

Jan. 24, 1956

E. E. WIGINGTON ET AL

2,731,829

PISTOL MOUNT FOR SHOOTING TESTS

Filed Jan. 29, 1954

4 Sheets-Sheet 1

FIG. 1

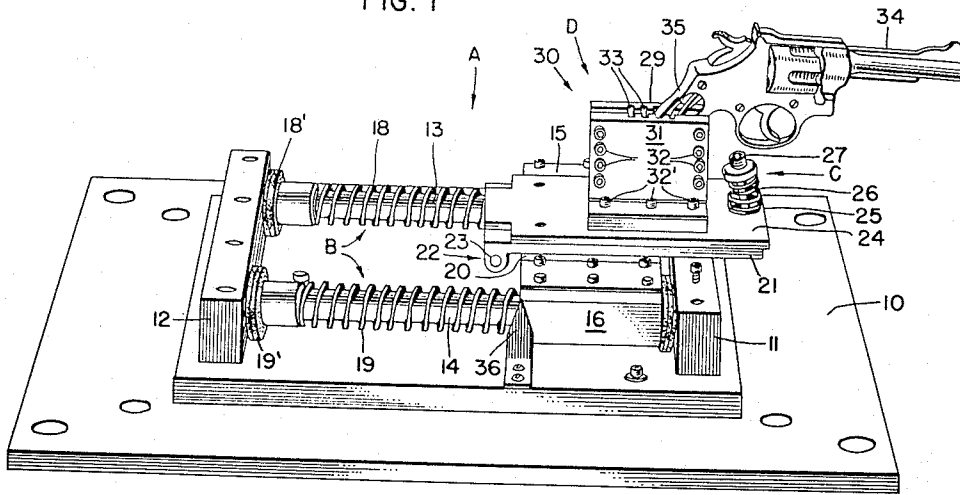
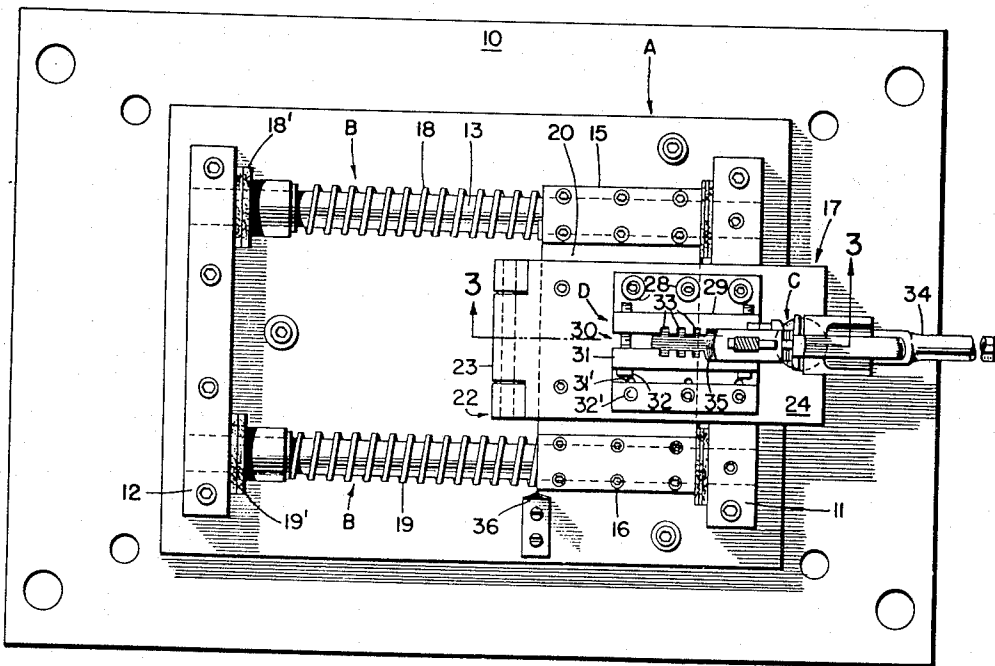


