

No. 890,731.

PATENTED JUNE 16, 1908.

M. O. TROY.
STARTING MERCURY VAPOR APPARATUS.
APPLICATION FILED SEPT. 27, 1907.

Fig. 1.

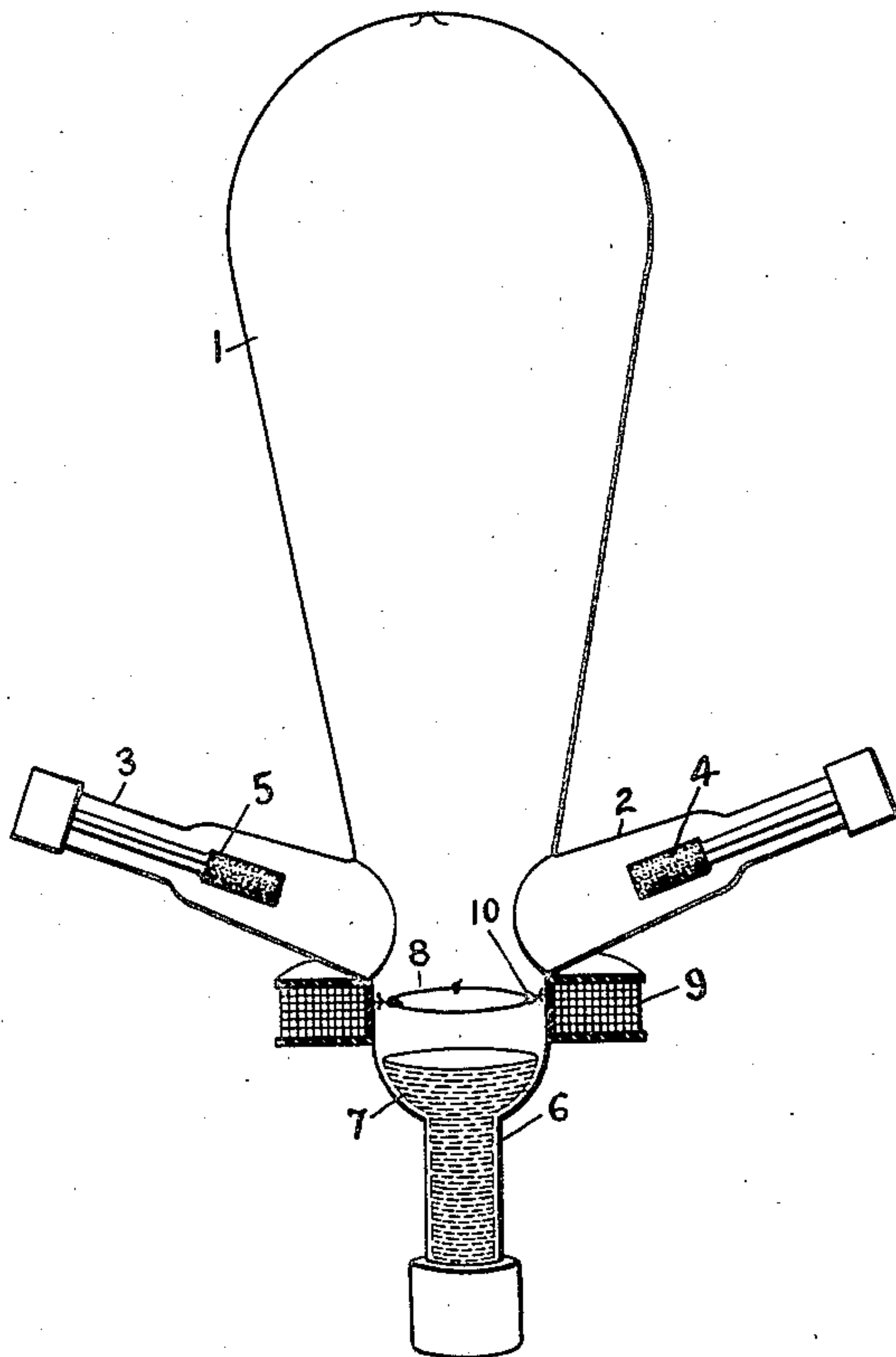
