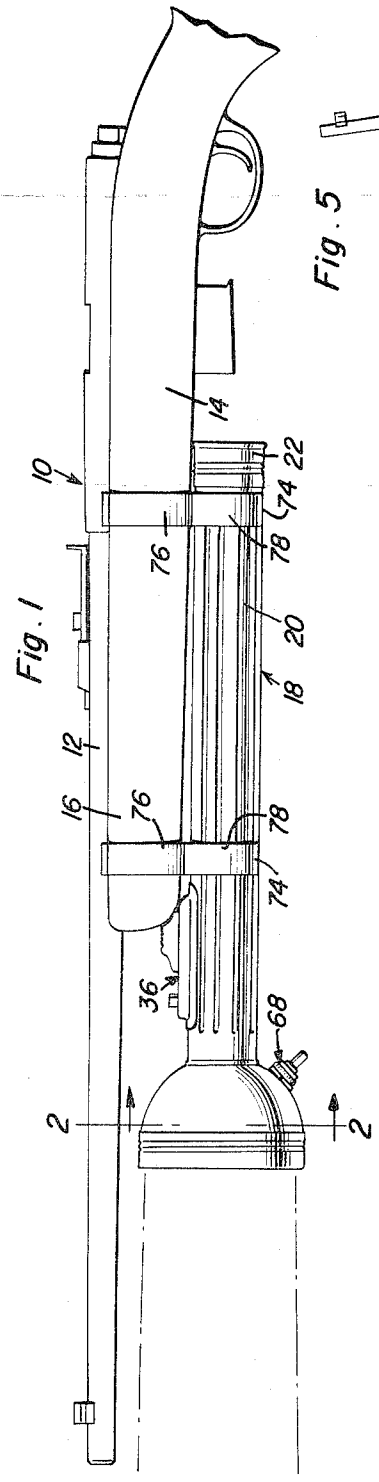
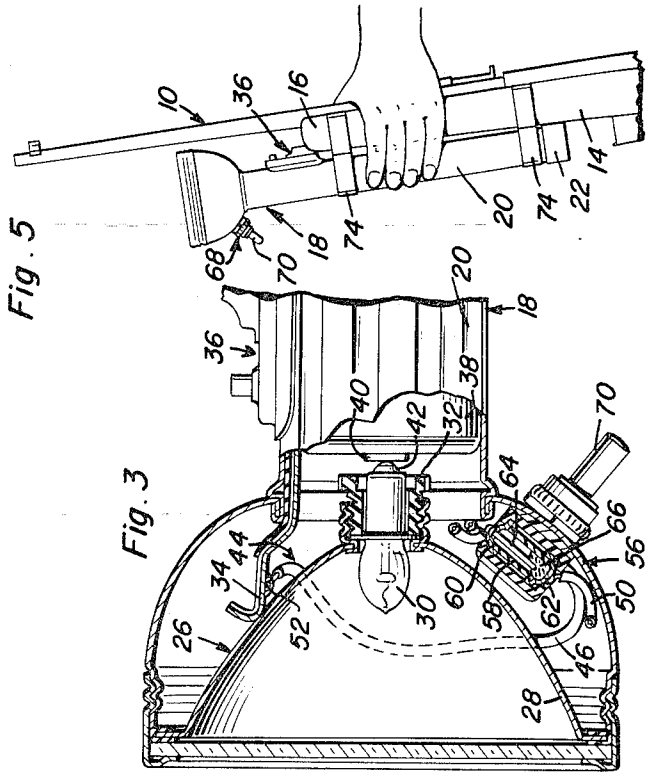
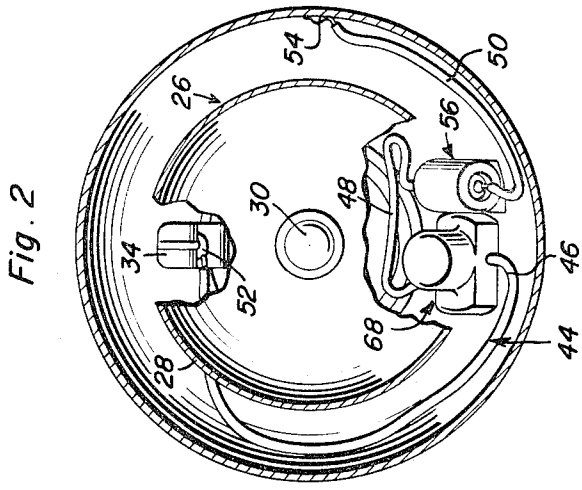
Dec. 7, 1965 G. M. BREEDING 3,222,511

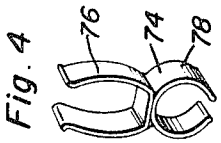
GUN BARREL MOUNTED FLASHLIGHT MOUNT AND SWITCH

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Garnett M. Breeding
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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# GUN BARREL MOUNTED FLASHLIGHT MOUNT AND SWITCH

Garnett M. Breeding, 3700 Leland Ave., Waco, Tex.

