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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KYLE A. SOMMERFELD,
HAO BIN HUANG, and JAY P. PAINTER

Appeal 2019-004155
Application 15/207,326
Technology Center 3600

Before STEFAN STAICOVICI, MICHAEL L. HOELTER, and
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 3–8, 11–14, and 21–29. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “Cameron International Corporation (the assignee of record for this application) and Schlumberger Limited.” Appeal Br. 2.

CLAIMED SUBJECT MATTER

The disclosed subject matter “generally relate[s] to locking assemblies and sealing packoffs that can be installed within a bore of a wellhead.”

Spec. ¶ 5. System claims 1 and 21, and method claim 26, are independent.

Claim 1 is illustrative of the claims on appeal and is reproduced below.

1. A system comprising:

a wellhead component having a bore;

an inner component disposed within the bore of the wellhead component;

a locking assembly disposed within the bore between the inner component and the wellhead component to secure the inner component within the bore of the wellhead component, the locking assembly including:

a lock ring that extends into a recess in a wall of the bore of the wellhead component; and

an actuator radially disposed between the inner component and the lock ring to retain the lock ring within the recess;

wherein the actuator has an interference fit with the inner component to inhibit movement of the actuator between the lock ring and the inner component; and

a packoff disposed in the bore of the wellhead component, the packoff including:

an inner annular seal; and

an outer annular seal.

EVIDENCE

Name	Reference	Date
Berner, Jr. et al. (“Berner”)	US 4,561,499	Dec. 31, 1985
Koleilat et al. (“Koleilat”)	US 6,510,895 B1	Jan. 28, 2003
Nelson	US 2010/0147533 A1	June 17, 2010

REJECTIONS

Claims 1, 4–8, 11, 13, 14, 21, 22, and 24–29 are rejected under 35 U.S.C. § 102(a)(1) as anticipated by Berner.

Claim 3 is rejected under 35 U.S.C. § 103 as unpatentable over Berner and Koleilat.

Claims 12 and 23 are rejected under 35 U.S.C. § 103 as unpatentable over Berner and Nelson.

ANALYSIS

*The rejection of 1, 4–8, 11, 13, 14, 21, 22, and 24–29
as anticipated by Berner*

Appellant argues system claims 1, 4–8, 11, 13, 14, 21, 22, 24, and 25 together. *See* Appeal Br. 4–11. Appellant also argues method claims 26–29 together, but relies on the same arguments presented with respect to the above system claims. *See* Appeal Br. 11. Accordingly, we select claim 1 for review, with the remaining claims (i.e., claims 4–8, 11, 13, 14, 21, 22, and 24–29) standing or falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Claim 1 is directed to a locking assembly, including an actuator and a lock ring, disposed within a wellhead between a wellhead component and an inner component, “wherein the actuator has an interference fit with the inner component to inhibit movement of the actuator between the lock ring and the inner component.” *See* Appeal Br. 13 (Claims App.). Appellant’s Specification does not define “interference fit,” stating only that “[f]riction caused by the interference fit at the interface 66 between these two components [i.e., between actuator 56 and hanger 48, i.e., inner component,] retains the actuator 56 in its locked position.” Spec. ¶ 28. The Examiner states (which Appellant does not dispute), “[a]n interference fit is defined as

‘a match between the size and shape of two parts, such that force is required for assembly as one part is slightly larger than the other’ by Dictionary.com.” Ans. 6.

The Examiner correlates Berner’s item 112/118 to the recited “actuator,” Berner’s item 72 to the recited “inner component,” and Berner’s item 66 to the recited “lock ring.” Final Act. 5–6. For a better understanding, Appellant’s Figure 3 and Berner’s Figure 2B are reproduced below.

