Apr. 3, 1923. 1,450,253

H. A. DOUGLAS

SWITCHING DEVICE

Filed Aug. 15, 1918

Fig. 1.

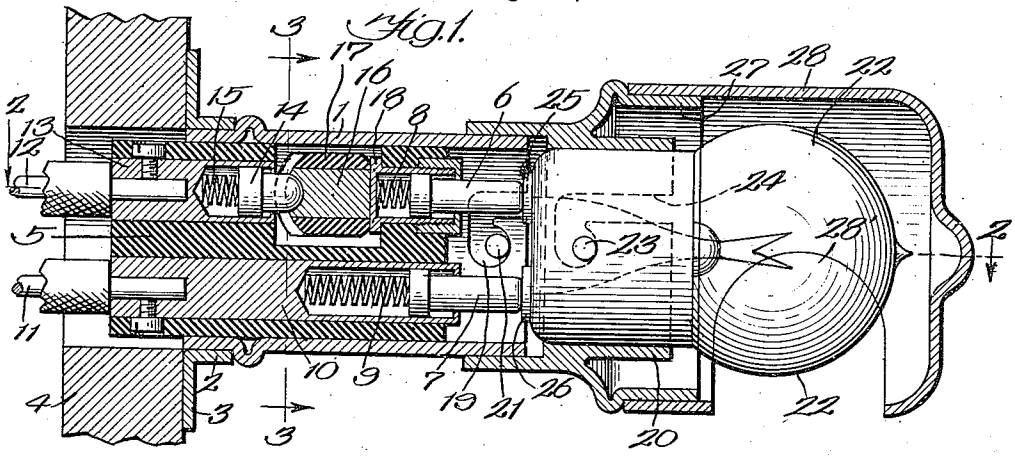


Fig. 2.

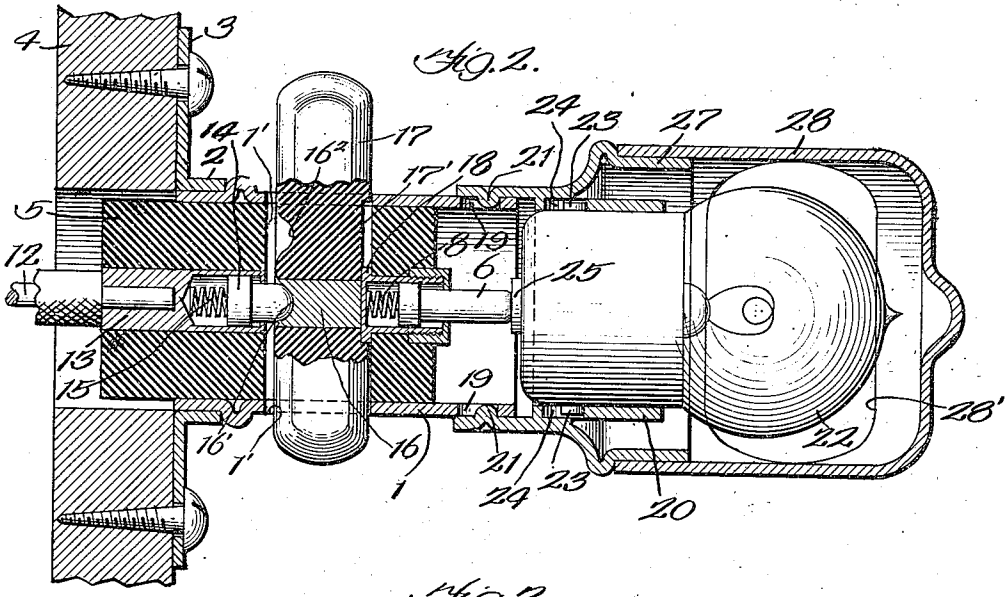
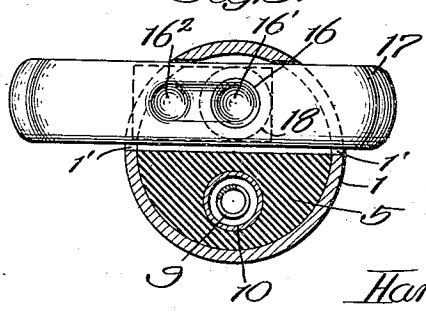


Fig. 3.



