

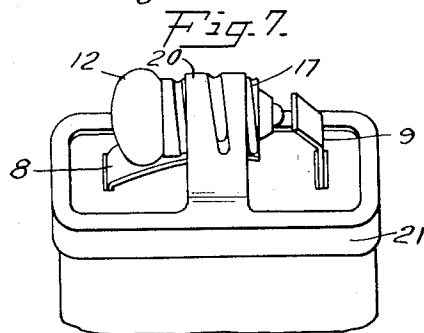
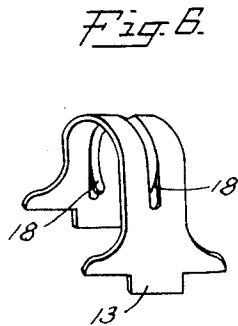
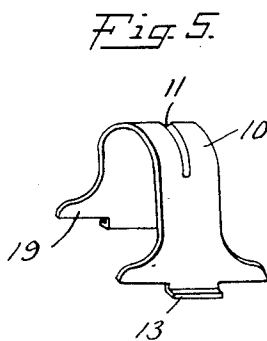
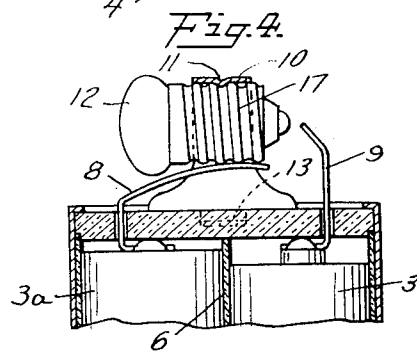
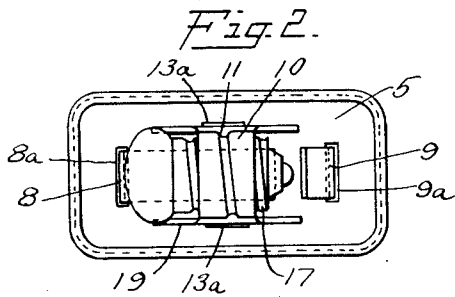
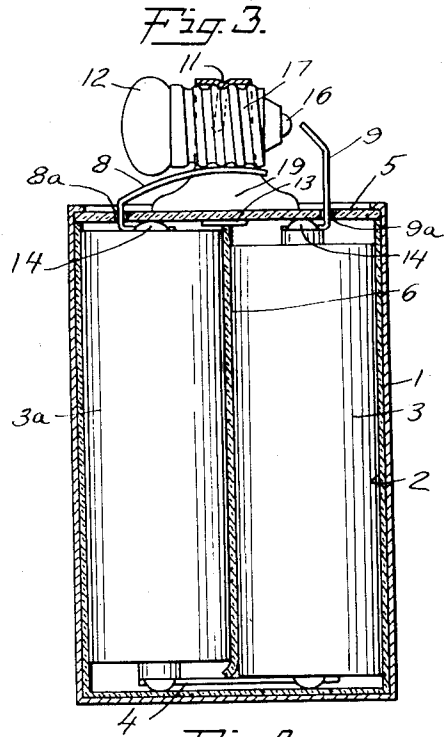
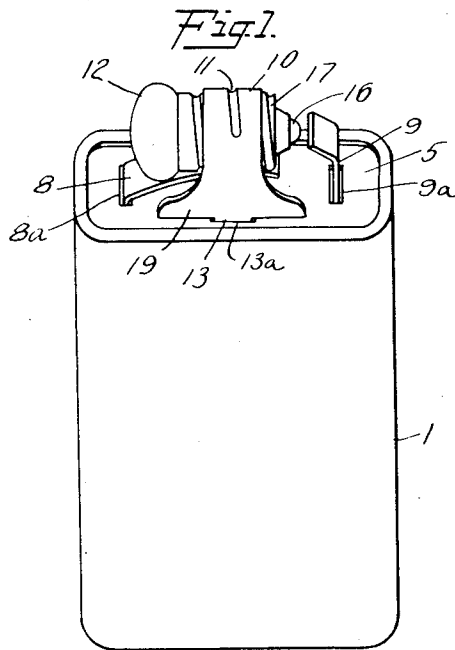
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W. B. SCHULTE

1,940,023

HAND LAMP

Filed Nov. 25, 1931



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UNITED STATES PATENT OFFICE

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HAND LAMP

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Application November 25, 1931
Serial No. 577,266

8 Claims. (Cl. 240—10.61)

My invention relates to a battery hand lamp and consists of a dry cell battery having an incandescent bulb mounted adjustably in a holder above said battery.

