

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. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte KAJ HENRICSON

---

Appeal No. 1998-2133  
Application No. 08/448,585

---

ON BRIEF

---

Before CAROFF, JOHN D. SMITH, and LIEBERMAN, Administrative Patent Judges.

CAROFF, Administrative Patent Judge.

DECISION ON APPEAL

This decision on appeal relates to the examiner's final rejection of claims 14-33, all the claims now pending in appellant's application.

The claims relate to a method and apparatus for ozone bleaching of cellulose pulp involving the use of a plurality of fluidizing mixers directly connected in series where ozone is introduced only into the first fluidizing mixer. Claim 14 is representative of the subject matter on appeal:

14. A method of ozone bleaching cellulose pulp having a consistency of 5-25% using first and second fluidizing mixers, comprising the steps of sequentially:

(a) in the first fluidizing mixer at a pressure of 6-15 bar mixing cellulose pulp having a consistency of 5-25% with a mixture of ozone gas in carrier gas in an amount of 2-5 cubic meters per air dried ton of the cellulose pulp to form a fluidized mixture of pulp, ozone and carrier gas so that some ozone reacts with pulp to effect bleaching but non-reacted ozone remains;

(b) transferring the mixture of pulp, non-reacted ozone, and carrier gas from the first fluidizing mixer directly to the second fluidizing mixer;

(c) in the second fluidizing mixer, without introducing any additional ozone therein, refluidizing the mixture of pulp, non-reacted ozone, and carrier gas from the first fluidizing mixer, the ozone further reacting with the pulp to effect bleaching, but some residual ozone and carrier gas remaining mixed with the pulp, and discharging the mixture of residual ozone, carrier gas, and pulp from the second fluidizing mixer;

(d) maintaining the residual ozone in contact with the pulp for a time sufficient for further reaction of ozone with the pulp to effect bleaching to take place; and

(e) separating carrier gas and unreacted ozone from the pulp.

The following references are relied upon by the examiner

Appeal No. 1998-2133  
Application No. 08/448,585

as representative of the prior art:

Oldshue 1976	3,966,542	Jun. 29,
Richter 1978	4,093,506	Jun. 06,
Phillips et al. (Phillips) 1995	5,411,633	May 02,
Henricson et al. (Henricson) 02, 1995	5,411,634	May
Bosenius et al. (Bosenius) 1991 <sup>1</sup> (GERMANY)	4,039,099	Jul. 04,
Coste et al. (Coste) 1989 (FRANCE)	2,620,744	Mar. 24,
Greenwood et al. (Greenwood) 1, 1992 (EUROPE)	0,492,040	Jul.

The following rejections are before us for consideration:

I. Claims 14-18, 20-26, 28-30 and 33 stand rejected under 35 U.S.C. § 103 for obviousness based upon Phillips in view of Oldshue, Richter or Bosenius, and further in view of Henricson.

II. Claims 19, 27, 31 and 32 stand rejected under 35 U.S.C. § 103 for obviousness based upon the combination of

---

<sup>1</sup> Appellant's brief indicates that Canadian 2,031,848 is an English language equivalent of the German Bosenius patent. Accordingly, all references to Bosenius in our decision will be with respect to the Canadian equivalent.

Appeal No. 1998-2133  
Application No. 08/448,585

Phillips with Oldshue, Richter or Bosenius as above, and further in view of Coste or Greenwood.

Based upon the record before us, we agree with appellant that although the references cited by the examiner are relevant, those references are insufficient to establish a prima facie case of obviousness. Accordingly, we reverse each of the rejections at issue.

Appellant's position is premised upon a solution to a problem which has been found to exist in the prior art. That problem relates to the limitations of a fluidizing mixer when used to promote contact between a medium consistency pulp and ozone dispersed in a carrier gas. See appellant's brief (paragraph bridging pages 5-6). Apparently, insufficient contact occurs due to the formation of large bubbles of ozone in the mixer. See appellant's specification (page 3, lines 1-10). Although the specification (page 3, lines 10-15) indicates that the problem has been addressed in the prior art, in our view, appellant's invention represents a unique and nonobvious solution to that problem.

Appeal No. 1998-2133  
Application No. 08/448,585

In our opinion, the secondary references relied upon by the examiner to show the use of a plurality of mixers in series do not give rise to a prima facie case of obviousness since they are not particularly pertinent to the very specific problem faced by appellant. Namely, the problem of insufficient mixing apparently arises in a very specific context, i.e., using a particular type of mixer, a fluidizing mixer, for ozone bleaching of medium consistency pulp where large bubbles of ozone form in the mixer.

Oldshue apparently does not relate to the use of a fluidizing mixer, nor is that reference particularly concerned with medium consistency pulp. While Richter (Figure 3) suggests using a plurality of fluidizing mixers directly connected in series, Richter does not suggest that the treatment fluid or bleaching agent be added only into the first mixer in the series.

Bosenius feeds a different bleaching agent into each of a plurality of fluidizing mixers. Accordingly, Bosenius does not relate to the problem addressed by appellant since, in Bosenius, the ozone requirement is apparently reduced by using additional bleaching agents. Further, as we construe

Appeal No. 1998-2133  
Application No. 08/448,585

appellant's apparatus claims, by requiring that the second and any subsequent mixer be "devoid of any mechanism for introducing ozone and carrier gas thereinto" those claims distinguish over the apparatus of Bosenius where conduits feed bleaching agent to each of the two fluidizing mixers 17, 18 directly connected in series.

The other references which have been cited by the examiner do not remedy the deficiencies of Oldshue, Richter and Bosenius noted above. Accordingly, the decision of the examiner is reversed.

REVERSED

Appeal No. 1998-2133  
Application No. 08/448,585

MARC L. CAROFF	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
JOHN D. SMITH	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
PAUL LIEBERMAN	)	)
Administrative Patent Judge	)	

MLC:lbg

NIXON AND VANDERHYE  
8TH FLOOR  
1100 NORTH GLEBE ROAD  
ARLINGTON, VA 22201-4714