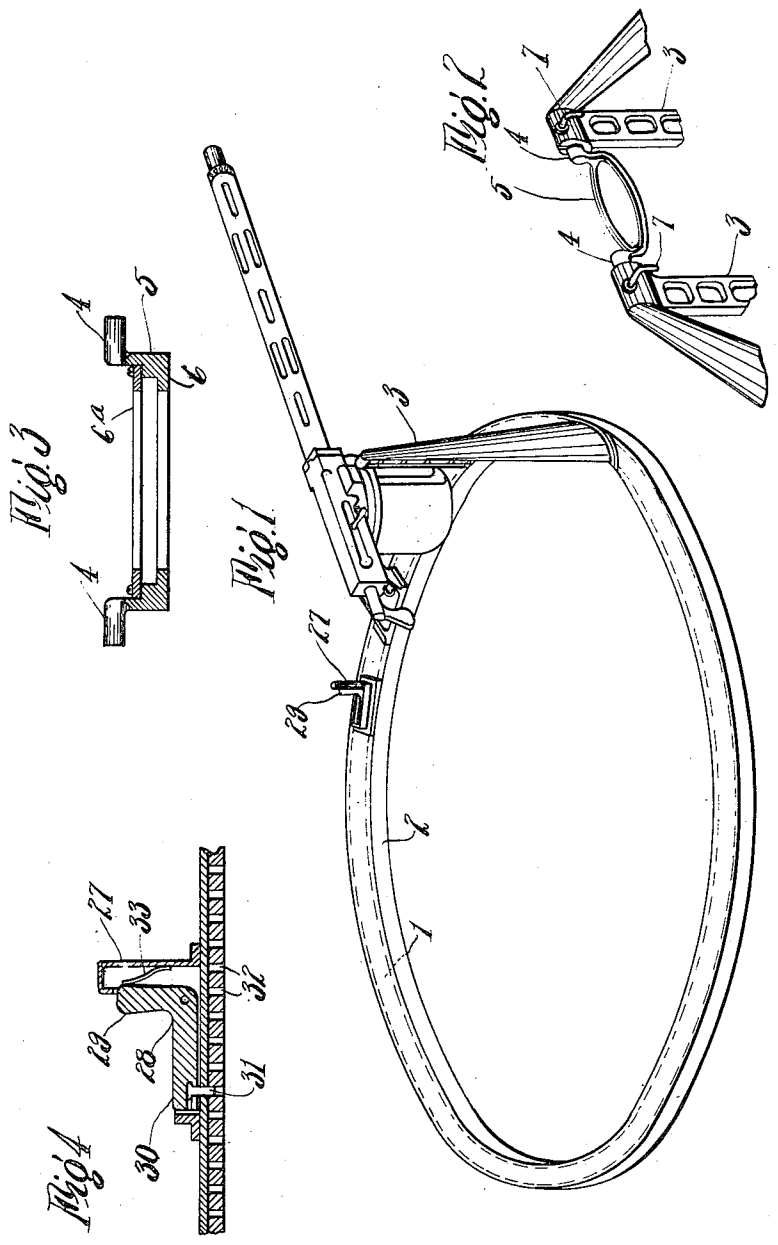
Feb. 19, 1924. 1,483,987

H. M. ROCKWELL

TURRET MOUNT FOR AUTOMATIC GUNS

Filed Dec. 16, 1918 3 Sheets-Sheet 1



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TURRET MOUNT FOR AUTOMATIC GUNS

