

Dec. 19, 1950

S. J. BOOTH
FLASHLIGHT

2,534,945

Filed June 12, 1947

2 Sheets-Sheet 1

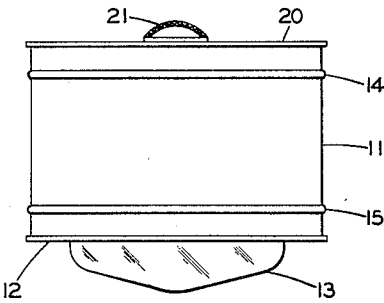


FIG. 1

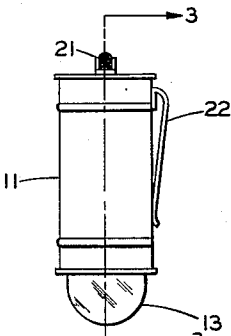


FIG. 2

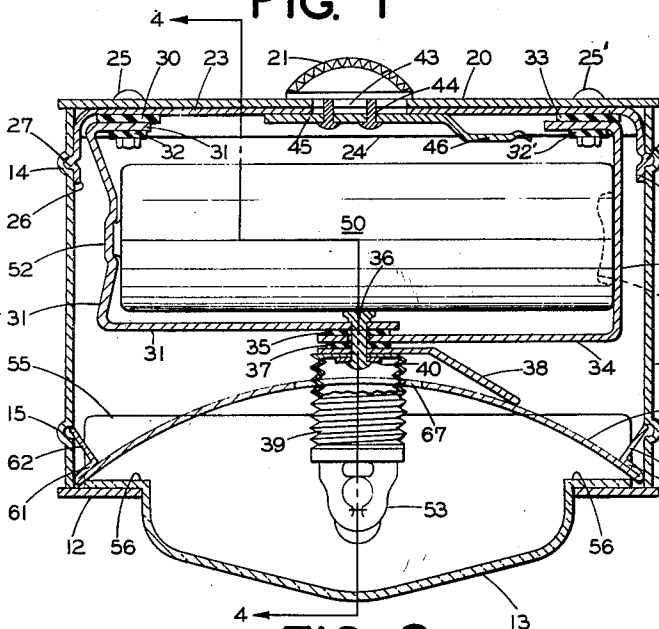


FIG. 3

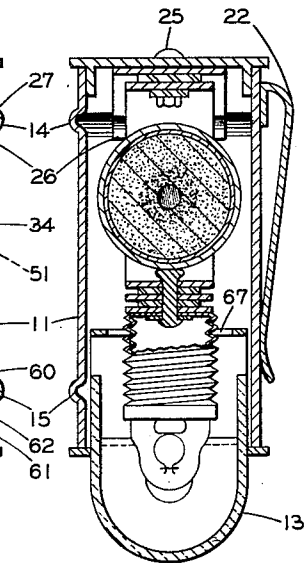


FIG. 4

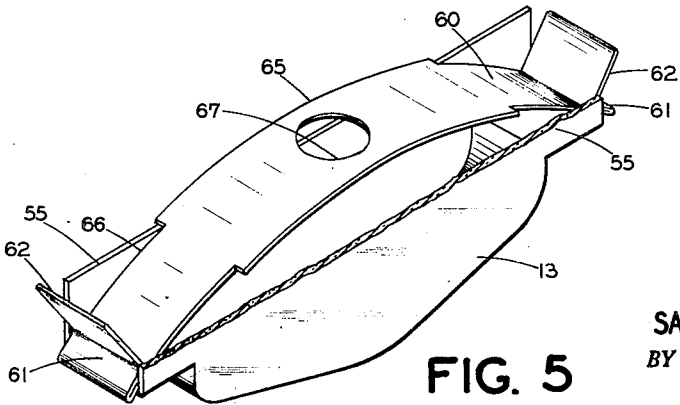


FIG. 5

INVENTOR.
SAMUEL J. BOOTH
BY
Charles J. Hyde
ATTORNEY

Dec. 19, 1950

S. J. BOOTH
FLASHLIGHT

2,534,945

Filed June 12, 1947

2 Sheets-Sheet 2

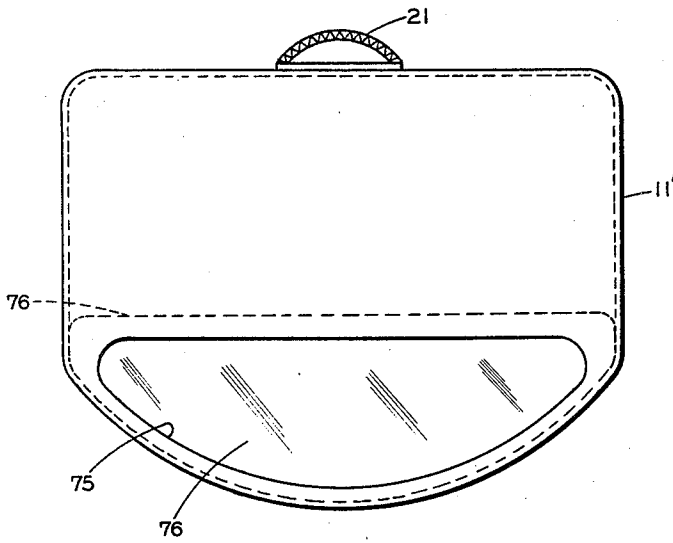


FIG. 6

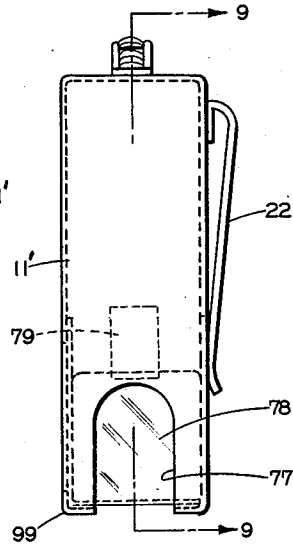


FIG. 7

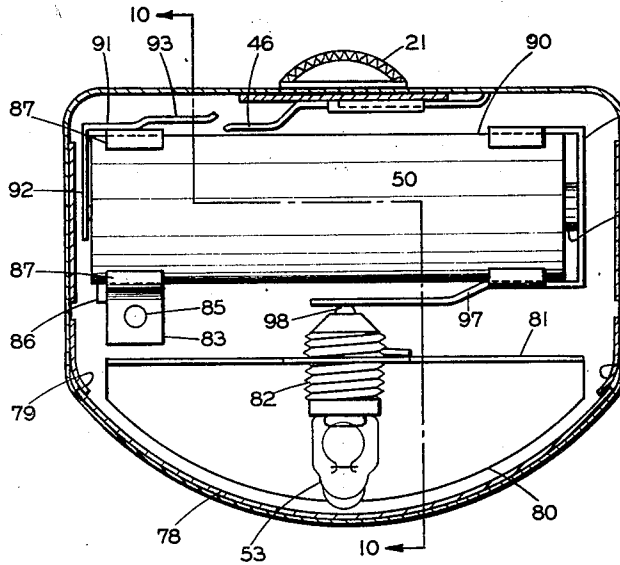


FIG. 9

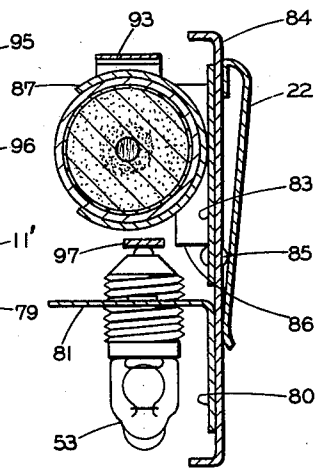


FIG. 10

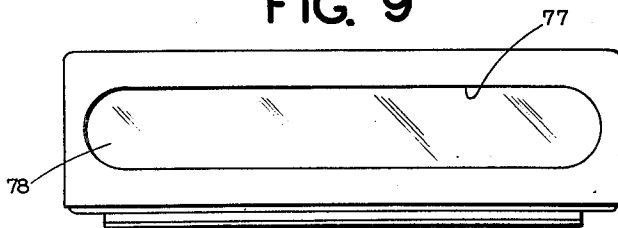


FIG. 8

INVENTOR
SAMUEL J. BOOTH
BY *Eber J. Hyde*
ATTORNEY

UNITED STATES PATENT OFFICE

2,534,945

FLASHLIGHT

Samuel J. Booth, Cleveland, Ohio

Application June 12, 1947, Serial No. 754,143

9 Claims. (Cl. 240—6.45)

1 This invention pertains to a flashlight, and more particularly to a flashlight which is adapted for use in an enclosed space, such as in a woman's purse or the like.

An object of the invention is to provide an inexpensive yet sturdy and reliable flashlight.

A further object of the invention is to provide a flashlight particularly adapted for illuminating the interior of a woman's purse, or a like enclosure.

Still another object of the invention is to provide a flashlight which produces a broad diffuse light for illuminating the entire interior of a woman's purse, or the like.

Yet another object of the invention is to provide a flashlight to be clipped into a purse, which flashlight may easily be removed from the purse for throwing a limited light beam on the ground or on a keyhole.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims and to the drawings wherein:

