

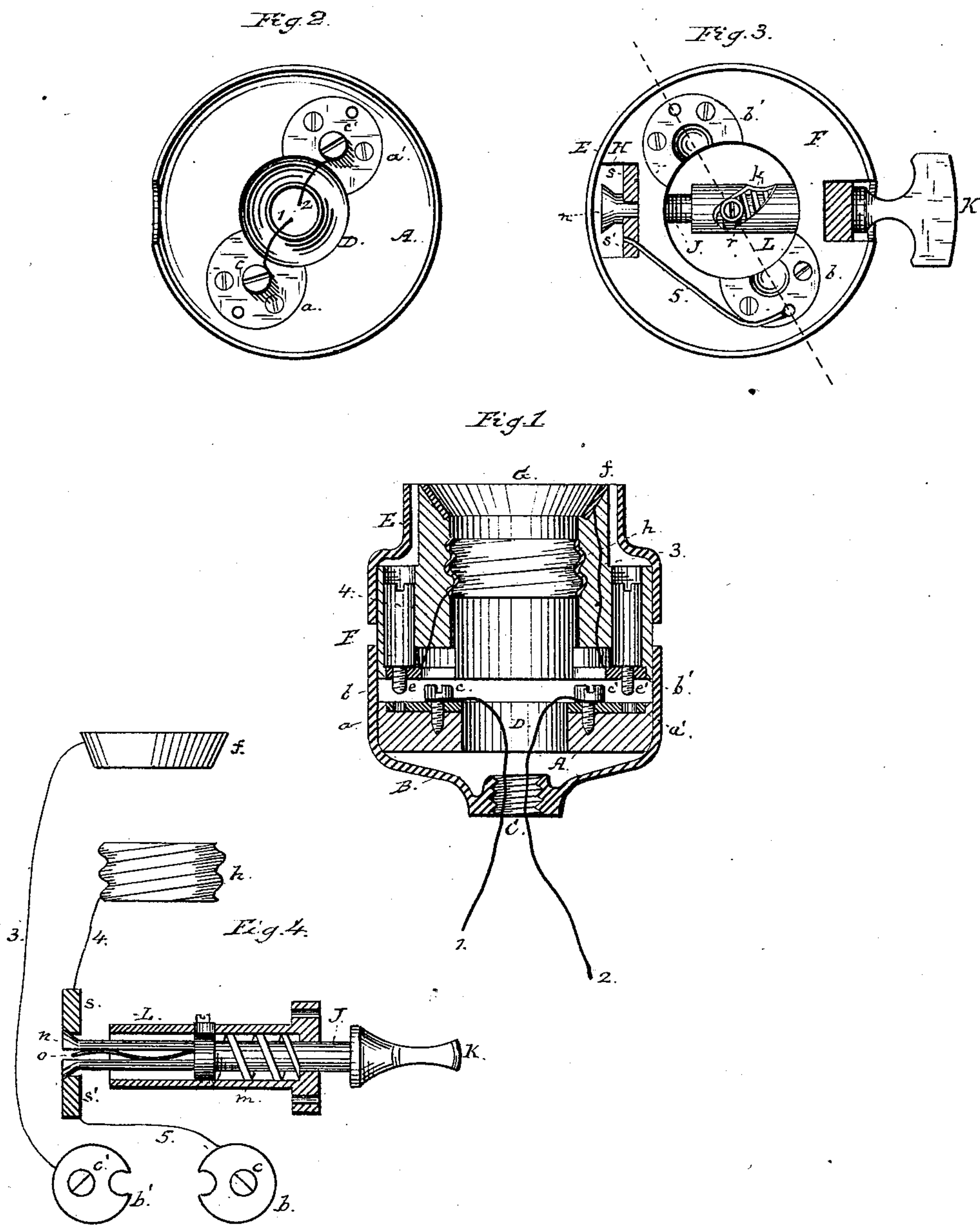
(No Model.)

