expandable downhole tool when the tool is in a retracted configuration; and
>
> *at least one non-pivotable, moveable arm* having at least one borehole engaging pad adapted to accommodate cutting struc-

> tures or wear structures or a combination thereof and *having at least one surface that engages the body* wherein the body is configured to guide a direction of translation of the non-pivotable, moveable arm along the at least one surface of the arm and a surface of the body;
>
> wherein said at least one arm is moveable between a first position when the expandable downhole tool is in a retracted position, and a second position defining an expanded of the expandable downhole tool, the second diameter being approximately equal to said enlarged diameter borehole.

J.A. 25 (emphases and line change added).

The examiner allowed new claims 82–91, 101, and 102, and finally rejected claims 28–36, 39, 40, 42, 79–80, 93–98, and 100 as anticipated by International Publication No. WO 00/31371 ("Eddison"), claims 43–46, and 49 as obvious over Eddison in view of U.S. Patent 6,059,051 ("Jewkes"), and claims 28, 40, 41, 43, 50, 80, 81, 93, and 99 as obvious over Eddison, European Publication No. EP 0 246 789 ("Wardley"), and Jewkes. Smith appealed to the Board, and the Board affirmed all of the examiner's rejections.

Eddison, entitled "Downhole Tool with Extendable Memebers," is directed to a "downhole tool" "having radially extendable members, such as an underreamer or an expandable stabiliser." Eddison at 1. A drilling tool described in Eddison is shown below:

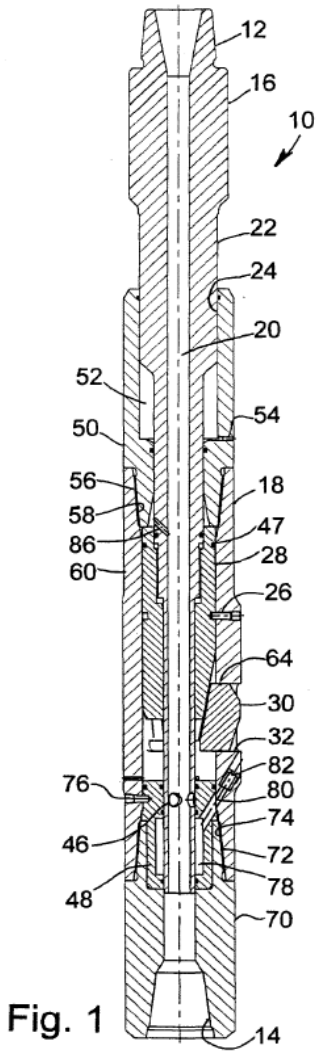


Fig. 1

Id. fig. 1.

Eddison discloses a drilling tool having a "mandrel 16" that "extends through the body 18" and "provides

mounting for a cam sleeve 28," which "cooperates with three extendable members in the form of cutters 30 mounted in respective body ports 32." *Id.* at 10. The "mandrel" and "body" in Eddison move axially relative to each other in response to the applied weight and fluid pressure differences, and this relative axial movement causes the cam sleeve to "push the cutters radially outwardly" or to "positively engage[] the cutters" to be "positively withdrawn." *Id.* at 12–13. In particular, Eddison teaches that its cam sleeve engages the cutters through "dovetail profiles and slots on the cam sleeve 28 and the cutters 30." *Id.* at 14.

The Board affirmed the examiner's interpretation of the term "body" as a broad term that may encompass other components such as "mandrel" and "cam sleeve," reasoning that only the term "body" is recited in the claims without further limiting features and that the specification neither defines the term "body" nor prohibits the examiner's broad reading of it. Based on this interpretation of the term "body," the Board affirmed the examiner's rejections based on Eddison. It concluded that Smith's additional arguments also fail because they rely on an incorrect claim construction and the examiner's interpretation of other claim terms was reasonable.

Smith timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

Claims 28–36, 39–46, 49, 50, 79–81, and 93–100 are on appeal. As all of them, either themselves or in their parent claims, contain the term "body," our decision respecting the meaning of this term will be dispositive of all of the claims. We therefore will not address secondary arguments.

