C. H. YOST.

GUN CARRIAGE.

APPLICATION FILED NOV. 23, 1915.

1,190,356.

Patented July 11, 1916.

2 SHEETS—SHEET 1.

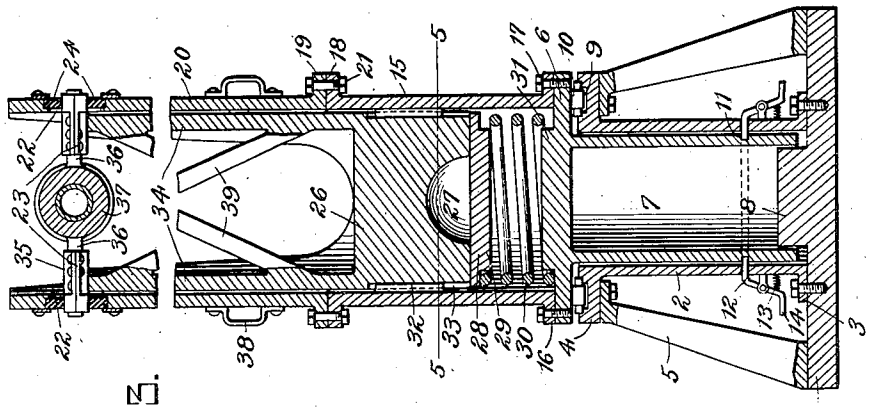


Fig. 1.

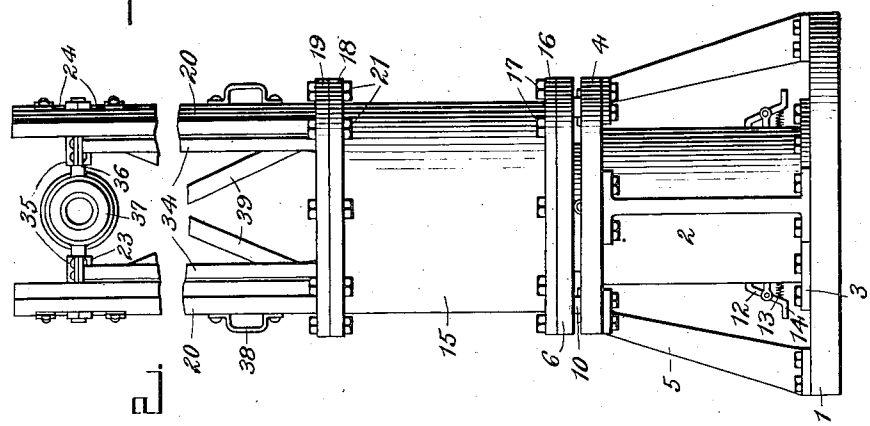


Fig. 2.

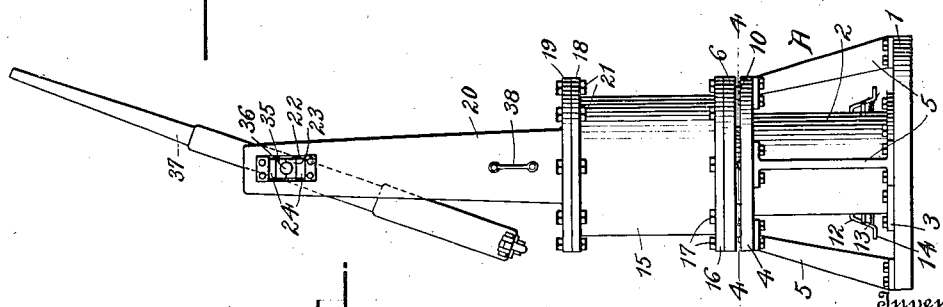


Fig. 3.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

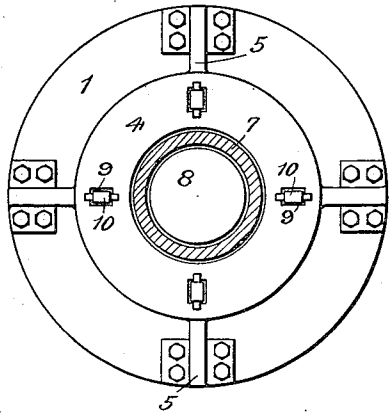


Fig. 5.

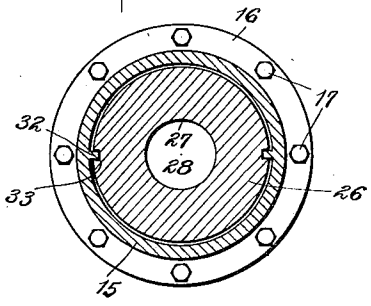


Fig. 6.

