

Feb. 5, 1929.

1,700,768

J. H. KUECHENMEISTER

FLASH LIGHT

Filed Aug. 5, 1925

2 Sheets-Sheet 1

Fig. 1.

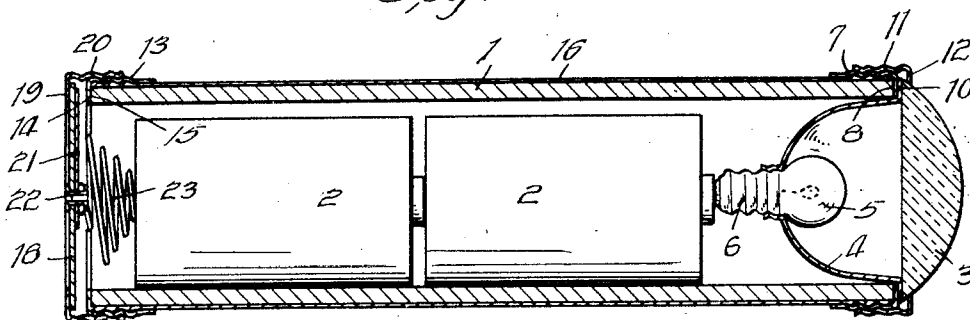


Fig. 2.

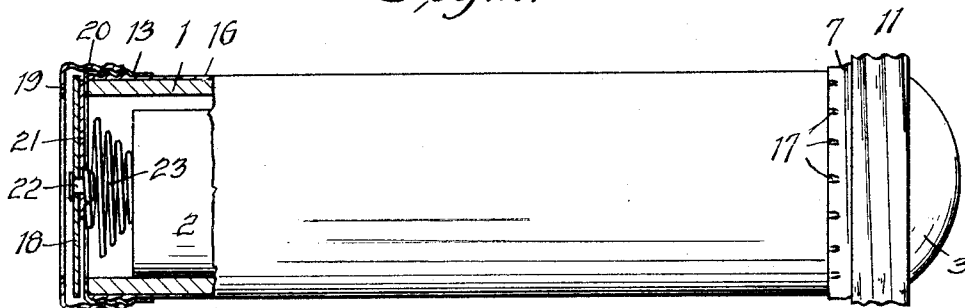
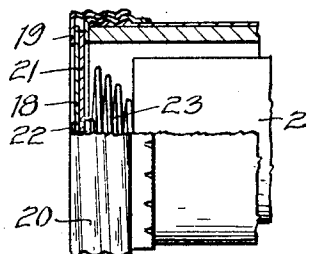


Fig. 3

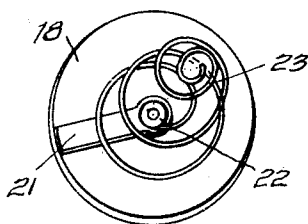


Fig. 4.

Inventor:
John H. Kuechenmeister.
By *Frederick J. Hanson*
Attorney.

Feb. 5, 1929.

1,700,768

J. H. KUECHENMEISTER

FLASH LIGHT

Filed Aug. 5, 1925

2 Sheets-Sheet 2

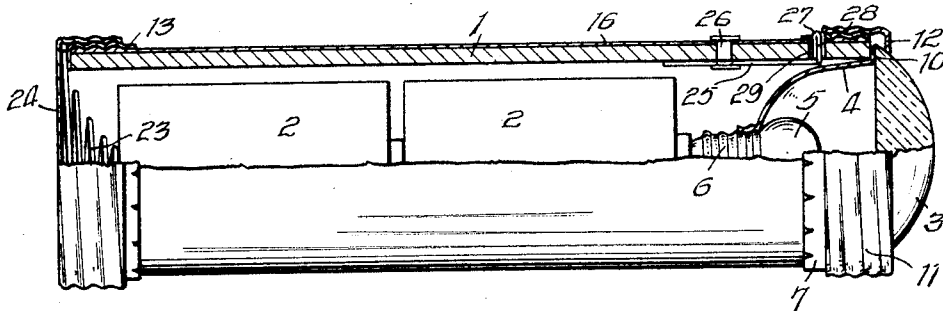


Fig. 5.

Fig. 6.

