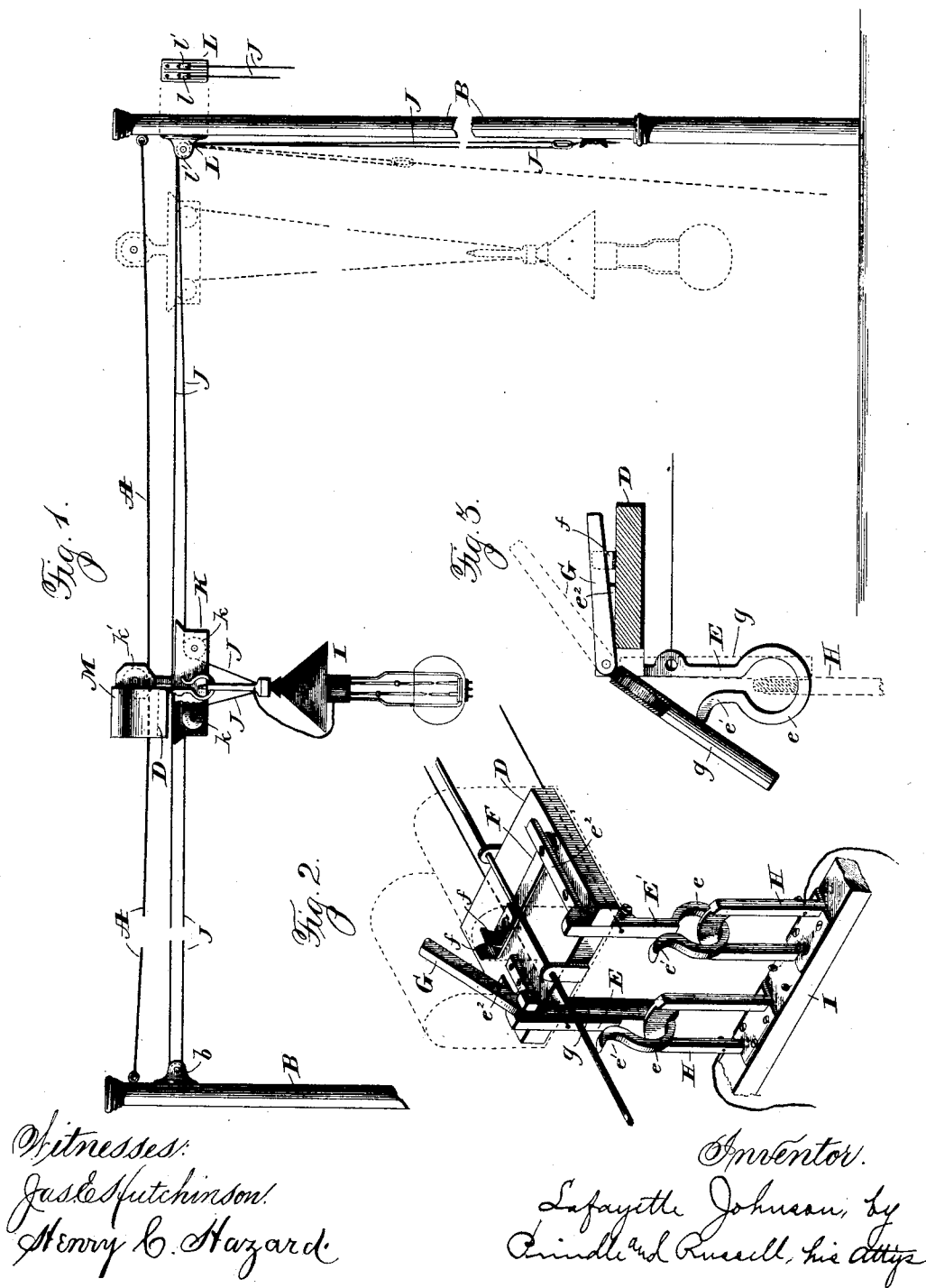


(No Model.)

L. JOHNSON.
ELECTRIC LAMP SUPPORT AND CUT-OUT.

No. 535,336.

Patented Mar. 5, 1895.



UNITED STATES PATENT OFFICE.

