THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHRISTIAN D. FREDERICKSON
and HAROLD B. KING

Appeal No. 1999-1765
Application No. 08/839,193[1]

ON BRIEF

Before CALVERT, FRANKFORT, and NASE, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 1, 10, 11 and 12 as amended after final rejection, which are all of the claims pending in this application. Claims 2 through 9 have been canceled.

[1] Application for patent filed April 23, 1997.

We AFFIRM-IN-PART.

BACKGROUND

The appellants' invention relates to a water rod assembly for a boiling water nuclear reactor, and to a fuel assembly for a boiling water nuclear reactor which includes an upper tie plate, a lower tie plate and a water rod assembly. An understanding of the invention can be derived from a reading of independent claims 1 and 12, which appear in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Jabsen	3,828,868	Aug. 13, 1974
Nylund	5,180,550	Jan. 19, 1993
Meier et al. (Meier)	4,041,349	June 25, 1992
(German Patent Application)[2]		

Claims 1, 10 and 11 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellants regard as the invention.

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[2] Our understanding of this foreign language document is based upon a translation prepared for the U.S. Patent and Trademark Office. A copy of that translation accompanies this decision.

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Nylund, or in the alternative under 35 U.S.C. § 103 as being unpatentable over Nylund.

Claims 1 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jabsen alone or in view of Nylund.

Claims 1, 10, 11 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Nylund and Jabsen.

Claims 1, 10, 11 and 12 additionally stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Jabsen and Meier.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 24, mailed October 5, 1998) for the examiner's complete reasoning in support of the rejections, and to the appellants' brief (Paper No. 23, filed June 23, 1998) and reply brief

(Paper No. 25, filed December 2, 1998) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow. In accordance with appellants' "GROUPING OF CLAIMS" (brief, p. 4), we need only comment on independent claims 1 and 12. Dependent claims 10 and 11 will stand or fall with independent claim 1.

Before addressing the examiner's rejections based upon prior art, it is an essential prerequisite that the claimed subject matter be fully understood. Analysis of whether a claim is patentable over the prior art under 35 U.S.C. §§ 102 and 103 begins with a determination of the scope of the claim. The properly interpreted claim must then be compared with the

prior art. Claim interpretation must begin with the language of the claim itself. See Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882, 8 USPQ2d 1468, 1472 (Fed. Cir. 1988). Accordingly, we will initially direct our attention

to appellants' claim 1 to derive an understanding of the scope and content thereof.

In so doing, we look first at the examiner's rejection of claim 1 under 35 U.S.C. § 112, second paragraph. It is our view that there is nothing indefinite about appellants' use of the terminology "the tie plate" in line 4 of claim 1. We agree with appellants (brief, p. 5) that proper antecedent basis for "the tie plate" can be found in line 3 of claim 1 wherein "a tie plate" is recited as being that by which the threads of a water rod end are adapted to be received. It is clear to us that in claim 1 appellants are not positively defining the combination of a water rod and a tie plate, as proposed by the examiner. In support thereof, we refer to appellants' brief (Paper No. 23, p. 5) where appellants argue that the water rod "is extendible" through the tie plate, and to their reply brief (Paper No. 25, pp. 1-2) wherein they state that "the recitation that the water rod extends through the tie plate must be interpreted in a manner consistent with the specification, which supports the proposition that the water rod is capable of extending through the tie plate." It

is therefore clear to us that in claim 1 appellants are claiming a water rod and end cap **assembly**, wherein the water rod **is extendible** through a tie plate of a fuel assembly of a boiling water nuclear reactor.[3] Thus, we do not agree with the examiner when he says in his answer (Paper No. 24, p. 4) that the appellants are "not claiming what they regard as their actual invention."

In light of the foregoing, it is our opinion that claim 1 on appeal reasonably apprises those of skill in the art of its scope and defines appellants' invention with a reasonable degree of precision and particularity adequate to satisfy the requirements of 35 U.S.C. § 112, second paragraph. Thus, we

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[3] We consider the following to be a fair reading and interpretation of appellants' claim 1, on appeal.

