

Oct. 21, 1941.

F. A. GEIER

2,259,443

ILLUMINATING CANE AND UMBRELLA HANDLE

Filed April 20, 1939

2 Sheets-Sheet 1

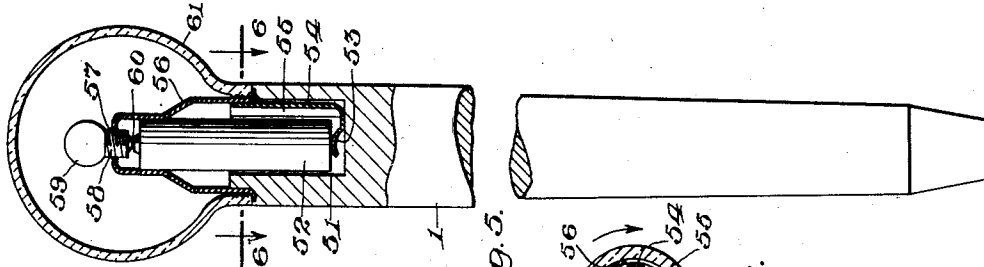


Fig. 5.



Fig. 6.

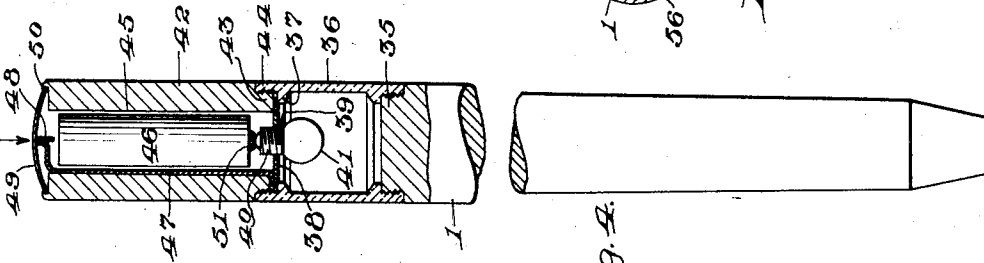


Fig. 4.



Fig. 2.

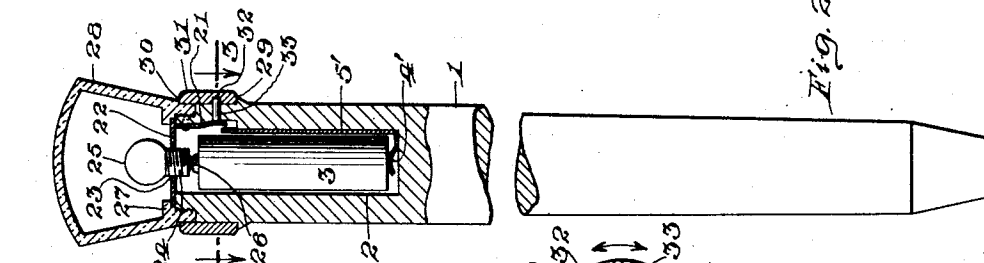
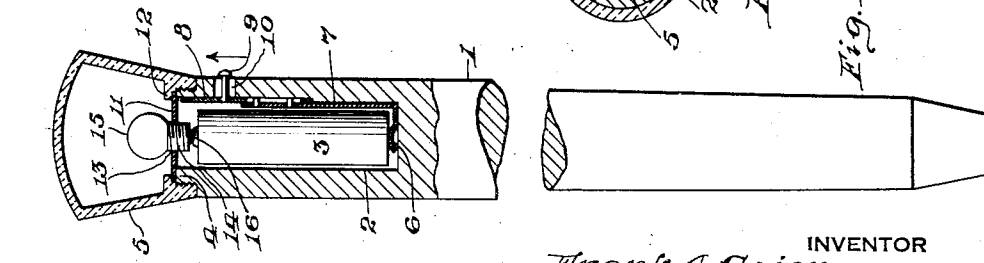


Fig. 3.



Fig. 1.



INVENTOR
Frank A. Geier,
 BY
J. Stuart Freeman,
 ATTORNEY

Oct. 21, 1941.

