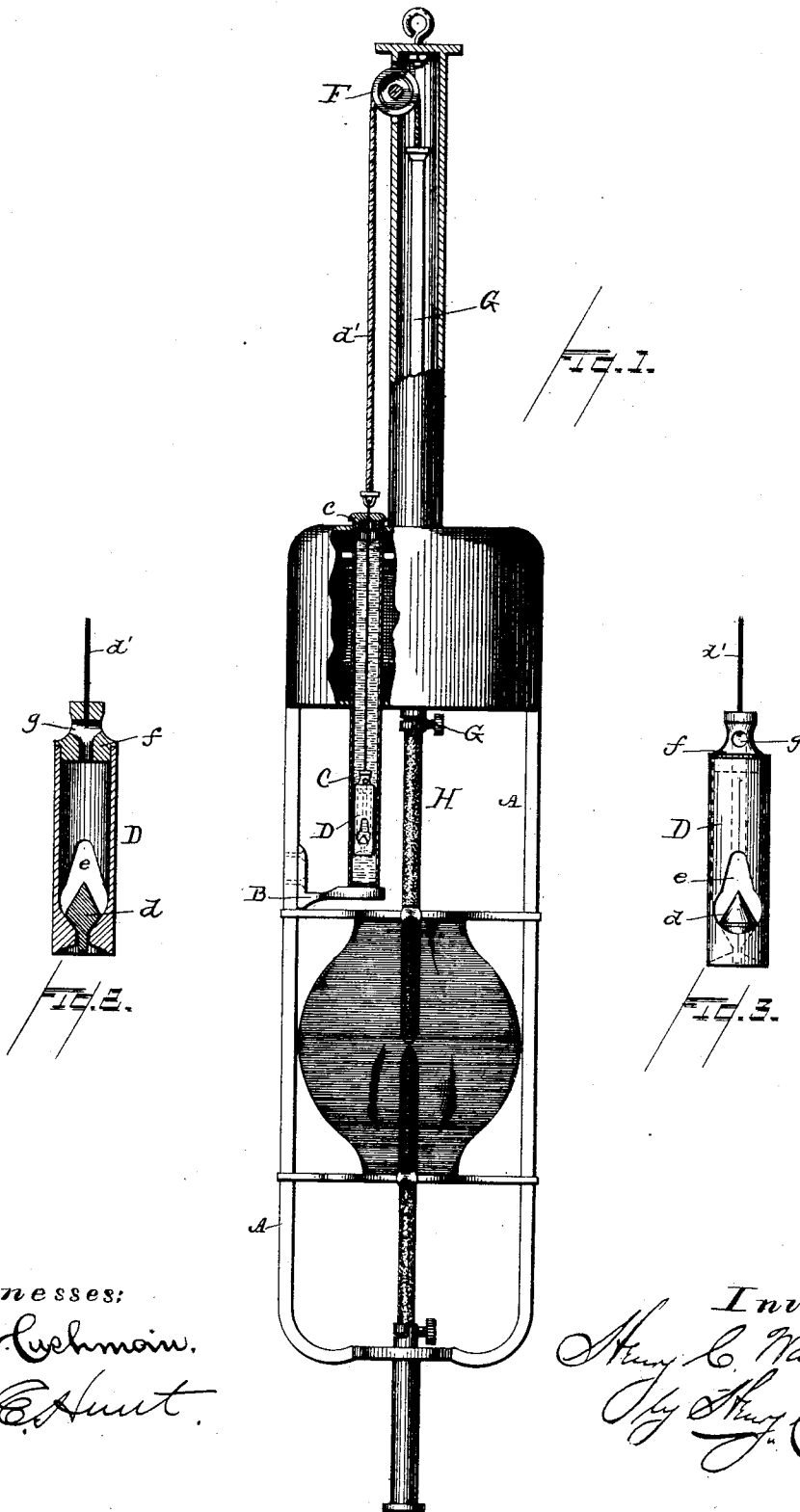


(No Model.)

H. C. WALDECKER.
ELECTRIC ARC LAMP.

No. 465,685.

Patented Dec. 22, 1891.



Witnesses:

A. V. Luchman.
C. E. Hunt.

Inventor:

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Atty.

