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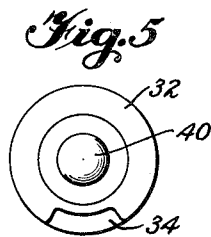
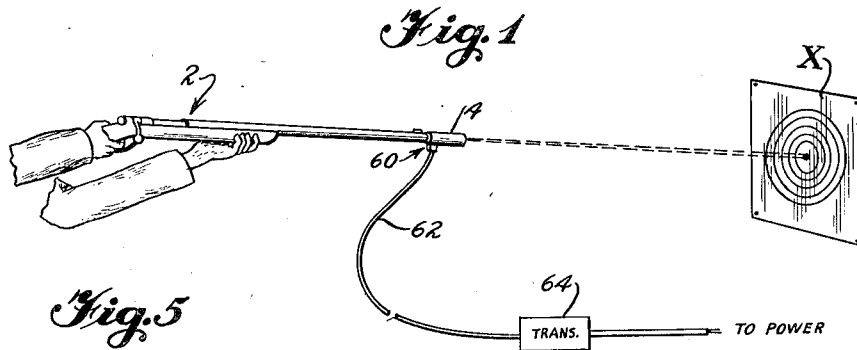
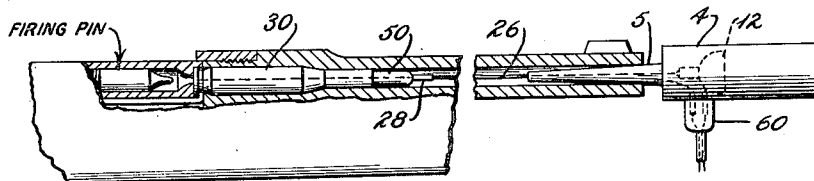
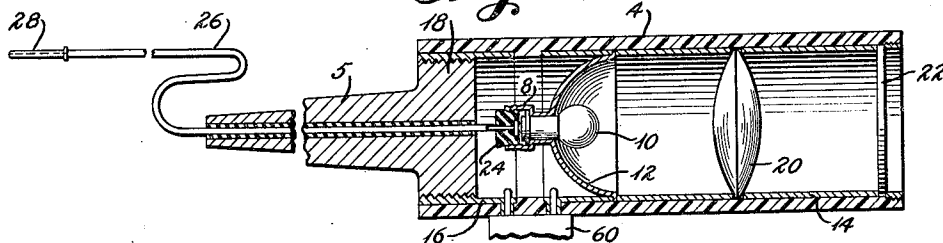
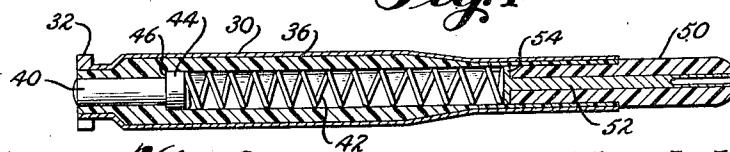
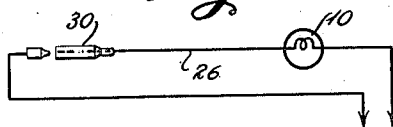
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MARKSMANSHIP TRAINING DEVICE

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*Fig. 2**Fig. 3**Fig. 4**Fig. 6*

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## MARKSMANSHIP TRAINING DEVICE

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2 Claims. (Cl. 240—2)

This invention relates to training and amusement devices, and more particularly to devices which are used to improve marksmanship with hand-weapons, such as rifle, shotgun, pistol, etc., although not limited thereto.

As is well known, the best way to develop marksmanship is actual firing at the target after having, of course, thoroughly absorbed all of the fundamentals which are involved.

However, actual firing is not only expensive, but considerable time is consumed in preparation, transportation, range delays, target inspection, etc.

All skilled marksmen find it necessary to do a great deal of so-called "dry firing" in order to develop the muscles which actually hold their weapon, as well as to coordinate their breathing with the squeeze of the trigger.

Dry firing is not only monotonous, but is unsatisfactory in that it provides no sensory indication of the degree of success which is being attained.

