

(No Model.)

W. S. ESSICK.
FRAMELESS SPECTACLES OR EYEGLASSES.

No. 572,107.

Patented Dec. 1, 1896.

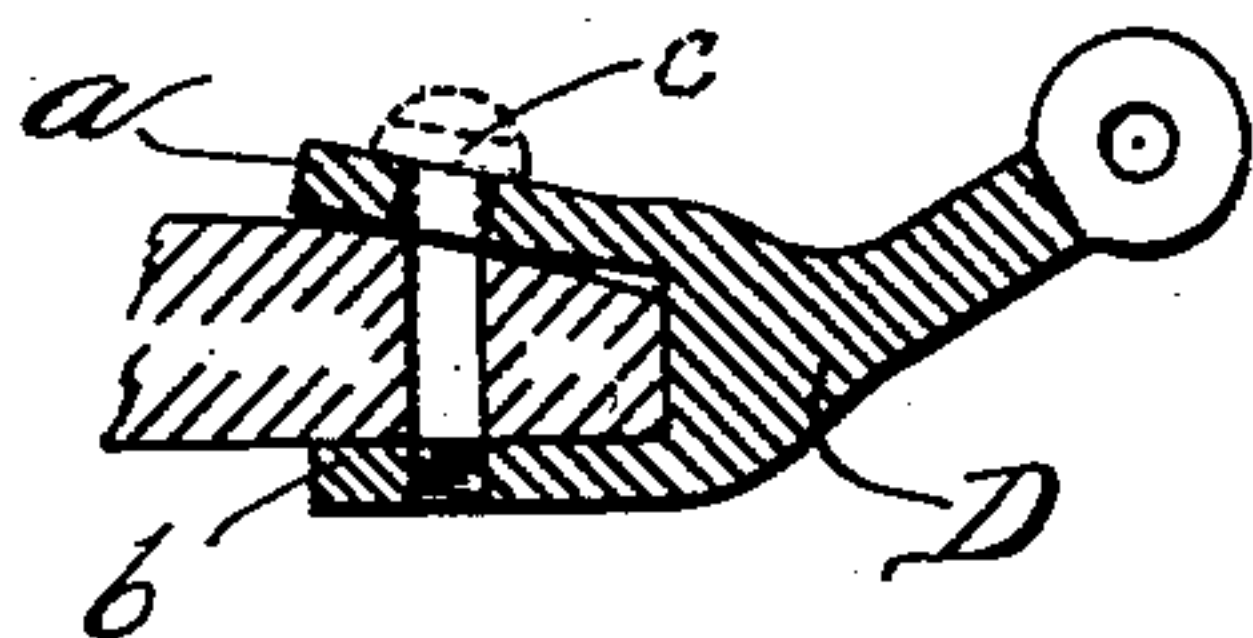


Fig. 1.

