UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID MACHER, HEINZ ZORN, and GERHARD SCHREINER

Appeal 2008-0283
Application 10/182,660
Technology Center 3700

Decided: April 30, 2008

Before JENNIFER D. BAHR, JOSEPH A. FISCHETTI, and JOHN C. KERINS, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

David Macher et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1 through 17. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

THE INVENTION

The Appellants' invention is directed towards an apparatus for drying shoes, gloves or articles of clothing using an electrically operated fan 12 contained in a housing 1 (Spec. 4, l. 32 through Spec. 5, l. 7 and fig. 2). The housing 1 includes two opposed openings 13 which each engage a pipe socket 2.3 by a flange 3 in a form-locking connection (Spec. 5, ll. 14-23 and fig. 1). The pipe sockets 2.3 are connected further to pipes 2.1 and 2.2 for conduction of the air stream towards an air outlet 6 (Spec. 6, ll. 4-26; Spec. 7, ll. 27-29; fig. 1). The form-locking connection between pipe socket 2.3 and housing 1 forms a pivot joint that allows pipe socket 2.3 to be rotated 1 to 360° relative to the housing 1 (Spec. 5, l. 35 through Spec. 6, l. 3).

Claim 17 is representative of the claimed invention and reads as follows:

> 17. Apparatus for drying shoes, gloves or articles of clothing with an air stream-generating fan which is contained in a housing,
>
> wherein the housing comprises at least one air outlet opening which is connected to two oppositely mounted pipe sockets attached to the housing and wherein the pipe sockets are connected to pipes for further conduction of the air stream, and
>
> wherein further the pipe sockets are angled and one end of each pipe socket is rotatably connected to the housing, forming a pivot joint, wherein the end of each pipe socket engages in an opening, wherein a circumferential wall of the opening and the end of the pipe socket form with each other a form-locking connection.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Greenlaw	US 3,052,490	Sep. 4, 1962
Lafleur	US 5,287,636	Feb. 22, 1994
Sloan	US 5,289,642	Mar. 1, 1994
Rice	US 5,720,108	Feb. 24, 1998

The following rejections are before us for review:

Claim 17 stands rejected under 35 U.S.C. § 102(b) as anticipated by Sloan.

Claims 1, 3, 5-10, 12-13, and 15-16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sloan in view of Greenlaw.

Claims 2, 11, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sloan in view of Greenlaw and in further view of Lafleur.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Sloan in view of Greenlaw and in further view of Rice.

The Examiner provides reasoning in support of the rejections in the Answer (mailed May 2, 2007). The Appellants present opposing arguments in the Appeal Brief (filed February 22, 2007) and the Reply Brief (filed July 2, 2007).

OPINION

The anticipation rejection based on Sloan

Sloan discloses an apparatus for drying ski boots including an air means 14 and a distribution means 10 for distributing the air inside a ski boot 12 (col. 2, ll. 7-10 and fig. 1). The distribution means 10 includes a collar 16 having a first opening 20 in a connector 18 to communicate with

the air means 14 and opposed, circular openings 22 to communicate with shoulder connectors 28 (col. 2, ll. 18-24 and ll. 43-63, and fig. 1) (pipe sockets), upper tubes 34 (col. 3, ll. 15-36 and fig. 1), flexible joints 40 (col. 3, ll. 46-47 and fig. 1), lower tubes 46 (col. 3, ll. 58-60 and fig. 1), and an aeration ball 52 (col. 4, ll. 38-43 and fig. 1). The shoulder connectors 28 are "frictionally held within the central portion 24" of the collar 16 (col. 3, ll. 3-4 and figs. 1-2).

The Appellants argue that the frictional fit of Sloan does not constitute a "form-locking connection" (App. Br. 6 and Reply Br. 2). According to the Appellants, "[a] frictional fit is a temporary connection between two parts that can be disconnected from [one] another," whereas a "form-locking connection" is a connection "between two parts that cannot be disconnected from one another" (App. Br. 6 and Reply Br. 2-3). In response, the Examiner contends that because "there is no structure defined for the term 'form-locking connection' in the broad claim 17," the frictional fit connection taught by Sloan satisfies the limitation of a "form-locking connection" (Ans. 7). Specifically, the Examiner takes the position that because the housing and the pipe sockets (shoulder connectors 28) of Sloan are connected such as to form an "integral body 'form-locked' against each other and not movable," the frictional fit of Sloan is a "form-locking connection" (Ans. 7).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The issue presented in the appeal of the rejection

of Claim 17 is whether the "frictional fit" of Sloan constitutes a "form-locking connection."

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)). We find that a person of ordinary skill in the art would understand a "form-locking connection" to be a connection that "connects two elements together due to the shape of the elements themselves" (*See* U.S. Patent No. 5,566,540, issued Oct. 22, 1996, col. 5, ll. 60-67). Further, we find that the ordinary and customary definition of "locking" is "to make fast, motionless, or inflexible esp. by the interlacing or interlocking of parts" (*Merriam Webster's Collegiate Dictionary* 684 (Tenth Ed. 1997)). Furthermore, we find that "interlocking" means "to connect so that the motion or operation of any part is constrained by another" (*Merriam Webster's Collegiate Dictionary* 611 (Tenth Ed. 1997)). Therefore, we find that a "form-locking connection" between two parts requires the interlacing or interlocking of the two parts such that the motion of one part is constrained by the other due to the shape of the two parts.