E. H. JOHNSON.

SOCKET OR HOLDER FOR ELECTRIC LAMPS.

No. 251,596.

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Attest:

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# UNITED STATES PATENT OFFICE.

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## SOCKET OR HOLDER FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 251,596, dated December 27, 1881.

Application filed May 27, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD H. JOHNSON, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Sockets or Holders for Electric Lamps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is to construct a socket or holder for incandescent electric lamps in which the circuit-connections shall be completed by the placing of the lamp in the socket, subject, however, to such a circuit-controller as shall instantaneously and effectually make or break the circuit and light or extinguish the lamp.

My socket is intended for use with that class of lamps in which the glass inclosing-globe is set firmly into an insulating-socket or neck surrounded by two metal bands, each of which is connected to one of the clamps which hold the incandescing conductor.

The socket is made in two parts—an upper portion, made of wood or other insulating material hollowed out to receive the neck of the lamp, and containing on its interior surface two metal bands corresponding to those of the lamp-neck, and so connected with the conductors that when the lamp is screwed into the socket electrical connection is immediately completed to the lamp; and a lower part, consisting of a piece of wood set into a metal cup having at the bottom a screw-threaded aperture, by which the socket is attached to a bracket or other fixture, and through which pass the conductors, which terminate in metal plates set into the wood of this part of the socket. Corresponding metal plates are contained in the upper portion of the socket, and the two parts being placed together, the plates meet and are firmly clamped and held in position by screws. From these upper plates conductors pass—one directly to the metal band connected with the lamp, while the other is connected to a suitable circuit-controller, preferably such as hereinafter described. A portion of one of the conductors should consist of a safety-catch or piece of soft metal which, should an abnormal amount of current pass, will be fused thereby, it being so placed in a

groove in the wood that the molten metal will be retained within that portion only of the socket, thus preventing damage which might otherwise ensue to the socket, or, should it escape therefrom, to surrounding articles.

The circuit-controller to be used with this socket consists, generally speaking, of a metal rod passing through the upper portion of the socket laterally and projecting at one end, where a key or thumb-screw of insulating material is formed. The other end is formed into a conical enlargement split down the center, this split continuing through about half the length of the rod and containing a spring acting to keep the split well open. The rod passes within a sleeve containing a spiral slot, in which takes a projection from the rod, the rod also being surrounded by a spring, so that when the key is turned the spring will throw the rod in and out, the projection in the slot serving to stop its movement when the proper point is reached. The conical end of the rod passes through a circular opening between two metal plates, both of which are included in the lamp-circuit. When the rod is turned back its conical projection fits closely against the plates, the spring contained within the split forcing the two sides firmly against them and maintaining perfect contact, the current passing down one side and up the other of the split.

When the rod is turned in the other direction the enlarged end of the rod projects beyond the metal plates and a space is left between them, so that the circuit is destroyed.

A metal covering may surround the upper part of the socket in order that the whole may present a uniform and ornamental appearance.

In the annexed drawings, Figure 1 is a sectional view of a socket with the circuit-controller removed; Fig. 2, a plan view of the lower portion of the socket; Fig. 3, a bottom view of the upper portion, and Fig. 4 a section of the circuit-controller, with a diagram showing the circuit-connections therefrom.

As above stated, the socket consists of two parts, which in Fig. 1 are shown as partly separated.

A is a block of wood or other insulating material set into the metal cup B. This cup contains an aperture, C, and the wooden block an aperture, D, through which pass the conducting-wires 1 2. In the upper surface of A are



set metal plates  $a a'$ , containing binding-screws  $c c'$ , to which the wires 1 2 are attached.

In the upper half of the socket F is the main portion, usually of wood, E being the metal ring surrounding it. In the lower surface of F are sunk the metal plates  $b b'$ , which, when the two parts are pressed together, meet the plates  $a a'$ , they being held firmly together by screws or rivets  $e e'$ , the parts E B meeting and producing a continuous metal exterior for the socket.

