Feb. 13, 1940. F. E. WOLF 2,190,582

TEMPLATE FOR EDGING LENSES

Filed June 30, 1938

Fig. 1

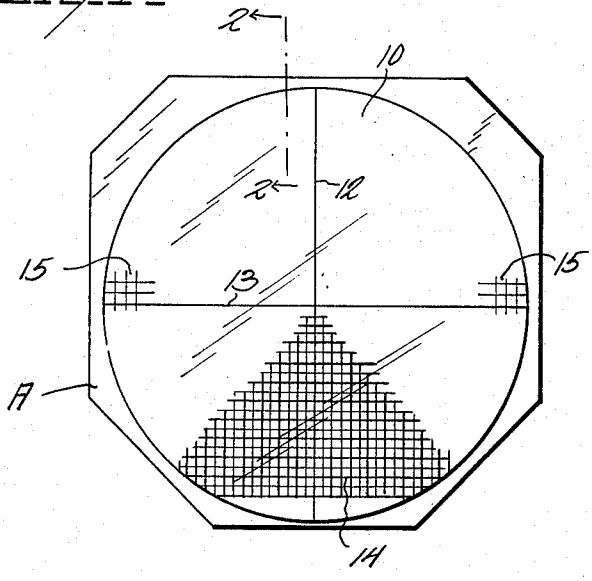
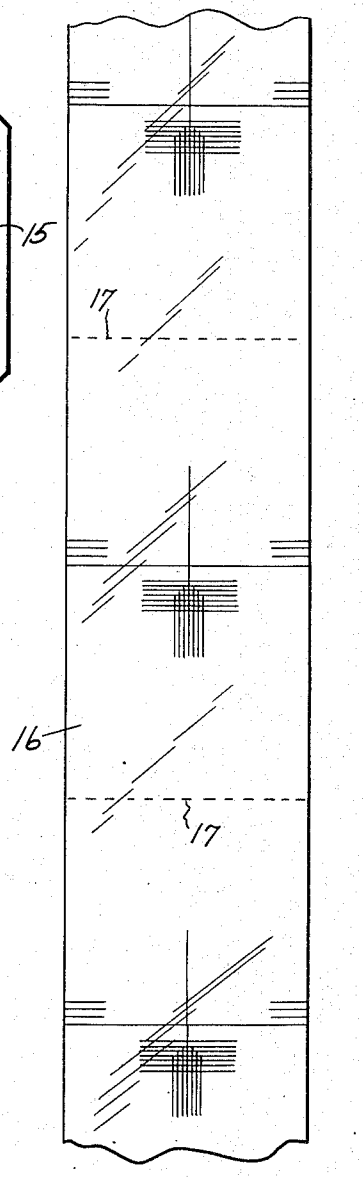


Fig. 3



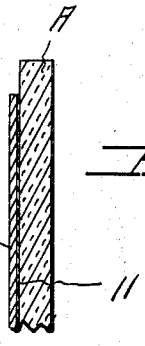


Fig. 2

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Patented Feb. 13, 1940

2,190,582

UNITED STATES PATENT OFFICE

2,190,582

TEMPLATE FOR EDGING LENSES

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Application June 30, 1938, Serial No. 216,812

3 Claims. (Cl. 88—56)

This invention relates to lens edging and pertains particularly to improvements in gauges or template devices for facilitating the edge grinding or edging of a lens blank according to an optometrist's or oculist's specifications.

It is well-known that in the practice of filling prescriptions for lenses, the dispensing optician takes from his stock lens blanks which have already been surface ground by the optical supply house to the proper correction as called for by the prescription. Since the axis of the lens in the human eye is usually several degrees from the true horizontal and vertical axes, and frequently the two eyes have a different axis, it is necessary to establish the angular deviation to correct the eyesight. Since the lens blank, which is to be edge ground, is considerably larger in diameter than the finished lens, the lens blank must be rotated the required number of degrees from the true horizontal and vertical axes and the center of the finished or completed lens located by measuring in millimeters from the horizontal and vertical axes of the unfinished blank, before edging. It is the practice in carrying out this edge grinding operation to lay out the grinding specifications on the lens blank by means of lines marked on the glass. These lines frequently become washed off during the edging process and considerable time is required to re-locate the marks. After the center of the finished lens has been determined on the blank and cut to approximate shape and size, then the blank is placed in an edging machine which shapes the lens to the particular type of frame or to the shape desired.

The present invention has for its object to eliminate the necessity for laying off the edging specifications upon the surface of the glass and thus avoid the objectionable features of this procedure, by providing a template disk of suitable material, preferably a disk of Cellophane or like transparent substance, having laid off thereon standard markings in water-proof ink and having an adhesive on one face whereby such disk or template may be applied to the lens blank and retained thereon until the edge grinding operation is completed and the lens has been drilled for the attachment of the usual nose pieces and temple bars.

A further object of the invention is to provide standard markings on the adhesive covered surface of such a template "sticker" or disk which include a horizontal and vertical axis intersecting at the center of the template with suitable millimeter-square markings on other portions of the template to facilitate the location of the proper edging specifications for bi-focal lenses and such other specifications as are required.

A still further object of the invention is to provide such templates of standard type which would apply to practically every ordinary job of edging lenses for the optical trade and it is intended that these template stickers shall be printed on rolls of tape material so that templates can be torn or cut off the roll and used as needed.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawing wherein:

Fig. 1 is a face view of a lens and my improved template applied thereto.

Fig. 2 is a fragmentary section on the line 2—2 of Fig. 1, the section being enlarged.