Another disadvantage of dry firing is that, although the actual squeeze of the trigger is utilized, the fall of the hammer on the firing pin and the movement of the latter into the empty chamber is injurious to the weapon.

Accordingly, it is among the objects of the present invention to provide an improved marksmanship training device which effectively eliminates the foregoing disadvantages.

More specifically, the present invention seeks to provide an improved marksmanship training device of the general dry-firing type, but wherein there is sensory perception of the skill which is being developed.

Another object is the provision of a device of the class described which eliminates, or materially reduces, the well known injurious results of the usual dry firing.

Still another object is the attainment of the foregoing objectives with a real weapon, and preferably the identical one which is to be actually fired at a later date. This feature of permitting the ultimate user of a weapon to become thoroughly accustomed to it preliminary to the actual firing thereof is particularly important due to the fact that firearms—even those of identical size and make—considerably vary in trigger squeeze, etc.

Still another object is a marksmanship training device which projects a light ray along the axis of the barrel of the firearm and which therefore enables "bore-sighting" with the result that greater accuracy is obtained.

A further object is the provision of a marksmanship training device of the type described which will not materially change the weight and balance of the firearm on which it is used.

A further object is to provide a device having the aforementioned advantages which may be easily and inexpensively manufactured and easily and quickly installed on, and removed from, practically all firearms of existing design.

A still further object is to furnish a device which attains all of the foregoing advantages in the form of an adaptation kit which may be effectively commercialized.

While the invention is susceptible of various modifica-

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tions and alternative constructions, certain preferred embodiments have been shown in the drawings and will be described below in considerable detail. It should be understood, however, that there is no intention to limit the invention to the specific forms disclosed, but, on the contrary, the intention is to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a perspective view illustrating the apparatus of the present invention as applied to a rifle of conventional design, together with a suitable target;

Figure 2 is an enlarged, fragmentary, sectional view of the bore-sighted light-projecting device which was referred to earlier herein;

Figure 3 is an enlarged, longitudinal, sectional view of the light-projecting device of Figure 2;

Figure 4 is an enlarged sectional detail view of a dummy cartridge which is adapted to be disposed in the chamber of the shoulder weapon of Figure 1 and which is provided with instrumentalities which permit it to serve as a switch for energizing the aforementioned light-projecting device;

Figure 5 is an enlarged rear elevational view of the dummy cartridge of Figure 4; and

Figure 6 is a diagrammatic view illustrating a simple electrical circuit whereby the light-projecting device may be activated.

Referring more particularly to Figure 1, the numeral 2 generally designates a conventional weapon upon which the device of the invention is to be employed, the same being shown, for purposes of illustration, as comprising a rifle of the bolt action type.

As shown most clearly in Figure 3, the light-projecting device of the apparatus of the present invention comprises a small tubular housing 4, one end of which is provided with an extension 5 of reduced diameter which tapers outwardly in order that it may be inserted within the outer end of the barrel of the weapon 2.

While the said extension 5 of reduced diameter, as aforementioned, is shown as comprising a tapering (or frusto-conical) member, it may acceptably take other forms, so long as it is of sufficient strength as will enable the small tubular housing 4 to be firmly supported on the outer end of the barrel of the weapon; for example, it might comprise a series of evenly spaced prongs (not shown).

The outside diameter of the small tubular housing 4 is preferably such that, when it is in use, its upper surface will not interfere with the use of the front sight on the outer end of the barrel of the weapon.

Within the small tubular housing 4, and along the axial center line thereof, there is mounted a miniature lamp socket 8 in which there is received a miniature lamp bulb 10 of the type used in very small flash-lights. The miniature lamp bulb 10 is shown as being provided with a separate reflector 12; but it will be understood that, if desired, a miniature lamp bulb with a built-in reflector may be utilized in lieu thereof.

In Figure 3, the small tubular housing 4 (of the light-projecting device) is shown as comprising an outer sleeve of suitable electric insulating material (such as rubber, etc.), together with a forward inner sleeve 14 and a rearward inner sleeve 16, both of which are electrically conductive.

The rearward inner sleeve 16 screw-threadedly receives a plug 18 which carries the tapering (or frusto-conical) extension 5 of the small tubular housing 4. Both the plug 18 and the tapering extension 5 are electrically conductive and may, if desired, be made integral, as shown.

