(No Model.)

E. J. GATLEY.

ELECTRIC WIRE CONNECTION.

No. 450,581. Patented Apr. 14, 1891.

Fig. 1.

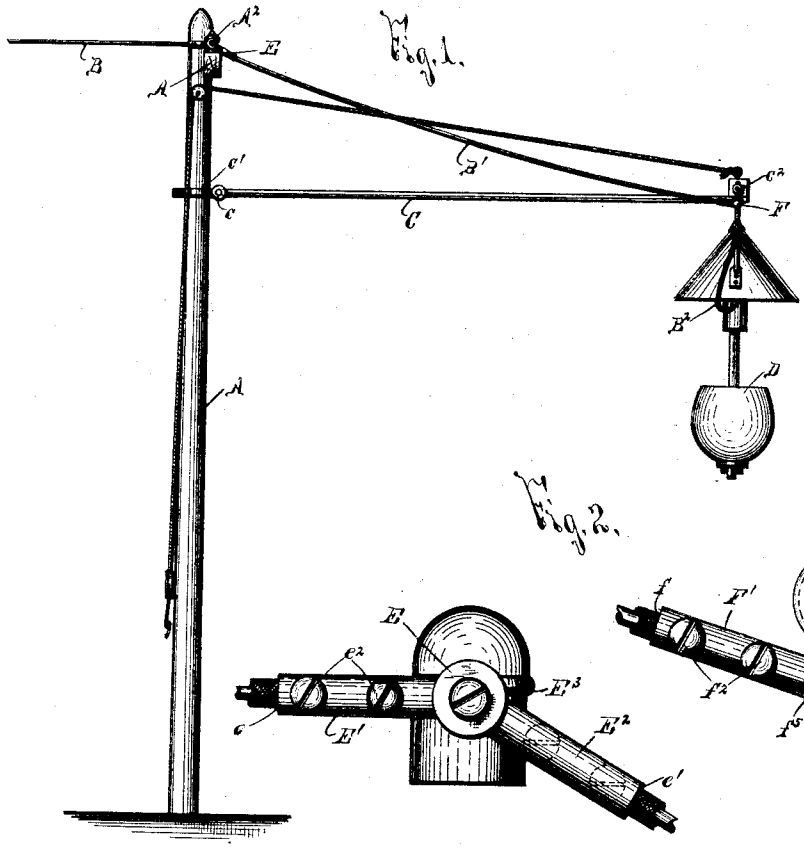


Fig. 2.

Fig. 3.

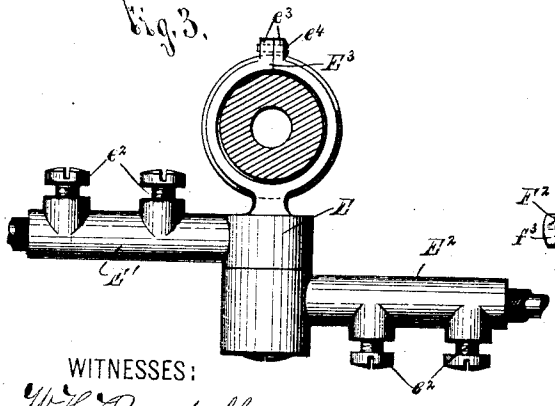
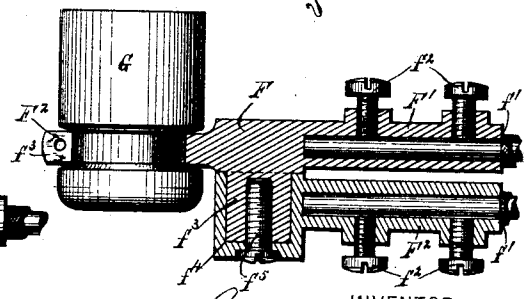


Fig. 4.



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EDWARD J. GATLEY, OF ROME, NEW YORK, ASSIGNOR TO EDWARD H. WALWORTH, OF SAME PLACE.

