

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. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GHOLAM A. PEYMAN

Appeal No. 1998-0308
Application 07/844,879

ON BRIEF

Before ABRAMS, McQUADE and LAZARUS, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

Gholam A. Peyman appeals from the final rejection of claims 1 through 23 and 25 through 32, all of the claims pending in the application. We reverse.

THE INVENTION

The invention relates to various methods for modifying the curvature of a live cornea. A copy of the appealed claims

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appears in the appendix to the appellant's main brief
(Paper No. 18).

THE EVIDENCE

The items relied upon by the examiner as evidence of
obviousness are:

L'Esperance, Jr. (L'Esperance '541)	3,982,541	Sept. 28, 1976
L'Esperance, Jr. (L'Esperance '608)	4,538,608	Sept. 3, 1985
L'Esperance, Jr. (L'Esperance '913)	4,665,913	May 19, 1987
Bath	4,744,360	May 17, 1988

Peyman et al. (Peyman), "Modification of Rabbit Corneal
Curvature with Use of Carbon Dioxide Laser Burns," Ophthalmic
Surgery, Vol. 11, No. 5, pp. 325-329, May 1980.

Krwawicz, "Lamellar Corneal Stromectomy," Notes, Cases,
Instruments, pp. 828-833.¹

The item relied upon by the appellant as evidence of non-
obviousness is:

¹ Although the copy of the Krwawicz article in the record
does not show a publication date, the appellant has not
disputed that the article or any other item relied upon by the
examiner is prior art with respect to the subject matter
recited in the appealed claims.

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The 37 C.F.R. § 1.132 Declaration of Dr. Gholam A. Peyman
filed June 29, 1994 (Paper No. 12).

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THE REJECTIONS

Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over Krwawicz in view of L'Esperance '608, L'Esperance '541 and L'Esperance '913.

Claims 2 through 6, 15 through 19 and 25 through 32 stand rejected under 35 U.S.C. § 103 as being unpatentable over Krwawicz in view of L'Esperance '608, L'Esperance '541, L'Esperance '913 and Bath.

Claims 7 through 14 and 20 through 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Krwawicz in view of L'Esperance '608, L'Esperance '541, L'Esperance '913, Bath and Peyman.

Reference is made to the appellant's main and reply briefs (Paper Nos. 18 and 21) and to the examiner's answer (Paper No. 19) for the respective positions of the appellant and the examiner with regard to the merits of these

rejections.²

DISCUSSION

Krwawicz, the examiner's primary reference, discloses a lamellar corneal stromectomy procedure "by means of which a thin lamella of the stroma can be removed from the central part of the cornea without injuring its anterior or posterior surface [whereby] [t]he resulting depression in the anterior surface of the cornea changes its curvature and thus modifies the refraction of the eye" (page 829). As described by Krwawicz,

[u]nder local anesthesia, sutures are placed in the lids and in the superior and inferior rectus muscles. A circular area, five mm. in diameter, is marked out in the center of the cornea by lightly touching it with a trephine; if necessary, the mark can be intensified by staining. On the margin of the operative area thus delineated, preferably on its temporal side, an incision about three-mm. long

²The final rejection appealed from (Paper No. 14) also included two obviousness-type double patenting rejections. The examiner withdrew these rejections (see the advisory action dated March 8, 1995, Paper No. 17) in response to a terminal disclaimer filed February 6, 1995 (Paper No. 16).

is made with a keratome (fig. 1). The incision does not go beyond the superficial layers of the stroma. Starting from the bottom of the incision, the superficial layers of the stroma are split through the previously delineated area with a small flat knife (fig. 2). Then the original incision is slightly extended on either end, and the free margin of the lamellar corneal flap thus obtained is lifted by means of an additional silk suture (fig. 3). This facilitates inspection of the deeper layers of the stroma. Now, another incision is made, starting from the bottom of the first one and of the same length, reaching the deeper layers of the stroma (fig. 4). Again, the stroma is split longitudinally but this time in its deeper part and over a slightly smaller area (fig. 5).

In this way a flap is formed inside the corneal stroma; a part of this flap is then excised with a 2.4 mm. punch forceps introduced through both incisions (stromectomy, fig. 6). After the removal of the punch forceps, a distinct concavity can be seen in the center of the cornea (fig. 7).

Finally, the sutures are removed . . . [pages 829 through 831].

As implicitly conceded by the examiner (see pages 4 through 6 in the answer), Krwawicz's lamellar corneal stromectomy technique fails to respond to numerous limitations in claims 1, 11, 15 and 25 through 27, the six independent claims on appeal. More particularly, the Krwawicz procedure does not meet (1) the laser beam and sequential, incremental cornea portion ablation and removal limitations in claim 1,

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(2) the laser beam and coagulation limitations in claim 11, (3) the laser beam limitations in claim 15, (4) the sequential, incremental cornea portion removal limitations in claim 25, (5) the sequential, incremental cornea portion removal and laser energy limitations in claim 26, and (6) the laser beam and sequential, incremental cornea portion ablation and removal limitations in claim 27. The examiner's reliance on L'Esperance '608, L'Esperance '541, L'Esperance '913, Bath and/or Peyman to overcome these deficiencies is not well taken.

L'Esperance '608 discloses a non-invasive surgical procedure wherein laser energy is used to remove cataractous lens tissue from an eye without damaging the cornea or retina.

L'Esperance '541 discloses a carbon dioxide laser probe which can be used to contact, vaporize and remove various surface portions of an eye including cataract, iris, scleral, corneal and vitreous tissues.

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L'Esperance '913 discloses a non-invasive surgical procedure in which a scanning laser is used for ablative photodecomposition of selected front surface regions of a live cornea.

Bath discloses an invasive laser probe for ablating and removing cataractous lenses.

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Peyman describes an unsuccessful experiment to modify the curvature of rabbit corneas by using a carbon dioxide laser to produce burns of various intensities, locations and patterns on the front corneal surface.

The foregoing references constitute a disparate lot in terms of the various eye surgery methods taught or suggested thereby. The non-invasive laser techniques disclosed by L'Esperance '608 and L'Esperance '913, the cataract ablation procedure disclosed by Bath and the rabbit experiment described by Peyman have little, if any, reasonable pertinence to the lamellar corneal stromectomy technique disclosed by Krwawicz. Although the invasive laser probe disclosed by L'Esperance '541 is described as having general utility for the vaporization and removal of corneal tissue, there is nothing in this reference which indicates that the probe might be effective for, or even capable of, the particular corneal tissue removal step in the Krwawicz process. Against this backdrop, the appellant's position that the reference combinations advanced by the examiner are predicated on impermissible hindsight is persuasive. Given the

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diverse natures of the different surgical techniques disclosed by the references, it is apparent that the examiner has employed the appealed claims as a blueprint to selectively piece together isolated portions of the prior art in order to arrive at the appellant's invention. In this light, we are satisfied that the applied references fail to establish a prima facie case of obviousness with respect to the subject matter on appeal.³

Accordingly, we shall not sustain the standing 35 U.S.C. § 103 rejections of claims 1 through 23 and 25 through 32.

The decision of the examiner is reversed.

³This being so, we find no need to delve into the merits of the appellant's 37 C.F.R. § 1.132 declaration evidence of non-obviousness.

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REVERSED

NEAL A. ABRAMS)
Administrative Patent Judge)

JOHN P. McQUADE)
Administrative Patent Judge)

) BOARD OF PATENT
) APPEALS
) AND

INTERFERENCES

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)
RICHARD B. LAZARUS)
Administrative Patent Judge)

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