

No. 657,433.

Patented Sept. 4, 1900.

J. MELZER.
ELECTRIC ARC LAMP.
(Application filed May 2, 1900.)

(No Model.)

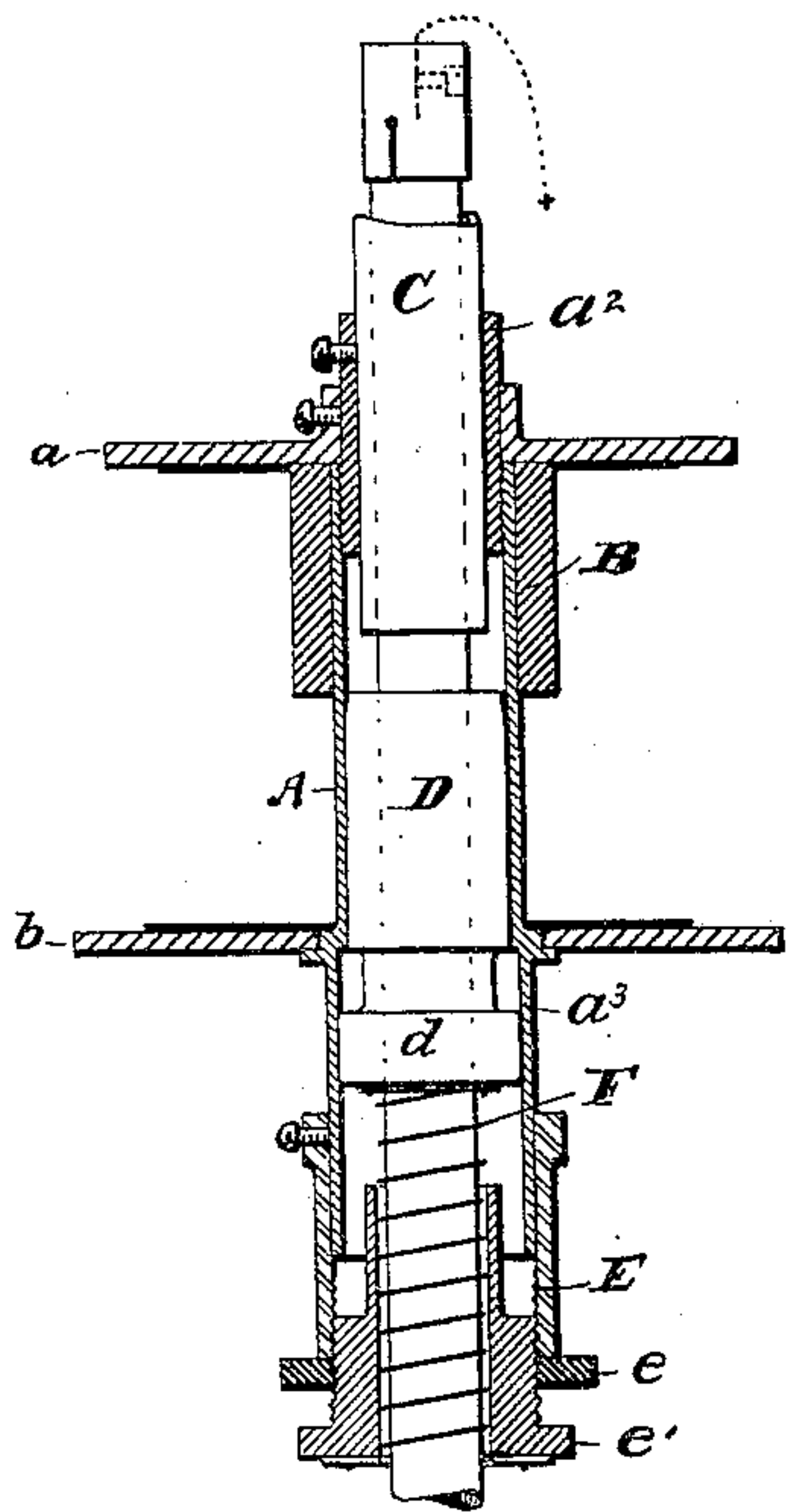


Fig. 4.

