UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte **KRISHNA SRINIVASAN**
and BRIAN E. DUFFY

Appeal 2007-0512
Application 10/310,744[1]
Technology Center 1700

Decided: May 1, 2007
On Brief

Before: FRED E. McKELVEY, *Senior Administrative Patent Judge*, JAMES T. MOORE, and MARK NAGUMO, *Administrative Patent Judges*.

NAGUMO, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Application for patent filed 5 December 2002 as a division of application 09/190,373, which was filed 12 November 1998, now issued as U.S. Patent 6,536,498. Appellants identify the real party in interest as Building Materials Corporation of America. (Corrected Appeal Br. filed 13 February 2006 ("Appeal Br".).

A. Statement of the Case

Appellants appeal under 35 U.S.C. § 134 from the final rejection of claims 26, 27, 29, 30, 33, 34, 36, and 38–44.[2] A subset of the appealed claims has been rejected for lack of an adequate written description under 35 U.S.C. § 112, first paragraph. The complementary subset of claims has been rejected as anticipated under 35 U.S.C. § 102(e). We have jurisdiction under 35 U.S.C. § 6(b). For the reasons that follow, we affirm.

BACKGROUND

The claims on appeal cover an apparatus for welding sheets of thermoplastic roofing material together. The record indicates that a strip of such material is laid down at one side of the roof. The strip is secured to the roof by placing a batten bar or a line of stress plates on the strip near the inner edge. The bar or plates are then nailed or screwed to the roof. A second strip of material is then laid down parallel to the first and overlapping the secured line. Heat and pressure are applied to the material in the overlapping region to weld the two strips together. According to Appellants, the prior art only provided welds on either side of the secured line, which led to undesirable bubbles or air pockets over the fastening means. (Specification at 5.) Appellants seek patent protection for an apparatus that provides a substantially continuous weld seam from one side of the secured line across to the other side of the secured line.

The disputed issues involve (1) whether the subject matter of certain claims on appeal is anticipated by the prior art; and (2) the meaning of the term "channel" as it appears in the remainder of Appellants' amended claims.

[2] Claims 12–25 are subject to a restriction requirement and have been withdrawn from consideration.

Some of the procedural history of the prosecution of the application provides helpful context for the issues in this appeal. The application on appeal was filed on 5 December 2002, as a division of original application 09/190,373, which was filed on 12 November 1998, and which had been allowed. On 26 August 2003, U.S. Patent 6,610,159 B2 ("Henegar") was issued to Jeffrey W. Henegar and assigned to BFS Diversified Products, LLC, based on an application filed 27 July 2001. On 17 September 1993, Appellants filed a preliminary amendment adding claims 25-37, drawn to apparatuses; Appellants also filed a petition to make the application special, for rapid processing, alleging commercial sales of devices that would infringe the apparatus claims. In due course, the Examiner issued an action on the merits (20 November 2003, "FAOM"), in which, *inter alia*, the potential of an interference with Henegar was noted, due to apparently copied claims (FAOM at 3 and 9); and rejections for lack of written description and for anticipation under 35 U.S.C. § 102(e) over U.S. Patent 5,935,357 to Michael J. Hubbard and John Jordan ("Hubbard") were entered. Although the claims have been amended since, the basic issues on appeal were joined at that time. Further prosecution eventually led to the present appeal.

B. FINDINGS OF FACT

The following findings of fact[3] and any set out in the Discussion are supported by a preponderance of the evidence of record.

[3] Any conclusions of law should be treated as such.

