

No. 803,423.

PATENTED OCT. 31, 1905.

N. MARSHALL.
ELECTRIC LAMP SOCKET.
APPLICATION FILED DEC. 24, 1900.

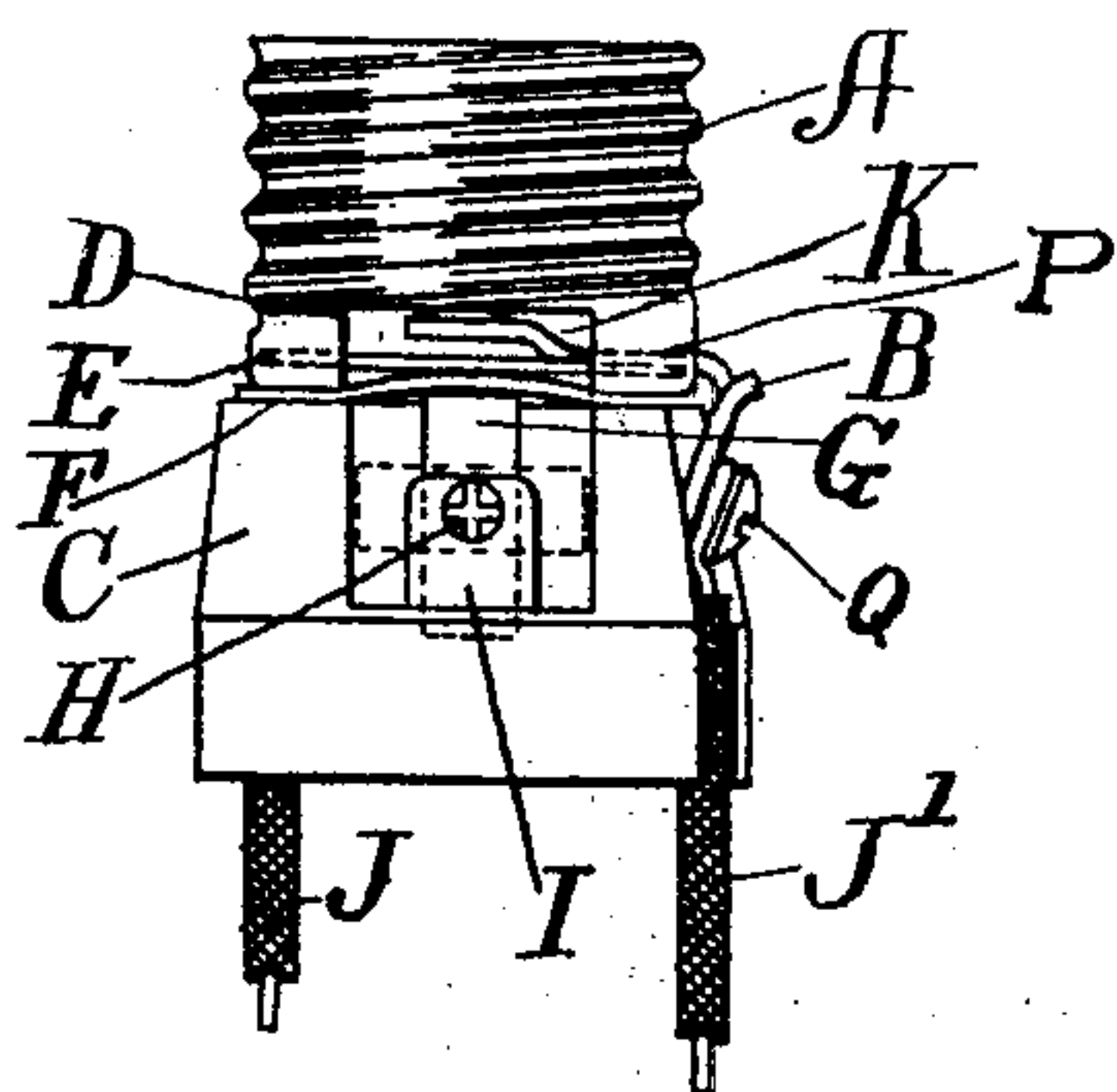


FIG. 1.

