

(No Model.)

J. W. HOWELL.

NIGHT LAMP FOR ELECTRIC LIGHTING SYSTEMS.

No. 348,125.

Patented Aug. 24, 1886.

Fig 1

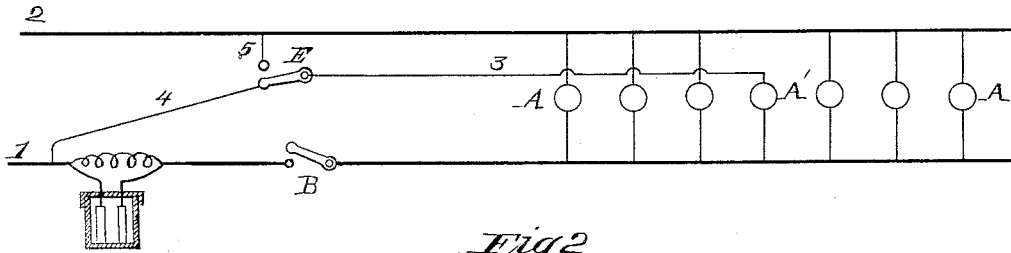


Fig 2

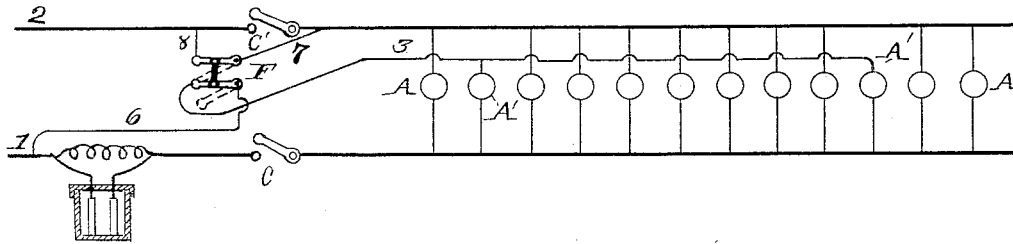


Fig 4.

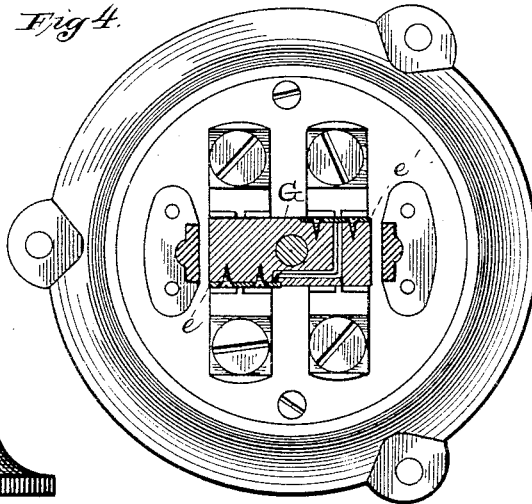
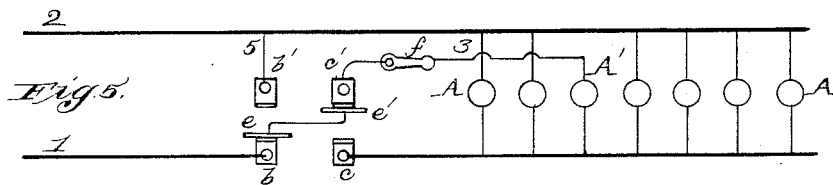
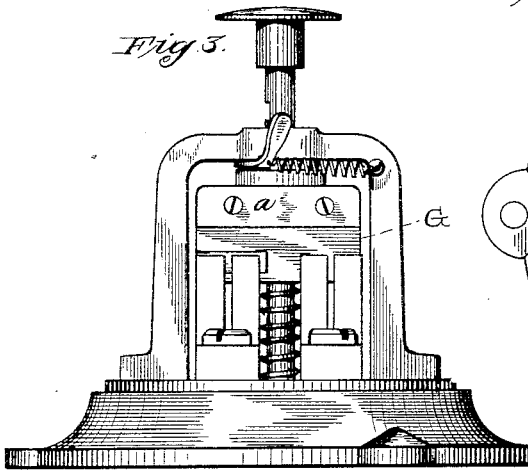


Fig 3.



ATTEST:

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INVENTOR

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*Atty.*

# UNITED STATES PATENT OFFICE

JOHN W. HOWELL, OF NEW BRUNSWICK, NEW JERSEY, ASSIGNOR TO  
CHARLES S. VAN NUIS, OF SAME PLACE, AND DYER & SEELY, OF NEW  
YORK, N. Y.

