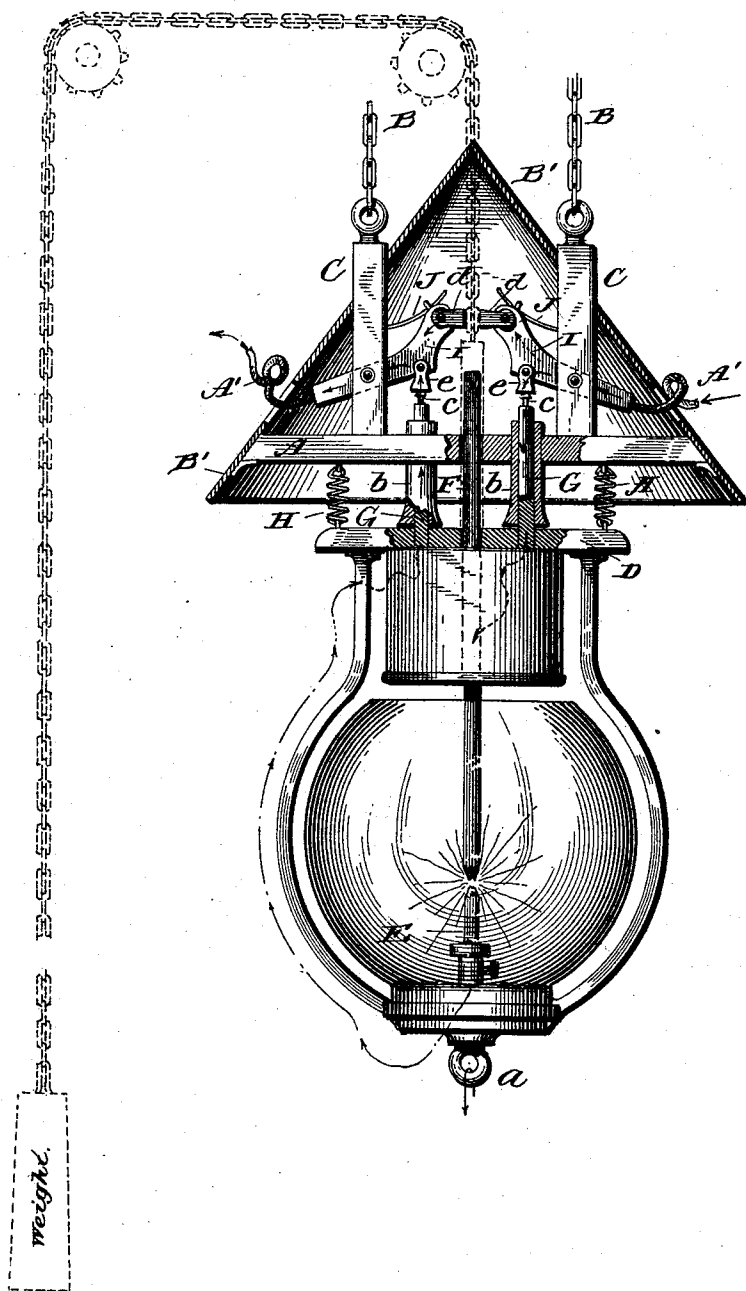


(No Model.)

D. B. MATSON.
HANGER FOR ELECTRIC LAMPS.

No. 467,511.

Patented Jan. 26, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID B. MATSON, OF BUFFALO, NEW YORK.

HANGER FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 467,511, dated January 26, 1892.

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To all whom it may concern:

Be it known that I, DAVID B. MATSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in electric switches designed for making and breaking the circuit to permit of the cleaning or renewing of the carbons of an electric lamp without danger to the person doing the same. I provide simple mechanism whereby the circuit is broken as the lamp is pulled down, the circuit being automatically completed as the operator releases his hold of the lamp. The parts are simple, cheap of manufacture, and in practice have proved most efficient for the purpose for which they are designed. The parts are protected by the shade or protector usually employed in connection with electric lights. The action is positive. There is no possibility of the circuit being through the carbons when the lamp is pulled down. When the lamp is pulled down, the course of the current must be changed.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawing, which, with the letters of reference marked thereon, forms a part of this specification, and in which is shown a side elevation of a lamp equipped with my improvements, with parts in section and parts broken away.

Referring now to the details of the drawing by letter, A designates a support for the hood or protector of a lamp of known construction. The hood is secured to this support in any suitable manner, and the said support is designed to be held in the desired position—say, for instance, by chains or cords B, which are attached to the uprights C, secured to the support A, and passed upward through openings in the hood B'. These cords or chains may be supported in any preferred manner. They may be arranged within a hollow post, as shown in a pending application of mine.

The manner of supporting them, however, is immaterial to the working of the present invention.

