May 26, 1959 F. W. YESSEL 2,887,861

FLASHLIGHT BULB CONTACT CLEANER

Filed May 25, 1955 2 Sheets-Sheet 1

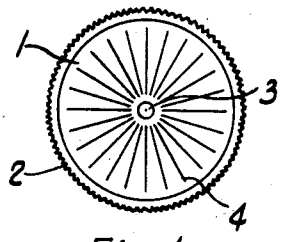


Fig. 1

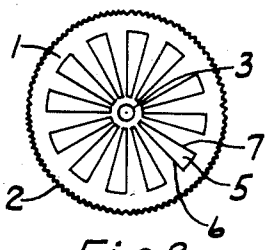


Fig. 2

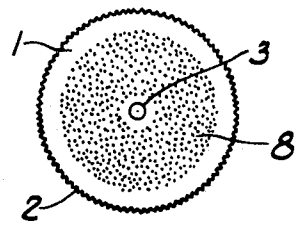


Fig. 3

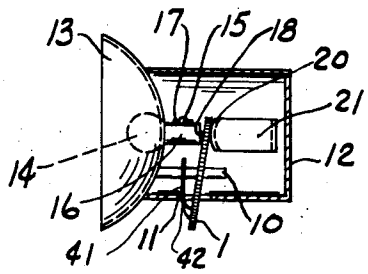


Fig. 4

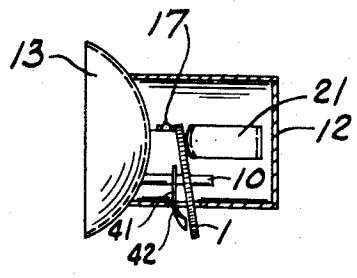


Fig. 5

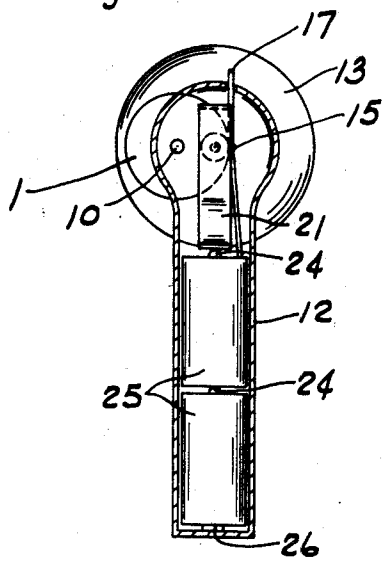


Fig. 6

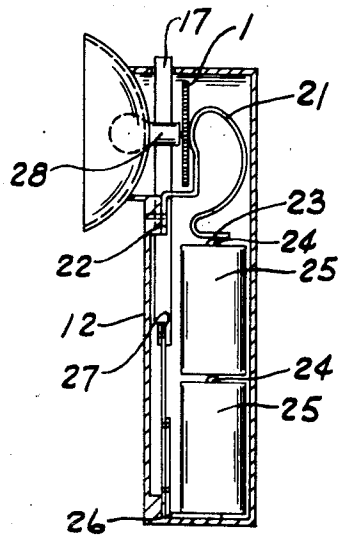


Fig. 7

INVENTOR.
FREDERICK W. YESSEL
BY
William D. Carothers
HIS ATTORNEY

May 26, 1959 F. W. YESSEL 2,887,861

FLASHLIGHT BULB CONTACT CLEANER

Filed May 25, 1955 2 Sheets-Sheet 2

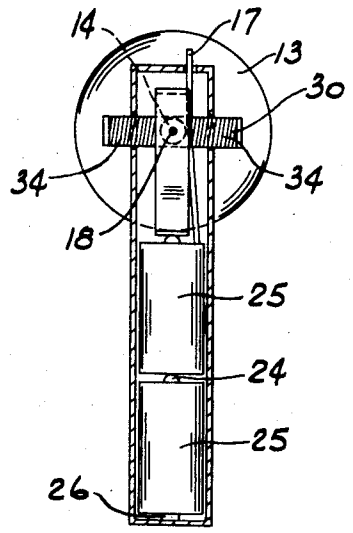


Fig. 8

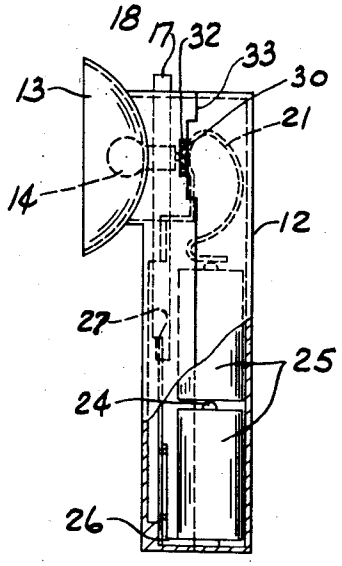


Fig. 9

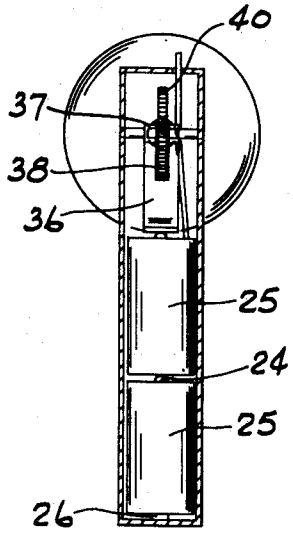


Fig. 12

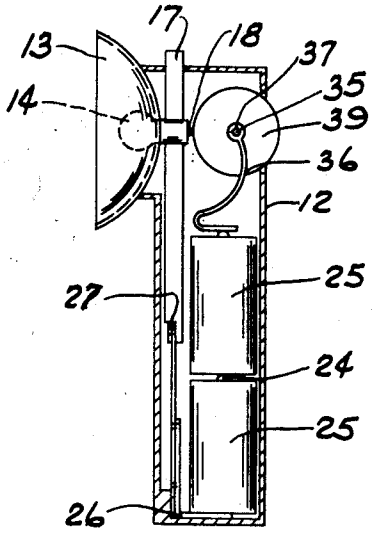


Fig. 11

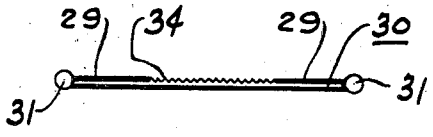


Fig. 10

INVENTOR.
FREDERICK W. YESSEL
BY
William D. Carothers
HIS ATTORNEY

United States Patent Office 2,887,861 Patented May 26, 1959

2,887,861

FLASHLIGHT BULB CONTACT CLEANER

Frederick W. Yessel, Forest Hills, Pa.

Application May 25, 1955, Serial No. 511,086

6 Claims. (Cl. 67—31)

This invention relates generally to apparatus for cleaning the contact of a flashbulb after it has been inserted in the flashbulb apparatus and ready for use.

Frequently flashbulbs are removed from their distributing package and inserted in a flashbulb attachment and without more the equipment is set and everybody is in readiness for the picture, the picture is taken and the flash does not occur which spoils the film. This not only spoils the picture but oftentime one loses a particular picture that is sometimes impossible to duplicate. The flashbulb is usually removed and its contacts are cleaned off and it is again inserted, and sometimes the second trial does not produce any better result.

The principal object of this invention is to provide a movable device that engages and maintains a fresh, clean contact of the flashbulb in the flashbulb apparatus for the purpose of insuring electrical contact therewith which also insures that the bulb will flash the first time that it is energized.

Another object of this invention is the provision of a rotary contact disc member which is maintained in the circuit of a flashlight bulb and has a roughened or scraping surface that will maintain a clean contact with the flashbulb under pressure for the purpose of insuring that the bulb will be set off upon the taking of the picture.