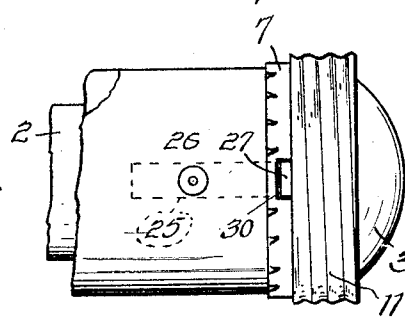
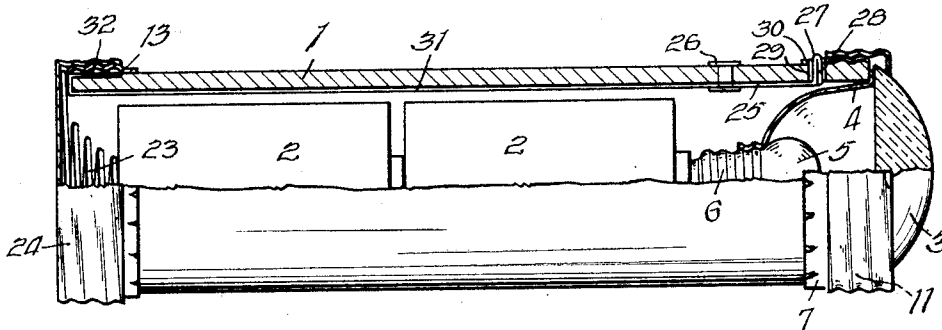
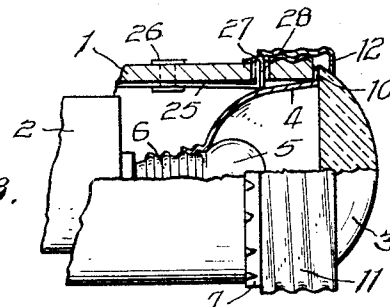


Fig. 7.

Fig. 8.



Inventor:

John H. Kuechenmeister:

By Fred J. Haron,
Attorney.

UNITED STATES PATENT OFFICE.

JOHN H. KUECHENMEISTER, OF CLAYTON, MISSOURI.

FLASH LIGHT.

Application filed August 5, 1925. Serial No. 48,208.

My invention relates to flash-lights, and it is a distinct and practical improvement to overcome certain practical objections to, and defects in, flash-lights of the present construction.

The object of my invention is to provide a flash-light with a tin foil, or equivalent, covering for the casing thereof to act as a conductor of electrical current.

A further object of my invention is to provide a flash-light with a tin foil, or equivalent, covering for the casing thereof to act as a conductor of electrical current and with depressible circuit controlling means for making and breaking the electric circuit.

A further object of the invention is to provide a flash-light having an electric circuit partly within a container and partly upon the outside of the container and yieldable controlling means for said circuit.

A further object of the invention is to provide a circuit closing means in contact at one end with a lengthwise conductor of electrical current and having a yieldable portion provided at one end with an extension to be depressed by the screw threaded sleeve holding the reflector and lens in position and held in such depressed position for engagement with the metallic reflector carrying an electric lamp for affording a permanent light.

A further object of the invention is to provide a flash-light container of fiber stock to which is fixed a circuit closing element that can be moved into contact with the reflector for closing a circuit by depressing one end of the circuit closing member.

A further object of the invention is to provide a flash-light having an outer conductor, an inner yieldable conductor connecting at its inner end with the outer conductor and at its outer end with the reflector, means for holding the outer end of the inner conductor in or out of contact with the reflector, yieldable circuit closing means and means for holding the circuit closing means in a closed position to afford a permanent light when a flash light is not desired.

A still further object of the invention is to provide a flash-light having an outer conductor in the form of a tin foil covering for the casing and in contact at one end with the reflector and yieldable circuit closing means at the opposite end of the flash-light and means for holding the circuit closing means in a closed position when a steady light is desired.

A still further object of the invention is to provide a flash-light, an inner conductor yieldable at one end for contact with a reflector and fixed at its opposite end for contact with a metallic closure for said latter end of the flash-light.

A still further object of the invention is to provide a flash-light which possesses advantages in points of simplicity and efficiency, and, at the same time proves itself comparatively inexpensive in cost of manufacture.

With the above and other objects in view, the invention consists in the novel features of construction, arrangement and combination of parts hereinafter more fully described and finally pointed out in the claims hereto appended.

Referring to the accompanying drawings forming a part of this specification, wherein like characters of reference denote similar parts throughout the several views:

Fig. 1, is a longitudinal sectional view of a flash-light embodying the features of my invention and showing the circuit controlling means in open position.

Fig. 2, is a view partly in side elevation and partly in section, showing the circuit controlling means in closed position, as a flash-light.

