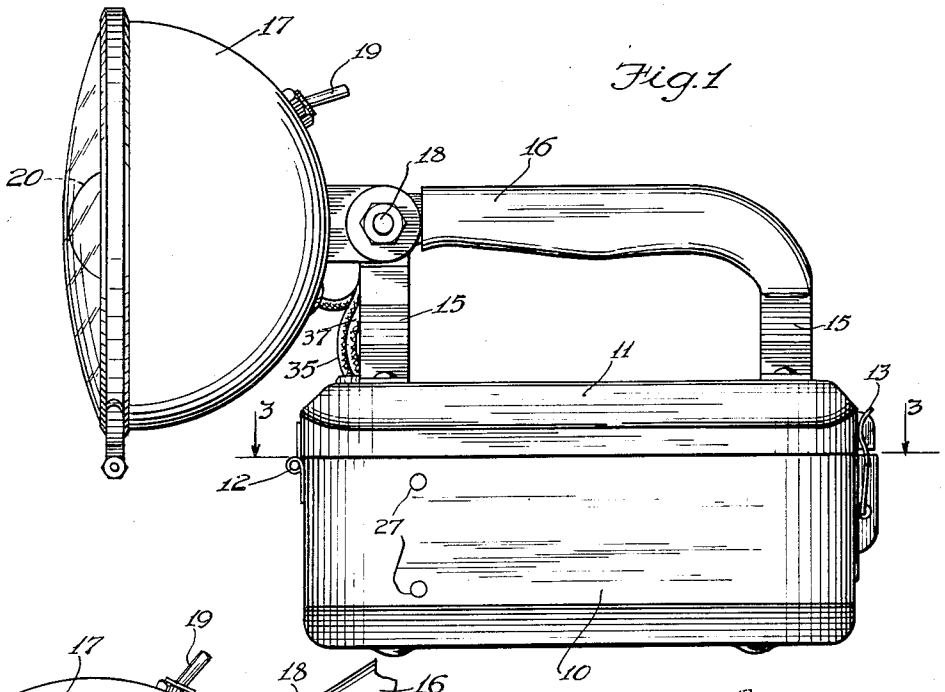
Feb. 10, 1953 C. G. TALBOT ET AL 2,628,305

