July 9, 1929. L. H. BARRINGER 1,720,199

LIGHT RAY PROTECTOR AND HOLDER

Filed Sept. 10, 1926 2 Sheets-Sheet 1

Fig. 1.

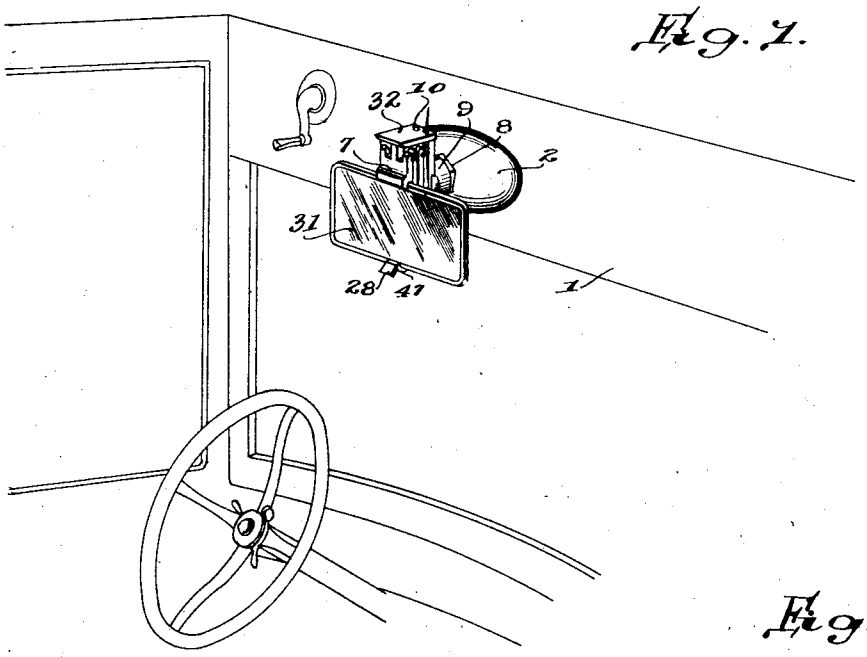


Fig. 3.

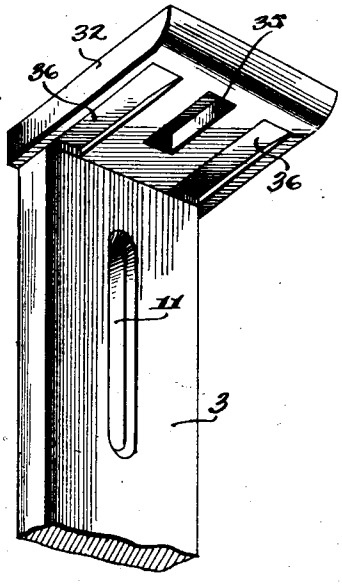
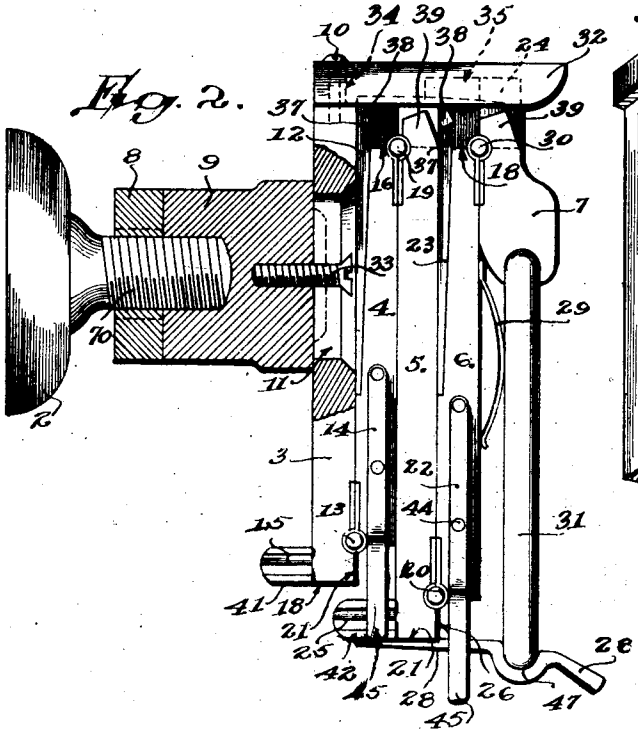


Fig. 2.



