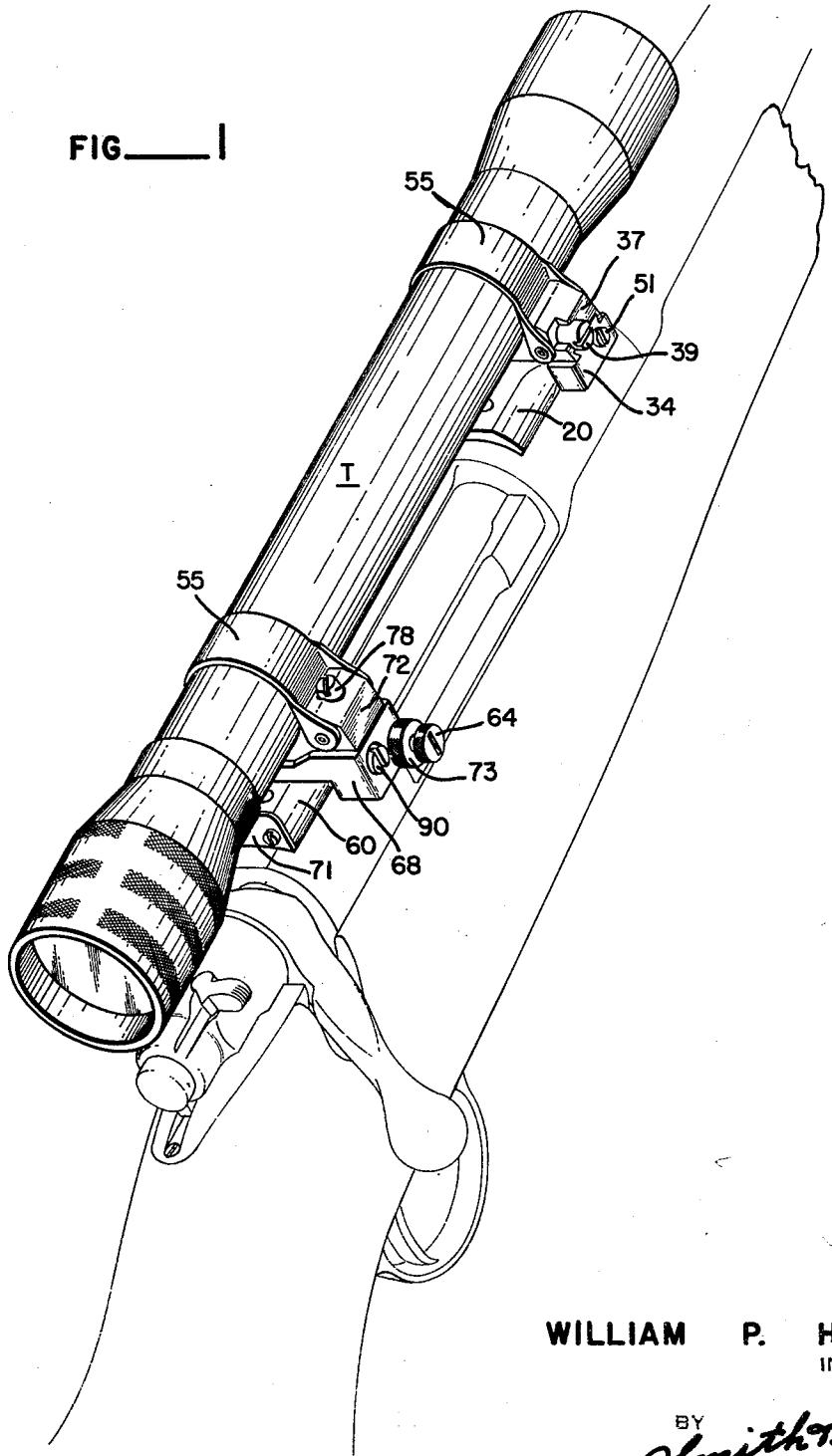
Dec. 22, 1953 W. P. HARMS 2,663,083

DOUBLE ADJUSTABLE RIFLE TELESCOPE MOUNT

Filed July 1, 1952 3 Sheets-Sheet 1

FIG. 1



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DOUBLE ADJUSTABLE RIFLE TELESCOPE MOUNT