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UNITED STATES PATENT OFFICE.

HARRY A. DOUGLAS, OF BRONSON, MICHIGAN.

SWITCHING DEVICE.

Application filed August 15, 1918. Serial No. 250,023.

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 Switching Devices, of which the following is a full, clear, concise, and exact description.

My invention relates to switching devices, the switching device of my invention being of particular service when employed in conjunction with incandescent lamp supporting sockets, though the invention is not to be thus restricted.

In carrying out my invention I employ a shell and aligned contacts held thereby and therein. A switching member is employed which is accessible for operation laterally of the shell, this switching member comprising a contact carrier interposed between said aligned contacts and itself carrying a switching contact adapted for alignment and simultaneous engagement with said aligned contacts, one of these aligned contacts being spring pressed into engagement with said switching contact upon said carrier and which switching contact engages the other of said aligned contacts. The contact carrier of the switching member, being movable laterally or transversely of the shell, is adapted to bring the switching contact into or out of simultaneous engagement with the aforesaid aligned contacts to make or break circuit.

I will explain my invention more fully by reference to the accompanying drawing showing the preferred embodiment thereof and in which Fig. 1 is a longitudinal sectional view of a cowl lamp made in accordance with the invention; Fig. 2 is a view on line 2—2 of Fig. 1; and Fig. 3 is a sectional view on line 3—3 of Fig. 1.

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

The device of my present invention is shown in conjunction with an incandescent lamp structure that forms the subject matter of my Patent No. 1,285,071, dated November 19, 1918.

The main socket or shell 1 is supported within a ferrule 2 having a flange 3 which is screwed to the dash board or other mounting 4. This main socket contains a contact carrier 5, and as the structure illustrated is a so-called two pole structure but to which the invention is not to be limited, this contact carrier supports two spring contacts comprising contacting plungers 6 and 7 which are respectively forwardly pressed by coiled springs 8 and 9. The plunger contact 7 and the coiled spring 9 operate in the bore of a terminal conductor 10 to which a circuit conductor 11 is secured. The other circuit conductor 11 is secured to a terminal conductor 13 having a bore in its forward end. A plunger contact 14 operates in this bore and is pressed forwardly by a coiled spring 15. A switching metallic contact 16 is carried by and passes transversely through the bar 17 of insulating material, this bar passing transversely through the shell 1 and being movable laterally of such shell. The spring 8 and the contact 6 are operable in a current conducting spring barrel 18 which is aligned with the plunger contact 14. When the switching contact 16 is placed in alignment with the plunger contact 14 and the spring barrel 18, the plunger contact 6 is electrically connected with the circuit conductor 12 whereby any circuit continuing device that is connected with the forward ends of the contacts 6 and 7 is included in circuit. When the switching contact 16 is moved out of alignment with the elements 14 and 18 the circuit is open.

The switching contact 16 has a recessed seat 16^1 which is engaged by the forward rounded end of the plunger contact 14 when the switching contact 16 is placed in alignment with the contacts 14 and 18 thereby to hold the switching member 16, 17 in place when the circuit is to be closed. The insulating bar 17 has another recessed seat 16^2 engageable by the rounded end of the plunger contact 14 to hold said switching contact out of alignment with the aligned contacts 14 and 18 when the circuit is to be opened. It will be observed that the inner end or base of the spring barrel is inwardly extended beyond the portion of the contact carrier 5 supporting this spring barrel in order to assure good contact between this spring barrel or contact 18 and the switching contact 16. This extended portion of the contact 18 projects into a recess 17^1 formed in the bar 17 and elongated lengthwise thereof, this recess having a depth which is less than the length or thickness of the part of the contact 18 that extends inwardly from the portion of the con-

