

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KANTI JAIN

Appeal No. 1997-0689
Application No. 08/047,238¹

HEARD: October 20, 1999

Before HAIRSTON, LALL, and GROSS, Administrative Patent Judges.
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 12, 14, 18, and 23 through 27. Claims 2 through 11, 13, 15 through 17, 19 through 22, 28 through 30, and 32 are allowed. Claim 31 is objected to for an informality. Appellant has submitted a proposed correction to claim 31 which the examiner (Answer, page 3) has agreed to

¹ Application for patent filed April 13, 1993.

Appeal No. 1997-0689
Application No. 08/047,238

enter by Examiner's Amendment upon resolution of the appeal to place claim 31 in condition for allowance.

The appellant's invention relates to a window system which uses diffraction gratings and spectrally selective coatings to control entry of heat and light into a room. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A transmissively controllable energy efficient window system for controlling radiation entering an interior space, comprising:

a) a fixed diffraction grating windowpane (10) capable of deflecting the infra-red spectral component of an input radiation beam by a certain range of angles;

b) a movable diffraction grating windowpane (14) capable of deflecting the infra-red spectral component of an input radiation beam by a certain range of angles, and selectively juxtaposable in or out of optical series with said fixed diffraction grating windowpane (10) so as to either permit at least some of said infra-red spectral components of the beam deflected from said fixed windowpane to enter the interior space or to deflect the beam further so as to prevent said infra-red spectral components from entering the interior space; and

(c) a window frame for holding said fixed diffraction grating windowpane and said movable diffraction grating windowpane in adjacent parallel planes.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Appeal No. 1997-0689
Application No. 08/047,238

Tietig	2,280,358	Apr. 21, 1942
Lueder	3,236,290	Feb. 22, 1966
Gerritsen (Gerritsen I)	5,009,484	Apr. 23, 1991
Gerritsen et al. (Gerritsen II)	5,048,925	Sep. 17, 1991
Zhang et al. (Zhang)	5,164,856	Nov. 17, 1992

Claim 23 stands rejected under 35 U.S.C. § 112, first paragraph, as being non-enabled by the specification.

Claims 1, 12, 14, 18, 23 through 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Zhang in view of Gerritsen II, further in view of Gerritsen I (for claim 14), Tietig (for claim 18), or Lueder (for claim 25).

Reference is made to the Examiner's Answer (Paper No. 25, mailed February 1, 1996) for the examiner's complete reasoning in support of the rejections, and to the appellant's Brief (Paper No. 24, filed November 20, 1995) and Reply Brief (Paper No. 28, filed March 20, 1996) for the appellant's arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by the appellant and the examiner. As a consequence of our

Appeal No. 1997-0689
Application No. 08/047,238

review, we will affirm the enablement rejection of claim 23 and reverse the obviousness rejection of claims 1, 12, 14, 18, and 23 through 27.

Claim 23 requires mounting the movable diffraction grating windowpane for "rotational repositioning with respect to said fixed diffraction grating windowpane." The examiner asserts (Answer, page 5) that there is no enabling disclosure for such rotational repositioning. Appellant (Brief, page 10) points only to original claim 23 for enablement, stating that "round

windowpanes presented in various forms as Figure 13 properly reflect the language of original claim 23." (It should be noted that Figure 13, to which appellant refers, is not part of the original disclosure and has not been entered by the examiner.)

We agree with the examiner that the specification as originally filed does not provide enablement for claim 23. Nowhere in the specification is there any mention of rotational repositioning, and all figures are directed to

Appeal No. 1997-0689
Application No. 08/047,238

windowpanes that move vertically, not rotationally. We believe that round windows are old and well-known, and that one of ordinary skill in the art would recognize that round windows would be easier to rotate than square or rectangular ones. However, we do not believe that the mounting of such a window for "rotational repositioning with respect to said fixed diffraction grating windowpane" such that it is "selectively juxtaposable in or out of optical series with said fixed diffraction grating windowpane" (as required by claim 1, from which claim 23 depends) would be quite as clear to the skilled artisan as appellant asserts.