Filed July 1, 1952 3 Sheets-Sheet 2

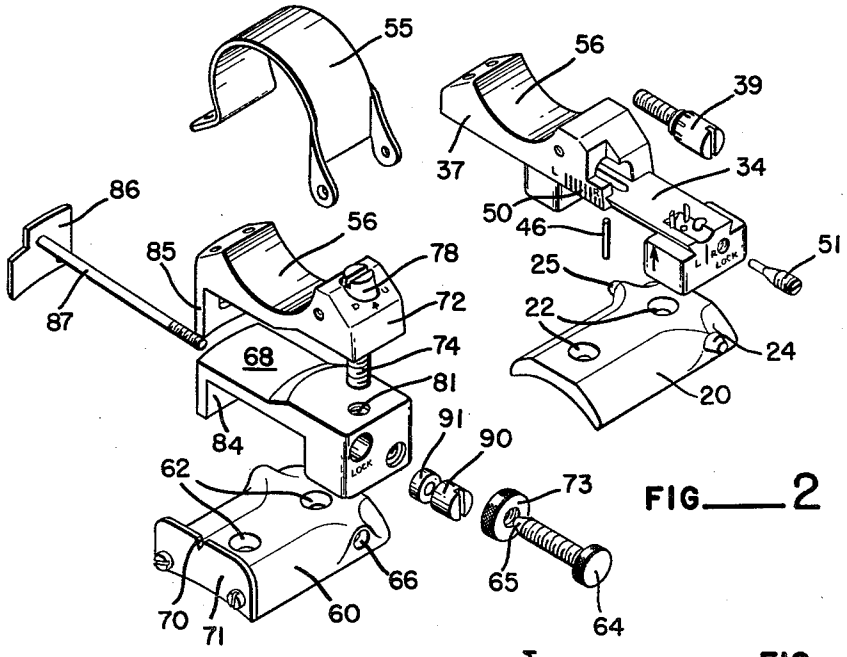

FIG. 2

FIG. 19

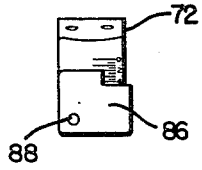

FIG. 3

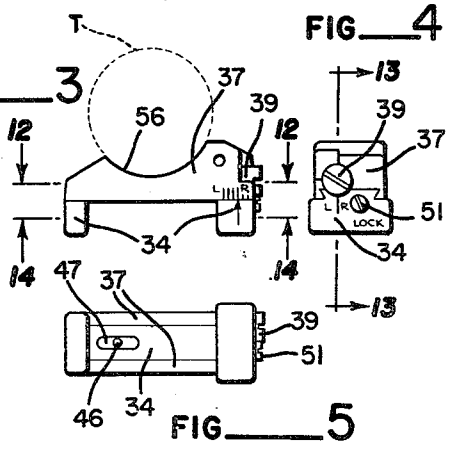

FIG. 4

FIG. 5

FIG. 6

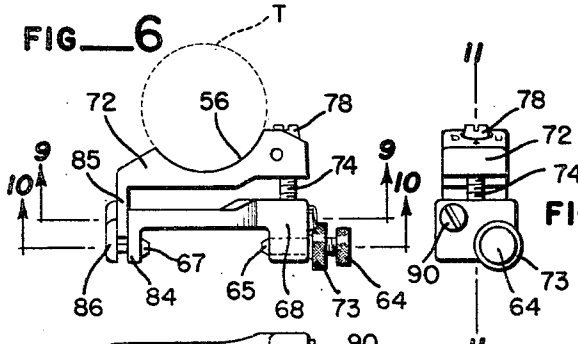

FIG. 7

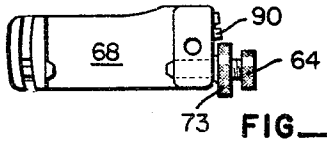

FIG. 8

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Dec. 22, 1953 W. P. HARMS 2,663,083

