

No. 682,101.

Patented Sept. 3, 1901.

J. C. MAYRHOFER.

ARC LAMP.

(Application filed July 27, 1896. Renewed Feb. 12, 1901.)

(No Model.)

Fig. 1.

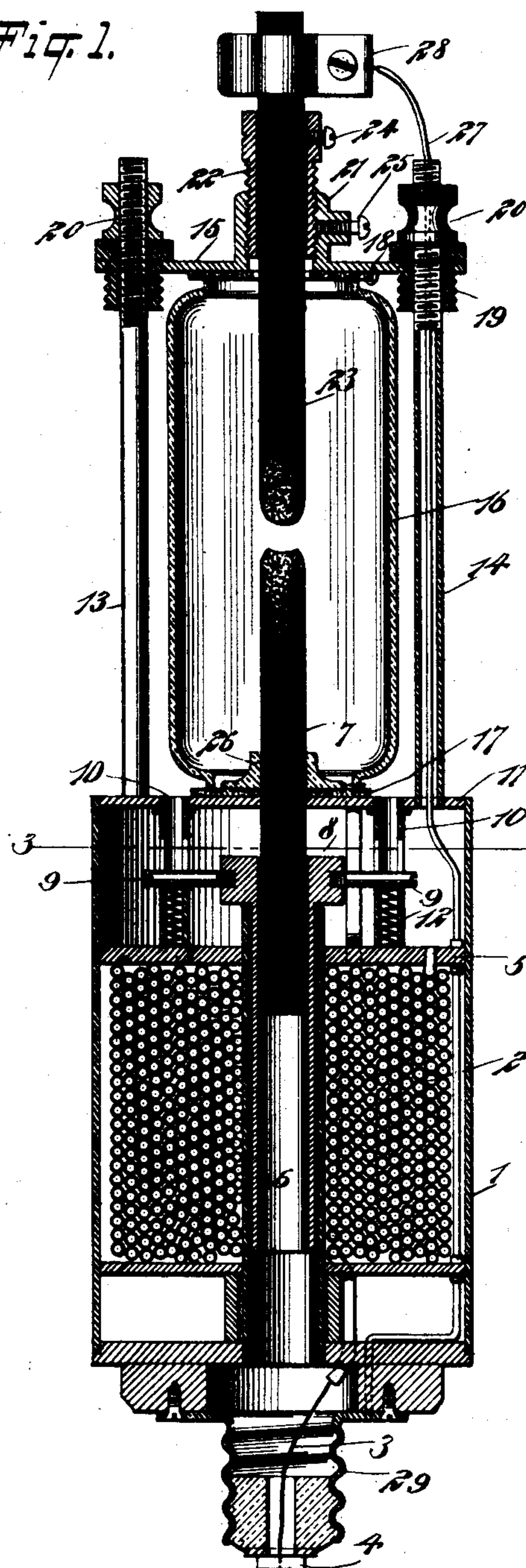


Fig. 2.