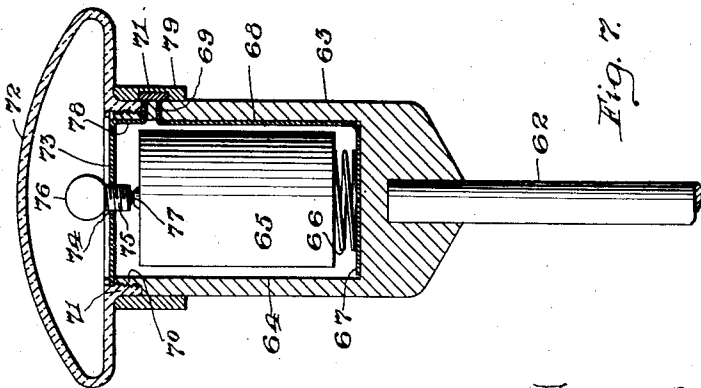
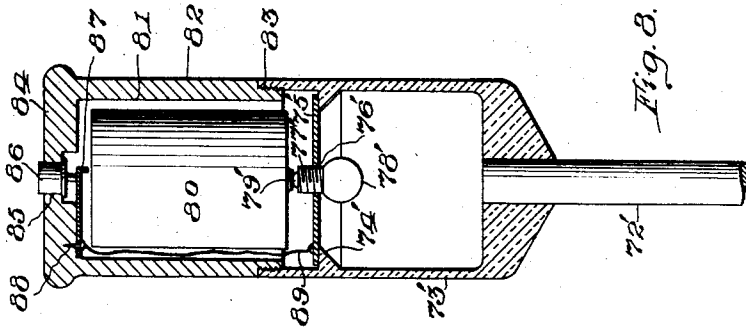
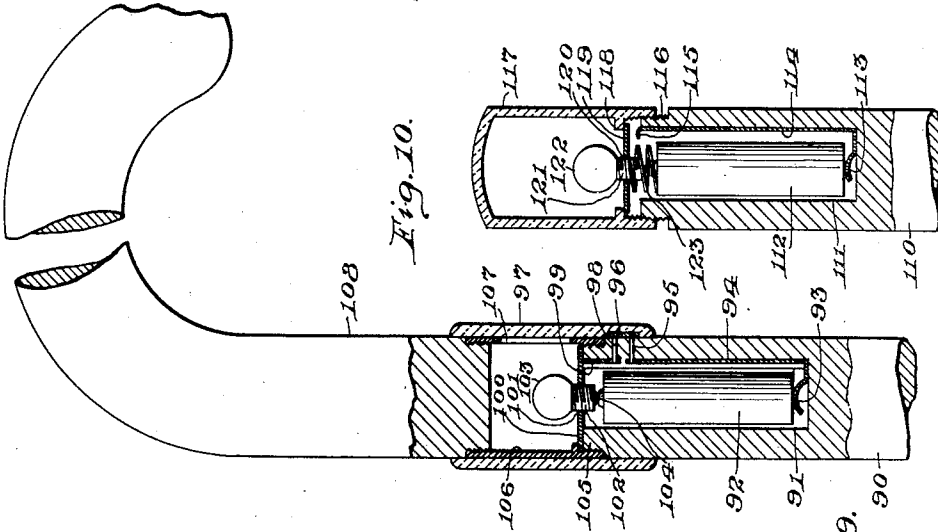
F. A. GEIER

2,259,443

ILLUMINATING CANE AND UMBRELLA HANDLE

Filed April 20, 1939

2 Sheets-Sheet 2



INVENTOR
Frank A. Geier,
BY
J. Smart Freeman,
ATTORNEY

UNITED STATES PATENT OFFICE

2,259,443

ILLUMINATING CANE AND UMBRELLA HANDLE

Frank A. Geier, Philadelphia, Pa.

Application April 20, 1939, Serial No. 268,864

1 Claim. (Cl. 240—6.42)

The object of the invention is to provide improvements in illuminated canes and umbrella handles, and in the following description and appended claims it is to be understood that the single reference to canes and cane handles is intended to imply the equivalent structure in umbrellas.