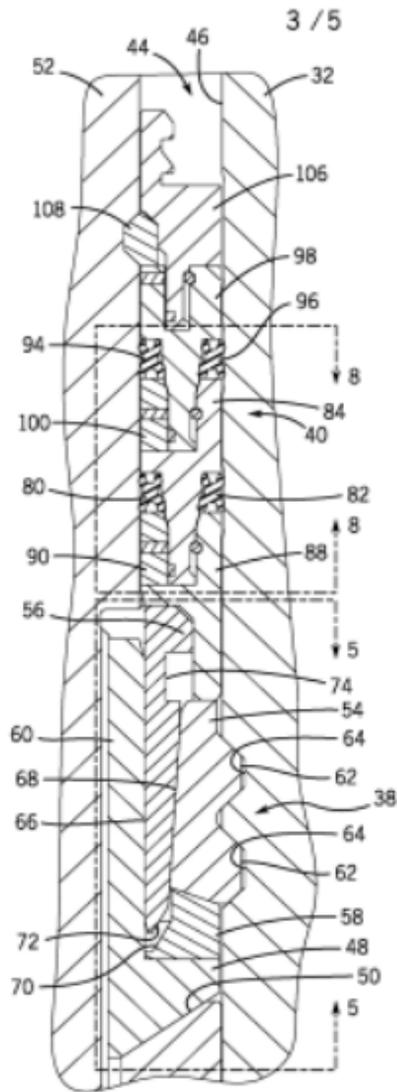


FIG. 3

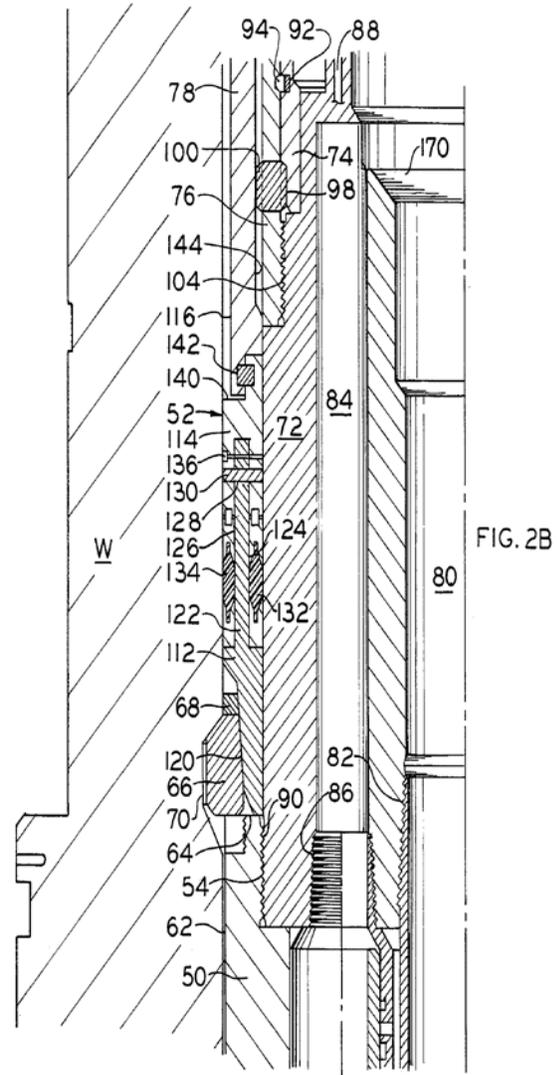


FIG. 2B

Appellant's Figure 3 (left) and Berner's Figure 2B (right) are both cross-sectional views depicting the above identified components.

The Examiner specifically references Berner's teaching that "section **112** includes an inwardly tapering actuating sleeve **118**" and that this taper is "to provide for a positive locking engagement against locking/loading dogs **66** when the dogs are urged by the downwardly forced actuating sleeve **118**." Final Act. 6, Ans. 5 (both referencing Berner 6:37–49). Thus, according to the Examiner, because Berner's "[s]leeve **118** is forced down between the locking dogs **66** and inner component **72** . . . This is by definition an interference fit." Final Act. 6.

Appellant disagrees, stating that the passage in Berner relied upon "does not even address the *inner* surface of the sleeve 118 facing the tubing hanger body 72, let alone expressly state that the sleeve 118 has an interference fit with the tubing hanger body 72." Appeal Br. 7 (also replicating Figure 2B of Berner); *see also* Reply Br. 2–3. Instead, "[t]he Berner et al. reference does not appear to disclose dimensions or manufacturing tolerances of these components and gives no indication of the type of fit between the sleeve 118 and the tubing hanger body 72." Appeal Br. 8. Appellant acknowledges that in Berner, "the sleeve 118 is pushed down to drive the locking dogs 66 outward," however, as per Appellant, "nothing about FIG. 2B can be reasonably characterized as expressly disclosing an interference fit between the sleeve 118 and the tubing hanger body 72."² Appeal Br. 8; *see also* Reply Br. 3. Appellant contends that the Examiner's focus on the apparent wedging of Berner's actuator 112/118