The forward inner sleeve 14 of the small tubular

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housing 4 carries the reflector 12, which, in turn, carries the socket 8 for the bulb 10.

The forward inner sleeve 14 of the small tubular housing 4 may, if desired, be provided with a magnifying lens 20 and an outer focusing lens (or lenses) 22, the latter being shown as screw-threaded, and adjustably mounted.

An electrical connecting plug 24 is provided for the socket 8; and to it there is connected an insulated single conductor wire 26 which extends axially through the tapering extension 5 (of the small tubular housing 4) and, after considerable length, terminates in a connecting plug 28, the purpose of which will be later described.

Referring particularly to Figure 3, the numeral 30 designates a dummy cartridge which is of such size and shape as will enable it to be easily inserted into, and removed from, the chamber of the weapon 2.

This dummy cartridge 30 comprises a rearward integrally formed flange 32 which is, for the most part, annular, but which is provided with a recessed or notched portion 34, as shown in Figure 5. According to such an arrangement, when the dummy cartridge 30 is placed in the cartridge chamber of the weapon, the recessed or notched portion 34 may be disposed opposite the cartridge ejector (not shown) whereby the latter is (for the purposes of the present invention) rendered ineffective while, at the same time, permitting the weapon to be cocked, firing pin activated, etc.

The dummy cartridge 30 and its integrally formed rearward flange 32 are shown as being electrically conductive, with an inner lining 36 of insulating material which extends throughout.

In the rear of the inner (insulated) lining 36 of the dummy cartridge 30 there is disposed a slidable pin 40 which is resiliently influenced rearwardly by means of a spring 42, the excessive rearward movement of the pin being prevented by an integral head 44 which seats against a shoulder 46 on the lining 36.

In the outer end of the insulated lining 36 (of the dummy cartridge 30) there is disposed a longitudinally bored element 50 which resembles a bullet in size and shape recessed at its outer end to receive the connecting plug 28 on the outer end of the wire 26 which is adapted to be easily threaded through the bore of the weapon 2. The excess of the insulated wire 26 simply reposes in the bore without creating any problems.

This longitudinally bored element 50 is composed of suitable insulating material; and through it there extends a rod 52 of electrically conductive material. The inner end of the rod 52 carries a flange 54 which makes electrical contact with the inner end of the coil spring 42; while its outer end is recessed to detachably receive the connecting plug 28 on the outer end of the insulated wire 26 of the light-projecting device.

As shown most clearly in Figures 2 and 3, the small tubular housing 4 of the light-projecting device carries a detachable electrical plug 60, the pins of which extend through the outer insulating sleeve to make contact with the forward and rearward inner sleeves 14 and 16, respectively.

The pins of the detachable electrical plug 60 are connected to a dual conductor wire 62 which is, in turn, connected to the output terminals of a suitable transformer 64.

It will, of course, be understood that the input side of the transformer 64 is connected to any suitable source of power, such as a 110-volt household circuit.

From the foregoing construction and arrangement, it will be seen that, when the trigger of the weapon 2 is squeezed in realistic fashion, the firing pin thereof will be released to make electrical contact with the outer end of the resiliently slidable pin 40 of the dummy cartridge 30, thus completing the circuit to illuminate the miniature lamp bulb 10.

When the miniature lamp bulb 10 is illuminated, the reflector 12 will cause a thin beam of light to be pro-

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jected through the optical system within the small tubular housing 4 and along the exact axis of the bore of the weapon 2 and onto a suitable target, as indicated at X.

The target, which is shown at X in Figure 1, may be of any suitable type. However, it will be found highly desirable to employ with the apparatus of the present invention a target which will retain light for a short interval of time. Various luminous, or light-sensitive, surfaces may be utilized, whereby such surfaces will become visible in the dark upon the impingement thereon of light rays from the miniature lamp bulb 10. This result may be obtained with numerous well known luminous compounds; for example, the sulphides of barium, calcium, zinc and strontium will continue to glow after the removal of the illumination.

