Feb. 5, 1946. E. B. NOEL 2,394,468

ELECTRIC LAMP ADAPTER

Filed Oct. 13, 1944

FIG. 1.

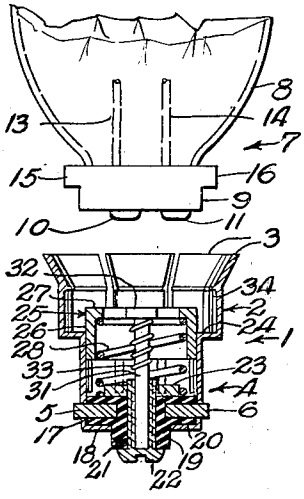


FIG. 2.

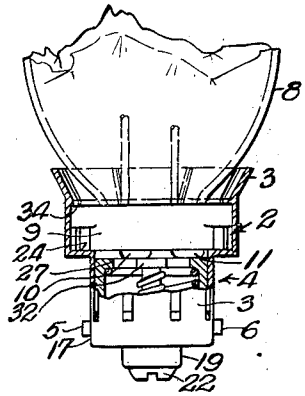


FIG. 3.

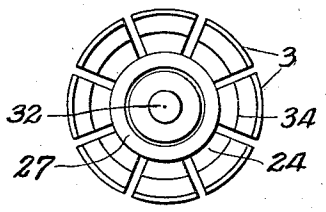


FIG. 4.

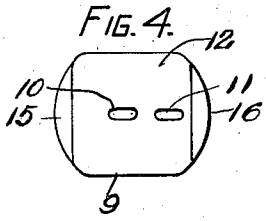
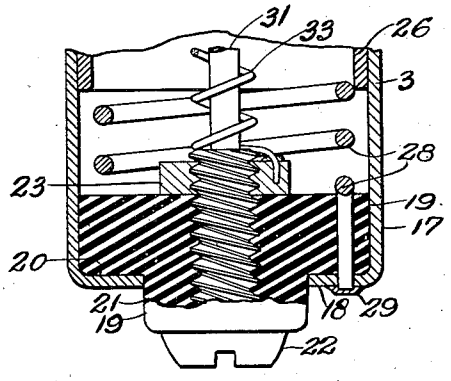


FIG. 5.



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ELECTRIC LAMP ADAPTER

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Application October 13, 1944, Serial No. 558,519½

2 Claims. (Cl. 173—344)

My invention relates to adapters for electric lamps and its principal object is to provide an adapter comprising a bayonet socket engaging part and a socket part into which a lamp base may be inserted and removed by force applied longitudinally of the adapter. Other objects and advantages of the invention will be apparent from the following description thereof and from the accompanying drawing in which Fig. 1 is a front elevational, partly sectional view of an adapter embodying my invention and a fragmentary view of the base end of a lamp of a type insertable into the socket part of the adapter; Fig. 2 is a similar view showing the lamp base disposed in the adapter; Fig. 3 is a plan view of the adapter shown in Figs. 1 and 2; Fig. 4 is a bottom plan view of the lamp base shown in Figs. 1 and 2 and Fig. 5 is an enlarged, fragmentary, sectional view of the adapter rotated 90° from the position shown in Figs. 1 and 2.

Referring to Figs. 1, 2 and 3 of the drawing the adapter 1 has a socket portion 2 comprising a plurality of lamp base gripping, spring fingers 3 disposed in a circle and a bayonet socket engaging portion 4 provided with a pair of indexing and locking contact pins 5 and 6. The lamp 7 is a photoflash lamp of the type disclosed in my copending application Serial Number 530,667, filed April 12, 1944, and comprises a light transmitting bulb 8 and an electrically insulating base 9 having a pair of electric contacts or terminals 10 and 11 disposed and exposed on the bottom or web portion 12 of the base 9 (Fig. 4). The contacts 10 and 11 are bent-over extensions of the current inlead wires 13 and 14 which extend into the lamp bulb 8 from the base 9 and which may support the usual igniter and the combustible, light emitting material (not shown for purposes of simplicity of illustration) in the bulb 8. The base 9 is provided with a pair of diametrically opposed flanges 15 and 16 (Fig. 4) which are engaged and gripped by the spring fingers 3 of the adapter 1 (Fig. 2) to hold the lamp 7 firmly in the adapter 1.

The adapter 1 is made up of an outer shell consisting of resilient metal. The shell has a solid walled, cylindrical portion 17 having an inwardly extending flange 18 at one end thereof which defines an opening accommodating an electrically insulating, hollow cylindrical bushing 19 which has a shoulder 20 engaging with the inner surface of the flange 18 and a bore of sufficient diameter to accommodate a hollow, tubular metal bolt or screw 21. The screw 21 is held on the bushing 19 by its head 22 and a metal nut 23. The bushing 19 is held in position against flange 18 by the pins 5 and 6 passing through the wall of the shell portion 17 and terminating inside the bushing 19 (Fig. 1).

