THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOIVO NISKANEN and KARI PELTONEN

Appeal No. 1997-1598
Application 08/456,699[1]

ON BRIEF

Before JOHN D. SMITH, OWENS and KRATZ, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of

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[1] Application for patent filed June 1, 1995. According to appellants, the application is a division of Application 08/182,036, filed January 14, 1994, now U. S. Patent No. 5,462,585, issued October 31, 1995.

claims 27-33 and 38-44, which are all of the claims remaining in the application.

THE INVENTION

Appellants claim an apparatus for separating gas from a liquid or a cellulose fiber suspension, wherein the initial gas separation takes place in a spiral flow path of the liquid or cellulose fiber suspension in the inlet channel. Claim 27 is illustrative and reads as follows:

27. A closed system in which gas is separated from a liquid, or a cellulose fiber suspension, comprising:

a first conduit and a second conduit;

a spiral housing having a central axis, a substantially axial liquid or suspension inlet channel with an inner wall, a liquid or suspension outlet, and a separated gas outlet, said separated gas outlet adjacent said central axis;

a shaft disposed within said spiral housing and connectable to means for rotating said shaft about said central axis;

a flange extending generally perpendicular to said shaft within said spiral housing for rotation about said central axis, at least one opening extending through said flange generally parallel to said axis of rotation;

a plurality of blades mounted to said flange on a face of said flange opposite said liquid suspension inlet;

path defining means disposed within said inlet channel for effecting spiral rotational movement of the liquid or suspension as it moves in said inlet channel toward said

spiral housing, defining at least one spiral path, so that the gas starts to separate from the liquid or suspension in the at least one spiral path; and

said liquid or suspension inlet and said liquid or suspension outlet connected to said first and second conduits to provide a closed system.

THE REFERENCES

Sherman et al. (Sherman)	4,637,779	Jan. 20, 1987
Henricson et al. (EP '387) (European patent application)	0 330 387 A2	Aug. 30, 1989

THE REJECTIONS

Claims 27-31, 33, 38, 39, 43 and 44 stand rejected under 35 U.S.C. § 102(b) as being anticipated by EP '387. Claims 32 and 40-42 stand rejected under 35 U.S.C. § 103 as being obvious over EP '387 taken with Sherman.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejections are not well founded. Accordingly, we reverse these rejections.

The examiner argues that because spiral strip 100 in

figure 7 of EP ‘387 extends to a point immediately adjacent impeller 105, the teaching in EP ‘387 that “the gas bubble created in front or upstream of the impeller is continuously removed” (col. 11, lines 12-14) indicates that the gas separation must start in a spiral flow path created by the spiral strip (answer, pages 6-7). Also, the examiner argues that some rotational movement of the suspension must take place due to frictional forces between the rotating spiral strip and the pulp suspension, and states that he finds it difficult to believe that such friction does not cause gas separation (answer, pages 8-9).

Appellants rely upon a declaration of Kaj Olof Henricson (attachment to paper no. 10, filed July 5, 1996), one of the EP ‘387 inventors, wherein it is stated (paragraphs 3 and 4) that spiral strip 100, which has a relatively large clearance with housing inlet 102, creates a high pressure and pushes the pulp toward impeller 105 without causing significant spiral movement of the pulp or causing gas separation from the pulp. Henricson states that it is the high rotational speed of impeller 105 which causes the gas separation (*see id*.).

Appellants’ claim 27, which is the sole independent

claim, requires a path defining means in the inlet channel for effecting spiral rotational movement of the liquid or suspension in the inlet channel so that gas starts to separate from the liquid or suspension within the spiral path. The point in the spiral path at which the gas separation begins can be at the very end of the path. Furthermore, the claim is open to the spiral movement and initiation of the gas separation being caused by the combined

action of the path defining means and rotation of the blades on the flange, provided that the initial gas separation takes place in the spiral path.

The examiner, however, has provided no evidence or technical reasoning which establishes that the EP ‘387 spiral strip 100 and impeller 105 are sufficiently close that, at the conditions under which the apparatus is capable of operating, the impeller and spiral strip can cause spiral flow and can cause gas separation in some portion of the spiral flow region. Although the impeller is disclosed as being immediately downstream of the spiral strip (col. 10, lines 41-

44), there is a region between the surface of the impeller and the spiral strip shown in figure 7 in which the gas separation can take place. The examiner's position is that gas separation inherently takes place in a spiral path. When an examiner relies upon a 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." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Int. 1990). Inherency "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." *Ex parte Skinner*, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986). The examiner has not provided the required evidence or technical reasoning.

The examiner's argument that friction between the spiral strip and pulp suspension would cause spiral movement of the

pulp is not persuasive because the examiner has provided no evidence or technical reasoning which shows that any spiral movement caused by such friction would be sufficient to cause gas separation.

For the above reasons, we find that the examiner has not set forth a factual basis which is sufficient to support a conclusion of *prima facie* obviousness of the invention recited in claim 27 or any of the claims which depend therefrom.[2]

DECISION

The rejections of claims 27-31, 33, 38, 39, 43 and 44 under 35 U.S.C. § 102(b) over EP '387 and claims 32 and 40-42 under 35 U.S.C. § 103 over EP '387 taken with Sherman, are reversed.

REVERSED

[2] Sherman is applied only for the purpose of showing a dependent claim limitation. The examiner does not explain why Sherman remedies any deficiency in EP '387 as to claim 27.

JOHN D. SMITH Administrative Patent Judge	)	
TERRY J. OWENS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
PETER F. KRATZ Administrative Patent Judge	)	

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