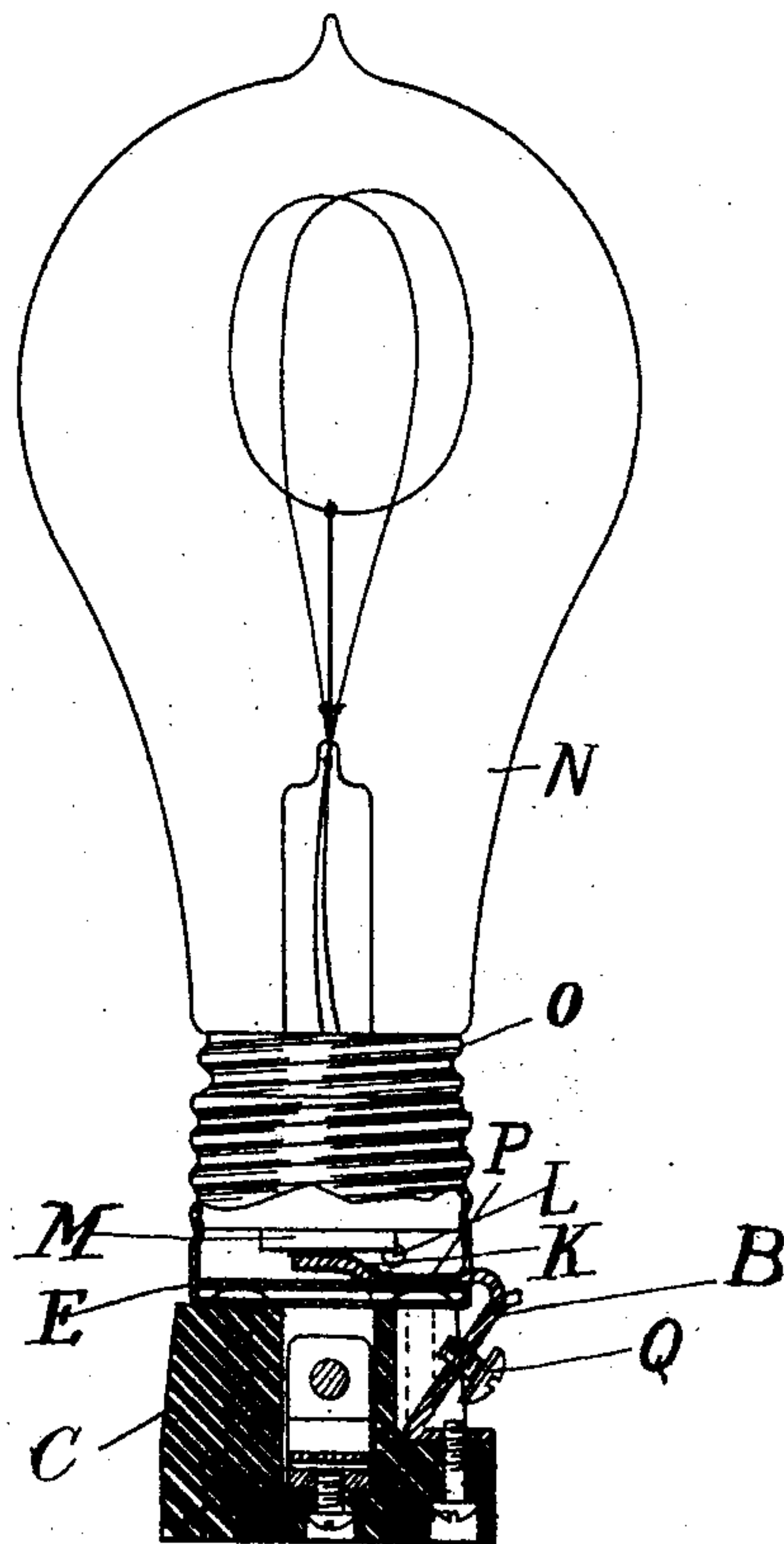


FIG. 4.