ELECTRIC-WIRE CONNECTION.

SPECIFICATION forming part of Letters Patent No. 450,581, dated April 14, 1891.

Application filed February 7, 1891. Serial No. 380,600. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. GATLEY, of Rome, in the county of Oneida, in the State of New York, have invented new and useful Improvements in Electric-Wire Connections, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to an improved connection for electric-lighting wires, designed for arc electric lamps so mounted as to be movable up and down, and has for its object the production of a simple and effective device for preventing breakage of the wire, for which there is great tendency, owing to the continued movement of the lamp; and to this end it consists, essentially, in a stationary or main wire, an insulator for supporting the stationary wire, a movable wire, a connecting wire between the movable wire and the lamp, an insulator on the lamp, and metallic hinged connections between the stationary and movable wires and between the movable wire and lamp-connecting wire.

The invention furthermore consists in a split ring upon said connections adapted to encircle the insulators, in a clamp for drawing together the separate parts of the ring, and in the detail construction and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 represents an elevation of my invention. Fig. 2 is an enlarged elevation of the detached connections with a portion of the wires operatively secured thereto. Fig. 3 is a top plan view of the connection between the main or stationary wire and the movable wire, and Fig. 4 is a sectional view taken on line $x\ x$, Fig. 2, with both divisions or members of the hinge shown in horizontal position.

A represents the support for the electric light, which is here shown as an ordinary post or standard having one extremity fixed in the ground and the other extended upwardly the desired distance and provided with a cross-bar A′, upon which is mounted the insulator A^2 for supporting the main or stationary electric-current-transmitting wire B of either the incoming or outgoing current.

C represents a mast or arm pivoted at c at one extremity to a support c' upon the standard A and provided at its other extremity with a cross-bar c^2, from which depends the lamp D. This lamp D is of any desirable form, size, and construction, and as the mast or arm C is rocked the lamp is depressed to permit the operator to change the carbon or globe or attend to any necessitated repairs, and is afterward elevated to its desired position.

B′ represents the movable wire, which is elevated and depressed with the mast-arm C, and B^2 the connecting-wire between the movable wire B′ and the electric lamp.

The connection E, between the stationary and movable wires B B′, consists of the two members E′ and E^2, hinged together at their adjacent extremities, and provided at their opposite ends with sockets $e\ e'$, which receive and closely fit the adjacent ends of the wire, and with clamps or screws e^2 for firmly securing the wires in position. Projecting from one of the members of the connection E′ is a split ring E^3, which engages a groove in the insulator for firmly supporting the connection, and thus supporting the adjacent ends of the wires B and B′. The free ends of the ring E^3 are formed with lateral arms e^3, adapted to be drawn together by a suitable clamp or screw e^4. The connection F, between the movable and lamp-connecting wires B′ and B^2, also consists of opposite members F′ and F^2, hinged together at their adjacent ends, and provided at their opposite ends with sockets $f\ f'$ and clamps f^2 for receiving and firmly retaining the wire. One of these divisions F′ is formed with a projecting nipple f^3, and the other with a socket f^4, both being held in position by a bolt f^5, having its head countersunk.

The adjacent ends of the members of the connection E are of the same construction as the adjacent ends of the connection F, just described, and are thus pivoted in the same

manner. It will be particularly noted that the parts are sufficiently strong and substantial to prevent burning or fusing of the metal, for which there is a great tendency, and to afford the desired hinge movement without cramping or binding. The member F′ of the connection F is provided with the vertically-extending split ring F^2, which embraces an insulator G, supported by the cross-head *c*, with its opposite divisions provided with laterally-extending projections f^6, which are drawn together by a clamp or bolt f^7. These two connections E and F are preferably of substantially the same construction, the only material difference being that the split ring for supporting the connection E projects horizontally and the ring F^2 for supporting the connection F vertically, owing to the relative position of the insulators which support said connections and the wires to which they are secured.