Another object is to provide several ways in which the invention can be inexpensively applied to handles of this class, so as to provide in turn for as many different modes of operation, and thereby suit the tastes of different manufacturers, as well as the many types of persons that go to make up the general public.

More specifically, the invention comprises the application of an electric light bulb, battery and control switch to a cane handle in several different forms, including one in which the switch is actuated by a laterally extending button, one in which a switch is actuated by the rotation of a cam-shaped sleeve or ferrule, one in which the switch is actuated by pressure upon a yielding closure of the free end of the cane handle, one in which the switch is actuated by rotation of the transparent head or knob of the cane, one in which a rotatable sleeve itself forms a circuit-closing contact element, one in which the switch is positioned in an unyielding end portion of a cane, and one in which a band is rotated so as to complete the electric circuit.

With the objects thus briefly stated, the invention comprises further details of construction and operation, which are hereinafter fully brought out in the following description, when read in conjunction with the accompanying drawings, in which Fig. 1 is an elevational view, partly in section, showing one embodiment of the invention; Fig. 2 is a similar view, showing a modified form of the invention; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a view similar to Figs. 1 and 2, but showing a second modified form of invention; Fig. 5 is a similar view showing a third modified form of the invention; Fig. 6 is a sectional view on the line 6—6 of Fig. 5; Fig. 7 is a sectional view of a handle of a shape and size which is especially adapted for use upon umbrellas and showing another modification of the invention; Fig. 8 is a view similar to Fig. 7, but showing still another modification of the invention; Fig. 9 is an elevational view, partly in section, showing a still further modification of the invention as applied to a cane or umbrella handle; and Fig. 10 is a similar view showing a still further modification of the invention.

cane or the like is shown as being provided in its normally manually engageable end portion with an axial recess 2, in which is positioned a dry cell or equivalent form of battery 3, while the outer end of said staff comprises a reduced, externally threaded end portion 4 upon which is secured any suitable form or shape of transparent terminal knob 5, which knob may be plain, carved, decorated, or in fact treated in any desired manner. The inner end of the battery 3 rests upon and in contact with one end 6 of a metallic conductor, which extends laterally and thence longitudinally along one side wall of the recess 2, to form a mounting 7 for a slidable metallic contact member 8, which in turn is provided with a lug 9 extending outwardly through an aperture 10 in the side of said staff. Upon shifting said lug longitudinally towards the normal upper end of said staff, said contact member 8 is brought into electrical contact with a metal gasket 11, the peripheral edge portion of which is fixedly positioned by and between the reduced end 4 of the staff and an adjacent, inwardly extending flange 12, carried by the hollow knob 5. This gasket 11 is also provided with a central aperture 13 through and in metallic contact with which is the outer cylindrical (and usually threaded) terminal 14 of an electrical lamp 15, the central contact 16 of which engages the corresponding terminal of the battery 3. With this construction, the lamp remains illuminated as long as the lug 9 is in upper position and the contact member 8 is in contact with the gasket 11.

Referring to Figs. 2 and 3, the staff 1 is here provided with a similar axially extending bore 2 in which is positioned a battery 3, the inner end of which is in contact with the laterally extending inner end portion 4' of a metallic conductor 5', the upper end portion of which conductor extends freely into a lateral offset 20 from the bore 2 and is adapted to be engaged by the yieldingly positioned inner end portion of a contact member 21, the opposite end of which is secured within said bore and in direct contact with a metallic gasket 22, which like the gasket 11 of Fig. 1 is provided with a central aperture 23 for receiving the outer terminal portion 24 of a lamp 25, the inner terminal 26 of said lamp being held in permanent contact with the central terminal of the battery 3 by reason of the fact that the gasket 22 is secured in fixed position against the outer edge portion of the staff 1, by means of a flange 27, with which the surrounding transparent knob 28 is provided, said knob being quite similar to the knob 5 in Fig. 1 and being secured

Referring to Fig. 1, the shaft or staff 1 of a

in threaded engagement with the adjacent edge portion of said staff. In this form of the device, said staff and knob are provided with spaced parallel flanges 29 and 30, between which is rotatably secured a band 31, said band being provided upon its inner surface with an angularly extending cam-shaped recess 32, into which extends the outer end portion of a lug 33, which upon turning said band operates to force said lug inwardly, or permits said lug to shift outwardly under the tension of the resilient contact member 21, so as to complete or break the circuit between the conductor 5 and said contact member, and thereby cause the lamp 25 to be energized and de-energized, respectively.

