

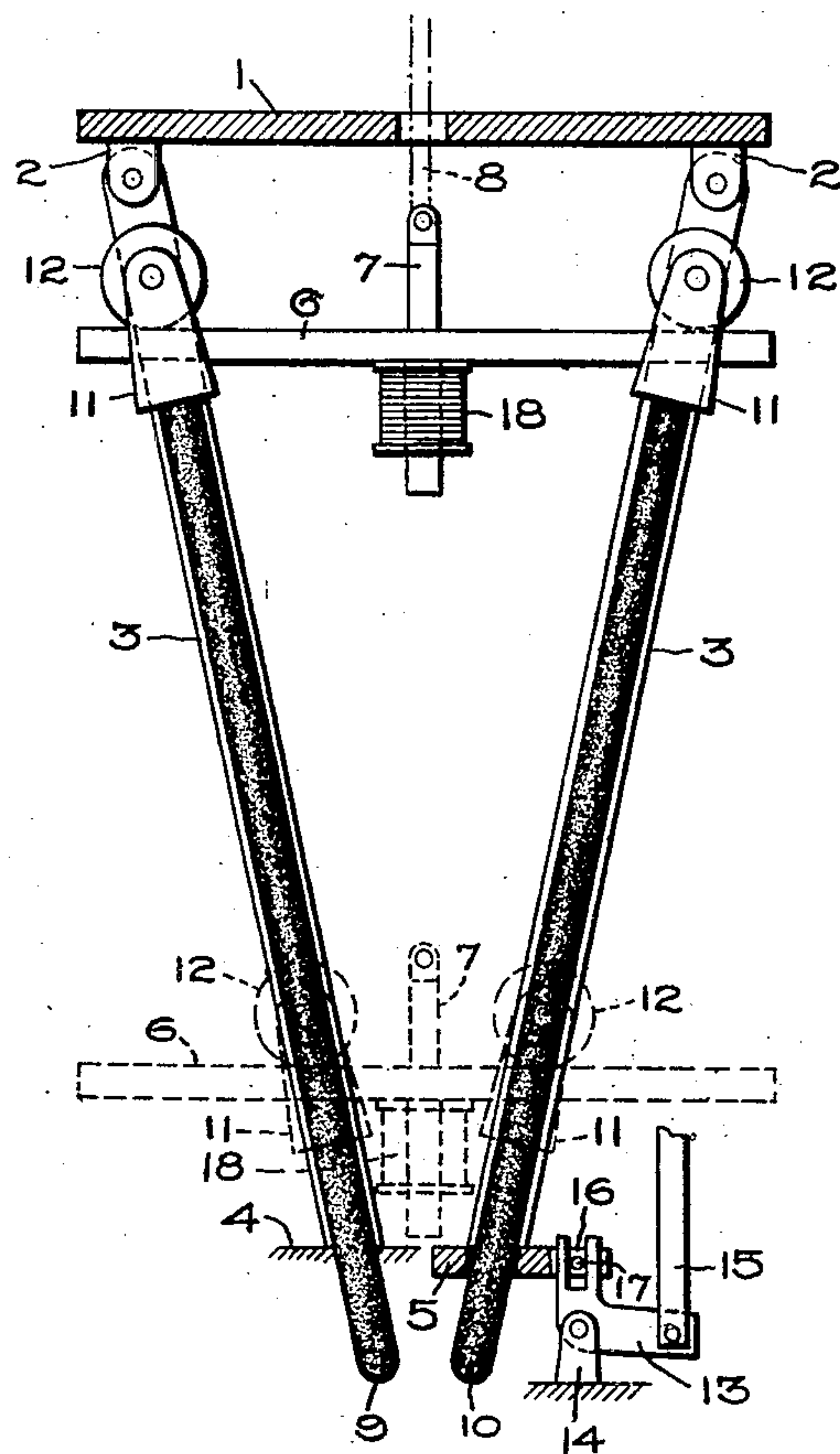
B. MONASCH.

ARC LAMP.

APPLICATION FILED JULY 9, 1908.

924,916.

Patented June 15, 1909.



Witnesses:
Earl G. Klock.
J. Ellis Klock

Inventor:
Berthold Monasch,
by *Albert H. Davis*
Atty.

UNITED STATES PATENT OFFICE.

BERTHOLD MONASCH, OF BERLIN, GERMANY, ASSIGNOR TO GENERAL ELECTRIC COMPANY,
A CORPORATION OF NEW YORK.

ARC-LAMP.

No. 924,916.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed July 9, 1908. Serial No. 442,735.

To all whom it may concern:

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

My invention has reference to improvements in arc lamps and specifically such with converging electrodes, the object of the invention being to provide means whereby when the electrodes have been consumed to a predetermined extent the arc will be drawn out to prevent its creeping up and burning or fusing the parts of the lamp above the arc which are rather close to the same. This object is attained in accordance with my invention by providing a magnet, which may be either a permanent or an electro-magnet, which travels downwardly with the electrode or electrodes toward the arc, and this magnet is of such strength that when it is remote from the arc it has no perceptible effect upon the same, but when it approaches the arc position closely it acts as a magnetic blow-out and extinguishes the arc.