DOUBLE ADJUSTABLE RIFLE TELESCOPE MOUNT

Filed July 1, 1952 3 Sheets-Sheet 3

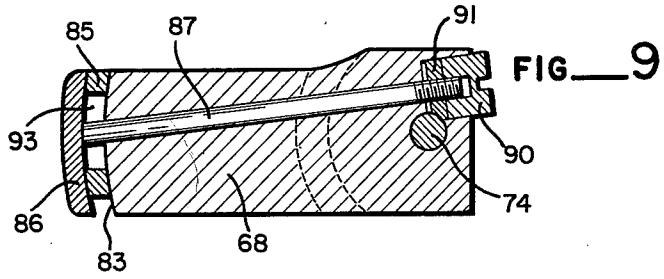


FIG. 9

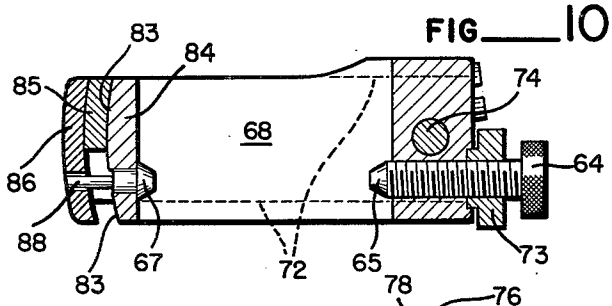


FIG. 10

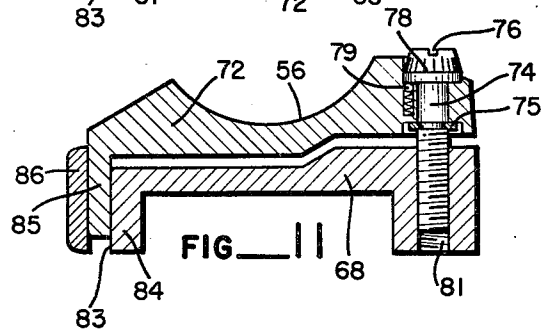


FIG. 11

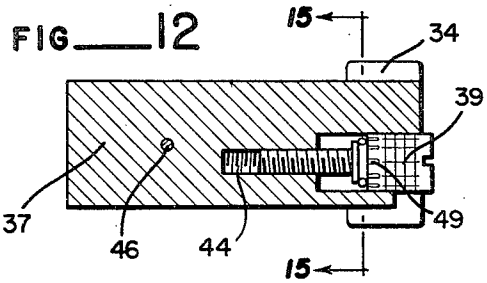


FIG. 12

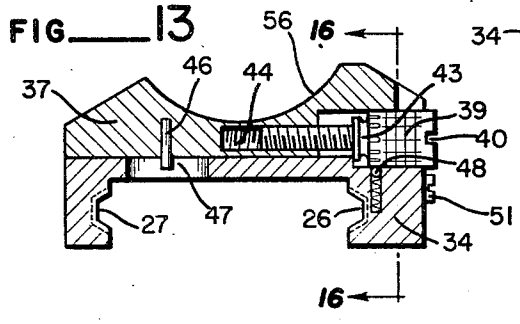


FIG. 13

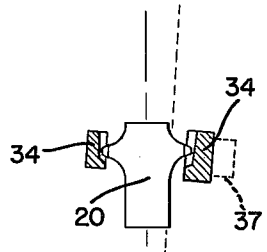
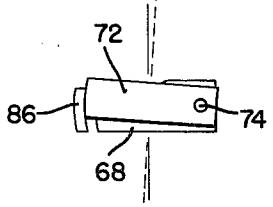


FIG. 18



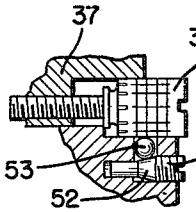


FIG. 17

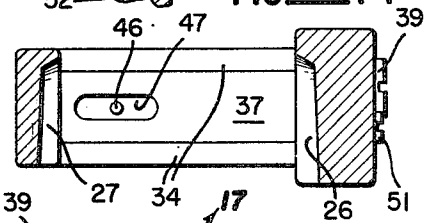


FIG. 14

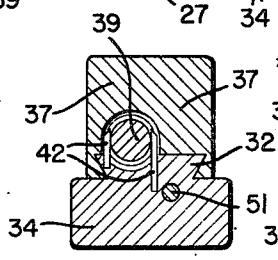


FIG. 15

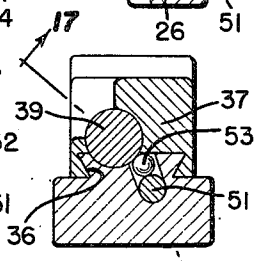


FIG. 16

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UNITED STATES PATENT OFFICE

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DOUBLE ADJUSTABLE RIFLE TELESCOPE MOUNT

William P. Harms, Bellevue, Wash.

Application July 1, 1952, Serial No. 296,590

13 Claims. (Cl. 33—50)

1

This present invention provides a telescope mount for the hunting type of rifle telescopes which is made in two units, comprising preferably a front unit which is arranged to provide windage adjustment of the telescope, and a rear mount unit in which provision is made for elevation adjustment. Adjustments for both windage and elevation are under accurate micrometer adjustment control wherein a finely-threaded screw is arranged to move the telescope mount members by means of externally available operating knobs to the end that very small changes can be made in either elevation or windage and, further, because of the micrometer control, the calibrated knobs can be set at the desired setting and they will always be the same. This gives to the man having a rifle equipped with a non-adjustable hunting or varmint type scope all the niceties and certainty of adjustment that at present is only available in the bulky target type of telescope mounts.

Due to changing economic conditions the average serious rifleman today spends but a small part of his shooting time actually hunting game. Many of them are never so engaged. These conditions have therefore created a large number, mounting into hundreds of thousands of riflemen, who are constantly experimenting, trying out new loads in their quest for maximum accuracy, hitting power or utility. This calls in turn for the hand loading of ammunition by the rifleman and each new load normally calls for a different setting of the scope with respect to the axis of the bore. Naturally as the rifleman varies the weight of bullets and the weight and type of powder used he experiences a change in velocity together with many other changes incidental to changing interior and exterior ballistics.

Rifle telescope makers and the makers of telescope mounts have offered many solutions of the rifleman's problem, and, judging from the items that are now offered to the commercial market, most telescope makers have been forced to build into their telescopes both the windage and elevation adjustments. In theory this seems to be a practical solution of the problem. However it must be remembered that the image of the reticule is magnified several times to the shooter's eye and this means conversely that the reticule itself must be very small and thus it becomes delicate and subject to deformation. In order to build the reticule into the scope and to have it capable of a reasonable range of adjustment both vertically and horizontally, and still not have the mechanism block the path of light

2

through the telescope, these various parts have been of necessity made small. On one hand it is difficult to maintain them in the desired adjusted positions, and, on the other hand, the means for moving the same is such that even though the adjusting dials may be calibrated, due to the fact that most of these adjusting devices must act against a spring to effect movement in one direction, such adjustments are not subject to calibration accurately, and the movement of the adjusting screw to an indicated change in either elevation or windage rarely provides actually the proper movement of the reticule to achieve the desired correction or setting.