1. A water rod [assembly] for a fuel assembly of a boiling water nuclear reactor, [said water rod assembly comprising a] water rod comprising a first end and a second end, at least one of said first and second ends comprising threads adapted to be received by a threaded aperture in a tie plate of the fuel assembly and being directly threadedly attachable to the tie plate without an end plug, and an end cap attached to the water rod over said at least one of said first and second ends, [wherein said at least one end is extendible] through the tie plate a sufficient distance to allow the end cap to be attached thereto.

will not sustain the examiner's rejection of claim 1 and dependent claims 10 and 11 under 35 U.S.C. § 112, second paragraph.

We turn to the examiner's rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Nylund, or in the alternative, under 35 U.S.C. § 103 as being unpatentable over

Nylund. Nylund shows, in Figure 3, a water rod that is threaded over its entire length and having first and second ends. An end cap 12 is attached to the water rod over at least one of the first and second ends. Appellants argue in their brief (Paper No. 23, p. 6) that "Nylund does not teach each and every element of the claimed invention" and that "Nylund lacks any teaching of a water rod having an end that is directly threadedly **attachable** (our emphasis) to the tie plate without an end plug and an end cap attached to the water rod over the end." We are not persuaded by this argument. In that regard, our prior analysis and determination of the scope of claim 1 has led us to conclude that claim 1 recites a water rod assembly, wherein the water rod is "attachable to" a tie plate, and has an end which "is extendible" through a tie plate. We, like the examiner, believe that the water rod in Nylund which is threaded throughout its entire length, has the capability of being "directly threadedly attachable to" a tie plate, and has an end which "is extendible" through a tie plate a sufficient distance to allow the end cap to be attached thereto. Since claim 1 on appeal is directed only to the water rod assembly per se, and the claim is directly

readable on the water rod assembly of Nylund (Fig. 3), the examiner's rejection of claim 1 under 35 U.S.C. § 102(b) based on Nylund is sustained.

As noted above, Nylund teaches all the limitations of claim 1. A disclosure that anticipates under 35 U.S.C. § 102 also renders the claim unpatentable under 35 U.S.C. § 103, for "anticipation is the epitome of obviousness." Jones v. Hardy, 727 F.2d 1524, 1529, 220 USPQ 1021, 1025 (Fed. Cir. 1984). See also In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982); In re Pearson, 494 F.2d 1399, 1402, 181 USPQ 641, 644 (CCPA 1974). Thus, we also sustain the examiner's rejection of appealed claim 1 under 35 U.S.C. § 103 as being unpatentable over Nylund.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of

ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on

§ 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). Our reviewing court has repeatedly cautioned against employing hindsight by using the

appellant's disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. See, e.g., Grain Processing Corp. v. American Maize-Products Co., 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

With this as background, we next consider the examiner's rejections of independent claims 1 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jabsen taken alone or in view of Nylund, of claims 1, 10, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Nylund and Jabsen, and of claims 1, 10, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Jabsen and Meier.

Initially, we observe that Jabsen discloses a fuel assembly for a nuclear reactor including a plurality of tubes 12 extending through a pair of grid structures 13, 14 and a releasable connection (see Figure 5) of each tube 12 to grid 13 which is effected by the use of a partially threaded sleeve

26 welded to the end of tube 12, a threaded bushing 27, and a nut 28.

The examiner states in his answer (Paper No. 24, p. 7) that

> Jabsen states sleeve 26 is welded to tube 12(e.g. see col. 3 lines 7-10 and 41+). The sleeve th[u]s becomes an integral part of tube 12. Tube 12 is threadedly engaged with the threads, in grid or tie plate 13. End cap 28 is attached to the threaded end of tube 12 which extends through grid 13.

And, that

> appellants[’] claims do not preclude the presence of a sleeve welded to the tube.

In looking at the two portions of the specification of the Jabsen patent referred to by the examiner (answer, p. 7), we note that Jabsen states:

> For the FIG. 5 embodiment, releasable connection of tube 12 to grid 13 is effected by the combination of a threaded sleeve 26 welded to the end of tube 12, **a threaded bushing 27**, and a nut 28. (Column 3, lines 7-10; emphasis ours.)