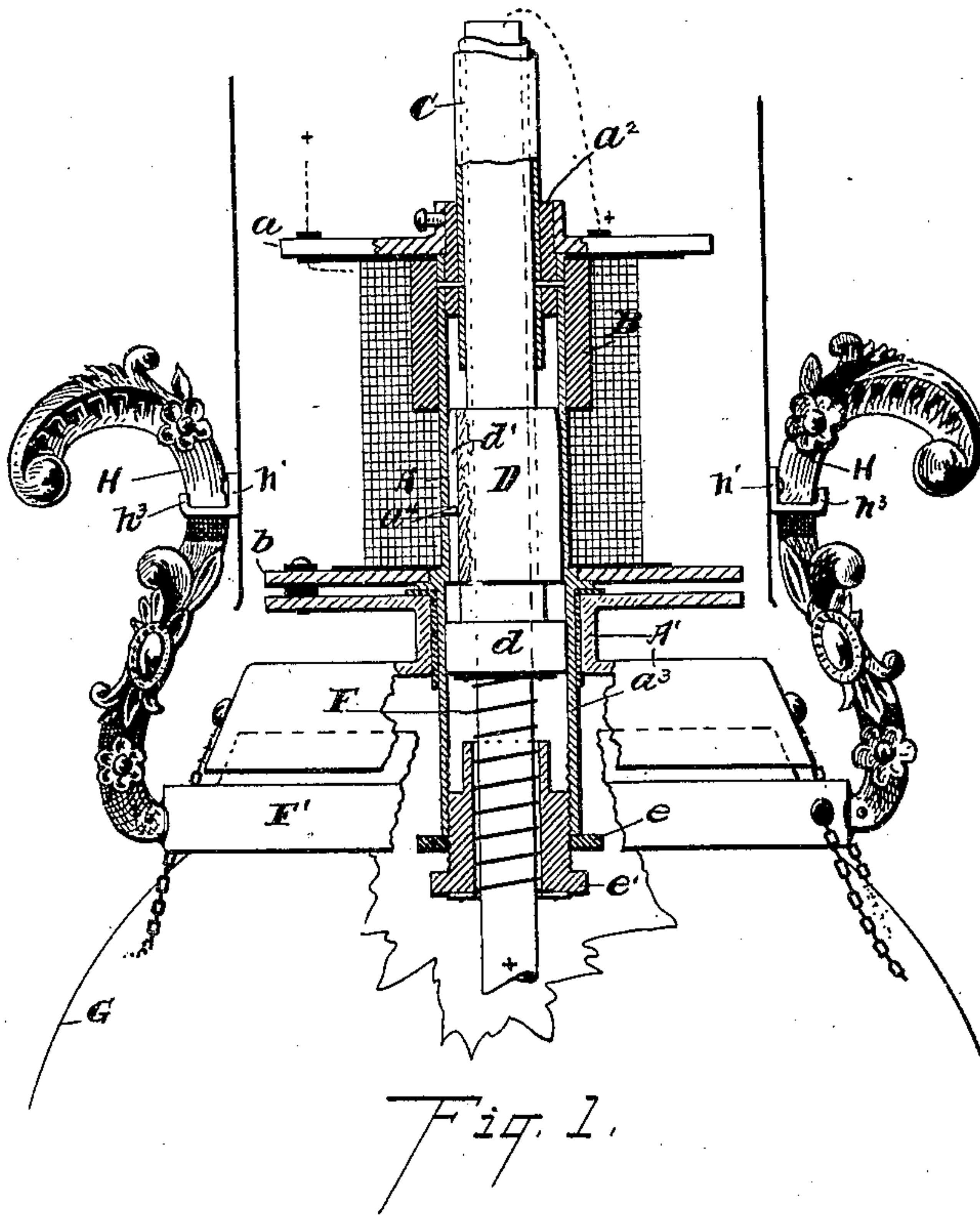


Fig. 1.