Another object of this invention is the provision of a metallic contact slide which is interposed between the spring member and the flashlight bulb for the purpose of having a roughened surface for cleansing the bulb and the spring contacts so as to insure electrical connection upon the application of an electrical energy impulse to set off the flashbulb.

Another object of this invention is the provision of a thumb contact wheel which is suspended on the spring and having its edge engage the central contact of the flashbulb. The serrated edge will clean the contact in order to insure a complete circuit when the bulb is set off.

The ordinary flashbulb is constructed to be set off by a very low voltage, such as would be obtained by one or two cells of a flashlight battery that provides one and a half volts a piece making a total of three volts. This low potential is difficult to burn through oxides or to complete a circuit through a dirty lead-tin contact such as found on a flashbulb. The ordinary oxides that gather on these flashbulb contacts would be sufficient to build up a high resistance to the flow of current and a voltage such as three volts could not overcome this barrier. In view of this fact one either must clean the bulb contact before placing it in the flashbulb holder and if one fails to do this, frequently the best picture for which everybody is primed is lost.

It is the principal object of this invention to provide means for cleaning the contact through which means the electrical circuit is made to provide a positive assurance that the flashbulb will receive its energy and the bulb will light at the proper time.

Other objects and advantages appear hereinafter in the following description and claims.

The accompanying drawings show for the purpose of exemplification without limiting the invention or claims thereto certain practical embodiments illustrating the principles of this invention wherein:

Fig. 1 is a view in side elevation of a rotary contact disc comprising this invention.

Fig. 2 is a view in side elevation of a second form of rotary contact disc comprising this invention.

Fig. 3 is a side elevation of a third rotary disc having a roughened contacting surface comprising this invention.

Fig. 4 is a view in horizontal section of a flashbulb apparatus shown with a contact disc and flashbulb in place.

