33-244. OR 2,696,672 SR

SEARCH ROOM

Dec. 14, 1954 D. R. DURFEE 2,696,672

SNAP-ACTING PROTECTIVE COVER FOR THE ENDS OF TELESCOPIC SIGHTS

Filed Feb. 16, 1952

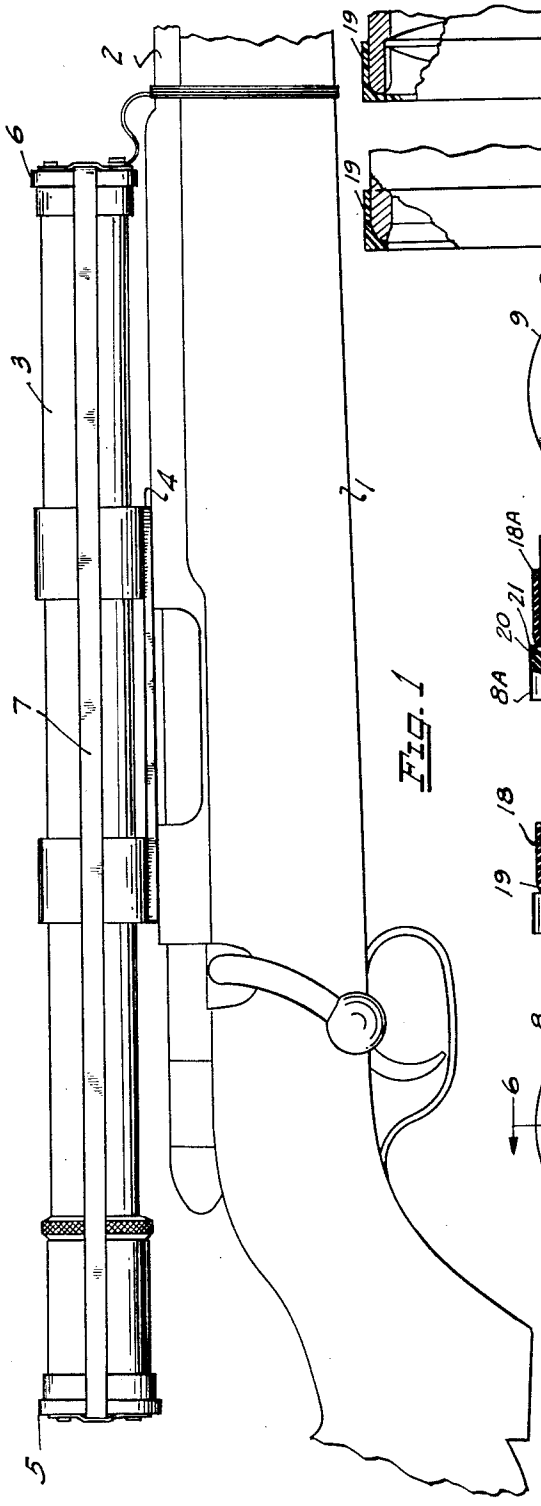


Fig. 1

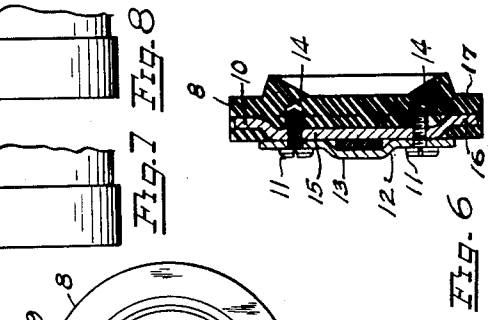


Fig. 6

Fig. 7

Fig. 8

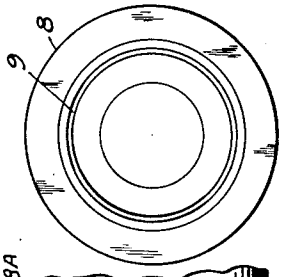


Fig. 5

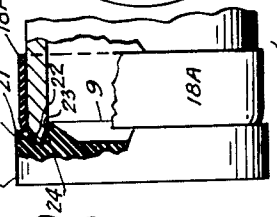


Fig. 4

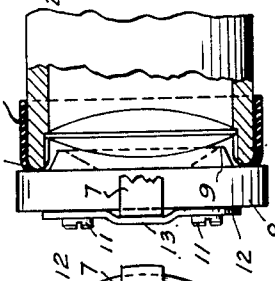


Fig. 3

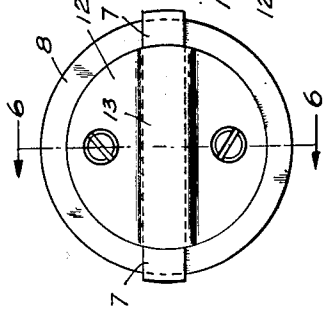


Fig. 2

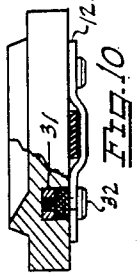


Fig. 10

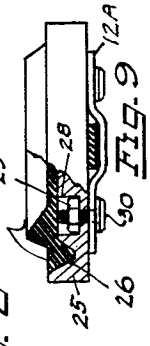


Fig. 9

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United States Patent Office 2,696,672 Patented Dec. 14, 1954

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SNAP-ACTING PROTECTIVE COVER FOR THE ENDS OF TELESCOPIC SIGHTS

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Application February 16, 1952, Serial No. 271,964

4 Claims. (Cl. 33—50)

This invention relates to improvements in protectors for lenses and more particularly to the lenses of telescopic sights of the type used on firearms, transits, levels, and the like.

