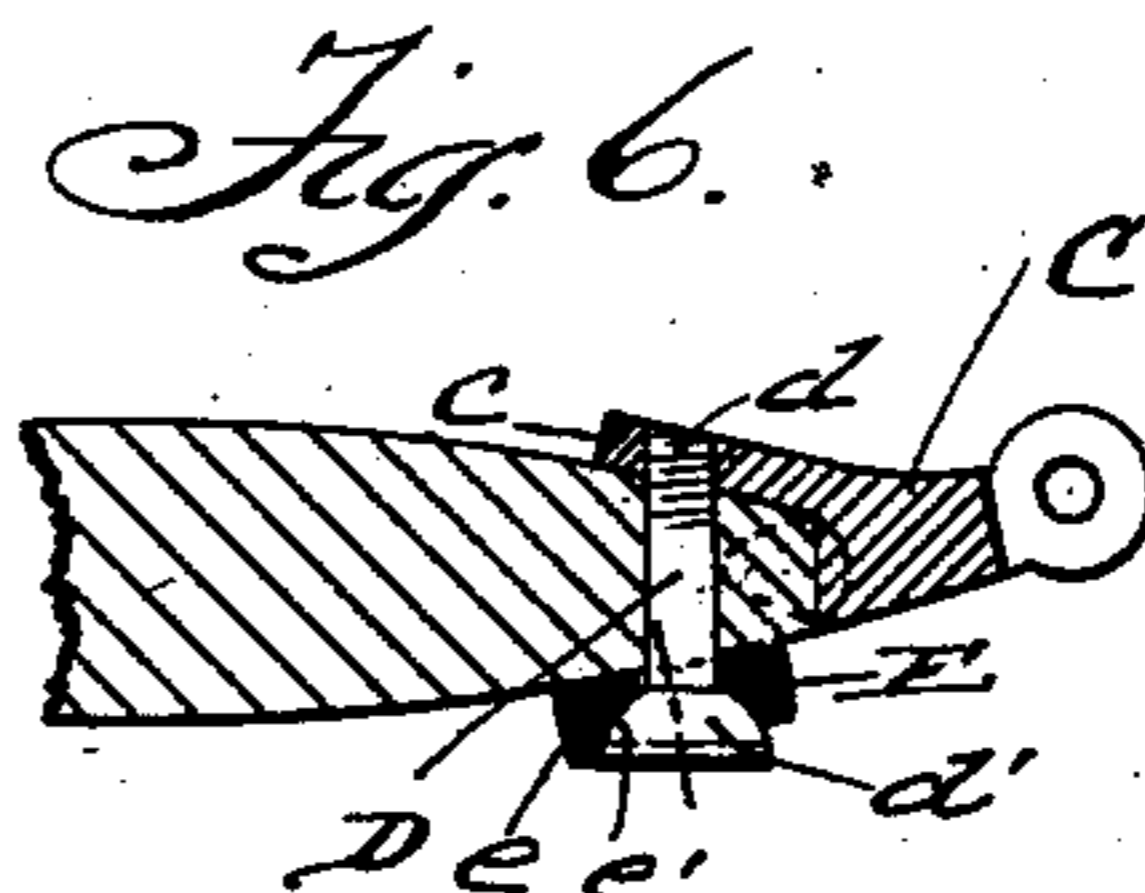