Referring to Fig. 4, the staff 1 is provided upon its normal upper end with a threaded reduced portion 35, to which is secured one end of a cylindrical transparent member 36, the opposite end of which member is provided inwardly with an annular flange 37, against which is positioned a metal gasket 38 having a central aperture 39, through and in contact with which is the outer terminal 40 of an electric lamp 41. Said gasket is secured in fixed position by means of an opaque cylindrical member 42, having a lower reduced end portion 43 which enters and is secured in threaded engagement with the similarly threaded annular terminal portion of said transparent member 36. The opaque terminal member 42 is provided with an axial bore 45 in which is positioned a battery 46 and also a longitudinally extending conductor 47, which at one end is in direct contact with the gasket 38 and at its opposite outer end is deflected radially inwardly and reversely bent, so as to comprise a resilient contact member 48, adapted to be brought into electrical contact with the outer casing of the battery 46, upon manually pressing inwardly upon a flexible disc 49, the periphery of which disc is secured to the opaque member 42 by means of an in-turned flange 50. In this form of the device, the conductor 47 must be suitably insulated from the casing of the battery 46, as by means of the usual cardboard or other non-conducting wrapper, which normally surrounds batteries of this character. The central terminal 51 of the lamp 41 being in contact with the central terminal of said battery, the said lamp is illuminated at will by and upon pressing the disc 49 inwardly. From this construction it is likewise obvious that by removing the usual insulating jacket from the battery 46 so that the conductor 47 contacts with the outer surface of said battery, eliminating the laterally extending terminal portion 48 and placing a spiral spring between the gasket 38 and the lower end of said battery so that said battery is normally in a raised position, free from contact with said lamp, downward pressure of the flexible disc 49 in such case will force the battery downwardly into contact with and cause energizing of said lamp.

Referring to Figs. 5 and 6, the staff 1 is here provided with an axially extending bore 51 in which is positioned a battery 52. The radially inwardly extending end portion 53 of a conductor 54 contacts with the outer terminal of said battery, while the major portion of said conductor extends longitudinally in an offset 55 of the bore 51, and at its outer end is in direct contact with one leg of a metallic yoke 56. This yoke is insulated from the outer energized surface portion of the battery and is provided centrally with an aperture 57 through and in contact with which is the outer terminal 58 of a lamp 59, the

inner terminal 60 of which lamp is in normal contact with the central terminal of the battery. The opposite legs 56 of said yoke are deflected laterally outwardly, and are secured between the adjacent edge portions of said staff and a hollow transparent terminal knob 61, said yoke being secured to said knob so as to rotate with it upon the threaded end portion of said staff. With this construction, and as will be seen from Fig. 6, when the lamp 59 is not illuminated, both of the legs of said yoke are laterally displaced with respect to the conductor 54. Then, when the knob 61 is rotated in the direction of the arrow of Fig. 6, one of these legs of the yoke comes into electrical contact with the conductor 54, thereby completing the circuit and effecting an illumination of said lamp.

Referring to Fig. 7, the relatively slender staff 62 of an umbrella or the like is provided with an enlarged opaque handle portion 63, having an axial bore 64 in which is positioned a battery 65, which rests upon a compression spring 66, said spring being in turn in contact with a transversely extending portion 67 of a conductor having a longitudinally extending portion 68, which at its opposite outer end projects at 69 through the wall of the handle 63. Said handle is provided outwardly with a reduced, threaded end portion 70 to which is secured the correspondingly threaded lower portion 71 of a hollow, transparent terminal knob 72, which may be of any desired shape or configuration, and is so formed as to secure against the adjacent end of said handle a metallic gasket 73, having a central aperture 74 through and in contact with the sides of which is the outer terminal 75 of a lamp 76, the central terminal 77 of which lamp is in constant engagement with the central terminal of the battery. Said gasket is also provided with a normally downwardly, and thence laterally extending end portion 78, which also projects through the side wall of the handle 63 and in close proximity to, but spaced from the end 69 of the conductor 68. These terminal ends are then adapted to be electrically connected by rotating a band 79, which surrounds said handle and is provided upon its inner surface with a metallic segment 71, whereby oscillation of said band 79 serves to complete or break the current and respectively energize and de-energize the lamp, as the case may be.

