July 30, 1935. M. L. BEAUMONT 2,009,952

FLASH LIGHT

Filed Nov. 22, 1933

Fig. 1.

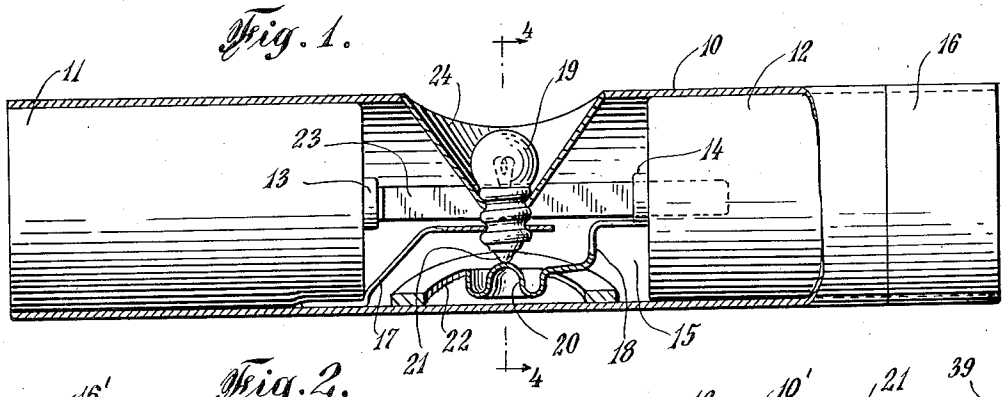


Fig. 2.

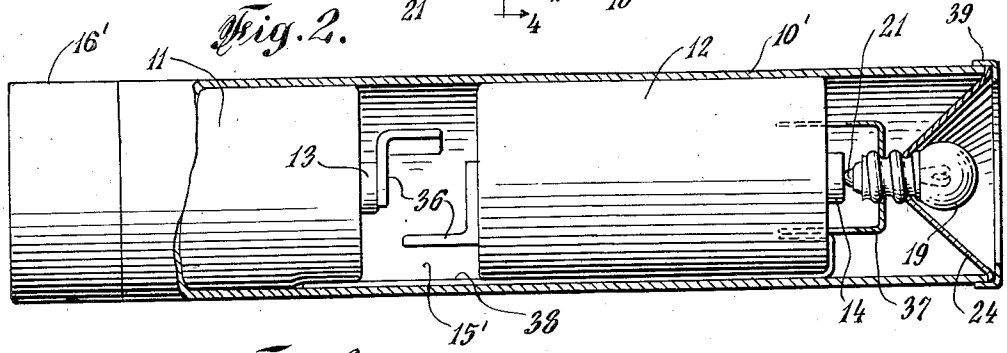


Fig. 3.

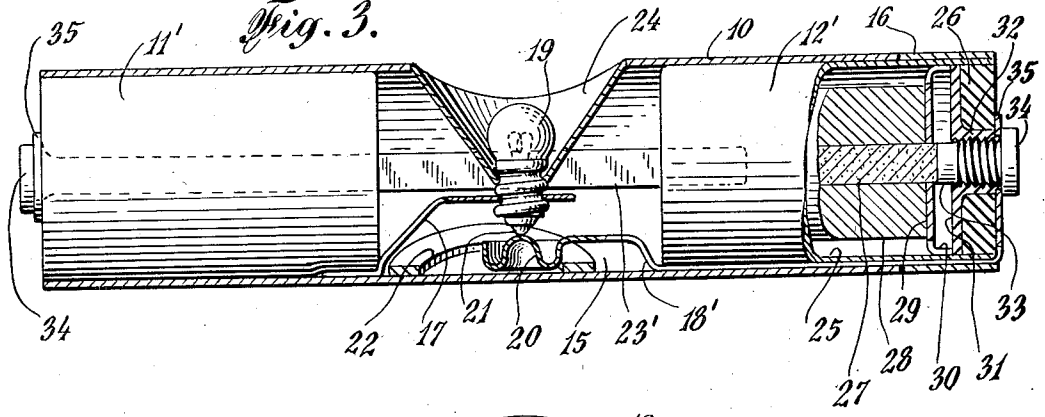
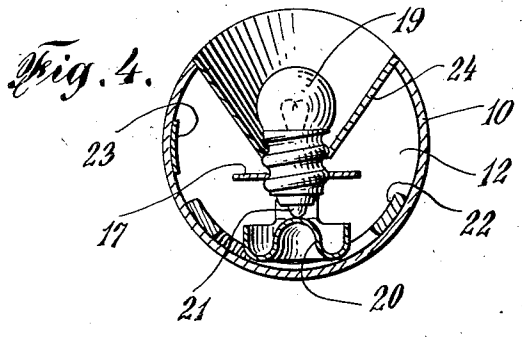


Fig. 4.



