

Jan. 27, 1959

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2,870,683

ADJUSTABLE TRIPOD TYPE GUN MOUNT

Filed Sept. 20, 1955

4 Sheets-Sheet 1

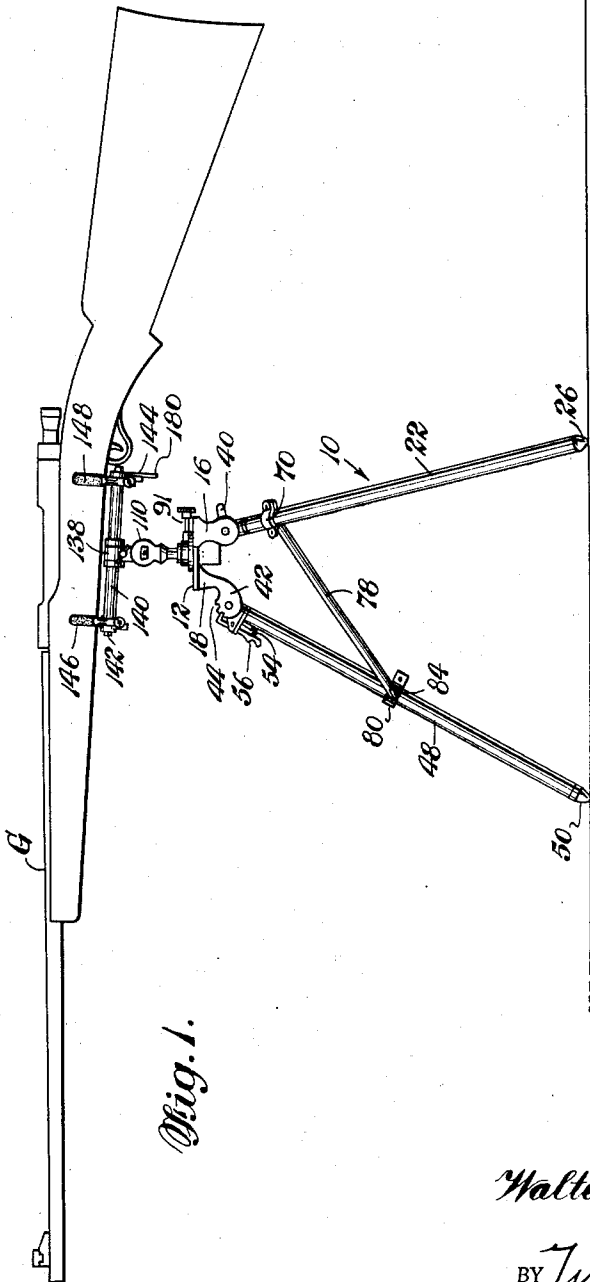


Fig. 1.

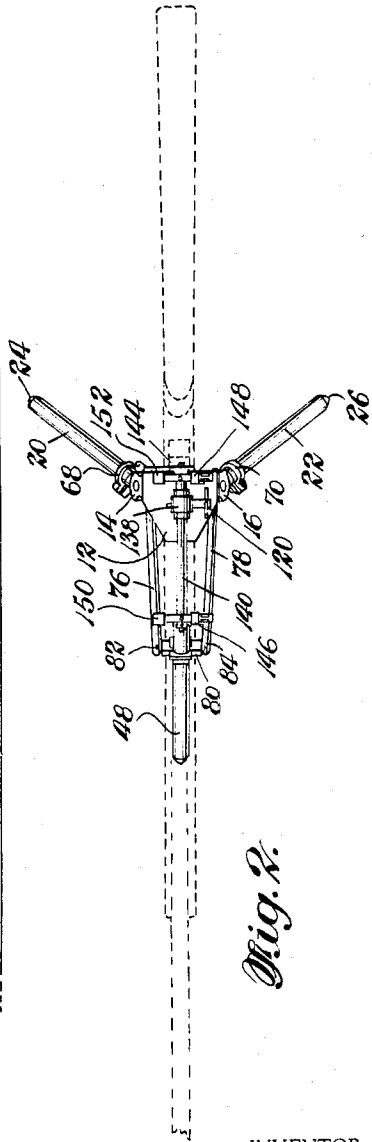


Fig. 2.