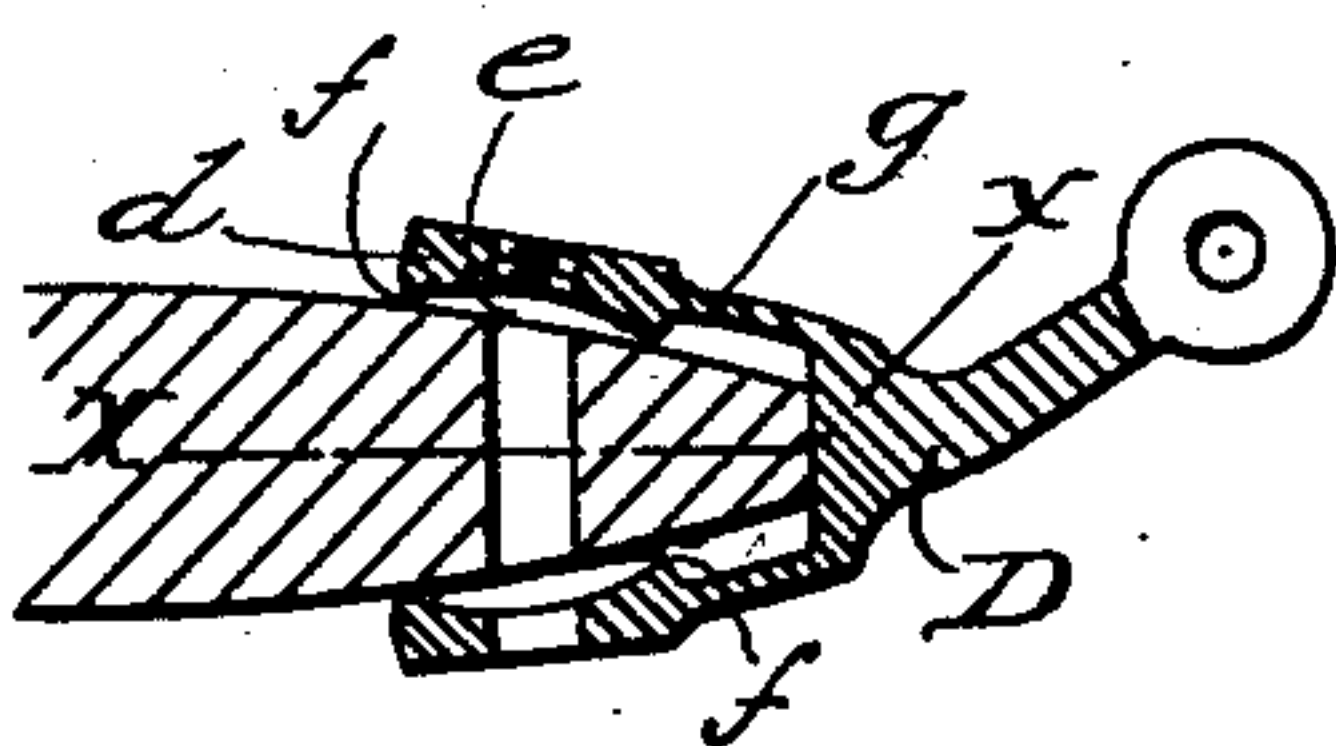


Fig. 2.