It is one of the principal objects of the invention to provide a pair of lens covers which independent of exterior flanges, sleeves, or hinged arrangements may be applied directly to the ends of the telescopic sight to protect the lenses from any foreign material that could temporarily limit the use of the sight or permanently injure the lenses.

Another object and thereby an advantage of this invention is to design the surfaces of the seals to allow an instantaneous and complete removal of the entire cover assembly from the sight by the simple expediency of tipping either seal away from the sight for rapid use of the telescope especially when applied to a rifle.

A further object of this invention is to provide a simple and positive method of attaching the seals to a resilient endless band without perforating and thereby mutilating the band.

Another object of this invention is to provide centrally on the inwardly disposed face of the seals an area recessed to avoid contact of this inner face of the seals with the outer centrally disposed face of the scope lenses.

A still further object and an advantage of this invention is the provision of a lens covering assembly as described which is of simple, efficient, durable and inexpensive construction and adapted to be carried in one's pocket without cupping dirt or without damage to the cover assembly and also adapted to easy application to its position on the telescope sight to protect the sight lenses.

Still another object and an advantage of this invention is the provision of a flexible cord, an end ring assembly, or similar means secured to the cover assembly so that the cover assembly may be linked or fastened at the discretion of its owner to the telescopic sight, sight mount, or to a rifle.

These and other objects will appear as my invention is more fully hereinafter described in the following specification, illustrated in the accompanying drawing and finally pointed out in the appended claims.

In the drawing:

Figure 1 is a fragmentary side elevation of a rifle and a telescopic sight attached thereto and showing snap-acting lens covers made in accordance with my invention operatively engaged with both ends of the telescope.

Figure 2 is a plan view of one of the two seals which are structurally identical.

Figure 3 is a fragmentary side elevation of either end of the telescope, partially in section and illustrating a cover in sealed engagement therewith.

Figure 4 is a view similar to Figure 3 showing a modified form of cover in operative engagement with either end of a telescope.

Figure 5 is a plan view of the obverse side of Figure 2.

Figure 6 is a sectional view taken on the line 6—6 of Figure 2.

Figures 7 and 8 are views similar to Figures 4 and 3, respectively, showing modified forms of sealing rings made of plastic or the like applied to the ends of the telescope.

Figures 9 and 10 are side views of modified forms of seals with fragments broken away for convenience of illustration.

Referring now more particularly to the drawing:

In Figure 1 reference numeral 1 indicates a rifle stock, 2 the rifle barrel and 3 a telescopic sight of any approved type secured as at 4 in any conventional manner to the rifle.

The invention comprises a cover assembly generally indicated at 5 for the rear sight and a cover 6 for the front sight, both being interconnected by an endless elastic band 7. A flexible cord 6A securely fastened to the front cover 6 may be wrapped around and secured to the telescope's support be it scope mount, rifle, tripod or other support of the telescope or the flexible cord 6A may be replaced with a standard end ring assembly secured to cover 6 to better facilitate the attachment of the cover assembly to the support of the telescope. Both covers are structurally identical but may be of equal or different diameters to meet the requirements of the telescopes to which they are applied. Therefore a description of one cover will suffice for both. The form of seal illustrated in Figures 2, 3, and 5 comprises a reinforced circular disc 8 preferably molded of soft or semi-soft resilient material such as rubber or the like and formed with a concentric annular ridge 9 whose tapering outside and inside walls are preferably formed on 60 and 30 degree angles respectively.

Molded within the resilient disc 8 is a metallic disc 10 provided with two diametrically opposed apertures to receive self-tapping screws 11, or said apertures may be threaded to receive machine screws if desired.

Secured to the metallic disc 10 by means of the screws 11 is an external clamping plate 12 formed with a channel 13 adapted to secure the elastic band 7 to its respective cover. The disc 8 is formed with a pair of cavities 14 to receive the inner ends of the screws 11 as shown. The disc 10 may be offset to provide a central portion 15 whose outside surface lies flush with the corresponding surface of the disc 8 and whose flange portions 16 are well embedded within the outer marginal portions of the disc 8. When this form of closure disc 8 or any of its modifications is employed to seal the end of the telescope as shown in Figure 3 its annular surface 17 becomes a seat for the extreme end of the telescope to form a seal between the two under the influence of the endless band 7 which maintains said disc 8 in firm engagement with said end of the telescope. As an additional sealing medium between the disc 8 and the end of the telescope I provide an endless elastic band 18 which securely embraces said end of the telescope and whose outer marginal portion will conform itself, as at 19, to the contour of the end of the telescope, whether it be round or of angular formation, into contact with the surface 17 of the disc 8. The band 18 may be, of course, adjusted in the direction of the length of the telescope to bring about the desired additional seal between the band and said disc. It will be noted in Figure 3 that the outside wall of the annular ridge 9 does not contact the inner annular surface of the end of the telescope nor does the inside wall of said ridge contact the surface of the lens. However, the angular formation of said outside wall of the ridge serves to locate the disc 8 with respect to the end of the telescope. By this arrangement the cover assembly may be instantly removed from the telescope by a mere flick of the finger without any resistance or any wedging action between said ridge and the inside diameter of the telescope.