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Fig. 4.

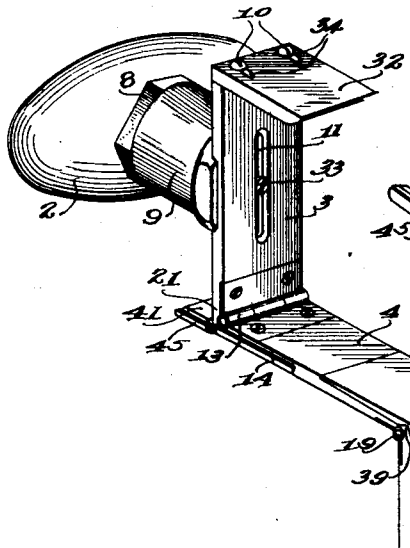


Fig. 7.

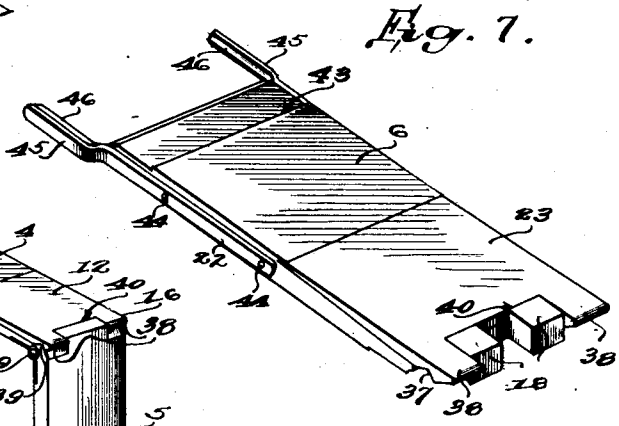
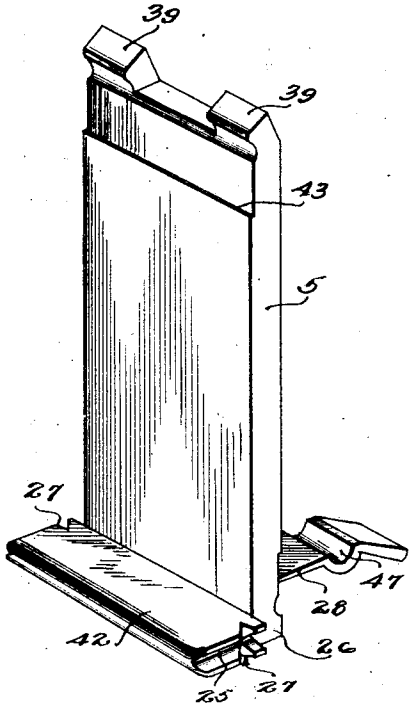


Fig. 5.



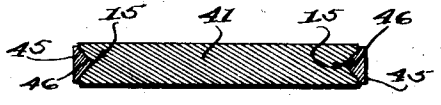


Fig. 6.

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UNITED STATES PATENT OFFICE.

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LIGHT-RAY PROTECTOR AND HOLDER.

Application filed September 10, 1926. Serial No. 134,630.

This invention relates to improvements in light ray shields, and it consists of the constructions, combinations and arrangements herein described and claimed.

An object of the invention is to contribute to safety in driving a motor vehicle, two of the outstanding purposes being, first, to provide a shield for the eyes against the lights of approaching vehicles, and second, to provide a simple and yet unique means for holding the glare shield.

