

June 28, 1927.

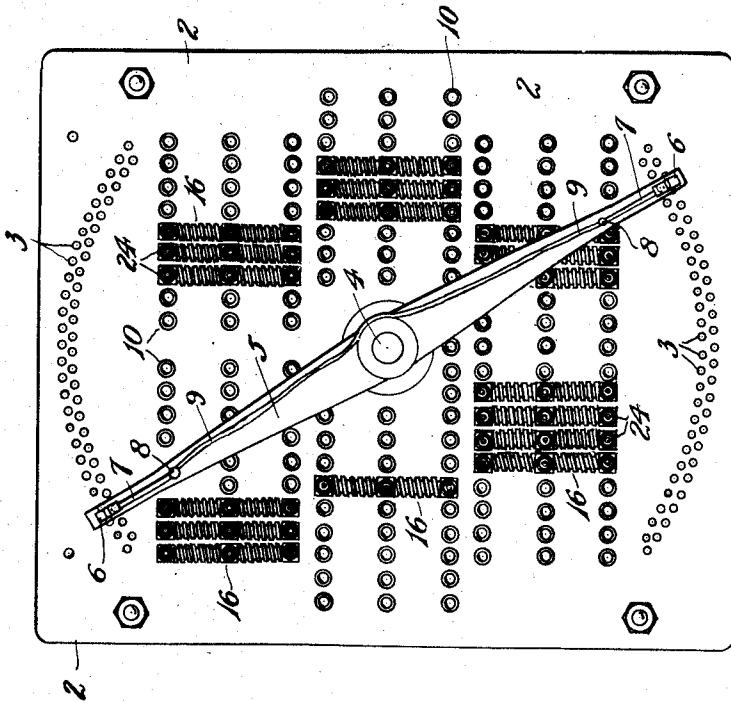
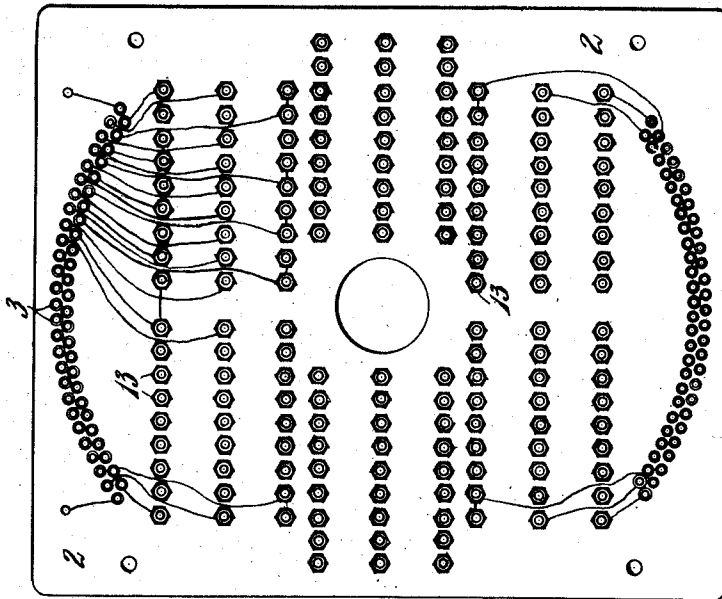
W. ROW