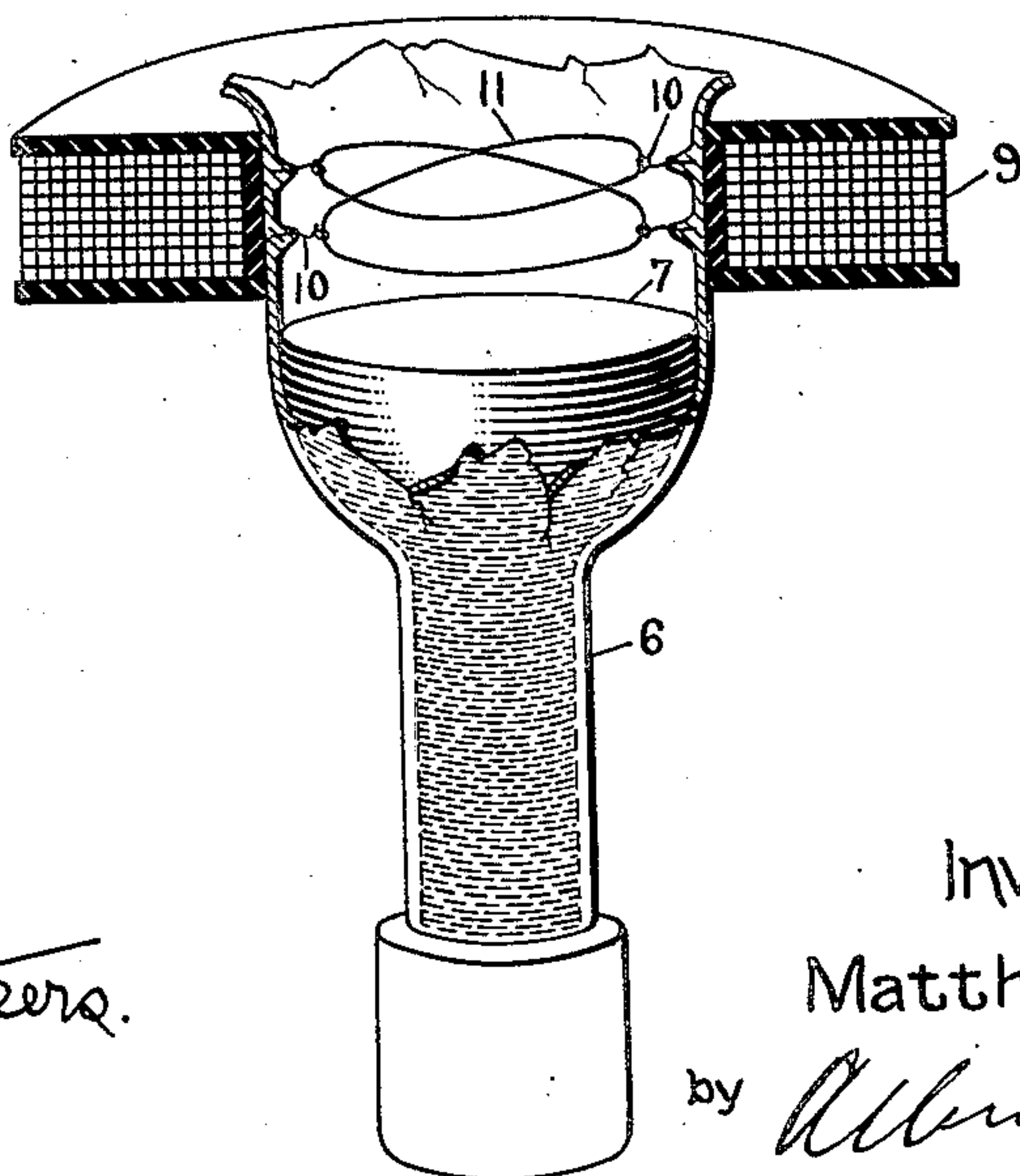


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

MATTHEW O. TROY, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

STARTING MERCURY-VAPOR APPARATUS.