Another object of the invention is to provide a support for the glare shield which is intended to assume either of two extreme positions, namely, either an entirely closed or fully extended position, the support being composed of jointed sections that have associated means for locking them only when either of the two positions mentioned is assumed.

Other objects and advantages appear in the following specification, reference being had to the accompanying drawings, in which,

Figure 1 is a perspective view of the device in the closed position, being mounted above the wind shield of an automobile,

Figure 2 is a side elevation of the device, parts being shown in section,

Figure 3 is a detail perspective view of the back and retaining plates,

Figure 4 is a perspective view of the device in the extended position,

Figure 5 is a detail perspective view of the second section hereinafter referred to,

Figure 6 is a detail cross section showing how the lugs of the side leaf springs enter the grooved heels to produce an interlocking engagement,

Figure 7 is a detail perspective view of the third section hereinafter referred to.

The types of protectors with which motorists are commonly familiar usually comprise a shield of colored celluloid with any one of a number of devices by which it may be fastened, either permanently or temporarily, to the inside of the motor vehicle at the front. It is deemed unnecessary to attempt an explanation of why these devices apparently have not come into general use, it being regarded sufficient to say that inadequate mounting devices have been most fruitful in discouraging the use of such protectors.

As has been stated in a general way already, it is one of the purposes of the device herein disclosed, to provide an adequate support for a glare shield. That support comprises joined sections that may be extended or collapsed according to needs, there being means for locking the sections together only when closed and when extended. There are no intermediate positions. The motorist must either close the device or have it fully open, and when either position is assumed, the sections will be firmly locked so that there is no danger of objectionable looseness.

Reference is made to the drawings. Figure 1 shows the application of the device to the interior of what may be regarded as a sedan automobile. The lintel 1 above the windshield, provides the foundation for a base 2 to which the back plate 3 of a jointed glare shield support is attached. This support includes first, second, third and fourth sections 4, 5, 6 and 7. A threaded stud 70 on the base 2 carries a jam nut 8 which is tightened against a hub 9 when the latter is screwed in position.

Loosening of the jam nut will permit a swinging of the support to either side. The motorist may think it desirable to have the support disposed at a slight angle, that is to say, instead of having the support straight up and down before him, he may wish to have it stand at an angle either to the right or left of the vertical center. Upon turning the hub 9 a sufficient distance, the jam nut 8 may be tightened thereagainst to fix the position.

A pair of bolts or screws 10 secure a retaining plate 32 to the back plate 3. The retaining plate has slots 34 to receive the screws. The latter enter the top edge of the back plate 3, thus disposing the retaining plate at a right angle. The slots permit a forward or backward adjustment of the retaining plate, thus permitting a snug holding of the glare shield support when closed or folded as in Figure 2. The retaining plate has a groove 35 on the underside and in the center as shown in Figure 3 and a pair of shallow depressions 36 which respectively receive a lever end and the notched ends of springs on certain sections.

A slot 11 in the back plate 3 receives the head and a portion of the shank of a screw 33 that enters the hub 9. The slot and screw

are designed to provide adjustments of the jointed sections relative to the base 2, thus making it possible to adapt the device to persons whose eye levels are at various distances above the driver's seat.

Plate springs 12 and 23, suitably secured to the first and third sections 4 and 6, have notches 37 in the projecting free ends 38, which notches are intended to receive shoulders 39 of the adjacent second and fourth sections 5 and 7. The notches and shoulders or shouldered formations engage only when the support is fully extended, as in Figure 4, thereby to interlock the sections in fixed relationship.

The plate springs 12 and 23 are cut out at 40 at the free ends so that the portions 16 and 18, known as side portions, may extend to points where they can abut the ends of the adjacent sections 5 and 7 when the support is fully extended. Portions 21 and 26 of the back plate 3 and section 5, also known as side portions, abut the ends of the sections 4 and 6 at the same time. These abutting side portions and ends of the various sections produce square shoulders which stiffen the support when lowered or extended.

