

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN H. HUGHES

Appeal No. 2001-0837
Application No. 09/131,177

ON BRIEF

Before THOMAS, HAIRSTON, and BLANKENSHIP, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 3, 5 through 11 and 13 through 19. In a first Amendment After Final (paper number 5), claims 1 and 9 were amended, and in a second Amendment After Final (paper number 9), claims 1 and 9 were further amended along with claim 17.

The disclosed invention relates to a multiple layer multileaf collimator that comprises first and second layers of multiple elongated radiation blocking leaves supported by first

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and second frames, respectively. The second frame rotates relative to the first frame through a range from parallel to perpendicular.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A multiple layer multileaf collimator capable of improving resolution for coverage of a target during radiation therapy, the multiple layer multileaf collimator comprising:

a first layer of multiple elongated radiation blocking leaves supported by a first frame for individual leaf positioning in a first direction; and

a second layer of multiple elongated radiation blocking leaves supported by a second frame for individual leaf positioning in a second direction, the second direction offset at a desired angle x , where $0^\circ \leq x \leq 90^\circ$, relative to the first direction to achieve an arrangement of the first layer and second layer that ranges from parallel to perpendicular through rotation of the second layer relative to the first layer, wherein the individual leaves of the first and second layers conform more closely with a target shape to improve resolution.

The references relied on by the examiner are:

Klasen et al. (Klasen)	4,987,309	Jan. 22, 1991
Cosman	5,748,703	May 5, 1998

Claims 1 through 3, 5 through 11 and 13 through 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Klasen in view of Cosman.

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Reference is made to the brief (paper number 11) and the answer (paper number 12) for the respective positions of the appellant and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse the obviousness rejection of claims 1 through 3, 5 through 11 and 13 through 19.

The examiner and the appellant both agree that Klasen discloses first and second layers of multiple elongated leaves that are mounted perpendicularly with respect to each other (answer, page 3; brief, page 5). The examiner acknowledges (answer, page 3) that the right angle between the two layers cannot be varied by rotating one layer relative to the other. According to the examiner (answer, page 3), "Cosman teaches that it is well known in the X-ray irradiation therapy art to allow rotation of radiation blocking members relative to each other to increase resolution coverage (see figures 5 and 7)." From this teaching, the examiner concludes (answer, page 3) that "[i]t would have been obvious to one of ordinary skill in the art to rotate the layers of leaves of Klasen et al. motivated by the benefits sought in both Klasen et al. and Cosman of reduced healthy tissue dosage."

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Cosman discloses a collimator in which jaws 601, 602 and 603 on three different levels 640, 620 and 630, respectively, are rotated independently about axis 690 to control the radiation striking spot 608 (Figure 6; column 5, lines 29 through 57).

Appellant argues (brief, pages 7 and 8) that:

Thus, even if the rotation of Cosman were applied with Klasen, et al., Appellant respectfully submits that all of the layers of the Klasen, et al. device would be rotatable based on the Cosman device (e.g., see Figure 6). In contrast, Appellant recites rotation of one layer (the second layer) to achieve an arrangement of the first layer and second layer that ranges from parallel to perpendicular.

Appellant respectfully submits that Klasen, et al. in view of Cosman fails to teach, show, or suggest Appellant's recited invention

We agree with appellant's arguments. Even if we assume for the sake of argument that it would have been obvious to one of ordinary skill in the art to apply the rotation teachings of Cosman to Klasen, the modified teachings of Klasen would only require the plates 23 within each of the holding yokes 24a through 24e to rotate about the holding yokes (Figure 2; column 4, lines 45 through 62). Nothing in the combined references teaches or would have suggested to the skilled artisan to rotate one holding yoke with respect to another holding yoke (claims 1 through 3, 5 through 11 and 13 through 16) to achieve an

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arrangement of the yokes that ranges from parallel to perpendicular (claims 1 through 3, 5 through 11 and 13 through 19). Thus, the obviousness rejection of claims 1 through 3, 5 through 11 and 13 through 19 is reversed.

DECISION

The decision of the examiner rejecting claims 1 through 3, 5 through 11 and 13 through 19 under 35 U.S.C. § 103(a) is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
KENNETH W. HAIRSTON)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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HOWARD B. BLANKENSHIP)	
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KWH:hh

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