

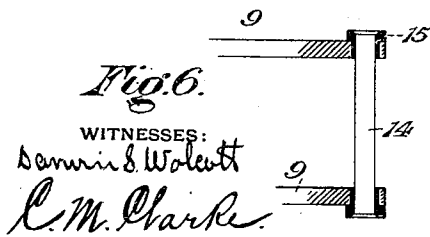
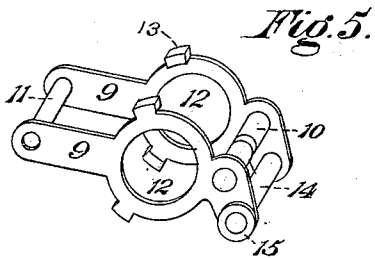
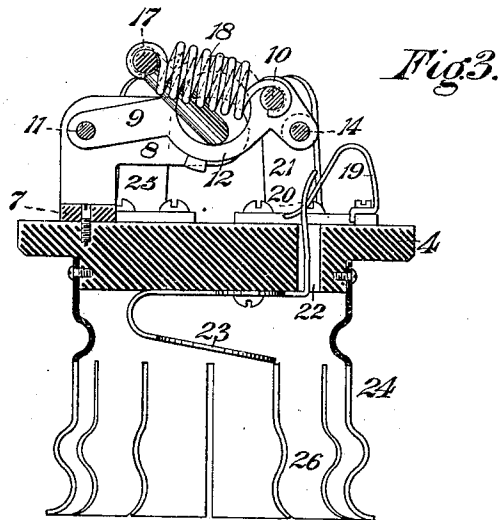
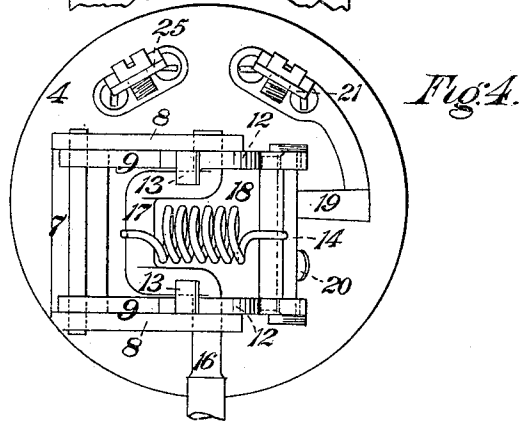
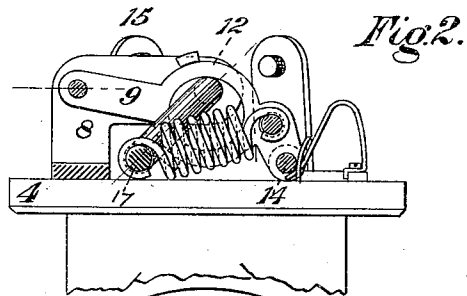
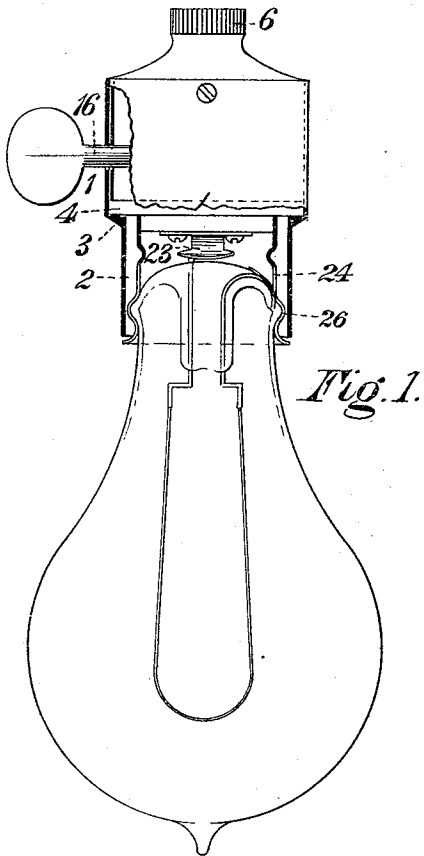
(No Model.)

J. J. FISHER.

SOCKET AND KEY FOR INCANDESCENT LAMPS.

No. 371,570.

Patented Oct. 18, 1887.



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SOCKET AND KEY FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 371,570, dated October 18, 1887.

Application filed March 1, 1886. Serial No. 193,571. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. FISHER, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Sockets and Keys for Incandescent Electric Lamps, of which improvements the following is a specification.

10 In the accompanying drawings, which make part of this specification, Figure 1 is a view in side elevation of my improved lamp-socket having a lamp attached thereto, a portion of the socket being broken away. Fig. 2 is a
15 view in side elevation of the switch mechanism, showing the position of the parts when the circuit is closed. Fig. 3 is a similar view showing the position of the parts when the circuit is open. Fig. 4 is a plan view of the
20 switch mechanism. Figs. 5 and 6 are detail views on an enlarged scale.

The invention herein relates to certain improvements in sockets and switches for incandescent electric lamps, and has for its object
25 such a construction of the switch mechanism that the circuit-closing bar is forced and held into or out of connection with the contact-pieces by the action of a spring without liability of said circuit-closing bar being moved
30 to or held in such an intermediate position as will permit of sparks passing between the switch-bar and the contact-pieces; and it is a further object of said invention to so construct the holder proper that a lamp may be readily
35 placed in position, and when so placed is ready for use without further turning or adjustment; and to these ends the invention consists in the construction and combination of parts, substantially as hereinafter described and claimed.