It is an object of this invention to provide an inexpensive battery hand lamp which does not require a casing or carton.

It is a further object of this invention to provide a battery hand lamp which may be operated intermittently or continuously without the use of a switch as a separate element of the circuit.

Further objects and advantages will become apparent from the following detailed description which is to be taken in conjunction with the accompanying drawing wherein:

Fig. 1 is a perspective view of a hand lamp made according to the invention;

Fig. 2 is a plan view of the hand lamp of Fig. 1;

Fig. 3 is a vertical, sectional view of the hand lamp;

Fig. 4 is a view similar to Fig. 3 but showing a slightly different embodiment of the invention;

Fig. 5 is a perspective view of the arched bulb holder of the hand lamp illustrated in Figs. 1 to 4;

Fig. 6 is a perspective view of a slightly modified form of my arched bulb holder; and

Fig. 7 is a partial, perspective view of a hand lamp employing a further modified form of arched bulb holder.

Like numbers indicate like parts in the several figures. Briefly, the hand lamp comprises an incandescent bulb mounted in an arched bulb holder on the top of a flashlight battery unit. The battery unit may be similar to that described and claimed in copending W. B.

Schulte and J. S. Zook application Serial No. 382,181 filed July 30, 1929. The battery comprises one or more dry cells, Fig. 3 showing two cells 3 and 3a, connected electrically at the bottom as by means of conductor 4. The individual

cells are separated by means of a suitable insulating partition, such as paper sheet 6. The battery is enclosed in a carton 1, which may be of insulating material, such as paper or a moulded phenolic condensation product, or of metal

lined with a suitable insulating material, such as paper 2. The top closure of said carton may be a disc 5 of stiff insulating material such as pressed paper board. The closure rests upon the top of the cells and the top of the partition

6, or upon the top of insulating lining 2. It is

held in place by crimping the top edge of carton over it. Spring terminal leads 8 and 9 are permanently fastened to the poles of said battery, as by solder at 14 and 15. These terminals extend upwardly through openings 8a and 9a in the end portions of the closure. Terminal leads 8 and 9 are made preferably of spring metal. As in the ordinary battery of this type one terminal lead 9 is shorter than the other. The shorter terminal projects substantially perpendicularly upwardly from the top of the battery while the longer terminal lead 8 is inclined at an angle to the top of the battery and toward the shorter terminal lead.

A bulb holder in the form of sheet metal arch 10 is mounted upon the top of the battery just described. As shown in Fig. 5 the arch has leg portions 19 which may be enlarged at their bases. Projecting from the base of each leg is a reduced end portion or lug 13. One or more grooves or corrugations 11 may be formed in the top of the arch.

Laterally spaced slots 13a are provided in the side portions of the battery top closure to receive lugs 13 of arch 10. Slots 13a may be of a size just large enough to receive lugs 13. In such case arch 10 is mounted upon disc 5 before the latter is mounted in the end of casing 1, and the ends of lugs 13 may be turned at right angles to lock arch 10 in position. Slots 13a may be sufficiently large to receive lugs 13 after they are bent as shown in Fig. 5 and the legs of arch 10 may be normally spaced farther apart than the distance between slots 13a, so that after lugs 13 are inserted in slots 13a they will press against the far sides of the slots and be maintained in position. The advantage of the latter construction is that the battery and arch may be sold separately so that it is necessary only to replace exhausted batteries.

Arch 10 is preferably made of spring metal, but stiff fibrous material or a moulded phenolic condensation product or other stiff, resilient material may be used as well. When bulb holder or arch 10 is in its position it is located longitudinally and substantially centrally of the top of the battery, extending over long terminal lead 8 and to one side of short terminal lead 9.