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This invention relates to a novel and useful gun barrel mounted light and more specifically to electrically actuated illumination means adapted to be secured to a gun barrel and to cast a beam of light along the line of sight of the gun barrel.

The flashlight or illumination means of the instant invention includes a body portion which may be readily removably secured to a gun barrel or gunstock in a manner so as to position the illumination means to cast a beam of light along the line of sight of the gun barrel. The illumination means may be of special construction or may be in the form of a somewhat modified flashlight. A conventional form of flashlight including an elongated body portion with illumination means disposed at one end thereof and positioned so as to cast a beam of light along the longitudinal axis of the body portion of the flashlight is well suited for use as a component of the instant invention. Conventional flashlights are provided with manually actuatable switch means for turning on the flashlight and this manually actuatable switch means is connected in series with circuit defining means for electrically connecting the illumination means with a suitable source of electrical potential such as flashlight batteries disposed within the body portion of the flashlight. In order to modify a conventional flashlight in accordance with the present invention an alternate or second circuit is operatively connected to the first mentioned circuit so as to bypass the conventional manually actuatable switch means. An automatic switch responsive to positioning of the body of the flashlight is serially connected in the bypass circuit and thus may be utilized to actuate the illumination means independently of the conventional manually actuatable switch means. In addition, a second and manually actuatable switch means is also serially connected in the bypass circuit so as to provide a means whereby the bypass circuit may be rendered inoperative. With the bypass circuit manually actuatable switch in the off position, a flashlight constructed in accordance with the present invention is operable in the conventional manner independently of the positioning of its body. Accordingly, a flashlight constructed in accordance with the present invention may selectively be utilized as a conventional flashlight or as a gun mounted light adapted to be automatically actuated in response to positioning of the associated gun in a firing position.

The main object of this invention is to provide gun mounted illumination means constructed in a manner whereby it may be readily secured to a gun barrel and automatically actuated to cast a beam of light along the line of sight of the gun barrel in response to movement of the gun barrel to the normal horizontally disposed firing position.

Another object of this invention, in accordance with the immediately preceding object, is to provide a gun barrel mounted illumination means which may be readily removed from engagement with its associated gun and utilized as a conventional flashlight.

Still another object of this invention is to provide gun barrel mounted illumination means of the type enabling the present invention to be practiced by the mounting of a somewhat modified conventional flashlight on the associated gun barrel.

A final object of this invention to be specifically enumerated herein is to provide a gun barrel mounted flashlight in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.



These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a fragmentary side elevational view of a conventional form of rifle shown with the flashlight or illumination means of the instant invention removably secured to the stock portion of the rifle and disposed in a position to cast a beam of light along the line of sight of the gun barrel;

FIGURE 2 is an enlarged vertical sectional view taken substantially upon the plane indicated by the section line 2—2 of FIGURE 1;

FIGURE 3 is an enlarged side elevational view of the forward portion of the flashlight with portions thereof being broken away and shown in section;

FIGURE 4 is a perspective view of one of the resilient spring clips utilized to removably support the flashlight from the stock of the gun; and

FIGURE 5 is a fragmentary side elevational view of the assembly illustrated in FIGURE 1 shown with the gun and flashlight in a carrying position in which the flashlight may be rendered inoperative.

Referring now more specifically to the drawings, the numeral **10** generally designates a conventional form of rifle including a barrel assembly **12** and a stock **14** including a forward handgrip portion **16**. The gun barrel mounted flashlight of the instant invention is generally referred to by the reference numeral **18** and comprises a conventional form of flashlight including a body **20**, a removable rear cap **22**, and a forward illumination assembly generally referred to by the reference numeral **26** embodying a reflector **28**, a bulb **30** and bulb mount **32**, and a conductor strip **34** which extends from the conventional actuatable switch **36** and is engaged with the rear surface of the metallic reflector **28** to which the bulb **30** is grounded. The removable end cap **22** includes the usual spring contact (not shown) for electrically connecting the rear end of the rearmost battery **38** with the body **20** and the forward terminal **40** of the forwardmost battery **38** is disposed in contact with the center electrode **42** of the bulb **30**. The manually actuatable switch **36** includes means for selectively electrically connecting the body **20** with the strip **34** and thus completing the electrical circuit to the bulb **30**.

The preceding description of the flashlight **18** is of course conventional and it is to be understood that the present invention resides in the structural features of the flashlight **18** set forth hereinafter.