The claimed subject matter

1. Claims 26 and 27 are representative of the issues involved in this appeal.

2. Claim 26 reads (emphasis added):

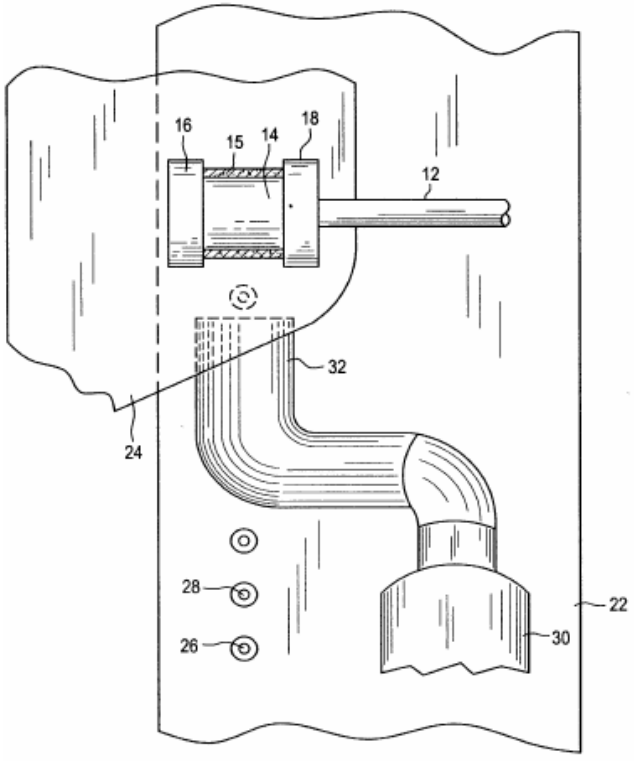
> An apparatus for seaming roofing membranes, wherein one of the membranes is secured to an underlying support structure by at least one protruding fastener, the apparatus comprising:
>
> a carriage;
>
> a heating assembly carried by said carriage, said heating assembly generating heat capable of bonding the membranes to one another; and
>
> a seaming assembly carried by said carriage, said seaming assembly directing the generated heat to the membranes while also applying pressure to the membranes so as to form a substantially continuous width seam.

3. Claim 27 reads (emphasis added):

> The apparatus according to claim 26, wherein said seaming assembly comprises:
>
> a nozzle for directing heated air between the membranes, said nozzle having at least two channels, wherein one of said channels is slightly elevated so as to forms a gap sized to pass over the at least one protruding fastener.

4. Appellants describe the seaming assembly with respect to Figure 7, shown here:

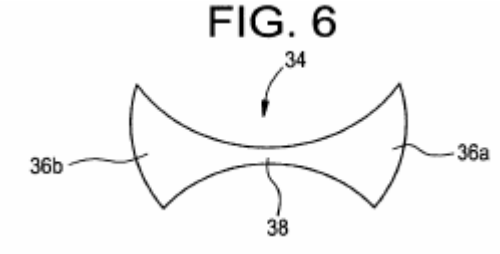
FIG. 7



> Pressure roller **10** [not labeled: **10** comprises **12**, **14**–**16**, and **18**] having distal end **16** and proximal end **18** travels on both sides of fastening means **26** exerting sufficient pressure onto the overlapped portion of the overlapping thermoplastic sheets [**22** and **24**] to produce a weld therebetween. * * * Portions of the rubber cushion [**15**] directly over the fastening means are compressed, while portions of the rubber cushion adjacent to the fastening means conform to the underlying second thermoplastic sheet and in sufficiently tight contact therewith to expel air from between the overlapping portions of the thermoplastic sheets so as to allow formation of air pockets or bubbles.

(Specification at 9, bracketed labels added for clarity.)

5. Appellants describe the hot air nozzle in terms of Figure 6, shown here:



> opening **34** comprises large openings **36a** and **36b** and a restricted opening portion **38** between **36a** and **36b**. It was found that the restricted opening portion **38** still allows sufficient outflow of heated air to sufficiently soften the overlapping portion of the thermoplastic sheets over and under the fastening means in order to weld the thermoplastic sheets together over the interposed fastening means.

(Specification at 9, emphasis added.)

Hubbard

6. U.S. Patent 5,935,357 issued to Michael J. Hubbard and John Jordon on 10 August 1999, based on original application 08/803,356, filed 20 February 1997.

