

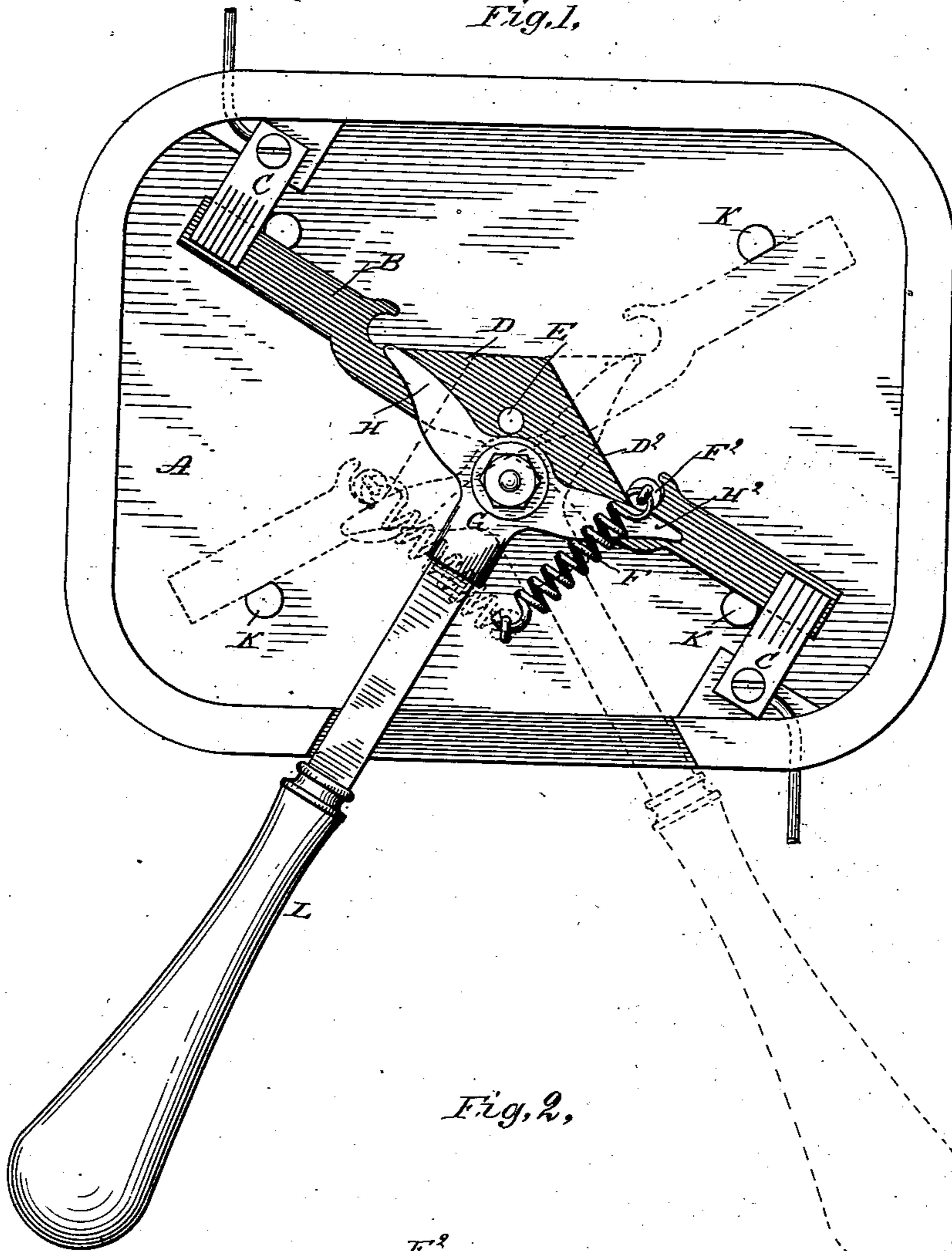
(No Model.)

