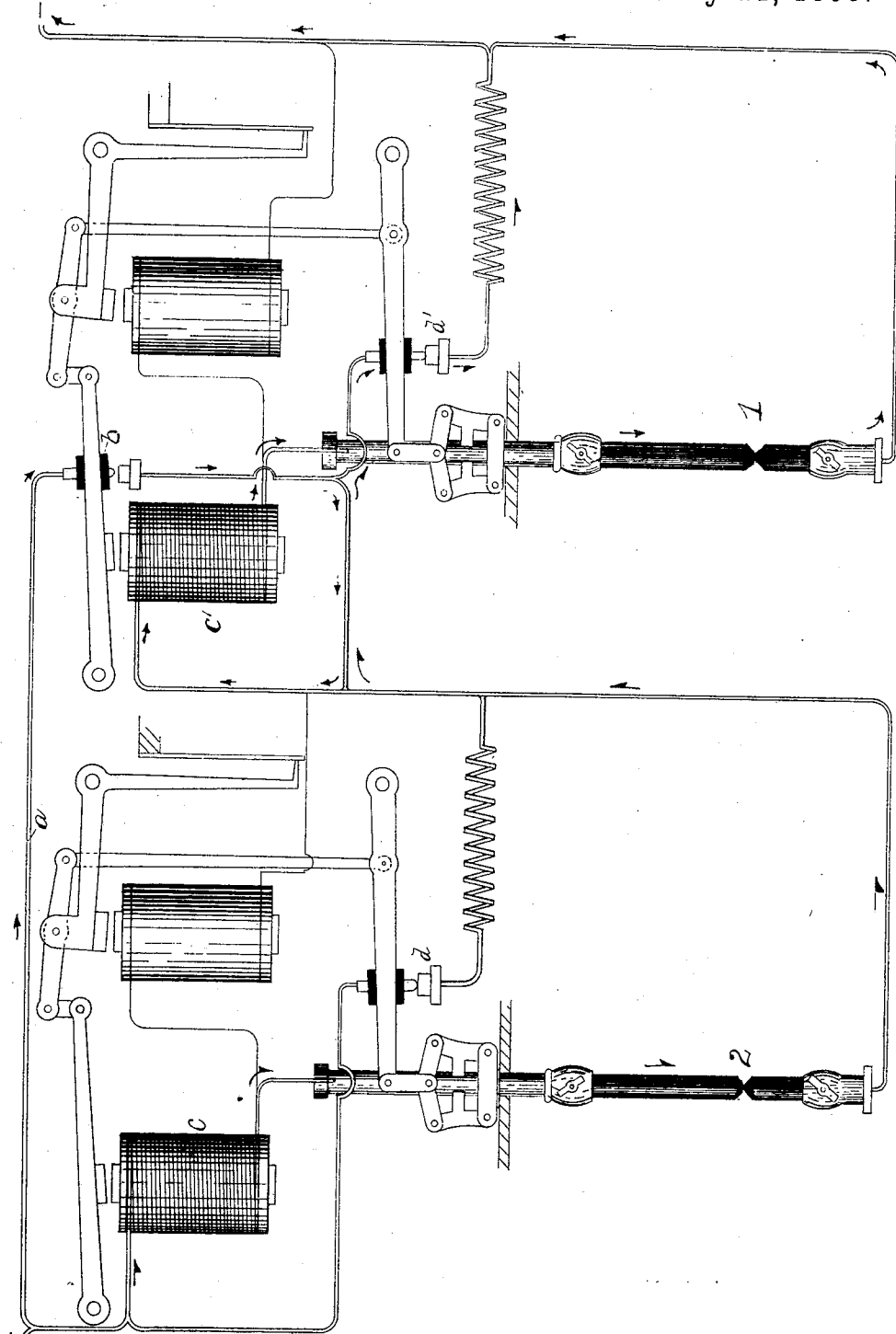


(No Model.)