The socket is hollowed out at G, and its interior contains metal bands or rings  $f h$ . From the plate  $b'$  the wire 3 passes, embedded in the wood to the upper ring,  $f$ .

In the edge of the wooden piece F is cut a depression, H, Fig. 3, in which are set two metal plates,  $s s'$ , separated from each other. (See Figs. 3 and 4.) From the plate  $b$  to  $s'$  a groove is cut in the face of F, in which is laid the safety catch-wire 5. It is evident that should this be fused by the passage of too much current the metal will still be held between F and A, and cannot by any possibility escape from the socket.

Still referring to Figs. 3 and 4, J is the circuit-controller, formed at one end into a handle or thumb-screw, K, for convenience of manipulation, passing (surrounded by the spiral spring  $m$ ) through the sleeve L and terminating in a conical enlargement,  $n$ , this end being split for some distance. The slit is of sufficient width to keep the parts from contact with each other and to contain a spring,  $o$ , which exerts an outward pressure to keep the sides apart. The sleeve L contains a spiral slot,  $p$ , in which takes a projection or stop,  $r$ , from J. In Fig. 3 the circuit is open. On turning the key K the rod J is drawn back by its spring until  $n$  enters between the plates  $s s'$ , as seen in Fig. 4, the spring  $o$  pressing the two portions of  $n$  firmly against these plates, and the stop  $r$  in the slot  $p$  preventing the rod from turning too far. The circuit is now as follows, Figs. 1 and 4: *via* conductor 2, plates  $a' b'$ , conductor 3, and ring  $f$ , around through the lamp, which is now supposed to be screwed into the socket, to ring  $h$ , wire 4, plate  $s$ , down one side and up the other of rod J, (or through spring  $o$ ,) to plate  $s'$ , safety-catch 5, plates  $b a$ , and conductor 1. On the key K being turned in the opposite direction,  $n$  projects beyond the plates  $s s'$ , the firm pressure of  $n$  against  $s s'$  and

the consequent friction produced by the spring  $o$  tending to prevent oxidation of the parts, 55 which would otherwise ensue, and maintain a perfect contact, so that a space is left between them and the circuit broken at this point.

In using this invention the lower portion of the socket is first screwed onto the end of the 60 bracket-arm or other fixture through which the conducting-wires 1 2 pass, their ends being drawn through the aperture C D and connected to the binding-screws  $c c'$ . The part F is then set into B and clamped down securely against 65 A by screws  $e e'$ . The metal piece E is placed over F and properly secured there, and the lamp-neck is screwed in at G, the metal bands upon the neck making contact at  $f$  and  $h$ .

What I claim is—

1. A socket for electric lamps, formed of two detachable parts, each of which is provided with contact-plates for completing circuit when the parts are placed together, substantially as set forth. 70

2. In a socket for electric lamps, the combination, with the two detachable parts described, one of which is grooved on its inner face, of a safety-catch held in such groove and contact-plates electrically connected by such safety- 75 catch, substantially as described. 80

3. In a circuit-controller for electric lamps, a spring-seated rod provided with a key or handle enlarged and forked at one end, and containing a spring for holding the forked portions apart, and contact-plates, substantially 85 as set forth.

4. In a circuit-controller, the combination of a rod having a stop or projection upon its body, a sleeve, through which the rod passes, provided with a spiral slot, in which the stop or projection takes, and a spring with the sleeve forcing the rod normally beyond the sleeve and holding the circuit broken, and contact-plates, 90 substantially as set forth. 95

5. In a socket for electric lamps, the combination, with interior insulating portions provided with circuit-connections, of exterior metal portions, forming a covering therefor, substantially as set forth. 100

This specification signed and witnessed this 19th day of May, 1881.

EDWD. H. JOHNSON.

Witnesses:

A. MACDONALD,

WM. H. MEADOWCROFT.