Figure 1 is a face view of a flashlight embodying the invention.

Figure 2 is a side view of the flashlight shown in Figure 1.

Figure 3 is a sectional view taken along line 3—3 of Figure 2.

Figure 4 is a sectional view taken along line 4—4 of Figure 3.

Figure 5 is an isometric view of two portions of the flashlight.

Figure 6 is a face view of a modified form of the flashlight.

Figure 7 is a side view of the modified form.

Figure 8 is an end view of the flashlight shown in Figures 6 and 7.

Figure 9 is a sectional view taken along line 9—9 of Figure 7, and

Figure 10 is a sectional view taken along line 10—10 of Figure 9, but with the flashlight case removed.

With reference to the drawing there is shown in Figure 1 a plan view of the flashlight which may comprise a comparatively thin generally rectangularly-shaped housing 11 having an opening substantially entirely across its bottom narrow edge face 12 and through which opening there extends a transparent visor 13. Around the top end of the case 11 there is a groove 14 and a similar groove 15 extends around the case near the bottom. A top fits into place to close the top end of the case and it carries a switch actuating push button 21. On the back of the

2 case there is connected by means of small rivets, spot welding or the like, a broad clip 22 for hanging the flashlight on the edge of a compartment within a purse or the like. When hanging in this location, the push button 21 is uppermost and the flashlight may be easily switched on whereupon light through the visor 13 floods the interior of the purse. From this position, the flashlight may easily be removed in order to illuminate a keyhole or the ground.