The socket engaging part 4 extends with uniform bore an appreciable distance from the free surface of bushing 19. The spring fingers 3 extending from shell portion 17 flare outward to form bottom wall 24 and then turn in the direction of the adapter longitudinal axis to form the base gripping, socket part 2 of the adapter 1.

The part 4 of the adapter accommodates a metal ring contact 25 which is in the form of a sleeve 26 slidable longitudinally along the part 4. The sleeve 26 has an inwardly extending flange 27 at its end portion extending into the socket part 2 of the adapter 1. A metal spring 28 is affixed, as by clamping or soldering, to the under side of flange 27 and rests against the free surface of the electrically insulating bushing 19 to support the ring contact 25 partially within the space defined by the bottom wall 24 and the side wall having spring fingers 3 of the socket part 2. One end of the spring 28 passes through the bushing 19 (Fig. 5) and the flange 18 of the portion 17. It is affixed to the latter as shown at 29, as by soldering, to make a positive electrical connection therewith. The ring contact 25 engages with contact 11 on the base 9 when the latter is inserted into the socket portion 2 of the adapter 1 (Fig. 2).

The ring contact 25 is concentric with a metal pin contact having a shank 31 and a flattened, lamp contact engaging head 32 supported in a common plane with flange 27 of the ring contact 25 by a metal spring 33. The spring 33 is affixed to the under side of the head 32, as by soldering or clamping, surrounds the pin shank 31 and rests against the top of screw 21 extending beyond nut 23. One end of spring 33 passes through an offset opening in nut 23 (Fig. 5) and is affixed therein as by soldering or clamping. The shank 31 of the pin 30 is slidably disposed in the bore of the screw 21.

When the lamp base 9 is out of the socket 2 the contact flange 27 and the contact head 32 are in socket portion 2 as shown in Fig. 1. The lamp base 9 is inserted in the adapter by moving the lamp 7 longitudinally toward the adapter 1 until the bottom of the base 9 engages the bottom wall 24 of socket portion 2 (Fig. 2). With base 9 in this position the springs 28 and 33 force the contact flanges 27 and contact head 32 firmly against the base contacts 11 and 10, respectively, to establish good electrical contact therewith.

As the lamp base 9 is thrust into the socket portion 2 the base flanges 15 and 16 first engage the surfaces of the spring fingers 3 sloping upwardly from the shoulders or ridges 34 on the fingers 3 and said fingers 3 are forced outward until the said flanges 15 and 16 pass the ridges 34. Then the surfaces of the fingers 3 sloping downwardly from the ridges 34 engage the flanges 15 and 16 so that the force exerted inwardly by the spring fingers retains the base 9 in the socket portion 2 against the force exerted by the springs 28 and 33 against the base contacts 11 and 10, respectively. The lamp base 9 is thus held firmly in the socket portion 2 and after being flashed by the usual means now in use for flashing such photoflash lamps it may be pulled out of the socket part 2 for replacement by an unflashed lamp.

The adapter 1 makes possible the use of photoflash lamps equipped with bases of the type shown in the drawing and described above in existing equipment, such as photoflash lamp units, intended to be used with lamps provided with single contact, candelabra bases. Further, by using the adapter described above in conjunction with existing and commercially available adapters having a screw base portion and a single contact, candelabra socket portion lamps having the bases described herein may be used with present equipment provided with screw type sockets.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. An adapter for an electric lamp having spaced, electric terminals exposed on the bottom of a base, said adapter comprising a shell having a socket engaging portion, and a socket portion having lamp base gripping spring fingers, and spring mounted, spaced, electric contacts normally projecting from the interior of said socket engaging portion into said socket portion for engaging the terminals of an inserted lamp, one of said contacts being a sleeve slidable along the bore of said socket engaging portion and having an inwardly extending, lamp terminal engaging flange at its end in said socket portion, another of said contacts being a pin supported with its lamp terminal engaging head concentric with the said flange.

2. An adapter for an electric lamp having spaced, electric terminals exposed on the bottom of a base, said adapter comprising a shell having a socket engaging portion, a socket portion having a plurality of lamp base gripping spring fingers, and spring mounted, spaced, electric contacts normally projecting from the interior of said socket engaging portion into said socket portion for engaging the terminals of an inserted lamp, one of said contacts being a hollow sleeve slidable along the bore of the socket engaging portion and having an inwardly extending, lamp terminal engaging flange at its end in said socket portion, another of said contacts being a pin supported within said sleeve contact with its lamp terminal engaging head concentric with the flange of the sleeve contact, said contacts being supported by the socket engaging portion of said adapter.

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