C. E. SCRIBNER.
DUPLEX ELECTRIC ARC LAMP.

No. 501,170.

Patented July 11, 1893.



Witnesses,
L. B. Bagg
Ella Carter

Inventor,
C. E. Scribner
By *Surge P. Barton*
att'y

UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
ELECTRIC COMPANY, OF SAME PLACE.

DUPLEX ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 501,170, dated July 11, 1893.

Application filed October 27, 1890. Serial No. 369,406. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Duplex Arc Lamps, (Case No. 235,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to electric arc lamps and its object is to provide for burning lamps in pairs one after the other in circuit in series, that is to say, the two lamps constituting a pair are placed in series and provided with circuits so arranged that one lamp shall be brought into service after the other is extinguished.

My invention will be more readily understood by reference to the accompanying drawing, in which I have shown two single lamps placed in series in the main circuit between wires + and -.

The principal feature of my invention is the wire *a* extending from wire + to the circuit closer *b* controlled by the lifting mechanism of lamp 1. The closing of cut out *b* serves to shunt out lamp 2; thus when current is established the current will be sent through the lifting magnets *c c'* of both lamps. The closing of the cut out *b*, however, will shunt out lamp 2 and its cut out *d* will be closed. Thus we shall have current from wire + over wire *a* through the contacts of cut out *b* and thence through the lifting magnet *c'* of lamp 1 and the carbons thereof to line-out -. Lamp 1 will thus be caused to burn until descent of its rod shall be arrested by the usual stop or otherwise; thereupon the cut out of lamp 1 will be closed and lifting magnet *c'* will be de-energized and the contact *b* opened. Thus lamp 2 will be brought into service while lamp 1 is cut out of circuit by its automatic cut out. That is to say, current will be established through lifting magnet *c* of lamp 2, the carbons thereof and thence through cut out *d'* of lamp 1 and out by wire -.

It will be observed that each lamp is provided with usual feeding mechanism, that is,

an electro magnetic device included in the shunt of the arc and clutch mechanism connected therewith, so that an increase of the electro motive force of the arc above the normal will cause the clutch to descend and open to permit the upper carbon to feed.

It is evident that my invention may be applied to single lamps of different constructions so that one lamp of a pair may be automatically brought into service after the arc of the other is extinguished.

The details of the lifting and feeding mechanism may be of the form shown in my Patent No. 415,571, granted November 19, 1889, for electric lamps. It will be understood that I do not limit my invention in this regard, as arc lamps of any form may be used and will burn in succession when two are connected in circuit in series, one of them being provided with a shunt or by-path circuit about it including a circuit closer controlled by the regulating mechanism of the other.

It is evident that each lamp may be provided with a circuit closer like *b* and a shunt circuit about the other lamp so that they will act reciprocally each to cut out the other if this should be thought desirable.

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

1. The combination with two arc lamps in series in the same circuit, of contact points controlled by the lifting mechanism of one of the lamps to be closed together when the same is energized, and a shunt or by-path about the other lamp including the said contact points, whereby one of the lamps is short circuited during the operation of the other, substantially as described.

2. The combination in an electric arc lamp with an electromagnet in circuit with the carbons thereof, an armature therefor, and contact points adapted to be closed together when said armature is attracted, of a cut-out adapted to shunt the said electromagnet when closed to de-energize the same, whereby the normally closed contact points controlled by the electromagnet are opened when the lamp is cut out.

3. The combination with two arc lamps in series in the same circuit, of an electromagnet in series with the carbons of one lamp, contact points adapted to be actuated by said magnet to be closed when the magnet is energized, a shunt circuit about the other lamp, including the said contact points, and a cut-out in the lamp having the said electromag-

net adapted to shunt the magnet when operated, substantially as described. 10

In witness whereof I hereunto subscribe my name this 20th day of October, A.D. 1890.

CHARLES E. SCRIBNER.

Witnesses:

ELLA EDLER,

GEORGE P. BARTON.