Dec. 28, 1926. 1,612,693

E. BAUSCH

MAGNIFYING GLASS

Filed Oct. 25, 1924

Fig. 1

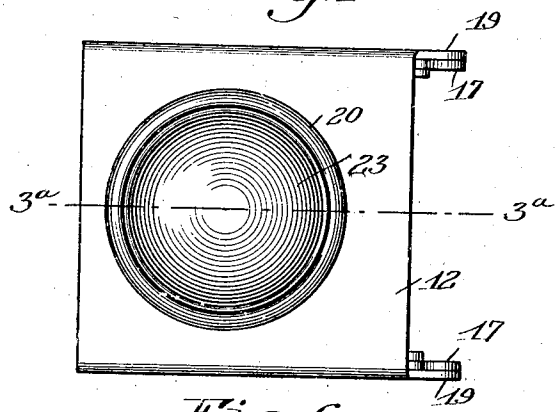


Fig. 4

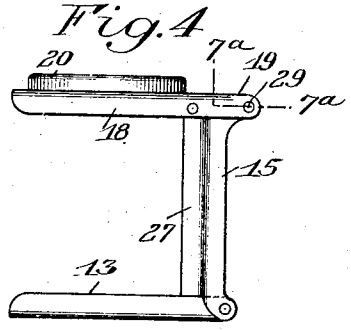


Fig. 6

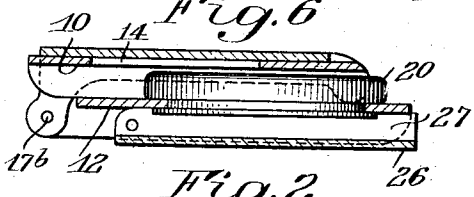


Fig. 5

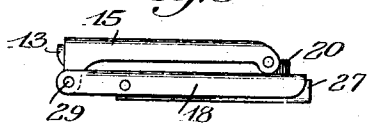


Fig. 2

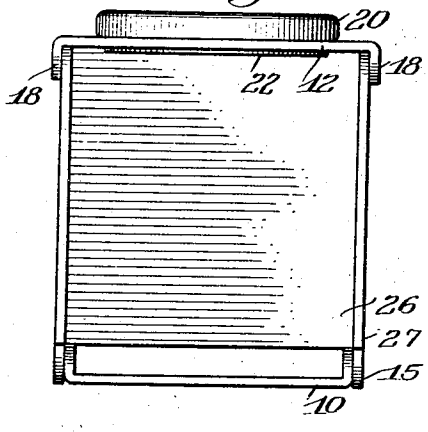


Fig. 3

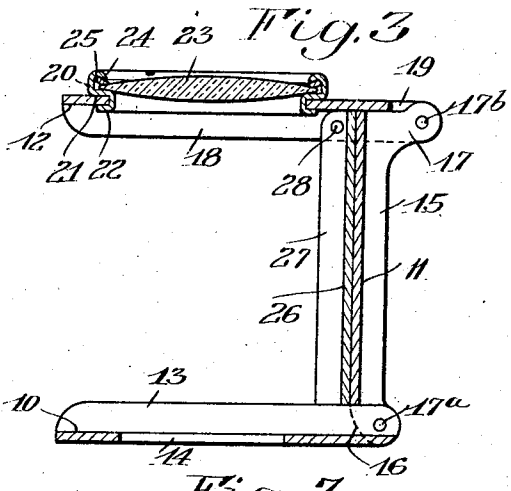


Fig. 8

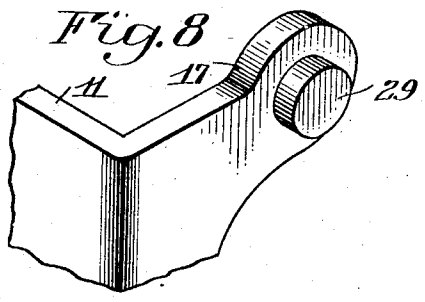
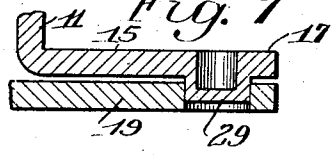


Fig. 7



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UNITED STATES PATENT OFFICE.

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MAGNIFYING GLASS.

Application filed October 25, 1924. Serial No. 745,888.

This invention relates to magnifying glasses, and more particularly to the pocket variety comprising lens means mounted on adjustably connected parts adapted to be arranged for supporting the lens in properly focussed relation to the object to be viewed and also for folding compactly into a small space when not in use, the chief object of the invention being to provide an improved character of construction for a magnifying glass of this type by which it may be economically formed of relatively thin sheet metal with the parts arranged to fold compactly together and in such a manner as to fully protect the lens.

To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a top plan view of a magnifying glass embodying the present invention with the parts arranged as in use.

Figure 2 is a side elevation of the same as viewed from the left in Figure 1.

Figure 3 is a sectional elevation on the line 3^a—3^a in Figure 1.

Figure 4 is a view similar to Figure 3 but showing the parts in elevation on a reduced scale.

Figure 5 is a side elevation but showing the parts in folded relation.

Figure 6 is a similar view enlarged and in section.

Figure 7 is an enlarged detailed sectional view on the line 7^a—7^a in Figure 4, showing the pivot construction, and

Figure 8 is a perspective detailed view of a part of the same.

Similar reference numerals throughout the several views indicate the same parts.

