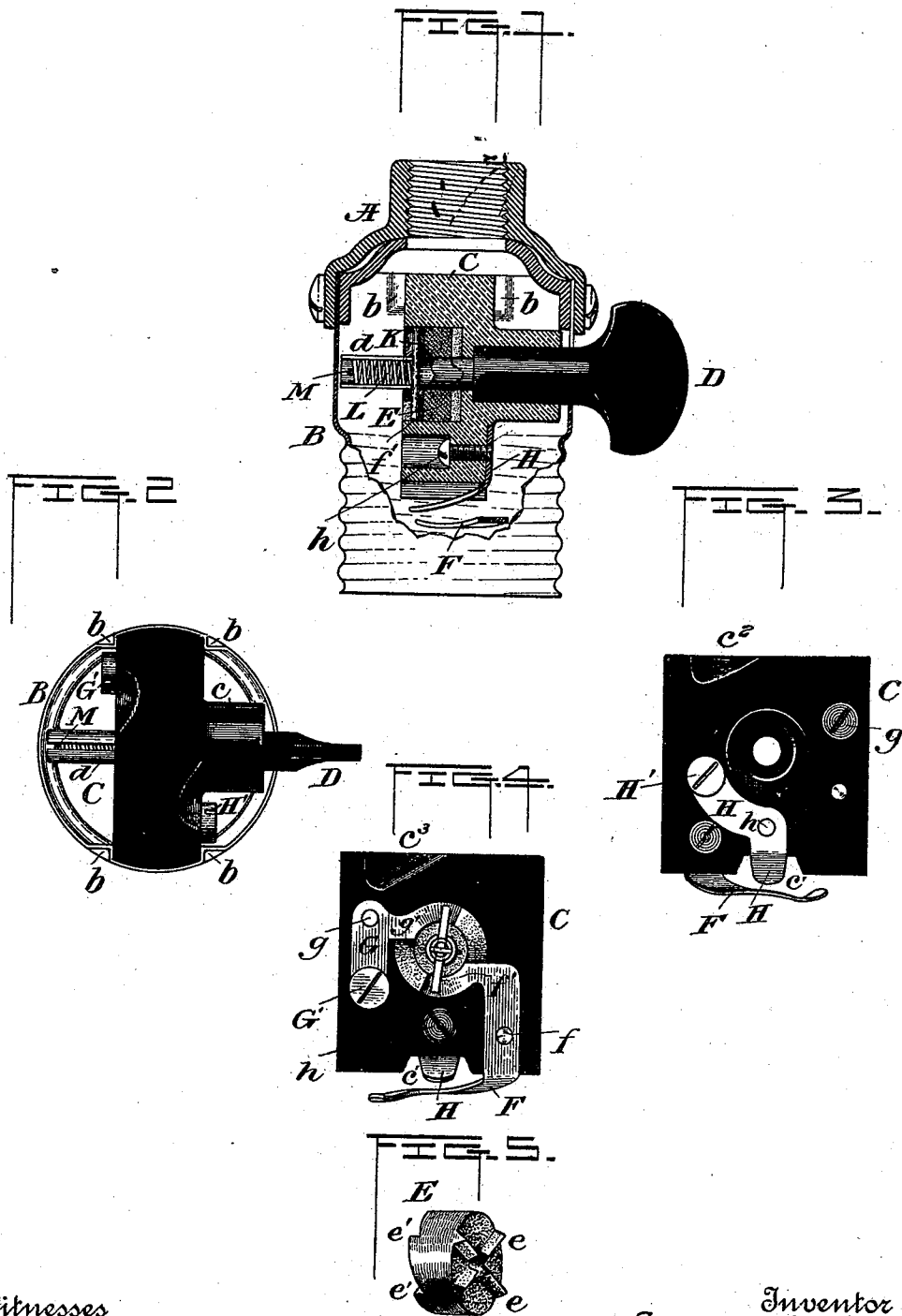


E. R. KNOWLES.
 SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

No. 516,820.

Patented Mar. 20, 1894.



Witnesses
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UNITED STATES PATENT OFFICE.

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SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 516,820, dated March 20, 1894.

Application filed December 9, 1892. Serial No. 454,663. (No model.)

To all whom it may concern:

Be it known that I, EDWARD R. KNOWLES, a citizen of the United States, residing at Middletown, in the county of Middlesex 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to electric lighting, and its object is to simplify the construction, and increase the efficiency, of the socket switches used to open and close the circuit of an incandescent electric lamp.

The invention consists in a snap switch of compact form adapted to be inclosed in the lamp socket.