1,633,647

ELECTRICAL DIMMER SWITCH

Original Filed Nov. 2, 1925

2 Sheets-Sheet 1



Inventor

W. Row,

by *Geo. A. New*
att'y

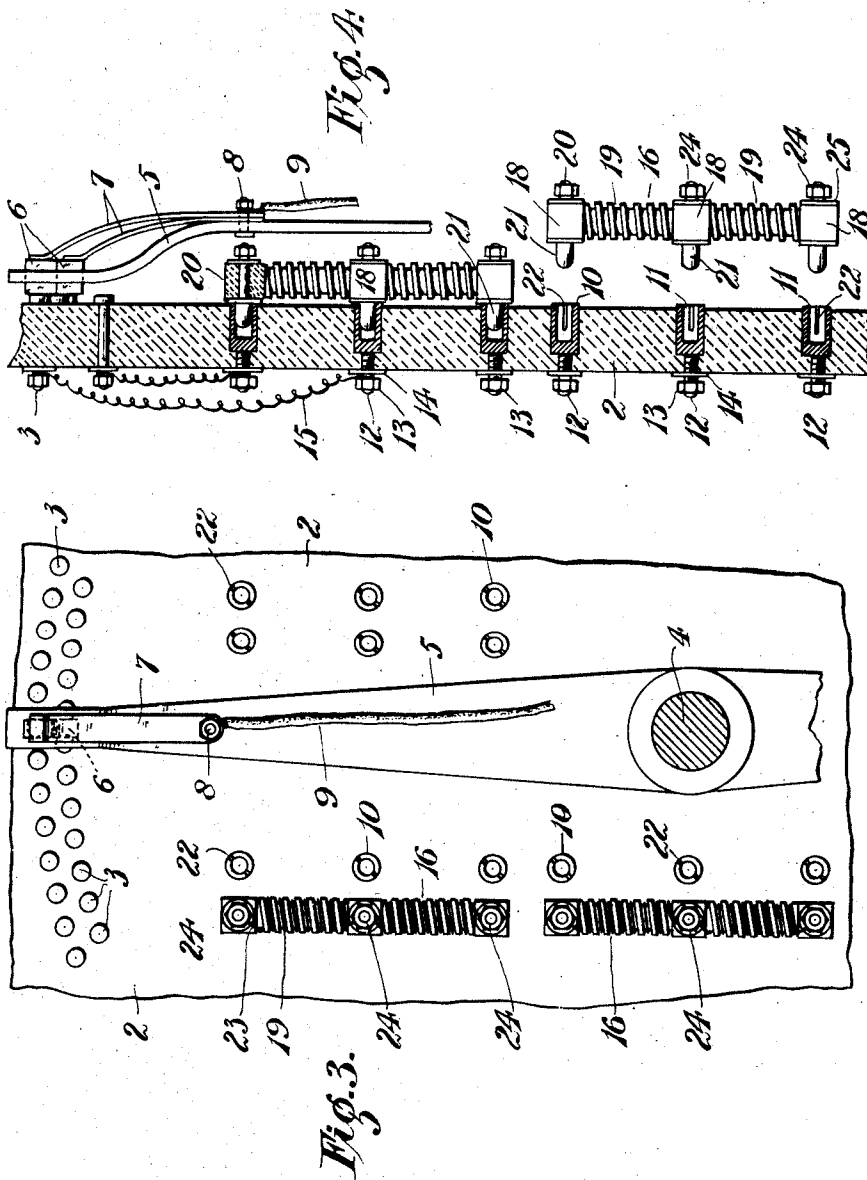
June 28, 1927.

W. ROW

1,633,647

ELECTRICAL DIMMER SWITCH

Original Filed Nov. 2, 1925 2 Sheets-Sheet 2



Inventor
W. Row,
by *W. L. Lamm*
att'y.

Patented June 28, 1927.

1,633,647

UNITED STATES PATENT OFFICE.

WILLIAM ROW, OF MELBOURNE, VICTORIA, AUSTRALIA.

ELECTRICAL DIMMER SWITCH.

Application filed November 2, 1925, Serial No. 66,373, and in Australia November 13, 1924. Renewed May 20, 1927.

This invention relates to improvements in electrical dimmer switches, and particularly to dimmer switches of the type employed for controlling banks of lamps used for stage illumination or for lighting halls and theatres.

In dimmer switches of this type the resistance coils or elements are rigidly secured to the rear surface of the switch base panel, so that in the event of one of said resistance coils or elements becoming fused considerable time is required to effect repairs and much inconvenience is caused, particularly if the mishap should occur during the playing of a theatrical performance.

One object of the present invention is to provide a construction of dimmer switch wherein the resistance elements can be speedily removed from the switch base panel for repair or replacement purposes.

According to one form of the invention sockets are fitted to the switch base panel and are wired to the switch contact studs and resistance elements are detachably fitted to said sockets. The resistance elements may each comprise a core of insulating material, which has plugs to fit into said sockets on the base panel and is grooved helically to receive a resistance wire connected at its ends to said plugs.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a view in front elevation of a dimmer switch constructed according to the improvements.

Figure 2 is a rear elevational view of the dimmer switch.

Figure 3 is a fragmentary view of the switch base panel showing two of the improved detachable resistance elements fitted in position.

Figure 4 is a sectional view of Figure 3 but showing one of the resistance elements in detached position.

