Nov. 8, 1938. D. E. TILDEN 2,135,774

TELESCOPE MOUNTING FOR GUNS

Filed July 22, 1937

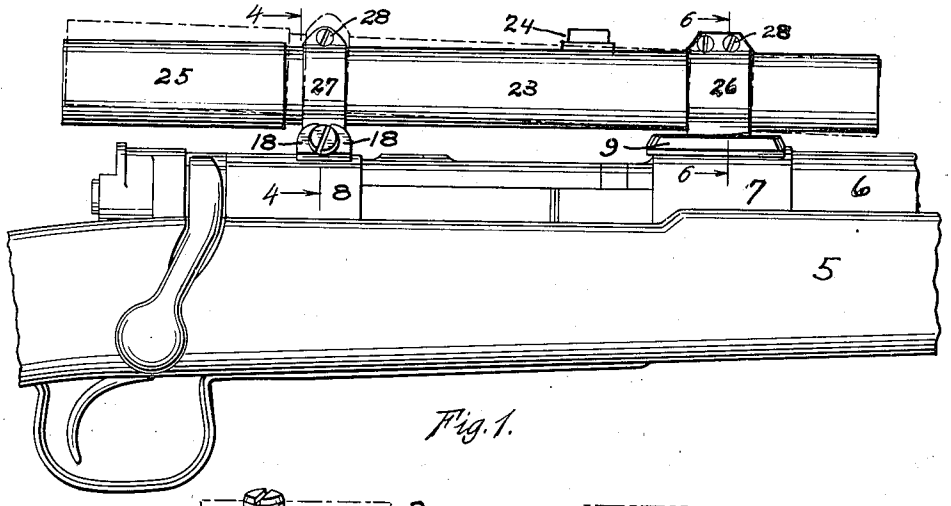


Fig. 1.

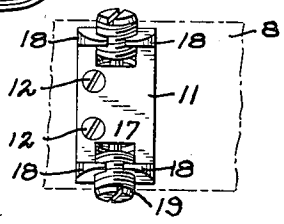


Fig. 2.

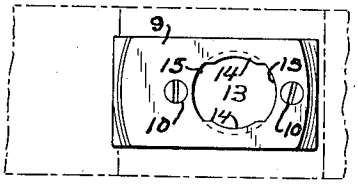


Fig. 3.

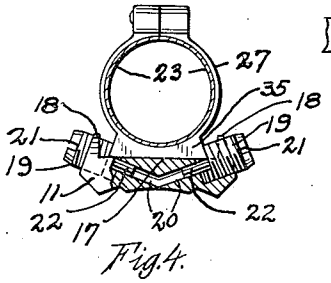


Fig. 4.

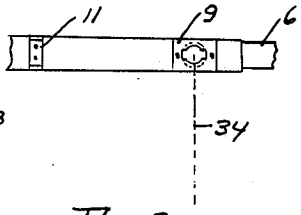


Fig. 8

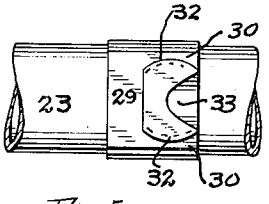


Fig. 5.

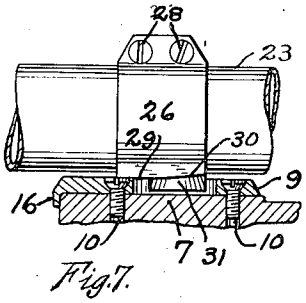


Fig. 7.

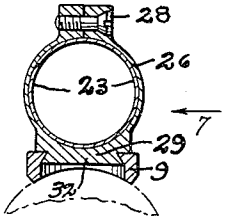


Fig. 6.

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TELESCOPE MOUNTING FOR GUNS

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4 Claims. (Cl. 33—50)

This invention relates to improvements in means for mounting a telescope on a rifle barrel in such a way that it can be readily attached and removed, and which will positively resume its adjustment for elevation and windage whenever it is replaced.

This invention relates more particularly to telescope mounts of the "bridge type" and consists of a front clamp ring carried by the telescope, a front base constructed to interlock with the front clamp ring by a relative rotary motion, a rear clamp ring on the telescope and a rear base on the receiver bridge, provided with an upper flat surface terminating in upwardly extending lugs provided with screws for engaging opposed surfaces on a downward projection on the rear clamping ring.