40 The case for inclosing the switch mechanism consists of a cylindrical piece of metal, 1, to one end of which is connected a similar piece, 2, but of lesser diameter, the point of junction between these cylinders forming a
45 shoulder, 3, as shown in Fig. 1. Within the cylinder 1 is placed a non-conducting disk or plate, 4, said disk resting upon the shoulder 3, and being held in position by the shell or cylinder 5, fitting within the cylinder 1. This

shell 5 is closed at one end, as shown, and is provided with an attaching-socket, 6.

To the under side of the disk 4 is attached the bracket or frame 7, having the bent arms 8, and between these arms is pivoted the rocking frame or carrier, consisting of the side
55 pieces, 9, connected by the cross-bar 10, and the pivoted bar 11. Near their forward ends these side pieces are provided with annular enlargements 12, provided on their perimeters with the inwardly-projecting lugs or ears
60 13, whose function will be hereinafter stated. In the forward ends of the side pieces, 9, is secured the circuit-closing bar 14, an insulating washer or sleeve, 15, being interposed between
65 said bar and the arms 9, as clearly shown in Fig. 6.

In the ends of the arms 8 of the bracket or frame 7 is mounted the switch-operating shaft 16, said shaft passing through the annular enlargements 12 in the side pieces, 9. The
70 portion of the shaft 16 between the side pieces, 9, is bent into a crank form, as shown at 17, adapted to be turned up and down between the side pieces. This crank is connected by
75 a spring, 18, to the cross-bar 10, connecting the side pieces, so that by turning the crank either up or down a corresponding movement is produced in the rocking frame.

To the disk 4 in the path of movement of the circuit-closing bar are secured the spring
80 contact-pieces 19 and 20, the former being electrically connected to the binding-post 21, and the latter projecting through an opening, 22, in the disk 4, and electrically connected with the spring contact-plate 23, secured on
85 the opposite side of the disk 4, and adapted to engage one of the platinum electrodes of the lamp when the latter is placed in the holder 24, the other platinum electrode being arranged to engage the walls of the holder when
90 the lamp is placed therein. This holder, which is electrically connected to the binding-post 25, consists of a cylindrical metal shell secured at one end around a circular projection from the disk 4, as shown in Fig. 3. The wall of
95 the opposite end of this shell is slotted for a considerable distance, thus forming a series of spring-fingers, which are provided with

grooves 26 for engaging a bead or projection on the lamp-bulb. In order to facilitate the introduction of a lamp into the holder, the ends of the spring-fingers are curved outwardly, as shown.

By reference to Figs. 2 and 3 the following description of the operation of my improved switch will be clearly understood. In Fig. 2 the carrier or frame is in position to hold the circuit-closing bar in electrical engagement with the contact-springs 19 and 20, thus closing the circuit, and the crank 17 and the cross-bar 10 are both below their centers of movement; hence the tension of the spring 18 will tend to draw the crank and carrier toward each other, and thereby prevent accidental displacement of the circuit-closing bar. When it is desired to break the circuit, the shaft 16 is rotated so as to bring the crank 17 to the opposite side of a plane passing through the pivotal points of the carrier and crank. While the crank is moving from the position shown in Fig. 2 up to the plane passing through the pivotal points above referred to the spring 18 is placed under a tension, but no movement is imparted to the carrier; but, on the contrary, it is held more tightly in the position shown in Fig. 2. As soon, however, as the crank 17 is moved beyond the plane passing through the pivotal points of the crank and carrier, the direction of the pull of the spring is changed, and the carrier is drawn quickly upward, thus effecting a quick disengagement of the circuit-closing bar and the contact-springs. The lugs or ears 13 are so arranged as to project into the line of movement of the crank 17, and thereby limit its movement on either side of the pivotal points of the carrier and the crank.

It is a characteristic of the construction and arrangement hereinbefore described that as long as the crank and cross-bar 10 are on the same side of the plane passing through the

pivotal points of the carrier and crank any movement of the crank will not effect any movement in the carrier; but as soon as the crank is moved to the opposite side of said plane the spring will immediately pull the carrier and its circuit-closing bar to the same side; and it is a further characteristic of the invention that the crank will remain at rest only when said crank and cross-bar 10 are on the same side of the pivotal points of the carrier and crank, and when the cross-bar moves to either side of these pivotal points the circuit-closing bar is either in full electrical engagement with the contact-springs or entirely disengaged therefrom; hence there is no possibility of so placing the circuit-closing bar in such position in relation to the contact-springs that an electric arc will be formed between them.

I claim herein as my invention—

1. A switch for incandescent electric lamps having, in combination, a vibrating frame or carrier having annular enlargements on its side pieces, the side pieces being provided with ears or lugs 13, 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, a spring connecting the crank-arm and carrier, and contact-springs or plates, substantially as set forth.

2. In an incandescent electric lamp, the combination of a shell having an internal shoulder, as described, a disk of insulating material resting upon said shoulder, and a clamping or holding cylinder fitting within the shell and having its edges resting upon the disk, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN J. FISHER.

Witnesses:

DARWIN S. WOLCOTT,
R. H. WHITTLESEY.