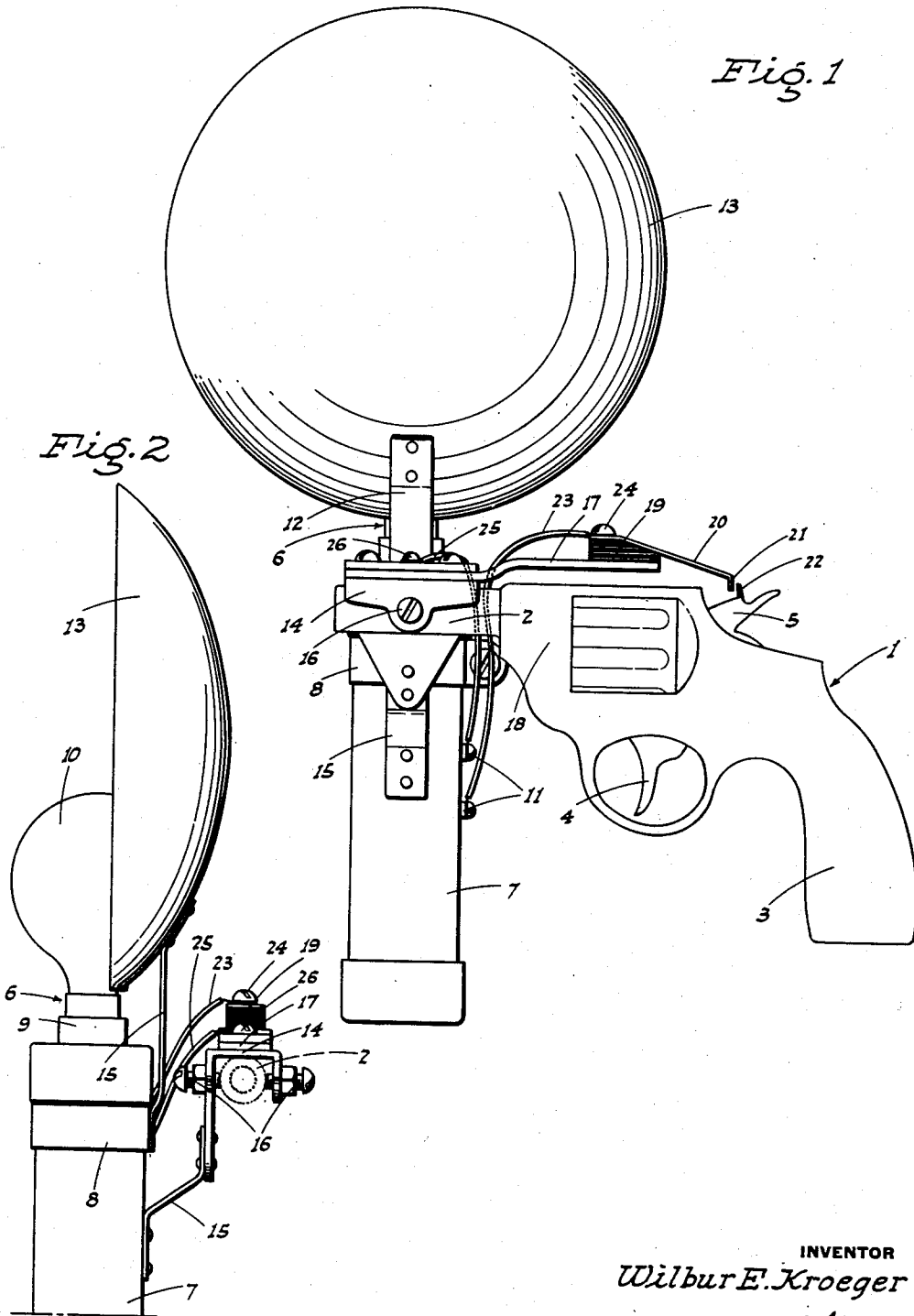


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FLASH UNIT FOR STARTERS' GUNS  
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## FLASH UNIT FOR STARTERS' GUNS

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This invention relates generally to starter's guns as used to start athletic events, such as foot races or the like.

It is the practice for the persons acting as timers to stand at the finish line, and the stop-watches held by such timers are manually placed in operation upon visual response by the timers to the firing of the starter's gun at the starting line; the intervening distance causing difficulties with respect to the timers starting the watches in a manner to obtain high accuracy.

It is therefore the major object of this invention to provide a starter's gun which includes, in novel combination therewith, a flash unit; such flash unit being actuated by and thus synchronized with firing of the gun, and facing in the direction of the finish line, whereby the timers may thus readily view the flash and place the stop-watches in operation with the desired accuracy.

Another important object of the invention is to mount the flash unit on the starter's gun in a novel manner; the flash unit being supported so that the included reflector faces toward the finish line, where the timers are standing, when the starter's gun is pointed crosswise of the track at the starting line.

A further object of the invention is to embody, in the combination of a starter's gun and a flash unit, a novel switch assembly for closing the circuit of said flash unit when the hammer of the starting gun falls; such switch assembly being arranged so that it requires no resetting, and returns to a normal open position immediately after firing of the gun.

An additional object of the invention is to provide a flash unit and switch assembly for a starter's gun, as above, which is adapted for manufacture as an attachment for existing starter's guns, without any substantial alteration of the latter. While an attachment in its preferred embodiment, the invention may of course be included with the gun as initially manufactured.

It is also an object of the invention to provide a flash unit and switch assembly, for attachment to a starter's gun, designed for ease and economy of manufacture and ready installation.

Still another object of the invention is to provide a practical and reliable combination starter's gun and flash unit, and one which will be exceedingly effective for the purpose for which it is designed.