In the Appellants' invention, although the pipe sockets 2.3 can rotate relative to the housing 1, the pipe sockets 2.3 cannot be removed from housing 1 because of flange 3. Hence, the shape of pipe sockets 2.3 and housing 1 restrains transversal motion (perpendicular to the longitudinal axis of the drying device) while permitting rotational motion. However, in Sloan, the frictional fit is specifically designed to allow the pipe sockets

(shoulder connectors 28) to be rotated and pulled (disassembled) from the collar 16 (col. 3, ll. 11-15 of Sloan). We note that, contrary to a "form-locking connection," a frictional fit does not create a connection based on the shape of the two parts, but rather on the friction force developed between the contact surfaces of the two parts. When an external force overcomes the friction force between the two parts the connection between the two parts is broken. In conclusion, we find that the "frictional fit" of Sloan does not constitute a "form-locking connection." We therefore agree with the Appellants that Sloan does not disclose all the limitations of claim 17. As such, the rejection of claim 17 is reversed.

The obviousness rejection based on Sloan in view of Greenlaw

The issue presented in the appeal of the rejection of Claims 1, 3, 5-10, 12-13, and 15-16 is whether the Appellants have demonstrated that the Examiner erred in determining that the subject matter of claims 1, 3, 5-10, 12-13, and 15-16 is unpatentable over Sloan in view of Greenlaw. This issue turns on whether it would have been obvious for one of ordinary skill in the art to provide the flange portion of Greenlaw to create a form-locking connection between the pipe sockets and the housing in the drying apparatus of Sloan.

Greenlaw is directed towards a conduit fitting for securing a conduit within an opening of a panel member (col. 1, ll. 37-40). According to Greenlaw, the conduit fitting is a tubular member 10 that includes a collar member 13 extending from open end 12 (col. 2, ll. 28-34 and fig. 1). The collar member 13 includes a flange portion 13b that engages the opening portion 16 of the plenum chamber wall to positively secure the tubular

member to the wall (col. 2, ll. 38-47 and fig. 1). Similarly, the end portion 12 of the tubular member 10 includes a flange portion 17 that engages the opening portion 16 of the plenum chamber wall to positively secure the tubular member to the wall (col. 2, ll. 47-54 and fig. 1). Upon engagement, the conduit fitting is "rigidly secured" to the plenum chamber wall (col. 3, ll. 39-44 and fig. 3). We read the term "rigidly secured" to mean that once the conduit has been securely connected to the opening of the plenum chamber wall, the tubular member 10 cannot rotate.

The Examiner determines that it would have been obvious to one of ordinary skill in the art to provide the flange portion of Greenlaw to create a form-locking connection between the pipe sockets and the housing in the drying apparatus of Sloan (Ans. 4). The Appellants contend that because the connection between the tubular member 10 and the plenum chamber wall in Greenlaw does not permit the tubular member 10 to rotate, "a person of ordinary skill in the art would not look to a conduit meant for permanent use…for motivation in how to connect conduits for ease of disassembly" (App. Br. 7). We agree. As noted above, the frictional fit in the drying apparatus of Sloan is specifically designed such that the pipe sockets (shoulder connectors 28) can be rotated and pulled (disassembled) from the collar 16 (col. 3, ll. 11-15 of Sloan).

Where a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, the proposed modification would not have been obvious. *See Tec Air Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). "A reference may be said to teach away

when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

The connection of Greenlaw is a permanent connection that does not permit rotation. Therefore, we find that the flange portion of Greenlaw cannot be used to create a rotatable form-locking connection, nor to form a pivot joint, between the shoulder connectors 28 (pipe sockets) and the housing 1 in the drying apparatus of Sloan, as required by claim 1. Therefore, contrary to the Examiner's position, we do not find that the teachings of Sloan in view of Greenlaw, even if combined, would yield a pivot joint. In any event, Sloan, in seeking a rotatable connection capable of disassembly, would have discouraged one of ordinary skill in the art from providing the flange portion of Greenlaw to connect the shoulder connectors 28 to housing 1.

Accordingly, the modification proposed by the Examiner of providing the flange portion of Greenlaw to create a rotatable form-locking connection, to form a pivot joint, between the pipe sockets and the housing in the drying apparatus of Sloan would not have been obvious to the person of ordinary skill in the art. For the above stated reasons, we conclude that the Examiner has not discharged the initial burden of establishing a prima facie case of obviousness of the subject matter of claims 1, 3, 5-10, 12-13, and 15-16. Therefore, the rejection is reversed.

The rejections based on Sloan in view of Greenlaw and in further view of Lafleur and on Sloan in view of Greenlaw and in further view of Rice

Claims 2, 4, 11, and 14 depend from independent claim 1, and as such include all its limitations. We find that neither the application of Lafleur nor the application of Rice makes up for the deficiency in the combination of Sloan in view of Greenlaw as discussed above. Hence, the rejections under 35 U.S.C. § 103(a) of claims 2, 11, and 14 as unpatentable over Sloan in view of Greenlaw and in further view of Lafleur, and of claim 4 as unpatentable over Sloan in view of Greenlaw and in further view of Rice, are also reversed.

SUMMARY

The decision of the Examiner to reject claims 1 through 17 is reversed.

REVERSED

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