In the drawings,—Figure 1 is an enlarged elevation of a lamp socket partly broken away to show the switch. Fig. 2 is a plan view, with the base removed. Fig. 3 is an elevation of one side of the switch. Fig. 4 is an elevation of the other side; and Fig. 5 is a detail.

The base A of the socket, and its attached shell B, may be of any suitable pattern, the shell being indented at two places on each side to form parallel guides *b*, into which slides the block C, of hard rubber or other insulating material. The block is preferably rectangular, as shown, and has on one side a neck *c* to receive and afford a bearing for the turning handle D, which has a reduced stem *d* extending through the block and projecting beyond the other side thereof. A cavity is formed in this side of the block, preferably circular, and concentric with the stem *d*, and into the cavity is fitted a thick washer E of hard insulating material, such as compressed fiber. The inner face of the washer is provided with one or more teeth *e*, to interlock with suitable grooves in the end of the cavity and keep the washer from rotating. The same result may be accomplished by making the cavity and the washer polygonal. The outer face of the washer is formed into four ratchet

teeth *e'*, each having an inclined surface and an abrupt shoulder, as shown.

Secured to one side of the block C by a screw *f* is a metallic plate F, which has a finger *f'*, overlapping and conforming to the inclined surface of one of the ratchet teeth *e'*. The other end of the plate extends under the block, being properly shaped to make contact with one of the lamp terminals. I have shown it as bent into a semi-circle. The inclined surface of the opposite ratchet tooth is similarly covered by a finger *g'* projecting from a plate G secured to the block by a screw *g*. On the other side of the block is a plate H, secured by a screw *h*, the lower end of the plate projecting under the block, in position to make contact with the other lamp terminal. The block may be notched at *c'*, if desired, to give free play to this end of the plate. It is understood, of course, that when the lamp is inserted into the socket, the lamp terminals come in contact with these free ends of the plates F, H, which, being resilient, exert a yielding pressure against the contacts on the lamp.

Binding screws G', H', are provided for connecting the line wires with the plates G, H, respectively, the block being preferably notched at *c'*, *c''*, to prevent its sharp edges from chafing the insulated wires.

To close the circuit, the stem *d* is provided with a metallic cross-bar K held yieldingly against the ratchet teeth *e'* by a spring. It is preferred to slot the stem lengthwise, and to insert the cross-bar in the slot. The slotted portion of the stem is tubular to receive a helical spring L, which abuts against a pin M at the outer end of the stem, and against the bar K at its other end. The pin is thus free to move axially along the stem, and is compelled to rotate therewith, being prevented from slipping out by the walls of the cavity in which the washer E is seated. When the stem is turned, the bar rides up the inclined surfaces of two opposite teeth of the ratchet, and snaps down over the abrupt shoulders upon the other two inclines. In the position in which it is shown in Fig. 4, the bar connects the fingers *f'*, *g'*, and the circuit is closed through the lamp. Upon giving the handle

a quarter turn, the bar snaps off the ends of the fingers upon the exposed teeth *e'* of the insulating washer, and the circuit is broken.

Having thus described my invention, what I claim is--

1. A switch for an incandescent electric lamp, comprising a block of insulating material having a cavity, a washer of hard insulating material seated in said cavity, and provided with ratchet teeth on its outer face, a rotatable stem projecting through said washer and carrying a yielding cross-bar, and contact plates having fingers overlapping two of said ratchet teeth, substantially as described.

2. An incandescent lamp switch, comprising a block of insulating material, a rotatable stem passing through said block, an axially yielding cross-bar carried by said stem, a washer of insulating material surrounding said stem and interlocking with said block, and alternate conducting and non-conducting ratchet teeth on the washer, substantially as described.

3. In an incandescent lamp switch, the combination with the rectangular block C of insulating material, having on one side the neck *c* bored to receive a rotatable stem, and in the other side a circular cavity concentric with said bore, and provided with grooves in its end, of an insulating washer fitting into

said cavity and having one or more teeth to engage with said grooves and keep the washer in place substantially as described.

4. In an incandescent lamp switch, the combination with a block of insulating material, provided with a cavity, of a washer of hard fiber having ratchet teeth and fitting into said cavity, said block and washer having an axial aperture through them, substantially as described.

5. In an incandescent lamp switch, a washer E of compressed fiber or other insulating material, having one or more teeth *e* on one face, and four ratchet teeth *e'* on its other face, substantially as described.

6. The combination with the block C, of the plates F, G and H and the ratchet washer E all secured to said block, the plates F G having fingers *f'* *g'* overlapping two opposite teeth of the ratchet, and a rotatable stem passing through and journaled in said block C and carrying a cross-bar adapted to slide over said ratchet and connect and disconnect said fingers, substantially as described.

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

EDWARD R. KNOWLES.

Witnesses:

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