Figures 3 and 4 show the details of the interior of the flashlight. A plate 23 having downwardly extending side walls 24 is connected to the underneath surface of the top 20 of the flashlight by means of a plurality of small nuts and bolts 25, rivets, or the like, and each end of the plate is bent downwardly to form a spring clip 26. Each of the spring clips has an upwardly extending raised portion 27 which when the top is in position engages the inner walls of the grooves 14 in the case 11 thus holding the entire top structure in place. The bolt 25 extends through a first insulator 30, a metal strip 31, and a second insulator 32 for holding the metal strip 31 tightly against the top 32 and for electrically insulating the strip from the flashlight case. The bolt 25' extends through the top wall 20 of the case 11, through the plate 23, through an insulating washer 33, through the arm 34 and through the insulating washer 32'. Each of the metal strips 31, 34 extend downwardly from the top 20 and then turn and extend toward each other for a distance sufficient that they overlap at a location substantially in the center of the flashlight. At this location, the metal strips are rigidly connected together with an insulator 35 positioned between them. Rivet 36 is used to make the attachment and it extends through the metal strip 31, through the insulator 35, through the metal strip 34, through an insulator 37, through a metal spring contact 38, through the wall of a light bulb socket 39, and through an insulating washer 40 positioned within the light bulb socket thereby connecting all of the aforesaid parts rigidly together.