7. Hubbard Figure 7 is reproduced here:

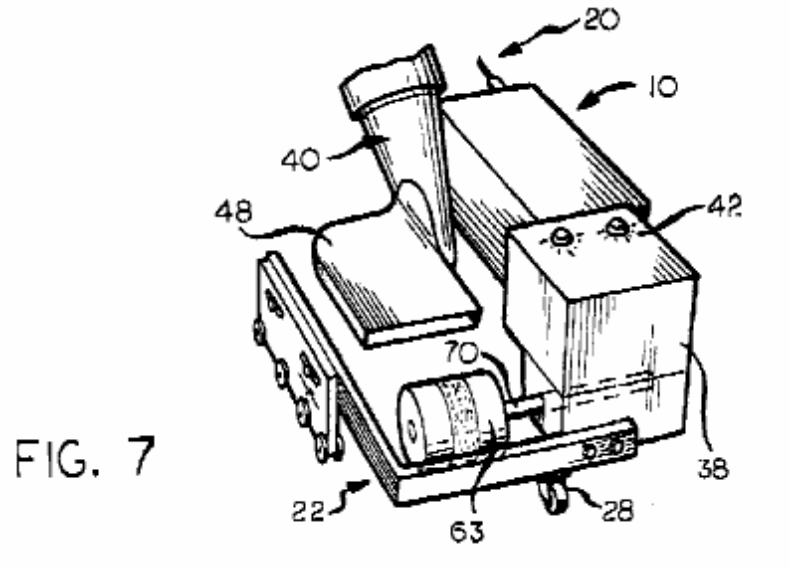


FIG. 7

8. Hubbard describes the apparatus as follows: "[a]ttached to the chassis **22** is the hot air welder **200** [sic: **20**] The hot air welder **20** includes a heating element for heating air and a blower for blowing the heated air to a nozzle **40** for selective distribution . . . ." (Hubbard at col. 5, ll. 53–66.)

9. Hubbard describes two distinct embodiments of weld wheels, one of which is shown in Figure 7, and a second, in which the middle, stipled portion, is absent:

> The roof membrane welding apparatus **10** may also include at least two weld wheels **62** and **64** or a weld wheel **63** made of a duo-durometer material having a soft middle material and a hard outer material. The duo-durom[e]ter material may be a urethane, silicone or a foam material and the like, having a Shore A hardness of about 50 or more for hard outer material and of about 40 or less for the soft middle material. It will be appreciated that the weld wheels **62** and **64** or weld wheel **63** must allow the roof membrane fasteners to pass between the weld wheels or underneath the weld wheel and allow the weld wheels to simultaneously press the first membrane **12** and the

> second membrane **14** against the roof deck **16** on both sides of the roof membrane fasteners.

(Hubbard at col. 7, ll. 29-42 (emphasis added) (items 12, 14, 16, 62, and 64 are illustrated in, e.g., Figure 19, which is not reproduced in this decision.)

10. Hubbard also states, with respect to the nozzle **40**:

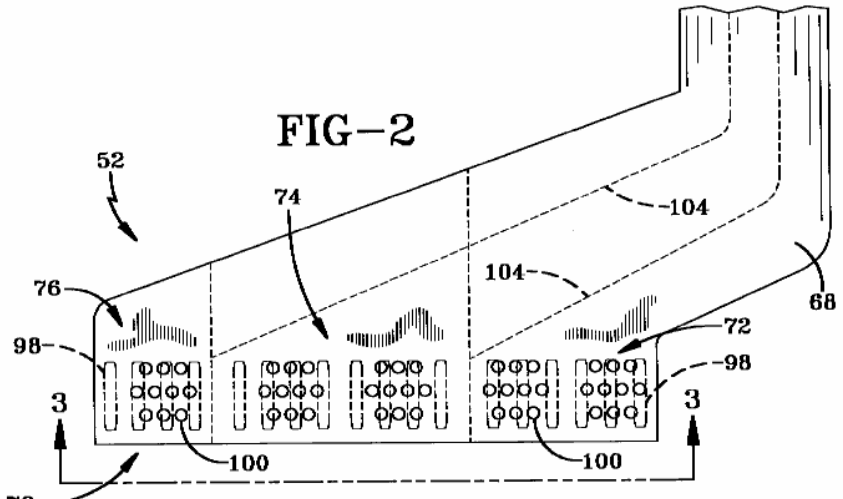
> [r]eferring to FIGS. **1-9, 10**, **13** and **14**, the flow of heated air from the outlet id [inner diameter] may be from a single opening **50** and span across the entire width of the roof membrane fastener **18** to form a heat sealing weld on each side of the fastener . . . .

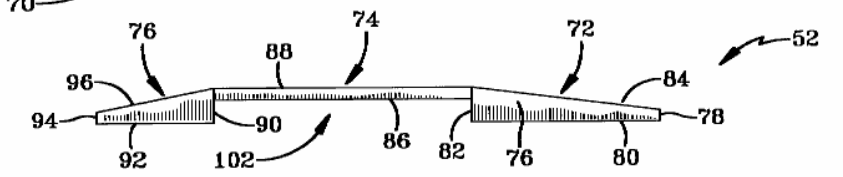
(Hubbard at col. 6, ll. 32–35; emphasis added.)

