March 16, 1948. J. W. HORVATH 2,437,744

TELESCOPE ATTACHMENT FOR FIREARMS

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Fig. 1.

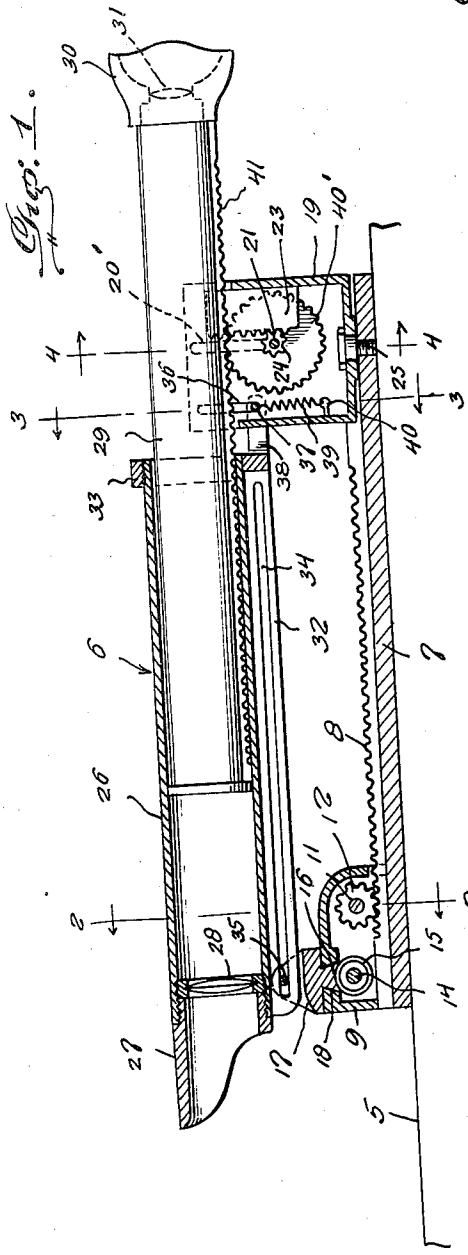


Fig. 4.

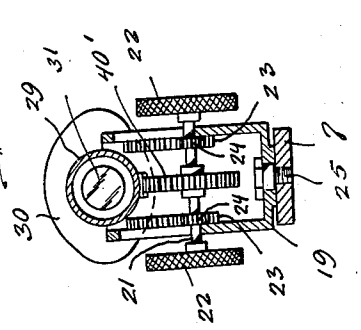


Fig. 3.

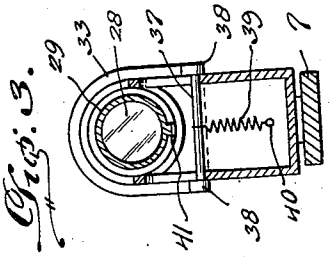
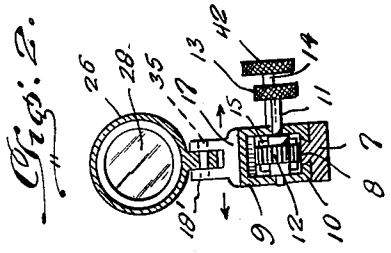


Fig. 2.



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TELESCOPE ATTACHMENT FOR FIREARMS

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4 Claims. (Cl. 33—50)

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This invention relates to a new and useful improvement in telescopic sights for firearms such as rifles, cannons, mortars, etc.

The principal object of the present invention is to provide a telescopic attachment for sighting rifles and other firearms wherein mechanism is provided for automatically setting the elevation for firing incident to focusing of the attachment on a target.

Another important object of the invention is to provide an instrument of the character stated which is positive acting, fool-proof and not susceptible to the ready development of defects.

Other objects and advantages of the invention shall become apparent to the reader from the following description.

