A. V. MONTEIRO GOMES, O. L. HEINTZ AND E. C. MESSERSMITH.

MOUNTING FOR MACHINE GUNS.

APPLICATION FILED NOV. 13, 1916.

1,315,718.

Patented Sept. 9, 1919.

2 SHEETS—SHEET 1.

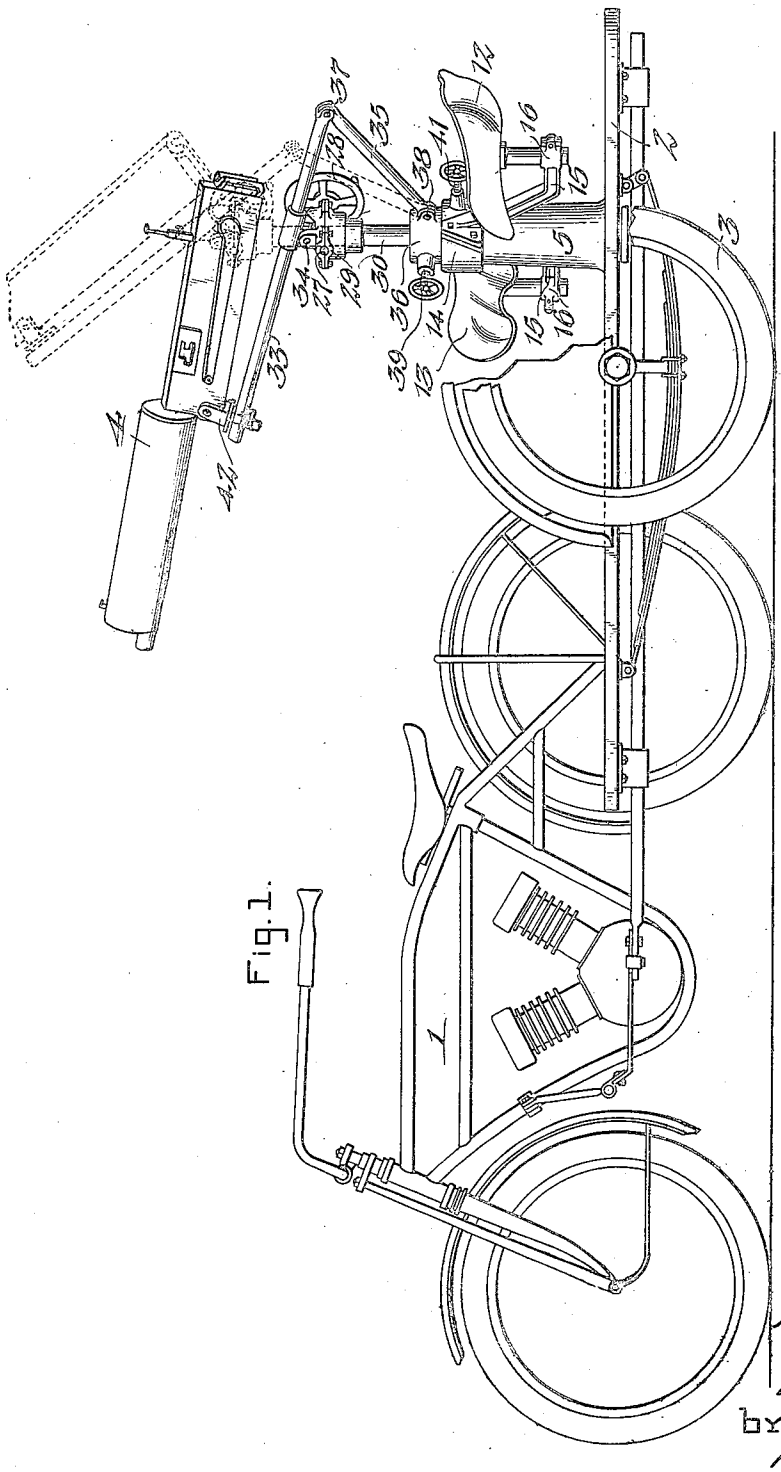


Fig. 1.

INVENTORS

Antonio Vaz Monteiro Gomes,

Otto L. Heintz,

Edgar C. Messersmith,

by Glenn Popp

ATTORNEYS.

A. V. MONTEIRO GOMES, O. L. HEINTZ AND E. C. MESSERSMITH.

MOUNTING FOR MACHINE GUNS.

APPLICATION FILED NOV. 13, 1916.

1,315,718.

