

W. LEGEL.
ELECTRIC ARC LAMP.
APPLICATION FILED FEB. 3, 1910.

977,022.

Patented Nov. 29, 1910.

Fig. 1.

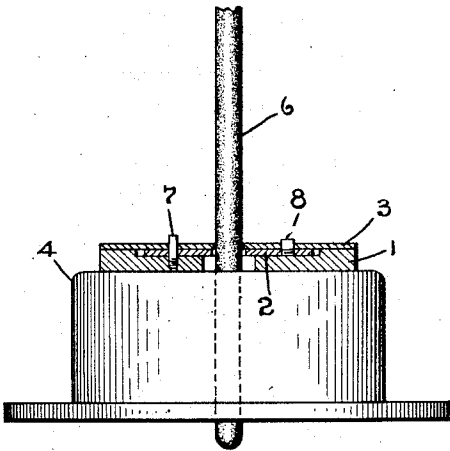


Fig. 3.

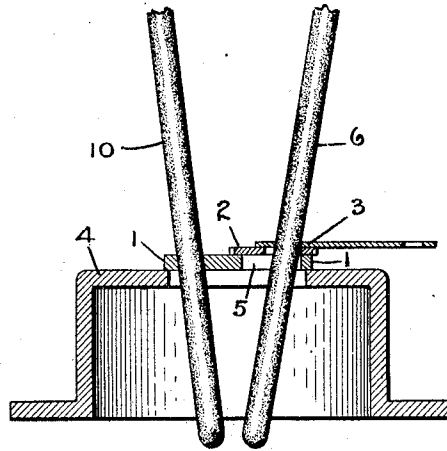


Fig. 2.

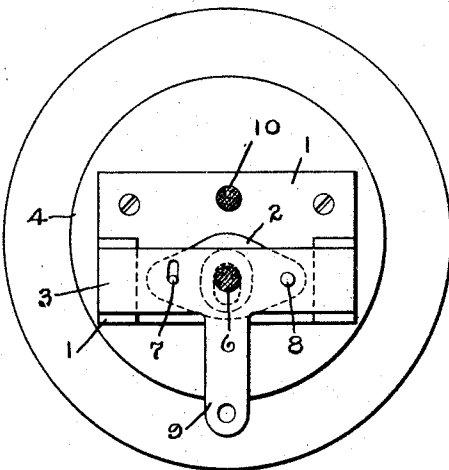
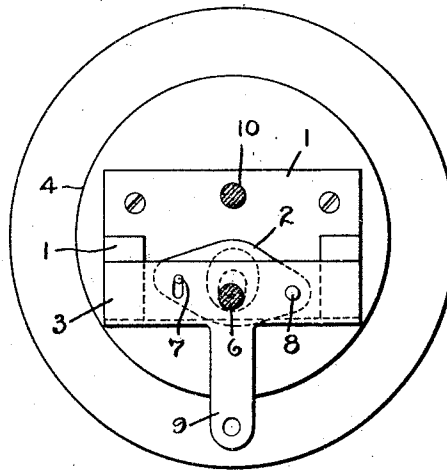


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLY LEGEL, OF BERLIN, GERMANY, ASSIGNOR TO GENERAL ELECTRIC COMPANY,
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ELECTRIC-ARC LAMP.

977,022.

Specification of Letters Patent.

Patented Nov. 29, 1910.

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To all whom it may concern:

Be it known that I, WILLY LEGEL, a subject of the King of Prussia and the Emperor of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention relates to electric arc lamps, and more particularly to that type of lamp in which the electrodes are converging and the arc is controlled by a lateral displacement of one or both electrodes. In this type of lamp it has been found difficult to seal the necessarily large apertures, through which the movable electrodes must pass, sufficiently well to protect the frame and mechanism of the lamp from the injurious products of combustion arising from the arc.

The object of this invention is to overcome this difficulty, and I do this by employing movable sealing- and electrode-guide plates and actuating by one of them the moving electrode and another sealing plate, so as to close the aperture in the economizer in all positions of the electrode.