In the accompanying drawing, which forms a part of this specification, my invention is shown as applied to a lamp structure with downwardly converging electrodes of an ordinary type, the lamp being shown in elevation partly in section.

In the lamp shown, 1 represents the platform which ordinarily supports the electromagnetic regulating mechanism, which is not here shown for the sake of simplicity. To the under side of this platform are secured lugs 2 and to these are secured two pairs of guide-bars 3, 3; one of each pair being shown in the drawing, the others having been omitted for the sake of clearness. These guide-bars are converging downwardly and they are fixed at their lower ends either to a lower platform, or to a bridge 4, as indicated with respect to one pair. Between these two pairs of guide-bars extends a rail 6 from the center of which rises a post 7 to which is joined the link 8 which freely passes through the platform 1, and is understood to be connected with the electromagnetic regulating mechanism of the lamp which operates to lower the rail 6 as the electrodes are gradually consumed. The electrodes 9 and 10 extend each between one pair of guide-bars 3; they are mounted in holders 11 which are pivoted upon the axles of rollers 12, and

either these axles or the holders are guided each between one pair of guide-bars 3. The rollers rest upon the rail 6, as indicated. The lower end of electrode 9 passes through the lower platform or bridge 4 and the electrode 10 passes through a plate 5 which is laterally adjustable; it is adjusted by a bell-crank lever 13 pivoted to standard 14, the horizontal arm of the bell-crank lever being connected by a link 15 with the electromagnetic regulating mechanism. This connection, however, is not shown in the drawing, since such illustration is unnecessary for the understanding of my invention. The horizontal arm of the bell-crank lever is bifurcated, as shown, and extends into a slot 16 in the movable plate 5, and there embraces a pin 17 which passes transversely through that slot.

The operation of a lamp of this kind is well understood in the art. The arc is struck by the separation of the electrode 10 from the electrode 9 by the rocking of the bell-crank lever caused by a downward movement of the link 15, which in turn is actuated by the electro-magnetic devices understood to be mounted above the platform 1. This condition is shown in the drawing. As the electrodes are gradually consumed the arc becomes longer and the regulating mechanism tends to lift the link 15 and thereby move the bell-crank lever to cause a nearer approach of the electrode 10 to the electrode 9. After a while the lengthening of the arc cannot be compensated for by this part of the regulating mechanism and then another part of this mechanism lowers the rail 6, whereby both electrodes are fed downwardly and thus shorten the arc to its normal length. All this is familiar and is understood by those skilled in the art. But if the electrodes are permitted to thus feed downwardly until the rail 6 has reached the end of its downward travel, and if in this position the electrodes were allowed to consume and to approach each other more and more by the action of the regulating mechanism on the bell-crank lever, the arc would come dangerously near the lower platform or bridge 4 or to any economizer that might, as is ordinarily the case, be used in that location, and either the platform or bridge 4, or the economizer, would be burned out or fused by the arc. This is actually what happens in lamps of this general character, and my invention is

directed toward the prevention of this trouble. For this purpose I provide a magnet 18 which, in this case, is shown as an electro-magnet, but which might just as well be a permanent magnet. This magnet is in this instance shown as secured to the rail 6 so that it will travel with the same, but it might just as well be secured to any other part of the lamp which moves downwardly with the electrode, so that it approaches the arc position more and more as the electrodes are consumed. It is also practicable to make the rail 6 itself, or a portion of it, a permanent magnet. Such magnet, whether it be a permanent or an electro-magnet, must be of such strength that so long as it is remote from the arc position it has no perceptible effect upon the arc, but when it reaches a point close to the arc position it will act upon the arc as a magnetic blowout and will extinguish the arc. This position of the rail 6 with its attached magnet 18 is indicated in dotted lines in which the rail is shown at the end of its downward travel.

It will be evident that my invention in its broader aspect is applicable to other arc lamps than those with converging electrodes; it is equally applicable to any arc lamp in which at least one of the electrodes is fed gradually toward the other as it is being con-

sumed. In all such lamps it is desirable that the arc be automatically blown out when the electrode has been nearly consumed.

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

1. In an arc lamp, the combination of an element traveling with a consuming electrode toward the arc, of an electro-magnet carried by the said element toward the arc to extinguish the same when it reaches a predetermined position.

2. In an arc lamp, the combination of a pair of electrodes, one at least being fed forward as it consumes, with a magnet traveling with the electrode toward the arc to extinguish it when it has reached a predetermined proximity to the same.

3. In an arc lamp having downwardly converging electrodes supported by a rail traveling toward the arc position as the electrodes consume, a magnet supported by the rail and traveling with the same toward the arc position to extinguish the arc when it reaches a predetermined proximity to the same.

In witness whereof, I have hereunto set my hand this 19th day of June, 1908.

BERTHOLD MONASCH.

Witnesses:

JULIUS RUMTAND,
KARL GRIEKELEEN.