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Fig. 5

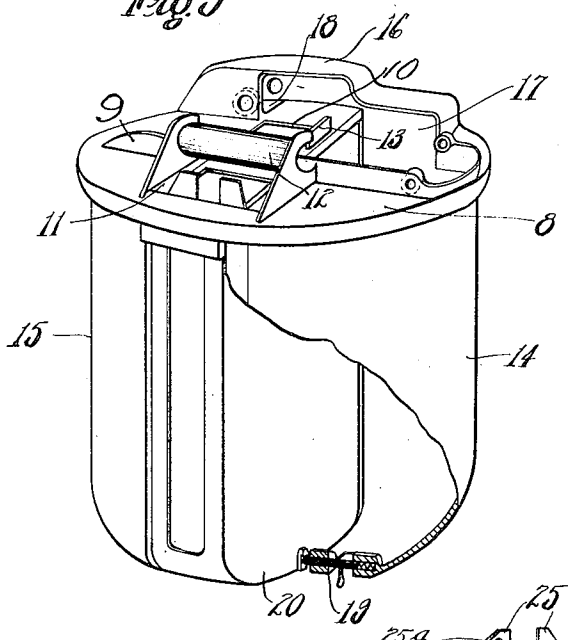


Fig. 6

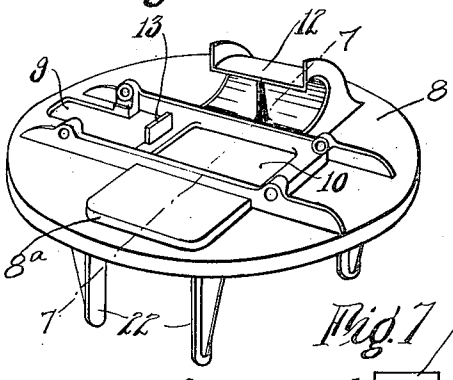


Fig. 8

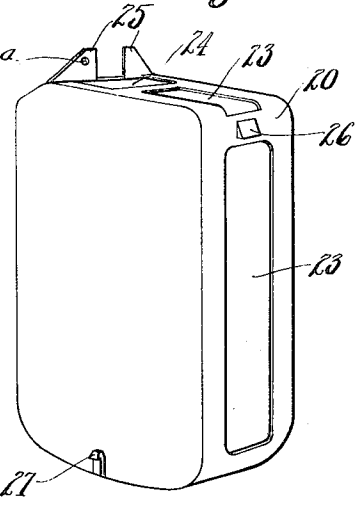
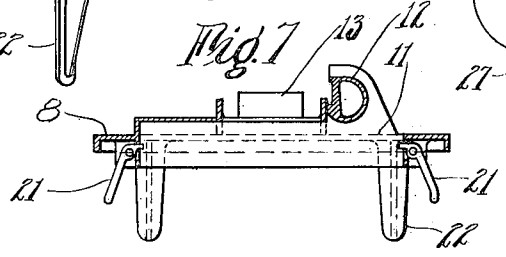