Fig. 3, is a detail of one end of a flash-light shown partly in side elevation and partly in sectional elevation with the circuit controlling means permanently closed for a steady light.

Fig. 4, is a perspective view of the depressible circuit controlling means.

Fig. 5, is a view partly in side elevation and partly in sectional elevation showing a modified form of circuit controlling means shown in open position.

Fig. 6, is a detail showing one end of the light shown in Fig. 5, in side elevation.

Fig. 7, is a view partly in side elevation and partly in sectional elevation of a further modified form of flash-light, with the circuit controlling means in open position.

Fig. 8, is a detail of one end thereof showing the circuit controlling means in closed position.

In the drawings, the reference character 1 represents a tubular container which is made from suitable fiber material and which is of any size, such as length, diameter and thickness of wall. The reference numeral 2 represents a pair of suitable batteries; 3, the lens; 4, the metallic reflector; 5, the electric

lamp bulb for said reflector; and, 6, the electrical connection between the batteries and the lamp. The batteries, lens, lamp bulb, reflector and electrical connection 6 are of the usual character, as is manifest.

The forward end of the tubular container 1 is provided with a fixed metallic screw threaded sleeve 7 having the inturned forward edge 8 engaging the end face 9 of the container. Mounted upon the inturned edge 8 of the sleeve 7 is the customary reflector 4 which has an outwardly flanged forward edge 10 to seat upon the inturned edge 8 of the sleeve 7. The lens 3 is seated upon the reflector flange 10 and the lens 3 and the reflector 4 are both secured against displacement by means of a metallic screw threaded retaining ring 11 engaging the sleeve 7, which ring 11 is provided with the inturned edge 12 for engaging the lens 3.

The container 1 is provided at its rear end with a fixed metallic screw threaded sleeve 13 having the inturned rearward edge 14 engaging the end face 15 of the container 1.

The numeral 16 designates a suitable outer conductor. The outer conductor 16 acts as a covering for the container 1 and it is in the form of a sheet of tin foil applied to the outer face of the container 1. The sleeves 7 and 13 engage the tin foil conductor covering 16 as clearly shown in Fig. 1, and are crimped to the container, as at 17, as shown in Fig. 2.

The circuit controlling means comprises a suitable disk 18 of non-conducting material limited as to outward displacement by means of an inturned flange 19 at the rear edge of a screw threaded retaining ring 20 mounted upon the sleeve 13. A suitable conductor 21 in the form of a flat metallic strip, is fixed to the inside face of the disk 18 at the center thereof by means of a suitable rivet 22. The conductor strip 21 extends radially to the peripheral edge of the disk 18, as shown in Fig. 4. A coiled spring conductor 23 is connected at its outer end to the rivet 22 and the forward end thereof is in contact with the rear end face of the rear battery 2. The coiled conductor 23 serves the dual function of holding the batteries in contact with each other and the front battery in contact with the lamp connection 6 and also for holding the conductor strip 21 out of contact with the inturned flange 14 of the conductor sleeve 13 when the ring 20 is slightly backed off on the sleeve 13, as shown in Fig. 1.

It will be here observed that when the circuit controlling disk 18 is forced inwardly by means of the fingers of the operator that the conductor 21 is moved into contact with the flange 14 of the sleeve 13, thereby closing the electric circuit when it is desired to operate the device as a flash-light. When pressure is relieved against the disk 18, it will be instantly retracted by the action of the

coiled spring conductor 23, thereby opening the circuit.

Now, if it is desired to establish and burn a steady light, the operator turns the ring 20 inwardly upon the sleeve 13 which moves the conductor 21 into contact with the flange 14 of sleeve 13 for closing the electric circuit, as is manifest, and which is clearly shown in Fig. 3.

In the modified form of device shown in Figs. 5 and 6, it will be observed that I eliminate the ring 20, the disk 18 and the conductor strip 21 and substitute therefor the screw threaded cap 24; also, I eliminate the rivet 22 due to the fact that the base of the coiled conductor 23 is enlarged to bind against the side wall of the cap 24. I further eliminate the flange 8 of the screw threaded sleeve 7 so as to cause the flange 10 of the reflector 4 to engage the end face 9 of the non-conducting container 1.