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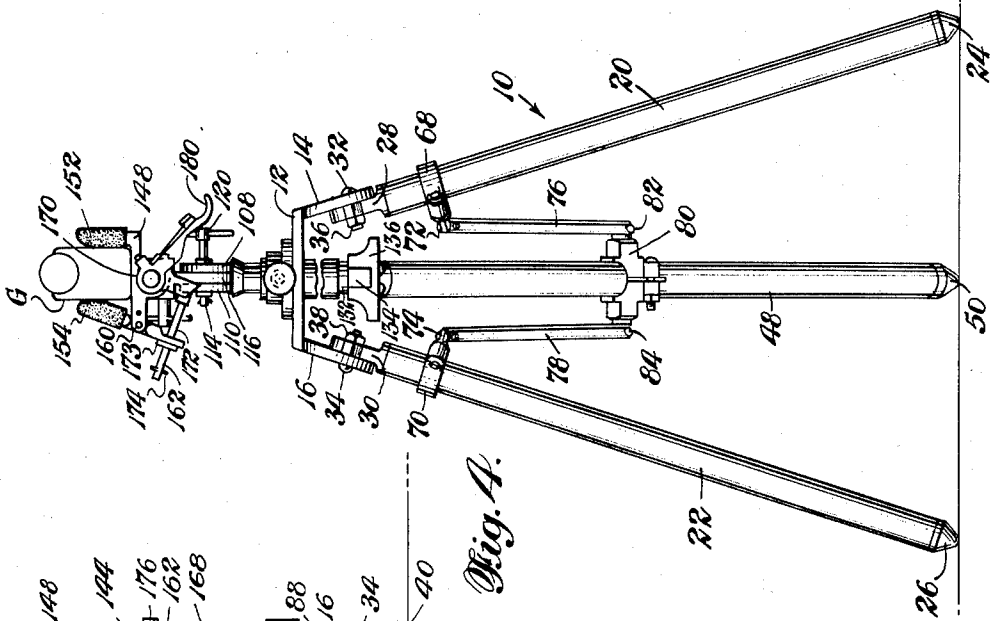


Fig. 4.

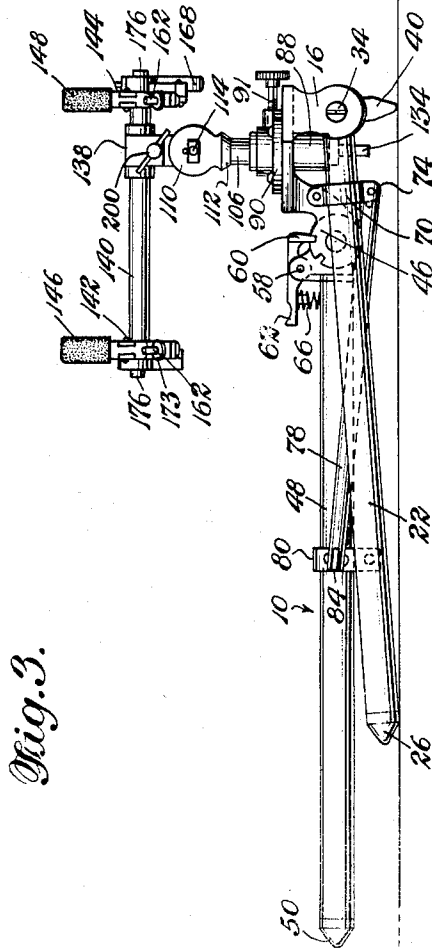


Fig. 3.