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FLASH LIGHT

Marie L. Beaumont, Brooklyn, N. Y., assignor, by mesne assignments, to William Custer Hammond, Kalamazoo, Mich.

Application November 22, 1933, Serial No. 699,140

5 Claims. (Cl. 240—10.66)

The present invention relates to flashlights, particularly of the portable type.

The principal object of this invention is to provide a flashlight of novel and improved construction, wherein the lamp is controlled by relative movement of its electric cell with respect to any other component of the device.

Another object is to provide a novel flashlight of the character described, wherein the circuit actuating the lamp is controlled by an improved switching means.

A further object of this invention is to provide an improved flashlight having a novel arrangement of its constituent parts.

Another object is to provide an improved flashlight of the nature set forth, which is controllable in the novel manner aforesaid and adapted to employ electric cells of the inactive type.

A further important object of my present invention is to provide a device of the character mentioned, which is simple in construction, cheap to manufacture, efficient in operation and easy to use.

With these objects in view and others which will be suggested and become manifest as the purposes and nature of my invention are fully disclosed and revealed in the following specification and drawing, I have shown several embodiments thereof.

In the accompanying drawing, forming a part of this application, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 shows a longitudinal, partial central section through a flashlight embodying my present invention, wherein the lamp is mounted intermediate the electric cells.

Fig. 2 is a similar view showing a modified form thereof, where the lamp is mounted at an end of the device.

Fig. 3 is a view showing an embodiment similar to that of Fig. 1, employing however, a pair of cells of the type which are inactive until first made active.

Fig. 4 is a section taken at line 4—4 in Fig. 1.

In the drawing, the numeral 10 designates in Fig. 1 a sleeve or tubular casing, within which, in axial alignment, fit the spaced cylindrical electric cells 11 and 12, with the projecting ends of their respective carbon electrodes 13 and 14, facing each other in the chamber 15 formed within the casing 10; the cell 12, having the portion thereof which projects out of the casing, covered with a tubular element 16, and said cell 12 is movable with respect to the casing 10.

Within the chamber 15, to the zinc container electrode of one, and to the carbon stick electrode of the other of the cells 11 and 12, are respectively secured the spaced metal members 17 and 18, through the former of which is mounted the base of a lamp 19. The member 18 terminates in a button component 20, which is adapted to come in and go out of contact with the central terminal 21, of the lamp 19, upon movement of the cell 12.

A ring element 22, having its inner diameter large enough to permit only limited movement of the button 20 which lies therein, is secured to the casing 10, in such position that when the button 20 and the ring 22 are concentric, contact is established between the button 20 and the terminal 21 of the lamp 19. A metal strip 23, is secured to the carbon electrode 13 of cell 11, and extends along the surface of the chamber 15 and far enough beyond, to maintain brush contact with the zinc container electrode of cell 12. The casing 10 is provided with an opening to the chamber 15, concentric with the lamp 19; a reflector member 24, being mounted about the base of said lamp, and extending upward, terminates at the periphery of said opening.

To operate the device, it is held casing 10 in one hand, while with the other hand on element 16, the cell 12 is either turned a little within the casing 10, or else slid out a little therefrom, whereby the lamp 19 will be either lit or become extinguished depending upon whether the circuit is opened or closed by the contact or separation of the button 20, and the lamp terminal 21. The ring 22 limiting the scope of motion of the button 20, will thereby prevent the cell 12 from becoming disassociated from the casing 10, and will further limit its sliding and turning motion within same.

In the Fig. 3, which is similar to the Fig. 1, with slight modifications necessitated by the use of inactive type cells 11' and 12', the ring member 22 is shown secured eccentrically with respect to the button 20, whereby the cell 12', is permitted only a rotary motion of short range with respect to the casing 10.