BATTERY RETAINER FOR ELECTRIC HAND LAMPS

Filed March 23, 1950 2 SHEETS—SHEET 1

Fig. 1



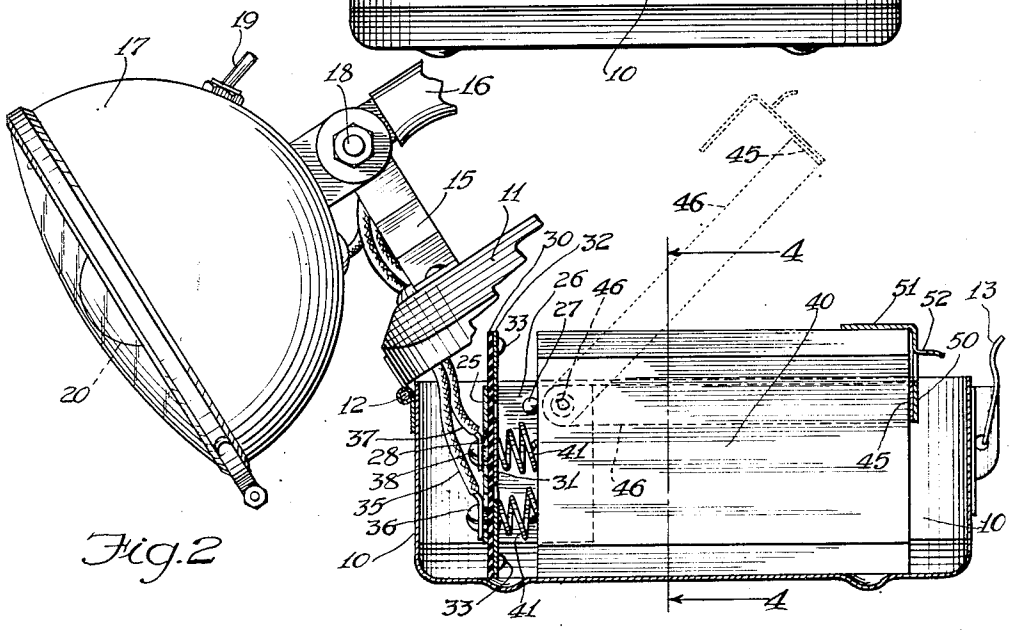


Fig. 2

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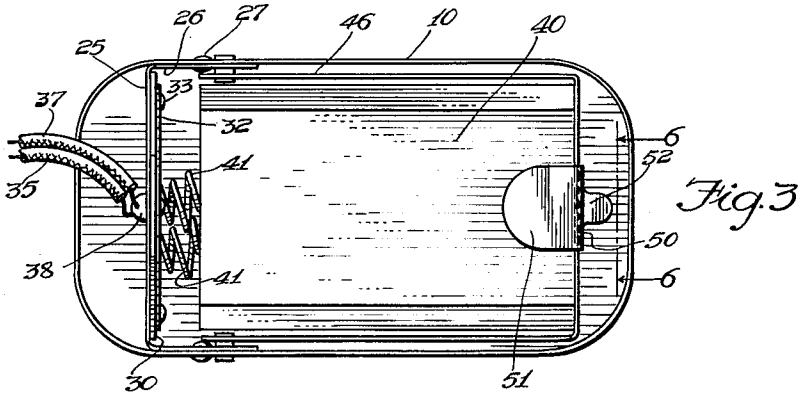


Fig. 3

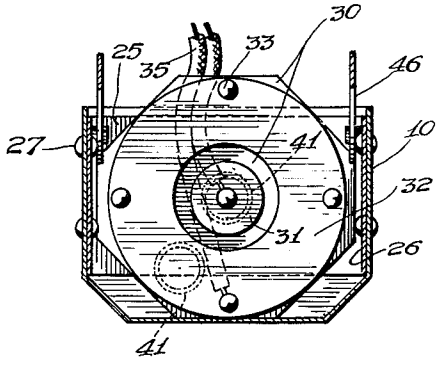


Fig. 4

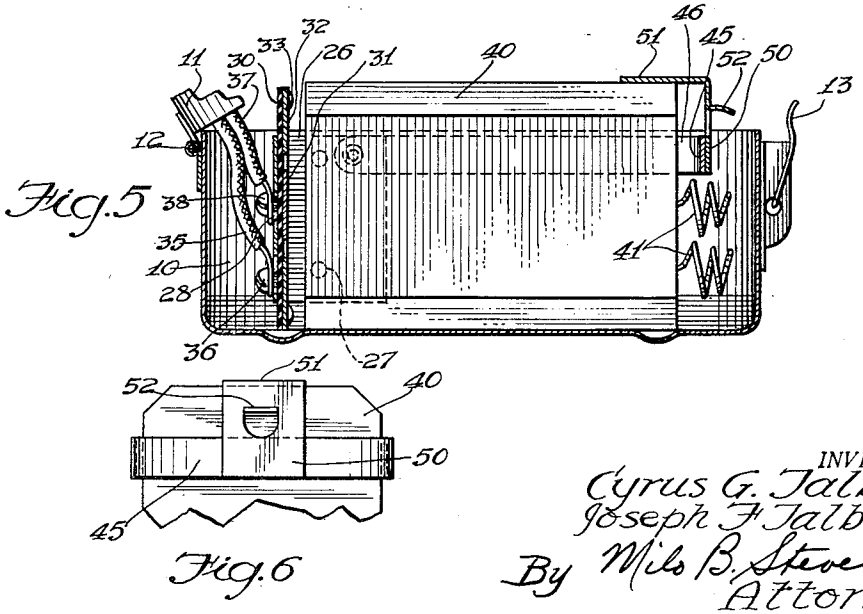


Fig. 5

Fig. 6

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BATTERY RETAINER FOR ELECTRIC HAND LAMPS

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Application March 23, 1950, Serial No. 151,416

3 Claims. (Cl. 240—10.63)

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Our invention relates to the familiar type of battery-operated hand lamps which are used around the home, garage or automobile, and one object of the invention is to provide a reliable unit within the lamp casing for retaining the battery in place and with a good electrical contact.

