

Sept. 8, 1953

H. G. CLARK
BATTERY OPERATED LAMP HAVING ANCHORING MEANS TO
POSITION THE LAMP AND HOLD THE SWITCH CLOSED
Filed Feb. 20, 1950

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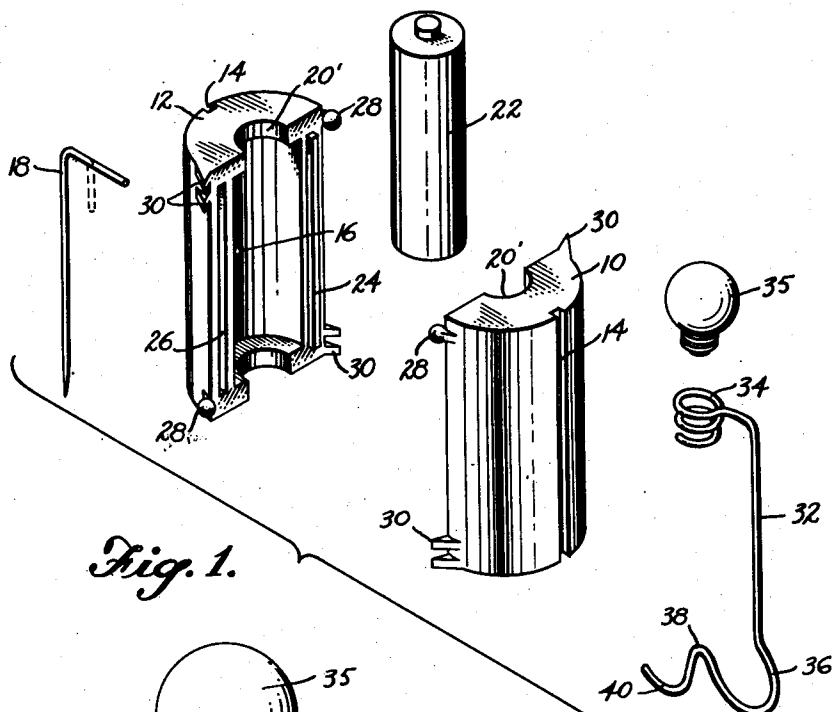


Fig. 1.

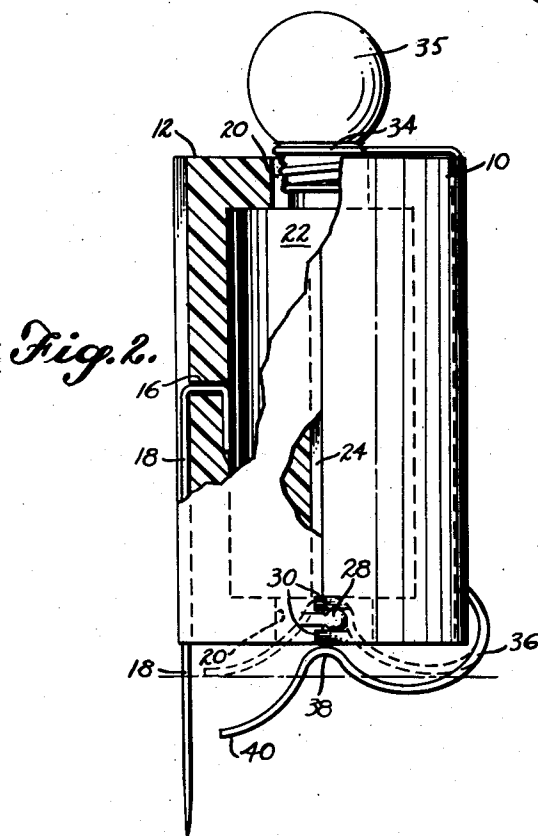


Fig. 2.

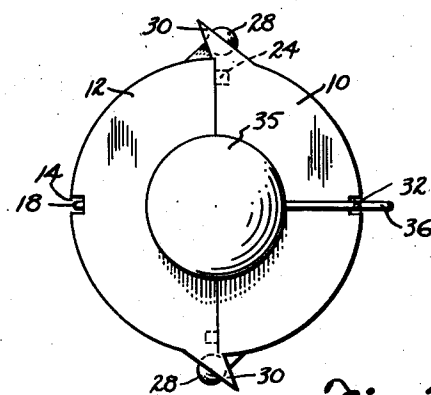


Fig. 3.

INVENTOR.
HERBERT G. CLARK
BY
Reynolds, Beach & Christensen
ATTORNEYS

UNITED STATES PATENT OFFICE

2,651,710

BATTERY OPERATED LAMP HAVING ANCHORING MEANS TO POSITION THE LAMP AND HOLD THE SWITCH CLOSED

Herbert G. Clark, Bellevue, Wash.

