

(No Model.)

F. L. POPE, H. M. BYLLESBY & P. LANGE.

KEY SOCKET FOR INCANDESCENT ELECTRIC LIGHTS.

No. 366,606.

Patented July 12, 1887.

Fig.1,

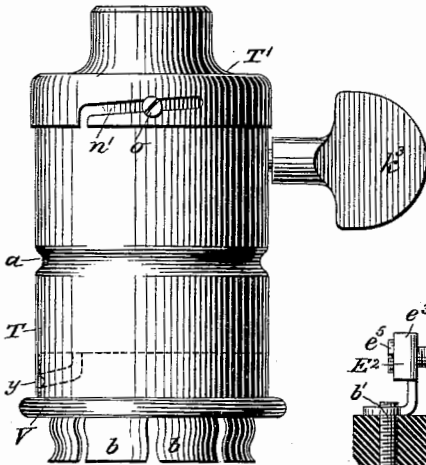


Fig. 2.

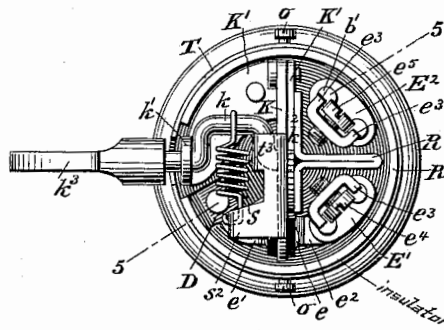


Fig.5.

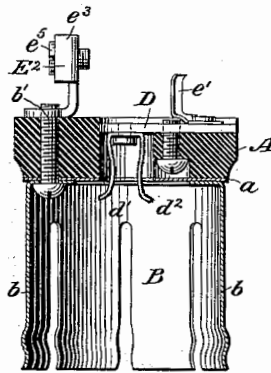


Fig. 4.

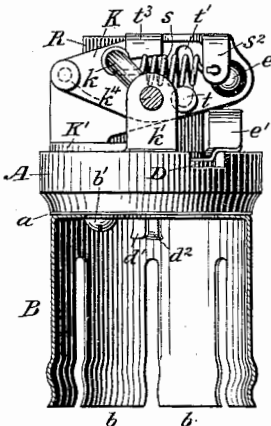


Fig. 3,

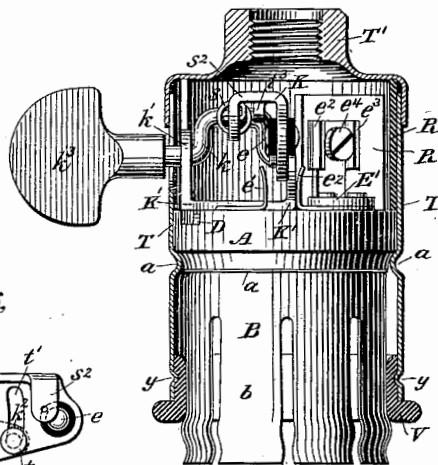
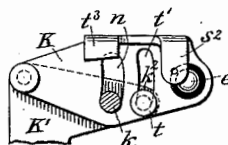


Fig. 6,



Witnesses

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KEY-SOCKET FOR INCANDESCENT ELECTRIC LIGHTS.

SPECIFICATION forming part of Letters Patent No. 366,606, dated July 12, 1887.

Application filed November 18, 1886. Serial No. 219,337. (No model.)

To all whom it may concern:

Be it known that we, FRANK L. POPE, a citizen of the United States, and residing in Elmora, Union county, New Jersey, and HENRY M. BYLLESBY, a citizen of the United States, and PHILIP LANGE, a subject of the Emperor of Germany, residing in Pittsburg, Allegheny county, Pennsylvania, have invented certain new and useful Improvements in Key-Sockets for Incandescent Electric Lights, of which the following is a specification.

The invention relates to the construction of sockets for holding and supporting incandescent electric lamps.

The object of the invention is to provide a simple and efficient socket which is cheap to manufacture and which is not liable to get out of order.