A further object is to build a frame structure within the casing of the lamp which serves at one end as a contact plate and at the other end as a retainer effective to hold the battery terminals in firm engagement with the contact plate.

Another object is to design the novel retainer with a pivotal connection in order that the retainer may be swung out of the casing to release the battery.

An important object is to construct the novel retainer along lines of rigidity and simplicity.

With the above objects in view, and any others which may suggest themselves from the description to follow, a better understanding of the invention may be had by reference to the accompanying drawing, in which—

Fig. 1 is a side elevation of the hand lamp in the position of use;

Fig. 2 is a similar view, partly in section and showing a part of the lamp handle and casing broken away;

Fig. 3 is a section on the line 3—3 of Fig. 1, showing the battery installed in the lamp and the retainer in place;

Fig 4 is a section on the line 4—4 of Fig. 2 with the battery removed;

Fig. 5 is a view similar to Fig. 2 showing the battery in the reverse position; and

Fig. 6 is a section on the line 6—6 of Fig. 3.

In accordance with the foregoing, the casing of the lamp is indicated at 10, the same being oblong in shape; and the casing receives a cover 11 over the top, such cover being hinged at the front end as indicated at 12 and receiving a conventional spring latch 13 at the rear.

The cover 11 is surmounted with straps 15 forming the supports of a handle 16; and the head 17 of the lamp is horizontally pivoted at 18 to the front end of the handle, such head having a convenient finger switch 19 for the control of the light bulb 20 contained in the lamp head.

It is now apparent that the structure of the cover, of the handle 16 and lamp head 17 is swingable upwardly on the hinge 12 in the manner indicated in Fig. 2 in order to afford access to the interior of the casing 10. Figs. 2 and 4 show that such interior receives a channel-shaped frame 25 at the front, the sides 26 of the frame

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being riveted or otherwise fastened as indicated at 27 to the side-walls of the casing 10. The frame 25 has an internal opening 28 and receives a vertical sheet 30 of insulating material on the rear side. This sheet in turn receives a central plate 31 and an outer ring 32 on the rear side, the plate 31 and ring 32 being of metal and secured to the sheet 30 by rivets 33. One of the feed conductors 35 for the lamp bulb 20 is secured as indicated at 36 to the frame 25, which is employed as a ground. The other conductor 37 is passed through the opening 28 to connect at 38 with the center plate 31. The latter and the ring 32 thus form opposite terminals for the feed current designed to pass by way of the conductors 35 and 37 to the lamp bulb 20. The battery 40 for the novel lamp is of the octagonal lantern type and is designed to be laid horizontally in the casing of the lamp as shown in Fig. 2. Such batteries carry spring terminals at one end, some terminals being in the form of blades, while the ones shown are in the form of spiral coils 41.

The battery terminals are so positioned that when the battery is laid as mentioned with the terminals directed forwardly, they will occur opposite the terminal plate 31 and ring 32, respectively; and pressure on the battery from behind will engage the battery terminals with the said plate and ring in order to maintain a good electrical contact with the same.

The novel retainer is designed to hold the battery in place and maintain the same with forward pressure to insure the aforesaid electrical contact at all times. Thus, Figs. 2 and 3 show that the retainer is in the form of a rectangular arch 45 whose legs extend forwardly to make pivotal connections 46 with the sides 26 of the frame 25. The retainer is located in the top of the casing and is designed to be swung up to the position indicated by finely-dotted lines in Fig. 2 when the battery 40 is to be inserted into the casing. When this has been done, the retainer is lowered, but its cross bar 45 will only assume a position behind the rear end of the battery after the latter has been pushed forward and its spring terminals 41 compressed to bear against the contact elements 31 and 32 in the positions indicated by finely-dotted lines in Fig. 4.