Hinges 13, 19, 20 and 30 movably join the various sections. The leaves of the hinges are contained by recesses in the surfaces of adjacent sections as shown, for example, at 43 in Figure 5. Leaf springs 14 and 22 assist the plate springs 12 and 23 in locking the sections in the fully extended position. The former are attached to the edges of the sections 4 and 6 as indicated at 44 in Figure 7. The protruding free ends 45 of the springs 14 and 22 have lugs 46 designed to engage the grooves 15 and 25 of heels 41 and 42 on the back plate 3 and section 5. The heel 42 has cross slots 27 with which the lugs of the springs 14 are engageable when the device is folded (Fig. 2) to secure the sections 4 and 5.

A latch spring 28, carried by the section 5, has a depression 47 to receive an edge of the glare shield 31 when the device is closed. At such time a release spring 29 is put under tension. The function of this spring is to initially throw out the glare shield prior to an extension of the support upon release of the latch spring 28. The section 7 has a lever end 24 which is introduced into the groove 35 (Fig. 2) and then used as a lever to compress the sections and spring 29 while moving the glare shield 31 down to a position where it will engage in the depression 47.

The operation is readily understood. There are only two positions of the support, namely the fully closed or folded position in Figure 2, and the fully extended position in Figure 4. The jointed sections of which the support is composed have means to interlock them when each position is assumed.

When in the fully extended position as in Figure 4 the shouldered formations 39 of the sections 5 and 7 will engage the notches 37 of the plate springs 12 and 23. At the same time, the grooves 15 and 25 in the heels 41 and 42 of the back plate 3 and section 5 will receive the lugs 46 of the side springs 14 and 22 thus to lock the sections in fixed positions.

In closing the support the joints are readily "broken" by merely pressing the sections in the proper directions. The various plate and leaf springs are powerful enough to hold the sections in the extended position but they will yield under sufficient closing pressure. The shallow depressions 36 on the underside of the retaining plate 32 (Fig. 3) will receive the projecting free ends 38 of the springs 12 and 23 (see Figure 2). The lever end 24 will be made to engage one end of the groove 35. Upon then moving the glare shield 31 toward the final position there will be a lever action to press the sections together. The spring 29 will be held under tension as long as the glare shield is retained by the depression 47 of the latch spring 28.

Any looseness or swinging of the glare shield will be prevented. The lugs 46 of the side springs 14 will engage the cross slots 27 of the heel 42. The engagement of the lever end 24 in the groove 35 and the spring ends 38 in the depressions 36 prevent all side motion of the sections when folded. Upon desiring to extend the glare shield the motorist has only to press down on the latch spring 28 when the spring 29 will initially throw out the glare shield 31 so that the support has only to be pulled down into position. The engagement of the heel 42 with the heel 41, as will occur when the support is opened, will perform a wedge action upon the springs 14 causing the release of the lugs 46 from the cross slots 27.

While the construction and arrangement of the improved light protector is that of a generally preferred form, obviously modifications and changes may be made without departing from the spirit of the invention, or the scope of the claims.

I claim:—

1. A device of the character described comprising a glare shield, a support for the glare shield including a plurality of jointed sections by which the support may be extended, and means incorporated in the joints which means lock the sections in position upon full extension of the support.

2. A device of the character described comprising a glare shield, a support for the glare shield comprising a plurality of jointed sections, and means carried by certain sections being formed to assume a locking engagement with portions of adjacent sections to hold the sections in predetermined relationship when the support is fully extended.

3. A device of the character described com-

prising a glare shield, a support for the glare shield including a plurality of jointed sections certain ones of which have shouldered formations, and means carried by others of the sections having notches to receive the shouldered formations to lock the sections in fixed positions when the support is fully extended.

