

(No Model.)

H. LEMP.  
INCANDESCENT LAMP SOCKET.

No. 420,077.

Patented Jan. 28, 1890.

Fig. 1,

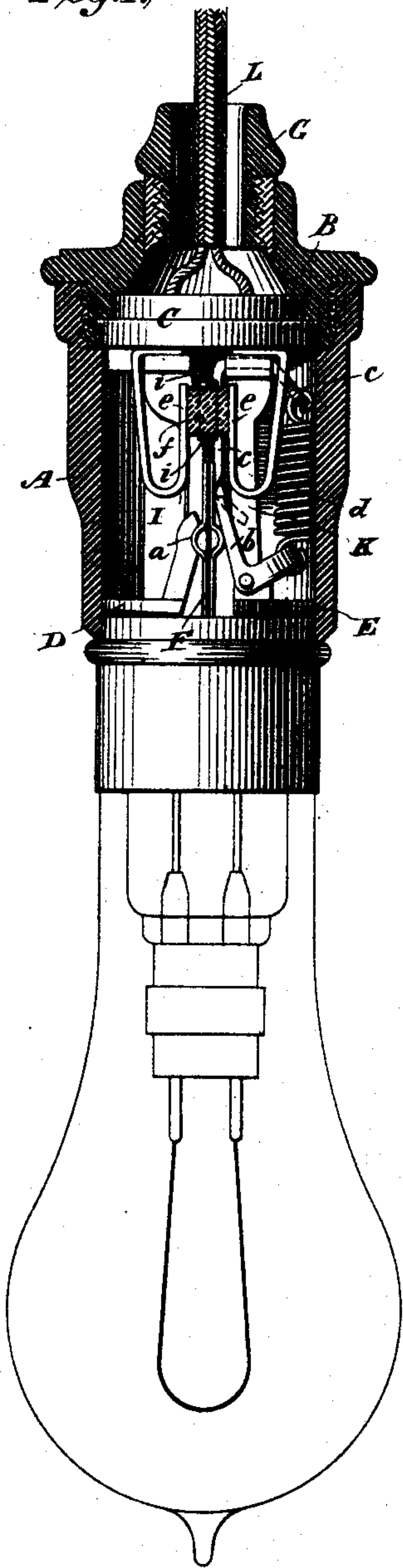


Fig. 2,

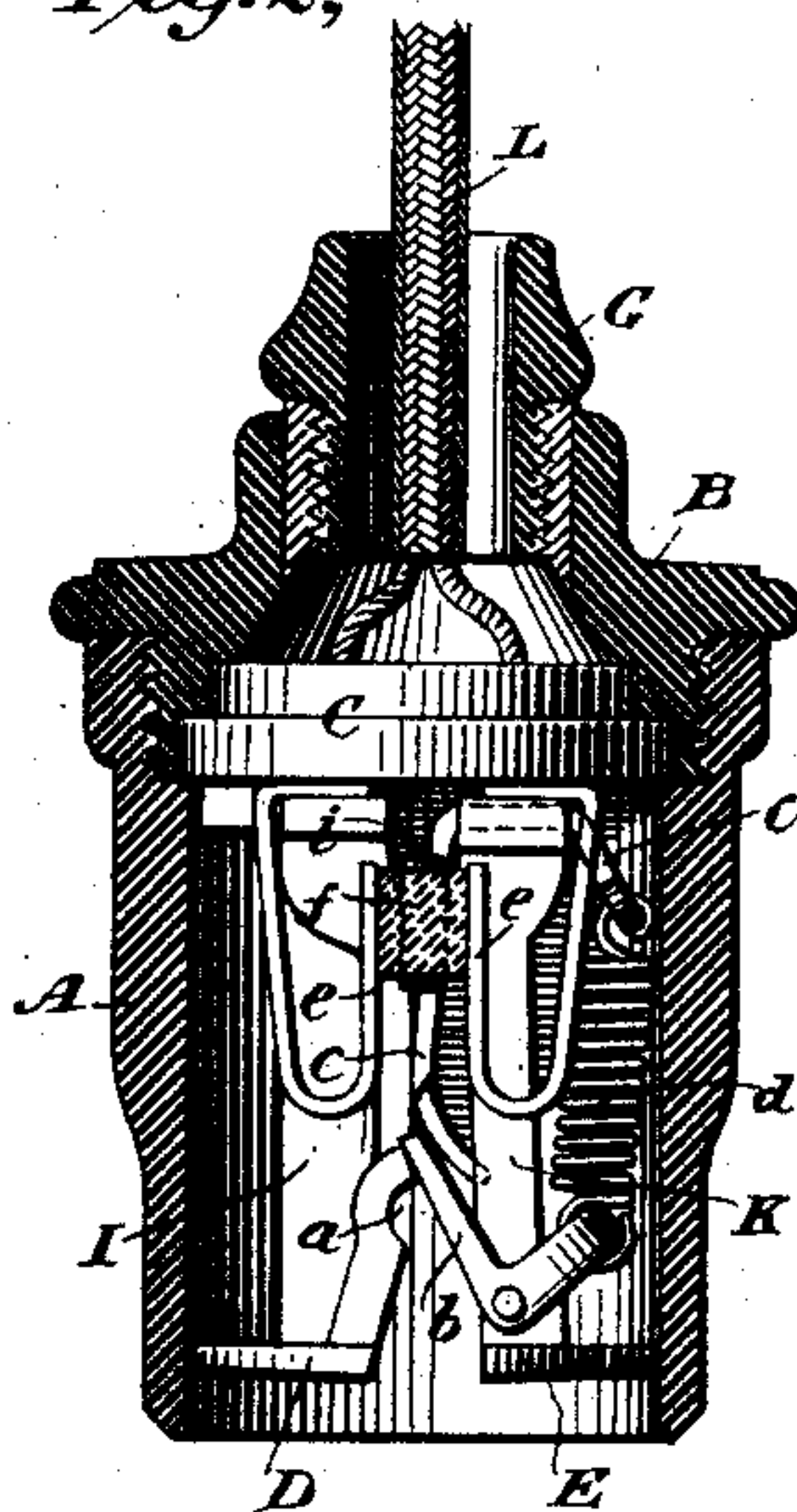


