

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENNETH A. WRIGHT, CHRISTOPHER A. WYKER, and
RONALD J. DUPPERT

Appeal 2008-1304
Application 10/320,008
Technology Center 3600

Decided: May 29, 2008

Before JENNIFER D. BAHR, ANTON W. FETTING, and
STEVEN D.A. MCCARTHY, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Kenneth A. Wright et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1, 4, and 5. Claims 2 and 3 have been canceled. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

Appellants' invention is directed towards a replaceable wear sleeve 48 to protect a crankshaft 18 from excessive frictional contact wear with a lip seal 38 (Spec. 5, ¶ 17 and fig. 3). The crankshaft 18 has a reduced diameter portion 49 where the crankshaft engages the lip seal 38 (Spec. 5, ¶ 17 and figs. 3 and 4). The replaceable wear sleeve 48 is received in the reduced diameter portion 49 of the crankshaft 18 (Spec. 5, ¶ 17 and figs. 3 and 4). The hardness of the material of the wear sleeve 48 is greater than that of the crankshaft 18 (Spec. 5, ¶ 17).

Claim 1 is illustrative of the claimed invention and reads as follows:

1. A crankshaft for use in a compressor that incorporates a lip seal, comprising:
 - a first material forming the crankshaft, said crankshaft having an outer diameter;
 - an area on the outer diameter of the crankshaft that engages the lip seal, wherein said area has a reduced diameter portion; and
 - a wear sleeve on the crankshaft for protecting the crankshaft from wear due to frictional contact with the lip seal, said wear sleeve received in the reduced diameter portion.

THE REJECTIONS

The Examiner relies upon the following references as evidence of unpatentability:

Sullivan US 3,189,151 Jun. 15, 1965

Appeal 2008-1304
Application 10/320,008

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| Willis | US 4,314,611 | Feb. 9, 1982 |
| Backlin | US 4,337,954 | Jul. 6, 1982 |

The following rejections are before us for review:

Claims 1 and 5 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sullivan in view of Backlin.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Sullivan in view of Backlin and in further view of Willis.

The Examiner provides reasoning in support of the rejections in the Answer (mailed November 2, 2006). Appellants present opposing arguments in the Appeal Brief (filed August 10, 2006) and the Reply Brief (filed February 21, 2006).

OPINION

Claims 1 and 5

Appellants argue the rejection of claims 1 and 5 under 35 U.S.C. § 103(a) together as a group. Therefore, in accordance with 37 C.F.R. §41.37(c)(1)(vii)(2006), we have selected claim 1 as the representative claim to decide the appeal, with claim 5 standing or falling with claim 1.

The Examiner explains where the elements of claim 1 are disclosed in Sullivan and Backlin. The Examiner finds that Sullivan discloses a crankshaft 13 having an outer diameter portion and a reduced diameter portion 14, and a lip seal 33 that engages the reduced area portion 14 of the crankshaft (Ans. 3). Sullivan supports this finding at col. 1, ll. 52-57; col. 2, ll. 9-12; and Figure 1. The Examiner further finds that Backlin teaches that it is well known to provide a replaceable wear sleeve between a seal and a

crankshaft shaft in order to extend the life of the crankshaft (Ans. 3). Backlin supports this finding at col. 1, ll. 11-16.

The issue presented in this appeal with respect to claim 1 is whether the Appellants have demonstrated that the Examiner has erred in determining that the subject matter of claim 1 is unpatentable over Sullivan in view of Backlin.

The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the replaceable sleeve of Backlin on the crankshaft of Sullivan because “Backlin teaches it is known to provide a wear sleeve on a crankshaft to extend the life of the crankshaft by preventing the grooving thereof by the seal” (Ans. 3). The Appellants argue that (1) “Sullivan does not have a reduced diameter portion...in the area that engages the lip seal” (App. Br. 3); (2) in the Examiner’s proposed modification of Sullivan in view of Backlin the lip seal “would be received ‘on’ a smaller diameter section of the shaft not ‘in’ a reduced diameter portion as claimed by Appellants” (App. Br. 3); (3) there is “no teaching in Sullivan that a wear sleeve is needed or required” (App. Br. 3); and (4) contrary to the claimed invention the sealing arrangement of Sullivan is part of a clutch assembly, rather than a compressor assembly (Reply Br. 2-3).

It is elementary that to support an obviousness rejection all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970). In this case, we agree with the Examiner that the crankshaft of Sullivan includes an outer diameter portion 13 and a reduced diameter portion 14 (Ans. 4). We further agree with the Examiner that Figure 1 of Sullivan clearly shows a lip seal 33

that engages the reduced diameter portion 14 of the crankshaft (Ans. 5). Therefore, contrary to the Appellants' argument, we find that Sullivan teaches a reduced diameter portion of a crankshaft where a lip seal engages a crankshaft.

