

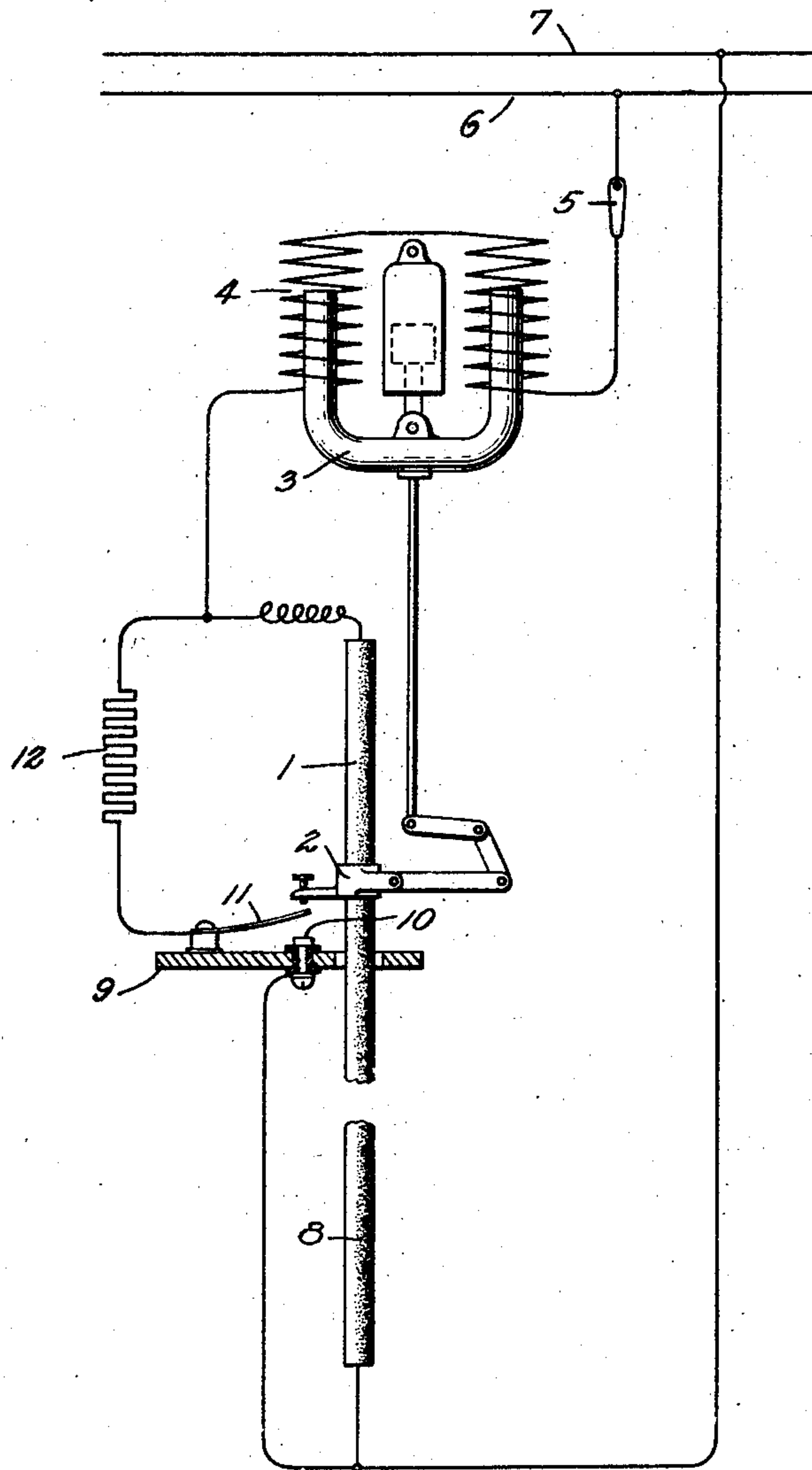
R. H. READ.

ARC LAMP.

APPLICATION FILED AUG. 23, 1908.

917,147.

Patented Apr. 6, 1909.



WITNESSES:

*George F. Thornton,*  
*Benjamin B. Hume*

INVENTOR:

*Robert H. Read,*  
*By Albert Davis*  
*Att'y.*

# UNITED STATES PATENT OFFICE.

ROBERT H. READ, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

## ARC-LAMP.

No. 917,147.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed August 23, 1906. Serial No. 331,732.

*To all whom it may concern:*

Be it known that I, ROBERT H. READ, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Arc-Lamps, of which the following is a specification.

This invention relates to electric arc lamps, and its object is to provide means for starting such lamps when the electrodes are composed of a material, (such as carbide of aluminium or titanium) which in burning becomes covered with a film or crust of oxid which is non-conducting, especially when cold. If the arc is extinguished, it cannot be started again by simply bringing such electrodes into contact and then separating them, as in the case of carbon electrodes, because the oxid deposit or crust prevents the passage of the electric current even when the electrodes are touching. The crust is, however, either in the form of a powder or fused film which is quite fragile, so that it can be removed easily by rubbing or jarring it. My present invention aims to accomplish this removal automatically, so that the lamp will be self-starting.

To this end, the invention consists in means for automatically agitating one of the electrodes whereby it is caused to pound or scrape upon the other electrode so long as passage of current between the same is interrupted and thereby break off the oxid crust, and permit the current to flow between the electrodes.

The accompanying drawing is a diagrammatic representation of one embodiment of my invention.

The upper electrode 1 is engaged by the clutch 2 which is suitably connected with the armature 3 of the series coil 4 which is connected at one end with the electrode 1 and at the other, through a switch 5, with the posi-

tive main 6. The negative main 7 is connected with the lower electrode 8. The upper electrode passes through a hole in the trip platform 9. An insulated contact 10 is mounted in said table and coöperates with a spring contact 11 also supported on the platform, the two contacts forming a circuit-closer which is normally open. This circuit-closer is included in a shunt around the arc, said shunt including also a resistance 12.

When the lamp goes out and the electrode 1 drops upon the lower electrode, the crust of oxid prevents current from flowing. But the clutch in falling closes the circuit-closer in the shunt and thus causes the series coil to be energized, so that it lifts the upper electrode. If no arc is drawn, the coil is at once deenergized by the opening of the circuit-closer when the clutch is lifted. The upper electrode thereupon drops again; and this operation is repeated so long as the lamp fails to light. The continued pounding of the upper electrode upon the lower one quickly breaks off the oxid crust and permits the arc to be drawn; whereupon the coil remains energized and the rheotomic action of the lamp ceases.

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

In an arc lamp, the combination with the electrodes and a single arc controlling magnet, of a clutch for raising the upper electrode, a shunt around the arc including the magnet winding, and a circuit closer in said shunt adapted to be closed by said clutch when the upper electrode drops.

In witness whereof, I have hereunto set my hand this 22nd day of August, 1906.

ROBERT H. READ.

Witnesses:

BENJAMIN B. HULL,  
HELEN ORFORD.