

(No Model.)

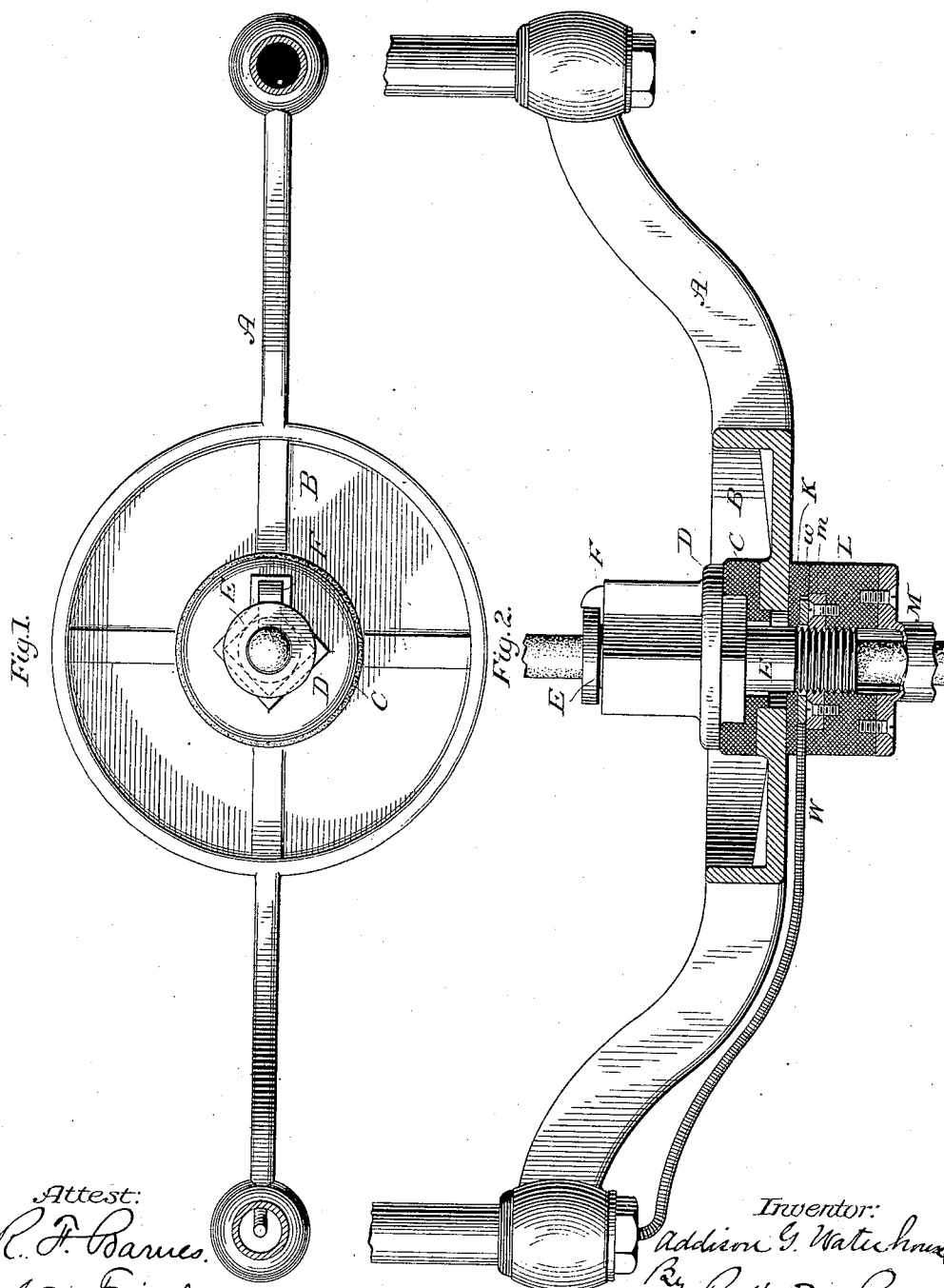
2 Sheets—Sheet 1.

