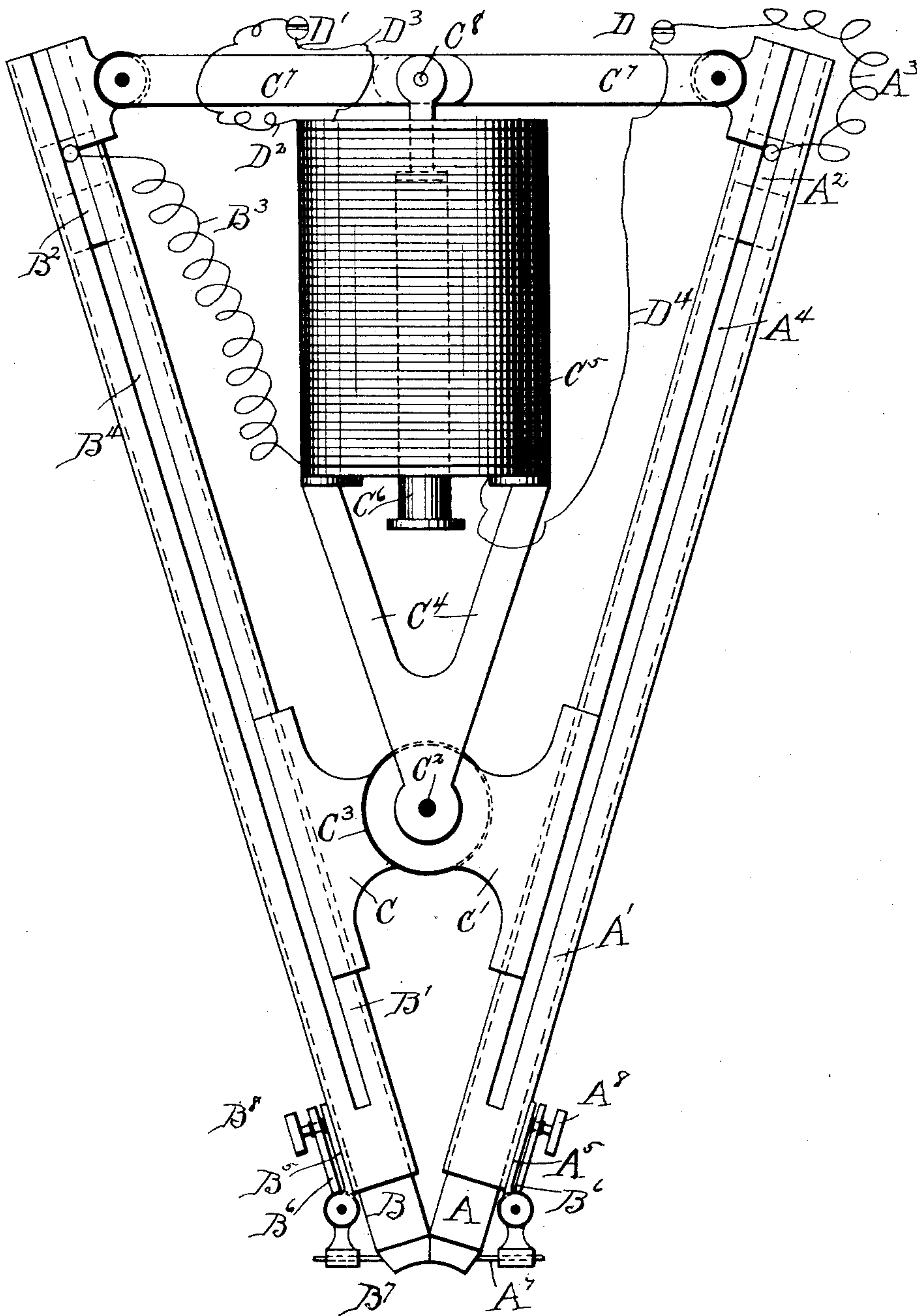


(No Model.)

C. A. PFLUGER.
ELECTRIC ARC LAMP.

No. 541,179.

Patented June 18, 1895.



WITNESSES
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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. 541,179, dated June 18, 1895.

Application filed July 2, 1894. Serial No. 516,326. (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, cheap and simple lamp, of which the following is a description, reference being had to the accompanying drawing which is a diagrammatic view of the lamp.