Referring to Fig. 8, the staff 72' of an umbrella or the like is, in this case, provided upon its free outer end with a hollow, transparent handle 73', having an inwardly directed annular flange 74', to which is secured a metallic gasket 75' having a central aperture 76', through and in contact with the sides of which is the outer terminal 77' of a lamp 78', the inner terminal 79' of which lamp is in contact with the central terminal of a battery 80. This battery is positioned within an axial bore 81 in an opaque handle section 82, which is in threaded engagement at 83 with the transparent portion 73' of said handle. This opaque portion is closed at its outer end by a wall 84, having a central aperture 85 through which extends a button 86, which upon being pressed inwardly operates to force against the outer energized surface of said battery the freely extending end portion of a resilient switch member 87, the opposite end of which is secured by any suitable means 88 to the inner surface of the end wall 84, and is connected by a wire or other form of conductor 89 to the gasket 75'.

Pressing the button 86 inwardly obviously then causes an illumination of the lamp 78'.

Referring to Fig. 9, the staff 90 of a cane or umbrella is in this case provided with an axial bore 91, containing a battery 92, the outer terminal surface portion of which is in contact with one end 93 of a conductor 94, which in this case is provided with a radially outwardly projecting end portion 95, adapted to contact with an inwardly directed metallic segment 96, carried by an oscillatable, transparent band 97, said segment simultaneously being in contact with the outwardly projecting portion 98 of a conductor 99, which at its outer end is in contact with a metallic gasket 100, said gasket having a central aperture 101 through and in contact with the sides of which is the outer terminal 102 of a lamp 103, the central terminal 104 of which lamp is in contact with the central terminal of the battery 92. The upper end portion of the staff 90 is provided with a reduced, threaded portion 105 to which is secured the lower end of an opaque cylinder 106, which forms a light-arresting liner for the transparent band 97, except for an aperture 107 through which light is permitted to pass outwardly. The outer end of said liner is closed by the handle 108, which is in axial alignment with the staff 90, and over the lower end portion of which also extends the upper portion of said band 97. In this modification, oscillation of said band causes the segment 96 to electrically connect the contacts 95 and 98, so as to energize said lamp and cause rays to shine outwardly through the aperture 107 in the opaque liner 106, and thence through the transparent band 97.

Referring finally to Fig. 10, the staff 110 is here provided with an axial bore 111 containing a battery 112, the outer energized surface of which is in contact with one end 113 of a con-

ductor 114, which extends longitudinally through and against one side wall of the bore 111 to a terminal end portion 115. Said staff is also provided with a threaded, reduced end portion 116, to which is rotatably threaded a hollow, transparent knob 117 having an internal flange 118, against which is positioned a metallic gasket 119, having a bore 120, through and in contact with the sides of which is the outer terminal 121 of a lamp 122. A spring 123 extends between said battery and the adjacent surface of said gasket, also surrounding the adjacent end portion of said lamp, and thereby operates to press the gasket 119 against the knob flange 118. With this construction, rotation or "screwing down" of said knob operates to bring said gasket into contact with the terminal 115, thereby causing the battery to energize the lamp for such length of time as may be desired, and said lamp being de-energized by reversely rotating said knob outwardly.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent of the United States is:

The combination of a staff having a recess, a battery located in said recess, resilient means to force said battery outwardly, and a conductor extending from said battery laterally through a wall of said recess, a metallic gasket carried by said staff, a lamp having one terminal in contact with said gasket, a hollow transparent member secured to said staff and operatively securing said gasket in position, said gasket having a lateral conductor extension also extending through the wall of said recess, and a band having an electrically conductive portion which when angularly shifted connects said conductor extensions to illuminate said lamp.

FRANK A. GEIER.