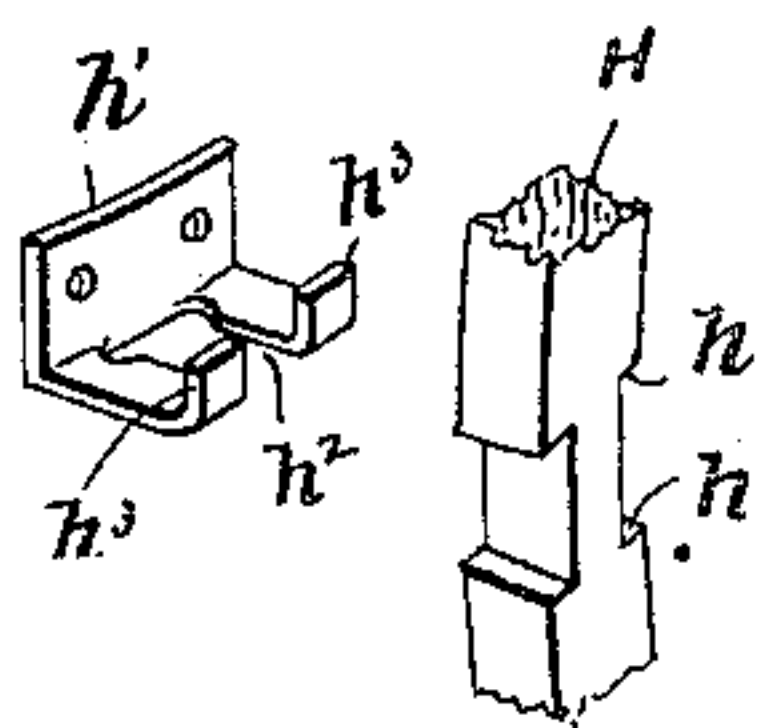


Fig. 2.

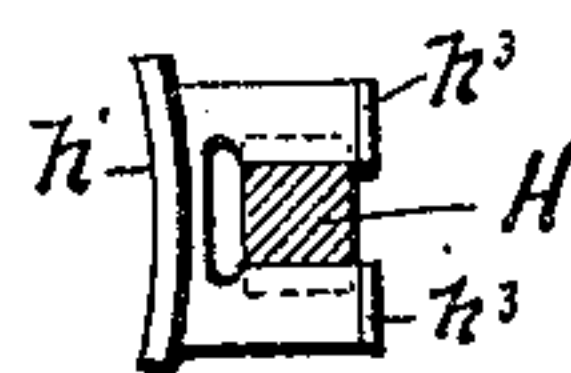


Fig. 3.

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JOSEPH MELZER, OF CLEVELAND, OHIO, ASSIGNOR TO THE INTERSTATE ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 657,433, dated September 4, 1900.

Application filed May 2, 1900. Serial No. 15,192. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MELZER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electric-Arc Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in electric-arc lamps; and it consists more especially of the features hereinafter pointed out in the annexed claims.

The object of my present invention is to produce an arc-lamp having a great range of armature control, an improved form of clutch, and efficient means for detaching the globe when trimming the lamp.

In the accompanying drawings, Figure 1 is a cross-sectional view of a lamp embodying the features of my invention. Fig. 2 is a detail view of one of the catches that support the globe. Fig. 3 is a plan view of one of the globe-hooks in position on a supporting-catch. Fig. 4 is a sectional view of a modified magnet construction.

The invention comprises the features instanced in the construction shown, to which I do not limit myself in specific detail.

One form of magnet for my lamp comprises a brass core-tube A, which supports the permeable heads *a* and *b*. A ring B of large cross-section is placed on the tube A near the head *a*. In the upper end of the tube A is placed an iron ring *a*² and provided with the head *a*, the connections between these parts being such as to permit the removal of said head. Within the ring *a*² is a brass supporting-tube C. A carbon-inclosing tube may slide inside of the tube C, or a carbon terminal cap may slide therein instead. The supporting-tube C serves also as an arc-striking limit-stop, and, if desired, it may be made adjustable, as shown in Fig. 4, so as to increase the range of armature movement.