The Appellants' second argument appears to be grounded on an unduly narrow interpretation of the limitation of the wear sleeve being received "in the reduced diameter portion" (underlining added).¹ When construing claim terminology in the United States Patent and Trademark Office, claims are to be given their broadest reasonable interpretation consistent with the specification, reading claim language in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004)). In this case, we find that the ordinary and customary use of the word "in" indicates location or position within limits (*Merriam Webster's Collegiate Dictionary* 585 (Tenth Ed. 1997)). Therefore, we find that a wear sleeve being received "in the reduced diameter portion" (underlining added) is a wear sleeve being received within the limits of the reduced diameter portion. We agree with the Examiner that when the replaceable wear sleeve of Backlin is provided to the crankshaft of Sullivan in order to extend the life of the crankshaft, as proposed by the Examiner, "the wear sleeve would be placed between the lip seal and the crankshaft." Thus, by virtue of the depicted positioning of lip seal 33 in Figure 1 of Sullivan, the wear sleeve

¹ The Appellants' contention that "the Examiner failed to give full meaning to the claim language of claim 1 when arguing this rejection" (App. Br. 3) hints that this is the Appellants' position.

would be located within the limits of the reduced diameter portion 14 of Sullivan.

Regarding the Appellants' third argument, Sullivan teaches a crankshaft having a lip seal and Backlin teaches that it is well known to provide a replaceable wear sleeve between a seal and a crankshaft in order to extend the life of the crankshaft. If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1740, (2007). "In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references." *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006). A person of ordinary skill in the art would readily appreciate that the benefits gained by providing a wear sleeve, as taught by Backlin, could also be achieved in the crankshaft of Sullivan. Moreover, the Appellants do not provide any evidence to show that modification of Sullivan to provide the wear sleeve of Backlin would have been beyond the technical grasp of a person of ordinary skill in the art.

Finally, the Appellants' fourth argument is not persuasive because contrary to the Appellants' position, claim 1 merely requires a crankshaft and does not include a positive recitation of a compressor. We find that the language at issue of a "crankshaft for use in a compressor" is directed towards the intended use of the crankshaft because it appears only in the preamble of claim 1. If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely

states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999). It is well settled that the recitation of an intended use for an old product does not make a claim to that old product patentable. *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Sullivan's crankshaft appears reasonably capable of use in a compressor and the Appellants have not shown that this is not the case. *See id.* at 1477.

For the foregoing reasons, the Appellants' arguments do not persuade us the Examiner erred in rejecting claim 1 as unpatentable over Sullivan in view of Backlin. Therefore, the rejection of claim 1, and claim 5 standing or falling with claim 1, is sustained.

Claim 4

The Appellants argue that Willis is non-analogous art (App. Br. 3). The Appellants contend that Willis is not in the field of the Appellants' endeavor, which is that of a compressor crankshaft (App. Br. 3-4).

The analogous-art test requires that the Board show that a reference is either in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned in order to rely on that reference as a basis for rejection. *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992).

We agree with the Appellants that the earth boring machinery of Willis is not in the Appellants' field of endeavor of a compressor crankshaft.

However, according to the second prong of *In re Oetiker*, an analogous prior art reference should be “reasonable pertinent to the problem with which the inventor was concerned.” The Court of Appeals for the Federal Circuit states that

“A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem.” In other words, “familiar items may have obvious uses beyond their primary purposes.”

In re Icon Health and Fitness, Inc., 496 F.3d 1374, 1379-80 (Fed. Cir. 2007) (citations omitted). In this case, the general problem facing the Appellants was extending the life of the crankshaft. Backlin teaches that it is well known to provide a replaceable wear sleeve between a seal and a crankshaft in order to extend the life of the crankshaft. The Examiner found that Willis teaches a hardened steel wear sleeve 128 that protects a stem 126 from abrasion against seal 132 (Ans. 4). Hence, both Backlin and Willis address the problem addressed by the Appellants, namely, protecting a part subject to wear from abrasion to extend the life of the part. Therefore, the teachings of both Backlin and Willis are reasonably pertinent to the problem the Appellants were trying to solve, and are thus analogous art.

The Appellants further argue that Willis does not provide any teaching showing “that the wear sleeve material is harder than the material forming the stem 126” (App. Br. 4). We agree that Willis does not specifically provide such a teaching. However, Willis teaches a hardened steel wear

sleeve that protects a stem (hollow shaft) from abrasion against a seal. Thus, it would have been an obvious matter of common sense to a person of ordinary skill in the art that a wear sleeve used to protect a stem (hollow shaft) from abrasion against a seal is made from a material that will wear less than the material of the stem (hollow shaft), and hence will be made from a harder material than that of the stem. We agree with the Examiner that a person of ordinary skill in the art would have understood that “the wear sleeve material will wear less than the crankshaft material” in order to effectively protect the crankshaft in the compressor crankshaft of Sullivan as modified in view of Backlin and in further view of Willis (Ans. 6).

For the above reasons, the Appellants’ arguments do not persuade us of error in the Examiner’s rejection. Therefore, the rejection of claim 4 is sustained.

SUMMARY

The decision of the Examiner to reject claims 1, 4, and 5 is affirmed.

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) (2006).

AFFIRMED

JRG

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