FIG. 2



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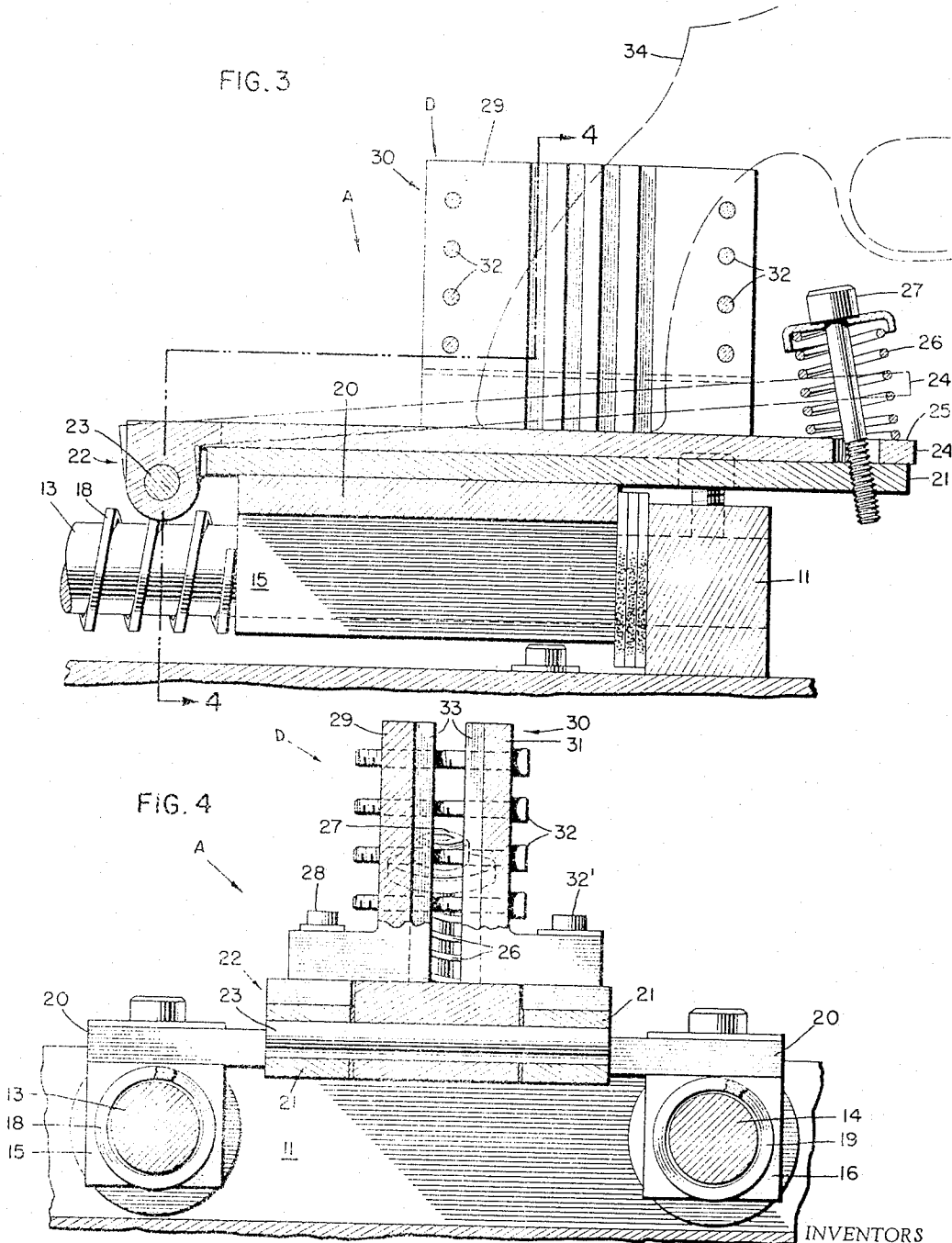
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FIG. 5