H. LEMP.  
ELECTRIC SWITCH.

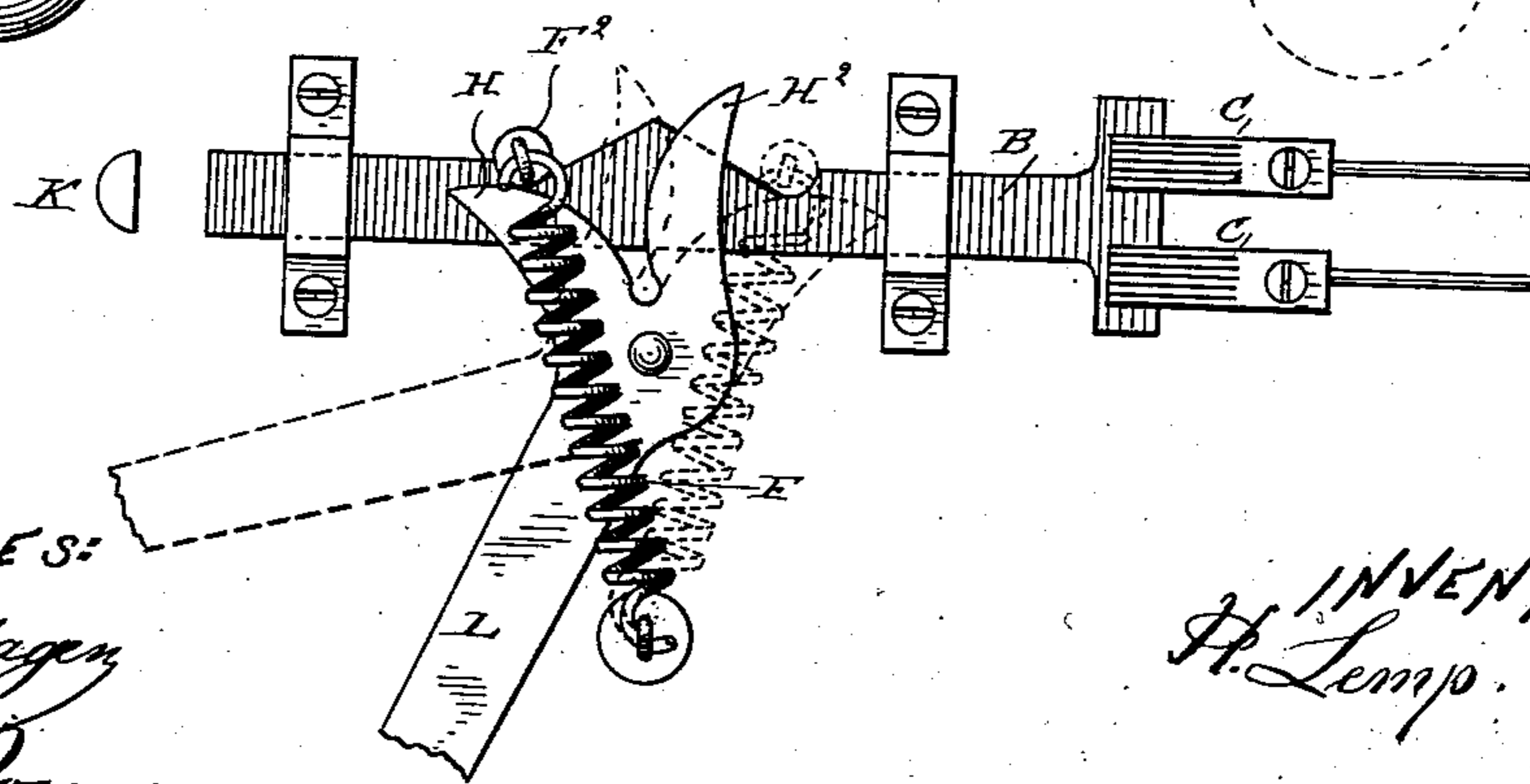
No. 329,460.

Patented Nov. 3, 1885.

*Fig. 1,*



*Fig. 2,*



WITNESSES:

*Ernst H. Schagen*

*John Dooney*

INVENTOR:  
*H. Lemp*

By his Attorney: *H. C. Townsend*

# UNITED STATES PATENT OFFICE.

HERMANN LEMP, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE  
SCHUYLER ELECTRIC LIGHT COMPANY, OF SAME PLACE.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 329,460, dated November 3, 1885.

Application filed July 17, 1885. Serial No. 171,900. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN LEMP, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

My invention relates to electric switches of any kind adapted to make and break, reverse, or otherwise change or modify electric connections; and its object is to provide a means whereby a quick or "snapping" action may be obtained in the operation of the switch by skilled or unskilled persons.

My invention consists in the combination, with the moving portion of the switch by whose movements the changes of connection are effected, of an actuator of any desired form, but preferably of the form or construction herein shown, arranged to engage with two oppositely-inclined cams or surfaces connected with or applied to the moving portion of the switch, and a lifting device, whereby the actuator may be brought from engagement with the bottom of either incline to engagement with the top of the other incline, where it may by engagement with the cam or incline, throw the switch quickly into a position the reverse of that which said switch occupied before the operation.

