Mar. 13, 1923. 1,447,983

H. W. HILL

LENS HOLDER FOR USE IN LENS GRINDING

Filed Aug. 23, 1920

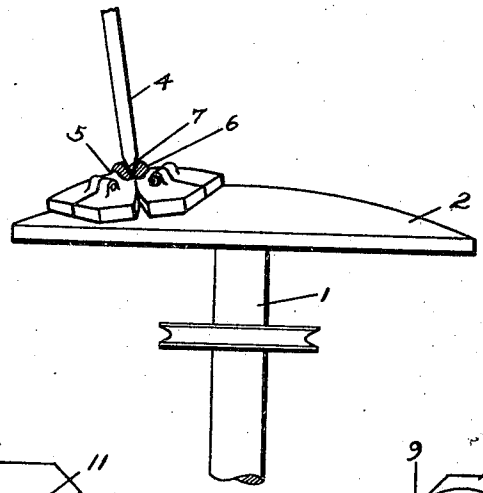


Fig. I

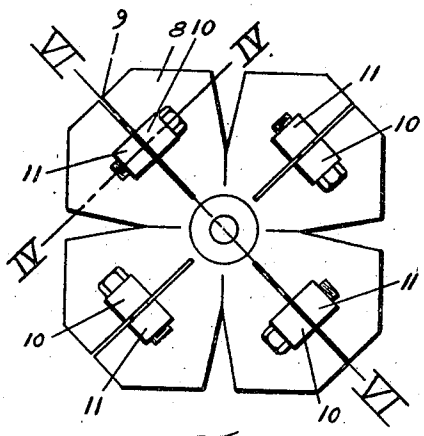


Fig. II

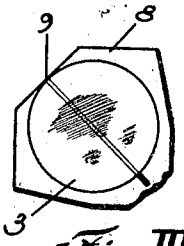


Fig. III

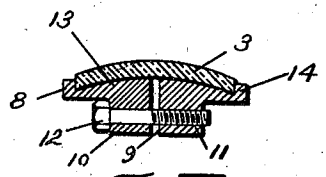


Fig. IV

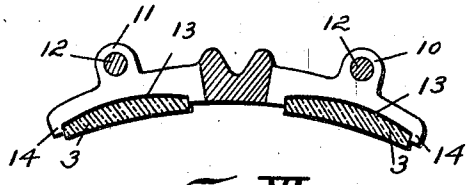


Fig. VI

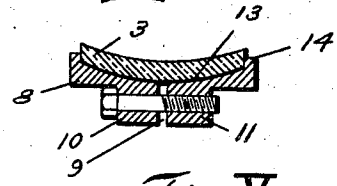


Fig. V

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UNITED STATES PATENT OFFICE.

HARRY W. HILL, OF SOUTHBRIDGE, MASSACHUSETTS, ASSIGNOR TO AMERICAN OPTICAL COMPANY, OF SOUTHBRIDGE, MASSACHUSETTS, A VOLUNTARY ASSOCIATION OF MASSACHUSETTS.

LENS HOLDER FOR USE IN LENS GRINDING.

Application filed August 23, 1920. Serial No. 405,302.

To all whom it may concern:

Be it known that I, HARRY W. HILL, a citizen of the United States, residing at Southbridge, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Lens Holders for Use in Lens Grinding, of which the following is a specification.

This invention relates to improvements in grinding machinery and has particular reference to machinery adapted for use in the construction of ophthalmic lenses.

It is, therefore, the object of my present invention to provide a novel and improved construction of lens block or holder adapted to receive and properly retain a plurality of lenses without the necessity of making use of pitch or other adhesive.

A further object of the invention is the provision of a device which will hold the several lenses in exact predetermined position and in predetermined relationship one to the other so that accurate grinding of the several lenses to proper thickness may be accomplished.

A further object of the present invention is the provision of a device of this character in which the lens shall be firmly supported and liability of springing of the glass and thus of production of improper surfaces thereon eliminated.

Other objects and advantages of my improved construction should be readily apparent by reference to the following specifications taken in connection with the accompanying drawings, and it will be understood that I may make any modifications in the specific details of construction shown and described within the scope of the appended claims without departing from or exceeding the spirit of my invention.