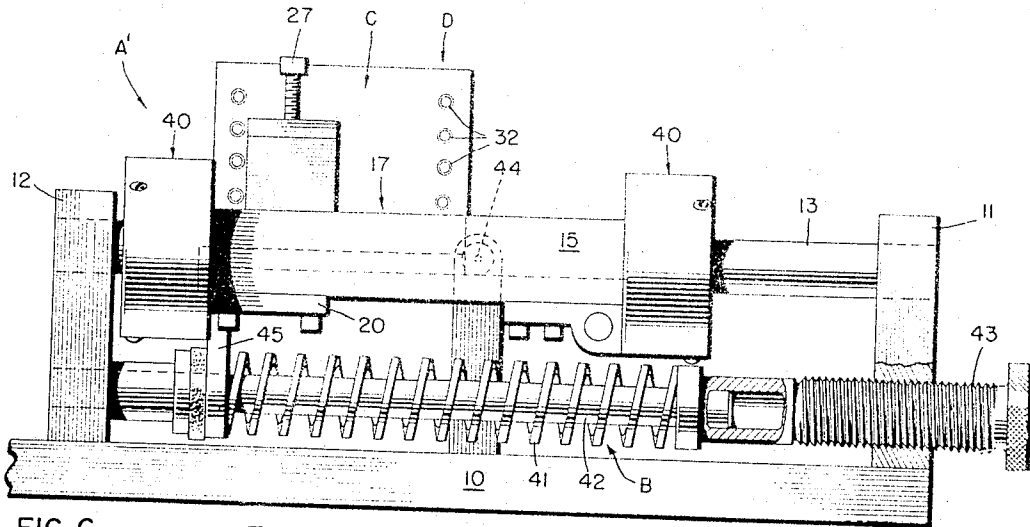
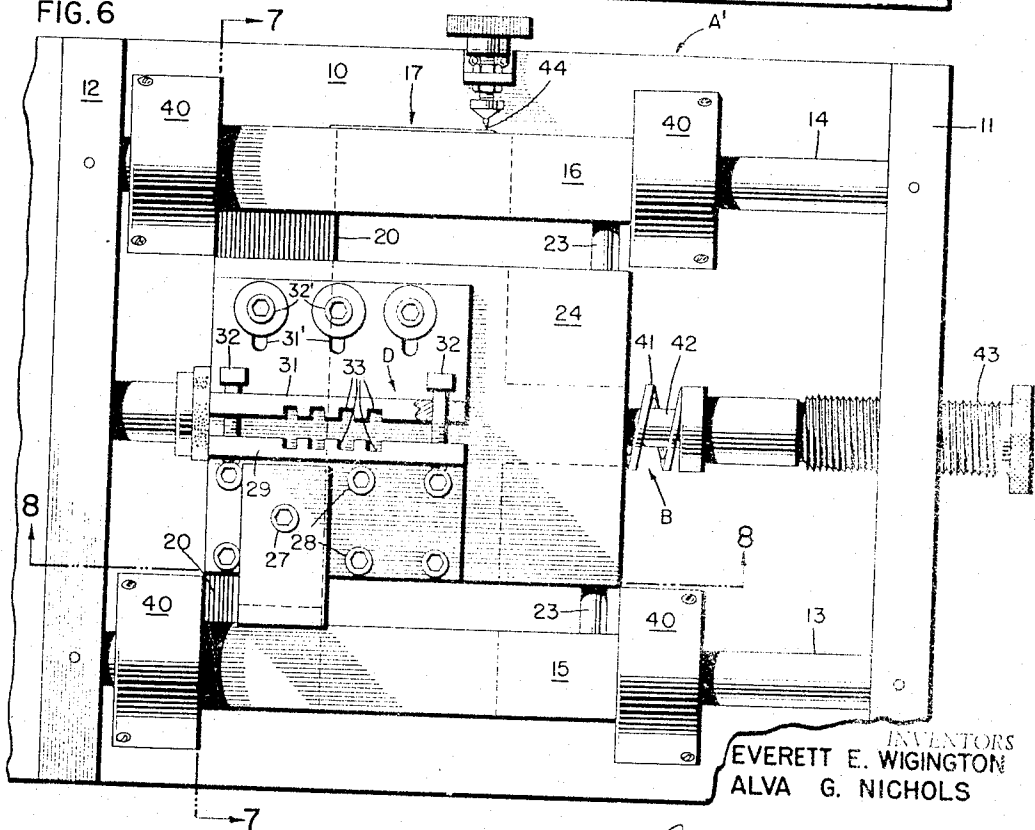