Application February 20, 1950, Serial No. 145,158

3 Claims. (Cl. 240-10.6)

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This invention relates to a battery-operated portable lamp for jack-o'-lanterns and similar applications. Its chief object is to provide a compact, inexpensive, and reliable dry cell and lamp bulb holder combination, which includes switch means operable automatically to complete the lamp circuit upon installation of the lamp in the jack-o'-lantern, for instance, and to break such circuit when the lamp is removed.

A further object of the invention is to provide a novel dry-cell operated lamp construction, in which the parts are easy to assemble and disassemble, can be of rugged though inexpensive construction, and will hold well together under conditions of rough usage.

Briefly described, my novel dry cell operated lamp construction comprises a dry cell holder in the form of a two-part cylindrical plastic shell, one end of which has an opening to admit the terminal end of a lamp bulb for contacting the dry cell center post, and the opposite end of which is provided with an opening to admit a switch element for contacting and disengaging from the opposite end or terminal of the dry cell, thereby to make and break the lamp circuit.

Preferably such dry cell holder comprises semicylindrical parts or halves of substantially identical form, such as can be made in the same mold, which parts are normally held together by snap-action elements, but can be separated for replacement of a dry cell by application of a reasonable force. A longitudinal groove in the outer shell wall receives the intermediate portion of a clamp-on wire conductor, which at one end carries a lamp bulb socket positioned in one end opening of the shell. The opposite end of this conductor forms a resilient switch arm which has a switch-contact portion underlying the bottom opening of the shell and is bent upward for deflection into contact with the dry cell to complete the lamp circuit when the lamp is installed by placing it upright on its base. The dry cell holder preferably has an anchor pin projecting downwardly to hold the lamp, like a candle, in upright position.

These and other features, objects, and advantages of the invention, including certain details of its preferred and illustrated form, will now be described in detail by reference to the accompanying drawings.

Figure 1 is an exploded isometric view of the novel lamp.

Figure 2 is a side view of the lamp, with parts broken away to show certain details.

Figure 3 is a top view of the same.

The cylindrical dry cell holder is formed as a hollow shell in two semicylindrical halves 10 and 12, which are substantially identical in shape and can be made of a plastic material formed in the same mold. The two parts are held together

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firmly, although releasably, by snap action afforded between the detent bulbs 28 and complementary resiliently expansible sockets 30 located at opposite ends of both meeting shell edges. These sockets are formed by parallel, closely spaced, radially projecting ears 30, between and past the restricting initial contact edges of which the bulbs 28 are wedged, and which ears then exert pressure toward each other to retain the bulbs, when the two halves 10 and 12 are forced together in registry. The bulbs are held between the respective pairs of ears because of the relative divergence of the inner faces of the latter as shown at the bottom of Figure 2.

Each of these shell halves 10 and 12 also preferably has a tongue 24 and a groove 26 along its respective longitudinal edges, matching complementary elements on the other shell half to locate the two halves in both lateral and longitudinal registry when brought together. As shown, these tongue and groove elements may extend virtually the entire length of the longitudinal surfaces which form the interface between the parts 10 and 12 in assembled position. As thus assembled the dry cell holder or shell has end walls each with a central aperture 20 formed by complementary semicircular notches 20' in the inner edges of the end walls of the shell halves 10 and 12. These openings expose the respective ends of a dry cell 22, constituting its opposite electric terminals, within the holder, but are not large enough to permit the dry cell itself to slip endwise out of the closed holder. Preferably these notches are identical, so that two shell halves could be assembled whichever end of one half was matched with a given end of the other half if the tongues 24 and grooves 26 were not provided.

Both shell parts have longitudinal grooves 14 in their outer wall, which extend from top to bottom preferably midway between their longitudinal edges. The part 12 has a small aperture 16 in its groove 14, generally midway between its ends, to receive the bent upper end of a pointed anchor pin 18, lying partly in the groove 14 of such part and projecting partly below the holder, as shown best in Figure 2. The end of pin 18 passing through hole 16 may be bent back on itself to anchor the pin securely in the hole. The other half 10 of the semicylindrical shell requires no such aperture, but may have one if the aperture is formed in the molding operation and it is desired to manufacture both halves 10 and 12 in the same mold.

