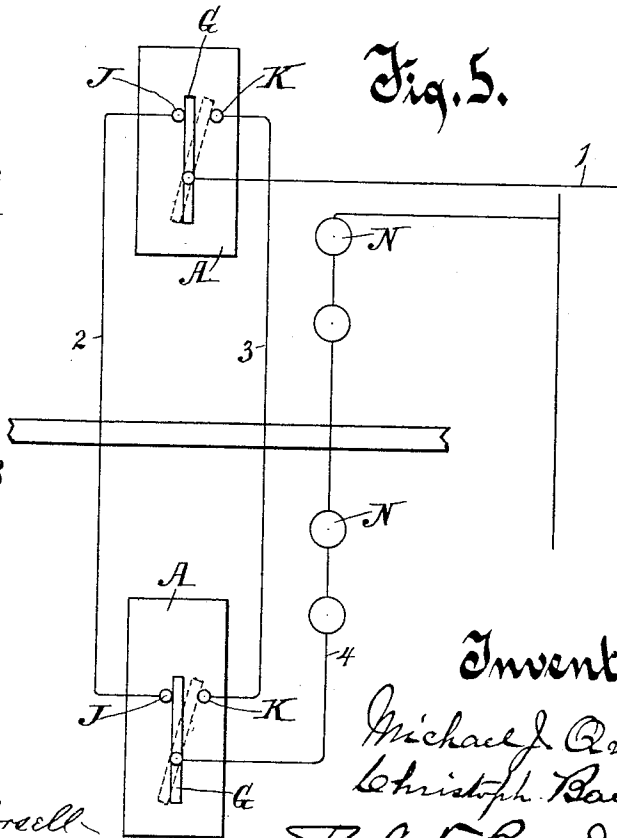
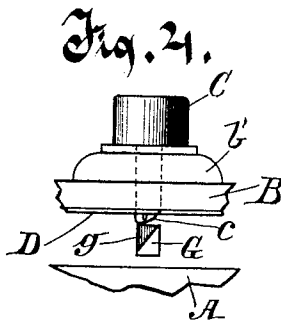
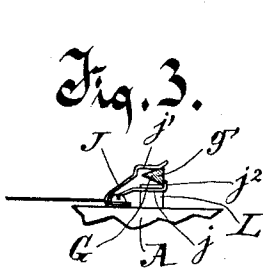
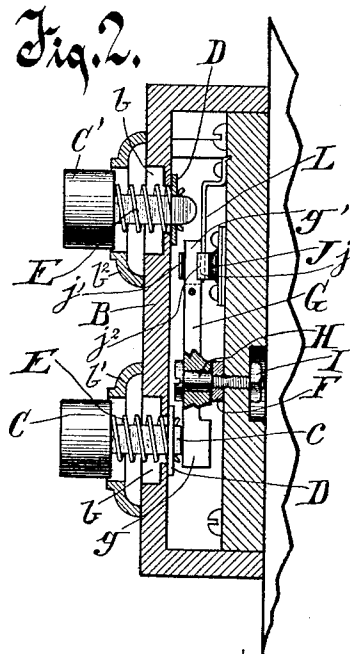
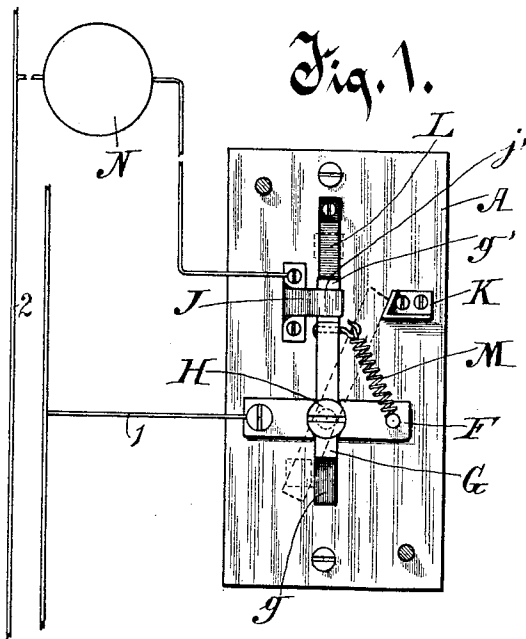


(No Model.)

M. J. QUIRK & C. BACH, Jr.
ELECTRIC LIGHTING SYSTEM.

No. 480,782.