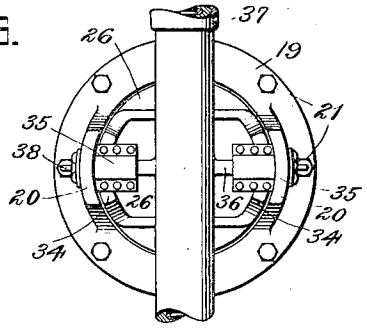


Fig. 8.

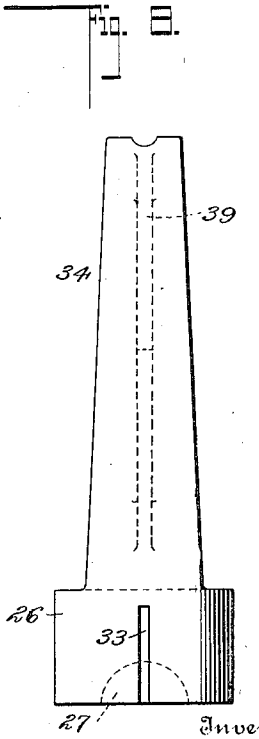
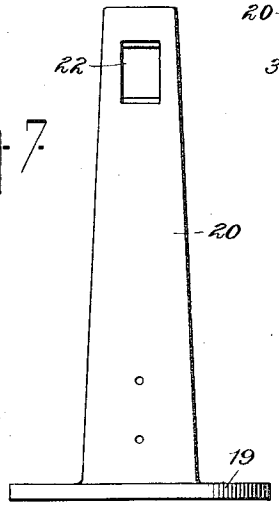


Fig. 7.



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UNITED STATES PATENT OFFICE.

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GUN-CARRIAGE.

1,190,356. Specification of Letters Patent. Patented July 11, 1916.

Application filed November 23, 1915. Serial No. 63,022.

To all whom it may concern:

Be it known that I, CLAUDE H. YOST, a citizen of the United States, residing at Greenwich, in the county of Fairfield and State of Connecticut, have invented new and useful Improvements in Gun-Carriages, of which the following is a specification.

This invention relates to gun carriages, the main object of the present invention being to produce a gun carriage which is particularly designed for use against air craft of all kinds and particularly aeroplanes and dirigibles, the carriage embodying novel means for maintaining the gun proper and providing for the recoil of the same while at the same time enabling the gun to be inclined or poised at any desired angle between the horizontal and vertical and to be turned so as to quickly bring the aircraft into range and follow the course taken by the aircraft until the charge is fired.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of the complete gun carriage, including the gun, embodying the present invention. Fig. 2 is an enlarged view in elevation of the gun carriage complete. Fig. 3 is a vertical diametrical section through the carriage. Fig. 4 is a horizontal section on the line 4—4 of Fig. 1. Fig. 5 is a horizontal section on the line 5—5 of Fig. 3. Fig. 6 is a top plan view of the carriage, omitting the stationary base. Fig. 7 is a side elevation of one of the plunger guides. Fig. 8 is a similar view of the plunger.

The gun carriage contemplated in this invention comprises a stationary base designated generally at A and comprising a bed plate 1, a tubular pedestal 2 extending upwardly from the bed plate 1 and having its lower end flanged at 3 and fastened permanently to the bed plate. The upper extremity of the pedestal 2 is also provided with an annular flange 4 additionally supported by means of downwardly diverging braces 5 secured to the flange 4 and to the bed plate 1.

Mounted rotatably upon the base A is a turn table 6 having a central downwardly extending tubular shaft 7 which is received within the tubular pedestal 2, the lower end of the tubular shaft 7 embracing and being rotatable around a centrally located circular boss 8 which may be either formed integrally with the bed plate 1 or fastened in any suitable way thereto. The upper side of the flange 4 is formed at intervals with recesses 9 to receive supporting rollers 10 upon which the turn table 6 rests to enable the turn table to be revolved with the least effort. The tubular shaft 7 is provided with an external annular groove 11 in which are received the ends of a plurality of pivotally mounted catches or latches 12 which are normally pressed into engagement with the groove 11 by means of springs 13, the catches 12 being provided with pedal extensions 14 so that they may be moved by foot pressure out of engagement with the tubular shaft for the purpose of enabling the turn table 6 and all parts supported thereon to be removed from the stationary base when dismounting the movable parts of the gun carriage.

Secured in fixed relation to the turn table 6 and extending upwardly therefrom is a hollow cylindrical recoil chamber 15. This recoil chamber is shown as provided with a bottom flange 16 secured by fasteners 17 such as bolts or cap screws to the turn table 6 and the chamber 15 is also provided with a similar flange 18 at its upper end upon which rests the corresponding flanges 19 of oppositely arranged plunger guides 20, the flanges 18 and 19 being bolted or otherwise fastened together as shown at 21. It will thus be seen that the parts 15 and 20 rotate with the turn table 6.

