May 29, 1928. 1,671,282

W. T. GORTON

COMBINATION MOUNT FOR MACHINE GUNS

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Fig-1-

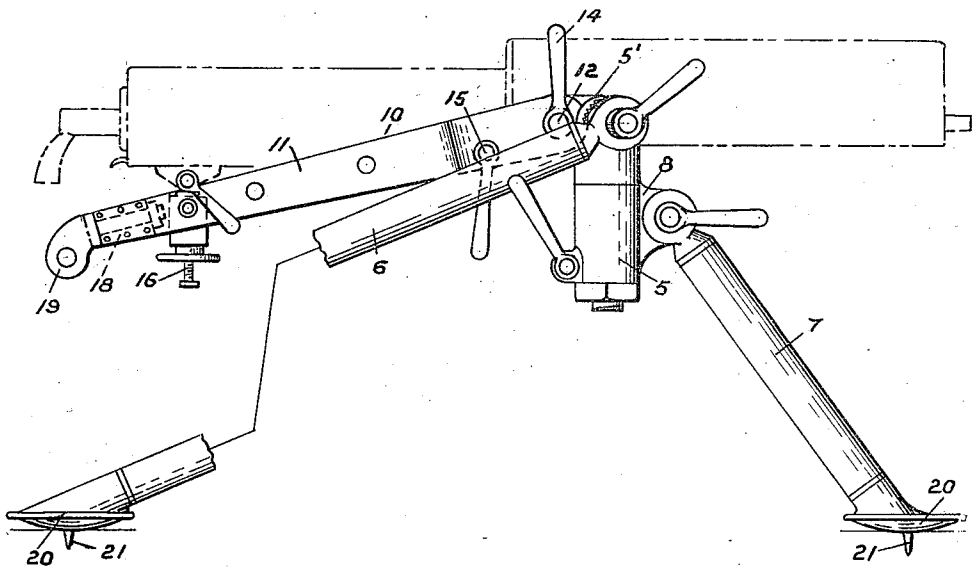


Fig-2-

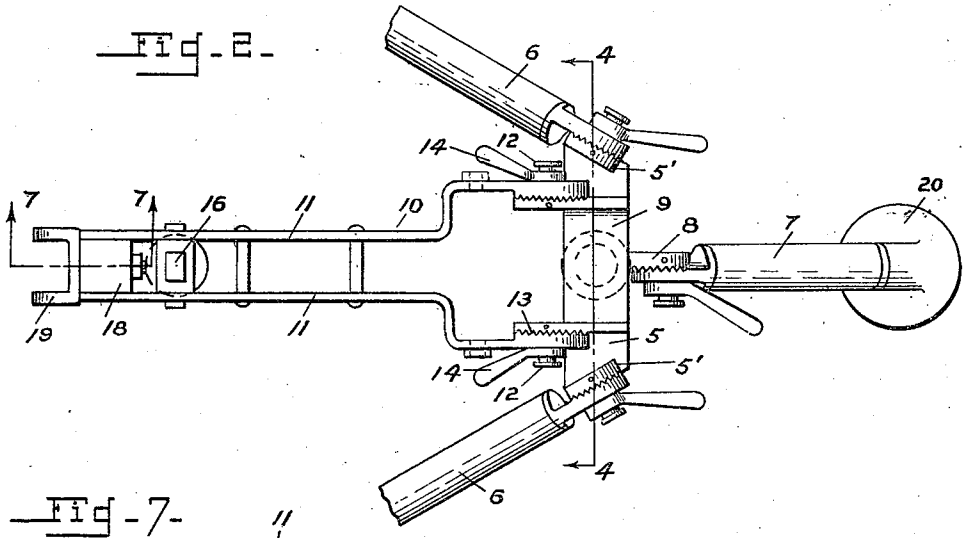
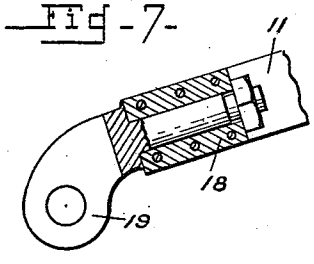


Fig-7-



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Fig. 3.