To complete the hand lamp, an incandescent bulb 12 is inserted longitudinally within the curved portion of arch 10 between the latter and terminal lead 8. The end terminal 16 of the bulb is arranged adjacent and laterally spaced a short distance from terminal lead 9. Terminal lead 8 is depressed by bulb 12 and threaded ter-

minal 17 of the lamp bulb is thus maintained in engagement with the under side of the arch. Corrugation 11 engages the threads of terminal 17 and maintains bulb 12 in position. The latter may be moved longitudinally by screwing it in the ordinary manner or by pushing it. As the bulb is pushed longitudinally, when a corrugation 11 passes a thread upon terminal 17, terminal lead 8 is depressed. When the adjacent groove upon terminal 17 is reached corrugation 11 moves into such groove with a snap. To maintain the hand lamp in the inoperative position terminal 16 of bulb 12 is maintained in spaced relation to terminal lead 9. To energize bulb 12, terminals 16 and 9 are brought into contact with each other. To accomplish this, terminal lead 9 may be moved into contact with terminal 16 or bulb 12 may be moved into contact with terminal lead 9 by either the pushing or the screwing operation described. If the pushing operation is used the snap referred to heretofore gives an audible indication that the hand lamp has been turned on or off properly. If the bulb is in contact with terminal lead 9, the hand lamp may be returned to the inoperative position by pushing terminal lead 9 toward bulb 12. When the latter snaps into the next groove upon terminal 17, terminal lead 9 may be permitted to return to its normal position. The movement of terminal lead 9 toward and away from bulb 12 may be used for flashing contact while movement of bulb 12 toward and away from terminal lead 9 may be used for permanent or continuous contact.

Fig. 4 illustrates a different type of closure for the battery and support for arch 10. It is a preformed disc of phenolic condensation compound or other plastic which is formed with the lugs 13 of arch 10 imbedded therein. With such construction the arch is also preferably constructed of hardened resinous or similar composition. The battery closure may be formed by pouring fusible sealing compound into the top portion of casing 1. In such case the bulb holder may be held in position during the operation of forming the closure and when the latter hardens the legs of the holder will be imbedded firmly in the closure.

In the modification of the arch illustrated in Fig. 6 the ends of corrugation 11 are turned inwardly to form lugs 18. The length of lugs 18 may be varied to suit the conditions and material used in making the arch. This type of arch is capable of holding the incandescent bulb in position above the closure of the battery without the aid of spring terminal 8. Lugs 18 may be made so that they do not fit bulb 12 tightly enough to prevent operation of the hand lamp by pushing bulb 12 back and forth.

A preferred form of the hand lamp is shown in Fig. 7. In this case the legs of the bulb holder 20 are attached to a collar 21 instead of having lugs at their ends engaging the closure disc of the battery. This collar is adapted to fit frictionally over the upper portion of the battery. The entire holder preferably is stamped and shaped from a single piece of sheet metal. The frictional engagement between the battery and collar 21 is sufficient to prevent the holder from becoming detached from the battery during normal use. When a metal carton is used as the battery container with this type of bulb holder, care should be taken that cell 3 is insulated therefrom as is stated to be possible in

the mentioned application Serial No. 382,181. It is preferable to insulate both cells from the container to avoid all possibility of the bulb holder causing a short circuit. In the device shown in Fig. 7 the bulb holder, with or without the bulb mounted therein, may be sold separately.

I claim:

1. A caseless hand lamp comprising, in combination, a battery, said battery comprising a plurality of electrically connected dry cells, a rigid container for said battery, a top closure for said container comprising a stiff insulating disc, resilient terminal leads connected permanently to terminal cells of said battery, said terminal leads projecting freely through said top closure, the projecting portion of one of said terminal leads being inclined toward the other terminal lead, a metal arch mounted upon said top closure and over said first terminal lead, means for mounting said arch comprising lugs at the ends of the legs thereof engaging slots in said closure disc, a groove in the curved portion of said arch, and an incandescent bulb mounted longitudinally within the curved portion of said arch with its threaded terminal engaging said groove, said first terminal lead being in continuous contact with said threaded terminal and pressing said terminal against said arch, the end terminal of said bulb being arranged adjacent and spaced from the second terminal lead of said battery whereby operation of said hand lamp may be effected by movement of said end terminal and second terminal lead into contact with each other.