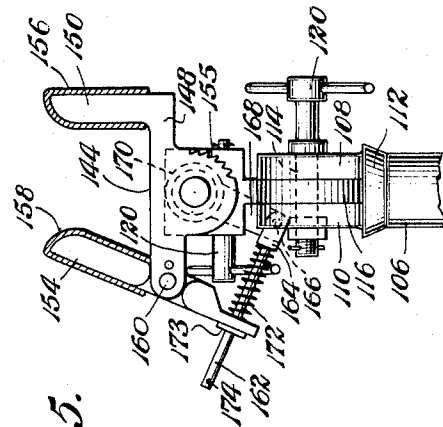


Fig. 5.

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4 Sheets-Sheet 3

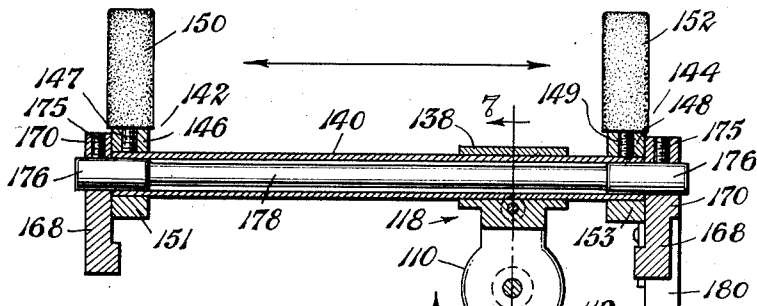


Fig. 6.

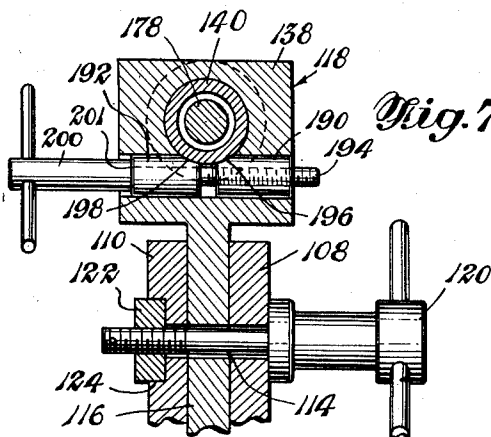
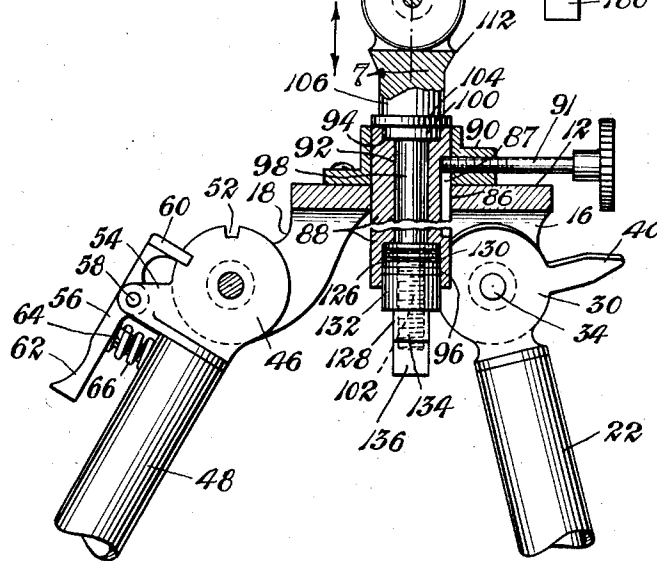


Fig. 7.

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Fig. 8.