The push button 21 is secured to the top plate 20 of the flashlight by means of a plurality of small screws 44 or the like which extend up through a metal plate 45 thereby holding the metal plate 45 tightly against the metal plate 23 and holding the push button 21 down against the top 20. A slot 43 is provided in the top plate 20 and in the metal plate 23 to permit the screws 44 to slide slideways as the button 21 is pushed. The metal plate 45 carries a spring metal con-

tact arm 46 at one end so that as the button 21 is pushed towards the right in Figure 3 the metal arm 46 comes in contact with the top horizontally extending portion of the strip 34 thereby grounding the battery 50 to the case 11. Insulating washers 33, 35 prevent the battery 50 from making electrical contact with the case 11 until the arm 46 is slid into contact with the metal strip 31. The battery 50 is suspended by the metal strips 31 and 34 and the strip 34 is provided at its back edge with inwardly extending ears 51 which help to hold the battery in place. The strip 31 is bent inwardly toward the center of the case and is then bent outwardly whereby a slight amount of spring tension is applied longitudinally of the battery thereby also helping to hold the battery in place and to assure positive electrical contact between the battery and the metal strips 31, 34. The metal strip 31 also includes a small cup-shaped depression 52 adapted to fit the hot terminal of the battery 50 to help hold the battery in place and to make good electrical contact therewith. A light bulb 53 is screwed into the permanently attached socket 39.

The lower edge 12 of the battery case 11 includes a broad opening through which the visor 13 extends. The visor 13 preferably is comprised of a formable plastic material but may also be of glass or any other light transparent material. The visor 13 is generally cup-shaped and it has side walls 55 which extend up into the rectangular housing 11 forming a channel extending the length of the housing 11. The visor 13 also includes a laterally extending portion 56 at each of its ends which rest against the bottom portion 12 of the housing. A reflector 60 made of polished spring steel or the like is positioned within the housing. The reflector 60 in its assembled position is shown in Figure 5. It is flat and at each of its ends it is folded back upon itself as at 61 and the end portion 62 is then turned away from the reflector at an angle of about 90°. The center portion 65 of the reflector is of slightly greater width than the main portion 66 so that when the reflector is in place the center portion 66 may be positioned between the upwardly extending side walls 55 of the visor 13 but the center portion 65 is too wide to allow the entire reflector to slide down into the visor as is shown particularly in Figure 3. When the flashlight is assembled with the light bulb in its socket 39 extending through a hole 67 in the center of the reflector 60 the reflector is bent and its two ends 62 engage the inner walls of the groove 15 in the walls of the case 11 thereby holding the reflector in place, and the reflector rests against the horizontally extending portions 56 of the visor to hold the visor in place with its cup-shaped bottom extending out of the hole in the case 11.

In order to turn the flashlight on, push button 21 is slid toward the right in Figure 3 to cause the spring arm 46 to contact the metal strip 34 thereby grounding the battery 50 to the case 11. The other side of the electric circuit extends from the center terminal of the battery to the metal strip 31 to the rivet 36 which extends through a hole in the end of the strip 34 without touching it to the inside of the base 39 of the light bulb 53. The spring arm 38 contacts the metal reflector 60 and through it grounds the light bulb socket 39 to the flashlight case 11.

The second sheet of drawing illustrates another embodiment of my invention wherein one edge of the generally rectangularly shaped case

