

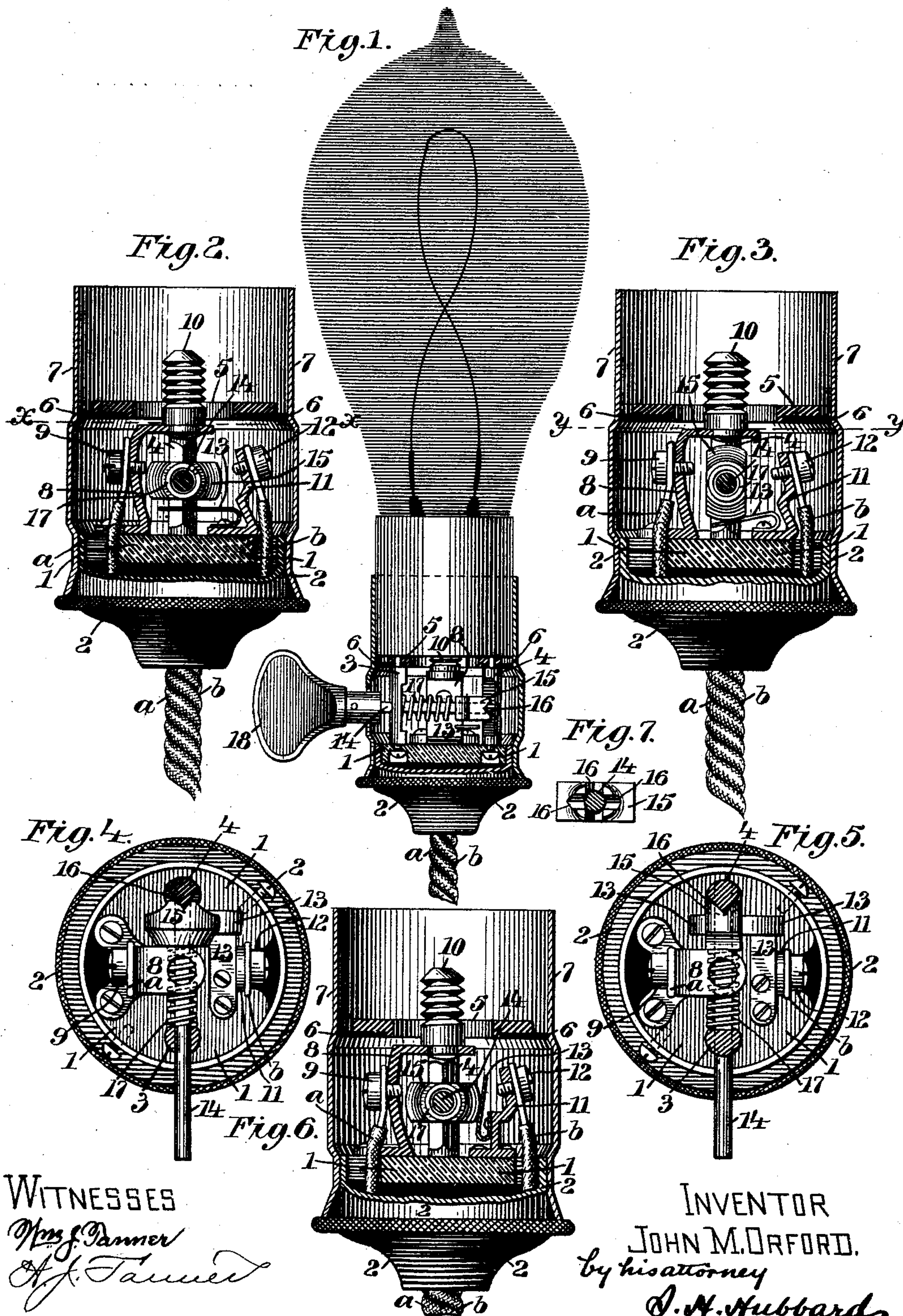
(No Model.)

J. M. ORFORD.

SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

No. 446,995.

Patented Feb. 24, 1891.



WITNESSES

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SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

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To all whom it may concern:

Be it known that I, JOHN M. ORFORD, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sockets for Incandescent Electric Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in key-sockets for incandescent electric lamps, but more particularly does it appertain to the switch which is incorporated in said socket, and whereby the circuit in which the incandescent filament lies may be readily made and broken.

The objects of my invention are to provide a socket and switch which shall be strong and simple in its several parts and economical to manufacture; and with these ends in view my invention consists in the construction and in the combinations of co-operating elements hereinafter fully set forth, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is an elevation, partly in section, of a lamp and socket made in accordance with my invention; Fig. 2, an enlarged detail section at right angles to Fig. 1, the circuit shown as open; Fig. 3, a similar view, circuit shown as closed; Fig. 4, a detail transverse section at the line *x x* of Fig. 2; Fig. 5, a similar section at the line *y y* of Fig. 3; Fig. 6, a view similar to Fig. 2, but showing a modified arrangement of the contact-spring; and Fig. 7, a detail face view of the circuit-closing block.

Like numerals and letters of reference denote the same parts in all the figures of the drawings.

1 represents a circular disk of insulating material, which is secured within the socket-cap 2 in any desired manner, as by screws or pins, as seen at Fig. 4, the same forming a

base upon which the several operative parts are mounted.

3 and 4 are pillars secured to and projecting vertically from said disk 1, as shown at Fig. 1. Both pillars are of brass or other suitable conductive material. The pillar 3 is shown as slabbed off at the center, which is convenient, but not essential, and the pillar 4 is cut away, as shown at Figs. 4 and 5, so as to present an angular inner face, for the purpose presently explained.