Fig. 5 is a view similar to Fig. 4 with the flashlight bulb not in place.

Fig. 6 is a vertical sectional view of the structure as illustrated in Fig. 4.

Fig. 7 is a vertical sectional view of the structure as illustrated in Fig. 4 and taken at 90° to that of the section shown in Fig. 6.

Fig. 8 is a vertical sectional view of the flashlight mechanism showing a modified form of contact cleaning member.

Fig. 9 is a vertical section of the structure as illustrated in Fig. 8 and taken at 90° therefrom.

Fig. 10 is a contact cleaning element such as employed in Fig. 9.

Fig. 11 is a view in vertical section of a modified form of flashlight bulb cleaning structure in a flashlight attachment.

Fig. 12 is a sectional view taken at right angles to the vertical section showing the structure of Fig. 11.

Referring to the drawings, the contact member or wheel 1 as illustrated in Figs. 1, 2 and 3 may have several forms. The structure shown in Fig. 1 shows a metal disc 1 having an insulated band with a serrated, fluted or roughened edge, as indicated at 2, to make the wheel more readily turned by the finger or thumb. The central portion of the contact discs 1 is metal and is provided with a central opening 3 on which the contact disc is journaled. In Figs. 2 and 3 the whole of the disc is metal.

The contact wheel 1 as shown in Fig. 1 is provided with a series of gouged-up flanges 4 which are disposed radially to the bearing 3 and each provides a sharpened edge. When this edge is placed in contact with the tin-lead contact of a flashbulb and rotated, the sharpened edges of the raised radial flanges 4 will actually cut or slice a surface of the contact on the back of the bulb and represents the contact cleaning means. These radial flanges or blades 4 are spaced close together so that the contact will always engage either one when it is centered thereon or both if the contact bridges between these flanges or blade sections 4.

In the structure shown in Fig. 2 the indentations 5 provide the sharp edges 6 and 7, which when the disc is rotated when in engagement with the tin-lead contact of the flashbulb it slices a slight amount of material off the surface of the flashbulb contact and thus provides a readily cleaned contacting surface which will not fail in permitting the current to flow therethrough and flash the bulb.

In the structure as illustrated in Fig. 3 the whole of the disc is metal and has a sand blasted surface as indicated at 8, which provides a contact cleaning means in the form of an undulated or merely roughened surface which has a similar cleaning and contact action on the tin-lead contact of the bulb by abrading off a small portion of the surface when scraped over as the contact wheel is turned. This freshly cleaned surface will readily complete the circuit and flash the bulb.

Referring now to Fig. 4 any one of the contact wheels

1 of Figs. 1 to 3 may be inserted in position as shown in Figs. 4 and 5 by placing the bearing member 3 over the post 10 which functions as a shaft or support means for the contact member 1. When the wheel is set in this position, a portion of the wheel extends through the window 11 in the casing 12. The casing 12 is usually made of plastic material such as hard rubber or the like. As shown, the casing 12 supports the reflector 13 which is provided with a socket at its inner end to receive the bulb 14. A small pin 15 is on the bulb socket 16 engaging the spring 17 for the purpose of holding the bulb in the socket. If the spring 17 is moved to release the pin 15, the spring contact moves the bulb out.

The bulb 14 is also provided with a central contact member 18 which is ordinarily of solder type material and which will oxidize forming an insulating coat which should be cleaned off to make contact. The opposite side of disc 1 is engaged in contacting relation by the contact end 20 of the spring member 21 which is a conductor means. When the spring 17 has been moved aside to permit the post to escape the spring 21 forces the bulb out of its socket and out of the reflector after which the structure then assumes the position as illustrated in Fig. 5 wherein the disc 1 is actually disposed in the opposite direction because of the whole of the pressure of the spring 21 is forcing it to the left and since the bearing 3 and the opening 11 do not closely fit the contact disc, it will move in the opposite direction.

As illustrated in Figs. 6 and 7, the spring member 21 has one end secured to the case 12 as indicated at 22 and is bent up to make pressure connection with the contact disc 1, and bends back down so that the lower part 23 forms a contact with the center post 24 and the battery 25. A second battery 25 is mounted under the first battery 25 and makes contact therewith in a well-known manner. The lower end of the casing is provided with a contact strap 26 which extends upwardly to one side of the circuit connection 27, the other end of which engages the base 28 of the bulb through the spring member 14. Thus, if the circuit is closed between 17 and the strap member 26, a circuit will have been completed through the center contact, the disc 1 and the batteries. Thus, before any picture taking, one should by the flick of the thumb rotate the contact disc 1 so as to clean the bulb contact and spring and insure the current flow therethrough impressed by a very low voltage. As shown in the Fig. 6, the spring 17 need only be shoved to the right to release the post and permit the post 15 and the flashlight bulb to be ejected by reason of the pressure of the spring 21 acting through the contact disc 1. Any one of the discs shown in Figs. 1, 2, or 3 may be employed in this structure.

