

(No Model.)

B. F. DUNN.
LIGHT VARYING ATTACHMENT FOR LAMPS.

No. 490,644.

Patented Jan. 31, 1893.

Fig. 1.

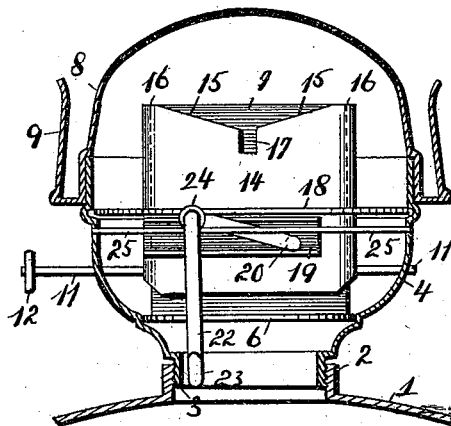
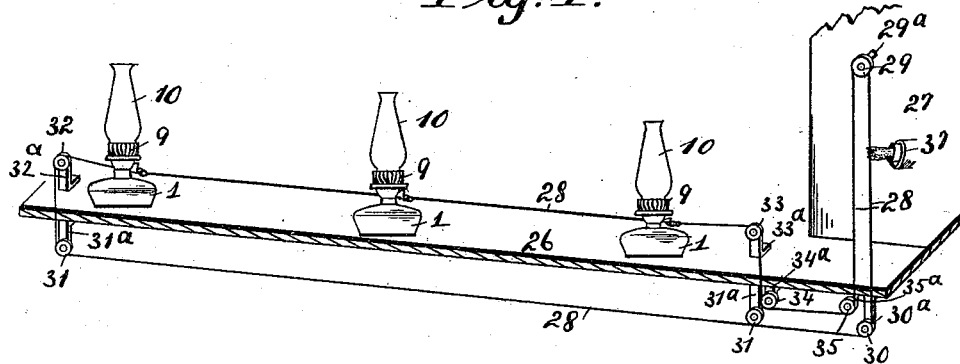


Fig. 2.

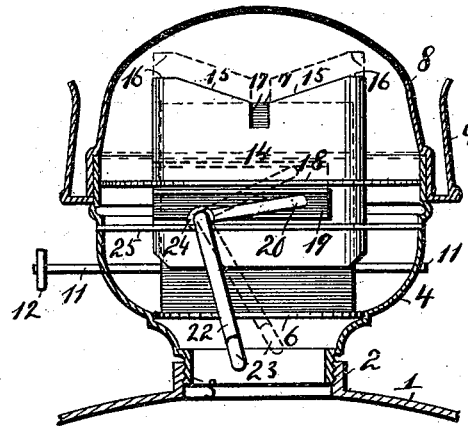


Fig. 3.

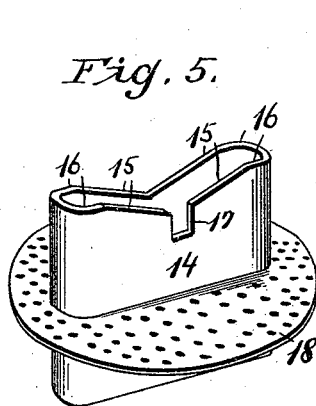


Fig. 5.

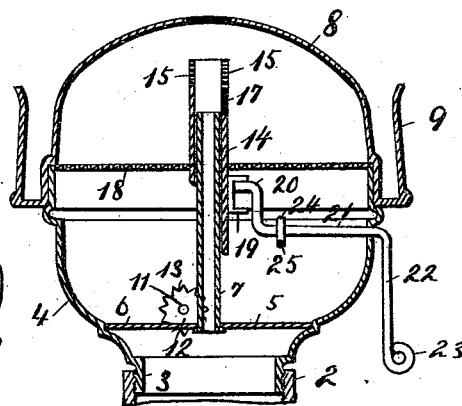


Fig. 4.

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BENJAMIN F. DUNN, OF KANSAS CITY, MISSOURI.

LIGHT-VARYING ATTACHMENT FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 490,644, dated January 31, 1893.

Application filed May 26, 1892. Serial No. 434,380. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. DUNN, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Light-Varying Attachments for Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to appliances for varying the quantity of light emitted by lamps which are used in theaters and other places of amusement and other places and which shall serve to vary the light from full head to total darkness without necessitating any raising or lowering of the lamp-wick and without extinguishing the flame of the lamp.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which;

Figure 1 is a perspective view of a number of lamps provided with my light-varying attachments and arranged in series upon the floor of a theatrical stage, in position as foot-lights. Fig. 2 is a transverse vertical section of one of the lamp-burners, on an enlarged scale, and showing the light-varying slide in lowered position, so as to permit the lamp to emit a full head of light. Fig. 3 is a view similar to Fig. 2, but showing the light-varying slide at the middle point of movement, so that the lamp shall emit a half-light; the uppermost limit of movement of the slide, necessary to produce total darkness, being shown in dotted lines. Fig. 4 is a transverse vertical section of the burner, showing the slide fully raised, so as to produce total darkness; the plane of this section being at right angles to the plane of the sections of Figs. 2 and 3. Fig. 5 is a detached perspective view of the light-varying slide.