Adjustable mounts for the target type telescopes have their adjusting means outside of and entirely separate from the telescope and as a result they are able to provide micrometer screws of adequate size to insure that a definite setting will be achieved when the index head of the screw is set to the predetermined change. Likewise the manufacturers of micrometer rear peep sights again work entirely in the open with threaded screws of adequate diameter and length and are again able to provide, with certainty, exact settings of their equipment. In the past many attempts have been made to provide a double-adjustable hunting telescope mount but those that have been studied, and they have been few in number to achieve any commercial use, have all been characterized by being bulky and readily subject to damage and did not have the ruggedness required for use on a game shooting rifle. In this present mount it is believed that by having the adjustable members including the micrometer screws positioned entirely out of the scope, they can be made an adequate size to stand the rigors of hunting and still provide the certainty of adjustment that is so much sought after by the experienced rifleman. This present mount is so proportioned that it can accept and still continue to function properly even though subjected to many times the rough treatment that would entirely incapacitate the hunting telescope. This present mount makes use of many of the principles well proven and established in the target telescope type of mount and also certain of the desirable features of the micrometer rear sights. These desirable characteristics have been achieved in a mount that is actually very compact and which enables the mounting of a telescope in the very lowest position which the lens housing of the scope will admit. Means is further provided to accept fully, the heavy recoil of the hunting rifle. This is

normally a very substantial shock load owing to the fact that the telescope in the hunting types is held rigidly with the rifle instead of being able to have the rifle slide out from under it as is characteristic of the target type scopes.

The principal object of my invention therefore is to provide a mount for hunting type telescope sights which is capable of both windage and elevational adjustment and to have these adjustments made by micrometer type adjusting means.

A further object of my invention is to provide a double adjustable telescope mount which makes it possible to mount the telescope just as low on the rifle as is permitted by the telescope parts.

A further object of my invention is to provide a double adjustable telescope mount which is characterized by its rugged construction and compact form.

A further object of my invention is to provide in a double adjustable telescope mount means whereby the mount may be quickly and easily removed from the rifle and can later be replaced on the rifle with no loss of "zeroing" in adjustments.

A further object is to provide pivoting means in the horizontal and vertical planes which will prevent any distortion, twist or bending of the delicate telescope tube during or subsequent to either windage or elevation adjustments.

Further objects, advantages and capabilities will be apparent from the description and disclosure in the drawings, or may be comprehended or are inherent in the device.

In the drawings:

Figure 1 is a perspective view showing my telescope sight mount as employed securing a hunting type telescope to a hunting rifle;

Figure 2 is an exploded perspective view illustrating the majority of the various parts employed in my front and rear members of my telescope sight mount;

Figure 3 is an elevation of the forward member of my sight mount as viewed from the rear of the rifle looking toward the muzzle and showing the same with the telescope securing band removed;

Figure 4 is an end elevation of the members shown in Figure 3;

Figure 5 is a bottom plan view of the same;

Figure 6 is an elevation of the rear member of my sight mount as viewed from the rear of the gun looking toward the muzzle and showing the same with the telescope securing band removed;

Figure 7 is an end elevation of the rear member as viewed from the righthand side of the rifle;

Figure 8 is a bottom plan view of the rear member of my sight mount;

Figure 9 is a horizontal sectional view taken along the plane of line 9—9 of Figure 6;

Figure 10 is a horizontal sectional view taken along the line 10—10 of Figure 6;

Figure 11 is a longitudinal vertical sectional view taken along the line 11—11 of Figure 7;

Figure 12 is a horizontal sectional view taken along the line 12—12 of Figure 3;

Figure 13 is a vertical sectional view taken along the line 13—13 of Figure 4;

Figure 14 is a horizontal sectional view taken along the line 14—14 of Figure 3;

Figure 15 is a vertical cross-sectional view taken along the line 15—15 of Figure 12;

Figure 16 is a cross-sectional view taken along the line 16—16 of Figure 13;

Figure 17 is a fragmentary sectional view taken along the broken line 17—17 of Figure 16;

Figure 18 is a diagrammatic view showing the coaction between the rear and front members of my telescople mount when a windage adjustment is being made with the same; and

Figure 19 is an end elevation of the rear mount member illustrating the elevation calibrations.

This present telescope mount is intended for mounting upon the action of a rifle as distinct from certain mounts which may be mounted, at one end, on the barrel of the rifle. Each different rifle has certain characteristics that makes it necessary to adapt the mounting blocks to the particular action with which the mount is to be used. Normally it is preferred to form the mounting blocks as two separate units. Particularly is this true of bolt action rifles wherein it is most convenient to mount one member as the forward member on the barrel band of the action and the rear member on the bridge portion of the action. Certain types of rifles however because of their peculiar construction indicate that the two blocks can best be made on a single unit, or as one piece so that it can be mounted on that particular rifle. This is especially true of certain of the repeating-action rifles other than the bolt actions. Throughout this present description however it has been elected to describe the mount as having two separate mounting blocks.

The forward mount member is provided with a mounting block 20 which is provided with a lower profile adapting the same to fit on top of the barrel ring of a bolt action rifle. This is held in place on the action by suitable screws passing through holes 22 which screws then pass into threaded holes in the barrel ring. Extending outwardly and disposed in a single horizontal plane are the two conical opposed detents 24 and 25.