One object of the invention is to provide the rear base with integral lugs that project over the top of the flat surface and which have threaded openings for threaded plugs or screws employed for effecting adjustment of windage and for clamping the telescope in adjusted position. The rear end of the telescope requires to be lifted over the lugs and dropped onto the flat surface between them.

Another object of this invention is to provide a front base that has a flat upper surface which has no protruding corners to catch or cut the hand when the telescope is dismounted.

A further object is to produce a telescope mount that positions the telescope very low, which saves space and brings the line of sight nearer than usual to the axis of the bore of the barrel.

A still further object is to provide an interlock between the front clamping ring and the front base that permits the rear end of the telescope to be raised and lowered without subjecting the telescope to severe bending strains; this permits a more rugged construction of the rear base than could be had with a construction in which the rear clamping ring base must slide over a plane surface of the rear base.

The above and any other objects that may become apparent as the description proceeds are attained by means of a construction and an arrangement of parts that will now be described in detail and for this purpose reference will now be had to the accompanying drawing in which the invention has been illustrated in its preferred form and in which

Figure 1 is a side elevation showing a telescope mounted by means of this invention, the tilted position of the telescope being indicated by dot and dash lines;

Figure 2 is a top plan view of the rear base;

Figure 3 is a top plan view of the front base;

Figure 4 is a section taken on line 4—4 Fig. 1;

Figure 5 is a bottom plan view of the front clamping ring;

Figure 6 is a section taken on line 6—6 Fig. 1;

Figure 7 is a longitudinal section through the front base showing the telescope attached thereto; and

Figure 8 is a diagram showing the position of the telescope when it is applied or removed.

In the drawing, reference numeral 5 designates a portion of the gun stock of a rifle, and reference numeral 6 designates the barrel of the rifle. Attached to the breech end of the rifle barrel is a receiver ring 7. To the rear of the breech opening is positioned a receiver bridge 8. A front base 9 is attached to the receiver ring 7 by means of screws 10. A rear base 11 is attached to the receiver bridge 8 by means of screws 12. The front base 9 is provided with an opening 13 that is entirely within the metal of the base. This opening has two diametrically opposed arcuate surfaces 14 that are downwardly and outwardly tapered so as to form one part of a rotatable dove-tail connection. The arcuate surfaces 14 are less than 180 degrees in extent and the spaces between them, which have been designated by reference numeral 15, are preferably arcuate and concentric with the surfaces 14 but have a radius that is at least as large as the maximum radius of the inclined walls of the surfaces 14. It will be seen from Figs. 3 and 7 that the upper surface of the front base 9 is flat so as to avoid the formation of sharp corners that may cause injury to the person handling the gun. The rear end of base 9 is provided with a downwardly extending lip 16 that projects a short distance below the receiver ring 7, in the manner shown in Fig. 7. This lip serves to resist forces produced by the recoil to prevent such forces from being transmitted to the screws 10, and produce shearing strains. The rear base 11, which has been shown partly in elevation and partly in section in Fig. 4, has a flat upper surface 17 that terminates at opposite ends in upwardly extending ears or lugs 18. Each lug is preferably formed from two ears spaced in the manner shown. The adjacent edges or surfaces of the ears are provided with concentrically curved openings which form portions of a cylindrical surface that is threaded for the reception of a threaded plug 19. The threaded openings in the ears 18 extend a short distance into the base and the base is provided with openings of smaller diameter, which have

been designated by reference numeral **20**, and which are in axial alignment with the threaded openings. The plugs **19** are provided with coin or screw driver slots **21** and have their inner ends provided with axial projections **22** of the proper size to fit the openings **20**. These projections serve as guides to resist forces tending to tilt the plugs **19** when they are forced against the base of the rear telescope ring in a manner which will hereinafter be more fully described.

