

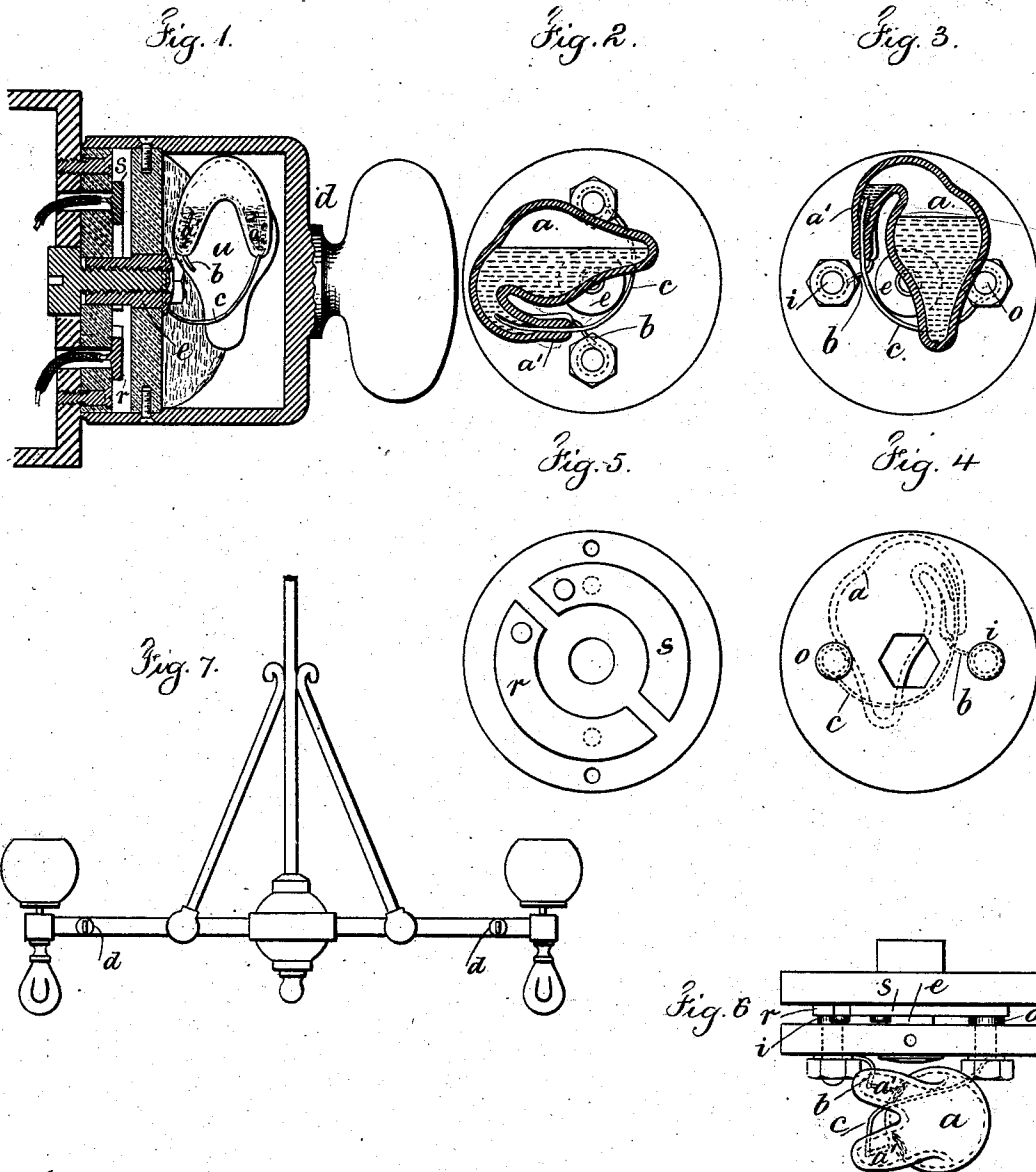
(Model.)

J. H. GUEST.

CIRCUIT CLOSING KEY FOR ELECTRIC LAMPS.

No. 260,864.