D is the frame-work or support of the lamp, the lower end of which supports the lower carbon E in any suitable manner and is provided with a hook *a* or other analogous provision to receive an instrument in the hands of the operator when he desires to pull down the lamp. The upper carbon F is held in any manner known to the art, and is guided through the top of the lamp-frame and through an opening in the support A, as shown.

Secured to the support A and depending therefrom are the guide-tubes *b*, through which are free to slide the rods G, which are secured to the lamp-frame and move therewith. At their upper ends, which project through the tubes, these rods carry the metal contact-pins *c*. The rods are connected with the upper and lower carbons by means of suitable wires, as indicated by dotted lines in the drawing with arrows. The lamp-frame is suspended from the support A by yielding means, as the springs H, connected to the two parts in any preferred manner.

Pivoted on the uprights C are the switch-levers I, one on each upright, the outer ends of the levers being secured to or connected with the line-wire A', which passes through openings in the hood, as seen in the drawing. The inner ends of the levers are turned upward and toward each other, and at their upper ends have pivoted thereto the contact-plates *d*, and upon their under sides in vertical line with the metal pins on the rods G are pivoted the contacts *e*, designed to normally hang vertically and contact with the said pins and thus complete the circuit through the rods G, as indicated by arrows in the drawing.

J are springs carried by the uprights C and arranged to bear against the free ends of the switch-levers I to force them downward, so that their contacts will come into engagement with each other when not held up by the rods G and their connections.

The operation will be readily understood. Normally the parts are in the position in which they are shown in the drawing, and the circuit is through the lamp. The contacts *d* are separated and the contacts *e* are in engagement with the pins *c*. When the party de-

sires to clean the lamp, change the carbons, or fix it in any way, he pulls down the lamp-frame in any suitable manner, which separates the pins *c* and contacts *e* and allows the contacts *d* to fall or be forced downward by their springs *J* until they come into engagement with each other, thus changing the current from through the lamp, as indicated by the arrows. When the contacts *d* are in engagement, the current is through them and there is no current through the lamp. Hence there is no danger to the person manipulating the same. As soon as the party has fixed the lamp he lets go his hold thereon, when the springs *H* draw the same upward and the contacts *d* are separated and the pins *c* come into engagement with the contacts *e* and the current is changed and will now be through the lamp. It will be observed that by my construction the wires are permanently located above out of the way of the attendant, and when the lamp is pulled down the said wires are not moved therewith, as is common in this class of devices, and to this feature special importance is attached, as it leaves the lamp free to be handled without danger.

Various modifications in details may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. When the lamp and its support are held in position by the chain and counter-balance, as indicated by dotted lines, the chain might be attached to the upper-carbon holder, as indicated in the drawing. When the chain and counter-balance are employed, the springs *H* should be dispensed with. The main wires *A'* may be otherwise connected with the switch-levers, and the posts or uprights *C* may, when the chain and counter-balance are employed, terminate within the hood, as indicated by dotted lines, their main function being only as supports for the pivots of the switch-levers. By the construction shown the circuit through the upper ends of the switch-levers or through the contacts *d* is made before it is broken through the contacts *e*, so that the current through the remaining lamps in the circuit is not affected, the downward movement of the levers being regulated

and stopped by the contact or engagement of the contacts *d* or of the free ends of the switch-levers when said contacts are not employed.

What I claim as new is—

1. The combination, with the support *A* and the pivoted switch-levers thereon and having the line-wires connected thereto, of the vertically-movable lamp-frame, the vertical rods and contacts carried thereby, and the pivoted contacts on the switch-levers, as set forth.

2. The combination, with the support *A* and the pivoted switch-levers and having the line-wires connected thereto, of the vertically-movable spring-supported lamp-frame, the vertical rods carried thereby, and the contacts on the levers, as set forth.

3. The combination, with the support *A* and the pivoted switch-levers, of the vertically-movable lamp-frame, the guide-tubes on the support *A*, the rods carried by the lamp-frame and working through said tubes, the pins on the upper ends of the rods, the pivoted contacts on the free ends of the levers, and the pivoted contacts on the said levers in line with the pins, as set forth.

4. The combination, with the support *A*, the pivoted switch-levers, the springs bearing on the upper ends thereof, and the pivoted contacts on the upper ends of said levers, of the lamp-frame, the springs connected therewith, the rods *G*, the pins thereon, the guide-tubes for the rods, and the pivoted contacts on the levers in line with the rods, substantially as specified.

5. The combination, with a vertically-movable lamp and the permanently-fixed line-wires, of switch mechanism and separable pivoted contacts between the lamp and wires and between the adjacent ends of the wires for each lamp, whereby the circuit is made through one set of contacts before it is broken through the other without lowering the wires, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID B. MATSON.

Witnesses:

H. SUTHERLAND,
L. C. HILLS.