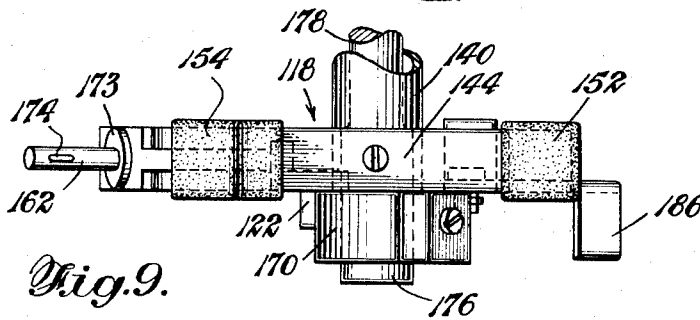
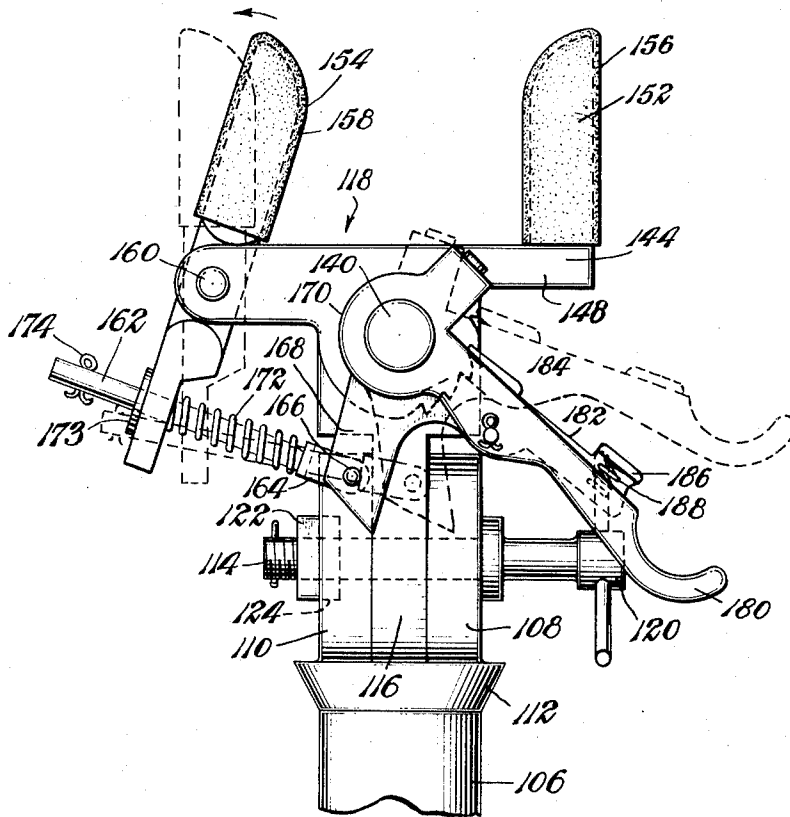


Fig. 9.

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ADJUSTABLE TRIPOD TYPE GUN MOUNT

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6 Claims. (Cl. 89-40)

This invention relates to a gun mount, and it particularly relates to a tripod type of gun mount, which is adapted for both horizontal and elevational adjustment.

Heretofore, the mounts used for supporting small calibre weapons, such as rifles or light machine guns, were generally of the biped type adapted to be connected near the front end of the weapon's barrel. Although this type of mount undoubtedly effected some steadying of the weapon during sighting, such steadying effect was largely offset by the fact that only the front end of the gun was supported by the biped mount, making it difficult to control the heavier weight of the rear portion. This is especially true in view of the fact that the balance point of most guns is about two-thirds of the distance toward the rear thereof.

It is one object of the present invention to overcome the above, as well as other, disadvantages, by providing a gun mount which is adapted to bear the entire weight of the gun, and which is capable of controlling not only the front end of the gun, but all portions thereof.

Another object of the present invention is to provide a gun mount which can be adjusted to the balance point of any type of gun, enabling easy and quick sighting.

Another object of the present invention is to provide a gun mount which is capable of being pivoted on a wide arc in both the horizontal and vertical directions.

A further object of the present invention is to provide a gun mount which also provides a readily operable vertical adjustment means.

Another object of the present invention is to provide a gun mount which is operative as a support for the gun when being used in either the kneeling, sitting or prone position.

Another object of the present invention is to provide a gun mount which is relatively light, which consists of comparatively few parts, and which can be easily collapsed into a compact, folded position suitable for carrying.

Another object of the present invention is to provide a gun mount which is capable of being adjusted from a relatively free-swinging support to a relatively rigid support.

Other objects of the present invention are to provide an improved gun mount, of the character described, that is easily and economically produced, which is sturdy in construction, and which is highly efficient in operation.