Patented Sept. 9, 1919.

2 SHEETS—SHEET 2.

Fig. 2.

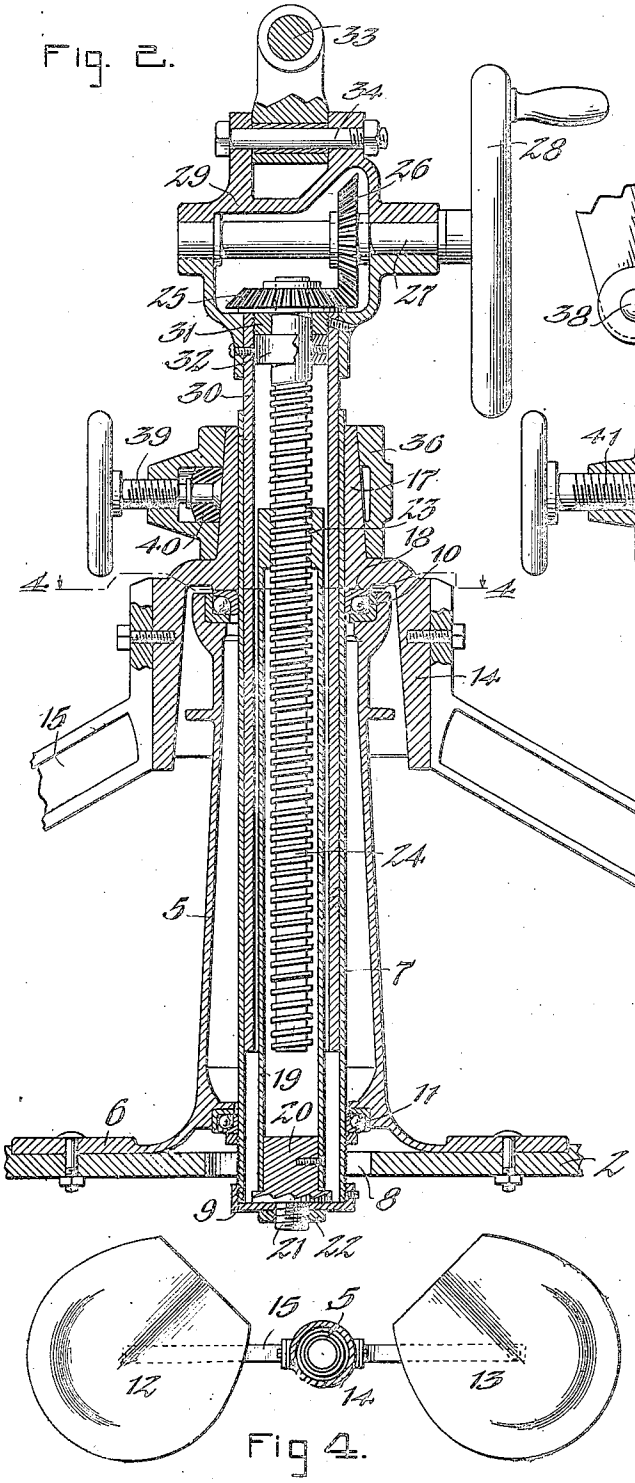
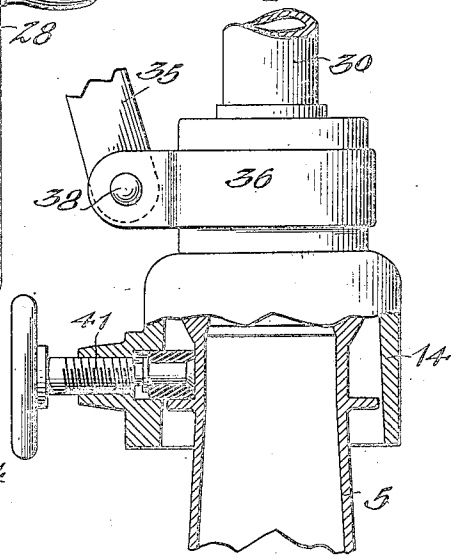


Fig. 3.



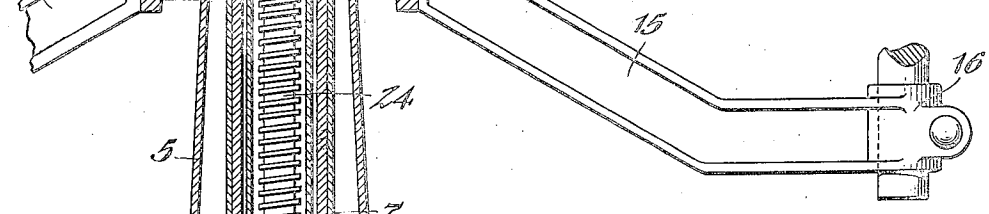


Fig 4.