Henegar

11. Henegar Figures 2 and 3 are reproduced here:

FIG–2





FIG–3

12. Henegar describes the nozzle of its invention in terms of "channels" at column 3, l. 40, through column 4, l. 33, with reference to Figures 1-4.

13. Henegar states,

> The nozzle [**52**] includes a plurality of channels, and, in particular, a proximal channel **72** which is closest to the elbow **68**. . . . The proximal channel **72** includes a side **78** that is substantially perpendicular with a bottom plate **80** that is positioned adjacent the top surface of the bottom membrane **56**. Extending substantially perpendicularly upward from the bottom plate **80** is an inner side **82** which is substantially parallel with the outer side **78**.

(Henegar at col. 3, ll. 49–60.)

14. Henegar describes center channel **74** and distal channel **76** in similar terms. (Henegar at col. 3, l. 60, through col. 4, l. 9.)

15. Henegar also describes the interior of the nozzle in the following words:

> Extending from the inner sides **82** and **90** are vanes **104** which are internal to the nozzle **52**. The vanes extend from the inner sides and are proportionally positioned within the nozzle and heat duct so as to direct the heated airflow equally along the entire width of the nozzle **52**. This provides a uniform heat gradient so as to ensure uniform bonding between the membranes in the seaming area.

(Henegar at col. 4, ll. 27–33.)

The Rejections

Rejection over Hubbard

16. The Examiner rejects claims 26, 30, and 38–42 as anticipated under 35 U.S.C. § 102(e) over Hubbard.

17. The Examiner finds that Hubbard describes, in Figure 7 and in the text at column 5, ll. 63–66, and column 7, ll. 29-42, an apparatus that meets all the limitations of the cited claims. (Answer at 5–6.)

18. In the Examiner's words, "[t]he pressure is applied by a variable pressure assembly comprising a pressure roller (weld wheel) [**63**] made of duo-durometer material having a soft elastomeric middle material and a harder outer material on either side such that the harder outer material on either side of the soft middle material provides a constant pressure source and the soft elastomeric middle material provides a variable pressure source in that it is compressed by protruding fastening means and conforms to the shape of the protruding fastening means as it passes over the fastening means (Figure 7; column 7, lines 29-42)." (Answer at 6.)

19. Appellants deny that Hubbard anticipates the claimed subject matter, arguing that, "[a]t Column 7, lines 36-41, Hubbard teaches 'weld wheel 63 (the duo-durometer embodiment) must allow the roof membrane fasteners to pass between the weld wheels or underneath the weld wheel and allow the weld wheels to simultaneously press the first membrane 12 and the second membrane 14 against the roof deck 16 <u>on both sides of the roof membrane fasteners</u>.'" (Appeal Br. at 12; emphasis original.)

20. Appellants conclude that "Hubbard cannot form a substantially continuous width seam since its center portion is provided to run over a batten bar. Hubbard makes a dual weld on either side of the batten bar and never a single continuous weld across the entire width of the weld wheel as in the present invention." (Appeal Br. at 12.)

21. The Examiner's response to that argument was that "[t]he provision of the softer rubber material between the harder rubber components on wither [sic: either] side of the pressing roller mechanism in Hubbard et al was clearly able to form a continuous width seam along the roof membrane as the soft component to the roller allowed one to more easily apply pressure in those regions where the fasteners protruded from the surface by virtue of the soft elastic material in the central region of the roller." (Answer at 9.)

22. Appellants maintain their position in the Reply Brief, urging that "[w]hat is different about the present invention is that the weld wheel is constructed to form a weld across its entire width. The weld wheel is structurally different than that found in Hubbard." (Reply Br. at 4.)

23. Appellants cite no authority, whether testimony by a knowledgeable person, technical reviews, or other technical publications, in support of their arguments.

Rejections for lack of written description

24. The Examiner rejects claims 27, 29, 30, 33, 34, 36, 43, and 44 as lacking an adequate written description in the specification as filed for the term "channel." (Final Rejection mailed 13 June 2005 ("Final Rejection") at 2–4; and Examiner's Answer mailed 6 July 2005 ("Answer") at 3-5.)

