W. R. RIDINGS.

ELECTRIC ARC LAMP.

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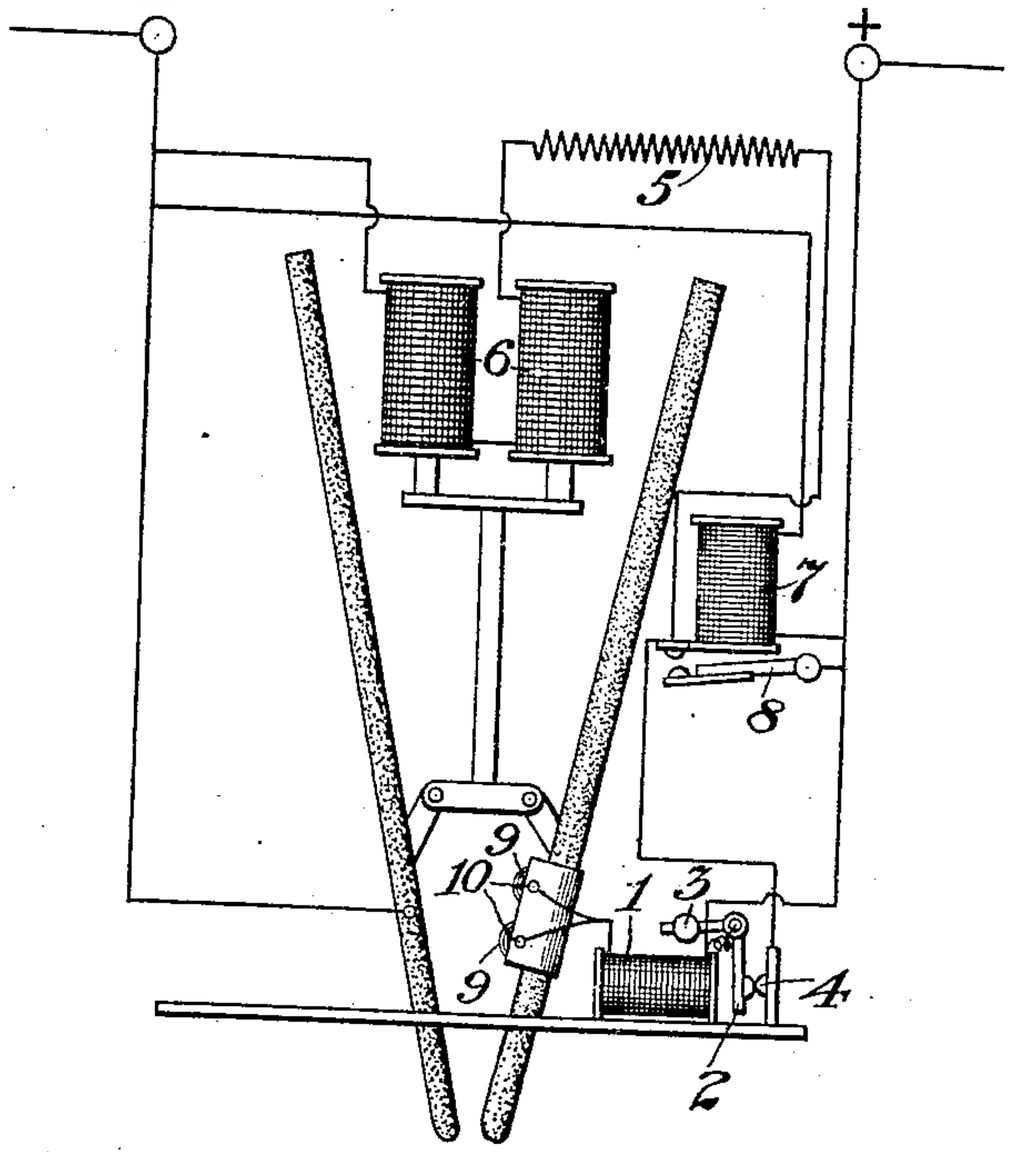
913,308.

Patented Feb. 23, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM REGINALD RIDINGS, OF STRETFORD, ENGLAND, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

ELECTRIC-ARC LAMP.

No. 913,308. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed February 20, 1904. Serial No. 194,526.

To all whom it may concern:

Be it known that I, WILLIAM REGINALD RIDINGS, a subject of the King of Great Britain, and a resident of "Fernside," Steven street, Stretford, in the county of Lancaster, England, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

This invention relates to electric arc lamps.

One object of this invention is to provide improved means for cutting out, as soon as the arc is formed, the coils employed for operating the striking and feeding mechanism, said coils being cut in again by means of a shunt wound magnet when the electrodes are required to feed.

For cutting in the coils when the arc becomes longer than is normal, there is provided a magnet connected in shunt across the arc, said magnet having an armature, the contacts of which are connected in parallel with the contacts of the armature of the controlling magnet above referred to.

In the accompanying drawings the invention is illustrated by way of example, as applied to a lamp of that kind in which the electrodes are inclined with reference to each other, and are provided with a magnet for controlling the shape and position of the arc.

The drawing is mainly diagrammatic showing the arrangement of the electrical circuits of the lamp according to this invention.

Referring to the drawing, the magnet 1, for controlling the shape and position of the arc is employed as a relay magnet by providing the same with an armature, 2, adapted by means such as a counterweight, 3, for example, for making contact with the terminal, 4, of a circuit in which the resistance, 5, and coils, 6, for operating the striking and feeding mechanism are included as long as the said magnet 1 is deënergized. When, however, the arc has been formed and current is flowing through the magnet 1, its armature 2 will be attracted and the coils 6 cut out. The coils 6 are cut in again when the arc becomes longer than is normal by the electromagnet 7, becoming energized and attracting its armature, 8, whereby the circuit of the coils 6 is completed, unless by some means the armature 8 becomes deranged or the current in the shunt is insufficient to energize the magnet 7, in which case the increasing resistance in the arc will eventually become so great as to cause the magnet 1 to release its armature 2 and complete the circuit of the coils 6 in the same way as it does before the arc is actually struck.

It will be observed from the description given above that for the greater portion of the time during which the lamp is in operation the coils 6 and resistance 5 are cut out of circuit, the expenditure of energy in passing current through said coils and resistance during this part of the time being thereby avoided.

I claim as my invention:—

In an electric arc lamp, a pair of electrodes, a relay magnet in series therewith, a shunt circuit including a feeding magnet and a separate shunt circuit including a relay magnet, means adapted to be operated by the first named magnet for cutting out the feed magnet during the normal operation of the lamp, and means adapted to be operated by the last named magnet for cutting in the feed magnet when the resistance in the electrode circuit becomes abnormally great.

Signed at London in the county of Middlesex England this twenty seventh day of January A. D. 1904.

WILLIAM REGINALD RIDINGS.

Witnesses:
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