The forward support block for the telescope T is provided with opposed grooves 26 and 27 adapted to engage detents 24 and 25 respectively. The form of these grooves is probably best illustrated in Figures 13 and 14 in which it will be noted that the grooves are beveled to the same angle as the conical detents but throughout their fore and aft extent they become narrower and shallower, to the end that the detents approaching the muzzle end of the rifle, slide in grooves 26 and 27 and come to a point of rest intermediate the ends of the grooves. This arrangement serves two purposes. It permits detents 24 and 25 to accept the force of recoil when the rifle is fired and the rifle tends to slide rearward with respect to the sight. Secondly the detents 24 and 25 being circular in cross-section, provide a pivot means so that the telescope can be adjusted for elevation, pivoting upon these detents. A third function of the detents and the associated grooves 26 and 27 is to provide a means for quickly and easily removing or attaching the telescope to the rifle. This is particularly desirable when it may be necessary to use the iron sights on the rifle, as such need often arises during transportation of the rifle.

A preferred form of construction is to employ means for windage adjustment in the forward mounting member. For certain installations it may be necessary to combine the windage adjustment and the elevating means in a single mounting member, either front or rear. However a more rugged arrangement is provided where these adjustments can be placed in one of the mounting members and the other in the second mounting member. To achieve windage adjustment in the forward member a flaring tenon

32 is formed as part of the grooved support block 34. Coacting with tenon 32 is a corresponding recess or mortise 36 formed in the forward saddle block 37.

The relative movement between saddle block 37 and support block 34 is controlled by the windage adjustment screw 39. Screw 39 may be adapted for operational engagement by various means as by the coin or screwdriver slot 40 and while the screw is free to revolve with respect to block 34 it is held against longitudinal movement with respect to block 34 by some convenient means. One such means is shown in Figure 15 and consists of two pins as 42 secured in block 34 and adapted to engage an annular groove 43 formed in screw 39. The smaller inboard end of screw 39 is threaded to engage corresponding threads 44 in saddle block 37. This arrangement provides for the certain positioning and movement of the windage means as described, in the same general manner in which micrometers function, and to this end screw 39 is preferably graduated so that exact settings for windage can be made, or the sight can be returned to a predetermined windage adjustment. A limit stop is provided by pin 46 a portion of which extends below saddle member 37 to which it is secured and engages a slot 47 in the support block 34.

A suitable spring pressed detent 48 engaging in the depressions 49 in the periphery of the head of screw 39 provides a click arrangement quite common in target sights and telescope mounts, so that fine settings of the sight contained within one turn of screw 39 can be determined by hearing or feeling. Complete revolutions of screw 39 are shown by graduations and a coacting index on parts 34 and 37 as indicated at 50 in Figure 2 and by the lines on the periphery of screw head 39 and a coacting index on the saddle block 37. When a setting has been determined and it is desired to lock the adjusting means at that setting the means illustrated in Figures 16 and 17 has been found very convenient. This consists of a slotted screw 51 having a tapered portion 52 adapted to seat ball 53 in locking engagement with screw head 39 and saddle block 37.

Suitable telescope securing bands 55 encircle the barrel of the telescope sight and are in turn secured to the front and rear saddle members in a manner to seat and secure the telescope firmly within the saddles. A preferred form of attachment is to pivotably secure one end of band 55 to the saddle block and then to employ tensioning screws to tighten the band when the telescope is in place.

The rear mounting block 60 has an inner profile adapting it to be seated on the bridge or rear portion of the receiver depending somewhat upon the type of rifle to which the mount is being attached. Block 60 is preferably provided with a plurality of screw holes 62 for screws which are threaded into a fixed part of the rifle receiver thus providing a fixed mounting. The support block 68 of the rear mount member is secured to mounting block 60 by detents preferably secured in the downwardly extending legs of the support block. This construction is employed primarily because of the need of an easy detachable means whereby the mount member can be removed from the mounting block 60 and a most convenient means is by a screw 64 having a conical or tapered end 65 of the same general form as detents 24 and 25. Screw 64 seats within the conical hole or recess 66 formed in block 60 and a corresponding detent 67 secured in the lower rear support block 68 is adapted to seat in a diametrically opposed opening on the opposite side of block 60. An emergency open sight is provided at 70 by a plate 71 which is secured to block 60 by suitable screws which screws preferably pass through enlarged holes in plate 71 so that limited adjustment in windage and elevation is possible for sight 70. When the telescope is removed the peep sight 70 is very effective as there are no bulky protuberances left on the rifle. It will be noted that rear support block 68 is formed generally as a transversely disposed bar having downwardly directed ends so that detent 67 and the detent end of screw 64 can be brought into horizontal alignment with openings 66 in block 60. When screw 64 is seated firmly in place it is locked in that position by the locking knurled nut 73.

Adapted to coact with block 68 is the rear saddle block 72. The relative movement between blocks 68 and 72 in the vertical plane provides the elevation adjustment for the telescope sight. This vertical movement is affected by and is under accurate control of the micrometer screw 74. Screw 74 is disposed to revolve freely within block 72 but is locked against longitudinal movement therein by the abutment of the head of screw 74 and by means of the snap ring collar 75 which seats within an annular groove cut around the body of screw 74. The head of screw 74 may be formed in any convenient manner to effect its movement; in this present illustration a coin or screwdriver slot is indicated at 76. Graduations are shown at 78 to indicate elevation values and a click indicator is provided by the spring pressed ball 79 which engages in suitable recesses cut within the head of the screw. This gives an adjustment which can be either heard or felt as the changes are made, as is common with micrometer adjusted sight. Graduations on screw 74 will give only the small increments of elevation for one thread pitch; graduations to show the number of complete revolutions of screw 74 are indicated in Figure 19 and are proportioned to read minutes of vertical angle and may for a definite installation be converted into range changes.