And, further states:

> Installation of the preassembled tube 12, with welded sleeve 26 and shank 21 combination in the FIG. 5 arrangement is accomplished in a similar manner to that described in relation to FIG. 4 insofaras[sic] connection of tube 12 to grid 14 is concerned. The difference between the FIG. 4 and FIG. 5 arrangement lies in the feature that in FIG. 5 there are adjustable connections to both grids 13 and 14. For providing adjustable connection to grid 13, the inside diameter of threaded passage 16A is made somewhat larger than the shoulder 31 outside diameter of sleeve 26. This allows the use of **adjustment bushing 27** which serves to set the axial position of tube 12 relative to grid 13. Accordingly, after completing the connection to tube 12 to grid 14, **bushing 27 is slipped over sleeve 26 and screwed through passage 16A**, and nut 28 is tightened until it bears against the outside end 32 of bushing 27 and draws shoulder 31 to bear against the inside end 33 of bushing 27 to establish the axial location of tube 12 with respect to grid 13. (Column 3, line 41 through column 4, line 5; emphasis ours.)

We agree with the examiner in his assessment of Jabsen that sleeve 26, which is welded to tube 12, can be considered part of tube 12. However, it appears that in reading the Jabsen patent the examiner has failed to appreciate the

presence of bushing 27 which slips over sleeve 26, and is screwed into threaded opening 16A. It is clear to us that it is bushing 27, and not sleeve 26, which actually carries the threads that are **directly threadedly attached** to the threaded opening 16A in grid 13. Since bushing 27 slips over sleeve 26, it is not affixed to sleeve 26 and is screwed into threaded opening 16A. We must therefore agree with appellants when they say (brief, p. 8) that "in the Jabsen patent, the tube does not comprises[sic] threads as claimed and is further not directly threadedly attachable to the tie plate." Having thus determined that the tube 12, 26 of Jabsen is not directly threadedly "attachable" or "attached" to grid 13, we must agree with the appellants that all the limitations recited in independent claims 1 and 12 are not taught or suggested by the patent to Jabsen.

Since all the limitations of independent claims 1 and 12 are not taught or suggested by the patent to Jabsen, the decision of the examiner to reject independent claims 1 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jabsen alone is reversed.

We turn to the examiner's rejection of independent claims 1 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jabsen in view of Nylund. In that regard, we have already discussed Jabsen and the fact that it does not show a tube that is directly threadedly "attached to" or "attachable to" the threaded opening 16A in grid 13, due to the presence of bushing 27. We have also determined that Nylund (Figure 3) shows a tube threaded throughout its length that has the capability of being directly threadedly attached to a tie plate, and has an end which is extendible through a tie plate a sufficient distance to allow the end cap to be attached thereto. However, since tube 12, 26 of Jabsen is neither directly threadedly attached, nor directly threadedly attachable to threaded opening 16A in grid 13, we see no incentive or motivation in the teachings of the applied prior art references to modify Jabsen by using the teachings of Nylund, in the manner urged by the examiner. We, therefore, will not sustain the examiner's rejection of claims 1 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jabsen in view of Nylund.

We next turn to the examiner’s rejection of claims 1, 10, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Nylund and Jabsen.

We have previously indicated that we would sustain the examiner’s rejection of claim 1 under 35 U.S.C. § 102 as being anticipated by Nylund or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over Nylund. Thus, we find the examiner's use of the Jabsen patent to be mere surplusage and sustain the § 103(a) rejection of claim 1 on the basis of Nylund alone, noting again that anticipation or lack of novelty is the epitome of obviousness. Claims 10 and 11 are grouped by the appellants with independent claim 1 (brief, p. 4), and are not argued separately from independent claim 1. Accordingly, we conclude that claims 10 and 11 will fall with claim 1, from which they depend. See 37 CFR § 1.192(c)(7).

However, we will not sustain the examiner’s rejection of independent claim 12 as being unpatentable over the combined teachings of Nylund and Jabsen. Unlike claim 1, which merely requires a water rod assembly to have the “capability” of

being “attachable” to a tie plate, claim 12 expressly sets forth the combination of a water rod assembly directly threadedly “attached” to a tie plate. As we have mentioned above, our examination of the patent to Jabsen has revealed the presence of slidable, threaded bushing 27 which precludes tube 12, 26 from being directly threadedly attached to grid 13. Since Jabsen fails to show a tube directly threadedly attached to a tie plate as required by claim 12 on appeal, we therefore see no incentive or motivation in the teachings of the applied prior art references (i.e., Nylund and Jabsen) that would have led one of ordinary skill in the art at the time the invention was made to

combine the teachings of Nylund and Jabsen in the manner urged by the examiner.