25. With regard to claims 27, 33, and 43, the Examiner finds that there is no basis in the originally filed specification for the limitation "said nozzle having at least two channels . . ." (emphasis added.) (Answer at 3-4.)

26. More particularly, the Examiner finds, "[o]ne skilled in the art would have recognized that that nozzle taught in the disclosure has a single channel

(opening) and that separate channels would have clear demarcations such as sidewalls and there is no suggestion of having at least two channels in the nozzle described in the disclosure." (Answer at 4.)

27. The Examiner also finds that "[t]he appellant has presented these claims in a effort to provoke interference with U.S. Patent 6,610,159, where the reference to U.S. patent '159 clearly disclosed separate channels as depicted in figure 2 therein where vanes 104 separated the individual channels." (Answer at 4.)

28. With regard to claims 29 and 44, the Examiner finds that there is no description of a nozzle having three channels. (Answer at 5.)

29. With regard to claim 36, the Examiner finds that there is no description of a nozzle having a plurality of channels.

30. Throughout prosecution, the Examiner has found that the term "channel" applies to structures such as those disclosed by Heneger as having including walls and an opening that separate one channel from an adjacent channel, as opposed to structures such as the nozzle shown in Appellants' Figure 6.

Appellants' argument

31. Appellants urge that "[t]he channels are recognized by one skilled in the art due to the different flow paths and dynamics of the fluid not due to any demarcated sidewalls." (Brief at 10.)

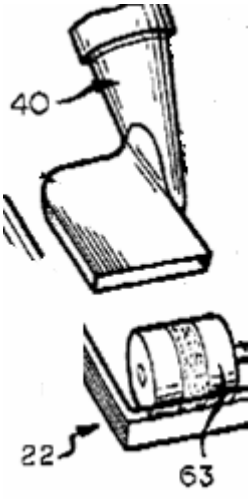
32. Before the Board, Appellants cite no testimony from one knowledgeable in the art, nor any other evidence of the use of that term by the prior art, such as review articles, technical encyclopedias or dictionaries, or examples of use of the term "channel" in the prior art.

C. Discussion

Anticipation by Hubbard

The only error raised by Appellants with respect to the rejection over Hubbard is whether the apparatus shown in Hubbard Figure 7 can produce a substantially continuous width welded seam. We hold that all other arguments previously made before the Examiner and not repeated in the appeal brief have been waived.

The critical part of Figure 7 is reproduced here:

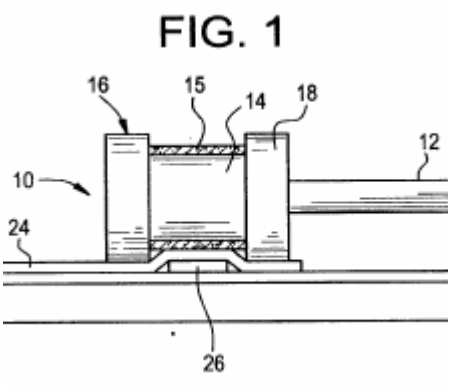


Part **40** is a nozzle that delivers hot air through the flattened opening facing weld roller **63**. In Appellants' words, "Hubbard cannot form a substantially continuous width seam since its center portion is provided to run over a batten bar. Hubbard makes a dual weld on either side of the batten bar and never a singe continuous weld across the entire width of the weld wheel as in the present invention." (Appeal Br. at 12.) Appellants do not rely on any evidence, other than Hubbard itself, in support of their arguments. In response, the Examiner answers: "[t]he provision of the softer rubber material between the harder rubber components on wither [sic: either] side

of the pressing roller mechanism in Hubbard et al. was clearly able to form a continuous width seam along the roof membrane as the soft component to the roller allowed one to more easily apply pressure in those regions where the fasteners protruded from the surface by virtue of the soft elastic material in the central region of the roller." (Answer at 9.)

We find that weld wheel **63**, as depicted, has a level surface — i.e., the hard outer portions are level with the softer inner (stippled) portion. Moreover, we observe that Hubbard teaches that the hard outer material has a Shore A hardness of about 50 or more, while the soft middle material has a hardness of about 40 or less. (Hubbard at col. 7, ll. 30-36.)