In the said drawings, 1 designates the base or receptacle of a lamp, this base or oil receptacle being of any suitable or preferred style or type, and being provided with a suitable collar 2, into which fits the neck 3 of the

lamp-burner; the connection between the collar of the receptacle 1 and the neck of the burner being shown as of the usual screw-type.

4 designates the base of the burner which is shown as of hemispherical form, and as provided at its bottom with a horizontal diaphragm or partition 6, through which passes the lower end of the vertical burner-tube 7.

8 designates the cap of the burner, which is shown as of the usual hemispherical form, and the lower margin of which embraces the upper margin of the hemispherical base 4, and is provided with external upwardly projecting spring-arms 9 for embracing the lower end of the chimney 10, in the usual manner.

11 designates the wick-operating rod of the burner, said rod extending horizontally through the lower part of the base 4 and across one side of the burner-tube 7 in the usual manner, said rod carrying the usual operating-wheel or knob 12 at its outer end, and the usual wick-engaging toothed wheels 13 at points within the burner-casing.

It is to be understood that this form of burner has been shown simply for the purpose of clearly illustrating the construction and operation of my light-varying attachments, and that said attachments are to be applied to any and all forms or types of lamp-burners now in use.

14 designates a vertical slide which embraces the upper part of the burner tube 7 which is of such form as to fit closely around said burner-tube and at the same time to have free vertical movement upon said burner-tube. As shown, the burner-tube 7 is of flat form, so as to receive a flat ribbon-like wick; this being of the "fish-tail" type of burner; consequently the slide 14 is shown as also of flat form, but it is to be understood that the precise form of this slide is to be varied to accord with the forms of burner-tubes which are used; the intention being that the slides shall fit closely around the burner-tubes, but at the same time be capable of free vertical movements thereon. Now, it is to be particularly observed that the upper end of this slide is cut away, as at 15, so that the upper end of the slide is of approximately V-form; the margins 15 extending obliquely upward

and outward from the middle of the slide, and preferably terminating at their outer or upper ends at short distances within the sides of the slide; thus leaving short horizontal inwardly extending portions 16 at the sides of the upper end of the slide. These short horizontal portions 16 may be dispensed with, if preferred, the oblique margins 15 extending fully to the sides of the slide, but in this respect the form shown is that which is found most advantageous in use. In any event a short vertical recess 17 is formed at the middle of one of the flat sides of the slide, at a point coincident with the meeting inner or lower ends of the two corresponding oblique margins 15; the upper end of this recess 17 communicating with the space left by the margins 15, and the said recess extending vertically downward from the upper end of the slide for a suitable distance, as shown. It is to be further understood that while I have shown the upper end of the slide, as provided with but one recess 17, located only at one side of the slide, two of said recesses may be used, if preferred; said two recesses being located midway of the width of the slide, and opposite each other. I would state, however, that the single recess 17 has been found to produce the best results practically. The purposes of this formation of the upper end of the slide 14 will be hereinafter explained. This slide may be of any suitable or preferred length; the proportional length shown being found practically advantageous, and said slide may carry, at a point about midway of its length a surrounding horizontal foraminous diaphragm or partition 18 which moves vertically with the slide, but this partition may be placed in stationary position within the base 4; the slide 14 working through the diaphragm or partition, or, if preferred, the said diaphragm or partition may be entirely dispensed with.

In any event, the slide 14 carries at one side, near its lower end, a horizontal guide bracket 19 which is preferably of approximately U-form in cross-section, and which is either formed upon or suitably secured to the slide. Between the horizontally extending flanges or arms of this horizontal guide is inserted the inner end of a crank-arm 20 which is formed at the inner extremity of a rock-arm 21; this rock-arm extending horizontally outward through the base 4, at right angles from the slide 14, and having a crank-arm formed on its outer end, an eye 23 being formed upon the extremity of the crank-arm 22, for a purpose to be hereinafter explained. The rock-arm 21 works within an eye or loop 24 which is formed in a supporting-rod 25 which latter extends horizontally within the base 4 of the burner, parallel with the burner-tube 7, and the ends of which are secured in said base, as shown. Now, it will be seen that by moving the rock-arm 21 in one or the opposite direction, by means of its outer crank-arm 22, the inner crank-arm 20 will be raised or lowered