FIG. 6



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FIG. 7

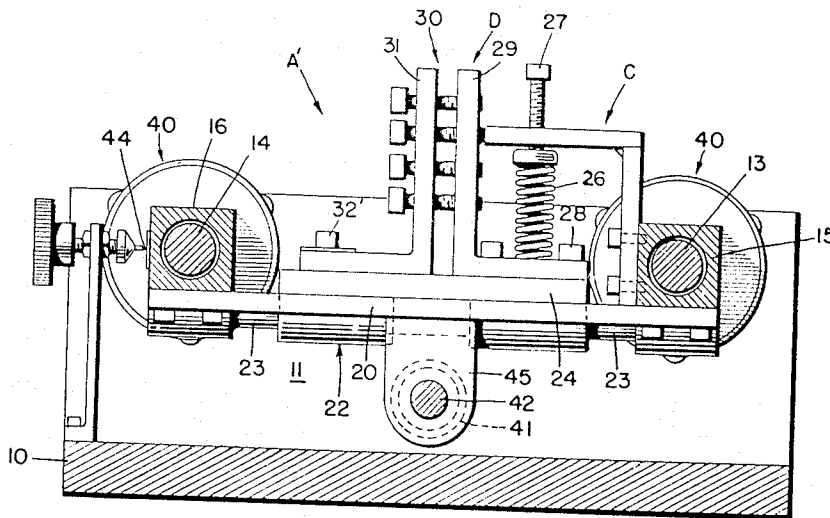
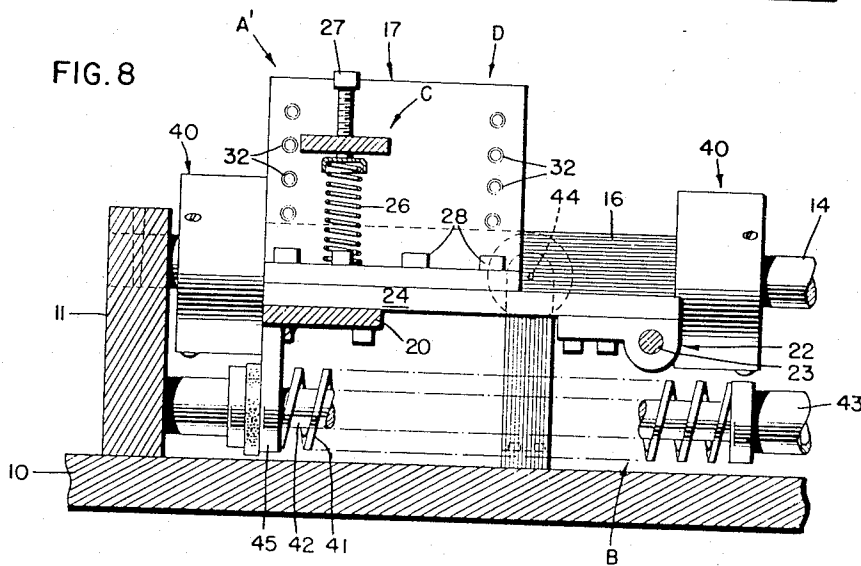


FIG. 8



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PISTOL MOUNT FOR SHOOTING TESTS

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6 Claims. (Cl. 73—167)

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The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

The invention relates to measuring and testing equipment and more specifically to an improved pistol mount for shooting tests.

The need for determining the inherent accuracy of hand-held guns is apparent especially in the case of survival weapons where the life of the user may depend on the accuracy of the weapon. The method of testing in the past has been to either hand-hold the weapon, which introduces a human element of error, or to clamp the barrel near the muzzle. Existing machine rests which clamp handguns by the muzzle militate against true shooting tests inasmuch as the normal method of holding such weapons is by the grip. Furthermore, experience has shown that clamping the weapon by the grip in a rigid vise does not give satisfactory results. High speed motion pictures of pistols being fired show some slight flexing of the pistol frames before the projectile emerges from the muzzle. Consequently, the holding forces acting on the test weapon should duplicate those obtained when the weapon is hand-held if a true conception of the weapon's accuracy is to be had. Since the weapon, when fired from the hand, recoils both horizontally and vertically, these motions should be allowed by the machine rest.

An important object of the invention is to provide a machine for testing the inherent accuracy of handguns that will simulate as nearly as possible the holding forces acting on the weapon when hand-held.

Another object of the invention is the provision of a machine for testing handguns that will allow the weapon to recoil normally.

