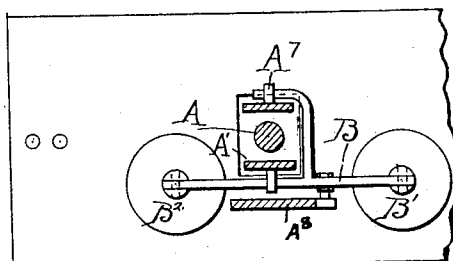
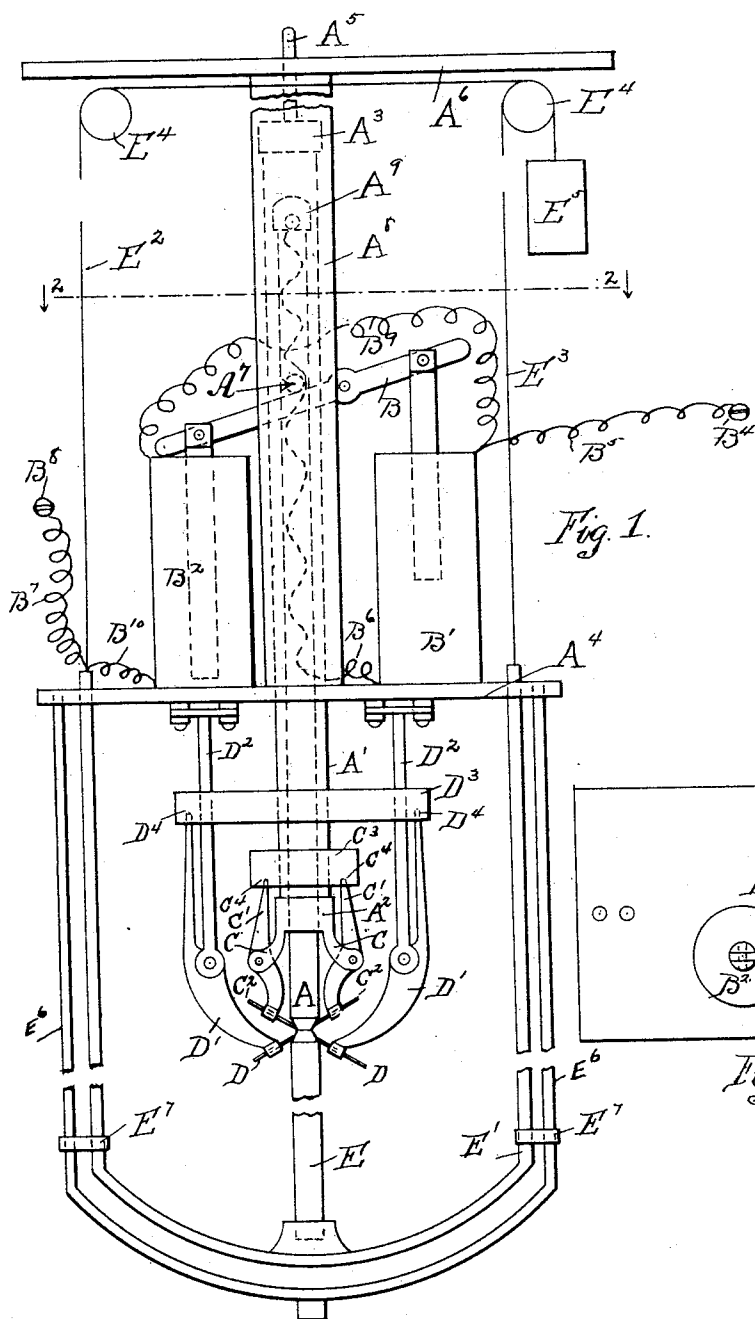


C. A. PFLUGER.
ELECTRIC ARC LAMP.

Patented Apr. 16, 1895.



Walter J. Smith &
A. H. Geddes

Charles A. Pfleger
by James W. Parken
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES A. PFLUGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE STANDARD ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 537,617, dated April 16, 1895.

Application filed July 2, 1894. Serial No. 516,325. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. PFLUGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Arc Lamps, of which the following is a specification.

My invention relates to arc lamps and has for its object to produce an improved lamp of which the following is a description, reference being had to the accompanying drawings, wherein—

Figure 1 is a diagrammatic view of the lamp. Fig. 2 is a cross section on line 2—2 Fig. 1.

Like letters refer to like parts throughout both figures.

