

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte DHARAPURAM N. SRINATH

Appeal No. 2002-1519
Application No. 09/433,344

ON BRIEF

Before ABRAMS, NASE, and BAHR, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the refusal of the examiner to allow claims 1, 2, 4 and 5, as amended subsequent to the final rejection. Claim 7 has been withdrawn from consideration. Claims 3 and 6 have been canceled.

We REVERSE.

BACKGROUND

The appellant's invention relates to fluidic mixing devices incorporating fluidic and vortical flow effects to enhance mixing of a fluent material with a carrier fluid (specification, p. 1). A copy of the independent claims under appeal (i.e., claims 1 and 4) is set forth below.

1. A fluid mixer and vortex distribution device comprising:
 - an oscillation and mixing chamber having an upstream end, a downstream end, top and bottom walls, curved sidewalls which diverge from said upstream end and converge towards said downstream end,
 - a power nozzle adapted to be coupled to a source of liquid under pressure for issuing a main jet of liquid into the upstream end of said oscillation and mixing chamber,
 - said oscillation and mixing chamber having a pair of control ports symmetrically contiguous to the side of said main jet of liquid, and an exit aperture at the downstream end of said oscillation and mixing chamber for the egress of fluids from said oscillation and mixing chamber to ambient, and one or more sources of fluent materials connected to said control ports,
 - whereby any vacuum caused by said main jet of liquid at said control ports entrains said fluent material and forming vortices on either side of said jet of liquid and create oscillation of the liquid jet exiting out and mixing entrained fluent material with said main jet of liquid in said oscillation and mixing chamber to form a mixture prior to passing through said exit aperture to a point of utilization, and said oscillation of the liquid jet stops when entrainment of said fluent material through said control port ceases.

4. A fluidic mixer comprising:
 - a housing having an oscillation vortex mixing chamber with an upstream end and a downstream end, said oscillation vortex mixing chamber having a pair of curved sidewalls which first diverge in a downstream direction from said upstream end to a point of maximum divergence and then converge towards said downstream end,
 - a power nozzle at said upstream end of said oscillation vortex mixing chamber, said power nozzle being adapted to be coupled to a source of carrier liquid under pressure for issuing a jet of carrier liquid into said oscillation vortex mixing chamber,

at least one outlet from said mixing chamber, and
a pair of control ports at said upstream end of said oscillation vortex
mixing chamber such that said jet of carrier liquid entrains fluent material
alternately from said control ports,
and passages for coupling said pair of control ports to one or more fluent
material source for mixing by vortex-action in said oscillation vortex mixing
chamber with said jet of carrier liquid prior to exiting from said oscillation vortex
mixing chamber through said at least one outlet,
whereby when said jet of carrier liquid entrains fluent material from said
control ports, said jet of carrier liquid oscillates and oscillation of said jet of
carrier liquid stops when entrainment of fluent material through said control ports
ceases.

Claims 1 and 4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by
U.S. Patent No. 3,669,135 to Starr.

Claims 2 and 5 stand rejected under 35 U.S.C. § 103 as being unpatentable over
Starr.

We make reference to the answer (Paper No. 22, mailed December 4, 2001) for
the examiner's complete reasoning in support of the rejections, and to the brief (Paper
No. 20, filed September 25, 2001) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to
the appellant's specification and claims, to the applied prior art reference to Starr, and

to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we will not sustain the rejection of claims 1, 2, 4 and 5 for the reasons which follow.

The anticipation rejection

We will not sustain the rejection of claims 1 and 4 under 35 U.S.C. § 102(b).

The examiner found (answer, p. 3) that claims 1 and 4 were anticipated by Starr since (1) Starr discloses a fluid mixer and vortex distribution device comprising: an oscillation and mixing chamber (chamber between inlet 12 and outlets 13, 14); a power nozzle 12; a pair of control ports 21, 22; an exit aperture 13, 14; and (2) vortices are inherently formed in Starr.

The appellant argues (brief, pp. 5-6) that the claimed subject matter is not anticipated by Starr since Starr does not meet the limitations set forth in the "whereby" clauses of claims 1 and 4.

To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). As stated in In re Oelrich, 666 F.2d 578, 581,

212 USPQ 323, 326 (CCPA 1981) (quoting Hansgirk v. Kemmer, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939)) (internal citations omitted):

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

Thus, a prior art reference may anticipate when the claim limitation or limitations not expressly found in that reference are nonetheless inherent in it. See In re Oelrich, 666 F.2d at 581, 212 USPQ at 326; Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 630, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates. See In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). However, inherency is not necessarily coterminous with the knowledge of those of ordinary skill in the art. See Mehl/Biophile Int'l Corp. v. Milgraum, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1305-06 (Fed. Cir. 1999); Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1946-47 (Fed. Cir. 1999).

It is well settled that the burden of establishing a prima facie case of anticipation resides with the United States Patent and Trademark Office (USPTO). See In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). When relying

upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. See Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Patent App. & Int. 1990).

In this case, it is our opinion that the examiner has not established a prima facie case of anticipation based on inherency. In that regard, the examiner has not provided any basis in fact and/or technical reasoning to reasonably support the determination that the limitations set forth in the "whereby" clauses of claims 1 and 4 are inherently met by Starr. While it may be true that Starr's fluidic device inherently forms vortices, this does not establish that the limitations set forth in the "whereby" clauses of claims 1 and 4 are inherently met by Starr. Specifically, the examiner has not set forth any basis in fact and/or technical reasoning as to why Starr's fluidic device would inherently create oscillation of the liquid jet exiting out of the device and that the oscillation of the liquid jet stops when entrainment of the fluent material through the control port ceases. In our view, the fluid flow in Starr's fluidic device only oscillates between outlet ports 13 and 14 when the user so desires by altering the control pressure in controls ports 21 and 22. Thus, there is no oscillation as is achieved in the appellant's device.

For the reasons set forth above, the decision of the examiner to reject claims 1 and 4 under 35 U.S.C. § 102(b) is reversed.

The obviousness rejection

We will not sustain the rejection of dependent claims 2 and 5 under 35 U.S.C. § 103.

As set forth above, limitations of parent claims 1 and 4 are not taught by Starr. Since the examiner has not set forth any rationale as to why the limitations of claims 1 and 4 not taught by Starr would have been obvious at the time the invention was made to a person of ordinary skill in the art, the examiner has not established a prima facie case of obviousness with respect to the subject matter of dependent claims 2 and 5. Accordingly, the decision of the examiner to reject claims 2 and 5 under 35 U.S.C. § 103 is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 and 4 under 35 U.S.C. § 102(b) is reversed and the decision of the examiner to reject claims 2 and 5 under 35 U.S.C. § 103 is reversed.

REVERSED

NEAL E. ABRAMS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JEFFREY V. NASE)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JENNIFER D. BAHR)	
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