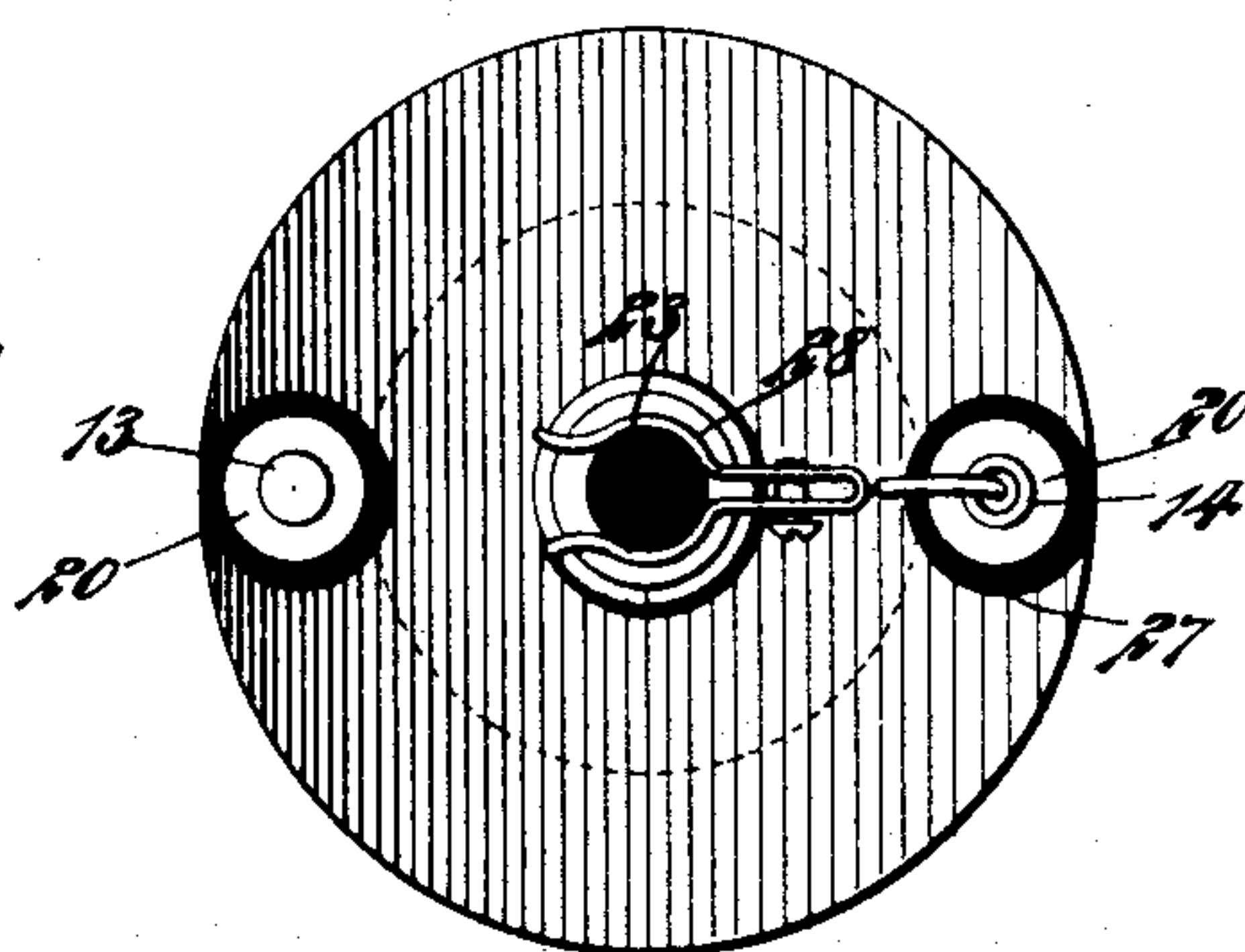


Fig. 3.

