

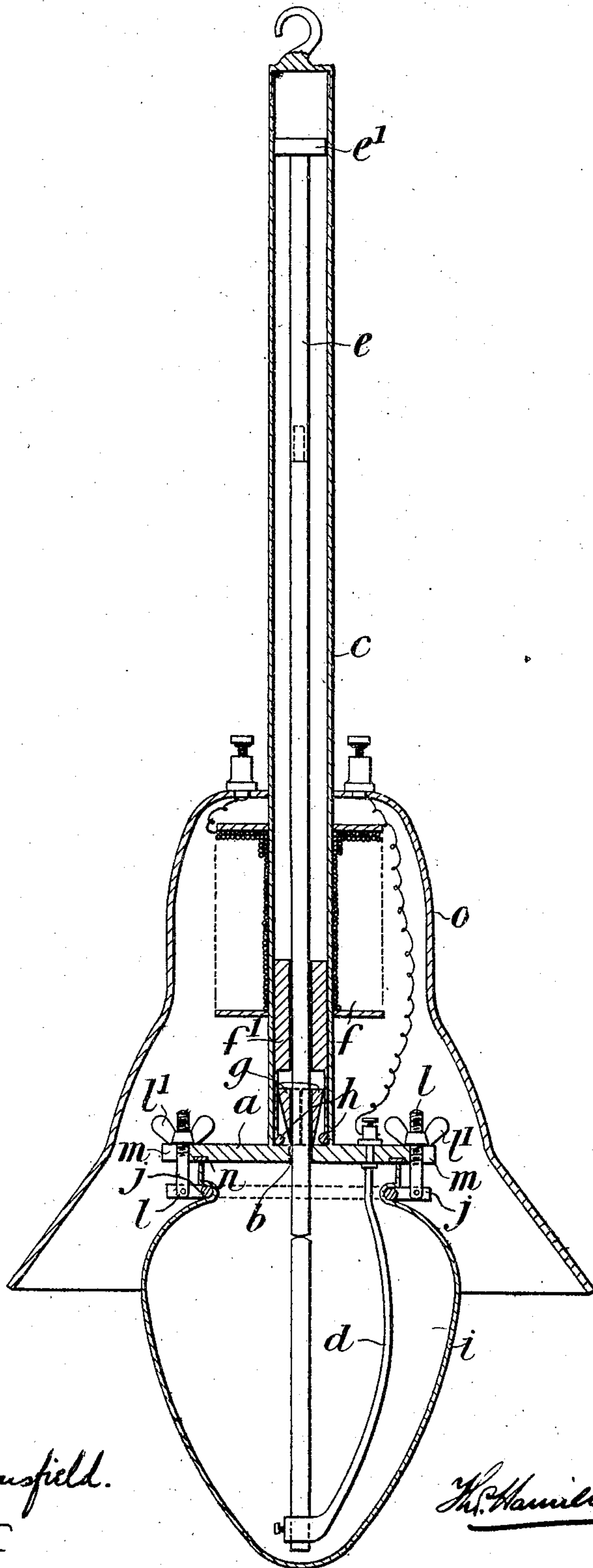
No. 774,876.

PATENTED NOV. 15, 1904.

T. HAMILTON-ADAMS.
ELECTRIC ARC LAMP.

APPLICATION FILED AUG. 21, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS HAMILTON-ADAMS, OF LONDON, ENGLAND.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 774,876, dated November 15, 1904.

Application filed August 21, 1903. Serial No. 170,287. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HAMILTON-ADAMS, a subject of the King of Great Britain, residing at Howard House, Arundel street, Strand, London, England, have invented new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

This invention relates to improvements in electric-arc lamps of the kind wherein the movable carbon is fed toward the fixed carbon by gravity and is raised by a solenoid core or armature, which directly or through the medium of a clutch automatically grips the carbon or holder when it is attracted by the solenoid, the object of my invention being to simplify the construction of such a lamp and to prevent the pressure generated within the lamp when inclosed from bursting or fracturing the lamp.

The accompanying drawing shows a vertical section of an electric-arc lamp constructed according to the invention.

The frame of the lamp comprises a foundation-plate *a*, having a central aperture *b* and a radiating-tube *c*, of non-magnetic material, fixed centrally on the said plate concentric with the hole *b* and capable of being closed at the upper end. This tube, which is of uniform diameter throughout, is of considerable length, so as to afford a relatively large area of surface for cooling the heated air contained in the lamp when inclosed to such an extent that the pressure will never rise to a dangerous point, thereby avoiding the necessity for using a valve or other device for relieving the air.

d is the holder for the lower or fixed carbon, and *e* the holder for the upper or movable carbon, the said holder *e* being of the same diameter as the upper carbon, which latter is reduced in diameter at one end, so as to fit into a socket in the lower end of the said holder. The upper end of the holder is provided with an enlargement *e'*, which slides against the sides of the tube *c*, which serves as a guide for the said holder, the lower end of the carbon being held in its proper position by passing through the central hole *b* in the foundation-plate. *f* is a solenoid-coil which is fixed on the exterior of the tube *c*,

and *f'* is the armature or core of the said coil, which is arranged within the tube *c* and provided with a central hole through which the upper carbon is free to slide. This armature-coil operates in conjunction with a clutch *g*, consisting of two gripping-pieces, which together form a kind of cone surrounding the carbon rod and designed to be acted upon by lugs or a projection-ring *h*, formed on extensions on the lower end of the armature *f'*.

i is the globe, upon which is secured a ring *j*, carrying a series of pivoted bolts *l*, designed to be engaged with slots *m* in the foundation-plate *a* and to be tightened against a packing-ring *n* in the under side of the said foundation-plate by means of thumb-nuts *l'* upon the said bolts *l*.

o is a shield or case which covers certain parts of the mechanism in a manner which will readily be understood with reference to the drawings.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In an arc-lamp, the combination with the foundation-plate, of a globe hermetically united thereto, a radiating-tube hermetically united to said plate, communicating with the interior of said globe and extending outside of the lamp-body to radiate the heat produced by the arc, whereby the heated air and gases within the globe are permitted to continuously pass into the radiating-tube and give off their heat, thereby obviating the use of pressure-relieving devices, substantially as described.

2. In an arc-lamp, the combination with the foundation-plate provided with a guiding-aperture therein, of a globe hermetically united thereto, a radiating-tube hermetically united to said plate, communicating with said guiding-aperture and extending outside of the lamp-body, for radiating the heat generated by the arc, and obviating the use of pressure-relieving devices, and a movable carbon-holder guided in said tube, said tube and said guiding-aperture in said plate forming the guiding means for the movable carbon, substantially as described.

3. In an arc-lamp, the combination with the globe for hermetically inclosing the arc, of a hermetically-sealed radiating-tube communicating with said globe and extending outside
5 of the lamp-casing, whereby the heated air and gases within the globe may continuously pass into said tube and be relieved of their heat thereby preventing an excess of pressure

within the globe and obviating the use of pressure-relieving devices, substantially as described. 10

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