The guide arms 20 are concavo-convex in horizontal section as illustrated in the drawings and are provided adjacent to their upper extremities with vertically extending guide ways 22 in which are slidably mounted trunnion bearings 23 which receive the trunnions of the gun, the bearings 23 being cushioned in their upward or downward movements by means of resilient bumpers 24 of rubber or like material arranged in the upper and lower portions of the slots 22.

Slidably arranged between the guides 20 is a plunger 26 shown as provided with a cavity 27 in the bottom thereof. The lower end of the plunger is preferably solid as shown in Fig. 3 and rests directly upon a supporting spring cap 28 having on its under side a spring centering circular boss 29 around which is placed the upper end of a recoil spring 30 located in the chamber 15

and having its lower end disposed around another centering boss 31 on the upper surface of the turn table 6. The plunger 26 is prevented from turning within the recoil chamber 15 by means of vertically extending keys or splines 32 which are received in grooves 33 in the sides of the plunger body 26 as shown in Fig. 5. Extending upwardly from the oscillatory portion of the plunger 26 are two oppositely located plunger arms 34 which like the guides 20 are concavo-convex in cross section as clearly shown in Fig. 6. The trunnion bearings 23 which are slidable in the guide ways 22 as above described, are carried by and bear a fixed relation to the plunger arms 34 and embody removable caps 35 to enable the trunnions 36 of the gun 37 to be removed therefrom when necessary. Handles 38 are provided on the arms 20 to enable the major portion of the gun carriage together with the gun to be removed from the stationary base A. Cross braces 39 are employed to strengthen the plunger arms 34.

From the foregoing description, taken in connection with the accompanying drawings, it will now be seen that the gun may be turned on a vertical axis and also swung on a horizontal axis so as to quickly bring an aircraft into range and enable the gun to be quickly adjusted so as to follow the air craft, the gun being capable of being tilted to almost any angle between a horizontal and a vertical line. To dismount the major portion of the carriage it is only necessary to operate the catches 12 and move the same out of engagement with the tubular shaft 7 of the turn table. Thereupon, the turn table together with all the remainder of the gun carriage mounted thereon may be detached and removed from the stationary base A. The spring 30 absorbs the shock or recoil of the gun and this is supplemented by the action of the resilient bumpers 24 which serve to properly position and yieldingly support the trunnion bearings.

Having thus described my invention, I claim:—

1. In a gun carriage, a stationary base, a turntable mounted to rotate thereon on a vertical axis, a rotatable recoil chamber fastened upon said turntable, oppositely arranged parallel guides secured fixedly to said recoil chamber and rising therefrom and spaced in relation to each other, a gun carrying plunger slidable longitudinally of and between said guides, a plunger recoil spring in said recoil chamber, a gun having trunnions, and trunnion bearings having a fixed relation to said plunger and a sliding relation to said guides.

2. In a gun carriage, a stationary base, a turntable mounted to rotate thereon on a vertical axis, a rotatable recoil chamber fastened upon said turntable, oppositely arranged parallel guides secured fixedly to said recoil chamber and rising therefrom and spaced in relation to each other, a gun carrying plunger slidable longitudinally of and between said guides, a plunger recoil spring in said recoil chamber, a gun having trunnions, trunnion bearings having a fixed relation to said plunger and a sliding relation to said guides, and resilient bumpers at opposite sides of said trunnion bearings.

3. In a gun carriage, a stationary base, a turntable mounted to rotate thereon on a vertical axis, a rotatable recoil chamber fastened upon said turntable, oppositely arranged parallel guides secured fixedly to said recoil chamber and rising therefrom and spaced in relation to each other, a gun carrying plunger slidable longitudinally of and between said guides, a plunger recoil spring in said recoil chamber, a gun having trunnions, trunnion bearings having a fixed relation to said plunger and a sliding relation to said guides, a tubular pedestal in said base, and a tubular shaft extending from the turntable downwardly within said pedestal.

4. In a gun carriage, a stationary base, a turntable mounted to rotate thereon on a vertical axis, a rotatable recoil chamber fastened upon said turntable, oppositely arranged parallel guides secured fixedly to said recoil chamber and rising therefrom and spaced in relation to each other, a gun carrying plunger slidable longitudinally of and between said guides, a plunger recoil spring in said recoil chamber, a gun having trunnions, trunnion bearings having a fixed relation to said plunger and a sliding relation to said guides, a tubular pedestal in said base, a tubular shaft extending from the turntable downwardly within said pedestal and formed with an annular groove, and a catch on said pedestal movable into and out of said annular groove.

In testimony whereof I affix my signature in presence of two witnesses.

CLAUDE H. YOST.

Witnesses:
FRANK J. HOHMS,
M. STANLEY FINNEY.