INVENTORS

Antonio Vaz Monteiro Gomes,

Otto L. Heintz,

Edgar C. Messersmith,

BY Guyon & Pope

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ANTONIO VAZ MONTEIRO GOMES, OF LISBON, PORTUGAL, AND OTTO L. HEINTZ AND EDGAR C. MESSERSMITH, OF BUFFALO, NEW YORK; SAID GOMES AND SAID MESSERSMITH ASSIGNORS TO SAID HEINTZ.

MOUNTING FOR MACHINE-GUNS.

1,315,718. Specification of Letters Patent. Patented Sept. 9, 1919.

Application filed November 13, 1916. Serial No. 130,992.

To all whom it may concern:

Be it known that we, ANTONIO VAZ MONTEIRO GOMES, a citizen of the Republic of Portugal, residing at the city of Lisbon, in the Republic of Portugal, and OTTO L. HEINTZ and EDGAR C. MESSERSMITH, citizens of the United States, and residents of Buffalo, in the county of Erie and State of New York, have jointly invented new and useful Improvements in Mountings for Machine-Guns, of which the following is a specification.

This invention relates to a mounting carriage for machine guns and similar ordnance, and more particularly to a mounting for supporting a gun on a motor car or the trailer or rear car of a motor cycle, which permits the gun to be sighted and fired at an enemy while the car is in motion.

Such guns are usually served by two operators, one stationed beside the gun to load it and assist in its adjustment and the other stationed behind the gun to sight and fire it.

One of the objects of our invention is the provision of an improved rotatable mounting which, in addition to the gun support, furnishes convenient seats for the operators which may be coupled to the gun-support to enable the operators to control the rotation of the gun-support by means of the seats and to maintain the same relative position between these parts after the gun-support has been adjusted to the desired angle.

A further object is to combine with the mounting a convenient adjusting mechanism which always brings the gun-sight in convenient proximity to the eye of the sighting operator while he remains seated, regardless of whether the gun is adjusted to a substantially horizontal position or pointed downward at a greater or less angle or directed upward to a more or less vertical position to disable a military air ship or aeroplane, avoiding the necessity of the sighting operator's stooping or leaving his seat to adjust the gun to extreme angular positions, and enabling him to sight it more quickly and with greater precision.

A further object of the invention is to so construct the adjusting mechanism that the angle of the gun is increased in the act of elevating it and diminished in the act of lowering it, thereby doing away with separate adjusting devices for this purpose and correspondingly simplifying the construction of the mounting.

In the accompanying drawings: Figure 1 is a side elevation of a motor cycle having a rear car or trailer equipped with the improved mounting. Fig. 2 is a sectional elevation of the mounting, on an enlarged scale. Fig. 3 is an enlarged side elevation, partly in section, of the upper portion of the standard and adjacent parts. Fig. 4 is a horizontal section, on a reduced scale, on line 4—4, Fig. 2, some of the internal parts being omitted for clearness.

Similar characters of reference indicate corresponding parts throughout the several views.

1, indicates a motor cycle of any suitable or well known construction and 2 the platform of a rear car or trailer suitably attached thereto and having two or more supporting wheels, 3 of any appropriate construction.

4 indicates a machine gun or similar device carried by our improved mounting which is constructed as follows:

5 indicates a tubular standard or pedestal rising from the platform 2 and having a base-flange 6 which is bolted or otherwise secured thereto. Arranged axially within the standard is a tube 7 projecting a suitable distance above the standard and preferably extending downward through an opening 8 in the platform. The lower end of the tube is closed by a cap 9. This tube is rotatable in the standard and preferably journaled and supported therein by upper and lower ball bearings 10 and 11 of any suitable construction.

12 and 13 indicate a pair of seats for the gun-operators, respectively, which are arranged on opposite sides of the standard and carried by a rotary seat support or frame adapted to turn thereon. This support comprises a hub 14 surrounding the upper portion of the standard and a pair of oppositely-extending arms or brackets 15 carrying the seats and secured to said hub to turn therewith. In their outer ends the brackets

are provided with split or other suitable clamping sockets 16 which receive the vertical posts of the seats. Upon loosening the clamping devices of these sockets, the seats can be adjusted vertically, as desired.