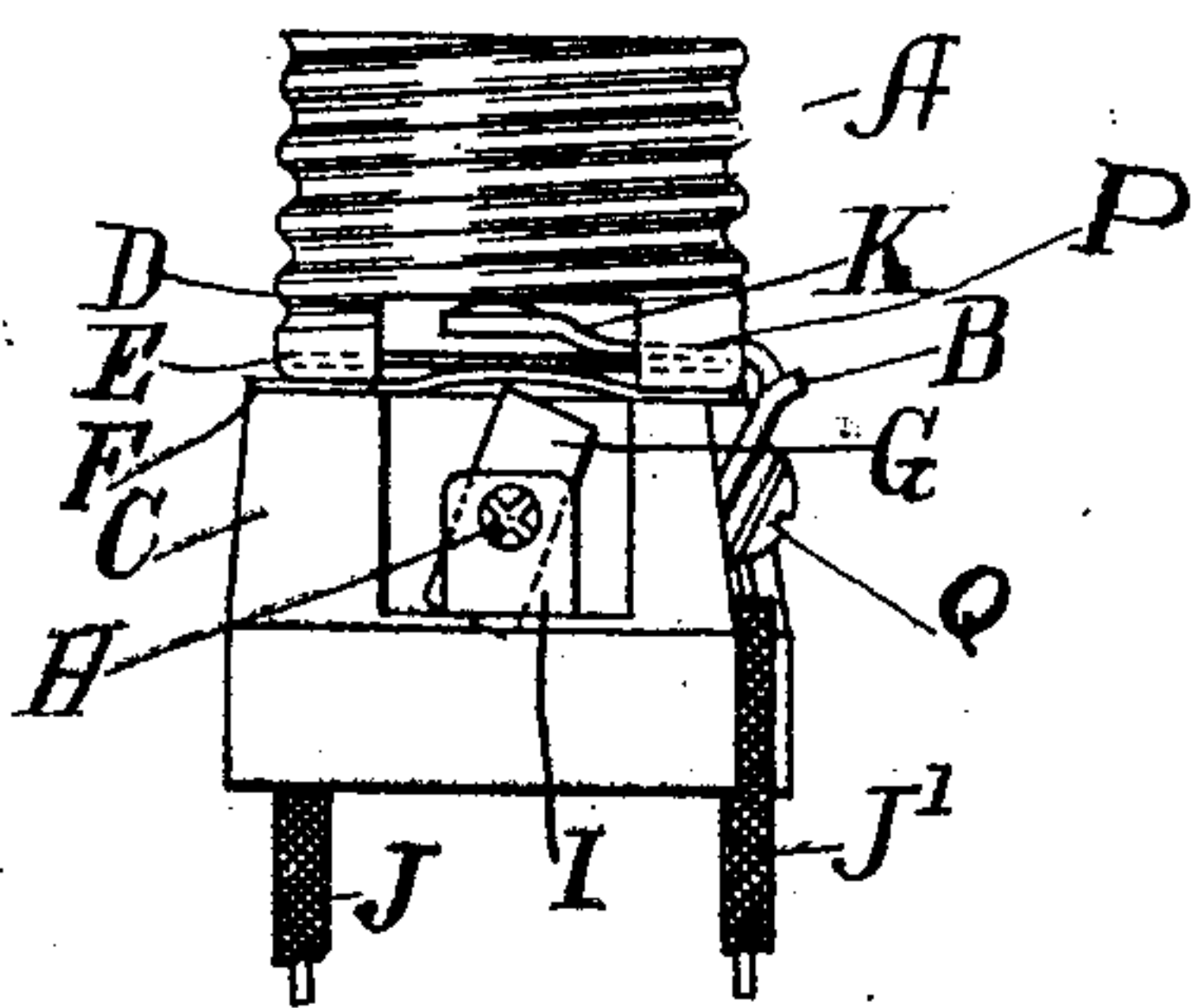


FIG. 2.