11' (Figure 6) is curved and the top surface thereof defines an opening 75. A transparent visor 76 is positioned to close this opening. The narrow edge of the curved face of the housing 11' includes an opening 77 which is closed by a second transparent visor 78 which may be held in place by metal clips 79, shown in Figure 9, spot welded to the interior of the housing 11'. Within the case 11' and spot welded to the back face thereof is a reflector 80 having an upwardly turned end 81 which extends across the interior of the case 11 and engages the visor 76 to help hold the visor in place. The reflector portion 81 preferably is straight, as shown in Figure 9, although it is within the scope of this invention to make it curved, and it is also within the scope of this invention to make the reflector portion 80 curved. The portion 81 of the reflector has a hole through it into which a light bulb socket 82 is connected. The reflector is so positioned with respect to the transparent visors 76, 78 that its flat portion 80 reflects light out through the visor 76 and its upstanding edge portion 81 reflects light out through the visor 78 thus throwing the light in two broad beams. When this flashlight is mounted within a purse by means of the clip 22 light through the visor 76 will shine outwardly away from the wall of the purse to which the light is connected thereby throwing light on the side of the purse opposite the flashlight and the visor 78 will throw light downwardly into the purse. A metal plate 83 is connected to the back wall 34 of the housing 11' by means of rivets 85, spot welding or the like, and the plate carries an upwardly turned side portion 86. Battery retaining means 87 preferably formed of metal are connected to the plate 86 and extend around the battery 50 for holding the battery in position, and the paper battery jacket 90 insulates the battery case from the retaining means. A metal arm 91 carrying a contact 92 is connected to the battery retaining means 87 by a spot weld and the contact 92 is in good electrical contact with the bottom metal portion of the battery case. The arm 91 is connected to a spring contact arm 93 which extends back toward the push button 21. A spring contact 46 is connected to the push button 21 so that as the push button 21 is moved to the left in Figure 9 the spring contact 46 engages the contact arm 93 to ground the battery to the flashlight case 11'. The "hot" side of the battery circuit is comprised of a metal clamp 95 which fits over the end of the paper battery jacket 90 and which holds a contact 96 in engagement with the center terminal of the battery 50. The clamp 95 includes a contact arm 97 which is permanently in engagement with the center contact 98 of the light bulb socket 82. Thus the electrical circuit extends from the center terminal of the battery 50 through contact 96 and contact arm 97 to the center terminal 98 of the light bulb socket 82 to the light bulb 53, and through the bulb socket 82 to the reflector 81 and thence to the flashlight case 11'. When the switch 21 closes the contacts 46, 93 the case 11 is grounded to the outside terminal, or case, of the battery 50.

While the drawings show the two visor portions 76, 78 as separate pieces it is within the scope of the invention to make them integral. The corner 99 of the metal case 11' may then be disposed with and light will come out of the flashlight along its edge where the two visor portions are joined together as well as from the visors 76, 78.

While the invention has been described with a certain degree of particularity it is to be understood that changes can be made in the various parts and in their arrangement without departing from the spirit and scope of the invention as hereafter claimed.

I claim as my invention:

1. A flashlight comprising, in combination, a thin flat case defining a generally rectangular enclosure one of whose narrow edge faces includes an opening extending over one-half the length of said edge, long, narrow cup-shaped light transmitting means mounted on said case for closing said edge opening with the bottom and side edges of said cup-shaped means projecting outwardly from said rectangular opening, battery means mounted longitudinally within said case, long narrow reflector means comprised of spring material curved in an arc and parallel to its axis of curvature mounted within said case adjacent said open narrow edge thereof with the ends of said reflector biased by the curvature of said spring material against the side walls of said case, said reflector having a hole therethrough, a light bulb, means mounting said light bulb within said case and extending through said hole in the reflector means with its longitudinal axis extending in a direction substantially perpendicular to the longitudinal axis of said battery means and substantially midway between the ends of said battery means, said light transmitting means being bowed outwardly from said case and the tip of said bulb being positioned within said cup-shaped means and outside said case whereby light from said bulb is substantially non-directional, and means for connecting said light bulb to said battery.

2. The invention set forth in claim 1, further characterized by said reflector means comprising an arcuately bent substantially rectangular strip of polished spring steel whose end portions are bent back about 180 degrees upon themselves and are bent at about 90 degrees to extend away from the back surface thereof, and said case includes notched means with which the ends of said reflector engage when the said reflector is bent into position.

3. The invention set forth in claim 1, further characterized by said reflector means comprising a strip of metal extending lengthwise within said case, the length of said reflector being about four times its width.