Patented Aug. 16, 1892.



Witnesses.

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UNITED STATES PATENT OFFICE.

MICHAEL J. QUIRK AND CHRISTOPH BACH, JR., OF MILWAUKEE, WISCONSIN.

ELECTRIC-LIGHTING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 480,782, dated August 16, 1892.

Application filed October 29, 1891. Serial No. 410,192. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL J. QUIRK and CHRISTOPH BACH, Jr., of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Electric-Light Systems, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

Our invention has relation to improvements in systems for electric lighting.

The present mechanism employed for controlling lights in buildings and large structures, wherein a crank is employed for making and breaking the circuit, not only presents a complicated arrangement, but besides is extremely unsightly, owing to the exposure to view of the mechanical parts of the device.

It is the object of our invention to greatly simplify the now existing arrangement, and at the same time to provide a construction which will not in the least mar the appearance of a room in which the mechanism is located; and with this particularly in view the invention consists in the improved construction and arrangement of parts, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan view of our single system adapted for lighting and extinguishing the lights upon one floor only, the cover of the base being removed to show the working parts. Fig. 2 is a central vertical section of the base and cover, the interior mechanism, however, being shown in full lines, except at one point, where it is broken away in order to illustrate clearly the securing-screw. Fig. 3 is an edge elevation of the switch-pole, showing the pivoted switch-lever in transverse section. Fig. 4 is an elevation of the push-button and an end elevation of the switch-lever, illustrating clearly the registering bevels of the same; and Fig. 5 is a diagrammatic view of the double-switch system adapted for controlling the lights upon two floors.

Like letters and figures of reference refer to like parts throughout the several views.

Referring to the drawings, the letter A indicates a base-plate, which is composed of porcelain or wood, but preferably of the latter. This base is concealed by means of a cover B, provided with apertured cavities $b\ b$.

Formed upon the top of the cover are push-button cases $b' b^2$, into which the push-buttons C C' work, said buttons being of the usual construction and having their shanks passing through apertures in plates D D, arranged upon the inner side of the cover, the extremity of the shank of button C, however, being beveled, as indicated at c. The usual coiled springs E E are disposed upon the shanks intermediate the heads and plates D D.

The letter F indicates a transverse contact-plate resting upon the base, and G a longitudinally-disposed switch-lever, which rests on the contact-plate and is pivoted upon a screw H. This screw is of the peculiar form illustrated in Fig. 2, the head thereof bearing upon the top of the lever and the enlarged circular portion beneath the head passing through the increased width of the lever at this point. The screw-threaded extremity extends through the contact-plate and also upon the base, the end thereof receiving a nut I, bearing against the bordering wall of a cavity upon the other side of the base.

The opposite extremities of the switch are beveled, as indicated at $g\ g'$, Fig. 4, bevel g registering with the beveled end of push-button C, so that when the latter is depressed it will contact with said bevel g and cause the lever to readily swing upon its pivot. A spring switch-pole J is located upon one side of the lever, while an angular plate K is located upon the opposite side. The latter serves, when employed in connection with the single system, merely as a stop for the end of the lever, while when used in connection with the double system serves both as a stop and contact-point.

Switch-pole J is shown in the drawings as consisting of inner and outer angularly-bent plates J and J', adapted to receive therebetween the end of the lever. Plate j , however, is provided with an upturned end j^3 , which when the lever is thrown into contact therewith bears against one edge thereof and firmly holds the lever in position between the two plates until a downward pressure is exerted upon plate j . It will be noticed that the lever is provided at this end with the bevel g' , hereinbefore referred to, which facilitates the engagement just described. In order to effect

the release of the lever from the pole, we employ an extra spring-plate L, the free end of which bears upon plate *j*. This plate L is brought into forcible contact with said plate *j* by depressing push-button C', which is located immediately above the same. When this is done, the under leaf *j* is moved laterally away from the lever, which latter is then released and brought around to the position shown in dotted lines, Fig. 1, by the action of the retractile spring M, the movement of the lever being limited by the angular plate K.