In the drawings:

Figure 1 is a longitudinal vertical sectional view through the attachment;

Figure 2 is a cross section on line 2—2 of Figure 1;

Figure 3 is a cross section on line 3—3 of Figure 1;

Figure 4 is a cross section taken on line 4—4 of Figure 1.

Referring to the drawings wherein like numerals designate like parts it can be seen that the numeral 5 denotes the breech portion of for instance a rifle upon which the present invention generally referred to by numeral 6 is mounted.

The attachment 6 consists of a base bar 7 fixed to the barrel 5 and extending longitudinally thereof.

The base bar 7 has a longitudinally extending dove tailed shaped rack 8 along which an elongated housing 9 is slidable and this housing 9 having its bottom portion formed with a dove tailed groove 10 in which the dove tailed rack 8 is located. Obviously the housing 9 is slidable on the rack 8 and has a shaft 11 journaled therethrough and carrying a gear 12 meshing with the rack 8. One end of the shaft 11 protrudes beyond one side of the housing 9 and has a knurled hand knob 13.

Also journaled through the housing 9 is a shaft 14 carrying a worm 15 meshing with a dove tailed slide 16 depending from a transversely movable carriage 17, this dove tailed slide 16 being slidable in a dove tailed slot 18 in the top of the housing 9. The carriage 17 carries a bifurcated riser 18'.

Swiveled on the rear end of the base bar 7 for horizontal rotation about a vertical axis is a box 19 having vertical slots 20 in the opposite side walls thereof and through which the end portions of a shaft 21 projects. The outer ends of the shaft 21 are equipped with a knurled hand wheel 22, 22. Toothed racks 23, 23 project inwardly from the rear wall of the box 19 and with these, a pair of gears 24, 24 on the shaft 21 mesh.

A pivot pin 25 extends through the bottom of the box 19 and is screwed into the base bar 7, thus swivelly securing the box 19 to the rear end of the base bar.

The telescope sighting device consists of an elongated tube 26 having a sun visor 27 at its forward end, this visor 27 serving to hold an objective lens 28 in this end of the tube 26 and preventing objectionable glare from sunlight upon the lens in use.

A drawtube 29 is slidable in the tube 26 and at its rear end an eye piece 30 is provided in which an ocular lens 31 is provided. This construction is conventional and it is to be understood that cross hair or some other sighting media is located in this telescope device as in the manner of conventional telescope attachment for rifles. In this connection, it is noted that, in accordance with the controlling and operating elements shown, the particular optical elements within the telescopic tubes 26 and 29 are of such conventional kind and arrangement whereby it is necessary to move the tube 29 outwardly in the tube 26 for focusing the sight on more distant objects.

A bar 32 extends longitudinally under the tube 26 and has an internally threaded collar 33 at its rear end into which the rear end of the tube 26 is screwed. The bar 32 has a longitudinal slot 34 therein and through the forward end of the slot 34 a pin 35 is disposed, this pin having its ends terminating in the bifurcations on the carrier 17.

The opposite side portions of the box 19 also have vertical slots 36 therein for receiving a horizontal rod 37 which has its ends terminating in a pair of arms 38, 38 which project rearwardly from the collar 33 on the bar 32.

A tension spring 39 extends downwardly from the rod 37 and connects to an anchor element 40 on the inner side of the front wall of the box 19.

The shaft 21 in the box 19 carries a large gear wheel 40' which meshes with longitudinally spaced rack teeth 41 on the bottom of the drawtube 29.

In the operation of the attachment, it can be seen that by actuating the worm 15 (see Figure 1) by means of a hand knob 42, the forward end of the tube 26 is moved horizontally and laterally and the swivel box 19 will turn accordingly, this to take care of windage. When adjustment for

windage has been satisfied, the knob or knobs **22** can be rotated to train the telescopic device on the target and when perfect focus has been reached the mechanism has been accordingly set as far as sighting is concerned for the proper elevation at which to fire. It will be observed that this has been accomplished automatically.