## NIGHT-LAMP FOR ELECTRIC LIGHTING SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 348,125, dated August 24, 1886.

Application filed December 5, 1885. Serial No. 184,770. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN W. HOWELL, of New Brunswick, in the county of Middlesex and State of New Jersey, have invented a certain new and useful Improvement in Night-Lamps for Electric Lighting Systems, of which the following is a specification.

My invention relates to that class of night-lamps wherein two or more of the regular lamps are used as a resistance to reduce the incandescence of the night-lamp, the latter being located in a shunt around a switch controlling simultaneously these two or more regular lamps.

The object I have in view is to do away with the expense of an extra lamp and its fixture or support for this purpose by providing means permitting of the use of one or more regular lamps as the night lamp or lamps, such regular lamp or lamps being at other times in cross-circuit under control of the switch, as usual. This I accomplish by connecting the regular lamp, selected by considerations of location for use as the night-lamp, permanently with one side of the circuit, as usual. The lamp on its other side is connected with a wire running back, preferably, to the locality of the main switch, where a device is provided for connecting this wire, so that the lamp will be at times in a shunt around the main switch in series with the other regular lamps, and at other times connected in cross circuit under control of the switch, as are the other regular lamps.

Where a single-pole main switch is employed, the device referred to for producing the night-lamp connections may be a simple three-point switch, the pivot-point of switch being connected with the return night-lamp wire, and the other two points being connected, respectively, one with the same side of circuit as main switch, but back of such main switch, and the other with the side of circuit which is permanently closed. The permanent connection of the regular lamp used as night-lamp is made with the side of circuit in which the main switch is located. When the three-point switch is on one of its open points, the

lamp controlled by it will be in a shunt around the main switch. When the three-point switch is on the other of its open points, the lamp will be in cross-circuit, like the other regular lamps. The connection which is run back of main switch may also be led back of the meter, if desired, that the night-lamp current should not be registered by meter.

For use with a double-pole main switch the return night-lamp wire is connected with a double-arm or four-point switch, which at the same time that it connects the lamp in a shunt around one side of main switch closes a shunt around the other side of such main switch. In its other position the four-point switch opens both these shunt-circuits and connects the lamp in a cross-circuit.

The three and four point switches referred to are separate from the main switch; but it is evident that the main switches may be constructed to perform the functions of these extra switches automatically by the act of opening and closing such main switches to turn off and on the regular lamps. Two or more regular lamps, located together or at different points, may be connected on one side with the night-lamp return-wire, so that there will be two or more night-lamps, instead of one. This increase in the number of night-lamps becomes necessary as the number of regular lamps controlled by the main switch is increased to the point where a single night-lamp would be given a higher incandescence than desirable.

In the accompanying drawings, forming a part hereof, Figure 1 is a diagram of night-lamp arrangement with a single-pole main switch; Fig. 2, a similar view of arrangement for double-pole main switch; Fig. 3, a side elevation of main switch constructed to automatically make night-lamp connections; Fig. 4, a horizontal section of this main switch on line 4 4, and Fig. 5 a diagram of connections of this switch.

1 2 are the conductors of an electric lighting-circuit, having incandescing electric lamps A connected therewith in multiple arc. This circuit is controlled by a single or double pole

main switch located back of all the lamps A, and acting to open and close the circuit to all such lamps, and thus turn them on and off simultaneously. The arrangement for a single-pole switch is shown in Fig. 1, and that for a double-pole switch in Fig. 2, the switches being indicated by conventional illustrations at B and C C' in the conductors 1 2. The circuit 1 2 may also have a meter, D, connected with conductor 1 back of the switch.

One of the regular lamps, A', or each of two or more of such lamps, is connected, as usual, with conductor 1 of circuit, and on the other side with an extra return-wire, 3. This wire runs to a suitable switch for connecting the lamp or lamps A' in a shunt around the main switch, or in cross-circuit under control of such main switch. When a single-pole main switch is employed, Fig. 1, the wire 3 may run to the pivot-point of a three-point switch, E, from one open point of which a wire, 4, extends to conductor 1, back of main switch B, and preferably, also, back of meter D. From the other open point of switch E a wire, 5, runs to conductor 2. In the position of switch E shown in full lines in Fig. 1 the lamp A' is in a shunt around main switch. The dotted lines indicate the other position of switch E. When a double-pole main switch is employed, Fig. 2, a two-arm or four-point switch, F, will be used for making night-lamp connections.

