This invention relates generally to systems for flashing a number of different light circuits and has special application as a decoration for Christmas trees.

For decorating Christmas trees or other such objects with strings of electric lights a pleasing effect may be secured by repeatedly flashing the lights. We have found that this effect may be augmented by having the lights flash during different periods rather than in synchronism so that the tree affords a twinkling appearance. Such devices must be capable of ready installation by persons unfamiliar with electrical circuits and must be simple in construction to permit manufacturing in large quantities.

It is an object of this invention to devise an electric light string for decoration purposes comprising a plurality of separately controlled lamp circuits.

It is a further object of this invention to devise an electric light string in the form of a portable unit which may be attached to any standard lamp socket, the unit having interrupter elements for separately controlling a number of light circuits.

It is another object of this invention to devise a lighting system comprising a plurality of light circuits controlled by a common switch means whereby certain lights may be either repeatedly flashed or burned steadily.

Further objects of this invention will appear from the following description in which we have set forth the preferred embodiment of our invention. It is to be understood that the invention is to be accorded a range of mechanical equivalents consistent with the prior art.

Referring to the drawings,

Figure 1 is an assembly illustrating the manner in which the light string of this invention is made up as a portable unit which may be attached to any standard lamp socket.

Figure 2 is a cross sectional view taken along the line 2-2 of Figure 3.

Figure 3 is a plan view of the mounting for the interrupter element with the enclosing cover removed.

Figure 4 is a plan view of one of the circuit interrupter elements.

Figure 5 is a cross sectional view taken along the line 5-5 of Figure 4.

Figure 6 is a bottom plan view of the mounting for the interrupter elements showing the construction of the circuit controller switch.

Figure 7 is a circuit diagram showing the manner in which different light circuits are connected with the interrupter elements and the circuit controller.

The invention comprises generally a plurality of lamp circuits which are adapted to be energized from a common source of current and are associated with a circuit controller which serves to independently flash the lamps of each circuit. The circuit controller is also provided with switch means whereby one or a number of lamp circuits may be supplied with uninterrupted current to burn the lights steadily while the remainder of the circuits are permitted to flash. The entire apparatus together with the circuit controller is constructed as a portable unit which may be installed by merely inserting a plug in a standard lamp socket.

Referring first to the circuit diagram of Figure 7, the system has been illustrated as being provided with five separate lamp circuits which have been designated as 1 to 5 inclusive. It is obvious, however, that any number of lamp circuits may be employed, depending upon the size of the object being decorated and upon the effect desired. These lamp circuits are all energized by a common source of current such as the current supply lines 10 and are electrically associated with a circuit controller designated generally at 11. In practice each light circuit is electrically connected by means of a flexible electric cord whereby it may be conveniently draped over a Christmas tree or other object to be decorated. Thus as shown in Figure 1, each light circuit has been shown as comprising one or more lamp sockets 13 electrically connected together by means of flexible cord 14 and to the circuit controller 11 by means of cord 15. The sockets are adapted to receive electric lamps 16 which may be of
The lamp sockets 13 may be placed, as shown, in parallel relationship to the lamps 15 and the contacts 17 are adapted to be connected to a supply of current by means of a standard connection plug 17. As will be presently described, the current through any one or more of the lamps 15 is interrupted by means of a circuit control switch 16 mounted in the circuit conductors, each such switch having a plurality of contacts 27 which is preferably made of an insulating material. Any suitable conductive material may be employed, although it is preferable to employ insulating material for short contacting elements. The conductive material is shown by numeral 42 which is preferably made of a standard connection plug 17, means of connecting the control switch 16 to the other conductors of the circuit. Such a circuit control switch 16 may be either a single or multiple type of interrupter element. A plurality of such switches 16 may be employed in the circuit to control the flow of current to one or more lamps. Each lamp may be controlled by a separate circuit control switch 16.

As shown by numeral 29, the lamps may be mounted separately in the circuit. As will be presently described, the lamps 15 are mounted in parallel relationship to each other by means of a circuit control switch 16. Each lamp may be controlled by a separate circuit control switch 16. Each lamp may be connected to a supply of current by means of a standard connection plug 17. As will be presently described, the current through any one or more of the lamps 15 is interrupted by means of a circuit control switch 16 mounted in the circuit conductors, each such switch having a plurality of contacts 27 which is preferably made of an insulating material. Any suitable conductive material may be employed, although it is preferable to employ insulating material for short contacting elements. The conductive material is shown by numeral 42 which is preferably made of a standard connection plug 17, means of connecting the control switch 16 to the other conductors of the circuit. Such a circuit control switch 16 may be either a single or multiple type of interrupter element. A plurality of such switches 16 may be employed in the circuit to control the flow of current to one or more lamps. Each lamp may be controlled by a separate circuit control switch 16.
tact with say the nearest switch finger 44 which serves to shut out the contact of the interrupter element 21 thus causing an interrupted supply of current to flow in the lamps of circuit 1 but permits the other interrupter elements to flash the lamps of circuits 2 to 5 inclusive. By further rotation of knob 43 two or more of the switch fingers may be brought into contact with the movable switch member 41 to cause the lamps of two or more circuits to burn steadily and to permit the remainder to flash. By turning the knob to the limit of its movement it may be made to shut out all of the interrupter elements and thus to cause all of the lamps to burn steadily.

In practice it is preferable to enclose the circuit controller by means of a metallic casing comprising for example a metal cup-shaped member 37 having a cover portion 59 slipped over its rim, this cover portion being provided with a suitable aperture 59 through which the cords 15 and cord 18 extend. An insulating lining 60 of paper or other insulating material is provided within the interior of the cup-shaped portion 57 to prevent short circuiting of the contacts 58 upon the casing. In order to limit movement of the knob 43 there is provided an insulating washer 61 between the upper face of the casing and the lower face of the knob.

We claim:

1. A decorative device for Christmas trees in the form of a portable unit comprising a plurality of lamp circuits supplied from a single source of current said circuits being formed by flexible conductor cords and each having a plurality of spaced lamps, a circuit interrupter electrically associated with each circuit for periodically flashing the current supplied to the lamps, said interrupters each having different timing periods and means for selectively controlling the operation of said interrupters.

2. A decorative device for Christmas trees comprising a plurality of separate circuits supplied from a common source of current, said circuit comprising a substantial length of flexible cord supplying an electric lamp, and a controller associated with all of said circuits, said controller comprising a plurality of bimetallic circuit interrupters each connected to a separate circuit, each interrupter serving to repeatedly and independently vary current supplied to its respective circuit.

3. A decorative device for Christmas trees comprising a plurality of separate circuits supplied from a common source of current, said circuit comprising a substantial length of flexible cord supplying an electric lamp, and a controller associated with all of said circuits, said controller comprising a plurality of bimetallic circuit interrupters each connected to a separate circuit, each interrupter serving to repeatedly and independently vary current supplied to its respective circuit.
Light Flashing System
Filed Sept 29, 1926

Figures 1, 3, 4, 5