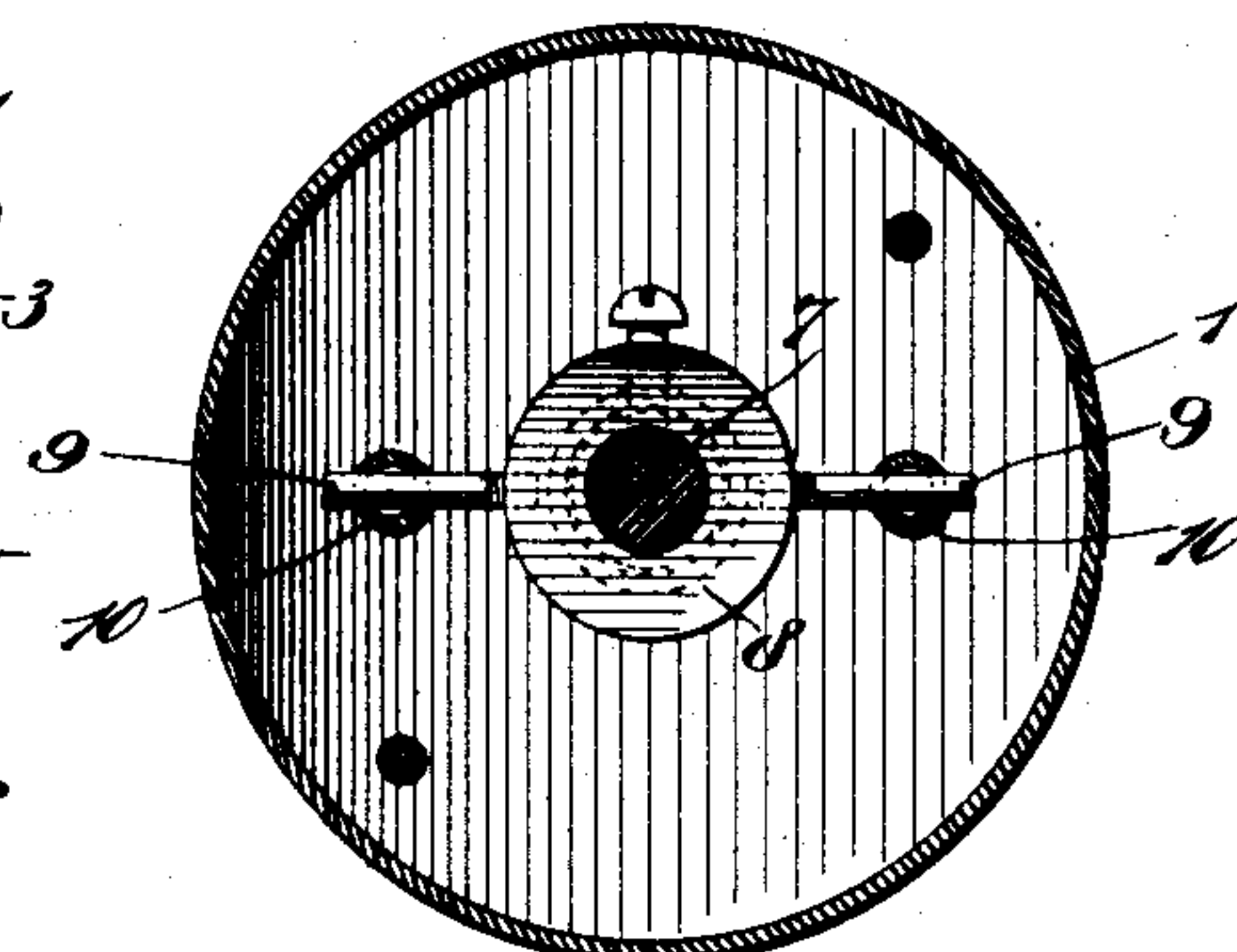
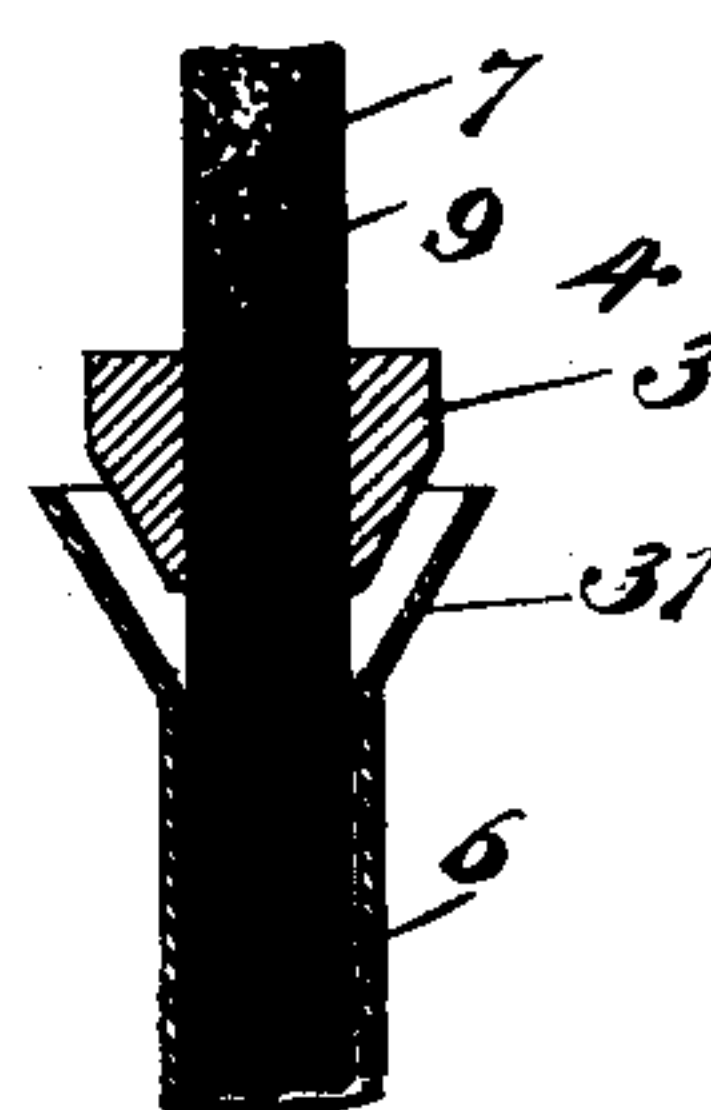


Fig. 4.



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ARC-LAMP.

SPECIFICATION forming part of Letters Patent No. 682,101, dated September 3, 1901.

Application filed July 27, 1898. Renewed February 12, 1901. Serial No. 47,053. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CARL MAYRHOFER, of the city of New York, borough of Manhattan, in the county of New York and State of New York, have invented a new and Improved Arc-Lamp, of which the following is a full, clear, and exact description.

This invention relates to improvements in electric-arc lamps; and the object is to provide a simple automatic means for separating the carbons to start and maintain the arc, and, further, to so construct the lamp that flickering caused by jolting will be prevented.

