Patented Dec. 24, 1929 1,740,463

UNITED STATES PATENT OFFICE

HERBERT A. KLIEGL, OF NEW YORK, N. Y., ASSIGNOR TO KLIEGL BROS. UNIVERSAL ELECTRIC STAGE LIGHTING CO., INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

SPOTLIGHT

Application filed January 16, 1928. Serial No. 246,932.

This invention pertains to spot lights of the type used in theatres, and is an improvement on the invention disclosed in Patent 1,679,361, issued August 7, 1928, to John H. Kliegl.

In the use of such spot lights it is customary to place transparent screens of various colors before the spot light in order to produce desired color effects on the stage.

The above application discloses electromagnetic mechanism for controlling the color screens to permit their manipulation by an operator at a point removed from the light itself.

The particular object of the present invention is to provide an improved arrangement of such apparatus, so designed that the electromagnetic control devices may be gathered together as a unit suitable for easy attachment to spot lights of regular type, thereby greatly simplifying manufacturing operations and reducing cost of manufacture.

Further and other objects and advantages will be hereinafter set forth in the accompanying specification and claim, and shown in the drawings, which by way of illustration show what is now considered to be the preferred embodiment of the invention.

Fig. 1 is a side view of a typical spot light with my invention in place thereon. The front of the light is at the left.

Fig. 2 is a front view of the light, on the line 2—2 of Fig. 1.

Fig. 3 is a view, partly in section, on the line 3—3 of Fig. 1.

Fig. 4 is a view of the electromagnetic assembly, on the line 4—4 of Fig. 1.

Fig. 5 is a wiring diagram.

The spot light casing is designated 10, and it is locked in position by clamp 12 on supporting standard 14.

Secured by screws 16 to the side of casing 10 is a box-like structure 18, within and upon which is assembled the entire electromagnetic control mechanism.

In the present embodiment of the invention four color screens 20 are shown, each mounted in a ring-like frame 22. Each frame 22 is provided with an arm 24 fast to one of four concentric shafts supported for rotation in brackets 26 at the top of frame 18 and integral therewith. The shafts are hollow except the center one. From the center outwardly the shafts are designated 30, 32, 34 and 36 (Figs. 1 and 4). By rotation of any shaft the screen frame 22 fast to that particular shaft may be moved from its normal position on stop 38 (Fig. 2) to the dotted line position on stop 40, or vice versa. Stops 38 and 40 are preferably of resilient material, and are mounted on rods 42 and 44 projecting forwardly from frame 18.

Each arm 24 is extended below the shaft to which it is attached, to form a finger 46, to which is connected one end of a helical spring 48 (Fig. 2), the other end of the spring being connected to a rod 50 which projects forwardly from frame 18 below, and parallel to, rods 42 and 44. Whenever a screen is in its inoperative position at the right (Fig. 2), its spring 48 is in the full line position.

Rod 50 and finger 46 are so located relatively to each other that, when the screen is at the right, in contact with stop 38, spring 48 is operating with a slight leverage 47 to urge the screen toward the left about its supporting shaft 30, 32, 34 or 36. This leverage is so adjusted as to enable spring 48 to hold the screen in substantially the normal position shown at the right in Fig. 2, even though stop 38 be removed. When the screen is moved to that position stop 38 serves the useful purpose of bringing the screen to rest without the oscillation which would take place if a stop or equivalent device were not provided. Particular utility of this arrangement will be pointed out later in the specification.

When the screen is to be moved to its operative position at the left, the spring and finger 46 assume the dotted line positions, in which position the spring is under sufficient tension to return the screen from operative to non-operative position whenever the screen is no longer forcibly held in operative position, as will be more fully explained.

Arranged in a row within frame 18 and directly underneath the nest of shafts 30, 32, 34 and 36, are four solenoids 52, each fastened to the floor of frame 18 by a screw 54. Each solenoid is provided with a vertically movable plunger 56, the upper end of which is opera-