The lower portion of screw 74 is threaded to engage similar threads 81 formed within block 68. It therefore follows that as screw 74 is turned, the space between blocks 68 and 72 will be proportionately changed.

Referring to Figure 18 it is to be noted that when a windage adjustment is to be made in the telescope sight, the forward support and saddle blocks 34 and 37 are moved longitudinally with respect to each other and detents 24 and 25 change their positions within their respective slots or grooves 26 and 27. However as one advances into the narrower and shallower portion of its groove, the opposite detent moves into the wider deeper portion of its grooves so that no binding occurs and the sight is held in exact position without any looseness developing. The tapering character of the groove bottoms and sides is best illustrated in Figures 13 and 14. This is shown diagrammatically in Figure 18. As this occurs, however, it is necessary to have means within the rear mount member to take care of the angular displacement in the horizontal plane, otherwise binding and finally locking would take place. A preferred solution of this problem is to pivot saddle block 72 upon

screw 74 and to let it swing in accordance with the adjustment of screw 39. After such adjustment is made it then becomes necessary to have some means of locking the parts in this adjusted relationship, and this is provided by the means probably best illustrated in Figures 9 and 10. In these views it will be noted that block 68 has a curved outer surface 83 of the downwardly extending leg 84. This curve is struck with a radius from the center of screw 74. The rear saddle block 72 has a similar downwardly extending leg portion 85 formed with an inside and outside curve and also struck from the center of screw 74.

Outside of leg 85 and having a curvature adapted to fit the same is the locking plate 86. This plate is positioned by rod 87 which passes longitudinally through the horizontal bar of block 68 and it is further guided by a pin 88, illustrated in Figure 10, formed as part of detent member 67. When the adjusted position of windage and/or elevation has been secured, pressure is applied by plate 86 against leg 85 by screwing up on nut 90 and blocks 68 and 72 are firmly locked together. Adapted to be also operated by nut 90 is the locking disc 91. Disc 91 has machined into one margin thereof threads corresponding to the threads on screw 74. Consequently as nut 90 is tightened, forcing disc 91 inwardly, a very secure locking is achieved for screw 74 and thus the elevation settings once obtained can be retained even under trying conditions. The relative movement of leg 85 and plate 86 as the telescope sight is adjusted in elevation provides an excellent index for counting the turns of screw 74. It will be noted in Figure 9 that leg 85 is slotted at 93 to form limits for the relative movement of blocks 68 and 72 and at an appropriate different level, relief is provided for guide member 88 so that it will not affect the free swing of the saddle block 72.

This mount is quick and easy to remove or replace by any user with one hand only. No tools as coins, screwdrivers, wrenches, are required, consequently the telescope may be removed under most adverse conditions as on a battlefield or hunting ground. The elevation and windage adjustments are by independent means and changing one does not affect the other.

On certain rifles it is desirable to have the front mounting block secured by a metal band which encircles the barrel in front of the barrel ring of the action. This arrangement simplifies the mounting on rifles where the action is not drilled and tapped for mounts and especially on hardened actions where drilling is difficult or impossible without annealing the action. These conditions are often encountered on large caliber rifles of the military or sporting types and to which this mount is especially adaptable and desirable. This mount further is particularly useful in the low mounting of target type telescope sights on high power rifles. On many rifles the mounting blocks must be adapted to mounting arrangements supplied by the manufacturer. These devices may be dovetail tenons or grooves, special holes, detents, slots and the like. Usually only the mount's detents need to be modified.

It is to be understood that the front and rear sets of detents 24 and 25 and 65 and 67 respectively coact to provide hinge points for the telescope to pivot upon, in the vertical plane, when adjustment is made in elevation.

It is believed that it will be clearly apparent from the above description and the disclosure in the drawings that the invention comprehends a novel construction of a double adjustable rifle telescope mount.

Having thus disclosed the invention, I claim:

1. A telescopic sight for a rifle adjustable for windage and elevation, comprising: a sighting telescope; a forward and a rear mounting block adapted to be secured to a rifle; a pair of detents of circular cross-section extending from the sides of said forward mounting block; a forward support block having depending portions on either side having grooves in their opposed inner side surfaces in which said detents are positioned, said grooves increasing in their cross-sectional dimensions from their rear to their forward ends; a forward saddle block having a groove in its bottom extending from side to side having inwardly flaring walls and a matching tenon on the top of said forward support block positioned in said groove whereby said forward saddle block is movable from side to side of said forward support block; a first, horizontally-disposed micrometer screw having its head secured in said forward support block against other than rotative movement and having its shank threaded into said forward saddle block forming independent means for horizontally moving said forward saddle block for windage adjustment; said telescope having its forward portion secured to the upper surface of said forward saddle block; a rear support block having depending portions on either side abutting the sides of said rear mounting block and connecting means therebetween permitting at least limited pivoting of said rear support block on said rear mounting block; a rear saddle block positioned on said rear support block and a second, vertically-disposed micrometer screw having its head secured in said rear saddle block against other than rotative movement and having its shank threaded into said rear support block forming independent means for vertically moving said rear saddle block for elevation adjustment; said rear saddle block having a depending leg on one end abutting one side of said rear support block with the abutting surfaces of said depending leg and said rear support block forming in horizontal cross-section arcs of a circle having said second micrometer screw as its center permitting pivoting of said rear saddle block about said second micrometer screw as said forward saddle block is adjusted for windage; and said telescope having its rear portion secured to the upper surface of said rear saddle block.

