Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte ROBERT C. GIBBONS, SAMUEL R. MCKENNEY, S. CHARLES BABER, RICHARD R. CHANG and MICHAEL C. BELL

Appeal No. 1997-3301
Application No. 08/159,879

ON BRIEF

Before GARRIS, HANLON, and PAK, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-20. Claims 21-25 are also pending in the application but have been withdrawn from consideration. The claims on appeal are directed to a chopper and a method of making the chopper. Claim 9 is illustrative and reads as follows:

9. A chopper which comprises:

(a) an infrared transmissive deformable film capable of containing a plurality of diffractive lens patterns pressed thereinto; and

(b) a plurality of diffractive lenses disposed in said film in a predetermined pattern, all of said diffractive lenses disposed at least in part within a predetermined geometrical shape to provide said chopper.

The references relied upon by the examiner are:

Suzuki et al. (Suzuki)	4,427,265	Jan. 24, 1984
Ohtaka et al. (Ohtaka)	4,567,123	Jan. 28, 1986
Trotta et al. (Trotta)	5,051,591	Sep. 24, 1991
Horigome et al. (Horigome)	5,330,880 (filing date Aug. 28, 1992)	July 19, 1994
Hayashi et al. (Hayashi)	5,320,787 (filing date Nov. 27, 1992)	Jun. 14, 1994
Isono et al. (Isono)	5,385,638 (filing date May 3, 1993)	Jan. 31, 1995

The following rejections are at issue in this appeal:

(1) Claims 1-20 are rejected under 35 U.S.C. § 112, first paragraph, based on written description and enablement.[1]

[1]The specification is also objected to under 35 U.S.C. § 112, first paragraph. See Answer, pp. 3-4. However, objectionable matters are not appealable. In re Hengehold, 440 F.2d 1395, 1403, 169 USPQ 473, 479 (CCPA 1970).

(2) Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph.

(3) Claims 1-20 are rejected under 35 U.S.C. § 103 as being unpatentable over Ohtaka in view of various combinations of Isono, Suzuki, Trotta, Horigome and/or Hayashi.

Rejection under 35 U.S.C. § 103

The claims on appeal are directed to a chopper comprising an infrared transmissive deformable film and a plurality of diffractive lenses disposed in the film in a predetermined pattern. All of the diffractive lenses are disposed at least in part within a predetermined geometrical shape to provide the chopper. See claim 9. The claims on appeal are also directed to a method of making a chopper comprising the following steps (claim 1):

(1) forming a mask on an etchable base member;

(2) etching the base member through the mask to form a predetermined diffractive lens pattern on the base member;

(3) replicating the diffractive lens pattern onto a rigid material; and

(4) stamping the diffractive lens pattern replicated on the rigid material onto an infrared transmissive deformable sheet to provide the chopper.

Appellants describe the operation of a chopper as follows (Specification, pp. 1-2):

> Forward looking infrared (FLIR) systems generally utilize a detector and a chopper system in conjunction with the detector for calibration of the detector. Such calibration is generally performed on-line and between detector scanning operations. . . . More recently, FLIR systems have been developed which use uncooled detectors, such systems being preferred when sufficient sensitivity can be obtained therefrom. An uncooled detector system utilizing a ferroelectric detector is intrinsically a differencing detector whose signal is the difference between that of the viewed scene and that of a reference source. In order to minimize dynamic range problems in the detectors, it is desirable to match the reference flux as closely as possible to the average scene flux. This is typically accomplished with the chopper which alternately permits the detector to view the scene and then view a reference source representing the average scene flux.

The examiner relies on Ohtaka in view of various combinations of Isono, Suzuki, Trotta, Horigome and/or Hayashi to establish a prima facie case of obviousness under 35 U.S.C.

§ 103. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992) (the examiner bears the initial burden of presenting a prima facie case of unpatentability).

Ohtaka teaches forming a fresnel based diffusion screen and Suzuki teaches the use of fresnel patterns as diffusion screens. See Answer, pp. 5-6. Both diffusion screens of Ohtaka and Suzuki are useful as focusing screens for a camera. Isono, Horigome and Hayashi disclose methods for making various optical articles such as optical disks. The method of Isono, particularly, is directed to forming a stamp and using the stamp to produce optical disks, holograms and the like. Appellants correctly point out that Ohtaka, Suzuki, Isono, Horigome and Hayashi do not disclose choppers.

Trotta is the only reference relied upon by the examiner which discloses a chopper. According to Trotta (col. 2, lines 18-27):

> Another aspect of the invention is an infrared imaging system that includes a special chopper. The chopper has an arrangement of reflective tubes and a means for moving the chopper in front of an infrared detector. When the chopper is placed in front of the detector, it causes an averaged uniform irradiance on the detector. This irradiance permits the detector to produce a reference signal representing the background radiance of the viewed

> scene, which can be subtracted from the signal representing the actual scene.

However, the chopper disclosed in Trotta uses reflective tubes rather than diffractive lenses as in the claimed invention. See Answer, p. 7 ("The diffusion of the light is accomplished by gluing tubes to each other."); Brief, p. 13 (Trotta "fails to teach or even suggest the use of diffractive lens patterns or the manner of making the chopper as claimed.").