A further object is to provide a pistol mount for shooting tests so constructed as to make possible a close approximation of the action of the weapon when fired from the hand but which excludes errors of sighting or grip which are to be expected from a hand-held weapon.

The invention also aims to provide a pistol mount for repetitive shooting tests which not only holds the weapon in a shooting position while permitting normal recoil but also returns the gun to the identical shooting position for a repeated shot.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

Fig. 1 is a perspective view of one form of pistol mount looking toward the right side thereof and showing a weapon held in a shooting position;

Fig. 2 is a top plan view of the mount and weapon shown in Fig. 1;

Fig. 3 is a fragmentary central longitudinal vertical sectional view of the mount taken substantially along the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary transverse vertical sectional

view of the mount taken substantially along the line 4—4 of Fig. 3;

Figs. 5 and 6 are fragmentary views in side elevation and top plan, respectively, of a preferred form of pistol mount;

Fig. 7 is a transverse vertical sectional view of the pistol mount shown in Figs. 5 and 6, taken substantially on the line 7—7 of Fig. 6; and

Fig. 8 is a fragmentary longitudinal vertical sectional view of the pistol mount shown in Figs. 5 and 6, taken substantially on the line 8—8 of Fig. 6.

In the drawings which for the purpose of illustration show preferred and modified forms of the invention, and wherein similar reference characters denote corresponding parts throughout the views, the letter A generally designates the form of pistol mount shown in Figs. 1—4, consisting briefly of a horizontal recoil mechanism B, a vertical recoil mechanism C and a gripping device D.

The entire pistol mount A is supported on a platform 10 for ready portability and quick attachment. The details of construction of the horizontal recoil mechanism B may be observed in Figs. 1—4. Mounted in spaced parallel relation above the platform 10, as by transverse forward and aft bracket bars 11, 12 is a pair of normally horizontal guide rails 13, 14. Supported for reciprocable sliding movement along the rails 13, 14, as by sleeves 15, 16, is a carriage 17 urged toward the forward bracket bar 11, as by expansion coil springs 18, 19 respectively encircling the rails 13, 14. The force exerted by the springs 18, 19 may be adjusted if desired, as by adding or removing collars 18', 19' on the rails 13, 14. The carriage includes a plate 20 connecting and extending transversely over the sleeves 15, 16. Suitable shock absorbing washers may be fitted on the rails 13, 14 between the carriage 17 and the forward bracket bar 11.

The vertical recoil mechanism C will now be described. Fixed on the carriage plate 20 is one leaf 21 of a hinge 22 disposed with its pintle 23 transversely of the after end of the carriage. The other hinge leaf 24 rides on the leaf 21 and at its free forward end portion 25 is urged downwardly toward the carriage as by an expansion coil spring 26, adjustable in force as by threading screw 27 relative to the lower hinge leaf 21.

Referring now to the gripping device D, there is rigidly fixed on the upper hinge leaf 24, as by cap screws 28, one jaw 29 of a vise 30 having a movable jaw 31 adjustable relative to the stationary jaw 29 as by screws 32. Other screws 32' threaded in the upper hinge leaf 24 extend through parallel slot 31' in the base of the movable jaw 31 and serve as guides during jaw movement and as additional fasteners for holding the vise in a closed position. The jaws 29, 31 may be provided with opposite vertical grooves 33 along inside portions thereof for firmly holding a handgun 34 by its grip 35. Inasmuch as the jaws 29, 31 are disposed parallel to the rails 13, 14, horizontal recoil of the weapon 34, upon firing and backward movement of the carriage 17 will be in the same direction.

An index finger 36 fixed to the platform 10 visually indicates to an observer any displacement of the carriage 17 relative to the base.

When the weapon 34 is fired, the hinge 22 opens against tension of the spring 26, thus permitting vertical motion or recoil of the weapon.

In Figs. 5—8 is shown an improved design of pistol mount A' similar to the just described mount A, but differing therefrom in that the horizontal recoil mechanism is equipped with antifriction bearings (not shown) in an aluminum housing 40 instead of brass bushings, a single horizontal recoil spring 41 on a separate rod 42 below the carriage guide rails 13, 14 is used, a horizontal recoil

spring tension adjusting screw 43 that telescopes over the spring supporting rod 42 is included, and a scribe 44 for recording horizontal recoil of the aluminum recoil housing 40 is added. The single horizontal recoil spring 41 acts against a depending portion 45 of the carriage.