In these views 2 indicates the insulating base panel of a dimmer switch, 3 the usual contact studs arranged in arcuate rows at the upper and lower ends of said base panel, 4 the switch spindle, 5 the contact arm fixedly mounted on said spindle, and 6 the contact brushes which are carried at the ends of said contact arm. The contact brushes 6 are pressed against the studs 3 by springs 7 secured by screws 8 to the contact arm. The brushes at the upper end of the contact

arm 5 are electrically connected in the usual manner to the brushes at the lower end of said contact arm by means of an insulated wire 9 connected to both screws 8.

Fitted in the switch base panel 2 and arranged in spaced relationship are sockets 10 each of which is constructed having a tubular end portion 11 to fit flush with the front surface of the base panel 2, and a screw-threaded shank 12 which projects from the rear surface of said base panel 2 and has a nut 13 and a washer 14. The switch contact studs 3 are wired to the sockets 10 by wires 15 arranged on the rear of the base panel and having their ends clamped between the nuts 13 and the washers 14. The system of the wiring is similar to that used on dimmer switches of ordinary construction for connecting the contact studs 3 to the resistance coils or elements.

Detachably fitted to the sockets 10 are resistance elements 16, each of which comprises a core 17 of asbestos or like material formed having cubical portions 18 and helically grooved portions 19. Fitted in holes bored through the cubical portions 18 of said core are screws 20 formed with plug-heads 21 to fit into the tubular ends 11 of the sockets 10. To ensure satisfactory contact being made between the plug-heads 21 and sockets 10, the tubular ends 11 of said sockets may be split or slitted as at 22—see Figures 3 and 4.

Wound around the helically grooved portions 19 of the core 17 is a resistance wire 23 which is fastened at its ends to the two end screws 20 by nuts 24 and washers 25. This resistance wire is tapped at a central point by being passed between the nut 24 and the washer 25 of the central screw 20 of the core 17.

In the event of one of the resistance elements 16 fusing or becoming damaged whilst the dimmer switch is in use, the damaged element is removed by being pulled outwardly from the base panel to disengage the plug-heads 21 from the sockets 10, when a new element is inserted in its place.

As the resistance elements 16 are arranged on the front surface of the base panel 2 and are each separately detachable therefrom, replacements can be conveniently effected without loss of time, as it is unnecessary to disassemble any parts of the dimmer switch.

It will be understood that in some cases the resistance elements 16 may be constructed without the centralappings of the resistance wires 23, in which case only two sockets 10 would be provided for each element, but in most cases it is preferable to use these centralappings as by their use very gradual dimming effect can be obtained.

In a modification of the invention (not illustrated) spring contacts of substantially U-shape are used in lieu of the sockets 10 on the switch base panel 2, and blade contacts are fitted to the resistance elements 16 in place of the plug-heads 21 to engage with said spring contacts. Said blade contacts may be secured in slits formed in the asbestos cores 17 and they are electrically connected to the ends of the resistance wire by suitable terminal screws.

What I do claim is:

1. In an electrical dimmer switch, a panel, contact studs carried thereby, members mounted in the panel and extending there-through, said members being formed at one end to present sockets on that side of the panel and at the opposite end to present solid shanks on the opposite side of the panel, resistance elements removably and frictionally engaging in selected sockets, and conductors cooperating with the shanks and leading to the contact studs.

2. In an electrical dimmer switch, a panel, contact studs carried thereby, and sockets fitted in the panel and opening to one sur-

face of the panel, said sockets being projected to the opposite surface of the panel for the connection of conductors leading to the contact studs, and independent resistance elements formed with plugs to frictionally engage in said sockets to interconnect the sockets through said resistance, each of said resistance elements comprising a core of insulating material, screws passed through the core and formed with said plugs, and a resistance wire wound about the core of insulating material and connected to the screws.

3. In an electrical dimmer switch, a panel, contact studs carried thereby, and sockets fitted in the panel and opening to one surface of the panel, said sockets being projected to the opposite surface of the panel for the connection of conductors leading to the contact studs, and independent resistance elements formed with plugs to frictionally engage in said sockets to interconnect the sockets through said resistance, each of the resistance elements comprising a core of insulating material having cubical members and helically grooved portions between said members, screws terminating in said plugs fitted through said members, and a resistance wire wound around said helically grooved portions and connected to said screws.

In testimony whereof I affix my signature.

WILLIAM ROW.