UNITED STATES PATENT OFFICE.

HENRY C. WALDECKER, OF AUSTIN, MINNESOTA, ASSIGNOR TO WINFIELD S. PIERCE, OF SAME PLACE, SAMUEL H. PIERCE, OF HUDSON, WISCONSIN, AND HARRY F. BATCHELOR, OF MILES CITY, MONTANA.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 465,685, dated December 22, 1891.

Application filed April 8, 1891. Serial No. 388,115. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. WALDECKER, a citizen of the United States, residing at Austin, in the county of Mower and State of Minnesota, have invented certain new and useful Improvements in Feed-Regulating Devices for Electric-Arc Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide an improved device for regulating the feed of the carbons of arc lamps, so as to check any sudden downward movement of the upper carbon when the latter starts to descend, thereby rendering the feeding movement of the carbon smooth and easy and preventing the light from flickering. To this end the upper-carbon carrier is connected with one end of a cord running over a pulley and having attached to its opposite end a valved piston suspended in a tube containing water or other fluid. The fit of this piston in the tube is not quite fluid-tight, but is sufficiently close so that when the carbon-carrier starts to move downward said piston will create sufficient suction to check any sudden movement of said carrier, the fluid slowly escaping past the piston to permit the carbon to descend gradually.

In the accompanying drawings, Figure 1 represents a sufficient portion of an electric-arc lamp to illustrate my invention. Figs. 2 and 3 are detail views of the piston and its valve.

A denotes the frame of an arc lamp, of any suitable construction. To said frame is attached a bracket B, serving as a support for a fluid-containing tube C, the latter being of any suitable material, as glass or metal, and being preferably provided with a perforated cap c to prevent evaporation of the fluid in the tube and to exclude dirt therefrom. Within the tube C is loosely fitted a piston D, to which is connected one end of a cord or wire d', passing upward through the hole in the cap c and over a pulley F and being attached at its opposite end to the carrier G for the upper carbon H. The piston D is provided

with a valve d, resting on a suitable seat (denoted by dotted lines in Figs. 1 and 3) in the lower portion thereof, said piston having side openings e for the ready insertion of the said valve. The cap f of the said piston is provided with one or more apertures g, through which the fluid may pass when the piston is lowered in the tube C, and the valve is raised from its seat by the downward pressure of the piston on the fluid in said tube.

The usual feeding mechanism for the upper-carbon carrier is employed; but as the same forms no part of my invention, which is merely additional thereto, such mechanism is omitted from the drawings.

With my improvements connected and arranged as above described the operation is as follows: When the feeding mechanism for the upper-carbon carrier is started in the usual manner to release said carrier and cause it to descend with its carbon, the tendency of any sudden upward movement of the piston D is checked by the suction caused by the close (but not fluid-tight) fit of the said piston in its tube, the fluid slowly passing by said piston, and thus permitting the carbon to descend slowly and easily, thereby obviating any such sudden movements of the carbon as would cause flickering of the light. Thus by the simple mechanism described the feeding movements of the carbon are regulated to a nicety and the light of the lamp is rendered steady.

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

1. In an electric-arc lamp, the combination, with the upper-carbon carrier thereof, of a fluid-containing tube C, a hollow piston D, fitting closely (but not fluid-tight) in said tube and provided with an upwardly-opening gravity-valve d, said piston having a cap provided with one or more fluid passages or apertures, a pulley, and a cord connected to said piston and to the said carbon-carrier and passing over said pulley, whereby as the said carbon-carrier starts to descend any sudden movement thereof will be checked by the suction of the said piston in its tube and whereby,

also, the said piston will be free to descend through the fluid inclosed in the said tube, substantially as set forth.

2. In an electric-arc lamp, the combination,
5 with the upper-carbon carrier, of a tube, a hollow piston fitting closely (but not fluid-tight) in said tube, said piston being provided with an upwardly-opening valve and with a fluid-escape aperture above said valve, a pulley, and

a cord connected to said piston and carbon-carrier and passing over said pulley, substantially as and for the purposes specified.

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

HENRY C. WALDECKER.

Witnesses:

WM. M. HOWE,

H. L. BANFIELD.