In the structure as illustrated in Figs. 8, 9, and 10, the contacting element or strip 30 is a metal member having serrations on one or both sides. As illustrated in Fig. 8, the structure has serrations on both sides. As illustrated in Fig. 10 it may have serrations only on one side. In this structure the metal contact element 30 is merely a flat plate provided with enlarged insulated ends 31 which prevent the plate from being shoved all the way through the support means in the form of the slot 32 in which it operates. The serrations may be omitted on one or both ends of the strip 30 to provide a smooth surface 29 for completing the contact after cleaning as shown in Fig. 10. The slot 32 may likewise be in the split 33 of the casing as illustrated in Fig. 9. The spring 21 exerts a pressure against the flat strip 30 causing the serrations 34 thereon to engage the contact 18 of the flashbulb 14 to penetrate the film or move the strip to clean the same before taking the picture. One merely pushes the strip 30 back or forth to clean the oxide surface on the contact of the bulb and insure a current flow for the purpose of burning the bulb at the proper instant.

In this device, upon opening of the casing 12 to remove or change the batteries, one can readily remove the contact strip and clean the same or turn it over if it is provided with serrations on both sides. The serrations 34 may be similar to that of a nail file so that it will insure cleaning of the contact of the bulb. If the serrations are on both sides of the strip coating, then it will clean not only the bulb but also the spring 21 that forces the contact strip into contact with the bulb. The strip is made sufficiently flexible so that the spring 21 will hold the contact 30 flexed and insure contact with the bulb and also provide pressure to permit the flashbulb to be ejected when the spring 17 is moved out of contact from the pin 15.

In the structures as shown in Figs. 11 and 12 the contact member support means is the shaft 35 which is positioned in the spaced bearings carried by the spring member 36 and which are separated by the slot 38 to receive the contact member in the form of the disc 39. Contact disc 39 is the same as the discs 1 but employs the rough or serrated edge shown in Fig. 12 at 40 to clean the contact. The spring 36 functions also as the conductor means. This edge is similar to that of other discs, but it may be wider. This serrated edge engages the contact 18 of the flashbulb 14 in the socket in the reflector 13 which is held in position by the spring member 17 as previously mentioned. Thus, by merely rotating the disc 39 one will readily clean the contact on the bulb and the circuit is made in the same manner through the flashlight batteries 25, and the connecting member 26, together with the connection for the switch in the camera or other contact means inserted between the spring 17 and the contact 26. Ordinarily the connection 27 has two terminals from 17 and 26 which when connected with the camera or other switch means will complete the circuit by the pressing of the shutter of the camera or otherwise operating the switch.

By having a contact disc or slide to clean the contacts, one does not risk the loss of a picture.

A cleaning or scraping arm may be provided on any of these structures to engage the rotary disc to abrade, pick or scrape the cuttings therefrom. Such a cleaning or scraping arm is shown as a flexible scraper 41 mounted on the pin 10 and extending through the opening 11 to engage against the cutting face of the disc 1. This scraper 41 is twisted intermediate of its ends as shown at 42 to present a scraping surface normal to the sharpened flanges or edges 4, 6, or 7. A similar cleaning mechanism may be provided for the strip 30 or for the serrated edge 40 of the disc 39.

I claim:

1. A flashbulb holder having a casing with a flashbulb receiver to hold a flashbulb contact in position and circuit means including a contact member to engage the bulb contact and a conductor member to maintain at all times a closed circuit through a battery to discharge the flashbulb when an independent switch is closed, characterized by support means to carry said contact member for movement from exteriorly of said casing, and contact cleaning means on said contact member for cleaning the bulb contact when said contact member is moved without interruption of said circuit.

2. The structure of claim 1 characterized in that said contact member is a disc mounted to rotate with a portion extending exteriorly of the casing.

3. The structure of claim 2 characterized in that said disc has its cleaning means on the side face thereof.

4. The structure of claim 2 characterized in that said disc has its cleaning means on the edge thereof.

5. The structure of claim 1 characterized in that said support means is a part of said conductor means.

6. The structure of claim 1 characterized in that said contact member is a slide mounted to move back and forth between the bulb contact and the conductor means.

(References on following page)

5

References Cited in the file of this patent

UNITED STATES PATENTS

1,569,639	Stevenson	Jan. 12, 1925
1,584,539	Hopkins	May 11, 1926
1,770,902	Fullmer	July 22, 1930
2,477,895	Pollock	Aug. 2, 1949
2,479,726	Czarnota	Aug. 23, 1949
2,490,020	Enzler	Dec. 6, 1949
2,600,789	Malone et al.	June 17, 1952

6