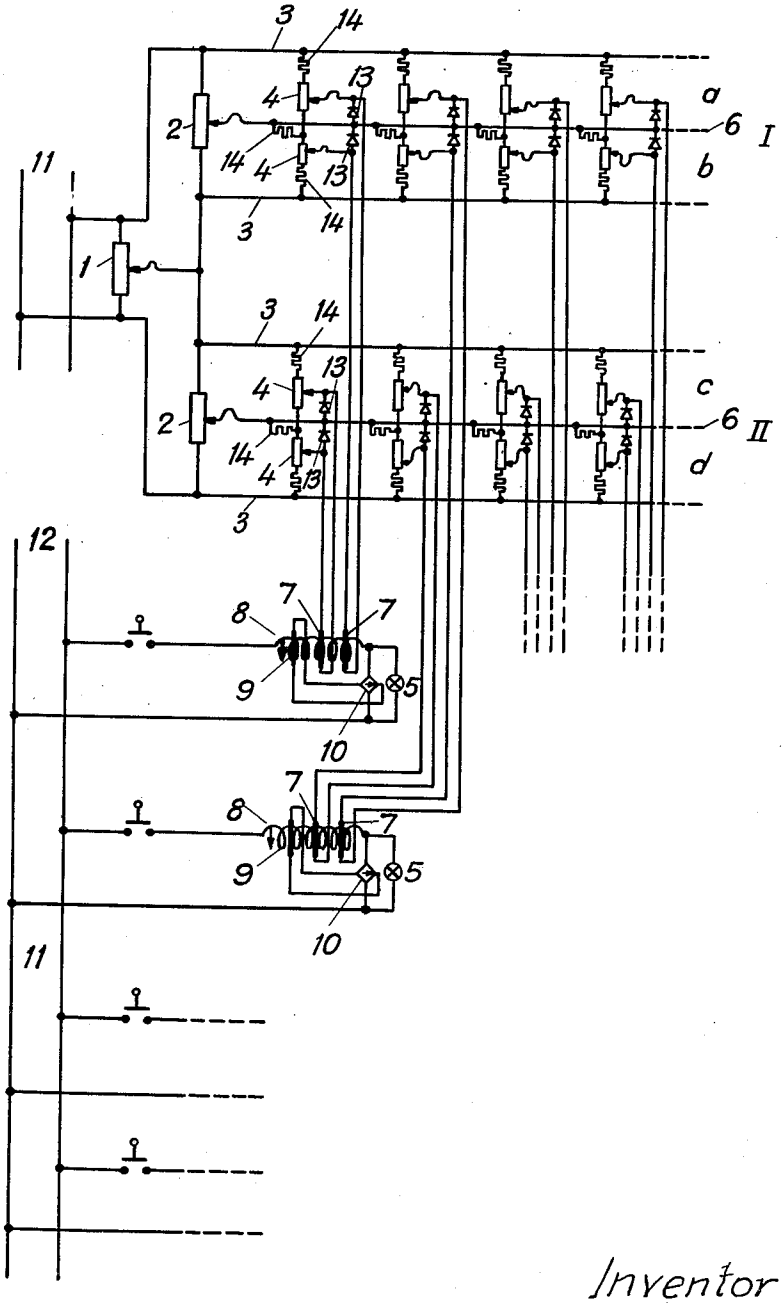
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LIGHTING CONTROL

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Inventor
Algot Arvidsson
By Cameron Quinn
Attorney.

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LIGHTING CONTROL

Algot Arvidsson, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

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In the control of the lighting of theaters or the like, it is sometimes desirable to preset the control means for a plurality of "lighting scenes" in order to facilitate the transition from one scene to another during the performance by means of a simple operation. Due to their known advantageous properties such as less control power, noiseless function, need of less space, and freedom in the choice of place for the control means, direct current saturable reactors, hereinafter referred to as transductors, are especially suitable for the lighting control.

The present invention relates to a connection arrangement which allows operation of a plurality of lighting scenes by means of a minimum of transductors.

An object of the present invention is to provide a stage lighting system which comprises dimming and fading means such as voltage dividers, selector means for selecting and transductors for regulating the intensity of illumination of the lamp units or groups (in the following briefly named lamps). The control circuit for each scene is provided with a number of selectors corresponding to the number of lamps to be controlled, and pairs of said scene circuits are joined to individual control circuits, the transductor for each lamp being provided with as many D. C.-control windings controlled by said selectors as there are control circuits.