A and E are the two carbons of the lamp. The carbon A is held in place by the two strips A' A' which are connected together at each end by the caps or cylindrical portions A² A³ and are free to move through a hole in the base A⁴. A rod A⁵ on the end of the cap A³ passes through a hole in the top plate A⁶ so as to guide the carbon holder consisting of strips A' A' and caps A² A³ and keep it in position. The strips A' A' are provided with the pins A⁷ A⁷.

A⁸ is a standard fastened to the base A⁴ and plate A⁶.

A⁹ is a cap on the carbon A to which the electrical connection is made. Pivoted to this standard is the lever B which is connected to the cores of the series coil B' and shunt coil B². Said lever engages one of the pins A⁷ on the strip A', and is provided with an arm B³ which engages the other pin A⁷.

The cap A² on the end of the strips A' is provided with the projecting pieces C C to which are pivoted the arms C' C'. The lower ends of these arms are provided with the pins or points C² C² which engage the carbon A near the base of its cone shaped end, so as to hold it in position. A washer or sleeve C³ surrounds the strips A' A' and is provided with the notches or recesses C⁴ C⁴ for the ends of the arms C' C'. It will be seen that when the ends of the arms C' C' are in the recesses of the said sleeve, the distance between the points C² is fixed.

The lower carbon B is provided in the same manner with the pins or points D D fastened

to the ends of the arms D' D'. Said arms are pivoted to the rods D² D² which are fastened to the base A⁴, but insulated therefrom. The arms C' C' are also preferably insulated from the cap A² and strips A'. A piece D³ surrounds the rods D² and is provided with the recesses D⁴ D⁴ for the ends of the arms D'.

The lower carbon E is attached to the bent tube or rod E', the ends of which pass through holes in the base A⁴. Said rod is insulated from the base A⁴. Fastened to the ends of this rod E' are the cords E² E³ which pass over the pulleys E⁴ E⁴ and are attached to the weight E⁵. A second bent rod E⁶ is rigidly fastened to the base A⁴. The two rods E' and E⁶ are connected together by the pieces E⁷ E⁷ which are free to slide on the rod E⁶ as the lower carbon burns away. The series coil B' is connected to binding post B¹ by wire B⁵, and with the carbon A by wire B⁶. The wire B⁷ connects rod E' with binding post B⁸. The wires B⁹ B¹⁰ connect the shunt coil B² with the wires B⁵ and B⁷.

It is evident that these several parts may be varied in form, construction and arrangement without departing from the spirit of my invention, and I therefore do not wish to be limited to the exact construction shown.

The use and operation of my invention are as follows: The carbon A may be inserted between the strips A' at the lower end by lifting the sleeve C⁴ and spreading apart the points C² C²; or said carbon may be slipped in between the plates A A' when the carbon holder is raised to its highest position; or it might be inserted at the top of the carbon holder. In a lamp in which the carbon is inserted at the top or bottom of the carbon holder, a tube may be used instead of the strips A' A'. The lower carbon is inserted by lifting the piece D³ so as to free the ends of the arms D' D' and allow the points D to be separated. When there is no current in the lamp the ends of the two carbons are in contact. When the current passes through the lamp the series coil B' is energized and attracts its core, and through the agency of the lever B and pins B⁷ B⁷ lifts the upper carbon holder points C² C² and carbon A, and strikes the arc. As the carbons burn away they are fed so as to be kept in contact with

the points D and C², the lower carbon being fed by means of the weight E⁵ and the upper carbon by its own weight. If for any reason the carbons get too far apart, the shunt coil B³ is strengthened so as to move the lever B downwardly and bring the points C² and D' closer together. The pins C³ C² and D D are arranged so that they engage the carbons near the base of their cone shaped ends, and hence are not materially affected by the heat of the arc. I prefer to have these points made of some non-corrosive material, as platinum or the like.

It will be seen that I have here a two carbon lamp that feeds both with and without variation in the current, and which is very short, and which has no carbon rod to get out of order. It will also be noticed that there are no sliding contacts, as the carbons are directly connected to the circuit.

I claim—

1. An arc lamp comprising a carbon holder

with a carbon free to move therein, stops to limit the motion of said carbon, said stops being attached to pivoted arms, said pivoted arms having pivoted washers associated with their ends so that the distances between the stops are fixed when said washers are in place but may be varied when the washers are removed, substantially as described.

2. The combination in an arc lamp, of a carbon holder with a carbon free to move therein, a lever pivoted to a standard and adapted to engage pins projecting from said carbon holder, a shunt magnet and a series magnet each having its core attached to one end of said lever and a lower carbon attached to a movable frame and provided with detaining points, substantially as described.

CHARLES A. PFLUGER.

Witnesses:

DONALD M. CARTER,

WALTER J. GUNTHER.