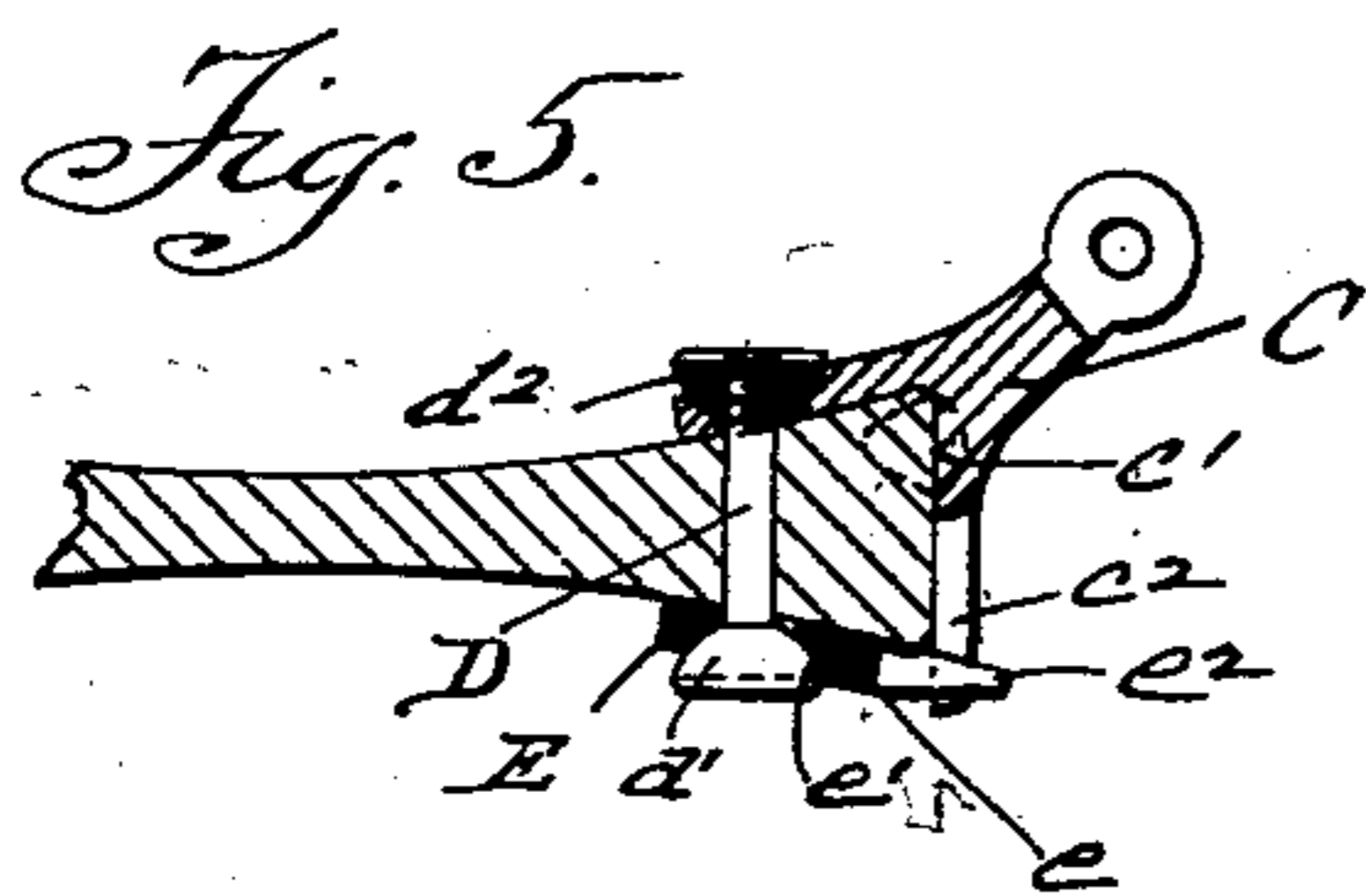
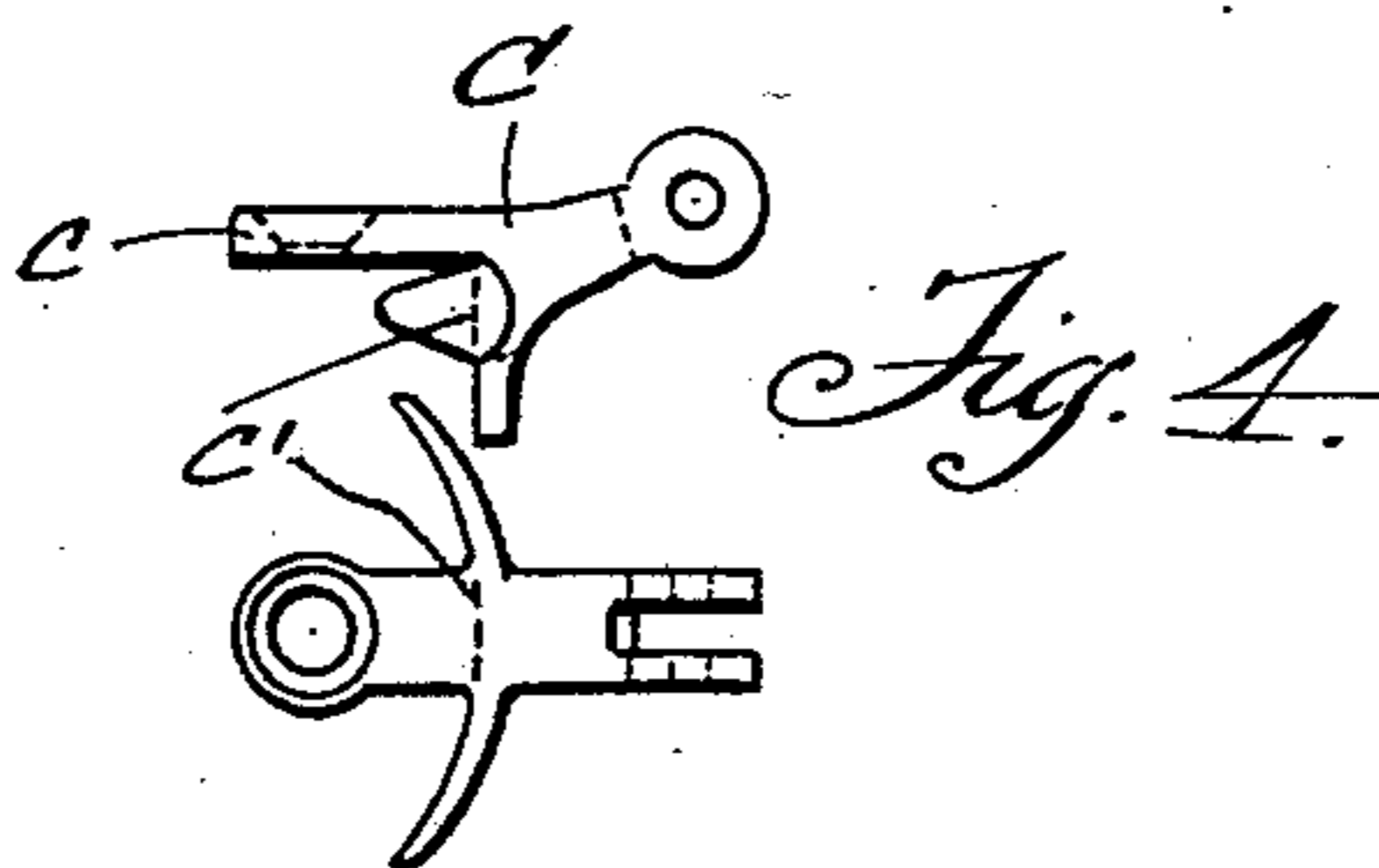