A bypass circuit generally referred to by the reference numeral **44** is provided and includes first, second, and third conductors **46**, **48** and **50**. The remote ends of the conductors **46** and **50** are electrically connected to the strip **34** and the body **20** as at **52** and **54** respectively. An automatic mercury switch assembly **56** is serially connected between the conductors **50** and **48** and includes a dielectric cylindrical body **58** including conductive opposite end caps **60** and **62**. An electrode **64** extends from the end cap **60** toward the end cap **62** and a quantity of mercury **66** is disposed between the end caps **60** and **62** and may be utilized, as shown in FIGURE 3 of the drawings, to complete the electrical circuit between the end caps **60** and **62**. However, should the forward end of the flashlight **18** be elevated from the position illustrated in FIGURE 3 of the drawings to

the position illustrated in FIGURE 5 of the drawings, the mercury 66 will flow downwardly toward the then lowermost end cap 60 thereby interrupting the circuit between the electrode 64 and the end cap 62. Thus, if the adjacent ends of the conductors 50 and 48 are electrically connected the bulb 30 will be actuated if the flashlight 18 is positioned as illustrated in FIGURES 1 and 3 of the drawings. However, changing the position of the flashlight 18 to the position illustrated in FIGURE 5 of the drawings will interrupt the electrical circuit extending between the points 52 and 54 and thus terminate operation of the bulb 30.

In addition to the automatic mercury switch 56, a manually actuatable switch 68 which may be of conventional design and include an exteriorly mounted actuator 70 is also serially connected in the bypass circuit 44 and thus, should the manually actuatable switch 68 be in the off position, movement of the flashlight 18 from the position illustrated in FIGURE 5 of the drawings to the normally actuated position as shown in FIGURE 3 of the drawings will not result in the illumination means being electrically connected with the batteries 38. Thus, it may be seen that the flashlight 18 may be readily used as a conventional flashlight merely by turning off the manually actuatable switch 68 thereby rendering the bypass circuit 44 inoperative and making the operation of the flashlight 18 dependent on the manually actuatable switch 36.

As can be best seen from FIGURES 1 and 4 of the drawings a pair of spring clip assemblies 74 are provided and utilized to removably secure the flashlight 18 to the handgrip portion 16 of the stock 14. Each of the spring clips 74 includes a resilient U-shaped portion 76 which is adapted to be clampingly engaged with the handgrip portion 16 and a C-shaped resilient portion 78 which is adapted to be clampingly engaged with the body 20 of the flashlight 18.

In operation, when the manually actuatable switch 68 is in the on position, movement of the flashlight 18 from the position illustrated in FIGURE 5 of the drawings to the position illustrated FIGURE 3 of the drawings will effect operation of the flashlight. However, it may also be noted that rotation of the flashlight about the longitudinal axis of the body 20 so as to position the manually actuatable switch 68 and mercury switch 56 uppermost would also render the flashlight 18 inoperative independently of the manually actuatable switch 36 even though the flashlight 18 is horizontally disposed. Thus, the positioning of the mercury switch 56 not only enables the flashlight 18 to be intermittently actuated by swinging movement of the flashlight 18 from the position illustrated in FIGURE 5 of the drawings to the position illustrated in FIGURE 3 of the drawings but also by rotation of the flashlight 18 about its longitudinal axis when the flashlight is horizontally disposed.

Further, although the flashlight 18 has been illustrated and described as being utilized in connection with a rifle, it is to be noted that it will function equally well when used with shotguns or even hand guns having long barrels.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.



What is claimed as new is as follows:

1. In combination with a gun barrel having a muzzle end, a flashlight of the type including an elongated body and including illumination means at one end thereof adapted to be electrically connected to a source of electrical potential and also adapted to cast a beam of light outwardly of said one end of said body, said flashlight including first electrical circuit defining means having a first manually actuatable switch for electrically connecting said illumination means to said source, second electrical circuit defining means electrically connected to said first circuit defining means bypassing said first switch and including a second automatic switch responsive to positioning of said body for closing said second circuit, means supporting said body from said barrel with said body generally paralleling said barrel and said one end of said body facing in the direction of the muzzle end of the barrel so as to enable said flashlight to cast a beam of light along the line of sight of said barrel, said means securing said body to said barrel including means adapted to removably support said body from said barrel in selective positions of rotation of said body relative to said barrel disposed 180 degrees apart, said second switch being orientated relative to said body so as to be actuated to close said second circuit as said gun barrel has its muzzle end lowered from an upright position to a position with said muzzle end approaching a horizontal position and to maintain said second circuit closed as said muzzle end passes a downwardly directed vertical position and until said muzzle end again approaches a horizontal position facing in the opposite direction from the position it faces in the first mentioned horizontal position, said second switch also being orientated relative to said body so that, if said body is rotated 180 degrees about its longitudinal axis relative to said barrel, said second switch will be operative to close said second circuit only as said muzzle end is lowered so as to approach a muzzle down vertical position and to maintain said second circuit closed until said muzzle end is swung past a muzzle down vertical position and thereafter past a horizontal position.

2. The combination of claim 1 wherein said second circuit also includes third manually actuatable switch means serially connected therein for selectively rendering said second circuit inoperative.

3. The combination of claim 1 wherein said gun barrel includes an underslung handgrip portion of a supporting stock, said means securing said body to said barrel including means removably securing said body to said handgrip portion.


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BENJAMIN A. BORCHELT, *Primary Examiner.*