5 is a ring, of brass or other suitable conductive metal, supported upon the tops of the two pillars. Between said pillars and said ring is an insulating annulus 6, which is preferably of mica and which is considerably larger than the ring 5. This annulus, as will be understood by reference to Fig. 1, is not designed to insulate the ring 5 from the pillars, but is adapted to prevent the inclosing shell 7, to whose interior it is closely adapted, from in any manner making contact with said ring 5 or its supports.

8 is a terminal standard secured upon the disk or base 1. This standard carries a binding-screw 9, to which one of the leading-in wires *a* is connected, and said standard above said binding-screw turns inward and bears on its extremity a vertically-projecting screw 10, which passes freely through the aperture of the ring 5 and is adapted when the lamp is in position, as shown at Fig. 1, both to retain said lamp in place and to afford electrical connection with one end of the incandescent filament.

11 is another and somewhat shorter terminal standard, to which by means of a binding-screw 12 the other leading-in wire *b* is secured. Near its lower end this terminal is provided with a contact-spring 13, which may be horizontally disposed, as shown at Fig. 2, or may be vertically disposed, as shown at Fig. 6. Its position is immaterial.

14 is a key shaft or spindle, which is mounted and adapted to turn in bearings formed in the pillars 3 4. It has also longitudinal movement therein. Contiguous to the pillar having the angular face this key-shaft carries an oblong circuit-closing block 15, whose ends are preferably slightly rounded and whose face next the pillar is cut away and provided

with two intersecting V-shaped grooves 16, as shown at Fig. 7. Both the key-shaft 14 and the block 15 are of metal. Between the block 15 and the pillar 3 an expansive spiral spring 17 is coiled about the key-shaft.

18 is a handle secured upon the end of the key-shaft. It is of non-conducting material, and its inner end projects through the socket, whereby an insulation is afforded against any possible contact between the metallic key-shaft and the socket. While this is convenient and preferable in practice, a somewhat enlarged opening in the socket for the passage of the key-shaft would afford air-space insulation.

The operation of my invention is as follows: Suppose the circuit to be closed, as shown at Figs. 3 and 6. In that case current is supplied to the lamp as follows: From the leading-in wire *a* connection is had through the terminal standard 8 and screw 10 with one end of the filament, as heretofore explained. The other circuit-wire *b* connects with the other extremity of the filament as follows: The current passes from said wire to the terminal standard 11, thence to the spring 13, thence to the circuit-closing block 15, thence along the key-shaft to the pillars 3 and 4, or either of them, and thence to the conductive ring 5, which latter, when the lamp is in the position shown at Fig. 1, is in electrical connection with the filament. To break the circuit the key-shaft is given a quarter-turn by means of the handle 18. The effect of this turning is to cause the block, one of whose face-notches was in engagement with the angular face of the pillar 4, to ride up upon said pillar, thereby backing the block off, and with it the key-shaft, against the power of the spring 17 until the other groove in the block comes into alignment with the angular face of the pillar, when the spring returns the key-shaft and block longitudinally toward the pillar to the position shown at Fig. 4. This change of position of course breaks contact between the circuit-closing block and the spring 13, so that the current ceases to flow. The spring-contact between the circuit-closing block and the angular-faced pillar is such that the change of position of said block may not accidentally occur, but at the same time the key-shaft may be turned readily in either direction, the notch-and-spring connection between the block and pillar offering but a moderate resistance to the turning of the key-shaft.

Among the advantageous features of my construction I desire to call attention to the fact that the arrangement of the screw 10 in passing freely through the space inside the ring 5 does away with the necessity of inserting insulating material between the ring and the screw 10, as has heretofore been needful, and which in case of an imperfect connection is a frequent source of fire. Any

other form of contact may be substituted for the screw 10.

In this my invention I do not wish to be confined to the precise details of construction herein shown and described, since the same may be varied in shape and detail of arrangement without departing from the essentials of my invention, as set forth in the clauses of claim.

I claim—

1. In an electric-lamp socket, the combination, with a suitable base, of two pillars, one having an angular face, a key-shaft journaled between said pillars and having rotative and longitudinal movement in its bearings, a notched block adapted to engage the angular face of the pillar, a spring for determining such engagement, and a spring-terminal with which said block may engage, substantially as set forth.

2. The combination, with the terminals, one of which bears a contact spring, of the vertical pillars having electrical connection with one end of the lamp filament, whereof one pillar is provided with an angular face, the rotative and longitudinally-movable key-shaft having bearings in said pillars and spring-actuated in one direction, and the oblong circuit-closer carried by said shaft and adapted to make contact with the spring, substantially as described.

3. The combination, in a socket for incandescent electric lamps, with a suitable insulating base, of a terminal standard having a projection adapted to make contact with one end of the filament, a pair of pillars supporting a conductive ring, surrounding but out of contact with the said projection and adapted to connect with the other end of the filament, a rotative and longitudinally-movable key-shaft journaled between said pillars and spring-actuated in the direction of its length, a notched block carried by said key-shaft and engaging one of the pillars, and a terminal bearing a contact-spring, with which latter the circuit-closing block may engage, substantially as described.

4. In a socket for incandescent lamps, the combination, with the base, of the vertical pillars bearing a conductive ring adapted to make contact with one extremity of the filament and a standard secured to said base and having means for making contact with the other extremity of the filament, said standard projecting freely up within and through the ring and insulated therefrom solely by the air-space between them, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN M. ORFORD.

Witnesses:

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