One embodiment of my invention is disclosed in the following specification and drawings, in which—

Figure 1 is an elevation of an economizer supporting the sealing device; Fig. 3 is a sectional view through the plane of the electrodes; and Figs. 2 and 4 are top views corresponding to the minimum and maximum displacement of the electrodes, respectively.

Referring to the drawings, it will be seen that the three superimposed plates, 1, 2 and 3, respectively, are supported by the economizer 4, and that each plate has an aperture smaller than that of the next lower. The plate 1 is fixed and is preferably not integral with the economizer 4, although in this respect choice may be exercised; it has an aperture 5 large enough for the total displacement of the movable electrode 6, and is secured to or held against the economizer 4 in any convenient manner. The movable plate 2 is pivoted to the fixed plate 1 at 7 and to the movable guide plate 3 at 8. The movable plate 3 is provided with a projecting tongue 9 for the purpose of connecting the same to the regulating mechanism (not shown) of the lamp. This tongue 9 is not necessary of course in a lamp in which the movable electrode 6 is actuated independently of the movable plate 3. The plate 3

has an aperture just large enough to admit the electrode 6 with a free feeding movement of the same, and is provided with a slot for the upwardly projecting pivot 7 which serves as a stop for the movable plates 2 and 3. These movable plates, however, might be limited in their motion in any other suitable manner.

When the plate 3 is being actuated, the plate 2 turns about the fixed pivot 7 as a center of rotation, and, since by preference the two pivots 7 and 8 are equally distant from the center of the electrode 6, the plate 2, at the point where the electrode 6 passes through, travels only half the distance as does the plate 3. This permits the use of a plate 2 large enough to cover that portion of the aperture 5 which is not covered by the plate 3 without at the same time being large enough to come in contact with the side of the fixed electrode 10 when the arcing ends of the electrodes come in contact.

The fixed plate 1 is secured to the economizer by screws, as shown, or in any other convenient manner, and is provided with an aperture just large enough to allow the electrode 10 to freely pass through, so as to feed downwardly without impediment.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. In an electric arc lamp in which the arc is controlled by a lateral displacement of one electrode, the combination of said electrode with means for actuating the same, an economizer provided with an aperture for said electrode, and means for sealing said aperture consisting of a fixed and two movable superimposed guide plates, each movable plate being pivoted to the next lower plate and covering a definite portion of the said aperture.

2. In an electric arc lamp in which the arc is controlled by a lateral displacement of one electrode, the combination of the laterally movable electrode with an economizer provided with a wide aperture for both electrodes, and means for sealing said aperture consisting of a fixed plate secured to said economizer, a sliding guide plate provided with means for connection to the regulating mechanism of the lamp, and a second movable plate placed between and pivoted to the two other plates.

3. In an electric arc lamp in which the arc is controlled by a lateral displacement of one

electrode, the combination of the laterally
movable electrode with an economizer pro-
vided with an aperture for the passage of
both electrodes and the lateral displacement
5 of one of them, and means for sealing said
aperture consisting of a series of apertured
superimposed plates, each plate being piv-
oted to and having an aperture smaller than
10 that of the next lower, the lowermost plate
being fixed, and the uppermost plate having
means for connection to the regulating mech-
anism of the lamp.

4. In an electric arc lamp in which the
electrodes are converging and the arc is con-
15 trolled by a lateral displacement of one

electrode, the combination of an economizer
provided with an aperture permitting the
lateral displacement of said electrode, a se-
ries of superimposed guide plates for sealing
said aperture, each plate being pivoted to 20
the next in the series, the uppermost having
means for connection to the regulating mech-
anism of the lamp, and the lowermost being
secured to the economizer.

In witness whereof, I have hereunto set 25
my hand this 18th day of January, 1910.

WILLY LEGEL.

Witnesses:

JULIUS RUMLAND,
KARL BREKEBEN.