2. A telescopic sight for a rifle adjustable for windage and elevation, comprising: a sighting telescope; mounting means adapted to be secured to a rifle; said mounting means having at one end a pair of detents of circular cross-section extending from the sides thereof; a first support block having depending portions on either side having grooves in their opposed inner side surfaces in which said detents are positioned, said grooves increasing in their cross-sectional dimensions from their rear to their forward ends; a first saddle block positioned on said first support block and said first support and saddle blocks having mortise and tenon means therebetween permitting movement therebetween only from side to side; said first support and saddle blocks having a first, horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; said telescope

having one end portion secured to the upper surface of said first saddle block; a second support block having depending portions on either side abutting the sides of the other end of said mounting means and connecting means therebetween permitting at least limited pivoting of said second support block on said mounting means about a horizontal axis; a second saddle block positioned on said second support block and said second saddle and support blocks having a second, vertically-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for vertically moving said second saddle block for elevation adjustment; and said telescope having its other end portion secured to the upper surface of said second saddle block.

3. A telescopic sight for a rifle adjustable for windage and elevation, comprising: a sighting telescope; mounting means adapted to be secured to a rifle; a first support block mounted on one end of said mounting means; means connecting said first support block to said mounting means permitting pivoting therebetween; a first saddle block positioned on said first support block and connecting means therebetween permitting movement therebetween only from side to side; said first support and saddle blocks having a first, horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; said telescope having one end portion secured to the upper surface of said first saddle block; a second support block mounted on the other end of said mounting means and connecting means therebetween permitting at least limited pivoting of said second support block on said mounting means about a horizontal axis; a second saddle block positioned on said second support block and said second blocks having a second, vertically-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for vertically moving said second saddle block for elevation adjustment; said second saddle block having a depending leg on one end abutting one side of said second support block with the abutting surfaces of said depending leg and said second support block forming in horizontal cross-section arcs of a circle having said second micrometer screw at its center permitting pivoting of said second saddle block about said second micrometer screw as said first saddle block is adjusted for windage; said telescope having its other end portion secured to the upper surface of said second saddle block; said second support block having a lateral through opening and a rod extending through said lateral opening and having a locking plate secured to one end positioned on the outside of said depending leg and having its other end threaded and having a nut thereon having its inner surface abutting a portion of said second support block whereby said second saddle block may be clamped to said second support block by pressure of said locking plate upon tightening of said nut.

4. The subject matter of claim 3 in which said lateral opening passes adjacent to said second micrometer screw and a locking disc positioned on said rod inside of said nut, said lateral through opening being enlarged at the threaded end of said rod forming a countersinking hole of a size to accommodate said locking disc and at least part of said nut and said countersinking hole communicating with said tapped hole whereby said disc is in position to clamp said second micrometer screw and a margin of said disc having threads corresponding to the threads of said second micrometer screw it abuts.

5. A telescopic sight for a rifle adjustable for windage and elevation, comprising: a sighting telescope; mounting means adapted to be secured to a rifle; a pair of detents extending from the sides of one end of said mounting means; a first support block having depending portions on either side having grooves in their opposed inner side surfaces in which said detents are positioned; a first saddle block positioned on said first support block and connecting means therebetween permitting movement therebetween only from side to side; said first support and saddle blocks having a first, horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; said telescope having one end portion secured to the upper surface of said first saddle block; a second support block mounted on the other end of said mounting means and connecting means therebetween permitting at least limited pivoting of said second support block on said mounting means about a horizontal axis; a second saddle block positioned on said second support block and said second saddle and support blocks having a second, vertically-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for vertically moving said second saddle block for elevation adjustment; and said telescope having its other end portion secured to the upper surface of said second saddle block.

6. The subject matter of claim 5 in which said grooves increase in their cross-sectional dimensions from their rear to their forward ends and said detents have circular cross-sections.

7. The subject matter of claim 6 in which said grooves have outwardly flaring walls and are closed at their rear end and open at their forward end and the bases of said grooves diverge as they extend forwardly and said detents have a conical shape.

8. The subject matter of claim 5 in which said connecting means between said first support and saddle blocks comprises said first saddle block having a groove in its bottom extending from side to side having inwardly flaring walls and a matching tenon on the top of said first support block positioned in said groove and the member securing the head of said first micrometer screw is said first support block and the member into which the shank of said first micrometer screw is threaded is said first saddle block.