The wire 3 runs to an open point of the switch. From the pivot of arm on same side of switch is a wire, 6, running to conductor 1, back of main-switch break C, and preferably back of meter D. A wire, 7, is led from the pivot of other switch-arm to conductor 2, in front of main-switch break C', while wire 8 from the open point on same side of switch runs to conductor 2 back of break C'. With the four-point switch in the position shown in full lines in Fig. 2, lamps A' are in a shunt around C, while wires 7 and 8 form a shunt around C'. When changed to the position shown in dotted lines, the four-point switch breaks both of these shunts and connects wires 3 and 7, thus throwing lamps A' into cross-circuit under control of the main switch.

For an automatic arrangement the main-line switch, Figs. 3, 4, and 5, is provided with extra contacts for producing the night-lamp connections. Plunger G, of insulating material, has a plate, *a*, on each side at its upper edge, bridging springs *b c* and *b' c'* when plunger is down, but leaving those springs disconnected when plunger is up. Plunger G has also a plate, *e*, on its lower edge in contact with *b* when plunger is up, and a similar plate, *e'*, in contact with *c'* when plunger is up. Plates *e* and *e'* are connected together, as shown in Fig. 4, by a wire which takes the place of wire 4 of Fig. 1. Conductor 1 of the lighting-circuit is opened at springs *b c*, while wire 3 runs to spring *c'* and wire 5 runs to spring *b'*. When plunger G is down, plates

*e e'* are out of circuit, and *b c* are bridged by a plate, *a*, closing circuit 1 2, while *b' c'* are bridged by another plate, *a*, throwing lamp A' into cross-circuit. When plunger G is up, plates *b c* are disconnected, and so are plates *b' c'*; but plates *e e'* are in contact with *b c'*. In this position of switch-plunger circuit 1 2 is opened, and lamp A' is in a shunt around the break formed by the main switch.

When the arrangement shown in Figs. 3 and 4 is used on a circuit having current during the day, wire 3 will have a circuit-controlling switch, *f*, which may be the key of a socket in which lamp A' is held.

What I claim is—

1. The combination, with an electric lighting-circuit and incandescing electric lamps in multiple arc therein, of connections for throwing one or more of such lamps from multiple arc into series with the other lamps, whereby a night-light will be produced, substantially as set forth.

2. The combination, with an electric lighting-circuit, incandescing electric lamps therein in multiple arc, and a main switch controlling such lamps simultaneously, of connections for throwing one or more of such lamps from multiple arc into a shunt-circuit around the main switch, substantially as and for the purpose set forth.

3. The combination, with an electric lighting-circuit, incandescing electric lamps therein in multiple arc, and a main switch controlling such lamps simultaneously, of a switch in addition to main switch, and connections for throwing one or more of such lamps from multiple arc into a shunt-circuit around the main switch, substantially as and for the purpose set forth.

4. The combination, with an electric lighting-circuit, incandescing electric lamps therein in multiple arc, and a main switch controlling such lamps simultaneously, of a return-wire extending from one side of one or more of the lamps back to locality of main switch, such lamp being permanently connected with one side of the circuit, a wire running back of main switch to side of circuit, with which such lamp is permanently connected, a wire extending to other side of circuit, and a switch for connecting the return-wire with either of the other two wires, substantially as set forth.

5. The combination, with an electric lighting-circuit, incandescing electric lamps therein in multiple arc, and a double-pole main switch controlling such lamps simultaneously, of connections for throwing one or more of such lamps from multiple arc into a shunt around one side of such main switch, and for closing a shunt around the other side of such main switch, substantially as set forth.

6. The combination, with an electric lighting-circuit, incandescing electric lamps therein in multiple arc, and a double-pole main

switch controlling such lamps simultaneously,  
of a switch in addition to main switch, and  
connections for throwing one or more of such  
lamps from multiple arc into a shunt around  
5 one side of such main switch, and for closing  
a shunt around the other side of such main  
switch, substantially as set forth.

This specification signed and witnessed this  
25th day of November, 1885.

JOHN W. HOWELL.

Witnesses:

A. W. KIDDLE,

E. C. ROWLAND.

Correction in Letters Patent No. 348,125.

It is hereby certified that Letters Patent No. 348,125, granted August 24, 1886, upon the application of John W. Howell, of New Brunswick, New Jersey, for an improvement in "Night Lamps for Electric Lighting Systems," was erroneously issued to Charles S. Van Nuis, and Dyer & Seely; that the said Letters Patent should have been issued to the said *John W. Howell, Charles S. Van Nuis, and Dyer & Seely*, said Van Nuis and Dyer & Seely being assignees of a part interest only; and that the 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 31st day of August, A. D. 1886.

[SEAL.]

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

Countersigned:

R. B. VANCE,  
*Acting Commissioner of Patents.*