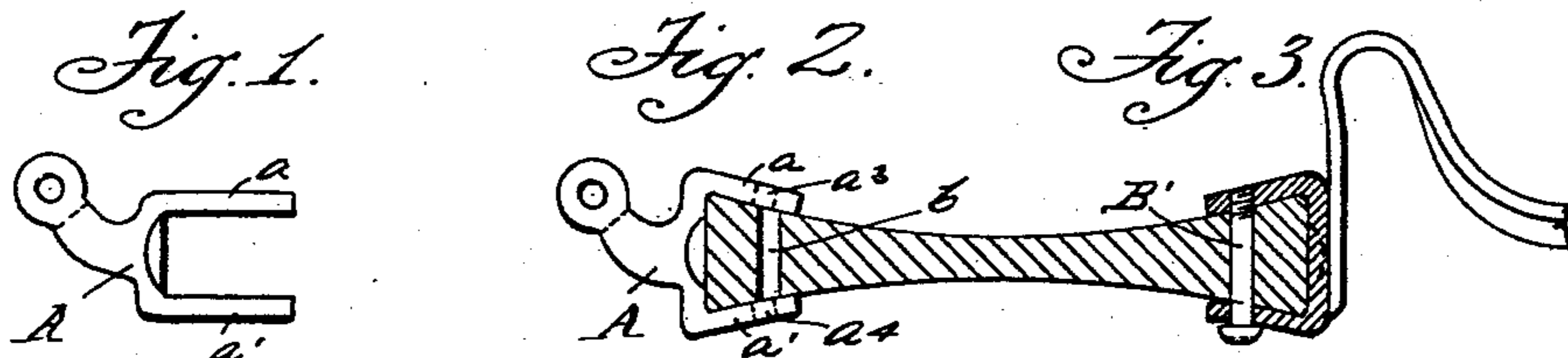