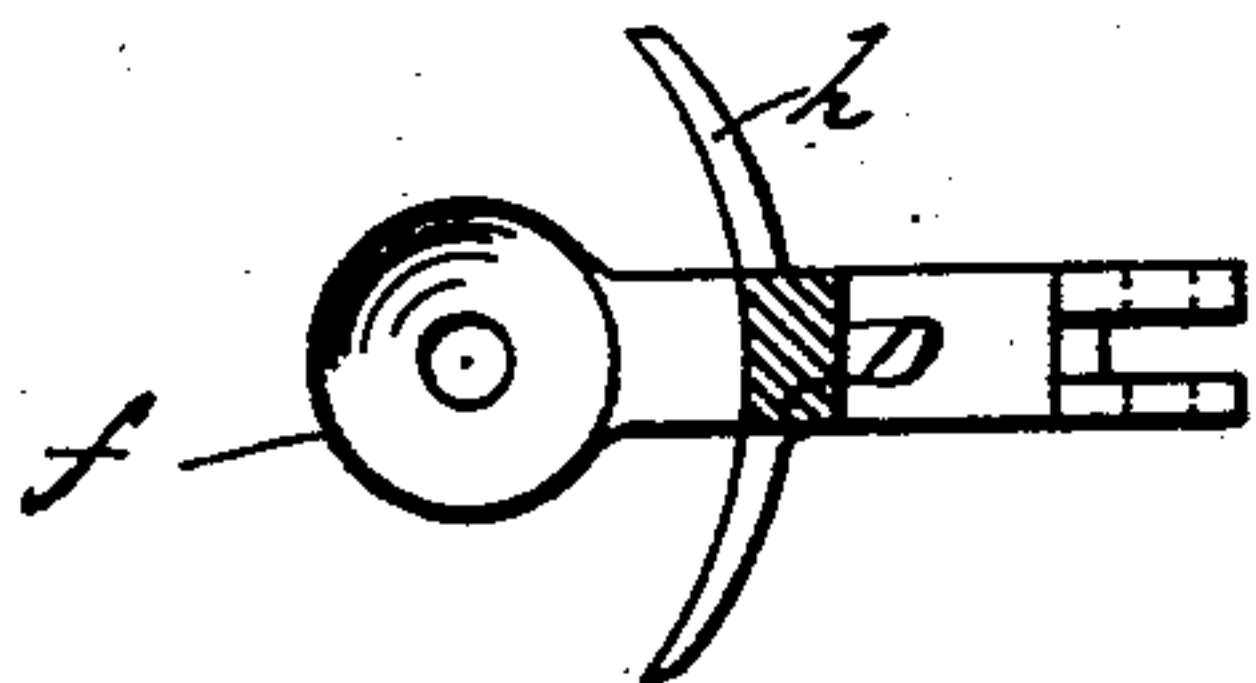


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

WALTER S. ESSICK, OF READING, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE INTERCHANGEABLE FRAMELESS SPECTACLE COMPANY, LIMITED, OF SAME PLACE.

FRAMELESS SPECTACLES OR EYEGLASSES.

SPECIFICATION forming part of Letters Patent No. 572,107, dated December 1, 1896.

Application filed September 16, 1896. Serial No. 605,996. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. ESSICK, a citizen of the United States, residing at Reading, county of Berks, State of Pennsylvania, have invented certain Improvements in Frameless Spectacles or Eyeglasses, of which the following is a specification.

My invention relates to frameless spectacles or eyeglasses, and particularly to the manner of attaching the necessary fittings to the frameless lenses. These fittings are commonly secured to the lenses by means of clamping-screws or rivets, each of which passes through a perforation in the lens and engages a correspondingly-perforated clamping ear or ears, which form part of the fitting whether the latter be arranged for use as a nose-piece connection, a temple connection, or a handle. These ears and the fittings of which they form a part are commonly made of metal, and the inner face of each ear is drawn tightly into contact with the surface of the lens by the clamping-screw. In practice this necessitates very careful workmanship to avoid so straining the lens on the one hand as to cause it to crack either in the act of clamping the fitting to it or thereafter in the ordinary handling of the finished article, and on the other hand to avoid a looseness of connection, which is very unsatisfactory.

The purpose of my invention is to overcome these difficulties; that is, to enable the fitting-ears to be clamped against the surface of a lens with any desirable amount of pressure, not only without danger of straining or cracking the lens, but so as to overcome the weakness naturally caused by the perforation provided for the passage of the clamping-screw, which form of connection for the fittings is generally used, notwithstanding the resulting difficulties above referred to.

In Figure 1 of the accompanying drawings I have indicated an ordinary fitting as commonly attached to a frameless lens, the latter being shown of plano-convex form. It will be at once noticed that the ear *a*, which contacts with the convex face of the lens, necessarily bears on the edge of the perforation in the lens, so that when the clamping-screw *c*

is drawn up practically the whole strain comes at its point of greatest weakness, thus tending to start a fracture even when only a moderate clamping-pressure is brought upon it; but it is also evident that this clamping-pressure is brought to bear at the most ineffective point for firmly attaching the fitting to the lens, being as near as possible to the center on which the fitting tends to turn, and thus causing any strain upon the projecting portion of the fitting to act at a considerable leverage and necessitating a correspondingly greater clamping-pressure with the accompanying increased likelihood of breakage. In the case of ear *b* contacting with a flat lens-surface the likelihood of breakage being caused by the clamping-pressure is much less, yet there is no certainty that this pressure will be evenly distributed over the lens-surface covered by the ear, and any inequality will tend to cause a fracture. Moreover, even if it were fairly distributed over the whole surface it would not be as effective in firmly clamping the parts as I now find it possible to make it. Having long experienced these difficulties in connection with the universally-used form of fitting, I finally conceived the idea that to avoid them that portion of the lens-surface immediately around the perforation should be entirely freed from the clamping-pressure and that the latter should be distributed as evenly as possible around said perforation at as great a distance therefrom as is practicable.

