This opinion is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FURUKAWA ELECTRIC NORTH AMERICA, INC.

Appeal 2007-2176
Application 10/309,852
Technology Center 1700

Decided: July 17, 2007

Before JAMESON LEE, RICHARD TORCZON, and
SALLY C. MEDLEY, *Administrative Patent Judges*.

TORCZON, *Administrative Patent Judge*.

DECISION ON APPEAL

The technical subject matter of this appeal is methods of drawing an optical fiber, and methods of assembling and preparing a preform for use in drawing an optical fiber. The examiner has rejected claims 17 and 20-24 under 35 U.S.C. § 102(e) as anticipated by prior art.[1] The appellant (Furukawa) seeks review of the rejection. We affirm.

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[1] The examiner withdrew a separate rejection for indefiniteness under 35 U.S.C. § 112(2). Examiner's Answer (Ans.) 3.

We begin our analysis by construing the contested claim limitations. Next, we determine whether the prior art reference discloses each limitation of the claim expressly or inherently. A claim limitation is inherent in the prior art if it is necessarily present in the prior art, not merely probably or possibly present.[2]

THE CLAIMS

Six claims are subject to the rejection, but Furukawa has focused on claim 17 in disputing the rejection. Since there is no separate argument for the claims, they stand or fall together.[3] Claims 17 and 24, the only independent claims,[4] define[5] the invention as follows—

> 17. A method of assembling and preparing an optical fiber preform, comprising:
>
> inserting a core rod axially inside a glass outer overclad tube having an open distal end;
>
> inserting a fusible plug in the open distal end of the outer overclad tube;
>
> providing a fusible fixing member for fixing the plug in the region of the distal end of the outer overclad tube;
>
> engaging the fusible fixing member with the outer overclad tube in the region of the distal end of the outer overclad tube, thereby fixing the plug inside the distal end of

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[2] *Akamai Techs, Inc. v. Cable & Wireless Internet Servs.*, 344 F.3d 1186, 1192, 68 USPQ2d 1186, 1190 (Fed. Cir. 2003).
[3] 37 C.F.R. § 41.37(c)(1)(vii).
[4] A claim is considered independent, despite an incorporation of limitations from another claim, if it defines distinct subject matter. *Ex parte Porter*, 25 USPQ2d 1144, 1147 (BPAI 1992). Claim 24 is thus independent because it defines a method of drawing optical fiber rather than a method of assembling and preparing an optical-fiber preform as in claim 17.
[5] Claim language is reproduced from the claims appendix to the appeal brief (Br.).

> the outer overclad tube so that a distal end of the core rod is blocked from sliding downward by the plug;
>
> positioning the distal end of the outer overclad tube for entry into a mouth of a furnace;
>
> lowering the distal end of the outer overclad tube with the inserted core rod, the plug and the fusible fixing member into the furnace;
>
> heating the distal end of the outer overclad tube in the furnace until the plug, the fixing member and the outer overclad tube soften and fuse with one another; and
>
> collapsing the outer overclad tube onto the core rod inside the furnace.
>
> 24. A method of drawing an optical fiber, comprising:
>
> assembling and preparing an optical fiber preform according to the method of claim 17; and
>
> drawing an optical fiber from the preform after the collapsing step.

In proceedings before the Office, a claim is given the broadest construction that is reasonable in view of the specification; however, limitations may not be read into the claims from the specification.[6] Furukawa has not pointed us to definitions in the specification that would require further limitation of a claim term. In particular, Furukawa has not pointed us to an express definition of the claim term "fusible fixing member".

The claims use the transitional term "comprising", which opens each claim to the inclusion of additional steps.[7] The steps of a method claim are

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[6] *In re Van Geuns*, 988 F.2d 1181, 1186, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993).

[7] *Moleculon Res. Corp. v. CBS, Inc.*, 793 F.2d 1261, 1271, 229 USPQ 805, 812 (Fed. Cir. 1986).

not ordinarily construed to require a particular order unless the claim explicitly requires a set order or if an order is implicit in the nature of the steps.[8]

The meaning of "plug" is contested.[9] The examiner has applied a broad functional reading of the term. Furukawa urges that the reference must be distinguished because the elements the examiner alternatively identifies as the plug have a particular construction and other functions. Neither the language of the claim nor the teachings of the specification bar the plug from any additional structure or additional function. Thus, we cannot read the term "plug" as narrowly as Furukawa argues we should.[10] In claim 17, the plug must block the downward motion of the core[11] and must be fusible. We decline the invitation to read additional limitations into the term.