We review the Board's legal determinations *de novo*, *In re Elsner*, 381 F.3d 1125, 1127 (Fed. Cir. 2004), and the

Board's underlying factual findings for substantial evidence, *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Id.* at 1312 (quoting *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938)). In reexaminations, the Board gives claim terms their broadest reasonable interpretation in light of the claim language and specification. *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984).

Anticipation is a question of fact that we review for substantial evidence. *REG Synthetic Fuels, LLC v. Neste Oil Oyj*, 841 F.3d 954, 958 (Fed. Cir. 2016). A patent claim is anticipated "only if each and every element is found within a single prior art reference, arranged as claimed." *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1294 (Fed. Cir. 2015) (citing *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008)). Obviousness is a question of law based on underlying factual findings. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1373 (Fed. Cir. 2016).

On appeal Smith challenges the Board's construction of "body" and anticipation and obviousness determinations. We first discuss the Board's claim construction.

In affirming the examiner's rejections, the Board determined that the term "body" is a "generic term such as 'member' or 'element' that by itself provides no structural specificity." *Board Decision*, 2016 Pat. App. LEXIS 3764, at *4. The Board reasoned that although "the specification *describes* the body as a discrete element separate from other elements," the specification does not "*define*[] the term 'body'" or "preclude the Examiner's interpretation." *Id.* (emphases in original). The Board also rejected Smith's argument that the person of ordinary skill in the art would understand the term "body" as a distinct element from other components, reasoning that Smith "has not shown that the parts identified in the prior art as

bodies are so similar as to create a specific identity of what a body is." *Id.* at *4–5. The Board noted that the claims "essentially recite only a body and the movable cutting arms," and other components, such as "a mandrel," are not recited in the claims. *Id.* at *5–6. Thus, the Board reasoned that it was "perfectly reasonable" to understand the term "body," given its broadest reasonable interpretation, as "the overall portion or portions of the downhole tool that define the bore and may include one or more other elements." *Id.*

Smith argues that the Board's interpretation of the term "body" as a generic term encompassing the drilling tool's internal components was unreasonable. Smith contends that the specification consistently refers to and depicts the body of the drilling tool as a component distinct from other separately identified components, such as the "mandrel" or "piston" that reside inside the drilling tool. In light of the consistent description of the body, Smith urges that the term "body" should be interpreted as an "outer housing." Smith cites relevant references in the art, including Eddison, to support its view that the term "body" is understood in the art to mean a drilling tool's outer housing. Smith also urges that the Board's interpretation of "body" as a generic term renders the term indistinguishable from "tool," which is used in the specification to denote the overall drilling tool.

The PTO responds that the Board correctly gave the term "body" its broadest reasonable interpretation and that substantial evidence supports the Board's findings. The PTO contends that the term "body" is reasonably understood as "the main cylindrical portion of the device that defines the central conduit." Appellee's Br. 19. As such, the PTO urges that the "body," "mandrel," and "cam sleeve" of Eddison "together meet the body limitation of claim 28." *Id.* The PTO argues that the Board correctly reached its broad construction of "body" based on: (1) the recitation of "a body" as a whole element in claim 28; (2) a

lack of recitation of "mandrel" in the claims; (3) a lack of definition of "body" in the specification; and (4) a lack of an established meaning of "body" in the art. The PTO also urges that Smith's proposed construction of the "body" as an "outer housing" is not supported by the specification.

We conclude that the Board's construction of "body" was unreasonably broad. Even when giving claim terms their broadest reasonable interpretation, the Board cannot construe the claims "so broadly that its constructions are *unreasonable* under general claim construction principles." *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (emphasis in original). "[T]he protocol of giving claims their broadest reasonable interpretation . . . does not include giving claims a legally incorrect interpretation" "divorced from the specification and the record evidence." *Id.* (citations and internal quotation marks omitted); *see PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 747, 751–53 (Fed. Cir. 2016).