I will describe an arc-lamp embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section of a lamp embodying my invention. Fig. 2 is a top plan view. Fig. 3 is a section through the line 3 3 of Fig. 1, and Fig. 4 is a sectional detail showing a modified form of solenoid-core.

The lamp here shown is designed particularly as a headlight for cars or other vehicles; but obviously it may be used in other connections.

Referring to the drawings, 1 designates a casing in which is arranged a solenoid 2. One end of this solenoid has a connection through a wire 3 with a contact-piece 4, designed to be put in engagement with a leading-in wire, and the other end of said solenoid is connected electrically to a top plate 5, through which the current passes from the lower carbon, as will be hereinafter described.

The solenoid-core 6 is made tubular, so as to receive friction-tight the lower carbon 7. At the upper end of the core 6 is a block 8, which by engaging with the upper portion of the solenoid limits the downward movement of the core, and consequently the downward movement of the lower carbon. From the block 8 arms 9 extend outward and through slots formed in the walls of vertically-disposed tubes 10. These tubes 10 extend from the top plate 5 to the cover 11 of the casing, and arranged in each tube is a spring 12,

which engages at the upper end with the arms 9 and at the lower end with the top plate 5. Posts 13 and 14 extend upward from the cover 11 and support a ring 15, adapted to engage with the upper portion of the globe 16, while the lower portion of said globe engages with the cover 11 or preferably with an asbestos disk 17 on said cover, and a similar asbestos disk 18 is arranged between the ring 15 and the upper end of the globe. The posts 13 and 14 pass through bushings 19, of insulating material, arranged in holes formed in the ring 15, and the screw-threaded portions of these posts are engaged by thumb-nuts 20, as plainly indicated in Fig. 1.

The ring 15 has a tubular upward extension 21, provided with an interior thread to engage an exterior thread of a holder 22 for the upper carbon 23. When the upper carbon is passed through the holder 22, it may be held as adjusted by a set-screw 24, and the holder 22 may be held as adjusted in the portion 21 by means of a set-screw 25. A collar 26, of glass or other similar material, is engaged around the lower carbon 7, which projects into the globe 16. This collar 26, when the arc is formed, will bear tightly against the asbestos disk 17, and as it is tightly engaged by friction with the carbon 7 it will effectually prevent the entrance of air and practically maintain a vacuum in the globe, thus prolonging the burning of the lamp without adjustment or feeding of the carbons.

The upper carbon 23 has electrical connection with a feed-wire through a wire 27, which for convenience I connect with a spring-clip 28, designed to be engaged with the carbon, as shown. This wire 27 is here shown as extended down through the tubular post 14 through the casing and having electrical engagement with the metal post 29, designed to engage in a socket similar to that of an incandescent-lamp socket.

In Fig. 4 is shown a block 30 on the upper end of the core 6, which is made substantially cone-shaped and adapted to engage in a similarly-shaped socket 31 at the upper end of the solenoid-spool. When the electric current is cut out, the springs 20 will move the core 6 upward, causing the end of the carbon 27 to

engage with the end of the carbon 23. Immediately, however, the current is turned on it will flow through the wire 27, the carbon 23, the carbon 7, the plate 5, the solenoid, and out through the wire 3. When the solenoid is thus energized, it will of course draw the core 6 downward, separating the carbons and forming the arc, and I have found that owing to the substantial vacuum in the globe 16 the lamp will continue to burn without resetting the carbons for from eight to nine hours, and in resetting the carbons the lower one may be moved upward in the core 6 and the upper carbon may be moved downward by turning the holder 22. As the block 8 or the block 30 will engage closely with the top of the solenoid-spool, lateral motion of the lower carbon relatively to the upper one will be obviated, and obviously as long as the current is turned on the carbons cannot approach each other to destroy the arc or cause flickering.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An arc-lamp, comprising a casing, a solenoid in said casing and through which the

main electric current is designed to pass, a tubular core for the solenoid adapted to receive the lower carbon, a block on the upper end of said core, tubes arranged in the casing and having slots, arms extended from the block into said slots, springs in the tubes and engaging with the arms, a ring supported from the casing, and a holder for the upper carbon adjustable in said ring, substantially as specified.

2. An arc-lamp, comprising a casing, a ring supported on said casing, a globe engaged between the ring and the casing, a lower carbon passing through the casing and into the globe, a collar mounted friction-tight on said carbon within the globe and adapted when the carbon is in operative position to prevent the entrance of air to the globe, an upper-carbon holder adjustably connected to the ring, and a solenoid for moving the lower carbon away from the upper carbon, substantially as specified.

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Witnesses:

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