In some cases, after the proper focusing adjustments of the telescopic sighting provision have been made and also the aforesaid automatic angular adjustment is effected between the sighting provision and the gun barrel, if some additional change in such angular relation of the parts is found necessary or desirable, the knob **13** can be turned in either direction and the housing **9** accordingly moved longitudinally of the base member on the gun barrel **5**, and this movement of the housing **9** together with the cross-pin **35** in the slot **34** causes a raising or lowering of the forward end portion of the sighting provision without affecting the previously set focused adjustment of the same.

The telescope is preferably of the conventional type and may contain 3 or 4 lenses to make it sensitive to distance and this multiple arrangement of lenses of course neutralizes the difference in eyesight between different individuals. So, too, it is obvious that the optical provisions within the tubes **26** and **29** may be such that the tube **29** must be moved inwardly in the tube **26** for focusing upon more distant objects (just the reverse from the adjustment hereinabove described) and in which case, of course, the racks **23** are then to be positioned vertically in the housing **19** at the side of the gear **24** opposite to that shown in Figure 1 of the drawings.

While the foregoing description sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

1. In combination with a firearm, a telescope having sighting means therein, said telescope having a forward tube and a draw tube slidable longitudinally in the rear portion of the forward tube, the said parts, as assembled, being mounted for both vertically and horizontally swingable movement, a support for the forward end portion of the telescope on the firearm with means for moving the support forwardly and rearwardly selectively on the firearm and simultaneously tilting the telescope to the proper angular relation on the firearm, means for moving the draw tube longitudinally inwardly and outwardly of the forward tube, said last-mentioned means comprising a longitudinal rack on the draw tube, a gear meshing with the rack, manual means for rotating the gear to move the draw tube in and out of the forward tube with cooperative provision for simultaneously raising and lowering said gear during its rotation in either direction to thereby change the angular relation of the telescope on the firearm during inward and outward longitudinal movement of the drawtube in said forward tube.

2. The structural attachment on a firearm as set forth in claim 1, wherein means is provided on the forwardly and rearwardly movable support for the forward end portion of the forward tube whereby to selectively swing said tube horizontally in any set position of the support.

3. In combination with a firearm, a telescope having sighting means therein, said telescope having a forward tube and a drawtube slidable in the forward tube, said parts, as assembled, being mounted for both vertically and horizontally swingable movement, means for moving the drawtube inwardly and outwardly in the forward tube and simultaneously tilting the device to the proper angular relation on the firearm, said means comprising a longitudinal rack on the under side of the drawtube, a housing supported swivelly about a vertical axis on the firearm and having the rear end portion of the forward telescope tube attached thereto without independent longitudinal movement but with freedom of up-and-down movement independently of said housing, resilient means normally urging said forward tube downwardly, a gear mounted within said housing and guided for up-and-down movement in the housing, said gear meshing with the rack on said drawtube, manual means for rotating the gear to move the drawtube inwardly and outwardly of the forward tube, a vertical rack supported within said housing, said gear being provided with a floating shaft and a pinion on the shaft meshing with the vertical rack, a longitudinally movable support on the firearm for the forward end portion of said forward tube, a manually manipulable rack and pinion provision for selectively moving said support forwardly and rearwardly on the firearm, and a manually manipulable supplemental member on said support, said supplemental member having a slot-and-pin pivotal connection with the forward end portion of said forward tube.

4. The structural attachment for a firearm as set forth in claim 3, wherein the means for moving the movable support for the forward end portion of the forward tube of the telescope comprises an elongated longitudinal rack on the firearm and a pinion mounted rotatably in the support and meshing with said rack, and the slot-and-pin connection between the forward tube of the telescope and the supplemental member on said support comprises an elongated slotted longitudinal flange on the bottom of said forward tube and the cooperative pin in such connection extends transversely across a bifurcated portion of said supplemental member and between which the flange on the forward tube is cooperatively disposed.

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