PATENT SPECIFICATION (11) 1 573 076

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(21) Application No. 9656/78 (22) Filed 10 March 1978

(31) Convention Application No. 776 593 (32) Filed 11 March 1977 in

(33) United States of America (US)

(44) Complete Specification published 13 Aug. 1980

(51) INT. CL.[3] A45D 33/32

(52) Index at acceptance B8P P

(54) LIGHTED COMPACT

(71) I, RAYMOND BOYD, a Citizen of the United States of America, of 2235 Cambridge Road, Broomall, Pennsylvania, United States of America, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a lighted compact and more particularly to an illuminated ladies compact which includes a battery source and light bulbs operated by the battery for illuminating the users face.

Battery operated lighted ladies compacts have been known for many years. However, one common fault which exists in these prior art compacts is in the positioning of the various electrical components and in the operation of the switch. In many of these compacts the battery or switch was located in either the cover or bottom member when the lights were mounted in the other. As a result it was often necessary to run wires between the cover and bottom member. Frequent opening and closing of the compact could result in breakage of the wires.

Prior art lighted compacts have also been relatively expensive to manufacture resulting from the fact that the electrical components were mounted in several different places.

According to the present invention there is provided a lighted compact comprising a shallow bottom case member; a shallow cover member having a configuration complementary to the peripheral configuration of the bottom case member; hinge means joining the bottom case member and said cover member for pivotal movement between an opened position and a closed position, part of the hinge means being carried by said bottom case member and part of the hinge means being carried by the cover member; a mirror locatable within the cover member; a battery positioned within the cover member behind the mirror; light diffusing means locatable within the cover member adjacent the mirror; electrically operated illuminating means positioned behind said light diffusing means; switch means positioned within the cover member and including movable actuator means; circuit means electrically interconnecting the battery, the illuminating means and the switch means; said part of the hinge means on the bottom case member being constituted, at least in part, by a cam surface adapted to engage the actuator means for moving the same from an off position to an on position during opening movement of the compact from its closed position, and from an on position back to its off position as the compact is closed.

There is later described by way of example an illuminated ladies compact wherein the various electrical components can be easily and quickly replaced if repairs are ever necessary. This illuminated compact has a bottom case member into which are mounted standard sized compact powders. A cover member and an intermediate member both of which have a configuration complementary to the bottom case member are hinged to the bottom case member. Mounted within the inside of the cover member is a battery, a switch and a pair of electrical lights. The intermediate member, which covers the battery, lights and switch, includes a mirror and light diffusers. The hinge on the bottom case member includes a cam surface which is adapted to engage the switch so that the lights are turned on when the compact is opened and are turned off when the compact is closed. The electrical conductors of the compact function as the light sockets, the switch and the battery contacts in addition to interconnecting the various components.

The present invention will become further apparent from the following exemplary description of a preferred embodiment as illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of a compact embodying the present invention in its open position with the intermediate member raised;

Figure 2 is a top plan view of the compact in its fully open position;

Figure 3 is a plan view of the intermediate members of the compact with the mirror removed;

Figure 4 is a view similar to Figure 2 but showing the inside of the cover member and the rear side of the intermediate member;

Figure 5 is a cross-sectional view taken along the line 5-5 in Figure 4;

Figure 6 is a view similar to Figure 5 but showing the compact in a 90 degree open position, and

Figure 7 is a detailed view of the cam and switch arrangement of the compact.

Referring to the drawings, there is shown in Figure 1 a lighted compact 10 that includes three main elements: a shallow bottom case member 12; a shallow cover member 14; and an intermediate member 16.

All three of the members 12, 14 and 16 have a similar peripheral shape. The peripheral configuration of the cover member 14 is complementary to the configuration of the bottom case member 12 so as to allow the two members to close together. The peripheral configuration of the intermediate member 16 is complementary to but slightly smaller than the inside perimeter of the cover member 14 so that the intermediate member can fit within the cover member 14 as shown in Figure 2. All three members are hinged for pivotal movement with respect to each other through hinge elements on each of the members. Bottom case member 12 includes hinge elements 18, 20 and 22; intermediate member 16 includes hinge elements 24 and 26; and cover member 14 includes hinge elements 28 and 30. All of the hinge elements are aligned along a single axis 31 (see Figures 5 and 6) so as to make all three members 12, 14 and 16 pivotally movable with respect to each other as shown in Figure 1.