4. A flashlight comprising, in combination, a thin flat case defining a generally rectangular enclosure one of whose narrow edge faces includes an opening extending over one-half the length of said edge, a light transmitting visor which has a generally cup-shaped portion mounted on said case with the lip of the cup engaging the case and the bottom of the cup extending outwardly from said rectangular enclosure, a reflector comprising a length of flat spring metal having a hole through its center portion, the length of said reflector being greater than the length of the said open edge of said case, said reflector being mounted within said enclosure with the ends of said reflector engaging the walls of said enclosure and engaging said visor to help to hold said visor in place and with the central portion of said reflector bowed inwardly from said visor, a light bulb mounted through the hole in said reflector with the light producing end of said bulb positioned within the said visor but outside the confines of said rectangular enclosure, a battery mounted within

said enclosure behind said reflector with the longitudinal axis of the battery extending in a direction substantially perpendicular to the direction of extension of the longitudinal axis of said light bulb, and means for electrically connecting said light bulb to said battery.

5. The invention set forth in claim 4, further characterized by the said reflector having a central portion which is wider than its end portions, and the said visor includes a channel portion integral with said cup-shaped portion, the narrower end portions of said reflector fitting down into the said channel portion of said visor, and the said wider central portion resting on the upper edges of said channel when said reflector is in a bent position.

6. The invention set forth in claim 5, further characterized by said reflector comprising a length of polished spring steel whose end portions are bent back about 180 degrees upon themselves and are bent at about 90 degrees to extend away from the back surface thereof, and said case includes notched means with which the ends of said reflector engage when the said reflector is in its bent position.

7. A flashlight comprising, in combination, a thin flat case defining a generally rectangular enclosure one of whose narrow edge faces includes an opening extending over one-half the length of said edge, a light transmitting visor which has a generally cup-shaped portion mounted on said case with the lip of the cup engaging the case and the bottom of the cup extending outwardly from said rectangular enclosure, a spring reflector having a hole through its center portion mounted within said enclosure, a battery having a case and a center electrode, first support means one end of which is insulatedly connected to the inside of said case and in electrical contact with the center electrode of said battery, a light bulb socket, the other end of said first support means being permanently electrically connected to said light bulb socket, second support means one end of which is insulatedly connected to the inside of said case and is in electrical contact with the case of said battery and the other end of which is permanently insulatedly connected to said light bulb socket, a bulb in said socket extending through the hole in said reflector, and switch means for electrically connecting said light bulb socket to said reflector and through said reflector to said case.

8. The invention set forth in claim 7 further characterized in that said switch means connects said second support means to said thin flat case.

9. A flashlight comprising, in combination, a thin flat case defining a generally rectangular enclosure one of whose narrow edge faces includes an opening extending over one-half the length of said edge, said case having notched means in the wall portions thereof near said opening, light transmitting means secured to said case and closing said opening, reflector means comprising a substantially rectangular strip of polished spring metal whose ends rest against and cooperate with said notch means in said case for securing said reflector means in said case, said reflector means being bent arcuately away from said light transmitting means, a battery, first support means insulatedly connected to said case and in engagement with the central terminal of said battery for supporting said battery within said case, light bulb means

including a socket electrically and supportingly connected to said support means, said light bulb being positioned between said reflector means and said light transmitting means, second support means insulatedly connected to said case and engaging the outer terminal of said battery for supporting said battery in said case, switch means for selectively grounding said second support to said case, and means for grounding said light bulb socket through said reflector to said case.

SAMUEL J. BOOTH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,321,026	Freed et al.	Nov. 4, 1919
2,092,355	Mailloux	Sept. 7, 1937
2,206,865	David et al.	July 9, 1940
2,272,040	Muldoon	Feb. 3, 1942
2,304,387	Whiting et al.	Dec. 8, 1942
2,400,974	Berman	May 28, 1946

FOREIGN PATENTS

Number	Country	Date
75,109	Switzerland	Oct. 1, 1917
814,563	France	Mar. 22, 1937