A and B are the two carbons and are contained in the tubes A' B'. The carbons are provided at their upper ends with the caps A² B² to which are attached the flexible wires A³ B³. The carbon tubes A' B' are provided with slots A⁴ B⁴ for the passage of the wires A³ B³. At the lower ends of the carbon tubes are the lugs A⁵ B⁵ to which are pivoted the arms A⁶ B⁶ carrying the pins or points A⁷ B⁷ which limit the downward motion of the carbons. The other ends of said arms are provided with the set screws A⁸ B⁸ by which the arms A⁶ B⁶ are moved so as to move the points A⁷ B⁷ out of the way when new carbons are inserted. Said arms A⁶ B⁶ are insulated from the tubes A' B'.

C C' are pieces rigidly attached to the carbon rods, and are free to move about the pivot C². These pieces are insulated from each other by the insulation C³. The pivot C² also passes through the frame C⁴ which carries the solenoid C⁵. The core C⁶ of said solenoid is attached to the strips C⁷ C⁷ by pivot C⁸, which also connects the ends of said strips together. Said strips are pivotally connected to the carbon tubes A' B' and are insulated therefrom. The carbons are kept together by the weight of the core C⁶. When the lamp is not burning the weight of said core also acts against the solenoid C⁵ in the operation of the lamp. I may also use a spring or the like to oppose the action of the solenoid when desirable.

As shown in the drawing the solenoid C⁵ is a series and shunt wound, or differential solenoid.

The binding post D is connected by wire A³ with carbon A. Binding post D' is connected

by wire D² to the series coil of solenoid C⁵ which is connected by wire B³ to carbon B. The wires D³ D⁴ connect the shunt coil with the binding posts D D'. I may use separate solenoids instead of combining them, as shown in the drawing. If desired I may use a single series magnet, or may feed the carbons by a positive feed. The carbons are connected directly to the circuit and hence a sliding contact avoided.

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: When it is desired to supply the lamp with carbons the caps A² B² may be pulled out at the top of the tubes A' B' and the carbons inserted, or the carbons may be replaced by screwing up the set screws A⁸ B⁸ until the points A⁷ B⁷ are out of the way, and then inserting the carbons in the lower end. Said points are readjusted when the carbons are in place. By the latter method the danger of injuring the points A⁷ B⁷ is obviated. When no current is passing through the lamp the weight of the core C⁶ keeps the carbons together. If now the current is turned on the solenoid C⁵ attracts its core C⁶ which, being pivoted to the strips C⁷, moves their connected ends upwardly. This movement shortens the distance between the upper ends of the carbon tubes A' B' and rocks said tubes about the pivot C², thus separating the carbons A B and striking the arc. After the arc is struck the carbons are fed by their own weight. Additional weights or springs may be used to aid the feed if desired. If the current is cut off, the downward pull of the core C⁶ brings the carbons together. If while the lamp is working the current varies, as by the carbons getting too close together or too far apart on account of the obstruction of the feed or the like, the solenoid C⁵ acts to bring them into the proper relations.

It will be seen that I have here a simple, short lamp, with very little mechanism to get out of order and injuriously affect the working of the lamp.

I claim—

1. The combination in an arc lamp of two
carbons at an angle with each other, tubes
containing said carbons, a solenoid connected
to said tubes so as to be supported thereby,
5 and a pivotal connection between the core of
said solenoid and each of said tubes, whereby
said tubes are moved by the movement of the
core.

2. The combination in an arc lamp of two
10 carbons at an acute angle with each other,
tubes containing said carbons pivoted to-
gether at some point between their ends, a
solenoid on a frame supported at said pivotal
point and having its core pivotally connected
15 to both carbon holders, whereby the distance

between the carbons is regulated by the cur-
rent passing through the solenoid.

3. In an arc lamp the combination of two
carbon holders or tubes at an angle to each
other with a controlling solenoid, the solenoid 20
and the two tubes pivotally connected to-
gether toward one end of such tubes and the
core of the solenoid and the tubes pivotally
connected together at the other end of said
tubes.

CHARLES A. PFLUGER.

Witnesses:

DONALD M. CARTER,
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