In my preceding application, Serial No. 364,795, I have shown a connection adapted to be interposed between the stationary and movable wires and to be supported upon the stationary wire; but my present invention differs therefrom in that the connection is supported directly upon an insulator, and that the forward extremity of the movable wire is also provided with a hinged connection.

It is well known that in electric lighting by the arc system the lamps are daily raised and lowered, thus causing the wires to kink and finally break, and as said wires are insulated by an outer covering, which does not necessarily or usually become broken with the wire, it requires a great amount of time and expense to discover the breaks in a system, especially during the winter months, when the wires become coated with ice and sleet and are rendered more rigid than is otherwise the case.

My invention entirely obviates breakage of the wire, since the same is provided with a pair of hinge-joints which relieve the wire of all strain and also greatly facilitate its up and down movement. It is evident, however, that the construction of my connection may be somewhat changed from that shown and described. Hence I do not herein specifically limit myself to the detail construction and arrangement of the parts.

I am aware that in incandescent lighting it is not new to support a hinged support for a wire upon a bracket projecting from the wall of a room; but I am not aware that it is old to support a main and movable wire for an arc electric lamp in sockets at the opposite extremity of a hinged connection, which connection is secured to an insulator.

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

1. The combination, with an arc electric lamp movable up and down, a stationary wire, a movable wire, and an insulator for supporting the stationary wire, of a metallic connection-division having a socket at one end for receiving the stationary wire, a clamp upon said connection-division for engaging the insulator, a second metallic connection-division hinged at one extremity to the former, and a socket at the opposite end of the latter connection-division for receiving the movable wire, substantially as described.

2. The combination, with an arc electric lamp movable up and down, a stationary wire, a movable wire, and an insulator for supporting the stationary wire, of a metallic connection division having a socket at one end for receiving the stationary wire, a split ring upon said division for encircling the insulator, a clamp for drawing together the separate parts of the split ring, a second metallic connection-division hinged at one extremity to the former, and a socket at the opposite end of the latter connection-division for receiving the movable wire, substantially as set forth.

3. The combination, with an arc electric lamp movable up and down, a stationary wire, an insulator for supporting the stationary wire, a movable wire, and a connecting-wire between the movable wire and the lamp, of a metallic hinge between the stationary and movable wires, an insulator on the lamp, a metallic connection-division having a socket at one end for receiving the opposite end of the movable wire, a clamp upon said connection-division for engaging the insulator on the lamp, a second metallic connection-division hinged at one extremity to the former, and a socket at the opposite end of the latter connection-division for receiving the wire connected to the lamp, substantially as specified.

4. The combination, with an arc electric lamp movable up and down, a stationary wire, an insulator for supporting the stationary wire, a movable wire, and a connecting-wire between the movable wire and the lamp, of a metallic hinge between the stationary and movable wires, an insulator on the lamp, a metallic connection-division having a socket at one end for receiving the opposite end of the movable wire, a split ring upon said connection-division for encircling the insulator, a clamp for drawing together the separate parts of the split ring, a second metallic connection-division hinged at one extremity to the former, and a socket at the opposite end of the latter connection-division for receiving the wire connected to the lamp, substantially as described.

5. The combination, with an arc electric lamp movable up and down, an insulator on the lamp, a stationary wire, a movable wire, a connecting-wire between the movable wire and the lamp, and insulators for supporting the stationary wire and the lamp-connecting wire, of a pair of metallic connections consisting of arms hinged together at their adjacent extremities, sockets in said arms for receiving the adjacent ends of the wire,

clamps for securing the wires in said position, a split ring on one of the connections for engaging one of the insulators, a split ring on the other of said connections for engaging the other insulator, and clamps for drawing together the parts of the rings, substantially as set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Rome, in the county of Oneida, in the State of New York, this 6th day of January, 1891.

EDWARD J. GATLEY.

Witnesses:
FRED. M. SHELLEY,
H. E. KETCHAM.