LAFAYETTE JOHNSON, OF NEW ALBANY, INDIANA, ASSIGNOR OF ONE-HALF
TO JOHN H. STOTSSENBERG, OF SAME PLACE.

ELECTRIC-LAMP SUPPORT AND CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 535,336, dated March 5, 1895.

Application filed April 5, 1894. Serial No. 506,481. (No model.)

To all whom it may concern:

Be it known that I, LAFAYETTE JOHNSON, of New Albany, in the county of Floyd, and in the State of Indiana, have invented certain new and useful Improvements in Electric-Lamp Supports and Cut-Outs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a view in elevation of my mechanism; Fig. 2, a perspective view of the hanger and switch devices, and Fig. 3 a vertical section through the same.

Letters of like name and kind refer to like parts in the several figures.

The object of my invention is the provision of simple, reliable and easily operated mechanism for raising and lowering arc, or other electric lamps, to and from an overhead support, and without moving or disturbing the conductor wires, or endangering the operator from the current, or the possibility of short circuiting the latter; and to these ends, said invention consists in the mechanism and the parts thereof constructed and combined, substantially as and for the purpose hereinafter specified.

My invention is applicable more particularly for use with lamps that are suspended over the middle of a street upon supporting wires that are attached to posts or other objects on opposite sides of the street. In Fig. 1 I show such a supporting wire A, and posts B and B between which it is stretched and to whose upper ends it is secured. At the transverse center of the wire, which is the point from which the lamp is to be suspended, I attach the board D, preferably of wood, or other insulating material, on which is mounted the mechanism for controlling the circuit as the lamp is moved into and out of place, and from which depend two hangers E and E' by which the lamp is supported. The board D extends equally on each side of the wire A, and the hangers are attached thereto on opposite sides of the latter.

Each hanger comprises a straight vertical part, and a hook *e* at the lower end of the latter, that is nearly a complete ring, its opening being at its upperside and there being an out-

wardly curved guard or finger *e'* that projects a short distance upward from the opening.

To attach the hangers to the board D each has a horizontal extension at the upper end of its vertical part, but the extension *e*² of the hanger E' is longer than that of the other, and from it toward the shorter one extends a metallic bar F, that at its end has two, separated, upwardly extending spring contacts *f* and *f*, that are adapted for engagement by a pivoted switch arm, or swinging contact G. Said arm is pivoted adjacent to the hanger E, and has a downwardly projecting arm *g* that stands at an obtuse angle to it. The two hangers being made of conducting material, and each being connected with an end or terminal of the main wire or conductor, it will be seen that the circuit through the latter may be opened and closed by the switch arm G. Said arm is made sufficiently heavy to cause it to normally tend to move into engagement with the contacts *f* and *f*, and thus when not restrained to automatically close the circuit from one hanger to the other through the bar F.

When the switch arm is in engagement with the contacts *f* and *f*, the arm *g* extends at an incline across the path of one of two open frames or loops H and H secured to the upper side of the lamp I as said loop is passed downward into engagement with the hook *e* of the hanger. As the loop passes downward, it strikes the arm *g* and swings it backward and thereby lifts the switch arm out of engagement with the contacts *f* and *f*.

The loops H and H are connected electrically with the carbons of the lamp so that as soon as said loops engage the hangers, the lamp will be cut into the circuit, and the switch arm having been raised, the entire current will pass through the lamp. Each loop H comprises a base plate for attachment to the lamp frame, two upright parallel bars, and a cross piece connecting the tops of the latter that, vertically, is broad and flat, and thin enough to pass easily into the hook *e* through the space between the guard *e'* and the vertical portion of the hanger.

Connected to the lamp frame are the two ends of a rope or cord J that passes therefrom

to and over two pulleys or sheaves *k* and *k'* journaled in a plate or frame *K* that depends from and is adapted to travel back and forth upon the wire, being provided with a wheel or pulley *k'* that engages the latter. From one pulley *k*, one portion of the rope extends to and around a sheave or pulley *b* attached to the post *B* and is then carried to a pulley *l* journaled in a block *L* that is attached to the other post *B*. The other portion of the rope from the other pulley *k* runs to a second pulley *l'* also journaled in the block *L*.