The examiner has additionally rejected claims 1, 10, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Jabsen and Meier. Having carefully reviewed the Meier reference, we see (Figure 5) plate 5 having internally threaded hole 21a. Pipe or rod 9, having an enlarged threaded end, is directly threadedly attached to, and extends part way through plate 5. Nut 10 is directly threadedly attached to plate 5 from the side of plate 5 opposite to that in which rod 9 is attached. The nut 10 of Meier is not attached to, and merely abuts against the end of rod 9. We have already discussed the teachings of Jabsen, however, we again note that the patent to Jabsen shows a slidable, threaded bushing 27 which prevents tube 12, 26 from being directly threadedly "attached" to, or "attachable" to grid 13. Thus, we believe that the examiner is in error when he states that

> [i]t would have been prima facie [obvious] to have modified Jabsen in view of the teachings of Meier et al, by having the end of the tube which is to be

> threadedly engaged with the tie plate, be of an increased diameter as a substitute for welding a sleeve to this end of the tube and have the sleeve be threadedly engaged with the tie plate, because such amounts to no more than the use of art recognized alternatives (answer, page 10).

Because the rod 12, 26 of Jabsen does not directly threadedly attach to grid 13, nor is it "capable" of being directly threadedly attached to grid 13, we can find no incentive or motivation in the prior art references relied upon that would have led one of ordinary skill in the art at the time the invention was made to have modified Jabsen in view of the teachings of Meier in the manner suggested by the examiner.

The examiner additionally argues (answer, page 10) that

> [a]lternatively, it would have been prima facie obvious to have modified Meier et al by having the tube or water rod extend through the tie plate a sufficient distance to allow the end cap to be attached thereto, externally of the tie plate, because such is no more than a known alternative as evidenced by the teachings thereof in Jabsen.

We are unpersuaded by this argument. In that regard, we note that Meier does not provide an end cap on rod 9, but the rod is instead abutted by nut 10 inside the threaded opening 21a of plate 5. Meier additionally lacks a tube which extends

through a plate a sufficient distance to allow an end cap to be attached thereto. Jabsen shows tube 12, 26 that merely slips through opening 16A in grid 13. Sleeve 27, of Jabsen, is subsequently slipped over tube 12, 26 and threaded into opening 16A, with nut 28 then attached thereto. While the tube of Jabsen does extend through a plate, with a nut or "end cap" subsequently attached thereto, in our view there is no motivation or incentive present in the teachings of either Meier or Jabsen that would have led one of ordinary skill in this art to have modified Meier (i.e., extend tube 9 through plate 5, eliminate abutting nut 10 and substitute an end cap therefor) as taught by Jabsen, in the manner urged by the examiner.[4]

Because of the foregoing, we will therefore not sustain the examiner's rejection of claims 1, 10, 11 and 12 as being unpatentable over the combined teachings of Jabsen and Meier.

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[4] The mere fact that the prior art structure could be modified does not make such a modification obvious unless the prior art suggests the desirability of doing so. See In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

In the final analysis, it appears to us that the teachings of the prior art relied upon by the examiner (i.e., Jabsen, Jabsen and Nylund, and Jabsen and Meier) as suggesting the subject matter of independent claims 1 and 12 are only sufficient when modified or combined with impermissible hindsight.

Our reviewing court has said:

> To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein

> that which only the inventor taught is used against its teacher.

W. L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

It is essential that:

> the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made . . . to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art. Id.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 10 and 11 under 35 U.S.C. § 112, second paragraph is reversed; the decision of the examiner to reject claims 1 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jabsen is reversed; the decision of the examiner to reject claim 12 under 35 U.S.C.
§ 103(a) as being unpatentable over Nylund and Jabsen is reversed; the decision of the examiner to reject claims 1, 10,

11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Jabsen and Meier is reversed; however, the decision of the examiner to reject claim 1 under 35 U.S.C. § 102(b) and alternatively under 35 U.S.C. § 103(a) based on Nylund is affirmed; and the decision of the examiner to reject claims 1, 10 and 11 under 35 U.S.C.
§ 103(a) as being unpatentable over Nylund and Jabsen 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).

AFFIRMED-IN-PART

IAN A. CALVERT)
Administrative Patent Judge)
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)
)
) BOARD OF PATENT

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