The lamp assembly is completed by the clamp-on wire conductor 32, the intermediate straight portion of which is adapted to lie in the groove 14 of the part 10. The grooves in both parts 10 and 12 may be of dove-tail cross section, and the wires 18 and 32 may be of such size as to

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be snapped laterally into their respective grooves so that they will be retained in their grooves against accidental displacement. The upper end of the conductor wire, projecting slightly above the holder, is turned inward and forms a helical spiral 34, constituting a screw socket for the lamp bulb 35, to hold such bulb positioned with its terminal end portion in contact with the upper end of the dry cell, as shown in Figure 3. A spot of suitable adhesive may be placed on the wire and bridging the groove to secure the wire to the case so as to hold the conductor 32 from sliding upward and breaking contact between the lamp bulb and the dry cell terminal. The lower end portion 36 of the clamp-on wire conductor 32 curves first somewhat outward, then downward and inward toward the dry cell holder axis, then upward toward and preferably slightly into, but not entirely through, the lower end wall aperture 20, where it forms a peak 38, constituting a switch contact, and then curves downward rather sharply to its end 40.

In the relaxed or switch-open position of the wire, shown by solid lines in Figure 2, the lower end or tail portion 40 is in its lowermost position, and no part of the wire contacts the bottom of the dry cell within the dry cell holder. However, when the lamp is installed in a jack-o'-lantern, for instance, by pressing its anchor pin 18 into the bottom of the jack-o'-lantern, the tail 40 is forced upward until the conductor peak 38 contacts the bottom of the dry cell 22, as shown by dotted lines in Figure 2, completing the electric circuit for the lamp.

The conductor wire 32 is resilient, so that its lower end recovers its original switch-open shape, and thereby opens the lamp circuit, automatically when the lamp is lifted off its base. Preferably the wire is sufficiently flexible, however, that the mere combined weight of the lamp parts resting upon it is sufficient to close the switch and complete the circuit, the anchor pin 18 serving simply to hold the lamp upright and to prevent it sliding when the jack-o'-lantern is tilted. It will be noted that the entrance of the wire coil 34, forming the lamp bulb socket, into the aperture 20 at the top of the battery shell will restrain swiveling of wire 32 which would swing peak 38 out of registry with the aperture 20 in the bottom of the shell.

It will be understood that the lamp form shown in the drawings and described in detail is primarily illustrative, and that certain variations may be made within the principles of the invention as hereinafter claimed.

I claim as my invention:

1. A battery operated lamp comprising a normally upright dry cell holding casing having apertured ends, a lamp socket received in said aperture in the upper end of said casing operable to hold the terminal end of a lamp bulb in contact with the upper end of a dry cell received in said casing, a switch wire having one end secured to said lamp bulb socket, its central portion extending from the socket end of said casing lengthwise thereof beyond the lower end of the casing, and the end portion of said wire remote from its socket-connected end including an upwardly bent portion in registry with the bottom end aperture of said casing, a pressure-receiving portion inclined from said upwardly bent portion downwardly and engageable with a surface beneath said casing to hold said upwardly bent

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wire portion in contact with a dry cell in said casing, and said wire portion between said upwardly bent portion and said central portion being curved and resiliently biased in a direction to swing said upwardly bent wire portion downwardly from said cell end when pressure is removed from the lower end of said wire, and holding means carried by said casing and operable to secure said casing relative to such surface in position to maintain pressure thereof against said pressure receiving wire portion to hold the upwardly bent portion thereof in dry cell contacting position.

2. A battery operated lamp comprising a normally upright dry cell holding casing having apertured ends and an external groove extending lengthwise thereof substantially from end to end, a lamp socket received in said aperture in the upper end of said casing operable to hold the terminal end of a lamp bulb in contact with the upper end of a dry cell received in said casing, a switch wire having one end secured to said lamp bulb socket, its central portion extending from the socket end of said casing lengthwise thereof beyond the lower end of the casing and received in said casing groove, and the end portion of said wire remote from its socket-connected end including an upwardly bent portion in registry with the bottom end aperture of said casing, a pressure-receiving portion inclined from said upwardly bent portion downwardly and engageable with a surface beneath said casing to hold said upwardly bent wire portion in contact with a dry cell in said casing, and said wire portion between said upwardly bent portion and said central portion being curved and resiliently biased in a direction to swing said upwardly bent wire portion downwardly from said cell end when pressure is removed from the lower end of said wire, and holding means carried by said casing engageable with the switch wire engaging surface adjacent to such pressure receiving wire portion and operable to secure said casing relative to such surface in position to maintain pressure thereof against said pressure receiving wire portion to hold the upwardly bent portion thereof in dry cell contacting position.

3. The lamp defined in claim 1, in which the holding means is a wire secured to the side of the casing adjacent to the downwardly inclined pressure receiving portion of the switch wire to penetrate the switch wire engaging surface at a location immediately adjacent to such pressure receiving portion of the switch wire.

HERBERT G. CLARK.

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