A. G. WATERHOUSE.

CARBON HOLDER FOR ARC LAMPS.

No. 266,236.

Patented Oct. 17, 1882.



Attest:
R. F. Barnes.
W. Frisby

Inventor:
Addison G. Waterhouse
By Parker W. Page
att'y.

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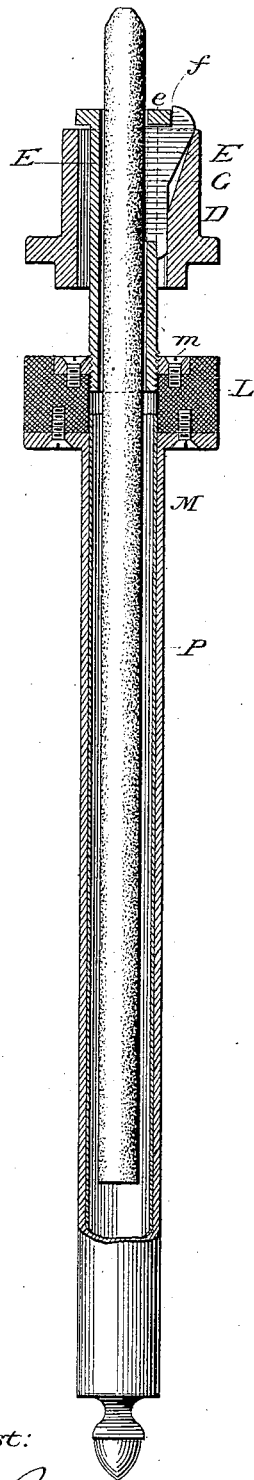


Fig. 3.

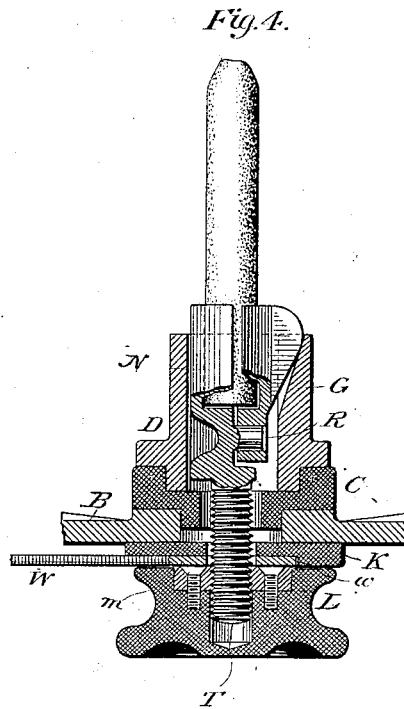


Fig. 4.

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UNITED STATES PATENT OFFICE.

ADDISON G. WATERHOUSE, OF NEW YORK, N. Y., ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF SAME PLACE.

CARBON-HOLDER FOR ARC-LAMPS.

SPECIFICATION forming part of Letters Patent No. 266,236, dated October 17, 1882.

Application filed June 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, ADDISON G. WATERHOUSE, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Carbon-Holders for Arc-Lamps, of which the following is a description, reference being had to the drawings accompanying and forming a part of the same.

My invention consists primarily in a socket or holder of novel construction for the lower or negative carbons of electric-arc lamps, and it also involves a means of insulating from the lamp-frame the said holder, or any equivalent form of holder, the nature of such improvements being more fully set forth in the following description by the aid of the accompanying drawings, in which—

Figure 1 is a plan view of the lower cross-bar of an electric-lamp frame, showing my improved socket or holder attached. Fig. 2 is a side view of the cross-bar, the central portion of the same and the carbon-holder attached thereto being shown in section. Fig. 3 is a central vertical section of the carbon-holder detached from the lamp; Fig. 4, a sectional view of a modified form of holder, illustrating the application of the insulating devices thereto.