In the drawing, the tube **23** designates the tube of a telescope of the kind ordinarily employed in connection with rifles. The telescope is provided with an elevation turret **24** and a slidable tubular member **25** that serves to properly adjust the rear end of the telescope to the convenience of the person employing the rifle. Secured to the telescope is a front clamping ring **26** and a rear clamping ring **27**. Both of these rings are split in the manner shown in Figs. 4 and 6 and are held in place on the telescope tube by means of screws **28**. The top of the front clamping ring extends a considerable distance above the top of the telescope tube and serves in some measure to protect the elevation turret against injury. The clamping ring **26** is provided with a flat base **29** whose under surface is upwardly inclined near the front, as indicated by reference numeral **30** in Fig. 7. A projection **31** extends downwardly from the base and is provided with arcuate end walls **32** of the proper diameter and proper inclination to cooperate with the arcuate surfaces **14** of the opening **13** in base **9**. Since the base **9** is very thin, the projection **31** has a small portion of its under surface upwardly tapered near the front thereof, as designated by reference numeral **33**, so as to prevent it from engaging the surface of the receiver ring. Referring now more particularly to Fig. 8 in which the parts have been shown in a diagrammatic manner, the axis of the telescope has been indicated by reference numeral **34** which designates the position of the telescope with reference to the rifle barrel **6** when the projection **31** is inserted into the opening **13**. The width of the projection **31** is substantially the same as the length of the curved notches **15** so that it will fit the opening **13**. After the projection has been inserted into the opening, the telescope is rotated and this brings the dove tailed surfaces 32 into operative engagement with the cooperating surfaces **14**. Due to the fact that the base **29** has front half of its under surface inclined, as indicated by reference numeral **30** in Fig. 7, the telescope can be tilted or its rear end moved up and down in the manner indicated by full and dotted lines in Fig. 1. This tilting movement is necessary for the purpose of positioning the base **35** of the rear clamping ring **27** onto the flat surface **17** of the rear base. One of the threaded plugs **19** is adjusted for windage and is normally left in adjusted position while the other plug **19** is employed for releasing and for clamping the base **35**. When the base is in position, as shown in Fig. 4, and the plugs **19** moved into clamping position, the telescope is rigidly and accurately held. It is evident that by retracting the plug **19** at the right in Fig. 4, the base **35** will be released and the rear end of the telescope can then be lifted into the position shown by dot and dash lines in Fig. 1. This raises the bottom of the base **35** over the tops of the ears **18** and over the threaded plugs **19** so that the telescope can be swung into the position indicated in Fig. 8, in which position the telescope may be removed.

Attention is called particularly to the fact that with the construction shown and described, the threaded plugs **19** or neither of them needs to be removed in order to release or fasten the telescope. Attention is also called to the fact that the plugs **19** are not constructed in the manner of the usual type of machine screw, but have their largest cylindrical surfaces threaded and this relieves them from severe strains and assures that they will not break as readily as the ordinary screws that have large heads with threaded surfaces of smaller diameter. The cylindrical extensions **32** serve as guides and as brace members that still further resist any tilting forces, and this construction therefore makes it possible to tighten the plugs very drastically without danger of breaking any of the parts. The lugs at each end of the rear base are preferably formed from two separate ears **18** and the size of the threaded opening is made slightly smaller than the size of the threaded portion of the plugs so that there will be a considerable pressure exerted against the plugs, which serves to hold them from accidental rotation. Attention is again directed to the construction that permits the telescope to be raised and lowered vertically as by this means it is possible to employ a rear base constructed in the manner described, in which neither screw has to be removed in order to permit the telescope to be swung into position. If the telescope could not be tilted in the manner shown, it is evident that the upper surface of the rear base would have to be a plane surface so that the base **35** could slide into position against one of the adjusting screws, after which the other screw would have to be positioned and such a construction is not as rigid or as reliable as the one here illustrated.

Attention is directed in particular to the feature of construction which makes it possible and entirely practical to raise and lower the rear end of the telescope to permit it to pass over the lugs **18** and screw plugs **19**.

From Fig. 3 it will be seen that the arcuate dovetail surfaces are on opposite sides of the axis of the barrel and the arcuate surfaces **32** on the base of the front clamping ring are likewise on opposite sides of the center line of the telescope. (Figs. 5, 6 and 7.)

It is evident that if the dove-tail surfaces are properly fitted, the front clamping ring cannot rock in a plane bisecting the arcuate surfaces **14**. If the arcuate surfaces are positioned so as to be bisected by the axial plane of the rifle barrel, the telescope cannot be tilted in the manner shown, and as necessary for the purpose of raising it over the lugs **18** and dropping it onto the flat central area of the rear base. By positioning the arcuate surfaces **14** in the manner described and shown, the rear base can have upwardly extending lugs at both ends and the screw plugs do not need to be provided with heads of greater diameter than the threaded portion.

With the present construction, which permits longitudinal tilting of the telescope, the danger of bending the telescope is greatly reduced because it will tilt about the front base when not attached to the rear base.