This and other objects of the invention will become apparent from the following description in combination with the accompanying drawing which shows by way of example a connection arrangement of the invention.

On the drawing, there are shown four circuits for four "lighting scenes" *a*, *b*, *c*, and *d*. The circuits *a*, *b* and *c*, *d* are joined to control circuits I and II, respectively, having separate outer conductors and a common middle conductor.

The incoming control power may be supplied to either of the control circuits I or II by means of a voltage divider or dimmer 1. Each control circuit has a voltage divider or fader 2, the movable tap of which is intended to be held in either of two outer positions for switching in one scene circuit whilst the other becomes short-circuited. Across the outer conductors 3 there are inserted four selectors 4 such as rheostats for each of a plurality of lamps 5 to be controlled according to four scenes *a*, *b*, *c*, *d* to be preset and switched in in the course of the performance. For the sake of simplicity, only two lamps 5 with corresponding control means are shown. The junction point of each pair of series connected selectors 4 is coupled to the common middle conductor 6, which is connected with the movable tap of the fader 2. From the movable taps on each pair of selectors 4 a conductor leads to a D. C.-control winding 7 on one transductor 8 associated with each lamp 5. According to the invention, each transductor 8 is provided with two D. C.-control windings 7, by which the intensity of illumination may be controlled successively. By this arrangement the advantage is obtained that four scenes may be preset and controlled by means of one single transductor for each lamp. As the costs for the transductors are considerably higher than those for the other control means, the lighting control system becomes considerably less expensive. Furthermore, the saving of space obtained by the invention is of great importance especially in theaters where the local conditions are restricted. Each transductor has also a sensing D. C. winding 9 connected in parallel to the lamp. The source for the control circuits is designated with 11, and for the lamp circuits with 12.

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The conductors from the movable taps on each pair of selectors 4 are bridged and the bridging conductor is connected with the common conductor 6, uni-directional electrical valves 13 being inserted in this conductor in such a manner that the control current passing the selector 4 in operation flows past the selector not actually in operation.

Furthermore, in order to control the intensity of illumination without perceptible fluctuations as the valves 13 do not work perfectly, and in order to obtain absolutely linear changing-over of the light from one scene to the future scene, series resistances 14 are inserted in the feeders 3 and 6 ahead of the individual selectors 4 and their junction points. By suitably dimensioning said series resistances, it will be possible to avoid said valves 13.

In the embodiment shown, it is assumed that the source 11 is a direct-current source. It will be understood, however, that it also may be an alternating-current source. In this case, the control current may be rectified either by a common rectifier inserted in the vicinity of the dimmer 1, or by rectifiers in the scene circuits *a*, *b*, *c*, and *d*, or by individual small rectifiers within the conductors to the transductors 8 (not shown on the drawing).

Although particular embodiments of this invention have been described, various modifications may be made without departing from its scope. The invention is exemplified by two control circuits but it will be understood that a plu-

rality of such pairs of control circuits may be employed.

I claim as my invention:

1. A stage lighting system, comprising a control current source, two main control circuits, a dimming means connected in parallel to said source for alternately supplying control voltage to either of said main control circuits, scene circuits for a plurality of lighting scenes capable of being reset, fading means joining said lighting scenes in pairs to said main control circuits for alternately supplying control voltage to either of said scene circuits, transductors, selecting means for adjusting the current to be applied to the direct current control windings of said transductors, and means connecting the alternating current windings of said transductors to lamps to be controlled, and each transductor for at least one lamp being provided with as many direct current control windings as there are circuits coupled to said main control circuits.

2. A stage lighting system according to claim 1, wherein said selecting means are series-connected to each other between the outer conductors of said scene circuits constituting the main control circuits, wherein their junction points are

connected to common middle conductors constituting the other conductors of said scene circuits, said middle conductors being connected to the movable contact on voltage dividers serving as said fading means, and wherein unidirectional electric valve means are interconnected between said common conductors and each of the movable contacts of the associated selecting means, and said valve means being directed in such a sense as to lead the current past the selecting means not actually in operation.

3. A stage lighting system according to claim 2, comprising series resistances inserted ahead of the said selecting means.

ALGOT ARVIDSSON.

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