in a curved line. This movement causes the extremity of the crank-arm 20 to engage the upper or lower flange of the guide 19 and to thus raise or lower the slide 14; the engagement of the parts being such that the slide always moves evenly, so that it always retains accurately its truly adjusted vertical position. When the slide 14 is in its lowest position, as shown in Fig. 2, the flame of the burner is fully exposed, and the lamp emits its maximum lighting power. When the slide is raised half way, as shown in solid lines in Fig. 3, the frame is partially obscured, and owing to the described V-form of the upper end of the slide, the flame is divided, and appears only as two small blue jets at the points 16, at each edge of the slide; thus producing what is known in theatrical parlance as a "moon-light" effect. When the slide is raised to its highest point, as shown in Fig. 4, and in dotted lines in Fig. 3, a tiny blue jet is left at the point occupied by the recess 17, and the lamp radiates no light whatever. At the same time, the lamp is not extinguished, nor is there any danger of its becoming so, and the instant that the slide is either wholly or partially lowered, the flame will instantly flash out to full head, or to "moon-light" effect, or to any intermediate gradations, as desired.

In Fig. 1, I have shown a number of lamps mounted as foot-lights upon a theater-stage, and as provided with my novel operating-connections. In this instance 26 designates the front portion of a stage-floor, it being assumed that the view is outward toward the body of the house, and 27 is a suitable partition which serves to conceal the operator from the view of the audience, and which is located at one side of the stage.

28 designates a continuous cord, rope, chain, or other suitable flexible connection, which is run in two strands, one of said strands passing through the eyes 23 of the crank-arms 22 above described, so as to oscillate the same, and the other strand preferably running horizontally beneath the stage-floor. This flexible connection 28 leads over a pulley 29 which is supported by a suitable bracket 29^a, upon the partition 27, thence downward around a second pulley 30 which is supported by a suitable bracket 30^a, and beneath a suitable number of pulleys 31 which are mounted beneath the stage-floor, upon suitable brackets 31^a. From the end pulley 31^a, the flexible connection 28 leads upward and over a pulley 32 which is mounted in a suitable bracket 32^a, and thence horizontally above the stage-floor and through the eyes 23 of the crank-arms 22. From the last eye 23, the flexible connection 28 leads over a pulley 33 which is mounted in a suitable bracket 33^a, thence downward beneath a pulley 34 which is mounted in a suitable bracket 34^a, and to a pulley 35, mounted in a suitable bracket 35^a, and finally upward to the pulley 29. The operator applies his hand, as at 37, to one strand

of the flexible connection, and by pulling upward or downward on this strand, throws the crank-arms 22 simultaneously in either direction, so as to vary the light as desired. It will be seen that the connections are direct and positive in their action, and that no springs are required, and that the manipulation of the lamps is consequently effective and perfectly reliable. It is obvious that the continuous flexible connection may be led in any desired direction according to the requirements of the particular situation in which the lamps are placed, but the positive and direct action described is always attained by virtue of the continuous form of the connection.

Thus it will be seen that I have produced light-varying attachments which are simple, strong, durable and inexpensive in construction, effective and reliable in operation, and which are adapted for application to a great variety of lamps, and in a great variety of situations. Also that I have produced operative connections for the attachments which are direct and positive in their operation, and which require no springs or weights to assist their action.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is:

1. A light-varying attachment for lamps, comprising a vertically movable slide for surrounding a burner tube, and having its upper end provided with a V-shaped recess or cut, and provided also midway of its width with a vertical recess communicating with the middle of the V-shaped recess or cut, substantially as set forth.

2. A light-varying-attachment for lamps, comprising a vertically movable slide having a horizontally arranged bracket secured thereto and below the diaphragm, and having out-

standing and horizontal flanges or arms and a rock shaft having a crank arm extending longitudinally with said flanges or arms and having its free end, bent and extending transversely thereto, and between said flanges or arms, and adapted to engage the upper or lower flange or arm, respectively, to raise or lower the slide, substantially as described.

3. A light-varying attachment for lamps, comprising a vertically movable slide having a horizontally arranged and approximately U-shaped bracket secured thereto and below the diaphragm, and a rock shaft having a crank arm at its inner end, extending longitudinally with the arms of the guide bracket, and having its free end, bent and extending transversely thereto, and between the flanges or arms of the bracket, and a cross supporting rod having an eye or loop bearing for the inner end of the rock arm, adjacent to the inner crank arm, substantially as described.

4. A light-varying attachment for lamps, comprising a vertical slide for surrounding the burner tube and provided below the diaphragm with a horizontally arranged bracket approximately U-shaped in cross section, a rock shaft journaled near its opposite ends in the burner casing, and a supporting rod secured therein, oppositely disposed crank-arms at each end of the rock shaft, with a continuous flexible connection or endless cord connected to the lower end of the outer or pendent crank arm and suitably arranged pulleys for guiding said endless connection, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

BENJAMIN F. DUNN.

Witnesses:

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