To "rotate" is defined in The Random House College Dictionary as "to cause to turn around an axis or center point; revolve" or "to turn around on or as on an axis." Thus rotational repositioning must involve turning around an axis or

center point. Since the repositioning is "with respect to said fixed diffraction grating windowpane," the axis about which the movable windowpane must rotate appears to be the fixed diffraction grating windowpane. However, it is unclear

Appeal No. 1997-0689
Application No. 08/047,238

how the movable windowpane would be mounted to rotate in this manner. Further, Figure 13, which was proposed to illustrate claim 23, seems to suggest that the rotation is actually about the center of the movable windowpane. Yet, it is unclear how such a rotation would make the movable windowpane "selectively juxtaposable in or out of optical series with said fixed diffraction grating windowpane." In addition, the examiner has identified other possible meanings for "rotational repositioning" (Answer, pages 5-6), thereby further suggesting a need for an explicit disclosure of what is meant by "rotational repositioning." Since there is no such disclosure, we must affirm the rejection of claim 23 as being nonenabled.

As to the obviousness rejections, Zhang is directed to a window using two polarizers, one fixed and one movable. The polarizers create an optical shade by passing or blocking incoming light depending on the relative positions of the two polarizers. Gerritsen II uses diffraction gratings in a window to focus light in a particular direction regardless of the angle of incidence. The examiner states (Answer, page 8) that

Appeal No. 1997-0689
Application No. 08/047,238

[i]t would have been obvious to one of ordinary skill to substitute the diffraction grating patterns of Gerritsen, et al ('925) for the polarizing patterns of Zhang, et al in the interest of not only controlling the amount of light entering the room, but rather, [the] range of entrance angles, the range of exit angles, and the particular spectrum manipulated, as taught by Gerritsen, et al ('925).

It is unclear to us how one would substitute Gerritsen II's diffraction gratings for the polarizers of Zhang such that moving one diffraction grating relative to the other would vary the amount of light transmitted (the purpose of Zhang) and still maintain a constant direction of transmitted light (the purpose of Gerritsen II). "[A] proposed modification [is] inappropriate for an obviousness inquiry when the modification render[s] the prior art reference inoperable for its intended purpose. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)." In re Fritch, 972 F.2d 1260, 1265-1266 n. 12, 23 USPQ2d 1780, 1783 n. 12 (Fed. Cir. 1992).

The examiner contends (Answer, pages 13-14) that "mobility of the respective planes in and out of optical series . . . is fairly suggested by Zhang, et al, who, in the

Appeal No. 1997-0689
Application No. 08/047,238

same field of endeavor, disposed optical elements in series to control light

entering the room." Zhang does use multiple elements that move in and out of optical series to control the amount of light

entering the room. However, the diffraction gratings of Gerritsen II are for focusing light rather than for varying the amount of light entering. As Zhang's polarizers and Gerritsen II's diffraction gratings do not have similar functions, substitution of the diffraction gratings for the polarizers is akin to comparing apples to oranges.

Furthermore, neither Zhang nor Gerritsen II is concerned with controlling infrared light, or rather, the amount of heat that is generated by the incoming light. The examiner states that "[t]he particular selection of an infrared component for control would have offered only advantages well-known and obvious to those skilled in the art, and is not considered to represent a patentable advance." (Answer, page 8). The examiner, however, provides no explanation how one would select controlling only the infrared light without defeating the purpose of Zhang, to vary the brightness in the room.

Appeal No. 1997-0689
Application No. 08/047,238

Additionally, the examiner has pointed to no teachings from the prior art suggesting a desire for the ability to transmit infrared radiation during one period and reflect, deflect, or absorb infrared radiation during another period, as required by claim 1. Therefore, we must reverse the obviousness rejection of claims 1, 12, 23, 24, 26, and 27.

With respect to claims 14, 18, and 25, Gerritsen I, Tietig, and Lueder do not cure the deficiencies in the combination of

Zhang and Gerritsen II. Accordingly, we will reverse the rejections of claims 14, 18, and 25.

CONCLUSION

We have affirmed the rejection of claim 23 under 35 U.S.C. § 112, first paragraph. We have reversed the rejection of claims 1, 12, 14, 18, and 23 through 27 under 35 U.S.C. § 103. As a result, the decision of the examiner is affirmed-in-part.

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

Appeal No. 1997-0689
Application No. 08/047,238

AFFIRMED-IN-PART

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
PARSHOTAM S. LALL)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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Appeal No. 1997-0689
Application No. 08/047,238

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