As shown in Figures 1 and 2, the bottom case member 12 includes therein a plurality of compacted powders such as 32 and 34. These powders may be eye shadow, blusher, face powder or the like. Also included in the lower case member 12 is a brush 36 and a holder 38 therefor.

The cover member 14, as shown best in Figure 4 has mounted on the inside surface 40 thereof a relatively flat battery 42. A plurality of upwardly extending ribs 44, 46 and 48 maintain the battery 42 in its proper location. Battery 42 may be, for example, a number 9K62 manufactured by P.R. Mallory Co., Inc, having a central terminal of one polarity and turn terminals of the opposite polarity spaced on opposite sides of the central terminal. Also mounted within cover member 14 are illuminating means in the form of electric light bulbs 50 and 52. Bulbs 50 and 52 are of the type which have a flat glass base having electrical contacts on the opposite surfaces of the base. Bulbs 50 and 52 are wired to the battery 42 through elongated flat sheet metal spring-like wires 54, 56, 58 and 60. A plurality of raised guide members such as shown at 62 and 64 form channels which guide the wires 54 and 56 toward the battery. A divider 68 runs between the members 62 and 64 and between the wires 54 and 56 to help guide the same and prevent the wires from shorting. Similar guide members and divider are associated with lamp 52 and wires 58 and 60.

The ends of guide members 62 and 64 adjacent the bulb 50 also function as the socket for the light. It should be noted that the divider 68 stops short of the ends of the members 62 and 64. The wires 54 and 60, however, continue substantially to the end of the channel. Bulb 50 is merely pushed into the space between the members 62 and 64 so that the wires 54 and 56 contact the sides of the base of the bulb. Again, a similar arrangement on the other side of the cover serves as a socket for bulb 52. Preferably also, a reflective material 70 is mounted beneath the bulbs.

Wires 54 and 60 also serve as the switch for turning the bulbs 50 and 52 on and off. As shown best in Figures 4 to 7, wires 54 and 60 are bent outwardly in a direction parallel to the plane of the cover member and are then again bent inwardly to form projecting bulges 72 and 74. The ends of the wires 54 and 60, therefore, can be moved into or out of engagement with the terminal at the end of battery 42 to complete the electrical circuit to the bulbs 50 and 52 by moving bulges 72 and 74 to the left or the right, respectively, as viewed in Figure 4. The bulges 72 and 74 can thus be considered as the actuating means for the switch. The manner in which the bulges 72 and 74 are moved will be more fully described below.

Referring again to Figures 1, 2 and 3, it can be seen that intermediate member 16 includes a recess portion 76 into which is mounted a mirror 78. Preferably, the entire intermediate member 16 is made of a translucent material to allow the bulbs 50 and 52 to shine therethrough. However, it is also possible to construct the intermediate mem-

ber 16 so that only the sides thereof overlying the bulbs 50 and 52 are translucent. Intermediate member 16 also includes a tab 80 which as shown best in Figure 2 covers the ends of the wires 54 and 60 so that only the bulges 72 and 74 are exposed.

Mounted on the rear surface of the intermediate member 16 adjacent the centre thereof is a sponge-like pad 82 which is surrounded by raised ribs 84 and 86. It should be readily apparent that when intermediate member 16 is pivoted into place within the cover 14, the pad 82 is pressed against the battery 42 to prevent the same from rattling and raised ribs 84 and 86 fit around the rib members 44, 46 and 48 to maintain the intermediate member in its proper position. Similarly, foam pads 88 and 90 fit over the bases of the bulbs 50 and 52 to maintain the same in position. Additional ribs such as shown at 92 are also provided to provide structural stability to the intermediate member 16.

As stated above, the switch of the lighted compact is comprised of the ends of the wires 54 and 60 which can be moved into and out of contact with one of the terminals of the battery 42. As also stated above, movement of the ends of the wires is accomplished by moving the bulges 72 and 74 toward the battery in a direction parallel to the plane of the cover member 14. This movement is provided by the relative movement between the cover member 14 and bottom case member 12.