Fig. 3,

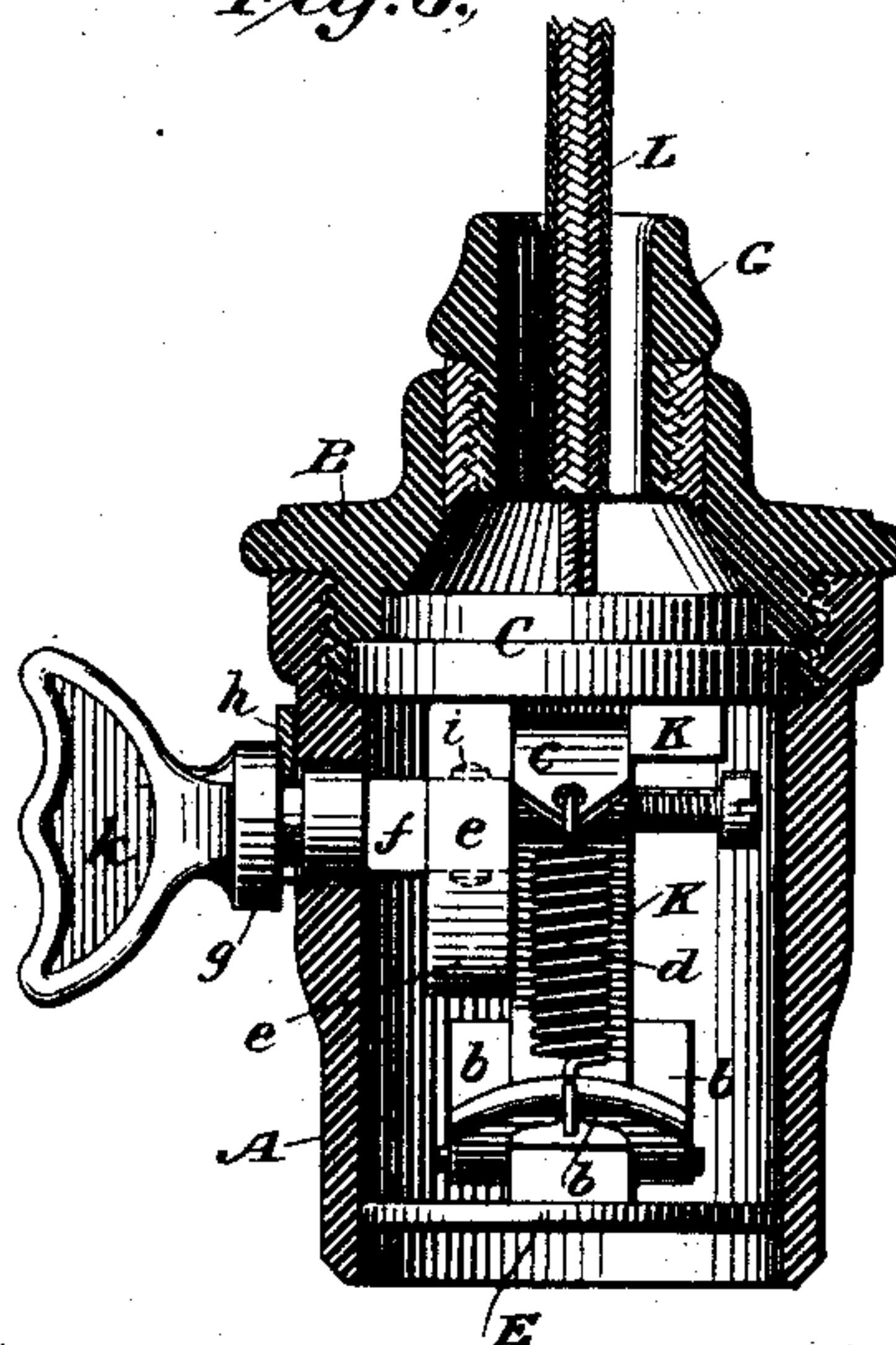
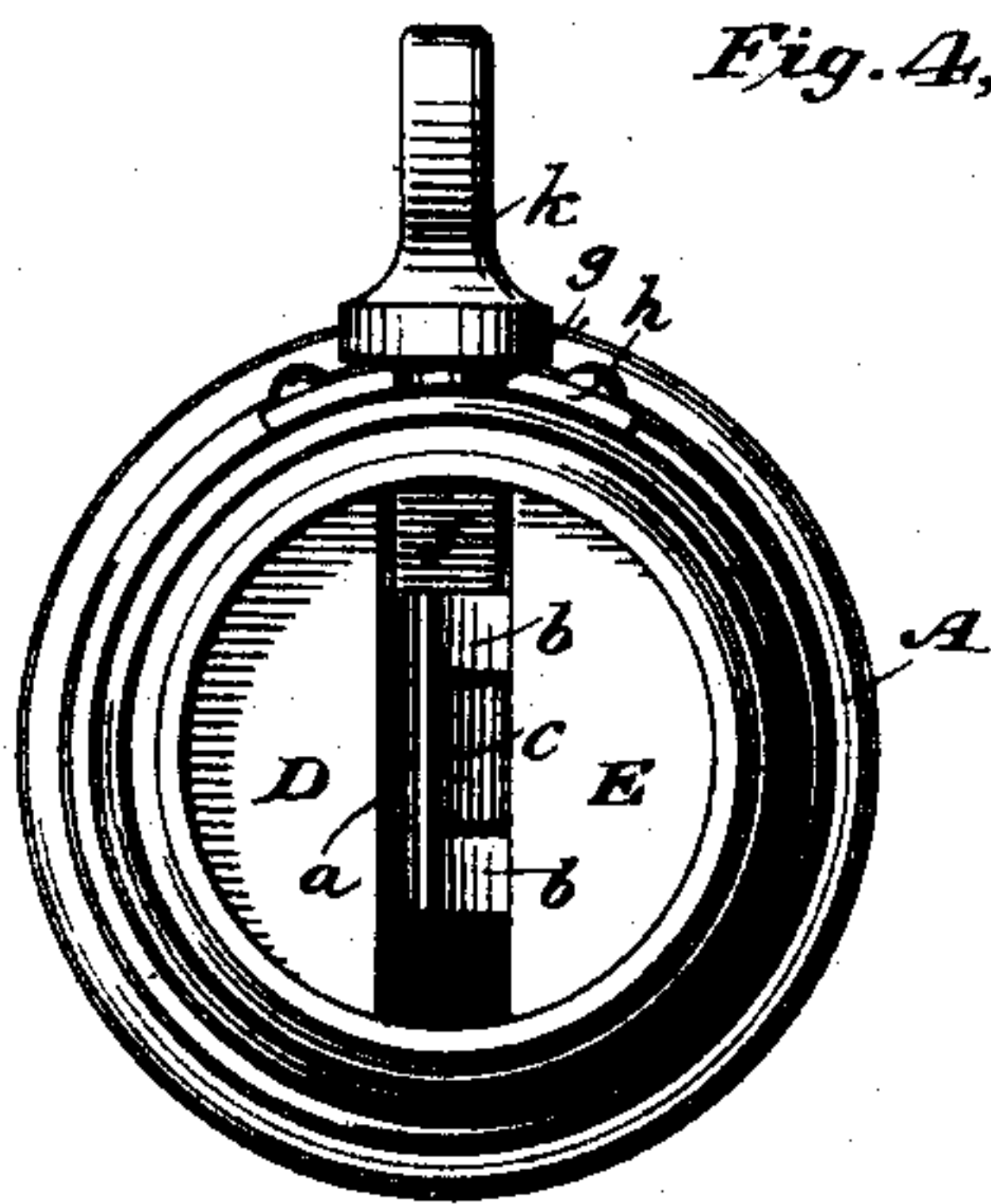