It is true that some of the claims at issue recite a broad term "body" without further elaboration on what the term "body" encompasses. J.A. 15, 17 (claims 28 and 43). However, the remainder of the specification does not use the term as a generic body. There is no dispute that the '817 patent specification consistently describes and refers to the body as a component distinct from others, such as the mandrel, piston, and drive ring. *See* Appellee's Br. 29–30. Therefore, the Board's reasoning that because the specification does not "in and of itself proscribe the Examiner's construction," the examiner's interpretation was reasonable, *Board Decision*, 2016 Pat. App. LEXIS 3764, at *4, was erroneous.

The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is not whether the specification proscribes or precludes some

broad reading of the claim term adopted by the examiner. And it is not simply an interpretation that is not inconsistent with the specification. It is an interpretation that corresponds with what and how the inventor describes his invention in the specification, *i.e.*, an interpretation that is "consistent with the specification." *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997) (citation and internal quotation marks omitted); *see also In re Suitco Surface*, 603 F.3d 1255, 1259–60 (Fed. Cir. 2010).

The Board emphasized that the patentee here did not act as a lexicographer, and that the specification neither defines nor precludes the examiner's reading of the term "body." Accordingly, the Board found that nothing in the specification would disallow the examiner's interpretation, rendering it "reasonable." However, following such logic, any description short of an express definition or disclaimer in the specification would result in an adoption of a broadest *possible* interpretation of a claim term, irrespective of repeated and consistent descriptions in the specification that indicate otherwise. That is not properly giving the claim term its broadest reasonable interpretation *in light of* the specification.

Relying on the incorrect interpretation of the term "body" as a generic term in the claims, the Board affirmed the examiner's arbitrary inclusion and exclusion of separately described components to and from the term "body." It reasoned that although a body, a mandrel, and moveable arms are all consistently identified and described separately in the specification, the *generic claim term* "body" includes some of the separately described components, such as a mandrel, but not others, such as moveable arms, solely because the "moveable arm" is recited in the claims and the "mandrel" is not. *See* Oral Argument at 15:16–46, *In re Smith Int'l, Inc.*, No. 16-2303 (Fed. Cir. Aug. 8, 2017), http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2016-2303.mp3 (applying this reasoning to a hypothetical

claim reciting other separate components of the tool but not a mandrel). But, giving the term "body" such a strained breadth in the face of the otherwise different description in the specification was unreasonable.

The '817 patent separately identifies and describes various components of its drilling tool, such as the "body," "moveable arms," "mandrel," "piston," and "drive ring," which do not support the Board's broad reading of the claim term "body." *See, e.g.*, '817 patent col. 7 l. 63–col. 8 l. 67, col. 9 ll. 30–61. Furthermore, Eddison's descriptions of its own drilling tool distinguish and separately describe its "body," "mandrel," and "cam sleeve." *See, e.g.*, Eddison at 9–11. The PTO fails to point to any description of the body that would support its strained construction of "body," and its urging that the term "body" in the '817 patent claims corresponds to the "body," "mandrel," and "cam sleeve" of Eddison is thus unsupported. We therefore conclude that the "body" in the '817 patent claims is a component distinct from other separately identified components in the specification, such as the mandrel, and cannot be understood to include the "cam sleeve" in Eddison.

The Board's findings regarding Eddison's teachings rest on its broad construction of "body," which the parties do not dispute. In particular, the Board relied on its construction of "body" to find that Eddison teaches "at least one non-pivotable, moveable arm . . . having angled surfaces that engage said body" in claim 28 and corresponding elements in other independent claims. Because such findings depended on an incorrect claim construction, the Board's findings of anticipation are not supported by substantial evidence. Similarly, the Board's factual findings underlying its obviousness determination relating to the Eddison reference are also not supported by substantial evidence. It is undisputed that Jewkes and Wardley do not teach or render obvious the missing elements discussed above. We therefore conclude that the

challenged claims of the '817 patent are not unpatentable as obvious over the combination of Eddison and the additional references. The rejections of all of the appealed claims are therefore reversed.

CONCLUSION

We have considered the remaining arguments, but find them unpersuasive. For the foregoing reasons, the decision of the Board is reversed.

REVERSED