Fig. 7



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Fig. 9

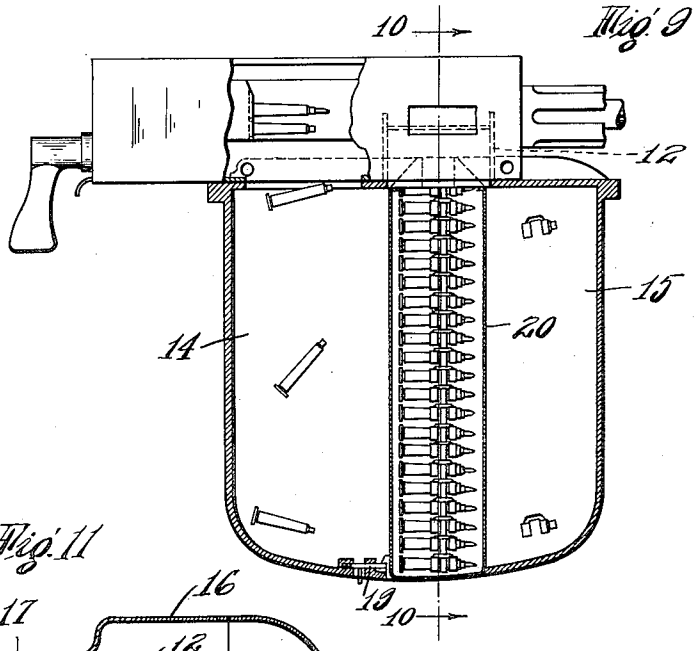


Fig. 11

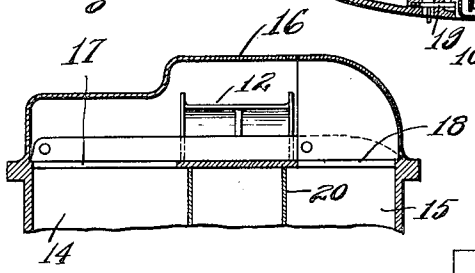
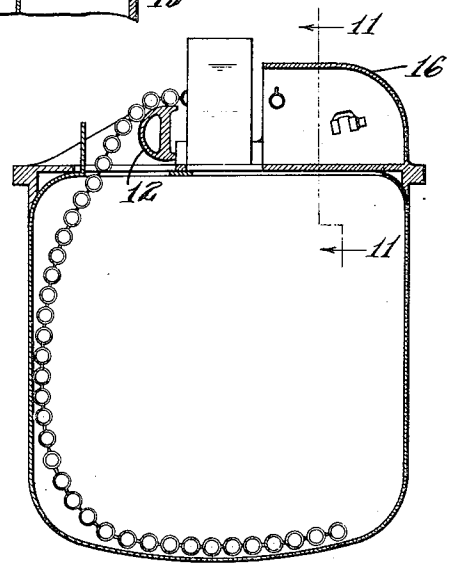


Fig. 10



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UNITED STATES PATENT OFFICE.

HUGH M. ROCKWELL, OF NEW HAVEN, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MARLIN FIREARMS CORPORATION, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF DELAWARE.

TURRET MOUNT FOR AUTOMATIC GUNS.

Application filed December 16, 1918. Serial No. 266,897.

To all whom it may concern:

Be it known that I, HUGH M. ROCKWELL, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Turret Mount for Automatic Guns, of which the following is a specification.

This invention relates to a device for supporting an automatic gun upon an airplane.

It has for its object to permit the turning of a gun to direct the fire thereof in any direction desired with comparatively little effort on the part of the operator.

The type of support now commonly in use for the gun to be operated by the observer comprises a circular track on the edge of the pit in which is located the observer's seat. Mounted on the track is a circular carriage which fits over the track and is capable of rotation around the observer's seat. A semi-circular bow is pivoted at its ends to diametrically opposite points of the carriage. The positioning of this bow is controlled through the medium of suitable means carried by the bow; also on the bow is a means for controlling a stop mechanism for the carriage. The gun is rotatably mounted on a pin or post which is rotatably connected with the bow at approximately the mid-point thereof.

My gun support is an improvement on this arrangement. Instead of having an adjustable bow member carry the gun, the gun is carried on a fixed support on the carriage. This means that the supporting point for the gun is at a fixed height as distinguished from the bow type support. The idea of having the gun support adjustable is theoretically ideal, but, when used, a gun support of this type was found not to be entirely satisfactory. The gun is mounted on a circular head, rotatably seated in a ring having offset trunnions journaled in the fixed supporting member, the offset being sufficient so that the line of recoil of the gun and the trunnion line intersect. The gun is capable, therefore, of being rotated about either a vertical or a horizontal axis. This feature, together with the fact that the carriage may be turned to bring the support to various points on the edge of the observer's pit, as desired, gives to the gun a great flexibility. The control for holding the carriage in the desired position is on the carriage instead of being on the bow end and is so placed that it is in the most natural position for use by the operator of the gun. The head is provided with suitable means for detachably mounting the gun thereon and for detachably carrying a cartridge box as well as means for guiding the cartridge belt into the feeding opening of the gun. In one modification there is provided suitable means for collecting the exploded shells and the links of the cartridge belt as they pass out from the gun.

Among the advantages of this invention are the mounting of the gun for movement in all directions in such a way that the recoil does not tend to cause a rotation of the gun about its horizontal axis; the provision of a means to catch the belt links and exploded cartridges as they are ejected from the gun; the provision of a cartridge magazine for the gun supported by the head carrying the gun; and also a novel construction of the cartridge magazine itself.

Certain features of the invention make it adaptable for use more particularly with a gun which ejects the exploded shells from the bottom and the belt links from the side—for example, the heavy Browning. The use of the mount is not limited to these guns, however, but can be used with practically any type of automatic gun.

