H. A. DOUGLAS.

REFLECTING LAMP.

APPLICATION FILED APR. 4, 1917.

1,357,036. Patented Oct. 26, 1920.

Fig. 1.

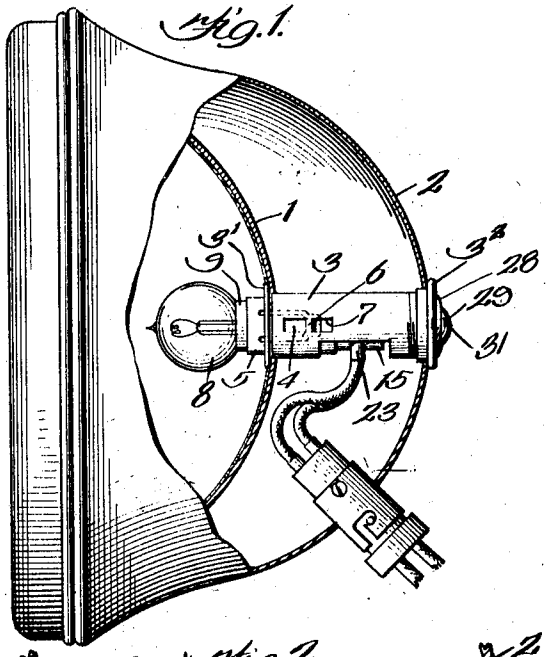


Fig. 5.

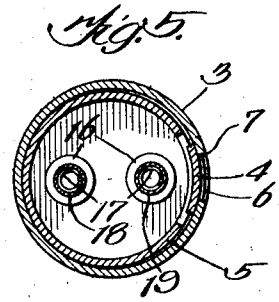


Fig. 2.

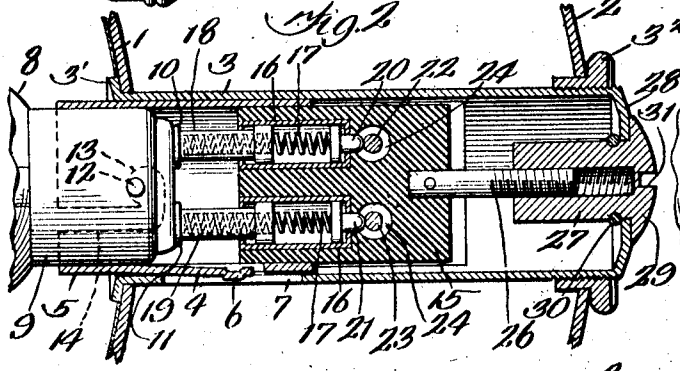


Fig. 3.

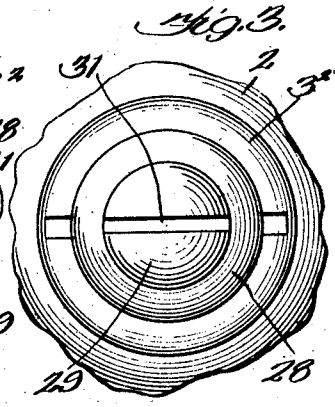


Fig. 4.

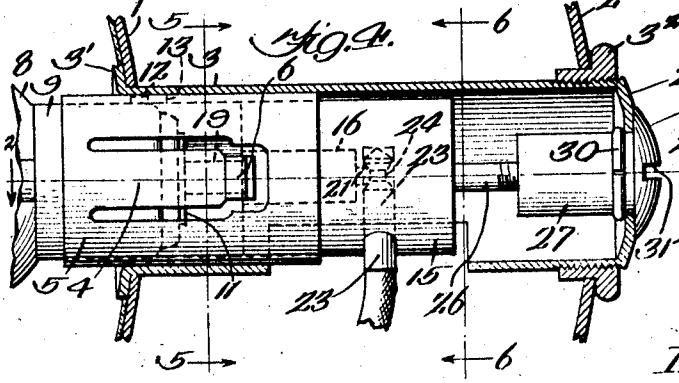
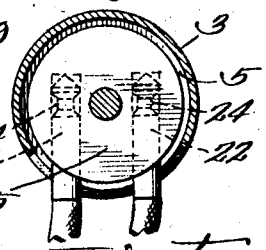


Fig. 6.



Inventor:
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By G. L. Gregg Atty.

UNITED STATES PATENT OFFICE.

HARRY A. DOUGLAS, OF BRONSON, MICHIGAN.

REFLECTING-LAMP.

1,357,036. Specification of Letters Patent. Patented Oct. 26, 1920.

Application filed April 4, 1917. Serial No. 159,731.

To all whom it may concern:

Be it known that I, HARRY A. DOUGLAS, citizen of the United States, residing at Bronson, in the county of Branch and State of Michigan, have invented a certain new and useful Improvement in Reflecting-Lamps, of which the following is a full, clear, concise, and exact description.

My invention relates to reflecting electric lamps and relates particularly to an electric lamp employing a concave casing, a concave reflector therein and spaced apart therefrom at its rear end, and a tubular holder assembled at its front end with the reflector and at its rear end with the casing. The invention has for its object the provision of an improved and simplified construction in this type of electric lamp whereby the lamp bulb may readily be focused with respect to the reflector without requiring any other than the mere longitudinal movement of the lamp bulb.