My invention consists, further, in certain improved details of construction and combinations of parts that will be described in connection with the accompanying drawings, and will be then specified in the claims.

In this specification I have described the application of my invention to a switch in which the moving portion consists of a simple pivoted lever; but it will be readily understood that the invention might be readily applied to switches when the movable portion has a rectilinear or sliding moving instead of a rocking moving, as in the cases supposed. In any case, no matter what the form of the switch or the nature of the movement given to the movable portion of the switch, all that is necessary in order to embody therein the principles of my present invention is to apply or connect with such movable portion the two oppositely-inclined ways or surfaces with

which the actuator engages, said actuator being brought into engagement with either incline by the operation of the lifting device according to the direction of movement desired in the switch.

In the accompanying drawings I have shown in plan in Figure 1 a simple form of make and break switch embodying my invention, the movable portion of the switch consisting of a simple pivoted lever adapted to make and break connection with one or more contact-springs. Fig. 2 illustrates the application of the invention to a sliding switch.

B indicates the switch-lever or movable portion of the switch, pivoted at E on a suitable base, A, and movable into and out of contact with suitably-mounted springs, CC. The connections are made to the springs, as indicated, and the circuit is completed through the lever, which consists of or carries conducting material. Stops K determine the movements of the lever, which, in the position shown, completes the circuit, while in the position shown in dotted lines the circuit is broken.

D D' indicate two oppositely-inclined ways or cams, placed at opposite sides of the lever's fulcrum, and forming the cams or surfaces with which the actuator engages to shift the switch. The actuator is shown in the present case as consisting of a spring-actuated block, roller, or follower, F', secured to the end of a rather stiff spiral spring, F, fixed to the base A, but might be of other forms or constructions.

The lifter or device for moving the actuator to engagement with the top of one incline or the other, according to the movement of the switch desired, is indicated at G. It consists in its simplest form of a lever mounted independently of the switch-lever and having the two arms or forks H H', adapted to engage, respectively, with the actuator in the two positions of the switch. The lever G is provided with a suitable operating-handle, L.

In the position of the parts shown the circuit is closed. To shift the switch, the handle L of the lifter is turned to the right, and the prong or arm H' of the lifter raises the block F' of the actuator along the incline D' and over the divide between the two inclines, so that it

into engagement with the incline D, on the actuator, being unobstructed, when the incline and at the same time throws the switch-lever into the position shown in dotted lines, thus rupturing the circuit. The arm or prong H of the lifter is in position to engage with the actuator, and the operation may be reversed in obvious manner by simply turning the handle of the switch to the left. Suitable stops are formed, one at the bottom of the inclines, to prevent the block or follower F<sup>2</sup> from becoming disengaged.

In the modification shown in Fig. 2 the portion B of the switch slides so as to make and break the connection between the springs C C in obvious manner. In all respects the operation is substantially the same as in the switch shown in Fig. 1.

I claim as my invention is—

1. The combination, with an electric switch, of a spring-actuator therefor, two oppositely-inclined ways or cam-surfaces upon which said actuator may ride, and a lifter for moving the actuator from either cam into engagement with the other.

2. The combination, with an electric switch, of a spring-actuator adapted to engage with either of two oppositely-inclined ways or cams connected to the switch, and a lifter for lifting the actuator from the bottom of either incline over the top thereof to engagement with the other at or near its top.

3. The combination of the pivoted switch-lever having the two oppositely-inclined surfaces at opposite sides of the fulcrum, the helical spring terminating in a block or follower for engagement with the inclines, and a forked lifting-lever for raising the cam from either incline to the top of the other.

4. The combination of the switch-lever, the helical spring terminating in the roller, the two cams on the lever, and the lifting-lever engaging with the roller, as and for the purpose described.

Signed at Hartford, in the county of Hartford and State of Connecticut, this 3d day of June, A. D. 1885.

HERMANN LEMP.

Witnesses:

MERLE J. WIGHTMAN,  
CHAS. E. DUSTIN.

Correction in Letters Patent No. 329,460.

It is hereby certified that Letters Patent No. 329,460, granted November 3, 1885, upon the application of Hermann Lemp, of Hartford, Connecticut, for an improvement in "Electric Switches," was erroneously issued to "The Schuyler Electric Light Company, of Hartford, Connecticut;" that said Letters Patent should have been issued to *The Schuyler Electric Light Company of New York*; and that said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 8th day of December, A. D. 1885.

[SEAL.]

H. L. MULDROW,  
*Acting Secretary of the Interior.*

Countersigned:

M. V. MONTGOMERY,  
*Commissioner of Patents.*