(No Model.)

W. S. ESSICK & C. S. REES.  
FRAMELESS SPECTACLES OR EYEGLASSES.

No. 570,625.

Patented Nov. 3, 1896.



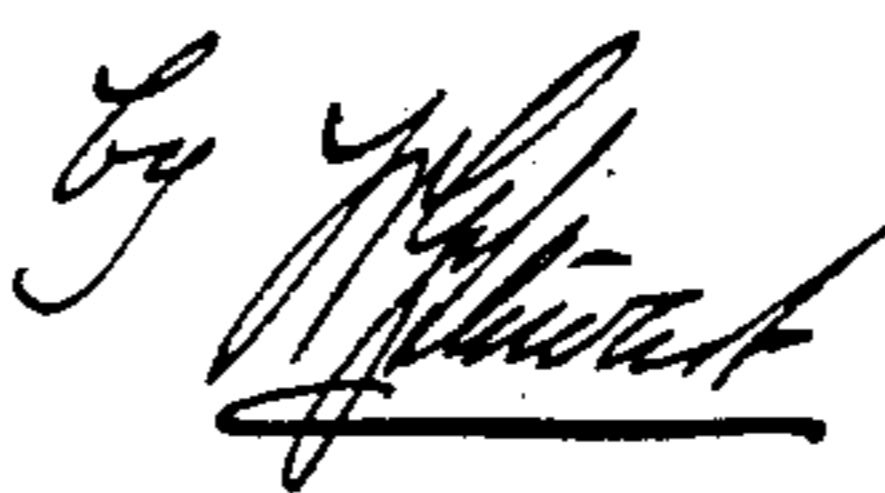
Witnesses.

Adam L. Otterburn.

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Walter S. Essick }  
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Inventors

By 

Attorney.

# UNITED STATES PATENT OFFICE.

WALTER S. ESSICK, OF READING, PENNSYLVANIA, AND CHARLES S. REES, OF SELMA, ALABAMA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE INTERCHANGEABLE FRAMELESS SPECTACLE CO., LIMITED, OF READING, PENNSYLVANIA.

## FRAMELESS SPECTACLES OR EYEGLASSES.

SPECIFICATION forming part of Letters Patent No. 570,625, dated November 3, 1896.

Application filed May 4, 1896. Serial No. 590,095. (No model.)

*To all whom it may concern:*

Be it known that we, WALTER S. ESSICK, residing at Reading, Berks county, Pennsylvania, and CHARLES S. REES, residing at Selma, Dallas county, Alabama, citizens of the United States, have invented certain Improvements in Frameless Spectacles or Eyeglasses, of which the following is a specification.

Our invention relates to that class of spectacles and eyeglasses known as "frameless," in which the nose-piece and temple-joints are secured directly to the lenses. Heretofore these fittings have been made in the form of clips, the opposing ears of which span the lens and are bound together against the opposite faces of the latter, a screw commonly passing through perforations in one of the ears and in the lens and engaging a screw-threaded perforation in the opposite ear. A very serious objection to this construction is that it necessitates the keeping in stock of a variety of clip-fittings adapted to various thicknesses of lenses, and even with such a variety it is practically difficult if not impossible to properly fit them to the lenses. A further serious objection is that even when carefully fitted and fastened the liability of breakage of the lenses is so great as to cause many to prefer the framed glasses, notwithstanding obvious advantages of the frameless construction. It is our object to overcome both of these objections, and this we have accomplished by means of the simple but important improvements described in connection with the accompanying drawings, the novel features of which are specified in the claims.

Figure 1 shows a clip-fitting of ordinary form, and Figs. 2 and 3 represent the same applied to a lens of considerable curvature. Fig. 4 shows our improved single-ear fitting, and Fig. 5 represents the same applied to the lens shown in Fig. 2. Fig. 6 shows our improved fitting in modified form applied to a lens of opposite curvature from that shown in Fig. 5.