The holder or socket may be used with any ordinary form of electric-arc lamp. The frame of the lamp in the present case has a lower cross-bar, A, which, at its middle portion, is widened or formed with a shallow cup, B, through the center of which is drilled a hole of proper diameter. Over this hole is laid a ring, C, of hard rubber, vulcanite, or other insulating material, and upon ring C rests a box, of metal, D. A flanged tube, E, is inserted in the box D, the length of the tube being such that it extends well through the perforated cross-bar A. Tube E is screw-threaded at its lower end and slotted above, as shown in Fig. 3, and in the slot is inserted a loose clamping device, consisting of a metal plate, F, wider at its upper end, and having a notch, f, into which the flange e extends. In the box or seat D is cut a groove, (indicated by the character G,) the groove having approximately the form of the plate F. A washer of insulating material, K,

is applied to the under side of the cross-bar A and around the projecting end of tube E.

L is a perforated block of insulating substance, vulcanite or vulcanized fiber being preferred. To its under side is clamped a flanged tube, M, and in its upper surface is set the metal ring m, which should be slightly raised above the surface of the block.

In using the above device a carbon is passed through the tube E, and the tube inserted in the box D. The tube M is then brought up around the projecting end of the carbon, and the block L screwed to the end of tube E. By this means the tube E is drawn down through the cross-bar A, the plate F forced against the carbon by the shape of groove G, binding tightly the carbon and holding the parts of the device firmly together. The current is conveyed from the carbon by an insulated wire, W, which is introduced through a groove in the insulating ring K, and formed into or attached to a ring, w, with which the metal ring m is maintained in good contact when the block L is screwed up tightly. Wire W passes up through one of the side bars of the frame, as indicated in Fig. 2.

To prevent contact between the carbon and the tube M, the latter is provided with a lining of insulating material, P, paper answering well for this purpose.

The objects of the above-described construction are mainly as follows: A long carbon may be used as the negative carbon without lengthening the lamp-frame, so that one negative carbon, by being drawn up from the tube M, will answer for several positive carbons; secondly, no portion of the lamp-frame is included in the electric circuit, so that it will be impossible for persons handling the lamp to receive a shock or other injury from the current. This latter object is attained with other forms of socket by the employment of the insulating-washers above described, as will be understood by reference to Fig. 4, in which is illustrated a socket for a short negative carbon. In this figure the tubes E and M are replaced respectively by a socket, N, with a pivoted portion, R, formed with a cam that fits in the groove G, and a screw-threaded extension, T, which en-

ters a recess in the block L. The washers or rings C, K, and *m* are present in this case, as in the former, the plan of construction and manipulation of the devices being practically the same.

Having now described the character and purposes of the devices forming the subject-matter of my present invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. The combination, with the lower cross-bar of an electric-lamp frame, of a box or seat, D, a tube, E, and devices for clamping a carbon therein, and a tube, M, for containing the projecting end of a carbon, and for drawing
15 down the tube E and its clamping mechanism into the seat D, as set forth.

2. The combination, with the lower cross bar of an electric-lamp frame, of a box or seat, D, provided with an incline or beveled part, G, a
20 slotted tube, E, plate F, and tube M for containing the projecting end of a carbon pencil, and for drawing down the tube E into the seat D, as described.

3. The combination, with the cross-bar of an electric lamp-frame, of a clamping socket or
25 holder extending through the cross-bar, insulating-washer C, a grooved washer, K, and a clamping-nut for the projecting portion of the socket or holder, and a wire, W, entering the
30 groove in washer K, these parts being constructed and combined in substantially the manner hereinbefore set forth.

4. The combination, with the cross-bar of an electric-lamp frame, of a box or seat, D, clamping tube or holder E, extending through the
35 cross-bar, insulating-washer C, grooved washer K, block L, nut *m*, tube M, and wire W, these parts being constructed and combined in substantially the manner hereinbefore set forth.

In testimony whereof I have hereunto set my
40 hand this 31st day of May, 1882.

ADDISON G. WATERHOUSE.

Witnesses:

W. FRISBY,
PARKER W. PAGE.