In the accompanying drawings, Figure 1 is an elevation of a lamp-socket embodying the invention, and Fig. 2 is a plan of the same, (the cap being removed.) Fig. 3 is an elevation, the outer casing being shown in section. Fig. 4 is an elevation with the casing removed. Fig. 5 is a section in the plane of the line 5 5 in Fig. 2, and Fig. 6 represents certain details of the circuit-controller.

Referring to the figures, A represents a block of insulating material upon which the various parts are supported. One surface of this block is preferably covered by a sheet of mica, *a*, to insure efficient insulation and to prevent any possibility of the formation of an arc. Upon one face of this block is secured a cylindrical cup, B, having flexible resilient arms *b*, of well-known construction. The opposite face of the block A carries a metallic conducting-bar, D, which is sunk into a groove or recess in the block extending to its center. This bar carries a double contact-spring formed in two yielding resilient arms, *d'* and *d''*, Fig. 5, which preferably incline inward toward their outer ends, and then suddenly expand, as shown in the drawings. These springs or arms are designed to receive the contact-point of the

lamp, which may either be constructed with a narrow neck, so as to extend between the arms, or it may simply press against the ends, springing them slightly and causing them to separate. A contact-spring, *e'*, extends from the plate D in a direction opposite to the springs *d'* *d''*. This is designed to be placed in electrical connection with a similar spring, *e''*, by means of a contact-piece, *c*, when it is desired to complete the circuit through the lamp for the purpose of lighting it. The spring *e''* is secured to the insulating-block A by a binding-plate, E', Figs. 2 and 3, which is designed to receive and clamp the terminal of one of the supply-conductors. A similar binding-plate, E'', Fig. 2, receives the other supply-conductor and is electrically connected by a screw, *U*, with the cup B. When, therefore, the contact-piece *c* is inserted between the two contact-springs *e'* and *e''*, the circuit is complete between the two terminals B and D. The binding-plates E' and E'' are preferably constructed with outwardly-projecting flanges *e'*, between which are the heads of the clamping-screws *e'* and *e''*. These flanges serve to prevent the wires from slipping out.

The contact-piece *c* consists of a metallic pin or screw extending through from one face to the other of a movable plate, K, but insulated therefrom. The plate K is pivoted at *k'* to a standard, K', which is secured to the insulating-block A. This same standard carries a crank-axis, *k*, affording two bearings or journals, *k'* and *k''*, in which said axis turns. The outer end of the crank-axis *k* is provided with a thumb piece or key, *k''*, by means of which it may be turned. The other end of the crank-axis *k* passes through a slot, *n*, in the movable arm K. (See Fig. 6.) This permits the plate K to turn upon its fulcrum at *k'*. The movement of the plate K is limited in one direction by the crank-axis striking a shoulder upon the plate K, and in the other direction by the crank *k* striking the plate K and by the plate K striking the standard K'. 9c

For the purpose of moving the plate K, a spiral spring, *s*, is attached at one end to the elbow of the crank-axis *k*. A groove prevents it from slipping on the crank. The other end 5 is attached to an arm, *s*², projecting from the plate K. By turning the crank-arm *k* the end of the spring *s* may be carried to one side or the other of the fulcrum of the plate K, and thus tend to pull the latter in the corresponding 10 ing direction the instant it has passed its center of motion. The movement of the crank-axis *k* is limited in one direction by the bed-plate of the standard K, and a lug, *t*², upon the upper edge of the plate K limits the movement in the opposite direction by stopping in 15 the path of the elbow. This lug may serve in some instances to assist the action of the spring *s* in moving the plate K away from the contact-springs *e*¹ and *e*².

20 A headed pin or screw, *t*, Fig. 6, passes through a slot, *t*¹, in the plate K, the office of which is to prevent the spring *s* from throwing the plate away from the support.

For the purpose of efficiently insulating the 25 conducting-surfaces from each other; a folded plate, R, Fig. 2, of fiber or other insulating material, is interposed between the support K' and the two binding-plates E' and E'', separating them individually from each other.

30 A band or tube, R', Figs. 2 and 3, of insulating material, also surrounds the entire circuit-controlling apparatus, electrically separating its mechanism from the inclosing metallic case T. This prevents any accidental 35 contact being made therewith.