To meet the requirements thus theoretically determined upon, I have changed the form of the contacting face of the ears, as indicated in Figs. 2 and 3.

Fig. 2 is a longitudinal section of a fitting embodying my improvements shown attached to a lens, and Fig. 3 is a sectional plan view of the fitting on the line *x x* of Fig. 2.

The clamping-ear *d* is of ordinary size and is connected with the body *D* of the fitting, as usual, by an arm *g*, which latter, however, I preferably reduce in thickness, so as to make it sufficiently yielding in the plane of the clamping-screw to permit the clamping-ear to properly adjust itself to the surface of

the lens, as hereinafter described. In order to insure proper contact with the surface of the lens, as already explained, I provide the inner face of the clamping-ear with an outer bearing f at a distance from the perforation for the screw c and with a recess e , which prevents the ear from contacting with that portion of the lens immediately surrounding the perforation therein for the passage of the clamping-screw c , no matter what the shape of the lens. This outer bearing is preferably reduced to a sufficiently thin edge to permit of the metal being slightly bent or crushed by the clamping-pressure, so as to make it conform exactly to the lens-surface, thereby insuring an unbroken line of contact around the hole; and this result is facilitated by the yielding connection g between the ear and the body of the fitting, which allows the bearing-ring f to be drawn down evenly all around, even though it is not properly set to the lens before the clamping-screw is tightened up, as indicated in Fig. 2, lower ear. The necessary strength is given to this connection g by making it relatively wide, thus combining ample rigidity with the capacity to yield in the plane of the screw for the purpose described. The effect of this improved construction is important both in facilitating the operation of attaching the fitting and in rendering the connection more firm and safe. The lens is freed from all contact with the fitting adjacent to the perforation, and the clamping-pressure on the bearing f may be increased to any possible extent without injury to the lens, such pressure, on the contrary, positively preventing breakage of the lens through the perforation, which has been heretofore the great source of weakness in this class of spectacles. Moreover, the effectiveness of the clamping-pressure, as well as the amount of pressure which it is safe to apply, is so greatly increased that the straps h , which are ordinarily employed to prevent

turning of the fitting, may be dispensed with, if desired. 45

What I claim is—

1. A perforated spectacle-lens having a fitting clamped thereto by means of a clamping-screw engaging a perforated ear of said fitting, the inner face of which ear is recessed to form an outer bearing against the lens and to leave a portion of the lens immediately surrounding the perforation free from pressure, substantially as and for the purpose set forth. 50 55

2. A fitting for a perforated spectacle-lens having a perforated clamping-ear and an outer bearing formed on the inner face of said ear and adapted to seat against the surface of the lens at a distance from the perforation in the latter substantially as and for the purpose set forth. 60

3. A fitting for a perforated spectacle-lens having a perforated clamping-ear recessed on its inner face so as to form an outer edge of metal adapted to contact with the face of the lens and to conform to the latter under clamping-pressure, substantially as and for the purpose set forth. 65 70

4. A fitting for a perforated spectacle-lens having a perforated clamping-ear with an outer bearing formed on the inner face thereof and adapted to seat against the surface of the lens at a distance from the perforation in the latter and a yielding connection substantially as described between said ear and the body of the fitting adapted to permit adjustment of the ear to its seat upon the lens under pressure of the clamping-screw substantially as and for the purpose set forth. 75 80

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

WALTER S. ESSICK.

Witnesses:

W. G. STEWART,
ADAM L. OTTERBEIN.