Fig. 3 is a face view of a series of templates connected to each other in the form of a continuous strip.

Referring to the drawing, in Fig. 1, I have illustrated a lens blank A to one face of which is applied a disk 10 of thin material, this disk being coated on one side with adhesive for effecting the secure attachment of the disk to the lens during the edging operation. This disk is preferably formed of a transparent material such as Cellophane in which case the adhesive is also transparent, but it is to be understood that the invention contemplates the use of an opaque material if it is found that the same may be effectively used in particular instances. The adhesive-coated face of this disk is marked with a vertical axis 12 and with a horizontal axis 13, these axes intersecting at the center of the lens blank. In Fig. 1, a template is shown whose lower portion on each side of the vertical axis 12 is laid out by a plurality of vertical and horizontal lines into millimeter-squares designated generally 14. In other words, this portion of the disk is described with parallel lines extending at right angles to each other and spaced on millimeter centers. At the lateral ends of the transverse line 13 there are vertical and horizontal lines designated generally 15 for use as indexes for drill holes. It is to be understood that these marks 12, 13, 14 and 15 are made in water-proof ink and that the adhesive 11 is a water-proof adhesive, so that this template may be applied to a lens blank without any danger of the template being washed away or the markings obscured or washed out.

In connection with the vertical and horizontal lines designated by the numeral 15, it is preferred that these be laid off in sixteenths of an inch rather than in millimeters.

While in Fig. 1, I have illustrated this template in the form of a circular disk, yet it is within the purview of my invention to print these templates successively upon a continuous strip of transparent material as shown in Fig. 3, so that this strip may be torn off at intervals, as shown in dotted lines in Fig. 3, to form the separate stickers for application to the lens. This strip 16 may be formed in rolls like adhesive tape so that the template can be torn off the roll and used as needed.

In using the strip form of the invention, the templates will be obtained for use as required by severing the strip in any suitable manner along the lines 17 and the template may be directly applied to the lens or it may be trimmed to roughly conform to the circular or other contour form of the lens which is to be ground. The markings of the strip may be either upon the material of the strip or upon the adhesive thereof if the adhesive is sufficiently transparent to show the markings through after the material has been applied to the lens. As previously stated, the actual grinding of the lens is done by the lens manufacturer and the optician's work consists in correcting the angular relationship necessary and the decentration so that the axes of the lens will be properly related to the axes of the eyes when the lens are finally mounted in suitable frames or nose pieces. This decentration is the distance between the actual axes of the lens blank before edge grinding and the axes of the finished lens as required by the prescription. It is in this phase of the lay-out that the template lines are helpful to the optician for in the use of the template, the optician first locates the new axes of the lens or decentration line from the prescription and then places the vertical axes of the template at that point so that when the lens is edged, or edge ground, the vertical axis of the finished lens will be coincident with the vertical axis of the template.

Likewise the horizontal axis must be corrected according to the prescription and the segmental height, which refers to the location of the bi-focal lens if such is called for by the prescription. The horizontal line 13 and the lines 14 are used by the optician in correcting the horizontal axis and segmental heights. In certain cases of very infrequent occurrence bi-focal arrangements require a segmental lens above the horizontal axis in which case the markings 14 might be extended above the line 13. With this in view, it is contemplated also to provide templates having the markings 14 extended above the line 13 although such an arrangement has not been illustrated.

The template after being properly located on the glass remains in place through the entire edging operation and until the lens is finished and drilled. Because of the provision of waterproof markings on the template, such markings cannot become smeared or shifted from their original position at any time in the process of edging and the optician can determine at a glance whether or not the lens blank has shifted its position in the chuck of the edging machine during such process.

When the lens blank is placed in a machine for marking, the angular relationship to correct for the difference between the axis of the eye and the true horizontal axis, the advantage of a transparent template is that the lay-out man or operator can sight through the template to observe a protracter which is set up behind the lens blank.

Under the old method of operating all of the marks laid off on the lens for the purpose of edging the blank according to prescription are so exposed that they may easily be washed off or smeared and when this happens inaccurate results are likely to be obtained and it is necessary for the operator to repeat the entire process of marking. Since the template markings in the present device are in millimeters, it is possible to tell at a glance where the decentration line and segment height are located as called for by the prescription. At the finish of the edging process and after the holes have been drilled for the lens supports, the template may be removed and discarded and since these templates can be made at very low cost, they need only be used once.

What is claimed is:

1. A template for use in edge grinding single vision or bi-focal lenses, consisting of a sheet of thin transparent material coated on one face with adhesive, the adhesive-coated face having perpendicularly related lines thereon designating a vertical axis and a horizontal axis for a lens, the lower portion of the sheet at each side of the vertical axis being marked with millimeter-squares.

2. A template for use in edge grinding single vision or bi-focal lenses, consisting of a sheet of paper thin transparent material coated on one face with adhesive, the adhesive-coated face having perpendicularly related lines thereon designating a vertical axis and a horizontal axis for a lens, the sheet at each side of the vertical axis and on one side of the horizontal axis being marked with millimeter-squares, the ends of the horizontal axis being marked with squares of a definite size for use in indexing the drill holes for the lens supports.

3. A template for use in edge grinding single vision and bi-focal lenses, consisting of a sheet of paper thin transparent cellulosic material having an adhesive coating on one face, the adhesive-coated face being marked with vertical and horizontal axis lines for a lens, the lower portion of the sheet on each side of the vertical axis line having crossing vertical and horizontal lines thereon defining millimeter-squares and the ends of the horizontal axis line being marked with squares of definite size as a means for indexing drill holes for the lens supports.

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