The end of the metallic case T is closed by a cap, T', provided with any convenient means of attachment to a fixture or support. This cap is preferably secured to the case by two 40 small set-screws, *o o*, Fig. 2, entering bayonet-joints *n'* on each side of the cap, as seen in Fig. 1. The openings are preferably somewhat inclined in direction in order to secure a tight coupling. The same set-screws are 45 employed to secure the cap when brought to the desired position.

The cap, when in position, acts through the insulating-shield R' to press the block A firmly 50 against an inwardly-projecting ring, *a*, formed in the case.

A bushing, V, of insulating material, is placed at the upper end of the case to prevent the arms *b b* from coming into contact 55 with the case or shell. A lug, *y*, upon the outer edge of this ring serves to prevent a shade-holder from slipping off. This ring is preferably secured in position by a bayonet-joint.

60 We do not claim as our invention a switch having in combination a vibrating circuit-closing bar, a crank-arm having its center of movement outside of the center of movement

of the circuit-closing bar, a spring connecting the crank and circuit-closing bar, and contact 65 springs or plates; nor the combination of a support, contacts on said support, a lever pivoted to said support, a shaft extending through the lever, and a contact-piece carried by the lever; nor a switch having in combination a 70 vibrating frame or carrier having annular enlargements on its side pieces, the side pieces being provided with ears or lugs, a circuit-closing bar connected to the carrier, a crank having its center of movement outside of the center of movement of the frame or carrier, 75 a spring connecting the crank-arm and carrier, and contact springs or plates; nor, in a holder for an electric lamp, the combination of a pivoted lever, a spring attached at one end to the lever and the other end to a support capable 80 of being moved across the line between the attachment of the other end and the pivot of the lever, a shoulder upon the lever, and a bearing-surface upon the support of the movable end of the spring, whereby the lever may 85 be forcibly moved in one direction; nor, in an incandescent electric lamp, the combination of the shell having an internal shoulder, a disk of insulating material resting upon said shoulder, and a clamping or holding cylinder 90 fitting within the shell and having its edges resting upon the disk; nor, in an electric switch, the combination, with a primary actuating device and a movable contact-bar, of a spring 95 connecting said two parts together, and one or more stops which limit the movement of said primary actuating device and contact-bar; nor, in an electric switch, the combination, with a primary actuating device and a pivotal 100 contact-bar, of a spring having its extremities respectively engaging with said two parts, and having its point of engagement with the contact-bar eccentric to the latter's pivotal axis, the movement of said actuating device changing the position of its spring connecting-point 105 and causing the line of the two springs' connecting-points to pass to one side or the other of the pivotal axis of said contact-bar.

We claim as our invention—

1. In a holder for an electric lamp, the combination of the binding posts or plates, the 110 block supporting the same, the shell surrounding the posts and block, and insulating-plates separating the several conducting parts from each other. 115

2. In a holder for incandescent electric lamps, an insulating-ring separating the flexible jaws from the surrounding case, which ring is fastened by a bayonet-joint.

3. In a holder for an incandescent electric 120 lamp, a ring of insulating material separating the flexible jaws from the inclosing-shell, a bayonet-joint securing the ring in position, and a lug upon the outer edge of said ring,

substantially as and for the purpose set forth.

4. In a holder for an incandescent electric lamp, a central contact consisting of converging flexible arms, which arms expand at their ends to admit the lamp-terminal, substantially as and for the purpose set forth.

5. In an electric-lamp holder, an outer contact-shell having resilient arms, an annular recess for receiving the lamp, and a central contact consisting of converging arms combining with the outer shell to hold the lamp in position and to complete the circuit-connections.

15 In testimony whereof I have hereunto sub-

scribed my name this 17th day of November, A. D. 1886.

FRANK L. POPE.

Witnesses:

CARRIE E. DAVIDSON,
CHARLES A. TERRY.

In testimony whereof we have hereunto subscribed our names this 2d day of November, A. D. 1886.

HENRY M. BYLLESBY.
PHILIP LANGE.

Witnesses:

CHARLES A. TERRY,
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