As shown best in Figure 7, hinge element 22 carried by the bottom case member 12 includes a rounded portion 94 and a relatively flat cut away portion 96. Hinge element 22 thus functions as a cam surface and provides a control means for turning the bulbs on and off. When the cover member 14 is closed, the bulges 72 and 74 are adjacent the cut away portion 96 of the hinge element 22 and no electric contact is made with the battery 42. However, when the cover member 14 is opened, the bulges 72 and 74 are forced to move onto the rounded portion 94 of the hinge element 22. This forces the bulges to the left as viewed in Figure 4 until the ends of the wires 54 and 60 contact the terminal of the battery 42 thereby turning on the bulbs 50 and 52. The bulbs are turned off by merely again closing cover member 14 with bulges 70 and 72 springing back into alignment with the cut away portion 96 of the hinge element 22. In addition, as shown in Figure 5, the cammed surface of the hinge element 22 is designed so that the ends of the wires 54 and 60 are out of engagement with the terminal of the battery 42, thereby turning off the bulbs 50 and 52, when the compact is in its fully opened position. It should be readily apparent that the surface of the hinge element 22 could be contoured to turn the bulbs 50 and 52 on or off at any desired open position of the compact. Wires 54 and 60 are, of course, made of a spring-like material so that they will return to their normal position wherein the ends are out of engagement with the terminal of battery 42 when the cover member 14 is closed or when it is fully opened.

It should be readily apparent from the above description that manufacture and repair of the liquid compact are relatively simple and inexpensive. The main components, i.e. the bottom case member 12, cover member 14 and intermediate member 16 include their respective hinge elements and all raised portions such as the ribs 44, guide members 62 and ribs 84 and 92 can be moulded in a single compression moulding operation. The electrical components are merely fitted into their respective positions and all necessary electrical contacts are automatically made. Repairs to the electrical components are easily made merely by removing the defective component and replacing it with a similar one. Again, the necessary electrical contacts are automatically made by placing the various components in their proper position.

WHAT I CLAIM IS:—

1. A lighted compact comprising a shallow bottom case member; a shallow cover member having a configuration complementary to the peripheral configuration of the bottom case member; hinge means joining the bottom case member and said cover member for pivotal movement between an opened position and a closed position, part of the hinge means being carried by said bottom case member and part of the hinge means being carried by the cover member; a mirror locatable within the cover member; a battery positioned within the cover member behind the mirror; light diffusing means locatable within the cover member adjacent the mirror; electrically operated illuminating means positioned behind said light diffusing means; switch means positioned within the cover member and including movable actuator means; circuit means electrically interconnecting the battery, the illuminating means and the switch means; said part of the hinge means on the bottom case member being constituted, at least in part, by a cam surface adapted to engage the actuator means for moving the same from an off position to an on position during opening movement of the compact from its closed position, and from an on position back to its off position as the compact is closed.

2. A lighted compact as claimed in claim 1, wherein the actuator means is movable in a plane substantially parallel to the plane of the cover member.

3. A lighted compact as claimed in claim 1 or 2, including an intermediate member having a configuration complementary to but smaller than the cover member, said intermediate member carrying the mirror and the light diffusing means and being adapted to fit within the cover member over the battery and the circuit means.

4. A lighted compact as claimed in claim 3, wherein said intermediate member is so connected to the hinge means as to be movable with respect to each of the bottom case member and the cover member.

5. A lighted compact as claimed in any preceding claim, wherein said circuit means includes sheet metal strips, channel means being provided within the cover member for maintaining said metal strips in their required position.

6. A lighted compact as claimed in claim 5, wherein said switch means and actuator means include parts of the metal strips.

7. A lighted compact as claimed in claim 6, wherein said battery has a terminal at one end thereof and wherein said switch means is comprised of parts of the metal strips being movable by the cam surface toward the terminal to make an electrical contact directly therewith.

8. A lighted compact as claimed in claim 5, 6 or 7, wherein parts of the metal strips function as socket means for the illuminating means.

9. A lighted compact as claimed in claim 8, wherein said socket means is comprised of a pair of the metal strips spaced apart and wherein said illuminating means includes a substantially flat base having an electrical terminal on opposite surfaces thereof, said base being positioned between said spaced apart metal strips.

10. A lighted compact as claimed in any preceding claim, wherein said electrically operated illuminating means includes a pair of electric lamps and wherein the battery has electric terminal means at one end thereof, said terminal means including a first terminal of one electric polarity and second and third terminals of the opposite polarity on either side of said first terminal.

11. A lighted compact constructed and arranged substantially as herein described with reference to and as illustrated in the accompanying drawings.

