

**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(2) is not binding precedent of the Board.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. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** TSUTOMU KURIHARA,  
HIROYOSHI HOSOMURA  
and KATSUMI HARADA

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Appeal No. 1997-2065  
Application No. 08/441,948

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ON BRIEF

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Before PAK, OWENS and LORIN, **Administrative Patent Judges**.

PAK, **Administrative Patent Judge**.

**DECISION ON APPEAL**

This is a decision on an appeal from the examiner's  
refusal to allow claims 7 through 10 which are all of the  
claims pending in the application.

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Claim 7 is representative of the subject matter on appeal and reads as follows:

7. Electrophotographic transfer paper having a shrinkage of no more than 0.45% in a direction crossing a flow direction in a paper making process and a two sidedness [sic, sidedness] shrinkage difference in the crossing direction ranging from 0.02 to -0.02%.

The prior art references of record relied upon by the examiner are:

Friedrich 1955 (Canadian Patent)	512,682	May 10,
Ishiyama 1967 (Published Japanese Kokoku Patent Application)	42-16341	Sep. 5,
Watanabe 1976 (Published Japanese Kokai Patent Application)	51-29505	Mar. 12,

Casey, "Pulp and Paper," Chemistry and Chemical Technology, Vol. III, pp. 1039-43 and 1774-77, (3d ed., Wiley-Interscience, 1980).

Claims 7 through 10 stand rejected under 35 U.S.C. § 103 as unpatentable over Friedrich or Ishiyama in view of Watanabe and Casey.

We reverse.

The claimed subject matter is directed to an "[e]lectrophotographic transfer paper having a shrinkage of no more than 0.45% in a direction crossing a flow direction in a

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paper making process and a two sidedness [sic, sidedness] shrinkage difference in the crossing direction ranging from 0.02 to -0.02%." See claim 7. These shrinkage properties allow the electrophotographic transfer paper to avoid or significantly reduce "post fuser curl." See Specification, pages 5 and 6. While the claimed two sidedness shrinkage difference is obtained by "controlling the paper making speed or the rate of dehydration," the claimed shrinkage of not more than 0.45% in transverse direction is obtained by providing an appropriate force of constraint in cross (transverse) direction "that is associated with the T/Y ratio." See Specification, page 12. T/Y ratio means velocity of propagation of ultrasonic wave in machine direction/velocity of propagation of ultrasonic wave in cross (transverse) direction. See Specification, page 11. The Rule 132 declarations executed by Koichi Makiyama referred to by both appellants and the examiner echo that view by showing that drying a paper under constraint in a cross direction is critical in obtaining the claimed shrinkage properties, particularly the desired shrinkage of "no more than 0.45%" in a cross direction.

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As evidence of obviousness under 35 U.S.C. § 103, the examiner relies on the combined teachings of either Friedrich or Ishiyama and Watanabe and Casey. The examiner states (Answer, pages 3 and 4) that:

[Ishiyama] show manufacture of non-curl paper.  
[Watanabe] show manufacture of non-curl paper on a twin wire machine which allows control of the two surfaces of the paper to eliminate curl. Casey on pages 1039-1043 shows that twin wire formers are conventional in the art and have a well known advantage in obtaining uniformity and absence of two sidedness in paper formed thereon. In particular, Bel Bae II (Beloit), a conventional twin wire former has the ability to change fiber orientation as reflected by MD:CD tensile strength ratios by changing the stock jet:wire velocity ratio. It is also noted that this is the type of twin wire former shown in Fig. 6(d) of the present specification. Casey teaches that in addition to the drying conditions of each side of the paper, fiber orientation is an important factor in curl control. Casey states that curl is related to the degree of crossing of the fibers or squareness of the sheet. The orientation is controlled by stock jet:wire velocity ratio. Since the primary references objective is to produce a non-curl paper, it would have been obvious to produce their paper by a twin wire machine in view of the above mentioned teachings of [Watanabe] and Casey.

Nowhere does the examiner, however, provide any evidence regarding an electrophotographic transfer paper having the claimed shrinkage of "no more than 0.45%" in a crossing

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direction. Nor is there any evidence or explanation as to how to produce such electrophotographic transfer paper, i.e., drying the paper under constraint in a cross (transverse) direction. Under these circumstances, we agree with appellants that the examiner has not established a ***prima facie*** case of obviousness regarding

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the claimed subject matter. Accordingly, we reverse the examiner's decision rejecting all of the appealed claims under 35 U.S.C. § 103.

As a final point, we observe that appellants disclose at page 13 of the specification that eight Japanese Laid Open Patent applications and four Japanese patents describe applying a force of constraint to the paper in its cross direction during drying. Upon return of this application, the examiner is advised to determine whether these published Japanese applications and patents, either alone or taken together with the above-mentioned references, affect the patentability of the claimed subject matter.

In view of the foregoing, the decision of the examiner is reversed and this application is remanded to the examiner for appropriate action consistent with the above instructions.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

***REVERSED/REMANDED***

CHUNG K. PAK	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
TERRY J. OWENS	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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	)	
HUBERT C. LORIN	)	
Administrative Patent Judge	)	

CKP:hh

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