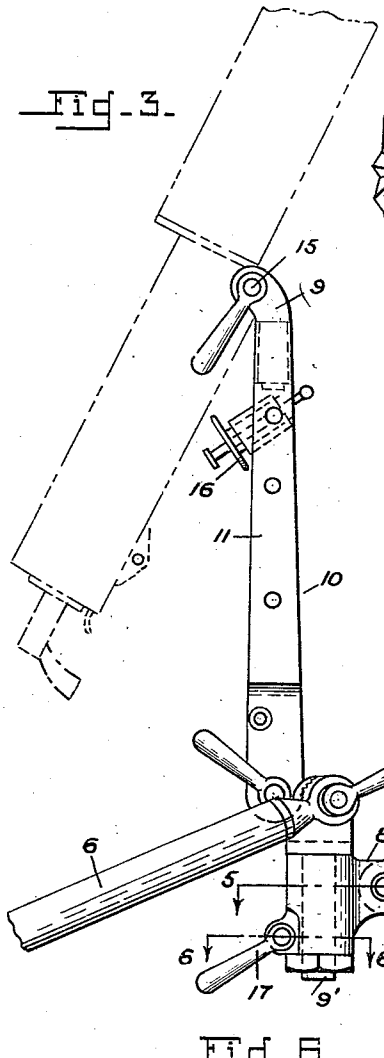


Fig. 4.

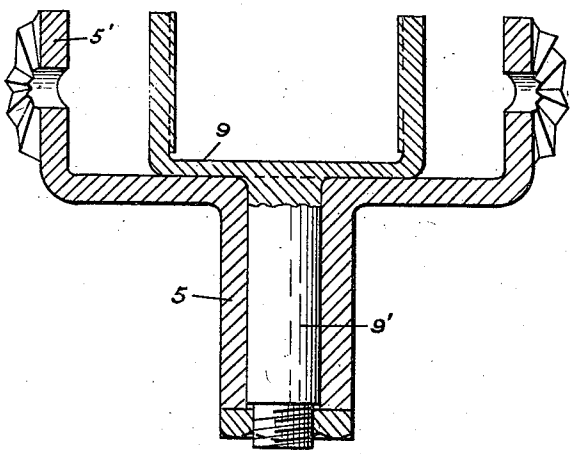


Fig. 5.

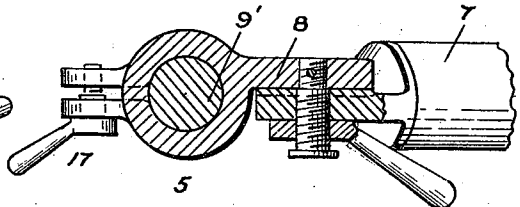
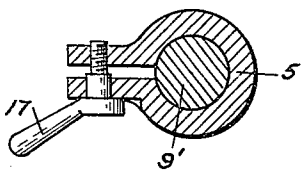


Fig. 6.



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UNITED STATES PATENT OFFICE.

WALTER T. GORTON, OF THE UNITED STATES ARMY, SPRINGFIELD, MASSACHUSETTS.

COMBINATION MOUNT FOR MACHINE GUNS.

Application filed August 20, 1925. Serial No. 51,466.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

This invention relates to a combination mount for machine guns.

With the employment of machine guns for overhead fire and their increased range due to improved ammunition, it is necessary in the interest of protection to the advancing troops that a stable and rigid mount be provided which will not lose adjustment and require constant rechecking. Furthermore, whereas in the normal application of the gun for low angle firing against ground targets it is desirable that the gun be mounted as low as possible, it is essential in high angle firing against aircraft that a more elevated mounting be maintained for proper aiming and manipulation. Consequently, an ideal mount for the gun should also be capable of rapid conversion to alternate positions of adjustment according to the nature of the target.

With tripods as at present constructed the loads which the various members must bear are applied eccentrically. Sufficient mass of material to resist these eccentric loads cannot be used in guns of this character if they are to preserve their mobility.