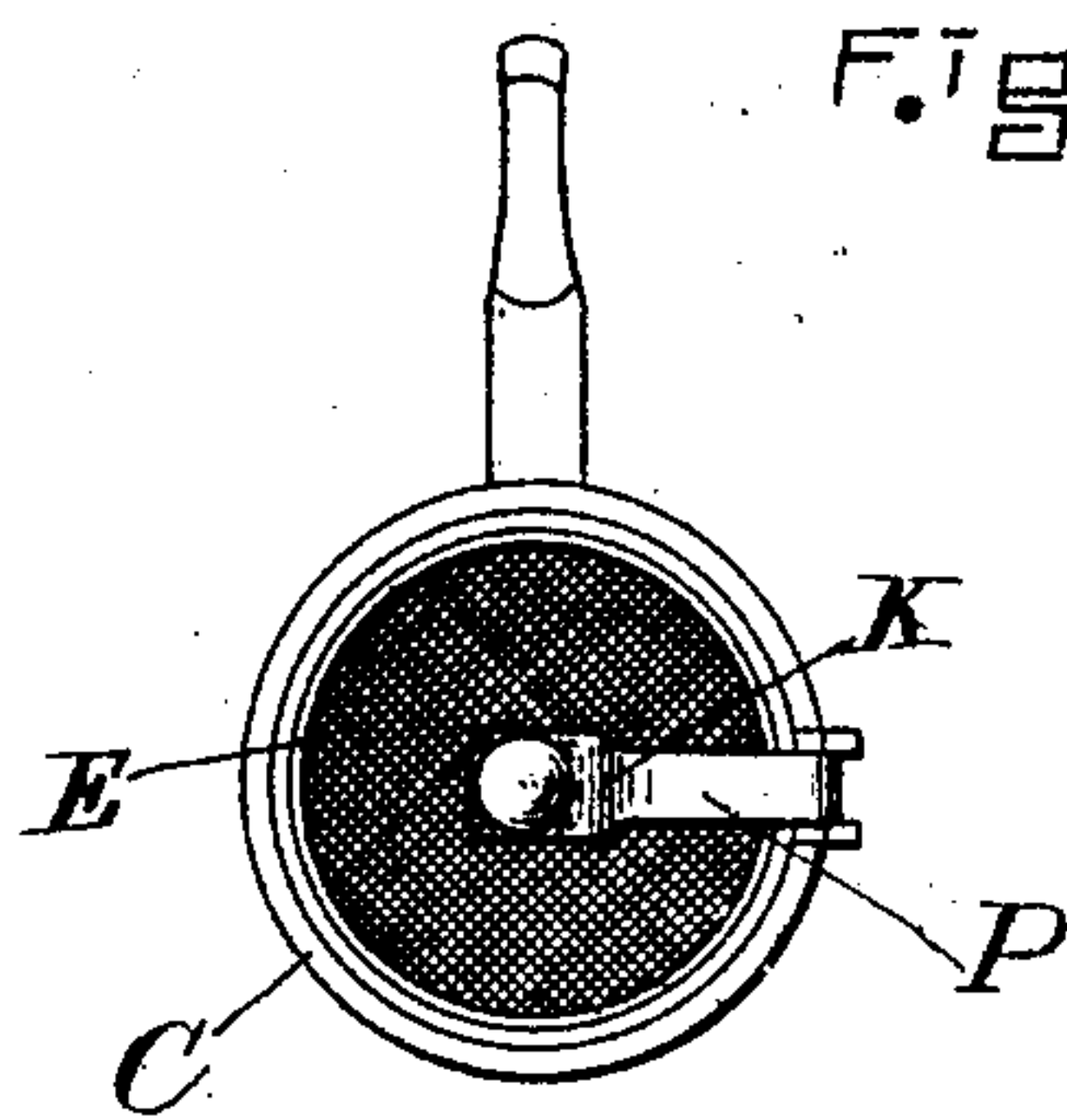


FIG. 3.

WITNESSES.

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ELECTRIC-LAMP SOCKET.

No. 803,423.

Specification of Letters Patent.

Patented Oct. 31, 1905.

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To all whom it may concern:

Be it known that I, NORMAN MARSHALL, a citizen of the United States, residing at Newton, in the county of Middlesex, State of Massachusetts, have invented a new and useful Improvement in Electric-Lamp Sockets, of which the following is a specification.

My invention relates to incandescent-lamp sockets, and certain features relate more especially to means for making an electrical contact whereby a more efficient and durable contact is provided in the circuit-breaking mechanism.

It has been customary heretofore to so construct electric-lamp sockets having a contact maker and breaker that the contact-maker makes a rubbing contact with the flange of the brass lamp-retaining sleeve which forms the conductor for making contact with the lamp-terminal when the lamp is in the socket. This rubbing contact between the contact-maker and the conductor bends the flange of the conductor and after a short time produces a permanent set or bend therein, which renders the contact imperfect and inefficient. In a socket embodying the present invention this defect is overcome by providing a yielding conductor with which the contact-maker engages and which allows the contact-maker to establish electrical connection with the lamp-retainer and then move farther in the direction of said retainer. This yielding conductor is preferably in the form of a spring which is secured between the lamp-retaining sleeve and the insulating base or support of the socket. I also prefer to form the conductor with which the contact-maker engages of a different metal from that of which the lamp-retaining sleeve and the contact-maker are made, such as bronze, as by the employment of a strip of different metal for this purpose a more satisfactory and efficient rubbing contact is produced.

The invention also includes certain other features more especially relating to sockets for use in connection with the Edison form of lamp-base, which will be more particularly referred to hereinafter.

In the drawings, in which I have shown a form of socket adapted to Edison lamps embodying all the features of invention, Figure 1 is a side elevation of the socket with the shell removed. Fig. 2 is a similar view with

the contact-maker in a different position. Fig. 3 is a plan view of Fig. 1. Fig. 4 is a partial sectional view with a lamp inserted.