No. 890,731.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed September 27, 1907. Serial No. 394,787.

To all whom it may concern:

Be it known that I, MATTHEW O. TROY, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Starting Mercury-Vapor Apparatus, of which the following is a specification.

My present invention relates to means for starting into operation such devices as mercury vapor lamps, rectifiers, or the like, and comprises improvements in that type of starting device in which the starting is produced through the action of a heated surface, preferably oxid-coated, in the vicinity of the cathode.

The various features of novelty which characterize my invention I have pointed out particularly in the appended claims. The invention itself, however, as utilized in practice, will be better understood by reference to the following description taken in connection with the accompanying drawings, in which

Figure 1 represents one embodiment of my invention, and Fig. 2 a modified detail.

In Fig. 1 I have represented my invention as applied to a mercury arc rectifier. In this figure I have shown the rectifier tube only and have omitted all illustration of the system of connections used with such rectifiers, since these connections are well understood in the art and form no portion of the present invention. The particular type of rectifier tube which I have illustrated in Fig. 1 by way of example, consists of an evacuated glass receptacle having a condensing chamber 1, arms 2 and 3, in which are located the usual anodes 4 and 5, and a downwardly projecting pocket 6 containing the puddle or body of mercury 7 constituting the cathode. Suitable leading-in conductors for the various electrodes are provided in the usual manner.

In order to start the apparatus into operation, when the same is connected to the supply circuit, I employ a closed conductor 8 located in proximity to the cathode 7 and adapted to be brought to a luminous condition by the inductive action of a primary exciting winding 9 fed with alternating current from any suitable source. The closed con-

ductor 8 is mechanically supported from the inner walls of the rectifier tube by a suitable number of wire loops, such as 10 placed around the interior of the tube and fused into projecting points of glass extending out from the interior walls of the tube, as indicated. The conductor 8 may consist of a small platinum wire provided with a coating of some suitable oxid such as barium oxid. This coating may be produced by dipping the wire into a solution of barium hydrate, drying, and then decomposing the hydrate in a Bunsen flame or the like, so as to leave a residue of oxid. Any other suitable oxid as thorium oxid or the like may, of course, be employed. The exciting coil 9 for the filament or conductor 8, is so proportioned as, when fed with alternating current, to bring the conductor to a moderate luminosity. When this result has been accomplished, the rectifier, its circuits being closed in operating condition, will then start into operation due to the exciting influence on the cathode of emanations or rays given off from the oxid-coated wire 8.

In Fig. 1 I have shown the conductor 8 as consisting of but a single turn, though it will be evident that in place of a single turn I may, if desired, employ a plurality of turns as I have indicated, for example at 11 in Fig. 2.

As it will be evident that my invention may be embodied in other forms than those indicated in the drawing and that various modifications may be made without departing from the spirit of my invention, I therefore do not wish to be limited to the precise forms shown and described.

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

1. The combination of an evacuated tube, a plurality of electrodes therein, a closed conductor in proximity to one of said electrodes, and inductive means for bringing said conductor to a luminous condition.

2. The combination of a mercury arc rectifier tube having a mercury cathode and a plurality of anodes, a closed conductor in proximity to the cathode, and an exciting coil for said conductor arranged outside of said tube but in inductive relation to the conductor.

3. The combination of a mercury arc rectifier tube having a mercury cathode and a plurality of anodes, an oxid-coated conductor closed upon itself and located in proximity
5 to the cathode, and a primary exciting winding arranged outside of said tube and in inductive relation to said conductor.

In witness whereof I have hereunto set my hand this 23rd day of September, 1907.

MATTHEW O. TROY.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.