Appellants describe the way their roller works in the following words (bold labels added for reference to Figure 1, shown here):



> Portions of the rubber cushion [**15**] directly over the fastening means [**26**] are compressed, while portions of the rubber cushion [**24**] adjacent to the fastening means conform to the underlying second thermoplastic sheet [**22**] and in sufficiently tight contact therewith to expel air from between the overlapping portions of the thermoplastic sheets so as not to allow formation of air pockets or bubbles.

(Specification at 10.) Appellants disclose a number of suitable elastomeric materials, and teach, "[t]he durometer of the various elastomeric materials

should preferably be in the range of from about 25 to 80 Shore A." (Specification at 8.)

We conclude that the Examiner has set out an insightful and accurate analysis of the function of weld wheel **63.** The similar structures of Hubbard's weld wheel **63** and Appellants roller **10**, together with the overlap in hardness taught by both for the soft middle material leave us in no doubt that, in similar circumstances, they would perform similar functions. The appearance of the nozzle opening in Figure 7, spanning the entire width of the fastener region, is no accident. Hubbard states, with respect to nozzle **40**, "[r]eferring to FIGS. **1–9**, **10**, **13** and **14**, the flow of heated air from the outlet id [inner diameter] may be from a single opening **50** and span across the entire width of the roof membrane fastener **18** to form a heat sealing weld on each side of the fastener . . . ". (Hubbard at col. 6, ll. 32–35; emphasis added.) We find that Hubbard teaches that the nozzle assembly shown in Figure 7 and the other figures listed, heats up the roof membrane material on both sides and on top of the fasteners. On the present record, the weight of the evidence strongly supports the finding that the "soft" center portion of weld wheel **63** in Figure 7 would press down on the heated membrane covering the roof membrane fastener at least as firmly as—if not more firmly than—the elastomeric center portion of Appellants' roller **10**. Indeed, in the absence of a recessed section**,** the contact between the center of the roller and the roof membrane would be expected, reasonably, to be even firmer in the apparatus shown in Hubbard Figure 7. Just as Appellants' roller **10** creates a continuous weld across the faster line, so would Hubbard's roller **63** in combination with the wide blower shown in Figure 7. *Cf. In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

("[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.")

Although, as Appellants point out, the center region of roller **63** is "provided to run over a batten bar" (Appeal Br. at 12), Appellants have not directed out attention to any evidentiary support for their finding that the apparatus shown in Hubbard Figure 7 would only make a weld simultaneously on both sides of the roof membrane fastener. Thus, the weight of the evidence supports the Examiner's finding.

Appellants have argued no other error in the Examiner's rejection. Accordingly, the Examiner's rejection for anticipation by Hubbard is AFFIRMED.

Written Description

Whether the written description requirement has been met is a question of fact. *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1323, 56 USPQ 2d 1481, 1483 (Fed. Cir. 2000) ("[the inquiry into whether the written description requirement has been met] is a factual one and must be assessed on a case-by-case basis." (citation omitted)). Appellants do not dispute that their specification, as filed, did not contain the term "channel," which now occurs in claims 27, 29, 30, 33, 34, 36, 42, and 44. The record shows that Appellants introduced these claims in order to provoke an interference with Henegar. Appellants also do not dispute the Examiner's finding that Henegar "clearly disclosed separate channels as depicted in figure 2 therein where vanes 104 separated the individual channels." (Answer at 4.)

Appellants argue that "channels are recognized by one skilled in the art due to the different flow paths and dynamics of the fluid not due to any demarcated sidewalls." (Appeal Br. at 10.) According to Appellants, the original disclosure, e.g., of the nozzle in Figure 6, showing wide and narrow regions, would have been recognized as producing multiple channels. (Appeal Br. at 10–11.) Appellants do not cite any evidence, whether testimony from one knowledgeable in the art, review articles or treatises, or instances in the prior art, in support of their argument as to how the term "channel" would have been understood by those skilled in this art.

On the present record in this appeal, Henegar stands as the only evidence of how this art has used and understands the term "channel." Henegar discusses channels in some detail at column 3, l. 40, through

column 4, l. 33; and in all of that discussion, channels are defined by interior walls in the nozzle in addition to the exterior walls of the nozzle. We observe that during prosecution the Examiner and the Appellants traded dictionary definitions of the word "channel." *See*, *e.g.*, arguments filed with the amendment filed 18 May 2004, at 13 (citing Webster's New Universal Unabridged Dictionary, 2d ed. (1983); Answer at 7, evidently quoting (but not citing) Webster's 3d Int'l Dictionary. Although claim terms are to be given their broadest reasonable interpretation consistent with the original disclosure, the introduction of a term not previously used raises other issues, particularly when that term is introduced to provoke an interference with an issued patent.