In explanation of the single-switch system reference should be had to Fig. 1 of the drawings, wherein the numeral 1 indicates the feed-wire, running from the dynamo or other source of supply (not shown) leading directly to transverse contact-plate F, and 2 indicates the electric-light wire, which runs from the switch-pole to the electric lights and is conducted from the latter to the exterior of the building. The jet may consist of from six to ten lights, in accordance with the regulation number, distributed at different portions of the floor. When the lever is in the position shown in full lines, the current passes from the feed-wire to plate F, then from the lever to the switch-pole, from which point it is conducted by the wire 2 to the electric lights.

Referring now to the double-switch system, which is adapted for lighting or extinguishing the jet from either the first or second floors of the building, Fig. 5 illustrates clearly the arrangement. Inasmuch as the mechanical parts shown in Figs. 1, 2, 3, and 4 are exactly duplicated, it has not been thought necessary to show all of the parts thus duplicated, and for this reason only switch-levers G are shown and the position of the switch-poles J and angular plates K illustrated by dots. Plates K, however, in this system serve not merely as stops, but, furthermore, as contact-points. The only change made necessary in order to adapt our system to two stories of the structure is, instead of running wire 2, leading from the switch-pole, directly to the lights, to extend the same to the corresponding switch-pole of the other story and to connect the two plates K by a wire 3, the electric-light wire 4 extending from the switch-lever located upon one floor.

In the position in which the levers are illustrated in both full and dotted lines, Fig. 5, the current is made. Following out the full lines, the current first passes along the feed-wire to the lever located at one point, over wire 2 to the lever located at the other point, and from said last-named lever to the electric lights through the medium of wire 4.

Following the course when the levers are in position shown in dotted lines, the current first passes over the feed-wire to the lever at one point, from thence over wire 3 to the lever at the other point, and from said last-named lever to the electric-light wire.

From the above it will therefore be seen

that in order to make the current from either the first or second stories all that is necessary is simply to press upon the proper push-button for throwing the lever into contact with the pole corresponding to the pole with which the lever at the other point contacts, and in order to break the current the reverse operation is gone through with—that is to say, the operator presses upon the proper button to throw the lever at the point where he is operating into contact with the pole opposite to the pole which the lever at the other point engages.

It will of course be understood that the lights shown in the circuit are arranged in series.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In an electric-light system, the combination of a switch-lever swinging laterally upon a pivot at right angles thereto, a switch-pole arranged to one side of the lever and adapted to engage said lever when the same is swung laterally thereagainst, a stop arranged upon the opposite side of the lever, a spring-plate engaging the switch-pole, push-buttons, one of which is adapted to engage directly the end of the lever to throw it laterally into contact with the switch-pole and the other constructed to engage the spring-plate to release the lever from said switch-pole, and electric lights within the circuit, substantially as set forth.

2. In an electric-light system, the combination of a switch-lever having its opposite ends beveled, a stop, a switch-pole having an angular end over which one of the beveled extremities of the lever is adapted to ride, a spring-plate having its free end bearing upon the switch-pole, a push-button adapted to exert a downward pressure upon the spring-plate, a push-button having the extremity of its shank beveled to register with the corresponding beveled end of the lever, a retractile spring, wires leading, respectively, to the lever and switch-pole, and electric lights within the circuit, substantially as set forth.

3. In an electric-light system, the combination of a base-plate, a switch-lever pivoted thereon, contact-points engaged by said switch-lever, an angular cover for inclosing the operating mechanism, provided with apertures and push-button cases having registering apertures, plates upon the inner surface of the cover, push-buttons within their cases, having their shanks projecting through the apertures and through the inner plates, and springs confined between said inner plates and the heads of the buttons, substantially as set forth.

4. In an electric-light system, the combination of duplicate devices located in different portions of the building, each consisting of a casing having thereon a pivoted switch-lever, a switch-pole arranged to one side of the lever and adapted to hold said lever in contact therewith as the lever is swung thereagainst, a spring-plate engaging the switch-pole, a con-

tact arranged upon the opposite side of the lever, push-buttons, one of which is adapted to engage directly the end of the lever to throw it laterally into contact with the switch-pole
5 and the other constructed to engage the spring-plate and cause the lever to be thrown against the opposite contact, connecting-wires leading to the switch-levers at each point, one of said wires having electric lights in its circuits, and
10 wires connecting, respectively, the switch-

poles and contacts of each of the duplicate devices, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

MICHAEL J. QUIRK.
CHRISTOPH BACH, JR.

Witnesses:

ARTHUR L. MORSELL,
ANNA V. FAUST.