As is usual in the type of sockets shown, the brass lamp-retaining sleeve A is supported upon an insulating base or support C, which also supports frame I, in which the contact-making tip G is mounted. As sockets of this character have heretofore been constructed the tip or contact-maker contacts directly on the lower side of the flange of the screw-shell, and after a short use the flange becomes bent, so that the tip fails to connect in its position of rest. In the socket shown a spring F, preferably of bronze, is interposed between the support C and the screw-threaded shell A, which forms the conductor for making contact with one of the lamp-terminals, the shell being cut away at D, so that said spring may yield when engaged by the tip G and allow said tip to move toward the shell or conductor after making electrical connection therewith. By the use of a bronze contact a more satisfactory rubbing contact is effected, and by making the contact in the form of a spring it can be made of heavier metal than that of which it would be possible to construct the screw-shell and by reason of its flexibility will not fail to contact with the tip after long use.

The contact maker and breaker G is mounted on the shaft H, on the end of which is the usual handle for making and breaking the circuit. When the tip G is turned from the dotted-line position, Fig. 1, the corner of the tip makes yielding contact with the conductor A through the spring F, the spring yielding as the tip continues to move toward the conductor A to accommodate such motion.

In sockets of the type shown it is desirable to have a flexible or yielding central contact, and for this reason it has been customary to make the contact-arm B of thin metal, so that it will bend down or yield when engaged by the contact on the lamp-base without breaking the porcelain support C. This metal is not thick enough, however, to give a strong thread for the binding-screw Q, which secures the line-wire to the contact B. I overcome this difficulty by making the contact B of thicker metal, which will give a strong and satisfactory thread for the binding-screw and swaging it at the point P to about one-half its

original thickness, so that an efficient spring-contact will be provided which will yield and will not break the porcelain.

On the Edison type of lamps there is a little bunch of solder where the filament-wire is fastened to the central lamp-terminal. As sockets for this type of lamps have been constructed heretofore the tongue or arm K of the contact B has been made straight, so that when the lamp was screwed into the socket it often happened with the common construction of such lamps that the bunch of solder L, with its attached filament-wire, was scraped off, destroying the connection of the lamp. This objection to the former construction I obviate by curving the tongue or arm K upward at the end out of the plane of the body of the arm, so that the solder bunch will clear the arm when the central contacts are in engagement. I also prefer to make the surface where it bears against the lamp-button spherical in order to more surely make a good and certain contact.

In the former construction the arm of the contact B was sometimes carried down when the lamp entered the socket too far, so that there was insufficient separation between the central contact and the flange of shell A, resulting in a short circuit, the destruction of the socket, and danger of fire. This objection to the former construction I have obviated by inserting a disk E, of fiber, mica, or other suitable insulating material, under the tongue of the contact B and over the flange of the shell A and the spring F. This disk also serves to hold the outer contact-shell from pulling away from the body C.

What I claim, and desire to secure by Letters Patent, is—

1. In an electric-lamp socket, the combination of an insulating-body bearing an outer screw-shell contact, with a central contact-arm bearing a wire binding-screw screw-threaded therein and having an intermediate swaged portion of reduced thickness to form a spring, substantially as shown and described.

2. In an electric-lamp socket, the combination of an insulating-body, a screw-shell contact mounted upon one end of said body, and a central contact-arm having one end extending within said shell-contact above the end of the body and provided with an intermediate portion of reduced thickness to form a spring.

3. In an electric-lamp socket, the combination of an insulating-body, an outer screw-shell contact provided at one end with an inverted flange secured to said body and at one side with an opening, an inner contact-arm secured to said body and extending through the opening in the shell-contact, and an insulating-disk supported outside said flange and beneath said inner contact.

4. In an electric-lamp socket, the combination of an insulating-body, a flanged screw-shell contact mounted upon one end of said body, a central spring-contact arm having one end extending within said shell-contact and overlying the end of said body, and an imperforate disk of insulating material held against the flange of said shell-contact by said central contact-arm.

5. In an electric-lamp socket, the combination of an insulating-body, an outer screw-shell contact having a portion of its flange and circumference cut away, a flat spring in the position of the cut-away flange, adapted to make contact upon the tip of the socket-key, substantially as shown and described and for the purpose specified.

6. In an electric-lamp socket having an insulating-body the combination of an outer shell-contact, having a portion of its flange cut away, a spring in the position of the cut-away portion of its flange adapted to make contact on the tip of the socket-key, a central contact with binding-screw attached, an insulating washer or disk filling the lower part of the shell, and separating the central contact-arm from the flange of the outer shell-contact and contact-spring, substantially as shown and described and for the purpose specified.

7. In a socket for an electric lamp, the combination with an insulating-support, of a screw-threaded conducting-sleeve having a flange by which it is secured to said support, said sleeve being adapted to receive a screw-threaded lamp-base, a contact-maker mounted within said support, and means whereby said contact-maker can move toward said sleeve after it has established electrical communication with said sleeve.

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Witnesses:

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