In the present case, it would seem, Appellants believe they should be the senior party in an interference with Henegar, and they introduced claims 26–42 for that purpose. (Request by Applicant for Interference with Patent Under 37 C.F.R. § 1.607, filed 24 April 2004, at 18.) Appellants have declined the Examiner's invitation to use their own terminology and to argue that such claims interfered with the claims of Henegar. (*See, e.g.*, Final Rejection mailed 13 June 2005, paragraph bridging 3-4; Answer at 7-8.) The difficulty for Appellants, however, is that obviousness does not serve as a proxy for written description. *Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997) ("Entitlement to a filing date does not extend to subject matter which is not disclosed but would be obvious over what is expressly disclosed. It extends only to that which is disclosed . . . The question is not whether a claimed invention is an obvious variant of that which is disclosed in the specification. Rather, a prior application itself must describe an invention, and do so in sufficient

detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought.")

In the present case, the preponderance of the evidence, namely, Henegar, indicates that the term "channel" is used in this art (controlling the flow of gases) to denote the use of enclosed structures, such as tubes. Appellants have not offered credible evidence to the contrary. We accord definitions taken from general, non-technical dictionaries, little weight as to how those skilled in this art would have understood this term because it is from the vantage of those skilled in the art that we must strive to understand the claimed subject matter. *Multiform Desiccants, Ind. v. Medzam, Ltd.*, 133 F.3d 1473, 1477, 45 USPQ2d 1429, 1432 (Fed. Cir. 1998) ("It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field.") Accordingly, the Examiner's rejection for lack of written description supporting the term "channel" and its variants is AFFIRMED.

Remarks on provoking interferences

We take this opportunity to reinforce what has been said on many other occasions and circumstances, including other decisions on appeal: applicants seeking to provoke an interference with a patentee having claims that use a different terminology are strongly advised to present claims that they regard as interfering with the patentee's claims *in the terminology of their own application's disclosure*, rather than copying the terminology and claims of their would-be opponent. They must, of course, argue that their

claimed subject matter is patentably indistinct over the patentee's claimed subject matter, *and vice-versa*, under 37 C.F.R. § 41.203(a) (commonly known as the "two-way test"); but they do not have to fight the additional battle of showing that their originally filed specification supports their novel use of the patentee's term. In cases such as this, where, perhaps, a broad construction of the term "three channels" might encompass their disclosed nozzle having a narrow section adjacent to wide sections on either side, the applicants, even if successful in surmounting the written description threshold, would still have to show that the "two-way test" is satisfied. That is, that the provision of multiple openings of adjacent pipes taught by patentees would have been recognized by those of ordinary skill in the art as obvious over a single opening with variations in flow across the opening taught by applicants, and *vice-versa*. Such a showing requires evidence, not mere attorney argument.

The Examiner's approach has been commendable. Rather than permitting patentability decisions to be shifted into an interference, the Examiner has dealt with them during *ex parte* prosecution. Moreover, he has supported both of his rejections with evidence and sound reasoning. And, while tackling the often patent-law technical issues surrounding written description, he endeavored not to let procedural technicalities slow down the appeal process. (See the Answer at 9-10, providing Appellants the opportunity to complete the record while responding to their substantive arguments, rather than delaying matters by insisting on an amended Appeal Brief.) Even had we reversed and proceeded to declare an interference, the Examiner's approach, namely, to resolve issues of patentability during *ex*

parte prosecution prior to forwarding the application to the Board with a suggestion for an interference, would have been proper and correct.

D. Decision

Upon consideration of the record and for the reasons given, the Examiner's rejections are AFFIRMED.

The Examiner rejection of claims 26, 30, and 38–42 as anticipated under 35 U.S.C. § 102(e) over Hubbard is AFFIRMED.

The Examiner's rejection of claims 27, 29, 30, 33, 34, 36, 43, and 44 as lacking an adequate written description under 35 U.S.C. § 112, ¶ 1, 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

lp
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