THE APPLIED PRIOR ART

Claims 17 and 20-24 have been rejected under 35 U.S.C. 102(e) as anticipated by a patent to Berkey.[12] In particular, the examiner points to the

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[8] *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1342, 59 USPQ2d 1401, 1416 (Fed. Cir. 2001).
[9] Br. 5.
[10] *In re Morris*, 127 F.3d 1048, 1056-57, 44 USPQ2d 1023, 1029-30 (Fed. Cir. 1997) (noting the applicant's obligation to make the claim conform to the scope the applicant says it has).
[11] Note that even in Furukawa's disclosure, the plug does not accomplish its function alone. Rather it is "supported" inside the tube by a pin, which corresponds to the claimed fusible fixing member.
[12] George E. Berkey, *Method of making an optical fiber by placing different core tablets into a cladding tube*, US 6,434,975 (issued 20 August 2002) (Berkey).

"Fiber Fabrication" section of Berkey.[13] Berkey prepares core preforms "by any known process."[14] The preforms are divided into tablets **81**, **82**. Each tablet has a core and a cladding (e.g., **83** and **84**, respectively).[15]

The tablets **81**, **82** are inserted into a tube **90**. The tube **90** has dents **98**, **99** at either end to retain the tablets **81**, **82**.[16] The tube **90** is coated in glass particles or soot **91**.[17] The overall insert assembly **94** is lowered into a furnace **95** where the fusing surfaces inside the tube **90** are cleaned and then fused.[18] The resulting fused assembly **98**[19] is suitable for drawing into an optical fiber.[20]

Berkey also teaches an alternative method without the retaining dents **98**, **99**. In this alternative, a glass capillary tube **104** is fused to the lower end of the tube **90** to retain the tablets **81**, **82**.[21]

Furukawa contends that Berkey uses dents rather than the claimed plugs to retain the core. Furukawa further contends that neither Berkey's dents nor Berkey's tablets can be read to be either plugs or fusible fixing members.[22]

The examiner's positions are best understood with reference to Berkey's FIG. **7** (annotation added):

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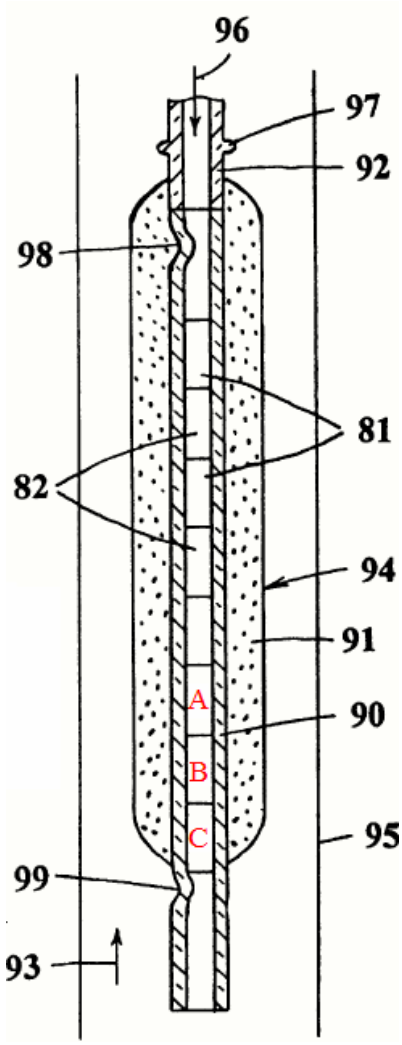
[13] Berkey 6:26-8:39; FIGS. **7-11**.
[14] Berkey 6:28-37.
[15] Berkey 6:44-51; FIG. **8**.
[16] Berkey 6:52-60 and 7:3-6.
[17] Berkey 6:60-67; FIG. **9**.
[18] Berkey 7:7-61.
[19] In Berkey, "**98**" is confusingly used to indicate both the upper dent (FIG. **7**) and the resulting fused assembly (FIG. **10**).
[20] Berkey 8:5-9.
[21] Berkey 8:31-39; FIG. **11**.
[22] Br. 4-5.



