

# UNITED STATES PATENT OFFICE.

ANTON T. KLIEGL, OF NEW YORK, N. Y.

## LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 720,935, dated February 17, 1903.

Application filed September 22, 1902. Serial No. 124,299. (No model.)

To all whom it may concern:

Be it known that I, ANTON T. KLIEGL, a subject of the Emperor of Germany, residing in the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Electric-Lighting Apparatus, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The invention subject of my present application is an improvement in the apparatus used in stage-lighting and for like purposes for producing varying light effects; and it consists in a novel form of reflector, in combination with two or more series of incandescent or similar lamps of different colors, the whole constituting a device known as "border" or "foot" lights for use in the flies of a theatrical stage. These devices are used to produce light effects of different colors, and as heretofore constructed they comprise an ordinary reflector before which the lamps with globes of different colors are arranged in a row. It has been found, however, in the use of such devices that when the lamps of one color are in circuit the light-rays, including a portion of those emanating directly as well as those reflected, are frequently strongly tinted by the colors of the globes of the neighboring inactive lamps, so that the desired effects are not fully secured. To remedy this, I have devised a novel form of reflector which, generally speaking, consists of the ordinary inclosing curved hood or shield, before which the lamps are mounted in a row, and plates with reflecting-surfaces secured within the hood intermediate to the position occupied by the lamps and forming shields which prevent the rays from one lamp from passing through the globes of any other.

I am aware, of course, that a series of independent reflectors might be used with each series of lamps as an obvious solution of the problem of the mere interference of the lights of different colors; but such an arrangement would be impracticable, because among other reasons the row of lamps must generally be very long and at the same time of minimum weight and maximum strength, so as to be quickly shifted and adjusted, and this would not be possible within limits of practical cost

if a large number of independent reflectors were mounted on a sufficiently strong support of the length usually required.

In carrying out my invention I construct the device as I have illustrated it in the accompanying drawings, in which—

Figure 1 is a front elevation with a portion of the base removed. Fig. 2 is a longitudinal section on the line 2 2 of Fig. 1, and Fig. 3 a transverse section on line 3 3 of Fig. 1.

The base B of the device, in which are mounted in a row a series of lamp-sockets A, is formed, preferably, of sheet metal bent into approximately rectangular form and strengthened by a wire C, around which the front edge of the metal is bent, as indicated. The rear edge of the sheet metal is extended beyond the level of the base and is formed into a hood D, its ends and edge to secure greater rigidity being wrapped around wires E.

The rectangular trough or base is formed with a raised portion or corrugation, upon which the lamp-sockets are mounted. This corrugation imparts greater rigidity to the device.

H is a sheet-metal cover containing perforations, through which the necks of the globes G may be inserted into the sockets beneath. The front edge of this cover is formed with a curved lip I, which fits over the wire edge of the base B, while its rear edge is bent upward to rest against the lower edge of the hood D. To this latter the cover is secured by bolts J or similar devices, which may be removed to permit the withdrawal of the cover when it is desired to obtain access to the interior of the base to make repairs.

To the interior surface of the hood D in positions intermediate to the lamp-sockets are secured metal plates F, preferably formed by bending flat plates to approximately a V-section and cutting their edges to conform to the shape of the hood. These plates extend down to nearly the level of the lamp-socket, as indicated in Figs. 1 and 3, and outward sufficiently to prevent the rays from one lamp passing through the globe of another.

The bent plates may be soldered or riveted in position. They may be of any proper material and may be made in various ways and of somewhat different shapes, according to circumstances. More than one piece