The examiner concludes (Answer, p. 8):

> It would have been obvious to use the technique for making a mold disclosed by Isono et al. '638 in the process for making a stamper of the fresnel diffusion screens of Ohtaka et al. '123, based upon its improvements over the prior art methods, the teaching within Ohtaka et al. '123 to making stamping masters and the teaching within Suzuki et al. '265 that the mass production of fresnel based diffusion screens is known in the art to make the final articles less expensive to produce and to substitute the resulting fresnel based diffusion screen for the diffuser element composed of metallized glass tubes used by Trotta et al. '591, based upon their having a similar washing out effect on the image as taught by Trotta et al. '591 and the less complicated and expensive manufacturing process for the diffusion element which also would be more easily attached to the frame.

Appellants argue that there is no teaching or suggestion to combine the references in the manner suggested by the

examiner. See Brief, p. 13. We agree. First, the examiner has failed to establish why one having an ordinary level of skill in the art would have substituted the metallized glass tubes of the Trotta chopper with the fresnel based diffusion screens of Ohtaka and Suzuki. Despite the fact that Trotta, Ohtaka and Suzuki are directed to diffusers in general, based on the record before us, the combined teachings of Trotta, Ohtaka and Suzuki fail to suggest the modification proposed by the examiner.

The examiner has further failed to establish why one having an ordinary level of skill in the art would have used a method for producing optical disks as disclosed in Isono to produce a diffusion screen as disclosed in Ohtaka and Suzuki. On this record, it is unclear how any "improvements" of the Isono method over the "prior art methods" relate to the processes of Ohtaka and Suzuki. See In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) ("The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification."); see also In re Gorman, 933 F.2d 982, 986-87, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991)

(in a determination of obviousness under 35 U.S.C. § 103, it is impermissible to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps).

The teachings of Horigome and Hayashi fail to cure the deficiencies of Ohtaka, Suzuki, Isono and Trotta. Therefore, for the reasons set forth above, we are constrained to reverse the rejection of claims 1-20 under 35 U.S.C. § 103 based on Ohtaka in view of the various combinations of Isono, Suzuki, Trotta, Horigome and/or Hayashi.

Rejection under 35 U.S.C. § 112, first paragraph

Claims 1-20 are rejected under 35 U.S.C. § 112, first paragraph, based on written description and enablement for the following reasons (Answer, p. 4):

> The appendix referred to page 3/line 9, page 5/line 6, page 8/line 14, page 9/line 9 is missing. Also none of the programs are disclosed. Also means for attaching the polymeric film to a means for rotation is not disclosed.

It appears that the programs referred to by the examiner are four macro routines which are said to generate an exact scale

graphical pattern of the lens array of the chopper. See Specification, p. 3.

Appellants point out that (Brief, p. 7):

> Neither the FLIR [(Forward Looking Infrared)] system in which the chopper would be used nor the specific lenslets as set forth in the APPENDIX to the application is specifically claimed. Everything that is claimed is fully disclosed and the individual steps of manufacture are each well known in the art.

Additionally, appellants point out that the specification, as originally filed, provides an equation by which the shape of each lens may be determined. See Brief, p. 7; Specification, p. 6.

For the reasons set forth by appellants, the rejection of claims 1-20 under 35 U.S.C. § 112, first paragraph, is reversed.

Rejection under 35 U.S.C. § 112, second paragraph

Claims 1-20 are rejected under 35 U.S.C. § 112, second paragraph, for the following reason (Answer, p. 5):

> A spindle or other means for attaching this [(the chopper)] to a means for rotation is not recited.

Appellants argue (Brief, pp. 16-17):

> This rejection was not understood since only the chopper per se is being claimed and not the manner in which it is attached in the FLIR. The connection is conventional as implied from the specification.

See Specification, p. 9 ("An aperture 7 is disposed at the center of the chopper 1 for securing the chopper to a device which will rotate the chopper in standard manner."). The examiner has failed to provide any evidence to the contrary. Therefore, for the reasons set forth by appellants, the rejection of claims 1-20 under 35 U.S.C. § 112, second paragraph is reversed.

Conclusion

The rejection of claims 1-20 under 35 U.S.C. § 103 as being unpatentable over Ohtaka in view of the various combinations of Isono, Suzuki, Trotta, Horigome and/or Hayashi is reversed. The rejection of claims 1-20 under 35 U.S.C. § 112, first and second paragraphs, is also reversed.

REVERSED

BRADLEY R. GARRIS)
Administrative Patent Judge)
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) BOARD OF PATENT

ADRIENE LEPIANE HANLON Administrative Patent Judge	)	APPEALS AND INTERFERENCES
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Appeal No. 1997-3301
Application No. 08/159,879

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DECISION: REVERSED
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s):
Prepared: June 29, 2001

Draft Final

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OB/HD GAU

PALM / ACTS 2 / BOOK
DISK (FOIA) / REPORT