If desired, the target X may be placed in a substantially dark area with the target surface, or certain portions thereof, formed of constantly luminous material, such as zinc sulphide mixed with radium, etc., thus rendering the portions so coated visible in the dark.

Also, luminous surfaces may be employed which are selective in character. That is, they are not activated to any appreciable extent by certain types of light rays; while, at the same time, extremely sensitive and responsive to activation by other light rays.

Further, a relatively dim light containing activating rays may be directed onto the target while projecting a more intense beam of light from the weapon containing activating rays for forming a light spot which stands out in contrast to the feeble activation of the entire surface.

Under strong light containing rays of short wave length, the better luminous materials will be activated or excited instantaneously so that an exposure of but a fraction of a second will bring about the desired phosphorescence.

By flooding the target with a colored ray, such as red or, from a distance, green, which has little tendency to excite a glowing effect, it will be found that ample illumination of the target will be obtained, while at the same time the target is directly responsive to white light, or any combination of light including rays of short wave length, whereby spots formed by such light are immediately indicated by a glowing area on the target, the glowing area being, of course, coterminous with the light spot formed. Any suitable means for forming such illumination may be employed.

It will be understood that, according to the specific type of dummy cartridge and firing circuit described hereinbefore, the miniature lamp bulb 10 will continue to be activated so long as the firing pin is in contact with the slidable pin 40. However, the present invention contemplates the use of any suitable circuit interrupting means.

The present invention also contemplates the constant illumination of the lamp bulb 10, with the dummy cartridge, electric circuit, etc., activating a shutter mechanism (not shown) at the light-discharge end of the small tubular housing 4.

While I have shown and described certain specific embodiments of the invention, it will be understood by those skilled in the art that I do not wish to be limited thereto, but only to the scope of the invention as defined in the appended claims.

I claim:

1. Apparatus for simulating marksmanship and for use on firearms comprising, in combination, a dummy cartridge adapted for disposition in the cartridge chamber of the firearm, a resiliently displaceable member carried on the rearward portion of said dummy cartridge and adapted to be contacted by the firing pin of said firearm, said resiliently displaceable member and the exterior of said dummy cartridge being electrically conductive but electrically insulated from each other, a tubular light projector including a lamp bulb, means for attaching said tubular light projector to the end of the barrel of said firearm for disposition exteriorly thereof but in axial

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alignment therewith, an electrical conductor detachable on at least one end and extending along the bore of said firearm and connecting said resiliently displaceable member with the negative contact of said lamp bulb, a source of electrical energy, an electrical conductor connecting said source of electrical energy with the barrel of said firearm, and an electrical conductor connecting said source of electrical energy with the positive contact of said lamp bulb, whereby the contact of the firing pin of said firearm with said resiliently displaceable member will complete the circuit to said lamp bulb.

2. Apparatus for simulating marksmanship and for use on firearms comprising, in combination, a dummy cartridge adapted for disposition in the cartridge chamber of the firearm, a resiliently displaceable member carried on the rearward portion of said dummy cartridge and adapted to be contacted by the firing pin of said firearm, the rearward extremity of said dummy cartridge being provided with a radial flange, said flange having a recess for disposition opposite the cartridge ejector means of said firearm, said resiliently displaceable member and the exterior of said dummy cartridge being electrically

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conductive but electrically insulated from each other, a tubular light projector including a lamp bulb, means for attaching said tubular light projector to the end of the barrel of said firearm for disposition exteriorly thereof but in axial alignment therewith, an electrical conductor detachable on at least one end and extending along the bore of said firearm and connecting said resiliently displaceable member with the negative contact of said lamp bulb, a source of electrical energy, an electrical conductor connecting said source of electrical energy with the barrel of said firearm, and an electrical conductor connecting said source of electrical energy with the positive contact of said lamp bulb, whereby the contact of the firing pin of said firearm with said resiliently displaceable member will complete the circuit to said lamp bulb.

#### References Cited in the file of this patent

#### UNITED STATES PATENTS

|           |              |               |
|-----------|--------------|---------------|
| 1,795,401 | Lawrence     | Mar. 10, 1931 |
| 2,174,813 | Younghusband | Oct. 3, 1939  |
| 2,569,594 | Aagesen      | Oct. 2, 1951  |