Referring now to the drawings,—

Fig. 1 is a perspective view of the turret with a gun mounted on the support;

Fig. 2 is a perspective view of the support;

Fig. 3 is a sectional view of the ring;

Fig. 4 is a detail of the means for preventing rotation of the carriage on the track;

Fig. 5 is a perspective view, partially broken away, of the gun-carrying head and the link and shell chambers;

Fig. 6 is a like view of another form of head;

Fig. 7 is a section on the line 7—7 of Fig. 6; and

Fig. 8 is a perspective view of the magazine.

Fig. 9 is a section through the head and gun mounted thereon; Fig. 10 is a section through the head and gun at right angles to Fig. 9; Fig. 11 is a section on line 11—11 of Fig. 10.

As shown in Fig. 1, the turret includes a

track 1 and a carriage 2. Mounted on the carriage are the supports 3, the upper ends of which form journals for the offset trunnions 4 of a ring 5. On the interior of the ring 5 is an annular lip 6. The pinch-screws 7 serve to draw the surfaces of the journals into contact with the trunnions and thus allow an adjustment of the frictional contact between the journals and the trunnions.

The gun carrier comprises a circular head 8 which fits within the ring 5, rests on the lip 6, and may be held in place by a detachable collar 6ª. This head is offset as at 8ª and is provided with the cut-out portions 9, 10 and 11, the purpose of which will be later set forth. A guideway 12 and a projection 13 are carried by the head. Suitable means, such, for example, as lugs with bolt holes therethrough, are provided for attaching the gun to the head.

In the preferred form of gun-carrying head disclosed in Fig. 5, the head is provided on its lower surface with the two chambers 14 and 15 and on its upper surface with a hood 16 having passageways 17 and 18 leading to the chambers 14 and 15, respectively. At the bottom of one of these chambers is a spring-pressed bolt 19 which may project beyond the edge of the chamber. The magazine 20 is placed in the opening between the two chambers and acts as a closure for the open faces thereof, being held in place by the bolt 19. In the modification disclosed in Figs. 6 and 7, the magazine is attached to the head by means of the dogs 21 and is held against lateral movement by the guides 22.

The magazine 20 is box-shape and is of a breadth sufficient to accommodate the cartridges to be used and is approximately as wide as the diameter of the head. It is cut out on the ends and top, as shown at 23, so as to allow easy access to the interior thereof. These cuts are less in width than the length of the cartridges. Near one edge of the top of the magazine is the opening 24 which is greater in width than the length of a cartridge and through which the loaded cartridge belt is inserted or removed. Adjacent this opening are the projections 25 which are spaced apart about the width of the belt in which the cartridges are loaded. On one of these projections is a button 25ª. The magazine is provided with the lugs 26 and 27 to be engaged either by the bolt 19 or the dogs 21.

When the magazine is in position, the top thereof seats in the offset portion 8ª of the head 8 and the projections 25 extend through the cut-out portion 11, which is in alinement with the opening 24 of the magazine. The cut-out portion 23 at the top of the magazine coincides with the opening 10 of the head.

On the carriage 2 is a hollow handle 27 by means of which the carriage may be rotated. Associated with the handle is the bell-crank lever 28, one arm 29 of which is partially housed in the handle and the other arm 30 extends along the carriage and is provided at its end with a pin 31 loosely mounted therein which is adapted to be inserted in the holes 32 placed at regular and frequent intervals in the track 1. A spring 33 normally holds the lever in the position shown.

When the gun is placed upon the carrier, the ejecting opening for the shells is in line with the opening 9 in the head 8 and the projection 13 extends up into the forward part of the ejecting opening of the gun. The cartridge belt is led up over the guideway 12 and then into the gun. When the gun-carrying head disclosed in Fig. 5 is used, the exploded shells are caught in the chamber 15. The links are ejected into the hood 16 and then dropped down into either of the chambers 14 and 15 through the passages 17 and 18 respectively. The lug 13 acts as a buffer for the exploded cartridges as they are forcibly ejected from the gun.

The two projections 25 on the magazine are to hold one end of the loaded belt in such a way that it can be easily gotten at after the magazine has been placed in position. The belt is passed down into the space between the two projections, with a cartridge on either side, which hold the belt in place. The button 25ª serves to prevent the belt and cartridges from being accidentally displaced, as it presents an obstruction which can be overcome only with a stronger pull than would be exerted except intentionally.