I will explain my invention more fully by reference to the accompanying drawing showing the preferred embodiment of the invention and in which Figure 1 is a view in elevation, partially in section, illustrating the construction of my invention; Fig. 2 is a longitudinal sectional view of a part of the structure; Fig. 3 is an end view of the structure shown in Fig. 2; Fig. 4 is a view on a larger scale of a part of the structure as it appears in Fig. 1, the tubular holder being, however, shown in section; Fig. 5 is a view on line 5—5 of Fig. 4; and Fig. 6 is a view on line 6—6 of Fig. 4.

Like parts are indicated by similar characters of reference throughout the different figures.

The concave reflector 1 is received in the concave reflector carrying casing 2 and is spaced apart therefrom. A rearwardly extending tubular continuation 3 virtually constitutes a continuation of the reflector 1. The front end of the tubular holder is provided with a flange 3^1. In the form of the invention shown, the rear end of the holder is provided with a flange 3^2 that is preferably in the form of a nut in threaded engagement with the complemental portion of the holder. The reflector and casing are disposed between these flanges and the pressure with which the flanges engage these elements is regulated by the nut 3^2. The holder 3 extends from the reflector to the casing and is assembled at one end with the reflector and at the other end with the casing and serves to prevent these parts from changing their relative positions whereby any focal adjustment of the lamp bulb is prevented from being disturbed. A spring tongue 4 is integrally formed with a shell 5 that constitutes a holder for contact carriers, this spring tongue having ample clearance at its side margins to permit it freely to function. Some part of the tongue, preferably the rear free end thereof, has a part 6 projecting therefrom which is narrower than the balance of the tongue and is slightly narrower than a slot 7 in the holder 3 whereby this portion may project into the slot to prevent the shell from turning with respect to the slot while at the same time the side margins of the tongue 4 are adapted to press against the side margins of the slot 7. The tongue thus presses upon a surface of the holder 3 and, where there is but one tongue, forces the shell toward the opposite side of the holder whereby the shell is held in engagement with the holder 3. The slot 7 is elongated so that the shell 5 may be moved back and forth in its holder 3 whereby in the structure illustrated the position of the lamp bulb 8 which is carried by the forward end of the shell in front of the reflector may be adjusted with respect to the reflector. The base 9 of the lamp bulb 8 constitutes the forward contact carrier and as the arrangement illustrated is a double pole arrangement this contact carrier 9 carries two rear contacts 10 and 11. The lamp base 9 is provided with bayonet pins 12 engageable within bayonet seats 13 constituting parts of bayonet slots 14.

The rear contact carrier includes a plug 15 of insulation, this plug being in fixed relation to the shell or lamp bulb holder 5. The plug 15 carries two metallic spring barrels 16 which house springs 17. These springs push the front contacts 18 and 19 into engagement with the contacts 10 and 11 and push the rear contacts 20 and 21 into engagement with the terminal plugs 22 and 23 that are inserted through lateral openings 24 in the plug 15.

The focusing device includes one member 26 that is in substantially fixed connection with the shell 5 preferably by being in substantially fixed connection with the plug 15 that is, in turn in substantially fixed connection with said shell. The complemental

member 27 of the focusing device is carried by the holder 3, this member 27 being rotatable and in threaded connection with the member 26, the member 26 being preferably in the form of a rod, while the member 27 is in the form of a threaded sleeve engaging said rod. The sleeve 27 is confined to a fixed plane of rotation by having the rear wall 28 of the holder 3 interposed between the head 29 of the sleeve 27 and a split washer 30 that is carried upon the sleeve within the holder 3. The sleeve head 29 has a screw driver slot 31 by which the sleeve may be turned and as the sleeve is prevented from moving back and forth the rod 26 must move back and forth when this sleeve is turned to cause corresponding movement of the shell 5 and the lamp bulb 8 carried at the forward end of this shell. The spring 4 acts to hold the shell 5 in any position to which it is moved and serves to prevent the sleeve 27 from accidentally rotating to cause accidental misadjustment of the lamp bulb.

From the foregoing it has been made clear that the construction of my invention includes an electric lamp bulb mounted to slide within and independently of the tubular holder 3 to be movable in and out for focusing, in combination with an adjusting device for moving the lamp bulb in and out and including one member movable longitudinally and independently of said holder and connected with the lamp bulb and another member co-acting with and movable with respect to the rear end wall of said holder to effect longitudinal movement of the aforesaid member and, thereby, of the lamp bulb, whereby no rotary movement need be imparted to the lamp bulb in effecting focal adjustment and whereby the mechanism for effecting the focal adjustment is much simplified.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown, as changes may readily be made without departing from the spirit of my invention, but having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

In a reflecting lamp, the combination with a concave casing; of a concave reflector therein and spaced apart therefrom at its rear, said casing and reflector having openings at their rear ends; a tubular holder extending from the reflector to the casing and assembled at said openings with the reflector and casing normally to have no motion with respect thereto, said holder having a rear end wall; an electric lamp bulb; a shell at the forward end of said tubular holder and with whose forward end said lamp bulb is assembled, said shell being mounted to slide within and longitudinally of said holder to be movable in and out for focusing the lamp; a plug connected with the rear end of said shell and movable therewith longitudinally of said holder, this plug carrying forwardly pressed contacting means engageable with contacting means upon the base of the lamp bulb to include the lighting element of the bulb in circuit; a rod carried by and extending rearwardly from the plug; and a sleeve in threaded engagement with the rod and confined to a single plane of rotation by the rear end wall of said tubular holder whereby the contact carrying plug, the shell with which the plug is connected, and the lamp bulb connected with the shell are together movable longitudinally of the tubular holder to focus the lamp.

In witness whereof, I hereunto subscribe my name this 28th day of February, A. D., 1917.

HARRY A. DOUGLAS.