Fig. 4,



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# UNITED STATES PATENT OFFICE.

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## INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 420,077, dated January 28, 1890.

Application filed December 17, 1888. Serial No. 293,851. (No model.)

### *To all whom it may concern:*

Be it known that I, HERMANN LEMP, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Incandescent-Lamp Sockets, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention has for its object the construction of an incandescent electric-lamp socket-piece that is strong, durable, and not liable to strain the parts when the lamp is inserted therein, and also to make a socket-piece in which the lamp can be readily inserted. It is designed as an improvement on the socket-pieces shown in Letters Patent Nos. 365,159 and 365,189, both granted June 21, 1887, to Merle J. Wightman and myself.

The invention consists in details of construction and arrangement hereinafter to be described, the novel features of which will be pointed out in the claims appended hereto.

Figure 1 is an elevation of my improved socket-piece, partly sectioned, showing the lamp inserted therein; Fig. 2, the same view with the lamp removed, showing the parts in their normal position; Fig. 3, a sectional view of socket-piece, taken at right angles to the section in Fig. 2; and Fig. 4, a plan view of the bottom of the socket-piece.

The same letters indicate the same parts throughout the various figures.

A is the socket-piece, made of, preferably, some insulating material, and is provided with cap-pieces B G, which are screw-threaded, so that they can be fastened together and to the socket-piece. Upon a ledge within the socket-piece A is supported an insulating circular base C, which is held firmly down upon the same by the cap-piece B, before alluded to. This construction is the same as set forth in the patents above referred to. Upon this insulating-base is mounted two metal standards I and K, which rest upon the turned-in ends of two circuit-terminal springs *ee* at one side, holding the same in place

against the insulating-base. Between the free ends of these spring-terminals is arranged a quadrangular insulating-shank *f*, which is provided with a metallic key *k* extending from the socket-piece. The quadrangular insulating-shank has a conducting piece or pin *i* extending through it, protruding upon two opposite sides thereof. When the circuit-terminals rest upon the conducting-pin, the circuit will be completed from one to the other; but when they rest upon the sides of the insulating-shank intermediate of the pin, as shown in Figs. 1 and 2, the circuit between the two will be broken. This part of the construction is similar to the construction shown in Patent No. 365,189 above.

My arrangement for holding the lamp to the socket-piece and controlling the circuit by the withdrawal and insertion of the lamp, however, is different, and constitutes the invention in the present case. The standard I is cast with a semicircular part *a*, which is adapted to receive a corresponding bulbous expansion of the lamp-terminals. Upon the other standard K is fulcrumed or pivoted a movable lever *b*, which is held against the standard I, or the lamp-terminals, as the case may be, by a spiral spring *d*, the other end of which is fastened to a lever *c*, held between the feet of the standard K, where it is fulcrumed, and having its other end normally bearing against the standard I, normally forming a path for the current from one standard to another. The spiral spring *d*, therefore, actuates both levers *b* and *c*. One of the leading-in wires is attached to standard I and the other to standard K, after passing through the insulating-base C, which insulates the standards from one another. The lower and free ends of the standards are provided with semicircular plates D E, which are separated so as to leave a slot between them for the lamp to be inserted. (See Figs. 1, 2, and 4.) The key is held to the socket by a small plate *h*, fastened to the outside of socket in any suitable manner. This plate takes in a groove in the key formed between the metal part *k* and a collar on the insulating-bar *f*.