Extending upwardly from the hub 14 is a collar 17 which is brazed or pinned to the rotary tube 7. The internal shoulder 18 of said hub rests upon the bearing cone of the upper ball bearing 10.

Arranged within the tube 7 and separated therefrom by an intervening space is a second tube 19 the lower end of which is suitably secured to the cap 9 of said outer tube, to hold the same against vertical movement relative thereto. In the construction shown in the drawings, said inner tube is fixed to a plug 20 having a screw stem 21 which passes through a central opening of said cap and to which a clamping nut 22 is applied. In its upper portion said inner tube is provided with an internal screw thread or nut 23 with which engages an upright adjusting screw 24 adapted to be turned in the nut for raising and lowering the screw and the parts carried by it. Secured to the upper end of this screw is a bevel gear 25 with which engages a corresponding gear 26 mounted on a horizontal shaft 27 having a hand wheel 28. This shaft is journaled in a head or gear case 29 inclosing said gears and secured at its lower end by screws or otherwise to the upper end of a hollow post or column 30. The latter is guided vertically in the tube 7 in which it is also rotatable. The gear case and the column 30 are connected to the adjusting screw to rise and fall therewith by any suitable means which permit rotation of the screw relative to said parts. In the construction shown this connection is effected by an externally screw threaded ring 31 screwed into the upper end of the column and interposed between the hub of the bevel gear 25 and a collar 32 secured to the adjusting screw. The nut 23 is held against rotation relative to the adjusting screw, by the weight of the seat-frame and the occupants of the seats, the hub of said frame, as before stated, being secured to the tube 7 to which the nut-tube 19 is fixed.

Mounted upon the gear case 29 is a vertically-swinging gun-support or lever 33 which is pivoted between its ends to the ears of the case by a transverse bolt 34. This lever carries the machine gun on its front or long arm, while its rear arm is pivotally connected with the upper end of a link 35 whose lower end is pivoted to a sleeve 36 which embraces the collar 17 of the seat carrying hub 14.

The link pivots 37 and 38 are substantially parallel with the lever pivot 34. The sleeve 36 is normally held against vertical and rotary displacement on the collar 17 by a suitable clamping device which may consist of a screw 39 provided at its outer end with a hand wheel and at its inner end with a block or shoe 40 which bears against the collar, as shown in Fig. 2.

Upon raising or lowering the adjusting screw 24 by turning the hand wheel 28, the gear case 29, lever 33 and the gun are likewise elevated or depressed, but as the lower end of the link 35 is held against vertical movement by the clamped sleeve 36, said lever is swung upward at a greater angle as the screw is elevated, and downward at a less angle as the screw is lowered. Both the elevation and the angle of the gun are thus simultaneously changed by the single act of raising or lowering the adjusting screw, thus dispensing with two adjusting devices for this purpose and simplifying the construction of the mounting accordingly. The seat-supporting frame is preferably provided with a locking or clamping device 41, which device 41 engages the upper end of the standard 5, similar to the screw 39, for rigidly holding the seats in place after swinging them to the desired position.

The gun is mounted to swivel in all directions on its carrying-arm or lever 33 by means of a universal joint 42 of any ordinary construction.

In the use of the gun-carriage or mounting the driver occupies the usual seat of the motor cycle and the operators of the gun occupy their respective seats at the side and the rear of gun, the seats being conveniently arranged substantially at right angles to each other for this purpose. Assuming the gun to be in the proper position with reference to the operators so that one is in position to sight and the other to load, the clamping screw 41 is first loosened, while the clamping screw 39 is tightened at this time to lock the sleeve 36 upon the collar of the seat hub 14, so as to cause the gun-carrying lever 33 to rotate therewith. The operators, by the thrust of their feet against the platform 2, now rotate the seat-frame together with the gun-supporting member to the general direction in which the gun is to be fired, after which the clamping screw 41 is tightened to lock the seat-frame and prevent displacement thereof while firing. If the gun is to be adjusted to an upward angle, say to fire at an aeroplane, the hand wheel 28 is turned in the proper direction to elevate the screw 24 in the standard, the screw being raised until the supporting lever 33 reaches approximately the angle required. The gun is finally sighted by swinging it laterally, or vertically on said lever, by means of the usual handles at its rear end, in a well known manner. If, after thus adjusting the gun, it should be desired to swing it in the arc of a circle to follow the enemy or sweep a given area, the oper-

ators can conveniently do so without leaving their seats or otherwise changing their positions with relation to the gun, the carrying lever 33 of the gun following the rotary movement of the seat-frame owing to its connection therewith through the link 35 and the coupling sleeve 36 clamped to the hub of said frame.

