

STRAND ARC CONTROLS

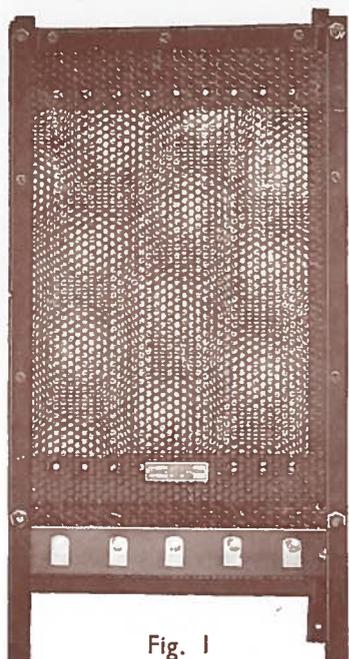


Fig. 1

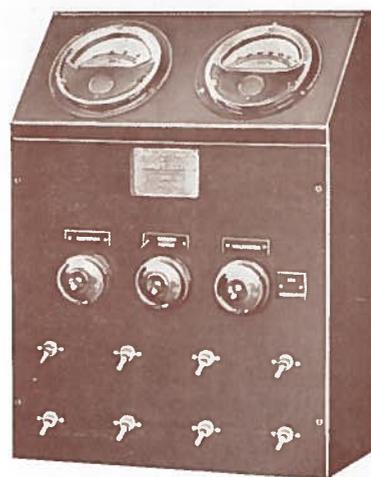


Fig. 2

In order to maintain a steady arc on Direct Current, a resistance (the value of which is dependent upon the supply voltage, and the arc voltage and current) is normally connected in series with the arc. (The supply voltage should be at least 50 volts higher than the arc voltage.) When using Alternating Current an inductor is to be preferred in view of the economies made in running costs and the reduction in noise normally associated with an A.C. arc.

(I) RESISTANCES

In theatres, a resistance may be installed in any convenient place in the circuit approved by the licensing authority. It is not generally permissible to install resistances, whose total dissipation of electrical energy (see note overleaf at foot) exceeds 2 kilowatts, in the projection room of a cinema or of a theatre equipped for cinema projection. To comply with this regulation, it is usually necessary to install the arc resistances outside the projection room.

There are several ways of doing this. A series resistance may be used with the switch spindle extended to work through a wall. The resistance is then fixed in a room adjacent to the projection room. A better method is to use a parallel type resistance (Fig. 1), with step switches mounted on a control panel in the projection room, adjacent to the projector or arc lantern (Fig. 2). The switches are either heater (tumbler) switches for steps up to 15 amps., heater (rotary) switches for steps up to 30 amps., or knife switches for larger steps than 30 amps. Another method is to use parallel type resistances with contactors for step selection. This method is recommended when the resistances are situated some distances from the arc, since only two wires capable of carrying the full load are run to the arc, and smaller wires only need be run to the control switches (operating the contactors), which can be grouped on a very small panel mounted on or near the projector lamphouse.

The current taken by the arc will depend upon the type of lantern, the length of throw, and the purpose for which it is being used. Having decided upon the type of lantern and the maximum current to be taken by the arc, suitable carbons and their recommended working voltage can be determined.

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