In the patents above referred to the standards I and K are made in the form of springs



and are not provided with the semicircular plates D and E, so that these springs, which are adapted to carry the current, and also support and hold the lamp in place, are apt to have their elasticity destroyed by an imperfect contact with the lamp-terminals when the same are being inserted or withdrawn, which would cause them to heat up. The strain also, when the lamp is inserted and withdrawn in the former construction, falls upon the insulating-base C and tends to disrupt the same. So, too, in the former construction several trials had to be made before the lamp could be inserted and the position of the spring-terminals determined. In the present construction these features are overcome. The semicircular plates D and E, which fit snugly the interior of the socket-piece A, throw any strain that is put upon the standards upon said socket-piece, and the slot between the semicircular plates permits the place the lamp is to be inserted to be readily determined. So, also, the standards I and K are made rigid and the spring action performed by the spiral spring *d* and the other objection above noted obviated.

The lamp-terminals F F are made flat, and are insulated from each other by a plate of mica or other material. These terminals are expanded into a bulb to take into the curve *a* of the standard I to hold the lamp in place. One end of the lamp filament is connected to one of these flat terminals and the other end to the remaining terminal, as in previous constructions.

Fig. 2 shows the normal position of the parts, representing the circuit as completed between the standards by the lever *b*, as well as by the lever *c*, a little above it. When the lamp is inserted, the circuit is first cut off between lever *b* and standard I. A further insertion of the lamp intercepts the current between lever *c* and standard I and causes the same to flow through the lamp terminals and filament. When the lamp is withdrawn, the circuit is established between lever *c* and standard I before it is broken with the lamp, lever *b*, and standard I, so that sparking, as in the previous patents, is prevented. The lever *b* holds the lamp in place when inserted, forcing the bulb in the curve *a* of standard I.

The above construction is strong and simple.

Having now fully described my invention, I wish to have it understood that I do not limit myself to the exact construction described, as the same may be varied without departing from the spirit of my invention.

What I desire to claim and secure as new by Letters Patent of the United States is—

1. A standard or member constituting a contact and a pair of spring-acted levers suitably fulcrumed and adapted to make contact with the said standard or member at different points thereof, whereby a contact device may be entered between said standard and levers and the contacts between the latter

successively broken in such entry and also successively made between such parts upon withdrawal of said contact device, for the purpose set forth.

2. In an incandescent-lamp socket-piece, the combination of an insulating-base mounted in the interior of the same, two independent rigid standards I and K, sustained thereby, two movable levers *b* and *c*, carried by one of the same and normally completing the circuit between them, with a spring for actuating said levers, substantially as described.

3. In an incandescent-lamp socket-piece, two standards arranged within the socket-piece and carrying the lamp-supporting devices and provided with flanges, substantially as D E, fitting the interior of the socket, with a slot between them for receiving the lamp-terminals.

4. An incandescent-lamp socket-piece provided with semicircular plates, substantially as D E, covering in the bottom thereof, with a slot between for the reception of the lamp-terminals, substantially as and for the purpose described.

5. An incandescent-lamp socket-piece consisting of two standards mounted in the interior thereof, provided with semicircular plates fitting the same, with a slot between them, for the purpose described, two levers, one above the other, swiveled to one of said standards, with a spiral spring between, causing them to normally bear upon the other standard to complete the circuit, the said levers and standards being adapted to hold the lamp in place when inserted and govern the circuit.

6. The combination, with a lamp-socket A, having a base-plate C set therein, of the standards I and K, secured by one end to the base C, and provided at the other end with arc-shaped flanges D and E, respectively, having their curved edges adapted to fit the interior of the socket and their straight edges adapted to lie a suitable distance apart to form a slot between them for receiving the lamp-terminals and acting to firmly hold the said standards in position, a pair of contact-levers *b c*, suitably fulcrumed and provided with a spring—such as *d*—the said levers *b c* being in electric communication with standard K and adapted to make contact with the standard I at two points thereof, whereby a contact device may be entered between the standard I and the contact-levers *b* and *c*, respectively, in succession and withdrawn therefrom, so as to break contact in succession, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal, this 2d day of September, 1887, in the presence of the two subscribing witnesses.

HERMANN LEMP. [L. S.]

Witnesses:

MERLE J. WIGHTMAN,  
WM. E. SHEPARD.