The fittings represented in Figs. 1 and 4 are temple-joints; but it will be understood that the invention relates equally to other attachments, such as the nose-pieces of either

spectacles or eyeglasses. The ordinary form of fitting A (represented in Fig. 1) is provided with two parallel ears  $a a'$ , between which the lens is inserted and clamped by means of a clamping-screw, which passes through one ear and the lens and screws into the other ear. Owing to the endless variety of lenses, both as to curvature and thickness, fittings of suitable dimensions and shape must be made and kept in stock by all dealers pretending to be properly equipped. Moreover in Fig. 2 is indicated one of the difficulties arising in the practical use of these fittings, the ears  $a a'$  being so bent as to approximately fit the double concave lens on both faces, which is an obviously difficult operation, while proper alinement of the holes  $a^3 a^4$  in the ears of the fitting with the perforation  $b$  in the lens is even more so. When these difficulties are successfully overcome, however, as indicated in Fig. 3, the clamping by means of screw B' is very ineffective, owing to the unequal strain brought to bear upon the lens around the hole  $b$ , as indicated, a defect which is not only liable to quickly cause the loosening of the connection but also to cause breakage of the lens even in the act of tightening up the clamping-screw.

In our improved fitting C we provide a bearing against one face only of the lens, thus rendering it at once equally applicable to lenses of all thicknesses. The single ear  $c$  may be readily bent to suit the curvature of the surface against which it is to bear, and it is then clamped against said surface as firmly as possible without danger of strain or breakage by means of a clamping-screw and washer D and E, as shown in Figs. 5 and 6. The hemispherical head  $d'$  of the screw seats itself properly in the correspondingly-shaped recess or socket  $e'$  of the washer, while allowing the latter to properly adjust itself to the surface of the lens, the opening  $e$  in the washer being sufficiently larger than the body of the screw D to permit it to assume any required angle to the latter, as shown.

In the simpler form of construction indicated in Fig. 6 the hole in the ear  $c$  is tapped to properly receive the threaded end  $d$  of the

screw in the same manner as shown in Fig. 3, the effect of our improved construction, however, being to firmly clasp the material around the hole in the lens, so as to practically reinforce and strengthen it instead of straining it, as in the prior construction, while at the same time producing a far more firm connection of the fitting. Instead of tapping a thread directly in the ear  $c$ , however, a hemispherical nut  $d^2$ , as shown in Fig. 5, may be used, thus duplicating the construction at the head of the screw and providing a complete universal-joint connection.

It will be noticed that in our improved construction, as in the old form, the fitting shoulders at  $c'$  against the edge of the lens, so as to avoid possible turning upon the screw  $D$ . In Figs. 4 and 5 we also indicate a means of preventing turning of the washer  $E$ , consisting of a projecting finger  $e^2$  on the washer, arranged to loosely engage a depending extension  $c^2$  of the fitting; but we do not consider any such provision essential to the satisfactory working of our invention, inasmuch as we have found by practical use of our invention that the clamping construction may be safely made so as to securely fasten the fitting, and, moreover, we have found by severe tests that the uniform pressure thus secured upon the lens greatly decreases the liability of breakage and enables us to place the hole for the clamping-screw so much nearer the edge of the lens as to materially extend the field of vision, thus largely obviating another objection to frameless glasses.

As already stated, a single size of our improved fitting may be quickly adapted to any shape and thickness of lens, thus avoiding the necessity of keeping a varied stock on hand. The screws may be readily cut off to

suit any given lens. The lenses also may have the screw-holes drilled at a uniform distance from the edge.

What we claim is—

1. In spectacles or eyeglasses, a frameless lens and a metallic fitting thereto having one clamping-ear only contacting with one face of the lens and a clamping-screw passing through a perforation in the lens and engaging said ear substantially as set forth.

2. A fitting for frameless spectacle-lens, having one clamping-ear only adapted to bear against one face of the lens, a shoulder forming a stop against the edge of the lens, and a perforation in said ear for a clamping-screw, substantially as set forth.

3. In spectacles or eyeglasses, a frameless lens and a metallic fitting thereto having one clamping-ear only to contact with one face of the lens, a clamping-screw passing through a perforation in the lens and engaging said ear, and a washer interposed between the head of the screw and the opposite face of the lens and in which said head is socketed, substantially as set forth.

4. A perforated spectacle-lens having a fitting clamped against one face thereof only by means of a clamping-screw passing through the perforation in the lens and a washer for said screw adjustably seated against the opposite face of the lens, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WALTER S. ESSICK.  
CHARLES S. REES.

Witnesses:

W. G. STEWART,  
W. S. WOOLSEY.