Patented July 11, 1882.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN H. GUEST, OF BROOKLYN, NEW YORK.

## CIRCUIT-CLOSING KEY FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 260,864, dated July 11, 1882.

Application filed April 24, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOHN H. GUEST, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Circuit-Closing Keys for Electric Lamps and other Electric Devices, of which the following is a specification.

In electric lamps it is usual to employ a key or circuit-closing switch for turning on and off the current. With these switches the metallic surfaces are liable to become burned or oxidized and not to operate satisfactorily.

My present invention is intended for preventing or lessening the aforesaid difficulty; and it consists in combining with the metallic conductors an oscillating or partially rotary mercury-holder, which when turned in one direction causes the mercury to flow and close the circuit and when turned in the other direction to flow and break the circuit.

The mercury-vessel has two cells, in which a globule of mercury always remains in contact with each conductor, and these mercury globules are united by the body of the mercury when it flows into contact with them, and they are separated from each other when the mercury flows away from the conductors and globules of mercury.

The mercury, being in a closed insulating-vessel—such as glass—is excluded from the atmosphere, and will become oxidized but little by the electric spark, and such oxide will not come into contact with the conductors, because the same floats upon the surface of the mercury.

In the drawings, Figure 1 is a vertical section of the apparatus complete. Fig. 2 is a section of the mercury-holder and the disk to which it is attached, the parts being in the position they assume when the circuit is closed. Fig. 3 is a similar view, with the parts in the position they assume when the circuit is open. Fig. 4 is an elevation of the opposite side of the disk to which the mercury-holder is secured. Fig. 5 is an elevation of the plates and disk to which the circuit-wires are attached. Fig. 6 is a plan of the parts without the inclosing case; and Fig. 7 represents a chandelier, and shows the position of the circuit-closing keys.

The bulb or glass vessel *a* is adapted to con-

tain mercury, and the two conductors *b* and *c* pass through the material of the vessel into the same, and they are hermetically sealed into the same. They are at such distance apart as to be insulated from each other. When the vessel is turned in one direction the mercury forms part of the circuit and closes the circuit between the conductors, and when turned the other way the mercury flows away from the conductors and breaks the circuit. In order to move this mercury-vessel, I employ any suitable device. The mercury-vessel may be simply tipped first one way to close the circuit or the other way to cause the mercury to flow away from the said conductors and break the circuit. Usually I prefer to cement this small glass vessel upon or into a holder of wood or other suitable material in the form of a turn-button, *d*, upon a pivot or stem, *e*, the conductors *b* and *c* terminating in contact-blocks *i o* on the turn-button that remain in contact with the plates or springs *r s*, that are part of the electric circuit, and are stationary, one leading to the light or other working device, the other to the dynamo or generator; or the switch and lamp may be in the multiple-arc circuit between the two main conductors. The form of this turn-button may be varied to suit the place in which it is to be used. I prefer that it be cylindrical, and that it be placed on a horizontal stem, *e*, and applied upon the fixture or other support of the electric light in a manner similar to the cock of a gas-fixture.

There is a mercury-cell, *a'*, at the end of each conductor, so that a globule of mercury remains constantly in each of such cells, as seen in Fig. 3. This prevents the metallic wires being burned, because if there is a spark when the circuit is broken it will be between the particles of mercury, and if any oxide is formed it will rise from time to time upon the surface of the mercury and not interfere with the passage of the current.

I claim as my invention—

1. The combination, with a glass vessel containing mercury, of two electric conductors, *b* and *c*, passing into such vessel, a turn-button supporting such vessel and conductors, stationary contact-surfaces, and contact-surfaces upon the turn-button, substantially as set forth.

2. The combination, in a circuit-closing key,

of an insulating-vessel containing mercury, and into which vessel the metallic circuit-wires pass, and separate cells in the vessel, containing mercury around the ends of such wires, and means for moving the vessel and bringing the mercury therein into contact with the mercury in the cells for closing the circuit, substantially as set forth.

Signed by me this 22<sup>d</sup> day of April, A. D. 1882.

J. H. GUEST.

Witnesses:

GEO. T. PINCKNEY,  
CHAS. H. SMITH.