4. A device of the character described comprising a glare shield, a support for the glare shield including a plurality of sections, certain ones of the sections having shoulders, hinges so connecting the sections that side portions of said certain sections may abut the ends of adjacent sections, and springs carried by said adjacent sections having notches to receive the shoulders and lock the sections in the position of full extension.

5. A device of the character described comprising a glare shield, a support for the glare shield including a plurality of jointed sections, certain ones of the sections having shoulders and grooves, and leaf springs carried by others of the sections having formations to interlock with the respective shoulders and grooves when the sections are moved to a fully extended position on the support.

6. A device of the character described comprising a glare shield, a support for the glare shield, a plurality of jointed sections, leaf springs at the edges of certain sections said leaf springs having lugs, leaf springs on the fronts of the same sections having notches, others of the sections having shoulders engageable in the notches, and grooved heels on said other sections receiving the formations of the first spring to lock the sections in the extended position of the support.

7. A device of the character described comprising a glare shield, a support for the glare shield including extensible and foldable jointed sections, a back plate to which one of the sections is hinged said back plate including a retaining plate, and means on one of the sections for engaging the retaining plate and pressing the sections together when folded in position against said back plate.

8. A device of the character described comprising a glare shield, a support for the glare shield including extensible and foldable jointed sections, a back plate to which one of the sections is hinged said back plate including a retaining plate, means on one of the sections for engaging the retaining plate and pressing the sections together when folded in position against said back plate, and means carried by one of the sections being engageable with the glare shield to prevent swinging thereof.

9. A device of the character described comprising a back plate and retaining plate having a groove, a glare shield, means affording a support for the glare shield upon the back plate including a plurality of jointed sections of which one is hinged to the back plate, and means on the section carrying the glare shield being engageable in the groove to permit a lever action for pressing the sections together when assembled in the closed position against said back plate.

10. A device of the character described comprising a back plate and retaining plate having a groove, a glare shield, means affording a support for the glare shield upon the back plate including a plurality of jointed sections of which one is hinged to the back plate, means on the section carrying the glare shield being engageable in the groove to permit a lever action for pressing the sections together when assembled in the closed position against said back plate, and a leaf spring carried by one of the sections having a depression receiving an edge of the glare shield to prevent swinging of the latter.

11. A device of the character described comprising a back plate with a retaining plate having a groove, a glare shield, a jointed support for the glare shield including a section hinged upon the back plate, a spring carried by a section adjoining the glare shield being engageable with the latter when the support is folded upon the back plate, a lever end included in the section carrying the glare shield being engageable in the groove performing a lever action to press the sections together when folded against the back plate said spring then being placed under tension, and means carried by one of the sections being engageable with the glare shield to prevent swinging of the latter said means being releasable from the glare shield to permit an initial throwing out of the glare shield prior to an extension of the support.

12. A device of the character described comprising a glare shield, a support for the glare shield including a back plate and a plurality of sections hinged together and to the back plate, a retaining plate on the back plate with which portions of certain sections are engageable to prevent side motion when folded, and means carried by one of said certain sections then being engageable with an adjacent section to prevent side motion of the adjacent ends of the sections.

13. A device of the character described comprising a back plate and retaining plate having a groove, a glare shield, a plurality of jointed sections by one of which the glare shield is carried another one of said sections being hinged to the back plate, shoulders on certain sections, and leaf springs on adjacent sections so protruding therefrom as to engage the shoulders of one of said sections when extended and to engage in the groove when the sections are folded against the back plate to avoid side motion in respect to the retaining plate.

14. A device of the character described comprising a glare shield, a support for the glare shield including a back plate and a plu-

rality of sections hinged together at opposite ends, a heel on the back plate having a groove, a heel on one of the sections having a groove and cross slot, and a leaf spring carried by the section intermediate of the back plate and the aforesaid section engaging the cross slot when the support is folded, the heel of the aforesaid section being engageable with the heel of the back plate performing a wedge action upon the spring causing release thereof from the cross slot when opening the support.

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