The retainer is designed to occupy a position along the side walls of the battery 40; and the head 45 of the retainer receives an angle plate 50 at the middle, such angle plate rising to terminate with a forward lug 51 which forms a stop over the top of the battery when the retainer has been fully lowered. Also, the plate 50 s struck

back with a tongue 52 which is used as a finger hold when the retainer is to be raised.

Fig. 2 shows the battery 40 positioned and retained for the use of the lamp. However, when the lamp is placed among other articles or stored away it is possible that some object coming in contact with or on the top of the finger switch 19 may accidentally depress the latter and turn on the bulb 20, so that the battery eventually becomes exhausted and useless. To avoid such an eventuality, the owner is advised to reverse the battery end-to-end, as shown in Fig. 5. Batteries of the type under consideration are encased in a cardboard shell. Therefore, the end of the battery now in front will pass no current or cause no incident in case it comes in contact with the contact plates 31 and 32; and, when the retainer is engaged over the battery as shown in the same figure, the possible rearward shifting of the battery will not bring the spring terminals 41 into contact with the rear wall of the casing to cause a short in the battery in case the metal of such wall has become exposed. On the subject of battery shorting, it is possible that, through accident, the battery might become shorted in any hand lamp. In such event, the battery not only heats up but swells; and its acid leakage often causes it to pack in its casing so it is very difficult, if not impossible, to remove the battery from the casing. Figs. 4 and 5 indicate that in the present instance ample side spacing is provided for the battery so that in case of a short only its bottom may adhere and the battery would be removable by forcing it sidewise or endwise until it is pried loose.

It will be evident from the above description that the novel retainer is a device which is both simple and compact. First, it is a direct extension of the contact frame between the battery and the bulb feed conductors, and is actually made in a unit with the frame, so that it becomes installed when the latter is fastened in the casing. Further, the retainer is handy in the top of the casing, having its forward lug 51 in a position to hold the battery down, while the rearward tongue 52 is readily accessible for the application of a finger to raise the retainer free of the battery. Owing to the resilient nature of the battery terminals 41, the retainer need not be made with any spring or other yieldable element, since the pressure of the retainer through the battery and the terminals 41 maintains the battery firmly lodged between the retainer and the contact elements 31 and 32. Further, the position of the retainer in the top of the casing, as maintained by the stop lug 51 over the battery 40, insures the retainer against becoming depressed when the battery is in the reverse position of Fig. 5 to a point where the retainer may contact the center battery terminal 41 and cause a short. Further, the contact elements 31 and 32 are not in the bottom of the casing, as in some lamps on the market, to gather dust and corrode, but in front and within handy reach for cleaning or inspection. Finally, the novel retainer is a device which does not require any skill on the part of the owner to apply or adjust, the operation of the retainer being practically self-evident on inspection.

While we have described the invention along specific lines, various minor changes or refinements may be made therein without departing from its principle, and we reserve the right to employ all such changes and refinements as may come within the scope and spirit of the appended claims.

We claim:

1. In a lamp casing designed to receive a battery having yieldable terminals at one end, contact means adapted to receive such terminals when the battery is laid on its side in the casing, said contact means comprising a frame carried by the casing opposite said terminals and formed with elements for contact by the terminals, such frame having sides secured to the casing, and a retainer designed to maintain said terminals in tensioned engagement with said contact means, said retainer comprising an arch-shaped member with legs pivoted to said frame sides, the head of the member being positioned to engage the battery-end opposite from that carrying said terminals when the battery has been urged in the direction of said contact means.

2. A battery-operated lamp having a casing open at the top and suitable to receive a dry battery laid on its side and directed from one end with yieldable terminals toward one casing end, the latter containing contact means for said terminals, a lid for the casing pivoted from said casing end, and a retainer designed to maintain the terminals in tensioned engagement with said contact means, said retainer comprising an arch-shaped member with legs pivoted transevrsely in the casing in proximity to said casing end and to swing similarly to the lid, the head of the member being positioned to engage the battery-end opposite from the one carrying said terminals when the battery has been urged in the direction of said contact means.

3. The structure of claim 2, the head of the member having a cross-bar applicable to said battery-end and a return lug adapted to overlie the battery as a limit for the swing of the member.

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