In the drawings:

Fig. 1 is a side elevation of a starter's gun with the flash unit and switch assembly mounted thereon.

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Fig. 2 is a front end elevation of the same.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 indicates generally a starter's gun, which gun includes a barrel 2, a grip 3, a trigger 4, and a hammer 5; such hammer having a neutral or safety position as shown in Fig. 1, being movable rearwardly to cock the same and occupying a position ahead of said safety position upon firing.

The flash unit is indicated generally at 6, and comprises an upstanding tubular battery case 7 fitted at the upper end with a rotary collar 8; a socket 9 projecting upwardly through the collar 8 for the reception, in removable relation, of a flash globe 10.

The flash unit 6 is wired internally so that upon closing of a circuit across two exposed terminals 11, current from the batteries (not shown) within the case 7 is fed to the globe 10, energizing the latter and causing the same to flash.

The rotary collar 8 is fitted on one side with an upstanding post 12 fixed to the bottom portion of an upstanding, dished or concave reflector 13 which lies alongside the flash globe 10. As the collar 8 is rotatable, the reflector 13 can be adjusted to face in any selected direction.

Laterally of the upper end of the battery case 7, the flash unit includes a saddle 14 fixedly secured to said case by a rigid bracket 15. The saddle 14 is adapted to engage over the barrel 2 of the starter's gun 1, with the battery case 7 laterally offset from said barrel; the saddle 14 being detachably secured to the barrel by means of opposed set screws 16.

A longitudinal mounting arm 17 is secured to the top of the saddle 14 and projects rearwardly therefrom in spaced or overhanging relation to the body 18 of the gun 1. At its rear end portion the longitudinal mounting arm 17 has a dielectric block 19 thereon. A spring blade 20 is fixed to the dielectric block 19 and thence extends rearwardly at a downward incline in the direction of the hammer 5, such spring blade 20 having a depending contact element 21 at its rear end, and a cooperating upstanding contact element 22 is fixed to the hammer 5. The contact element 21 is disposed so that when the hammer 5 is in its normal safety position there is slight spacing between said contact elements 21 and 22, but upon falling of the hammer and resulting firing of the starter's gun 1, said contact elements 21 and 22 come into engagement, but immediately release as the hammer 5 retracts to its safety position.

A circuit wire 23 connects between one of the terminals 11 on the battery case 7 and a ter-

minal 24 on the spring blade 20. Another wire 25 connects between the other terminal 11 and a ground screw 26 which runs into the longitudinal mounting arm 17; the latter being grounded through the saddle 14 to the barrel 2.

Consequently, upon the circuit being completed by engagement of the contact elements 21 and 22, when the starter's gun 1 is fired, there is simultaneous or synchronized actuation of the flash unit 6; i. e. the flash globe 10 fires simultaneously with the gun 1.

The starter's gun 1 is normally fired in a direction transversely of the track, and the reflector 13 is thus previously adjusted so that it faces down the track in the direction of the finish line and where the timers are standing.

When the starter's gun 1 is fired, with resulting flash from the globe 10—which flash is enhanced by the reflector 13—the timers readily receive quick visual response, and the stop-watches can be placed in operation with accuracy.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. In combination, a starter's gun; a flash unit detachable from the gun and including a battery case, a flash globe supported on the battery case, a battery circuit in which the globe is included, and means adapted to secure the battery case to the gun; and a normally open switch assembly in said circuit including a contact element mounted on the flash unit and a cooperating element on the gun, the switch being responsive to and closing upon firing of said gun.

2. A combination, as in claim 1, in which the battery case is in an upstanding position with the globe at its upper end, and a laterally facing reflector mounted in backing relation to the globe.

3. A combination, as in claim 2, in which the reflector is adjustable about the globe.

4. A flash unit, for attachment to a starter's gun having a barrel, comprising an upstanding

battery case having a socket and globe at its upper end, a reflector backing the globe, means mounting the reflector on the case, a saddle fixed in connection with the upper portion of the case but disposed laterally thereof, said saddle engaging over the gun barrel from above, means to secure the saddle to the barrel, a battery circuit in which the globe is interposed, and a normal open switch assembly in the circuit responsive to and closing upon firing of the gun.

5. A flash unit, for attachment to a starter's gun having a barrel, comprising an upstanding battery case having a socket and globe at its upper end, a reflector backing the globe, means mounting the reflector on the case, a saddle fixed in connection with the upper portion of the case but disposed laterally thereof, said saddle engaging over the gun barrel from above, means to secure the saddle to the barrel, a battery circuit in which the globe is interposed, and a normal open switch assembly in the circuit; the gun including a hammer having a normal or safety position rearwardly of the advanced or firing position of said hammer, the switch assembly including one contact element on the hammer and another contact element fixed with the saddle ahead of said one contact element, and said elements being normally spaced but engaging when the hammer advances to firing position.

6. A flash unit, as in claim 5, in which there is a mounting arm extending rearwardly from the saddle and above the gun, and a spring finger secured in insulated relation to and inclining downwardly and rearwardly from the arm; said other contact element being on the lower end of said spring finger.

7. In combination, a starter's gun, a flash unit having an upstanding flash globe, means to mount the unit on the gun, and a horizontal-axis reflector mounted behind the globe and facing laterally of the barrel of the gun when the unit is mounted thereon.

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

##### UNITED STATES PATENTS

| Number    | Name     | Date          |
|-----------|----------|---------------|
| 829,726   | McIntosh | Aug. 28, 1906 |
| 1,993,979 | Reed     | Mar. 12, 1935 |
| 2,317,713 | Aufiero  | Apr. 27, 1943 |