The circuit controlling means in the modified form of invention, instead of being in the form of a yieldable disk and conductor strip 21 in contact with the coiled conductor 23, I employ a flat conductor 25 in the form of a flat metallic strip which is fixed to the inner face of the container 1 near the forward end thereof by means of a rivet 26. The rivet 26 passes through the wall of the container 1 and engages the tin foil covering 16 and thereby also acts as a conductor between the conductor 25 and the tin foil conductor 16. The forward end of the conductor 25 is bent upwardly, as at 27 and then back upon itself, as at 28. This folded end of the conductor 25 passes through an opening 29 in the wall of the container 1 and a registering opening 30 in the sleeve 7 with the outer end thereof exposed to be depressed by the finger of the operator to bring the inner end thereof into contact with the reflector 4 when it is desired to close the circuit when operated as a flash-light.

When it is desired to establish and burn a steady light, the retaining ring 11 is moved inwardly upon the sleeve 7 causing the inner edge thereof to engage and depress the folded end of the conductor 25 for firmly holding it in contact with the reflector 4.

The modification shown in Figs. 7 and 8, it will be seen are the same as shown in Figs. 5 and 6, with the exception that I eliminate the tin foil conductor 16 which also acts as a covering for the non-conducting container 1, and, the conductor strip 25 in this modification is provided with a rearwardly directed extension 31 which has its rear end hook shaped, as at 32, and held between the sleeve 13 and the end face 15 of the container 1.

The many advantages of the herein described invention will readily suggest themselves to those skilled in the art to which it appertains.

I do not wish to be understood as having

limited myself to the exact details of construction shown and described, but desire to have it understood that the invention I have shown in the drawings is merely illustrative, 5 as it is manifest that various minor changes may be made in the exact construction and particular arrangement of parts without departing from the spirit of my invention, hence I reserve the right to make any such 10 changes, or modifications as may fairly fall within the scope of the appended claims when fairly construed.

What I claim is:

1. In a flash-light structure, a non-con- 15 ducting container, an outer conductor covering the outer face of the container, a flanged screw threaded sleeve applied to the forward end of the container, a reflector engaging one of said flanged sleeves, a lens mounted upon 20 the reflector, a flanged ring mounted upon said sleeve and engaging the lens, a lamp carried by the reflector and in contact with one end of the battery, a coiled spring conductor 25 in contact with the opposite end of the battery, a sleeve applied to the rear end of the container, a flange ring mounted upon said sleeve, a yieldable non-conducting disk disposed between the flange sleeve and flanged 30 ring and normally in contact with the flange ring to maintain an open circuit and a conductor carried by the disk in contact with the coiled spring conductor and movable with the disk into contact with the flanged sleeve 35 to close the circuit.

2. In a flash-light structure, a non-con- ducting container, an outer conductor covering the outer face of the container, a flanged screw threaded sleeve applied to the forward 40 end of the container, a reflector engaging one end of said flanged sleeve, a lens mounted upon the reflector, a flanged ring mounted upon said sleeve and engaging the lens, a lamp carried by the reflector, a battery, a 45 lamp carried by the reflector and in contact

with one end of the battery, a coiled spring conductor in contact with the opposite end of the battery, a sleeve applied to the rear end of the container, a flange ring mounted upon said sleeve, a yieldable non-conducting disk 50 disposed between the flange sleeve and flanged ring and normally in contact with the flange ring to maintain an open circuit, a conductor carried by the disk in contact with the coiled spring conductor and movable with the disk 55 into contact with the flanged sleeve to close the circuit for flash-light purposes and held in contact with flanged sleeve by said flanged ring when a steady light is desired.

3. In a flash-light structure, a non-conduct- 60 ing tubular container, an electric light circuit including a battery, a lamp, a reflector, a flanged sleeve applied to each end of the container and a tin foil conductor applied to the outer face of the container and in contact 65 with the sleeves and circuit controlling means including a yieldingly supported disk and a conductor fixed to said disk which is in contact with the battery at one end and normally out of contact with one of the sleeves at its op- 70 posite end.

4. In a flash-light structure, a non-conduct- ing tubular container, an electric light circuit including a battery, a lamp, a reflector, a flanged sleeve applied to each end of the con- 75 tainer and a tin foil conductor applied to the outer face of the container and in contact with the sleeves, circuit controlling means including a yieldingly supported disk and a conductor fixed to said disk which is elec- 80 trically connected with the battery at one end and normally out of contact with one of the sleeves at its opposite end and a flanged ring mounted upon one of the sleeves to hold the conductor fixed to said disk in contact with 85 sleeve upon which the flanged ring is mounted.

In testimony whereof, I have hereunto signed my name to the specification.

JOHN H. KUECHENMEISTER.