To change the position of the gun from that just described to an approximately horizontal position or at a downward angle, the adjusting screw 24 is lowered to the necessary elevation, and in either of these last-mentioned positions the gun can be pointed in any desired direction by the rotation of the seat frame about the standard, as above described.

Although the front portion of the gun is elevated and more or less inclined by these adjustments, its rear end which carries the sight remains in close proximity to the eye of the sighting operator in all positions of the gun. He can, therefore, conveniently and accurately sight it without leaving his seat, enabling him to do so more quickly and accurately than if he had to leave his seat and stoop or stand for that purpose.

By so organizing and constructing the mounting that the gun-support or lever 33 can be coupled to the seat frame to rotate in unison therewith, or disconnected therefrom to rotate independently thereof, these parts can be adjusted to the proper relative position to bring the gun sight directly in front of the sighting operator in all positions of the gun, avoiding the necessity of his leaning sidewise or otherwise assuming an inconvenient posture and insuring a more accurate aim.

It is also obvious that this mounting is suitable for supporting other objects which require similar vertical and angular adjustments, such for example as military search lights; and the terms of the appended claims are intended to include such analogous uses.

We claim as our invention:

1. The combination of a standard, a seat-support rotatable about said standard and held from vertical movement thereon, a gun-support capable of vertical and angular movement on said standard and rotatable independently of said seat support, and means for connecting said gun support with the seat-support to rotate therewith.

2. The combination of a standard, a seat-support rotatable about said standard and having a hub supported on the standard, a coupling sleeve mounted on said hub and having means for clamping it thereto, a gun-support rotatably mounted on said standard, and means connecting said gun-support with said coupling sleeve to cause the same to rotate with the seat-support when the sleeve is clamped to said hub.

3. The combination of a standard, an adjusting member vertically movable therein, a gun-support mounted to swing vertically on said member, a member which is fixed relative to said adjusting member and a connection between said gun-support and said fixed member.

4. The combination of a standard, an adjusting member vertically movable therein, a lever mounted to swing vertically on said member, a member which is fixed relative to said adjusting member, and a link connecting said lever with said fixed member.

5. The combination of a standard, a screw vertically adjustable in the standard, means for actuating said screw, a vertically-swinging gun-support carried by said screw, a member which is fixed relative to said screw, and a link connecting said gun-support with said fixed member.

6. The combination of a standard, a vertically-movable column guided in said standard, a gear case secured on said column, an adjusting screw for said column arranged in the standard, actuating gears for said screw arranged in said case, a gun-supporting lever pivoted to swing vertically on said gear-case, a member which is fixed relative to said screw, and a link connecting said lever with said fixed member.

7. The combination of a standard, an upright tube rotatably arranged in the standard, a seat support rotatable about the standard, and secured to said tube, a nut fixed to said tube, an upright rotary screw engaging said nut, means for rotating said screw, and a gun-support carried by said screw.

8. The combination of a standard, an upright tube, rotatably arranged in the standard, a seat support rotatable about the standard and secured to said tube, a second tube arranged within the first mentioned tube and fixed thereto, said second tube having an internal screw-thread, an upright rotary screw engaging the thread of said inner tube, means for operating said screw, and a gun-support carried by the screw.

9. The combination of a standard, an upright tube rotatably arranged in the standard, a seat support rotatable about the standard and secured to said tube, a second tube arranged within the first mentioned tube and fixed thereto, said second tube having an internal screw-thread, an upright rotary screw engaging the thread of said inner tube, a vertically movable column guided in said outer tube and connected to said screw to move vertically therewith, a gear case secured to the top of said column, gearing for operating said screw arranged in said case, a gun-supporting lever pivoted to swing vertically on said case, a coupling sleeve mounted on the hub of said seat-support, and a link connecting said lever with said coupling sleeve.

10. The combination of a standard, a seat

support mounted to rotate about said standard, means for locking said support to the standard, a gun-support capable of vertical and angular adjustment on the standard and rotatable independently of said seat-support, a coupling sleeve mounted on the hub of said seat-support and having means for clamping it thereto, and means connecting said gun-support with said sleeve to cause the same to rotate with the seat-support.

ANTONIO VAZ MONTEIRO GOMES.
OTTO L. HEINTZ.
EDGAR C. MESSERSMITH.