M. A. LAABS.

BIFOCAL LENS FUSING.

APPLICATION FILED APR. 14, 1915.

1,282,877. Patented Oct. 29, 1918.

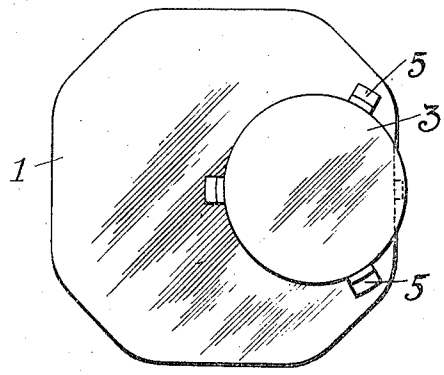


Fig. I

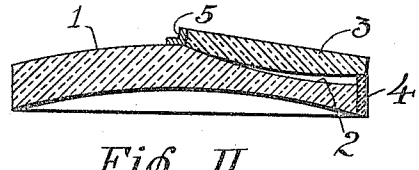


Fig. II

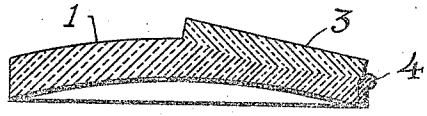


Fig. III

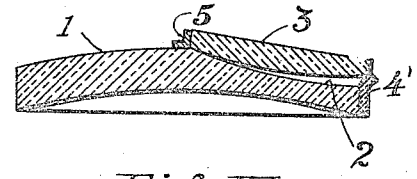


Fig. IV

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BIFOCAL-LENS FUSING.

1,282,877. Specification of Letters Patent. Patented Oct. 29, 1918.

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To all whom it may concern:

Be it known that I, MAX A. LAABS, 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 Bifocal-Lens Fusing, of which the following is a specification.

This invention relates to improvements in the method of supporting the segment of bifocal lenses upon the lens blank during the fusing operation therebetween.

The principal object of the invention is to obviate waste of the lens material by providing an improved method of supporting the segments upon the lens blanks during their fusing operation so that when the blanks are finished the entire area of the fused portion may be included in the finished lenses.

Another object is to so support the segment upon the blank as to prevent the formation of bubbles or other imperfections between the segment and the blank during the fusing operation.

With the foregoing and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and claimed.

In the drawings:

Figure I is a plan view of the lens blank and segment in position for fusing.

Fig. II is a sectional view centrally through the major and minor portions of the blank and the retaining means for the minor portion or segment.

Fig. III is a view similar to Fig. II showing the condition of the parts after the fusing operation.

Fig. IV is a view similar to Fig. II illustrating a slightly modified form of supporting means for the segment.

Referring to the drawings by numeral, 1 designates the distance blank of a bifocal lens which has formed therein the countersink 2 adapted to receive the segment 3; the blank and segment, as is usual, being formed from glass and of different indexes.

In the formation of bifocal lenses great difficulty has been found heretofore in providing means which will permit the segment 3 to be gradually fused to the lens blank 1 within the countersink 2 so as to prevent the formation of air bubbles between the segment and the lens when the fusing operation is in progress, and to also provide such means as will prevent the formation of other imperfections in the fused lens so that the entire area of the lens blank may be utilized in the formation of the finished lens.

In the accompanying drawings, I have illustrated the lens blank 1 as having suitably secured thereto, as by means of a cementitious material, a supporting strip 4. This strip is secured to the edge of the lens blank adjacent the countersink 2 and has the upper edge thereof projecting above the upper edge of the blank 1 so that one edge of the segment 3 may be supported thereon in spaced relation with the countersink of the blank, the opposite portion of the segment resting upon the lens blank within the countersink, as is clearly shown. I preferably form the supporting strip 4 from the same material as the lens blank 1, and segment 3, so that when the blank is subjected to the action of heat the segment 3 will melt and fuse with the blank 1 and the strip 4 will soften and gradually permit the edge of the segment to come in contact with the blank. By this construction it will be obvious that all gases are forced from between the segment 3 and the blank 1 during the fusing operation and that no other imperfection will be formed in the lens during the fusing operation, as has been the case heretofore when strips of material have been placed between the segment and the countersink to hold the segment in spaced relation with the blank 1 for the purpose set forth.

Another great advantage of this construction lies in the fact that when a temperature has been reached which will fuse the segment to the blank the supporting strip 4 will also fuse so that the fusing operation between the segment and the blank will be positive. This operation is a distinct improvement over the prior art in view of the fact that where the segment 3 has been supported by means of strips of material there has always been the likelihood of a portion of the segment not freeing itself from its supporting strip and thereby causing a waste of the entire lens.

If desired angle members 5 of any suitable material may be secured to the blank 1 adjacent the countersink 2 so as to provide

a bearing for the edge of the segment 3 during the fusing operation, the said members 5 being provided to prevent any lateral displacement of the segment after it has been placed in position upon the blank.

In Fig. IV of the drawings, I have shown the supporting strip 4′ as having the upper portion thereof bent slightly in an outward direction with respect to the lens blank 1 so that during the fusing operation when this strip softens it will positively shrink in an outward direction so that there is absolutely no possibility of any portion thereof becoming engaged between the segment 3 and the countersink 2.

From the structure illustrated and described, it will be seen that I have provided means entirely out of the field of uniting and joining of the parts of the bifocal so that a perfect blank for a lens may be produced and one not subject to the defects met with in prior methods.

While I have herein shown and described one specific form of my invention, I do not wish to be limited thereto except to such limitations as the claims may import.

I claim:

1. A step in the process of forming a fused bifocal lens consisting in cementing to the edge of the major blank a fusible spacing member projecting upwardly above the surface of the blank, said member being of a material having a lower fusing point than that of the major blank to which it is secured.

2. The process of uniting two portions of a lens as by fusion, including preparing the surfaces to be united, forming a spacing member of material whose softening point is as low as that of either of the members to be united with an attaching portion and with an angularly disposed spacing portion, cementing the spacing device to one of the members to be united with the angular portion projecting from said member adjacent the prepared surface thereof, mounting the other member to be united on the first with one edge resting on the angular spacing portion and held spaced from the first member by said portion, and subjecting the parts to a fusing heat whereby the angular portion of the spacing member will be caused to yield and move outwardly and downwardly away from the surfaces to be united and allow said surfaces to come into engagement without distortion thereof, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MAX A. LAABS.

Witnesses:
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