tact carrier 5 supporting this contact so that the switching contact 16 is sure to have good sliding engagement and effective contact with the contact 18 which would not be the case if the recess 17^1 were deep enough to permit such an engagement at the margins of this recess with the socket 1 that would prevent the sliding contact 16 from effectively reaching the contact 18. This projecting portion of the contact 18 also maintains the bar 17 in assembly with the shell or socket 1 since it engages one or the other of the ends of the recess 17^1 to prevent the complete withdrawal of said bar. In assembling the bar 17, with the shell 1 the entering end of said bar must be placed nearer the inner end of said shell than is normally the case in order that one end of the bar or the other may pass by the contact 18 to bring this recess 17^1 in position to receive the rearwardly projecting end of said contact as said bar is pushed through the shell. To this end the bar is movable longitudinally of the shell on which account the opening 1^1 in the contact carrier 5 is rearwardly extended beyond the normal location of the bar 17. If it is desired to withdraw the bar it is pressed rearwardly against the force of the spring 15 to place the recess 17^1 in the position in which the contact 18 is not received therein so that such contact will not obstruct the withdrawing movement of said bar. The ends of the recess 17^1 desirably correspond to the locations of the recesses 16^1, 16^2, one end of the recess 17^1 being engaged by the contact 18 when circuit is opened and the other end by such contact when the circuit is closed.

The forward end of the main socket 1 has bayonet channels formed therein, these bayonet channels preferably being in the nature of bayonet slots 19 extending through the side of the socket 1. A supplemental socket 20 surrounds the forward end of the main socket and has inwardly extending bayonet projections 21 for engagement with the bayonet seats afforded by said bayonet slots or channels to couple both sockets separably. The supplemental socket, in surrounding the main socket, conceals the bayonet slots 19 to improve the appearance of the structure and the bayonet channels 19, by being in the form of slots, permit the coupling of a circuit extending plug with and within the main socket 1 when the supplemental socket 20 is removed. An incandescent lamp bulb 22 has its base supplied with bayonet projections 23 which are insertable within the bayonet channels or slots 24 formed in the supplemental shell 20 in order separably to couple the lamp bulb with said supplemental socket. The base of this lamp bulb constitutes a contact carrier which supports the contacts 25 and 26 which are connected with the terminals of the lamp bulb filament. These contacts 25 and 26 are engaged by the forwardly spring pressed contacts 6 and 7 when the main and supplemental sockets have been assembled and when the lamp bulb is assembled with the supplemental socket. These contacts 6, 7, pressing forwardly upon the contacts upon the lamp bulb base, maintain all of said bayonet projections 21 and 23 in engagement with their seats in the corresponding bayonet channels 19 and 24. When the aforesaid switching contact 16 is aligned with the contacts 14 and 18 to be engaged thereby the incandescent lamp bulb is in circuit and when this contact 16 is out of such alignment the circuit of such lamp bulb is open.

Where a cowl or hood is to be provided for the lamp bulb the socket 20 desirably has a cylindrical skirt thereon upon which the cylindrical cowl 28 may be disposed and on which skirt said cowl may be turned to adjust the location of the light emitting opening 28^1 formed in the cowl.

The supplemental socket and cowl lamp features form the subject matter of my aforesaid co-pending application.

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:—

Switching mechanism including a shell; a bar of insulating material passing transversely through the shell and movable transversely and longitudinally of the shell; aligned contacts held within the shell; and a switching contact simultaneously engageable with said aligned contacts and carried by and extending transversely through said bar and movable by the bar into and out of alignment with said aligned contacts to close and open circuit, said bar having a recess formed in one side thereof and elongated lengthwise of the bar and to which recess said switching contact extends and into which recess one of said aligned contacts projects, the other contact being a spring contact constantly pressing the bar toward the first contact to maintain it in said recess thereby to maintain the assembly of the bar and shell.

In witness whereof, I hereunto subscribe my name this 12th day of August A. D., 1918.

HARRY A. DOUGLAS.