In the drawing, the lugs **18** have been shown as separated into two parts by a vertical slot. This construction is resorted to primarily for the purpose of producing the necessary friction to assure that the screw plugs will not be accidentally rotated. After the holes in the lugs have been threaded the two parts are pressed towards each other so as to retain a slight permanent

set and when the screw plugs are in place they will be subjected to pressure.

The windage adjustment screw may be provided with a lock nut if desired.

It is, of course, possible to thread the projections 22 and the wall of opening 20 and have the surfaces of the plugs 19 smooth, in which case the openings in the lugs will have smooth walls.

The under surface of base 29 has been described as upwardly inclined at its front end. It is evident that the inclined surface 30 may be straight or curved, as the object sought is to permit the rear end of the telescope to be raised and lowered.

This invention has been described in connection with a rifle and a telescope, which is the principal use contemplated. It is evident, however, that the means employed for removably securing the telescope to a rifle can be used for removably attaching any member to another and the rifle barrel and the telescope are used for the purpose of illustration only.

By enclosing opening 13, on all sides and attaching it to the receiver ring by screws 10 that pass through the base in front and to the rear of the opening, the base can be made much thinner than if it has a bottom in opening 13 and the screws 10 pass through the bottom.

Since only one of the screw plugs 19 acts as a positioning means, the other screw plug may be replaced by a cam or other means that will force the base 35 against the adjustable stop.

In the specification and claims, the undercut arcuate surfaces 14 have been referred to as "dove-tail" surfaces and it is to be understood that any undercut surfaces may be used. In the instant case, where the telescope is mounted for tilting movement, the undercut surfaces 14 and the cooperating surfaces 31 are preferably spherical. Owing to the short length of these surfaces, the section shown in Fig. 6 does not show the curvature. It is to be understood that any kind of undercut surfaces can be used. Transverse tilting is prevented by the under surface of base 29 engaging the flat upper surface of the front base 9 in the manner shown in Fig. 6.

Having described the invention what is claimed as new is:

1. A telescope mount for rifles, comprising, in combination, a front base attached to the receiver ring, a rear base attached to the receiver bridge, the rear base having a flat upper surface terminating at both ends in upwardly extending integral lugs having threaded openings for the reception of windage and clamping screws, a telescope having a front clamping ring, the front base and the front clamping ring having means for effecting an interlock when rotated relative to each other, the interlock permitting a limited upward tilting movement of the rear end of the telescope when it is parallel with the barrel, the telescope having a rear clamping ring provided on its lower side with a projection having a flat surface for engaging the flat surface of the rear base and inwardly and upwardly beveled sides for engagement with the windage and the clamping screws, and a windage and a clamping screw in the respective lugs of the rear base, the tilting movement of the telescope permitting the projection on the rear clamping ring to be passed over the lugs.

2. A telescope mount for rifles, comprising in combination, a front base attached to the receiver ring, a rear base attached to the receiver bridge, the rear base having a flat upper surface terminating at both ends in upwardly extending integral lugs, one of which has a threaded opening for the reception of a windage screw and clamping means associated with the other lug, a telescope having a front clamping ring, the front base and the front clamping ring having means for effecting an interlock when rotated relative to each other, the interlock permitting a limited upward tilting movement of the rear end of the telescope when it is parallel with the barrel, the telescope having a rear clamping ring provided on its lower side with a projection having a flat surface for engaging the flat surface of the rear base and inwardly and upwardly beveled sides for engaging with the windage screw and the clamping means, and a windage screw in the threaded opening in one lug, the tilting movement of the telescope permitting the projection on the rear clamping ring to be passed over the lugs.

3. Means for adjustably securing a rear sight to a rifle, comprising, a base block having a flat upper surface terminating at opposite ends in upwardly extending lugs having threaded openings inclined inwardly and downwardly, the base block having openings of smaller diameter axially aligned with the respective threaded openings, and threaded plugs operatively associated with the threaded openings, the plugs having axial extensions of smaller diameter rotatably fitting in the openings of smaller diameter in the base.

4. Means for adjustably securing a rear sight to a rifle, comprising, a base block having a flat upper surface terminating at opposite ends in upwardly extending split lugs, the adjacent surfaces of each lug having complementary cylindrical surfaces threaded for the reception of threaded plugs, the base having openings of smaller diameter in axial alignment with the respective complementary threaded surfaces, and a screw plug operatively connected with each split lug, the plugs having axial projections for rotatably fitting in the smaller diameter openings to form guides.

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