The invention provides a magnifying glass embodying a form of construction for the supporting frame capable of being struck up in a simple and economical manner from relatively thin sheet metal to afford at the same time a substantial degree of strength and stiffness and provide for compact folding of the frame when not in use with full protection for the lens surfaces. This frame consists, generally speaking, of three parts, namely, a base plate 10, a supporting plate 11 and a lens plate 12 pivotally connected together by advantageously simple means as hereafter more fully described.

The base plate is of generally rectangular shape having the marginal portions at opposite sides thereof turned angularly upward to provide stiffening flanges 13 which also serve to provide the means for pivotal connection with the supporting plate 11 as hereafter described. The base plate is also preferably formed at its central portion with an aperture 14 for viewing the object to be examined, the present glass being particularly adapted for testing the weave of fabrics for which purpose aperture 14 is given predetermined dimensions to disclose a unit area of fabric the number of threads in which may be readily counted when viewed through the lens.

The supporting plate 11 has the marginal portions at opposite sides thereof turned angularly toward the rear to provide stiffening flanges 15 each of which is extended at its ends as at 16 and 17 respectively for pivotal connection with the base and lens plates at 17^a and 17^b respectively by means described hereafter. As shown, the flange extensions 16 embrace the flanges 13 so that the base plate may be swung from the supporting position shown in Figure 3 to the folded position shown in Figure 6 in which it is nested within the supporting plates 11.

The lens plate 12 has marginal portions at opposite sides thereof turned angularly downward to provide in a similar manner stiffening flanges 18 extended at one end as at 19 for pivotal connection with the extended flange portions 17 of the supporting plate 11. The lens plate is formed with an opening through which is inserted one end of a sheet metal thimble 20 having a shoulder 21 seated on the plate 12 adjacent the opening, the end of the thimble being rolled over as shown at 22 to secure the thimble in place. The lens 23 is seated at its periphery on the shoulder portion of the thimble the upper end 24 of which is rolled over against a washer 25 bearing yieldingly on the upper surface of the lens to secure it in its mounting. The lens plate may be swung from the position of use shown in Figure 3 to the folded position shown in Figure 6 in which the lens is nested within the flanges 13 of the base plate and protected on one side by the latter and the supporting plate 11. In this position the lens lies inwardly of the flange

of its supporting plate 12 and is protected on the other side by the latter and flanges 18 thereof, the parts occupying the compact parallel relation shown in Figures 5 and 6.

In addition to the flange parts described above there is preferably provided, also, a cover plate 26 having angularly turned flanges 27 at opposite sides thereof which latter are received at one end and pivotally connected at 28 as hereafter described to the flanges 18 of the lens plate at a point adjacent the supporting plate 11 as shown. In the position of use shown in Figure 3, the lower end of the cover plate rests upon the flanges 13 and serves as a strut to additionally support the lens plate. In folded position the cover plate 26 lies over the outer surface of the lens, as shown in Figures 5 and 6, to further protect the latter, the cover plate in this position being compactly received within the flanges of the lens plate.

An advantageous form of pivotal connection is provided for the several plates by recessing or punching out a portion of a flange of one as for example the flange extension 19 of the lens plate, Figures 1 and 7, and pressing out a projection or trunnion 29 in the cooperating flange extension 17 of the supporting plate, by means of which the connection is formed entirely from the material of the plates themselves and in such a manner that the cooperating members may be sprung into place in assembly by a slight flexing of the plates.

When in position for use, the body of the supporting plate 11 rests at its lower edge on the flanges 13 of the base plate by means of which the plate 11 is rigidly supported in vertical position. Similarly the body of the lens plate 12 rests upon the upper edge of the body of the supporting plate 11 and is also supported by the cover plate as already described. The latter may if desired have its surface silvered or otherwise prepared to afford a reflecting surface to assist in illuminating the object under examination. From such position in use the parts may be compactly folded as described by first swinging the base plate against the back of the supporting plate and then the lens plate against the base plate, with the cover plate against the lens which is thus completely enclosed and protected. The frame parts are all so constructed that they may be readily and economically formed from relatively light sheet metal which is rendered sufficiently stiff for all practical purposes however by the reinforcing flanges which latter provide also for the advantageous pivotal connections described above.

I claim as my invention:

1. A magnifying glass comprising a base plate, a supporting plate and a lens plate each formed of relatively thin sheet metal with angularly turned flanges at opposite sides thereof for stiffening the same, means pivotally connecting the flanges of said base and lens plate to the flanges of said supporting plate and arranged to provide for the folding of said plates into compact parallel relation, lens means mounted in said lens plate and a plate pivotally connected with said lens plate for movement to an extended position in supporting engagement with said base plate and also to a folded position to cover and protect said lens means.

2. A magnifying glass comprising a base plate, a supporting plate and a lens plate pivotally connected to swing substantially into parallel relation, a lens carried by said lens plate and a cover for the lens carried by one of said plates and movable relative thereto into protecting position with respect to said lens.

3. A magnifying glass comprising a base plate, a supporting plate and a lens plate pivotally connected to swing substantially into parallel relation, a lens carried by said lens plate and a cover for the lens pivoted upon the lens plate and adapted when the latter is in operating position to engage the base plate to form a brace for the supporting plate.

4. A magnifying glass comprising a base plate, a supporting plate and a lens plate, each having a pair of flanged portions at opposite sides thereof, the flanged portions of the base plate and the flanged portions of the lens plate being pivotally connected with the flanged portions of the supporting plate to permit said plates to swing substantially into parallel relation, lens means carried by said lens plate and a member pivoted upon one of said plates to form a cover for the lens means.

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