The thrust upon the mount due to the recoil of the gun is transmitted approximately along the center line of bore. Theoretically, to secure a perfect mount, the axes of traverse and elevation of the gun or its cradle and the center of the support which is the point of attachment of the trail legs should all intersect at a common point which is in the axis of the barrel. While such a disposition of the axes is possible in the present arrangement, one of them, either the axis of elevation or the support, is slightly displaced with respect to the axis of traverse in order to provide for greater compactness.

Since the common point of the three axes and the center of the support is within the barrel of the gun, it is necessary, in order to satisfy the requirements enumerated, that the gun be embraced by an arrangement of supporting members which preferably includes a split trail.

Other objects of the invention are: to provide a rotatable auxiliary yoke for mounting the gun for high angle firing; to so fold the mount that the cradle and elevating gear will be protected; and to provide an improved foot for the legs of the tripod.

To these and other ends, my invention consists in the construction, arrangement, and combination of elements, described hereinafter and pointed out in the claims forming a part of this specification.

A practical embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a view in side elevation of a mount constructed in accordance with the invention and shown in normal adjustment for low angle firing;

Fig. 2 is a plan view thereof with the gun removed; and

Fig. 3 is a view in side elevation of the mount adjusted for high angle firing.

Figs. 4 and 7 are sectional views on the lines 4—4 and 7—7 of Fig. 2; and

Figs. 5 and 6 are sectional views on the lines 5—5 and 6—6 of Fig. 3.

Referring to the drawings by numerals of reference:

The mount which is of the tripod type comprises a tubular head 5, having its upper end formed as a yoke 5′ for adjustably attaching a pair of relatively long trail legs 6—6 preferably spread at an angle of about 60°. A short front leg 7 is adjustably attached to a lug 8 on the tripod head somewhat below the yoke 5′. Disposed within the yoke 5′ is an inner yoke 9 whose stem 9′ constitutes the axis of traverse and is rotatable in the tripod head. A cradle 10 consisting of spaced plates 11—11 is mounted for movement in elevation by means of trunnions 12—12 passing through the arms of the inner yoke 9 and may be secured in adjusted position by means of the serrated joints 13 and the jamming handles 14. The forward extremities of the cradle plates are offset so as to provide sufficient space to accommodate the water jacket of the machine gun which is trunnioned in the cradle as at 15 and has its rear end supported by a short elevating mechanism 16 of usual construction mounted in the free end of the cradle.

Approximate setting in elevating is ac-

complished by adjusting the cradle and final accurate setting is effected by the elevating mechanism. This arrangement requires but slight change of the gun with respect to the cradle so that the axis of the barrel may be considered as practically fixed. This is important because the cradle trunnions, which form the axis of elevation, and the attachment of the trail legs to the tripod head, which is the center of the support, are both positioned in the plane of the barrel axis when the gun is horizontal.

Theoretically, the axis of elevation and the center of the support should be in coincidence with each other and with the axis of traverse, but in order to provide for greater compactness, the axis of elevation is slightly displaced to the rear thereby providing accessibility for manipulation and confining the width of the yoke 5' within practical limits.

In adjusting the mount for high angle firing the cradle is elevated to a vertical position and securely locked against rotation by means of the traversing clamp 17 which operates in the usual manner. Secured between the free ends of the cradle plates is a block 18 in which is mounted for 360° rotation an auxiliary yoke 19 for trunnioning the gun when it is to be directed against aircraft.

The feet 20 of the tripod legs are formed with an approximate spherical contact surface to provide for varying inclinations of the leg. Cleats 21 are provided for an obvious purpose.

In folding, the cradle and legs swing upward to positions nearly parallel with the tripod head. This method is of special advantage by reason of its convenience for both folding and unfolding, the compactness of the tripod when folded and the protection affording the cradle and elevating gear by the legs which embrace them.