In the modified form of closure disc 8A illustrated in Figure 4 its annular marginal edge comprises a flange 20 whose inside wall is shaped as at 21 complementary to the outside edge 22 of the telescope; the outside wall 24 of the concentric ridge 9 is shaped complementary to the inside surface 23 of the telescope but the surface 24 is not in contact with the telescope at 23. It will be noted that the only surface of contact is between the extreme end of the telescope and the bottom annular surface of the groove formed between the inside wall of the flange 20 and the outside wall of the annular ridge 24. Accordingly, this form of cover may be just as quickly and conveniently removed from the end of the telescope as the form shown in Figure 3. With this form of cover I also employ an elastic sealing band 18A whose outer marginal edge conforms, as shown, to the converging edge 22 of the end of the telescope and seats itself

into firm contact with the marginal edge of the flange **21** of the disc **8A**.

The form of seal shown in Figure 9 comprises a base portion **25** preferably made of rigid material and formed with a concentric annular groove having converging side walls **26** to receive a sealing element proper indicated at **27** and preferably made of soft or pliable material. The seal **27** is secured within said groove and to the remaining portions of the base by any approved type of solvent sealing material. The base is formed with two diametrically opposed cavities **28** within each of which is disposed a nut **29** to receive a screw **30** for securing the clamping plate **12A** to the base.

The form of seal illustrated in Figure 10 is made entirely of rigid material and is provided with diametrically opposed inserts **31** which are embedded or molded within the seal. Each insert is externally knurled or serrated and internally threaded as shown, to receive screws **32** for securing the clamping plate **12B** to the seal.

As an alternate form of auxiliary sealing means, to replace those shown in Figures 3 and 4 and indicated at **18** and **18A** in Figures 3 and 4 respectively, I provide a ring **19** (see Figures 7 and 8) made of plastic material or the like.

While I have shown particular forms of embodiment of my invention, I am aware that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention. Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A protector for the lenses of a telescope comprising in combination a pair of discs adapted for removable sealed engagement with both ends of the telescope, means interconnecting said discs whereby the removal of either disc will automatically remove the other of said discs, and means for attaching one of said discs to a support for the telescope, each of said discs being made of pliable material, concentric means formed on one face of each disc for locating the same with respect to its respective end of the telescope, a stabilizing plate embedded within said disc, a clamping plate secured to said stabilizing plate, an endless resilient means interconnecting said discs and secured thereto by means of said clamping plate and said stabilizing plate.

2. A protector for the lenses of a telescope comprising in combination a pair of discs adapted for removable sealed engagement with both ends of the telescope, means interconnecting said discs whereby the removal of either disc will automatically and instantaneously remove the entire cover assembly from the telescope, and means to facilitate attaching one of said discs to a support for the telescope, each of said discs being made of pliable material, concentric means formed on one face of each disc only for locating the same with respect to its respective end of the telescope, a stabilizing plate embedded within said disc, a clamping plate secured to said stabilizing plate, said interconnecting means comprising an endless resilient band interconnecting said discs and secured to the discs by means of said clamping plate and said stabilizing plate.

3. A protective covering for the lenses of a telescope comprising in combination a pair of discs of flat formation, resilient means interconnecting said discs for normally maintaining them in sealed engagement with both outermost ends of the telescope and for automatically and instantaneously removing the entire cover assembly from the telescope upon removal of either of said discs, concentric means formed on one face of each of said discs to locate them in said sealed engagement by said resilient interconnecting means, said concentric means being in spaced relation to the inner periphery of either end of the telescope and means attached to one of said discs for attaching the cover assembly to a support for the telescope.

4. A protective covering for the lenses of a telescope comprising in combination a pair of discs of flat formation, resilient means interconnecting said discs for normally maintaining them in sealed engagement with both outermost ends of the telescope and for automatically and instantaneously removing the entire cover assembly from the telescope upon removal of either of said discs, concentric means formed on one face of each of said discs to locate them in said sealed engagement by said resilient interconnecting means, said concentric means being in spaced relation to the inner periphery of either end of the telescope and means attached to one of said discs for attaching the cover assembly to a support for the telescope, an auxiliary seal detached from said discs and surrounding each outer end of the telescope and being conformed to the formation of the outer surfaces at each end of the telescope whereby said discs by means of said resilient means will be pulled into sealed engagement with said ends of the telescope and said auxiliary seals.

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