In the embodiment shown in Fig. 3, I have included inactive cells of the type invented by Eugene P. Beaumont, set forth and fully disclosed in his application for patent bearing Serial No. 652,270, filed January 18, 1933. In such identical cells 11' and 12', there is in each, a cylindrical zinc can electrode 25, closed by a seal 26, which has a central aperture therein. Within this can 25, in spaced relation therewith and also

spaced from said seal **26**, is mounted a carbon electrode **27**, which has secured thereabout a cylindrical depolarizing mass **28**. A washer **29**, having several radially extending lugs **30**, is secured about the carbon electrode **27**, atop the depolarizing mass **28**; said lugs **30**, being bent toward the seal **26**, so that the washer **29** becomes wedged within the zinc container **25**, serving thereby to concentrically mount the carbon **27** with the mass **28** thereabout within said can. Another washer, numbered **31**, sets atop the lugs **30**, in contact with the seal **26**, and has an internally threaded integral nipple **32**, passing through the aperture in said seal. A carbon plug **33**, terminating at one end in a metal cap **34**, is threadedly engaged in said nipple **32**, and the uncapped end of said plug **33** is in contact, within the cell container **25**, with the end of the carbon electrode **27**; said plug being adapted to be removed temporarily for the admission of an electrolyte within the cell, to bring same into active condition.

By arranging the cells **128** and **11'** so that said removable plugs **33** are accessible at the ends of the device, the activating of said cells is accomplished with ease and is made a simpler matter, since neither of the cells need be removed, to have electrolyte introduced into their interiors whereby they are put into their active state.

It is to be noted, that the construction shown in the Fig. 3, the metal strip members **18'** and **23'**, are each insulated from the zinc containers of the cells **11'** and **12'**, and at their ends, where eye terminals **35** are provided, are respectively in electrical connection with the plugs **33**, which pass through said eyed ends, to secure same to the carbon electrodes **27** electrically. It is evident that the manner of operating this flashlight is identical to that set forth for Fig. 1.

In Fig. 2, the numeral **10'** designates a sleeve or tubular casing within which fit the spaced cells **11** and **12**, forming a chamber **15'** therebetween; the projecting ends of their respective carbon electrodes **13** and **14**, pointing in the same direction. The portion of the cell **11** which projects out of the casing **10'**, is covered with a tubular element **16'**. The cell **12**, is placed within the casing **10'**, to be intermediate the ends thereof.

The cell **11**, is turnable within the tubular member **10'**, to make and break the contact between the angular metal elements **36**, secured within the chamber **15'**, one to the carbon terminal **13**, and the other to the bottom of the zinc container electrode of the cell **12**, which elements **36**, when in contact, connect the cells in series, whereby the circuit controlling the lamp **19** becomes closed. But when the cell **11** is turned so that said elements **36** are in a position to be out of contact, then the lamp circuit is open.

Through a "U" member **37**, the ends of the arms of which are imbedded in the seal of the cell **12**, is mounted the base of a lamp **19**, so that the central terminal **21**, of said lamp be in contact with the carbon electrode terminal **14** of the cell **12**; said member **37**, having secured thereto a connector element **38**, which is insulated throughout except to make brush contact with the zinc container electrode of cell **11**, which it connects electrically with said member **37**. A reflector **24** is mounted about the lamp **19**, and extends to the open end of the tube **16'**, where it is secured by a ferrule **39**. From explanations and descriptions hereinabove set forth, the manner of operating this embodiment is fully evident.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiments shown herein be deemed illustrative and not restrictive, and that the patent shall cover whatever features of patentable novelty exist in the invention disclosed; reference being had to the appended claims rather than to the specific descriptions herein to indicate the scope of the invention.

I claim:—

1. In combination with a lamp, a casing, an electric cell fixed within the casing, a second electric cell partially within the casing and in movable relation with the first cell, and means including the external portion of the second cell to move said cell into series circuit with the first cell and the lamp.

2. In combination with a lamp, a casing, an electric cell fixed within the casing, a second electric cell partially within the casing and in slidable relation with the first cell, and means including the external portion of the second cell to move said cell into series circuit with the first cell and the lamp.

3. In combination with a lamp, a casing, an electric cell fixed within the casing, a second electric cell within the casing and capable of being rotated therein about its longitudinal axis, and means whereby the lamp is actuated upon turning the second electric cell.

4. In combination with a lamp, a casing, an electric cell fixed within the casing, a second electric cell partially within the casing and turnable about its longitudinal axis, and means including the external portion of the second cell to move said cell into series circuit with the first cell and the lamp.

5. In a flashlight of the type described, the combination of a casing, a battery comprising a pair of cells, mounted spaced within the casing and one of them in moveable relation therewith, a pair of conductive elements positioned within the casing between the cells, secured in spaced relation, one to a terminal of each of the cells, and a lamp having its base mounted in one of said elements and its central terminal in contact with the other of said elements; said contact becoming broken on motion of the movable cell, whereby the lamp is extinguished.

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