The operation of my mechanism is as follows:—With the lamps suspended by its loops *H* and *H'*, from the hangers *E* and *E'*, if the portion of the rope *J* running to the pulley *l'* be pulled upon, the lamp will be raised and its loops lifted out of the hangers and passed one on each side of the sheave carrying frame *K*. As soon as the loops are removed from the hangers, the lamp is thereby cut out of the circuit, and, as the switch arm *G* has been kept out of engagement with the contacts *f* and *f'* by the engagement of the loop *H* with the arm *g*, the latter will also be freed from the restraint of the loop, and the switch arm, by its gravity, will immediately fall into engagement with the contacts *f* and *f'* and thus close the circuit through the switch. When the lamp strikes the plate or frame *K* its upward movement will be arrested, and further pull upon the rope will draw said frame and lamp toward the pulley *l'*. The lamp can then be lowered at any point in its travel simply by ceasing to pull upon the rope, which will stop such travel, and allowing the lamp to descend of its own gravity, from the carrier *K*. To return the lamp to the hanger, the described movements are reversed simply by pulling upon the rope *J* so as to draw on the portion that runs from the pulley *k* of the carrier *K* to the pulley *b*.

Preferably, a suitable housing *M* is placed over the switch mechanism that is upon the upper side of the switch board *D*, and, as the latter is mounted at its center upon the wire *A*, it will be suitably weighted to counterbalance the weight of the switch arms *G* and *g*. The latter for insulation, is preferably of hard rubber, and is made hollow or tubular for the sake of lightness, although if desired, it may be made solid.

It will be seen that my mechanism is extremely simple, yet most efficient. There are no springs nor hinged joints to rust or become otherwise inoperative. There are no tight fitting parts to bind and stiffening of the rope by freezing will not prevent the mechanism from working. Owing to the peculiar form of the hangers, it is impossible for the loops to be accidentally disengaged therefrom, even in high winds, as mere swaying of the lamp cannot effect their disengagement.

A feature of especial value in my invention is the ability to lower the lamp for replacing carbons, &c., at any desired point relative to

its position when in operation. If the latter be the middle of the street, the lamp can be drawn over to the sidewalk and lowered there, and thus avoid the highly objectionable lowering in the street.

Having thus described my invention, what I claim is—

1. As an improvement in supports for electric lamps, the combination of hooks that form part of the light circuit, a switch to electrically connect said hooks, comprising a fixed and a movable contact, loops carried by the lamp, that are electrically connected with the translating means thereof, and are adapted to be moved into and out of engagement with the hooks, and an arm extending from the movable contact in the path of one of the loops as it is moved to place it in engagement with a hook, substantially as and for the purpose set forth.

2. As an improvement in supports for electric lamps, the combination of hooks that form part of the light circuit, the switch to electrically connect the hangers comprising a fixed contact and a pivoted arm that tends normally to engage the latter, and loops carried by the lamp which are electrically connected with the translating means thereof, and are adapted to be placed in and out of engagement with the hooks, and one of which is adapted to lift the switch arm out of engagement with the fixed contacts as the loops are placed in engagement with the hooks, substantially as and for the purpose specified.

3. As an improvement in supports for electric lamps, the combination of a supporting wire, hangers fixed thereto that form part of the light circuit, a switch to electrically connect said hangers, devices carried by the lamp to engage the hangers, a lamp carrier movable back and forth along the wire, and a rope passing from the lamp to said carrier, from thence in opposite directions to and over suitable pulleys and thence to a point where it may be manipulated to move the carrier in either direction with reference to the hangers, substantially as and for the purpose shown.

4. As an improvement in supports for electric lamps, the combination of a supporting wire, hangers attached thereto, loops carried by the lamp, a carrier movable back and forth along the wire relative to said hangers, two sheaves journaled by the carrier, a rope passing from the lamp to each of said sheaves, thence in opposite directions to suitably located pulleys, and thence to a point at which it may be manipulated to move the carrier in either of its directions along the wire, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of March, A. D. 1894.

LAFAYETTE JOHNSON.

Witnesses:

WILBUR N. MORRILL,
CHARLES F. VERY.