Berkey's FIG. **7** shows the tube **90** in a furnace muffle **95** with the core tablets **81**, **82** and the retaining dents **98**, **99**. For this opinion, the lower three tablets have been labeled **A**-**C** to aid discussion. The examiner offers alternative readings of claim 17 onto FIG. **7**. The tube **90** and the tablets **81**, **82** are eventually fused so all qualify as "fusible".

Alternative I

In one reading, tablet **B** is the core rod, tablet **C** is the plug, and the bottom dent **99** is the fusible fixing member. According to the examiner, the creation of the bottom dent **99** reads on the step of "engaging the fusible

fixing member with the outer overclad tube…, thereby fixing the plug inside".[23]

Alternative II

In a second reading, the top dent **98** is the fusible fixing member (with the plug and the core represented by the corresponding top tablets.[24] The examiner relies on a passage in Berkey where the dent **98** is formed in the handle **92**, which is fused to the tube.[25] While the drying gas from the furnace (arrow **93**) approaches from the opposite end, both ends (including the handle **92**) are shown as inside the furnace muffle **95**.

Alternative III

In a third reading, the capillary tube **104** is the fusible fixing member, with tablets **B** and **C** providing the core and plug, respectively.[26] The capillary tube **104** is fused to the bottom of the tube **90**.[27]

Alternative IV

In the final reading, tablets **A**, **B**, and **C** are the core, plug, and fusible fixing member, respectively.[28]

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[23] Ans. 5.
[24] Ans. 5.
[25] Berkey 6:52-60.
[26] Ans. 5.
[27] Berkey 8:31-39; FIG. **11**.
[28] Ans. 6.

ANALYSIS

The examiner has certainly complied with his obligation to read the claims broadly, but Furukawa contends the reading is not reasonable.

Alternative I, in which the bottom dent **99** is the fusible fixing member, is reasonably consistent with claim 17 except in its treatment of the "providing a fusible fixing member" and "engaging the fusible fixing member with the outer overclad tube". The examiner contends that creating the dent **99** meets the engaging step, but if so what meets the providing step? Moreover, it stretches ordinary understanding to say that creating a dent in a tube is the same as "engaging [the dent] with the…tube". We find the engaging step is missing in this alternative.

Alternative II, in which the top dent **98** is the fusible fixing member, requires a frame-of-reference shift such that the top of Berkey's assembly is the "distal end" of the claims. The problem with this reading is that the specification pretty clearly defines "distal" to mean "lower".[29] If this were an obviousness rejection under 35 U.S.C. 103, it would be possible to apply a teaching from the top of the assembly to the bottom of the assembly. An anticipation rejection, however, must actually or inherently satisfy each limitation of the claim without resort to obvious modifications. We find that fixing the plug at the distal end is missing in this alternative.

Alternative III, in which the capillary tube **104** is the fusible fixing member, appears to meet the limitations of claim 17. The capillary tube **104** is separately "provid[ed] for fixing the plug [tablet **C**]" and then "engage[ed]" with the lower end of the tube **90** "thereby fixing the plug

[29] Specification (Spec.) 5.

[tablet **C**] inside…so that the distal end of the core rod [tablet **B**] is blocked from sliding downward". The appeal brief does not provide argument for the other claim limitations and, in any case, they appear to be met in this alternative. We find this reading of claim 17 onto Berkey establishes a facially sufficient case of anticipation.

Alternative IV, in which the bottom tablet **C** is the fusible fixing member, does not appear to be consistent with Berkey. Berkey provides a bottom dent **99** or a fused capillary tube **104** to retain tablet **C**. Berkey does not otherwise provide a bottom restraint for tablet **C** and appears to expect tablet **C** to require the further restraint at least until the components are fused, after which the presence of a bottom restraint is moot. We find that the fusible fixing member is missing from this alternative.

HOLDING

The Berkey patent anticipated claim 17. The other rejected claims, having not been argued separately, fall with claim 17. The rejection of claims 17 and 20-24 under 35 U.S.C. 102(e) is—

AFFIRMED

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Law Office of Leo Zucker
25 BANK ST STE 221L
PO BOX 1194
WHITE PLAINS NY 10602-1194