With the above and related objects in view, this invention consists in the details of construction and combination of parts, as will be more fully understood from the following description, when read in conjunction with the accompanying drawings in which:

Fig. 1 is a side elevational view showing a gun mount, embodying the present invention, in operative position with a gun mounted thereon.

Fig. 2 is a top plan view of Fig. 1, with the mount shown in full line and the gun in dotted outline.

Fig. 3 is a side elevational view of the gun mount in folded position.

Fig. 4 is a rear elevational view of the gun mount in raised position.

Fig. 5 is an enlarged, detailed end view of the locking means, with the locking lever removed.

Fig. 6 is an enlarged, longitudinal sectional view of

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the gun support means, showing the horizontal and vertical sighting mechanism.

Fig. 7 is a vertical sectional view taken on line 7-7 of Fig. 6.

Fig. 8 is an enlarged detail view of the locking means at the top of Fig. 4.

Fig. 9 is a top plan view of Fig. 8.

Referring now in greater detail to the drawings wherein similar reference characters refer to similar parts, there is shown a gun mount of the tripod type, generally indicated at 10. This tripod comprises a base plate 12 provided with a pair of oppositely inclined, depending ears 14 and 16 and a front depending bracket 18.

Legs 20 and 22, having pointed ends 24 and 26, for digging into the ground, are connected to the respective ears 14 and 16. The connections between the legs 20 and 22 and the ears 14 and 16 are by means of integrally formed discs 28 and 30 on the legs. These discs are pivotally connected to the ears 14 and 16 by means of bolts 32 and 34 extending through mating central openings in the corresponding ears and discs. Nuts 36 and 38 act to adjustably maintain the tightness of the pivoted point.

Integrally connected to the upper ends of each of the legs 20 and 22, at the vicinity of the pivot point, is a pointed, perpendicular auxiliary leg 40, which is substantially shorter than the other legs. These short legs 40 are also positioned perpendicularly to the legs 20 and 22 at all pivotal positions.

The front bracket 18 comprises a centrally split, or slotted, arm, having an offset disc-shaped end portion 42. Both disc shaped ends 42 of the split arm portions of the bracket 18 are provided with a pair of lateral slots 44 on their periphery.

Positioned in the slot between the split portions of the disc-shaped end 42 of the bracket 18 is a disc 46 which is integrally connected to the upper end of a front leg 48; this leg 48 being generally similar to side legs 20 and 22, and provided with a pointed end 50. A pair of slots 52 are provided on the periphery of the disc 46, these slots 52 being adapted to internally mate with the aligned slots 44 on the split portions of the bracket.

Immediately below the disc 46, the leg 48 is provided with a bracket 54, between the split ends of which there is pivotally mounted a lever 56, the pivot being formed by a pivot pin 58. At the upper end of the lever 56 is provided a detent 60, and at the lower end, the lever is provided with a recessed hand hold 62. A lug 64 extends from the internal surface of the lever 56 and is surrounded by a coil spring 66 connected between the lever and the leg 48. The spring 66, guided by the lug 64, acts to bias the detent 60 toward the bracket 18. In this manner, the front leg 48 can be pivotally adjusted to a predetermined position and, when the slots 52 on the disc 46 are aligned with the slots 44 on the bracket 18, the detent 60 will automatically engage the aligned slots to hold the leg in its adjusted position. To disengage the detent, in order to permit further adjustment, the handle portion 62 of the lever is pressed in to force the detent 60 out of engagement with the slots. After detent 60 is disengaged from the slots and movement is started, the detent rides the periphery of the disc shaped ends 42 of the bracket 18 and automatically engages the slots when the reverse movement is completed.

Clamps 68 and 70 are provided on the legs 20 and 22, and pivotally connected to extending eyelets 72 and 74 of these clamps are one of the ends of the links 76 and 78. The opposite ends of the links are pivotally connected to a split collar 80 on the leg 48, as at 82 and 84. By means of this linkage, adjusting movement of the front leg 48 automatically adjusts the positions of side legs 20 and 22.