2. A caseless hand lamp comprising, in combination, a battery, said battery comprising a plurality of electrically connected dry cells, a rigid container for said battery, resilient terminal leads connected permanently to terminal cells of said battery and projecting from the top of said container, the projecting portion of the first of said terminal leads being inclined toward the second terminal lead, an arch of stiff material mounted upon the top of said container and over said first terminal lead, a groove in the curved portion of said arch, and an incandescent bulb mounted longitudinally within the curved portion of said arch, the threaded terminal of said bulb being held under compression between said arch and said first terminal lead, and the end terminal of said bulb being arranged adjacent and spaced from said second terminal lead.

3. A caseless hand lamp comprising, in combination, a battery, said battery comprising a plurality of electrically connected dry cells, a rigid container for said battery, said battery having resilient terminal leads projecting from the top of said container, the first of said terminal leads being inclined toward the second terminal lead, an arch shaped strip of stiff material curved on a center parallel to the top of the battery and removably mounted upon the top of said container and over said first terminal lead, an incandescent bulb mounted within the curved portion of said strip with its long axis parallel to the top of the battery, and means in said strip for positioning said bulb, said first terminal lead being in contact with the threaded terminal of said bulb, the end terminal of said bulb being arranged laterally adjacent and spaced from said second terminal lead.

4. A caseless hand lamp comprising, in combination, a battery, said battery comprising a plurality of electrically connected dry cells, a

rigid container for said battery, resilient battery terminal leads projecting from the top of said container, a collar conforming to the shape of the top of said container and fitting about the top of said container, an arch shaped strip of stiff material mounted upon said collar, and an incandescent bulb mounted movably within said strip, one terminal of said bulb being in continuous contact with one of said battery terminal leads, the other bulb terminal being arranged laterally adjacent and spaced from the other battery terminal lead.

5. A caseless hand lamp comprising, in combination, a battery, said battery comprising a plurality of electrically connected dry cells, a rigid container for said battery, resilient terminal leads projecting from the top of said container, an arch of stiff material mounted upon said container and above said terminal leads, and an incandescent bulb held in place between the curved portion of said arch and said first terminal lead, said first terminal lead being in contact with the threaded terminal of said bulb, the end terminal of said bulb being arranged laterally adjacent and spaced from the second terminal lead.

6. A caseless hand lamp comprising, in combination, a battery, said battery comprising a plurality of electrically connected dry cells, a rigid container for said battery, resilient battery terminal leads projecting from the top of said container, an arch of stiff material curved on a center parallel to the top of the battery and mounted upon said container top, and an incandescent bulb mounted for translational longitudinal movement within the curved portion of said arch, and with its long axis parallel to the top of the battery, the screw thread terminal of said bulb being in contact with one of said battery terminals and the end terminal of said bulb being positioned with reference to the other of said battery terminals whereby said hand lamp is operable by movement of said bulb into contact with said second battery terminal.

7. A separable head for a hand lamp battery adapted to retain a miniature incandescent bulb between said separable head and a resilient terminal of said battery, said separable head comprising an arch of stiff material, a groove in the curved portion of said arch whereby a bulb may be positioned between the curved portion of the arch and said resilient terminal lead of the battery and be retained in position by the engagement of said grooves and one of the threads on the base of the bulb, and the collar attached to the legs of said arch.

8. A separable head for a hand lamp battery adapted to retain a miniature incandescent bulb between said head and a resilient terminal lead of said battery, said separable head comprising an arch of stiff material, the legs of said arch having means at the ends thereof for attaching said arch to a battery, and means on the curved portion of said arch adapted to cooperate with said resilient terminal lead to retain a lamp bulb in said holder.

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