The armature D slides within the tube A, and it has attached a piston-head *d*, which slides in the enlarged end *a*³ of the tube A, where it forms a dash-pot having the usual functions. An adjustable tube E is secured

to the lower end of the tube A. The projecting end of the tube E is threaded, so as to receive a lock-nut *e* and an adjusting-nut *e*'. The dash-pot head *d* holds one end of the clutch-spring F, and the other end is fastened to the nut *e*'. This spring encircles the carbon, and as the armature is raised its coils contract and grip the carbon. The descent of the armature opens the coils and releases the carbon. Nut *e*' admits of careful and easy adjustment of the diameter of the coils of the spring to that of the carbon. In order that the armature is held from turning, a pin *a*⁴ is placed in the tube A. This pin projects into the slot *d*' of the armature. The slot can also be formed in the tube and the pin placed in the armature when a longer range of movement is desired than is attainable if placed as shown on account of the limiting length of the armature. The tube E may be fixed to the tube A without being adjustable thereon when desired. In practice tubes C and E are both fastened without being adjustable or they are both made adjustable.

In order that the lamp may be easily trimmed, I fasten safety-chains from the globe-ring F' to the lamp-frame A'. These chains hold the globe G in the lowest position while the lamp is being trimmed. Hook-handles H are pivoted to the globe-ring F', and they have shoulders *h* formed thereon. These shoulders pass above and below spring-catches *h*', which may be fastened in any suitable manner to the lamp-casing or the lamp-frame. The catches *h*' are slotted at *h*², and the sides form springs which serve to hold the hooks H from sidewise movement. In order that the hooks may not be accidentally displaced, the catches *h* have short hook ends *h*³. Before hooks H can be removed from the catches they must be raised far enough to clear points *h*³. In short, the globe G and globe-ring F' must be raised bodily a slight distance before the hooks H can be removed from the catches.

What I claim is—

1. In an electric-arc lamp, a solenoid-magnet, comprising a supporting-tube, an iron ring secured thereon, a magnet-core tube external to said ring, a magnet-head secured to the core-tube at the other end thereof, a mag-

net-head secured to the ring of the supporting-tube, in combination with an iron ring external to the core-tube and extending for about one-half the length thereof, substantially as set forth.

2. In an electric-arc lamp, a solenoid-core tube of highly-reluctant material, a hollow ring of highly-permeable material secured therein, a supporting-tube secured to and projecting through said ring, a highly-permeable detachable magnet-head also fastened to said ring, a second magnet-head of similar permeability secured to the core-tube, a ring of great permeability also secured to the core-tube adjacent the detachable magnet-head and an armature movable within the core-tube, in combination with limit-stops therefor, whereby the movement of said armature is confined within predetermined limits, substantially as set forth.

3. In an electric-arc lamp, a solenoid-core tube of highly-reluctant material and magnet-heads of great permeability supported by said tube, in combination with a ring of high permeability placed externally to the core-tube and adjacent to one of the magnet-heads, substantially as set forth.

4. In an arc-lamp, a solenoid-core tube, magnet-heads supported thereby and an armature within the tube, in combination with a ring of high permeability secured outside

of the tube adjacent one of the magnet-heads, substantially as set forth.

5. In an electric-arc lamp, the combination with a solenoid and an armature therein, of a tubular extension projecting from the core of the solenoid, a head or piston within said tubular extension and connected with the armature, a nut or sleeve adjustable in said tubular extension, and a coiled spring disposed in said tubular extension and nut or sleeve and adapted to permit the passage of a carbon-rod through it, one end of said spring secured to the head or plunger in the tubular extension and the other end secured to said nut or sleeve.

6. In an arc-lamp, a solenoid-core tube, permeable heads supported thereby, an armature within the same, and a highly-permeable ring outside of the tube and adjacent one of the heads, in combination with adjustable limit-stops, placed in the path of the armature, whereby its movement is confined within variably-fixed points, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH MELZER.

Witnesses:

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