Figure I represents a view of a lens grinding machine embodying my improvements.

Figure II represents an enlarged plan view of the block.

Figure III represents a bottom view of the block with the lens in position.

Figure IV represents a sectional view taken as on the line IV—IV of Figure II.

Figure V represents a similar section showing the mounting of a lens for grinding of the concave in place of the convex face.

Figure VI represents a transverse sectional view at right angles to Figure V as on the line VI—VI of Figure II.

In the drawings, the numeral 1 designates a lower rotating spindle or shaft bearing on its upper end a suitable grinding tool 2 adapted to operatively engage the lenses 3 carried by my improved lens block which is held in correct relation to the tool as by the pin or spindle 4. As shown, the lens block comprises a central or body portion 5 provided with an upstanding collar 6 enclosing the cone socket 7 to receive the lower end of the spindle 4 and having extending outwardly from the central body portion 5 a plurality of furcated lens engaging members, each of said members being split as at 9 and provided with the lugs 10 and 11 adjacent the slot 9. These lugs are adapted to be connected as by the clamp screw 12 to draw the furcated halves together and securely clamp a lens in position on the member 8. Said member 8 is provided with a seat portion 13 having its upper face of proper curve to fit exactly the lens to be mounted thereon and solidly support the lens, said portion 13 being peripherally bounded by the upstanding rim or flange 14 so that as the screw 12 is tightened and the parts 10 and 11 are drawn together the flanges 14 will clampingly engage the edges of the lens as is particularly illustrated in connection with Figures IV and V. By reference to these views it will be seen that the lens is firmly supported throughout so that there is no possible springing of the glass during the grinding operation and it is satisfactorily clampingly held by edge engagement, leaving the free face to engage and be operated upon by a suitable grinding tool.

In order that the lens may be best inspected and its thickness determined by the skilled operator, etc., without the necessity of removing it from the block, I coat the upper face of the seat 13 with a suitable layer of material which may be in the form of either pitch, felt, or heavy black paint, lacquer or the like, which will have a certain softness though rigidity, tending not to scar the glass placed in engagement therewith and will give a black surface at the back of the lens, the advantage of which will be immediately apparent to any lens grinder.

From the foregoing description it will be seen that I have provided an improved con-

struction of lens retaining block adapted to receive and properly retain a plurality of lenses having the proper shape to support the several lenses in such relation to each other that all of the lenses will be equally and evenly ground off and will all be ground to a uniform thickness, in which the lenses may be easily clamped in position or disengaged as desired, and in which through the provision of the black backing therefor they may be readily inspected as the grinding operation progresses.

I claim:

1. A lens block comprising a body portion having a plurality of furcated arms extending outwardly therefrom, said arms having lens seat portions and lens clamping projections on the arms adjacent the seats and means for drawing the furcations together to clampingly secure lenses in position on the seats.

2. A lens block comprising a body portion, a plurality of split arms radiating therefrom, said arms being of resilient material, said arms having lens receiving recesses formed therein, and means for springing the split portions of the arms together to clampingly secure a lens in position in the recess.

3. A lens block comprising a body portion having a plurality of outwardly extending split arms each formed on one face with a lens receiving seat and adjacent lens edge engaging portions, and means on the opposite face for drawing portions of the arm together to clampingly secure a lens in position on the seat and retained by the edge engaging portions.

4. A device of the character described comprising a body portion having a plurality of radiating split arm members, each of said arm members having a recess formed in one face of curve to fit the face of a lens and having at the sides of the recess upstanding flange portions adapted to engage the edge of a lens, and means for springing the arm sections together to clampingly secure a lens in position on the seat.

5. A device of the character described, comprising a body portion having a plurality of arms, each of said arms being centrally sub-divided and of resilient material, and having a lens receiving seat formed on one face thereof, lugs formed on the opposite face of each of the arms, and a clamping device engaging the lugs of adjacent sections of each arm for springing them inward to clampingly secure a lens in position on the seat.

In testimony whereof I have affixed my signature, in presence of two witnesses.

HARRY W. HILL.

Witnesses:
ESTHER M. LAFLER,
H. K. PARSONS.