

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NEELKANTH S. GUPTE, XIN LIU,
STEVEN J. SPENCER,
ROBERT H.L. CHIANG
and DANIEL GAFFANEY

Appeal No. 1999-0280
Application 08/672,383

ON BRIEF

Before ABRAMS, FRANKFORT, and PATE, Administrative Patent Judges.

PATE, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3 and 4. These are the only claims remaining in the application.

The subject matter is directed to an improved heat

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transfer tube for a heat exchanger. The tube has external fin con-volutions disposed helically around thereabout with the fin convolutions cut at an angle by notches. The angle of the base of the notches is at an oblique angle with respect to the longitudinal axis of the tube and ranges between 40 and 70 degrees.

The claimed subject matter may be further understood by reference to the appealed claims appended to appellants' brief.

The references of record relied upon as evidence of obviousness are:

Chiang et al. (Chiang) 1993	5,203,404	Apr. 20,
Kouda et al. ¹ (Japanese Patent)	3-234302	Oct. 18, 1991

THE REJECTION

Claims 1, 3 and 4 stand rejected under 35 U.S.C. § 103 as unpatentable over Chiang in view of Kouda. According to the examiner, since Chiang's ribs or fins are helical, they, by

¹ Our understanding of the Japanese reference is via an apparent English language equivalent, Patent No. 5,052,476 to Sukumoda et al. (Sukumoda).

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definition, extend at a slight angle to a radial line perpendicular to the longitudinal axis of the tube. Furthermore, since the notches in the ribs of Chiang are disclosed as perpendicular to these helical ribs, the notches of Chiang must extend at an oblique angle to the longitudinal axis of the tube. While the examiner admits that Chiang does not disclose the 40 to 70 degree angle claimed in all claims on appeal, the examiner has concluded that such an angle is a matter of choice in design and would have been obvious to one of ordinary skill in the art.

OPINION

We have carefully reviewed the rejection on appeal in light of the arguments of the appellants and the examiner. As a result of this review, we have determined that the applied prior art does not establish a prima facie case of obviousness with respect to the claimed subject matter on appeal. Therefore, the rejection of the claims on appeal is reversed. Our reasons follow.

Turning to the examiner's determination that the angle " disclosed by Chiang would have been an obvious matter of

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design choice, we note that Chiang expressly states,

[t]he notches run axially and perpendicularly, or nearly so, to the ribs for ease and economy in making manufacturing tooling. (Chiang, col. 3, lines 33-36).

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It is quite apparent to us that Chiang has disclosed a specific angle for the notches in his helical ribs, the specific angle being for the purpose of ease of manufacture of the tooling equipment. Therefore, the examiner's conclusion of obviousness is not based on underlying facts from the Chiang reference. Far from being an obvious matter of choice in design, Chiang carefully selects the angle of the notches to the ribs for a specific purpose. Consequently, the Chiang reference clearly teaches away from appellants' claimed subject matter of an angle " of 40 to 70 degrees.

We have carefully reviewed the examiner is not relying on the Kouda reference for a teaching or suggestion of the claimed " angle of 40 to 70 degrees with respect to the longitudinal axis of the tube. See answer, paragraph bridging pages 6 and 7. Therefore, the Kouda reference adds nothing to the Chiang disclosure on this critical point.

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For the reasons given above, the rejection of claims 1, 3
and 4 is reversed.

REVERSED

NEAL E. ABRAMS)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
CHARLES E. FRANKFORT)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
WILLIAM F. PATE, III)	
Administrative Patent Judge)	

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