It will be seen that both forms of the hereinbefore described invention provide means for mechanically gripping a normally hand-held weapon as it would be gripped by the human hand, which provides for both vertical and horizontal recoil in close similitude to that occurring upon firing a hand-held weapon, and which will accommodate automatic or semiautomatic pistols, revolvers, or other types of hand-held weapons.

Obviously many modifications and variation of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A pistol mount for shooting tests comprising a carriage having forward and after ends, means supporting the carriage for forward and aft horizontal reciprocatory movement between forward and aft positions, spring means biasing the carriage for movement toward said forward position, a member hinged to the after end portion of the carriage so as to ride on and swing upwardly from the carriage, spring means downwardly biasing the member, and means for releasably affixing the pistol at its butt end to the member with its barrel pointing forwardly of the carriage.

2. A pistol mount for shooting tests comprising a carriage having a forward end facing in the direction of the intended line of fire of said pistol and an after end portion, means mounting the carriage for forward and rearward movement, means urging said carriage forwardly, a support member having a forward and an after end portion, means hinging the support member at its after end portion to the after end portion of the carriage for upward swinging movement of its forward end portion about an axis transversely of the carriage movement, means urging said support member downwardly toward said carriage, and a clamp device for releasably affixing the pistol at its butt end to the support member with its barrel normally pointing in the direction of the intended line of fire.

3. A pistol mount for shooting tests comprising a base, a carriage having a forward end facing in the direction of the intended line of fire of said pistol and an after end portion, means mounting the carriage for forward and rearward movement along the base, means urging said carriage forwardly of the base, a support member having a forward and an after end portion, means hinging the support member at its after end portion to the after end portion of the carriage for upward swinging movement of its forward end portion about an axis transversely of the carriage movement, means urging said support member downwardly toward said carriage, a clamp device for releasably affixing the pistol at its butt end to the support member with its barrel normally pointing in the direction of the intended line of fire, and means recording longitudinal recoil of the pistol in terms of rearward movement of the carriage relative to the base.

4. A pistol mount for shooting tests comprising a base

including fixed parallel rails, a carriage having a forward end and an after end, means mounting the carriage for forward and rearward movement along the rails with its forward end facing in the direction of the intended line of fire of said pistol, expansion coil springs encircling said rails at the after end of the carriage for urging said carriage forwardly, a support member having a forward and an after end portion, means hinging the support member at its after end portion to the after end portion of the carriage for upward swinging movement of its forward end portion about an axis transversely of the carriage movement, means urging said support member downwardly toward said carriage, and a clamp device for releasably affixing the pistol at its butt end to the support member with its barrel normally pointing in the direction of the intended line of fire.

5. A pistol mount for shooting tests comprising a base including fixed parallel rails, a carriage having a forward end and an after end, means mounting the carriage for forward and rearward movement along the rails with its forward end facing in the direction of the intended line of fire of said pistol, means urging said carriage forwardly, a support member having a forward and an after end portion, means hinging the support member at its after end portion to the after end portion of the carriage for upward swinging movement of its forward end portion about an axis transversely of the carriage movement, means urging said support member downwardly toward said carriage, and a clamp device for releasably affixing the pistol at its butt end to the support member with its barrel normally pointing in the direction of the intended line of fire.

6. A pistol mount for shooting tests comprising a base including a stationary rod and rails fixed to the base parallel to the rod, a carriage having a forward end and an after end, means mounting the carriage for forward and rearward movement along the rails with its forward end facing in the direction of the intended line of fire of said pistol, an expansion coil spring encircling said rod and having one end engaging the carriage to urge it forwardly, and an opposite end, a spring tension adjusting shaft coaxial with said rod and having a screw threaded end portion in adjustably threaded engagement with the base and an opposite end portion telescopically slidable relative to the rod and engaging the spring at its opposite end, a support member having a forward and an after end portion, means hinging the support member at its after end portion to the after end portion of the carriage for upward swinging movement of its forward end portion about an axis transversely of the carriage movement, means urging said support member downwardly toward said carriage, and a clamp device for releasably affixing the pistol at its butt end to the support member with its barrel normally pointing in the direction of the intended line of fire.

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