While in the foregoing there has been illustrated and described, such combination and arrangement of elements, as constitute the preferred embodiment of my invention, it is nevertheless desired to emphasize the fact that interpretation of the invention should only be conclusive when made in the light of the subjoined claims.

I claim:

1. A mount for machine guns embodying a tubular head provided with an outer yoke, an inner yoke whose stem is rotatable in the head, a cradle including spaced plates trunnioned in the inner yoke and adapted to normally mount a gun for low angle firing, the cradle trunnions positioned in the plane of the barrel axis and slightly in rear of the stem, an auxiliary yoke rotatable in the free end of the cradle and adapted to mount a gun for high angle firing when the cradle is adjusted to a vertical position, and a pair of trail legs adjustably secured to the outer yoke in the planes of the barrel axis and inner yoke stem.

2. A mount for machine guns embodying a tubular head provided with an outer yoke, an inner yoke whose stem is rotatable in the head, a cradle including spaced plates trunnioned in the inner yoke and adapted to normally mount a gun for low angle firing, the cradle trunnions positioned in the plane of the barrel axis, an auxiliary yoke rotatable in the free end of the cradle and adapted to mount a gun for high angle firing when the cradle is adjusted to a vertical position, and a pair of trail legs adjustably secured to the outer yoke in the plane of the barrel axis.

3. A mount for machine guns embodying a tubular head provided with an outer yoke, an inner yoke whose stem is rotatable in the head, a cradle including spaced plates trunnioned in the inner yoke and adapted to mount a gun, the cradle trunnions positioned in the plane of the barrel axis, and a pair of trail legs adjustably secured to the outer yoke in the plane of the barrel axis.

4. A mount for machine guns embodying a tubular head provided with an outer yoke, an inner yoke whose stem is rotatable in the head, a cradle trunnion in the inner yoke and adapted to trunnion a gun, the cradle trunnions positioned in the plane of the barrel axis when the gun is horizontal, means for locking the cradle in adjusted position, an elevating mechanism carried by the cradle and attachable to the gun, and a pair of trail legs adjustably secured to the outer yoke in the plane of the barrel axis when the gun is horizontal and substantially coincident with the cradle trunnions.

5. A mount for machine guns embodying an outer yoke, an inner yoke rotatable therein, a cradle trunnioned in the inner yoke and in turn adapted to trunnion a gun in rear of its trunnions, the cradle trunnions positioned in the plane of the barrel axis when the gun is horizontal, a pair of trail legs attached to the outer yoke substantially coincident with the cradle trunnions, and an elevating mechanism carried by the cradle and attachable to the gun.

6. A mount for machine guns embodying a central support, a cradle adapted to mount a gun and trunnioned in the support in the plane of the barrel axis, and a pair of trail legs attached to the support in the plane of the barrel axis, and substantially coincident with the cradle trunnions.

7. A mount for machine guns embodying a central support, a cradle adapted to mount a gun and trunnioned in the plane of the barrel axis, and a pair of trail legs attached to the support in the plane of the barrel axis.

8. A mount for machine guns embodying a support, a cradle trunnioned therein and in turn adapted to trunnion a gun in rear of

its trunnions, the cradle trunnions positioned in the plane of the barrel axis when the gun is horizontal, and an elevating mechanism carried by the cradle and attachable to the gun.

9. A mount for machine guns embodying a support, a yoke rotatable therein, a cradle trunnioned in the yoke and in turn adapted to trunnion the gun, said cradle including spaced plates having their forward extremities offset to accommodate the water jacket of the gun.

10. A combination mount for machine guns embodying a support, a yoke rotatable therein, a cradle trunnioned in the yoke and adapted to normally mount a gun for low angle firing, and a rotatable yoke in the free end of the cradle for trunnioning the gun for high angle firing when the cradle is adjusted to the vertical position.

11. A tripod mount for machine guns including foldable legs and a gun supporting cradle arranged to be folded between said legs and substantially parallel therewith.

12. A tripod mount for guns embodying a head and a pair of trail legs attached to the head at the height of the barrel axis of a gun mountable on the tripod.

WALTER T. GORTON.