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Printed for Her Majesty's Stationery Office by The Tweeddale Press Ltd., Berwick-upon-Tweed, 1980.
Published at the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

1573076 COMPLETE SPECIFICATION
2 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 1

Fig. 1

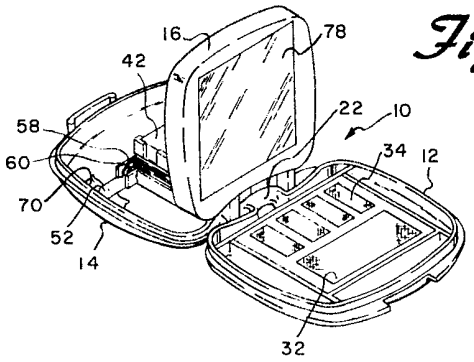

Fig. 2

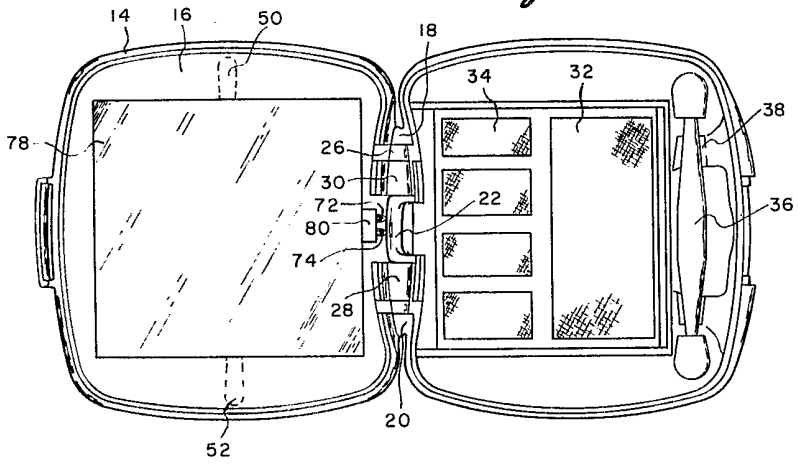

Fig. 3

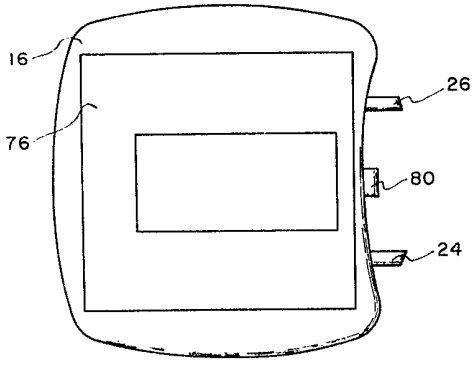

Fig. 4

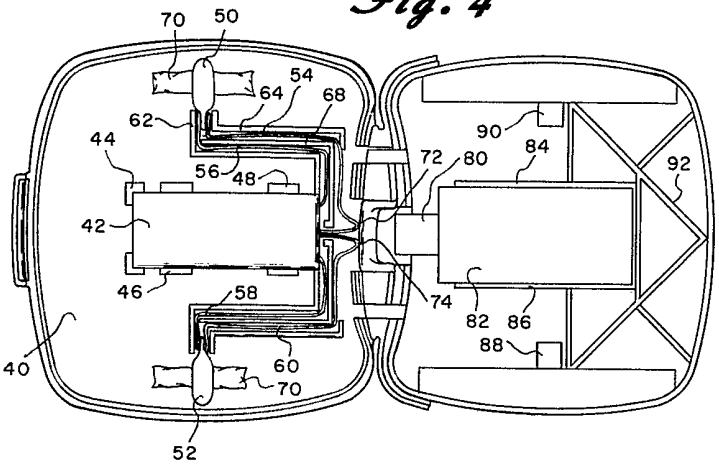

Fig. 5

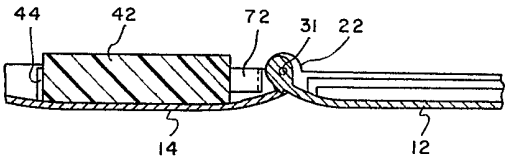

Fig. 6

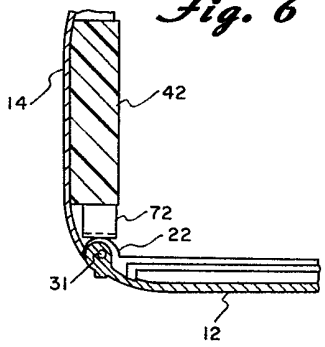

Fig. 7