Centrally provided in the plate 12 is an opening 86,

Slidably positioned within this opening 86 is a cylindrical sleeve 88, having a vertically extending slot 87 on its outer surface, stopping short of its top and bottom ends. Secured to the plate 12 about the opening 86 is a flanged collar 90 through which threadedly extends a manually controllable set screw 91 having its end extending into the slot 87 for securely holding the sleeve 88 at any desired position of vertical adjustment.

A central bore 92 is provided in the sleeve 88, and at each end of the bore there is formed a counterbore, as at 94 and 96. The counterbore 94 is shallow, whereas, the counterbore 96 is relatively deep.

Extending through the bore 92 is a shaft 98 having an enlarged head 100 at its upper end, and being threaded, as at 102, at its lower end. The head 100 is rotatably positioned in counterbore 94 and is provided with a top flange 104 which seats on top of sleeve 88.

Rising from the flange 104 is an enlarged shaft portion 106 having a pair of discs 108 and 110 positioned above a flange 112. Pivotaly connected between the discs 108 and 110, as by threaded shaft 114, is a disc 116 integrally depending from a gun support 118.

A handle 120 is connected to shaft 114 adjacent the disc 108 and provides means for adjusting the shaft relative to a fixed nut 122 which is positioned in a recess 124 in disc 110. By means of handle 120, the threaded shaft 114 can be tightened or loosened to vary the frictional engagement between the discs 108, 110 and 116 and, thereby, the ease of pivotal adjustment of the gun support.

As best shown in Fig. 6, the opposite end of shaft 98, within the counterbore 96, is provided with a ball bearing assembly 126. A washer 130 is fitted over shaft 92 between the ball bearing assembly 126 and the hub 132 of an adjusting handle 128. The cylindrical hub 132 is internally threaded to engage the threaded end 102 of shaft 98. Extending from the hub 132 is a stem 134 having a hand grip 136, as shown in Fig. 4. This handle 128 is used for adjusting the compressional force on the washer 130 and, thereby, adjusting the tightness of the enlarged head 100 in the counterbore 94, and thus the rotational movement of the shaft 98 in the sleeve 88.

The gun support 118, which is connected to disc 116, comprises a sleeve 138 through which slidably extends a tube 140. On opposite ends of the tube 140 are provided front and rear gun clamp units 142 and 144 forming an elongated gun holding means. These clamp units comprise a cross-arm, as at 146 and 148, provided with stationary vertical supports 150 and 152, and with movable vertical supports, as at 154. The cross-arms are connected to the tube 140 by set screws 147 and 149 which extend through ring portions 151 and 153 of the cross-arms. The rear ring portion 153 is provided with a peripheral toothed portion, indicated at 155. The fixed and movable vertical supports 150, 152, and 154 are all covered with a resilient covering material such as rubber, indicated at 156 and 158 in Fig. 5. This is for the purpose both of cushioning the gun G, held between the supports, and for providing a frictional engagement therewith. The movable supports 154 on both front and rear units, are provided with slots to receive the cross-arms 146 and 148 to which they are pivoted, as at 160. The lower end of these pivoted support arms are provided with openings through which extend rods 162. The opposite ends of these rods 162 are provided with heads 164 which are, in turn, pivotaly connected, as at 166, to an arm 168 which is integral with ring 170. Compression springs 172 are provided on the rods 162 between the bottoms of the movable supports 154 and the heads 164 on the rods. These springs act to bias the lower ends of the movable supports outwardly and the upper ends inwardly into clamping position. A washer 173 is provided on each rod 162, and a cotter pin 174 at the end of the rod acts to maintain the rod on the support member 154.

Each ring 170 is fixedly mounted, by means of set-screws 175, on an outwardly extending, enlarged, cylindrical extension 176 of a rod 178 which is positioned in the tube 140. The rod 178 is of substantially less diameter than the tube 140 whereas the extensions 176 are substantially of the same diameter as the internal surface of the tube, whereby a frictional engagement is provided.