The trunnions 4 of the ring 5 are offset sufficient to cause the line of recoil of the gun to intersect the axis of the trunnions, and the arrangement of the gun on the head is such that the center of gravity of the gun and head lies approximately in a plane passing through the trunnion axis at right angles to the line of recoil of the gun. Consequently, there is practically no tendency for the recoil of the gun to cause the ring to rotate about its axis. This helps to keep the gun steady and does away with the need of clamping the gun in position. The pinch-screws 7 are used only when for some reason it is desirable to have the gun tight, and do not act to overcome the tendency of the support to rotate under the recoil.

The locking means for the carriage is placed a little to the left of the supports 3, where it can easily be grasped by the left hand of the operator. In taking hold of the handle 27 to turn the carriage, it is natural to force the arm 29 of the bell-crank lever 28 and release the carriage. The arrangement of these parts is such that the operator instinctively releases the locking means upon taking hold the handle.

It is, of course, understood that this de-

vice, although more especially adapted for use in connection with cartridge belts of the disintegrating-link type, is capable of use with other forms of cartridge belts.

I claim as my invention:

1. In combination, a standard, a support pivoted on said standard about a horizontal axis, and a gun so mounted thereon that the center of gravity of said gun and support lies in a plane passing through the axis of said support approximately perpendicular to the line of recoil of the gun and said line of recoil intersects the axis of the support.

2. In a device of the character described, a support, a head having an aperture mounted on said support for universal movement, means to attach a gun to said support, a cartridge box carried by said head, and a guide member on said head adjacent said aperture.

3. A mount for automatic guns consisting of a support, a ring having offset trunnions journalled in the support, a gun-carrying head seated in the ring, and means on said head for detachably holding a gun.

4. In a device of the class described, a head, means to attach a gun thereto, a guide member on said head to direct a cartridge belt into a gun, and means to receive the belt and shells as ejected from a gun.

5. In a device of the class described, a head, receivers on the underside of said head, a hood on the upper side of said head, passageways from said hood to the receivers, and means for attaching a gun to said head.

6. In a device of the class described, a head, means on said head to attach an automatic gun thereto, receivers carried by the underside of said head, and means whereby the shells and belt ejected from the gun are led into said receivers.

7. In a device of the class described, a head, receivers carried by the bottom of said head, a magazine interposed between said receivers, and means to hold said magazine in place.

8. A cartridge magazine for automatic guns comprising a box having cut-out portions of a width less than the length of the cartridges, a single cut-out portion of a width slightly greater than the length of the cartridges, and two spaced ears adjacent the last-mentioned cut-out portion.

9. In a device of the class described, the combination of a gun-carrying head rotatably seated in a ring having offset trunnions journalled in supports, and a gun mounted on the head so that its center of gravity is in the same plane as the axis of the trunnions.

10. In a device of the class described, a support, a head rotatably mounted thereon, means to attach a gun thereto, means to attach a cartridge box, and means on said head to guide the cartridges into the gun.

11. In a device of the class described, a circular track, a circular carriage mounted thereon, a support on the carriage, a vertical housing on the carriage near the support, a bell-crank lever pivoted on the carriage having one arm partially enclosed by the housing the other end carrying a pin, and holes in the track to be engaged by said pin.

12. A mount for automatic guns consisting of a support, a ring journalled in said support, a gun-carrying head rotatably mounted in said ring, means on said head for detachably holding the gun, and means for removably attaching a cartridge box to said head.

13. A cartridge box having an aperture therein through which a belt of cartridges may be passed, and a pair of lugs adjacent said aperture, said lugs being spaced apart the width of the belt whereby the belt may be inserted between said lugs with a cartridge on either side thereof.

14. A cartridge box having an aperture therein through which a belt of cartridges may be passed, a pair of lugs adjacent said aperture, said lugs being spaced apart the width of the belt whereby the belt may be inserted between said lugs with a cartridge on either side thereof, and a button on one of said lugs whereby the belt is prevented from being accidentally removed from between said lugs.

HUGH M. ROCKWELL.