² In view of the teachings of Berner, the Examiner stated, "[a] statement of inherency was not needed." Ans. 7.

between inner component 72 and dogs 66 “is false” and that, instead, it is “segmented nut 152 and wicker threads 106” that “cooperate to lock the outer sleeve (including the actuating sleeve 118) in place to keep the dogs 66 in their extended, locked position in groove 70.” Appeal Br. 9; *see also* Reply Br. 3–4.

The citations to Berner relied upon by Appellant in asserting the role that segmented nut 152 and wicker threads 106 have in keeping dogs 66 in place (*see* Appeal Br. 9) is correct up to a point. Such nut/threads indeed aid in precluding upward (or release) movement of Berner’s actuator 112/118 (*see, e.g.,* Berner 8:13–25, Fig. 2C).³ However, the question is whether Berner discloses an “interference fit” consistent with the Examiner’s uncontested construction above. *See* Ans. 6. We are of the opinion that the Examiner has the better position on this point. Although Berner’s text may not directly address the interface between actuator 112/118 and inner component 72, Berner’s Figure 2B provides further teaching on this point. At the same time, Berner’s text discusses the taper of sleeve 118 being “downwardly forced” against dogs 66 at contact surface 120 (opposite the actuator/inner component interface). *See* Berner 6:37–49.

We have been instructed by our reviewing court that a “[d]escription for purposes of anticipation can be by drawings alone as well as by words.” *In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972). We have further been instructed that drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. *See In re Aslanian*, 590 F.2d

³ The Examiner states, “[t]he Examiner assertion was not an indication that there are not other elements in the overall system that hold components in place nor is this a requirement by the claims.” Ans. 7–8.

911, 914 (CCPA 1979). In other words, our reviewing court has provided guidance stating “we did not mean that things patent drawings show clearly are to be *disregarded*.” *Mraz*, 455 F.2d at 1072.

The Figures and text of Berner clearly teach a forced insertion of a tapered actuator into a smaller space. Accordingly, and more specifically, we understand from Berner that tapered actuator sleeve 118 is downwardly forced (i.e., wedged) into a smaller area between outer dogs 66 and inner component 72. This operation coincides with the definition of “interference fit” above. The Examiner further notes a similar operation occurring in Appellant’s device. *See* Ans. 6 (comparing “Figure 5 of the instant application and Figure 2B of Berner”). Because of such similarity, the Examiner reasons that “if the interface **66** of the instant application is an interference fit between the actuator **56** and the inner component **48** then it stands to reason that [a skilled artisan would reasonably understand that] the interface between the actuator **112/118** of Berner et al. and the inner component **72** must also be an interference fit.” Ans. 7.

In summation, and based on the record presented as well as guidance from our reviewing court, we are not persuaded of Examiner error. We instead conclude that the Examiner has established that Berner anticipates claim 1. We, thus, sustain the Examiner’s rejection of claims 1, 4–8, 11, 13, 14, 21, 22, and 24–29 as being anticipated by Berner.

*The rejection of claim 3
as unpatentable over Berner and Koleilat*

Appellant relies on the same arguments presented above contending that “the Koleilat et al. reference does not cure this error.” Appeal Br. 11. However, we are not persuaded that the Examiner’s reliance on Berner

above was in error. Accordingly, we sustain the Examiner's rejection of claim 3.

*The rejection of claims 12 and 23
as unpatentable over Berner and Nelson*

Appellant relies on the same arguments presented above contending that "the Nelson reference does not cure this error." Appeal Br. 12.

However, we are not persuaded that the Examiner's reliance on Berner above was in error. Accordingly, we sustain the Examiner's rejection of claims 12 and 23.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s) /Basis	Affirmed	Reversed
1, 4-8, 11, 13, 14, 21, 22, 24-29	102(a)(1)	Berner	1, 4-8, 11, 13, 14, 21, 22, 24-29	
3	103	Berner, Koleilat	3	
12, 23	103	Berner, Nelson	12, 23	
Overall Outcome			1, 3-8, 11-14, 21-29	

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

AFFIRMED