Integral with the rear ring 170, and extending therefrom at an opposite downward angle from the arm 168, is a manually operable handle 180 having a lever 182 pivotaly connected thereto intermediate its ends. The lever 182 is provided with a detent 184, at one end, adapted to engage the toothed portion 155 of the cross support bar 148; thereby maintaining the compression spring 172 in tensioned position and providing a releasable locking means. At the opposite end of the lever 182 is provided a knob 186 for pressing the lower end of the lever in to force the detent, at the upper end, out of engagement with the teeth. A spring 188, under the knob, biases the knob outward so that, in order to disengage the detent from the teeth, it is necessary to positively force down the knob. This releases the detent which releases the tension from compression spring 172, permitting the pivoted support arm 154 to move outward to release the gun.

The tube 140 is slidably and longitudinally movable in the sleeve 138 to permit the gun to be longitudinally adjusted in the mount to vary the balance point thereof. The tube is also rotatable in the sleeve to permit the gun to be levelled. The tube may be locked in any of its adjusted longitudinal and rotational positions by means of a pair of cylindrical locking lugs or barrels 190 and 192, each of which has a central bore through which extends a rod 194. The rod 194 is smooth at that portion which passes through lug 192 and is threaded at its end portion passing through lug 190 to threadedly engage with internal threads in that lug. The inner, upper ends of each lug is beveled, as at 196 and 198, to match the contour of the tube 140. A handle 200 is provided on the rod 194 at its unthreaded end. When the handle 200 is operated clockwise, the end 201 of the handle abuts against lug 192 while the threaded end screws into lug 190, thereby drawing the two lugs together against the tube 140 and frictionally engaging it. Opposite movement of the handle will reverse the relative movement of the lugs and release the tube. These locking lugs 190 and 192 perform a two-fold purpose, one being that they permit the tube 140 to be turned and locked in any position, and the other being that they permit the tube to be longitudinally adjusted and then tightened in position.

In the event the device is to be used on uneven ground, such as the side of a hill, it is merely necessary to position the gun in place on the mount, clamp it in place between the clamping support arms, and then, with a slight twist of the handle 200 in the counterclockwise direction, which releases the tube 140, the gun can be easily turned to a level position and then locked in such position. The gun is, in this manner, arranged in a level position regardless of the slope of the terrain.

The above-described construction permits the use of "resisted" adjustment as well as "free" adjustment of the gun G when in operation. The use of "resisted" adjustment is generally best for relatively stationary targets since it permits a slow adjustment to be made, free of any waver. This is accomplished by manipulating the handles 120 and 128 to place a greater frictional resistance upon the horizontal and vertical adjustments. If the targets are moving, however, resistance can be instantly removed by turning the handles 120 and 128 in the opposite direction. The gun support can then be freely moved in both horizontal and vertical directions to enable the shooter to follow or lead the target.

When the legs of the tripod are fully opened with the

sleeve 88 elevated to its highest point, the mount is adapted to be used in the kneeling position; with the tripod fully opened and the sleeve 88 lowered to its lowest point, it is adapted to be used in the sitting position. However, if it is desired to use the gun in the prone position, the legs are collapsed forwardly, as illustrated in Fig. 3. In this position, the gun support is still horizontal while the mount is supported on side legs 20 and 22, with the short legs 40 substituting for front leg 48, as the third support means.

In either position, the gun may be readily adjusted vertically a distance determined by the length of the vertical slot 87 in sleeve 88 by manually loosening the set screw 91 a very slight amount, manually raising or lowering the sleeve 88 and its supported parts, and then tightening the set screw 91 to fixedly mount or secure the sleeve 88 in the base 12.

The mount described above is adapted for use both by hunters and by the military. If used for hunting rifles, the mount is generally constructed smaller, and of a lighter weight material such as aluminum; whereas, if used for military purposes, larger, stronger and more rugged construction may be preferable. Basically, however, it is adapted for either purpose. The longitudinal adjustment of the tube 140 permits this mount to be used with various types of guns since, by adjusting the tube longitudinally, the balance point may be shifted in accordance with the type of gun being used. Furthermore, when tube 140 is slid forward while the tripod is folded, it forms a convenient handle for carrying.