9. The subject matter of claim 8 in which said first support block secures the head of said first micrometer screw against other than rotative movement by a pair of pins positioned in said first support block and abutting either side of the head of said first screw and said first screw having a circular groove in which said pins are positioned, said first support block having a tapped hole extending beneath said head of said first screw and a locking screw threaded into said

tapped hole, a second hole extending from said tapped hole upward to immediately adjacent said head of said first screw, a ball positioned in said second hole, and said locking screw having a tapered end bearing on said ball, whereby said first micrometer screw may be locked in position by pressure of said ball through the action of said tapered end of said locking screw on said ball.

10. A mounting for a telescopic sight adjustable for windage and elevation, comprising: mounting means adapted to be secured to a rifle: said mounting means having at one end a pair of detents extending from the sides thereof; a first support block having depending portions on either side having grooves in their opposed inner side surfaces in which said detents are positioned; a first saddle block positioned on said first support block and said first support block and said first saddle block having mortise and tenon means therebetween permitting movement therebetween only from side to side; said first support and saddle blocks having a first, horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; said first saddle block having means on its upper surface for securing one end portion of a telescope; a second support block being mounted on the other end of said mounting means and connecting means therebetween permitting at least limited pivoting of said second support block on said mounting means about a horizontal axis; a second saddle block positioned on said second support block and said second saddle and support blocks having a second, vertically-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for vertically moving said second saddle block for elevation adjustment; and said second saddle block having means on its upper surface for securing the other end portion of such telescope.

11. A mounting for a telescopic sight adjustable for windage and elevation, comprising: a first and a second mounting block adapted to be secured to a rifle; a pair of detents of circular cross-section extending from the sides of said first mounting block; a first support block having depending portions on either side having grooves in their opposed inner side surfaces in which said detents are positioned; a first saddle block having a groove in its bottom extending from side to side having inwardly flaring walls and a matching tenon on the top of said first support block positioned in said groove whereby said first saddle block is movable from side to side of said first support block; said first support and saddle blocks having a first, horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; click means for the head of said first micrometer screw for counting of the turning of said first screw; said first saddle block having means on its supper surface for securing one end of a telescope thereto; a second support block having depending portions on either side abutting the sides of said second mounting block and detent means therebetween permitting at least limited pivoting of said second support block on said second mounting block about a horizontal axis; a second saddle block positioned on said second support block and a second, vertically-disposed micrometer screw having its head secured in said second saddle block against other than rotative movement and having its shank threaded into said second support block forming independent means for vertically moving said second saddle block for elevation adjustment; click means for the head of said second micrometer screw for counting of the turning of said second screw; said second saddle block having a depending leg on one side abutting one side of said second support block with the abutting surfaces of said depending leg and said second support block forming in horizontal cross-section arcs of a circle having said second micrometer screw at its center permitting pivoting of said second saddle block about said second micrometer screw as said first saddle block is adjusted for windage; and said second saddle block having means on its upper surface for securing the other end of a telescope thereto.

12. A telescopic sight for a rifle adjustable for windage and elevation, comprising: a sighting telescope; mounting means adapted to be secured to a rifle; a first support block mounted on one end of said mounting means having depending portions on either side, said mounting means and the inner surfaces of said depending portions having groove and detent means therebetween permitting pivoting of said first support block about a horizontal axis running through said detents and permitting pivoting of said first support block about a vertical axis; a first saddle block positioned on said first support block and connecting means therebetween permitting movement therebetween only from side to side; said first support and saddle blocks having a first, horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; said telescope having one end portion secured to the upper surface of said first saddle block; a second support block mounted on the other end of said mounting means and connecting means therebetween permitting at least limited pivoting of said second support block on said mounting means about a horizontal axis; a second saddle block positioned on said second support block and said second support and saddle blocks having a second, vertically-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for vertically moving said second saddle block for elevation adjustment; and said telescope having its other end portion secured to the upper surface of said second saddle block.

13. A telescopic sight for a rifle adjustable for windage and elevation, comprising: a sighting telescope; mounting means adapted to be secured to a rifle; a first support block mounted on one end of said mounting means; means connecting said first support block to said mounting means permitting pivoting therebetween; a first saddle block positioned on said first support block and connecting means therebetween permitting movement therebetween only from side to side; said first support and saddle blocks having a first,

horizontally-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for horizontally moving said first saddle block for windage adjustment; said telescope having one end portion secured to the upper surface of said first saddle block; a second support block mounted on the other end of said mounting means and connecting means therebetween permitting at least limited pivoting of said second support block on said mounting means about a horizontal axis; a second saddle block positioned on said second support block and said second blocks having a second, vertically-disposed micrometer screw having its head secured to one against other than rotative movement and having its shank threaded into the other forming independent means for vertically moving said second saddle block for elevation adjustment; said telescope having its other end portion secured to the upper surface of said second saddle block; said second support block having depending portions

on either side abutting the sides of said mounting means and said connecting means between said mounting means and said second support block comprising one of said depending portions having a conical detent on its inner surface and the other depending portion having a through opening aligned with said conical detent, said mounting means having a recess in either side aligned with said conical detent and said through opening, said conical detent being positioned in the adjacent recess and a locking screw threaded into said through opening having a conical end positioned in the other recess and a locking nut on the shank of said locking screw outside of said second support block.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
681,202	De Zeng	Aug. 27, 1901
2,493,254	Leupold	Jan. 3, 1950
2,548,031	Leupold	Apr. 10, 1951