Although this invention has been described in considerable detail, such description is intended as being illustrative rather than limiting, since the invention may be variously embodied, and the scope of the invention is to be determined as claimed.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A gun mount comprising a base, supporting legs for said base, an upstanding rotatable shaft on said base, means for adjusting the frictional drag and thus the relative freedom of rotation of said rotatable shaft, a gun support on said shaft, said support being mounted for pivotal movement in a vertical plane on said shaft, means for adjusting the frictional drag and thus the relative freedom of pivotal movement of said support, a tubular gun clamp support mounted on said gun support for both longitudinal and rotational movement, and manually operable means for adjusting the freedom of movement of said tubular support member in regard to both the longitudinal and rotational movements thereof, said supporting legs comprising two side legs depending from said base in oppositely inclined directions, and a front leg depending in a third inclined direction away from said two side legs, all three legs being pivotally connected to said base, linkage connecting said side legs to said front leg, said front leg being pivotally movable away from said side legs to move said side legs along therewith into a position substantially parallel to said tubular support, means to releasably lock said front leg in its various pivotal positions, and auxiliary supporting legs perpendicularly arranged relative to said side legs and pivotally movable with said side legs.

2. The gun mount of claim 1 wherein the tubular support member is a tube having a pair of clamping means mounted at each end thereof, said clamping means each comprising a rigid vertical support and a laterally positioned pivotal support member, said pivotal member being resiliently biased toward said rigid member into clamping position, a releasable locking means for maintaining the bias of said pivotal member, and manually operable means to release said locking means, said manually operable means, itself, being resiliently biased toward a position to hold said locking means in locking position.

3. A gun mount comprising a vertical shaft, a horizontally rotatable and vertically pivotal gun support on

said vertical shaft, said gun support comprising a horizontally positioned sleeve, an elongated tube positioned in said sleeve for longitudinal and rotational movement therein, a gun clamping device on opposite end portions of said tube externally of said sleeve, and a sleeve clamping device comprising a lateral passage in said sleeve transverse to said tube and intersecting the passage in said sleeve containing said tube, a pair of tubular barrels in said lateral passage, adjacent ends of said barrels being contoured to match the outer cross-sectional contour of said tube, one of said barrels being internally threaded and the other of said barrels being internally smooth, a rod extending through said barrels, one portion of said rod being threaded and engaged within the internally threaded barrel, the opposite portion of said rod being smooth and slidably positioned in said internally smooth barrel, one end of said rod having an enlarged portion abutting against an end of said internally smooth barrel and the opposite end of the enlarged portion being provided with a manually operable handle.

4. A gun mount comprising a base which includes a sleeve secured in said base, a shaft rotatably positioned in said sleeve, a counterbore at the upper end of said sleeve to receive an enlarged head on said shaft for rotationally guiding said shaft, a second counterbore at the lower end of said sleeve, a ball bearing assembly surrounding the lower end of said shaft and positioned in said second counterbore, an internally threaded hub engaging an externally threaded end portion of said shaft below said ball bearing assembly, a manually operable handle on said internally threaded hub, and a washer surrounding said shaft within said second counterbore between said ball bearing assembly and said internally threaded hub, a gun support mounted on said shaft above said sleeve, an elongated gun holding means mounted on said gun support longitudinally and rotationally adjustable on an axis perpendicular to both the axis of said gun support and the axis of said shaft, said gun support being mounted for rotational adjustment on said shaft on an axis perpendicular to the axis of said shaft.

5. The gun mount of claim 4, and separate means for adjusting the frictional drag on and thus the relative freedom of rotation of said shaft in said sleeve, said gun support on said shaft, and said gun holding means on said gun support.

6. The gun mount of claim 4, wherein the sleeve secured in the base slidably extends through an opening in said base, a collar secured to said base about said opening, and manually controllable set screw means extendable through said collar into a vertical slot in said sleeve for adjustably securing said sleeve to said base.

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