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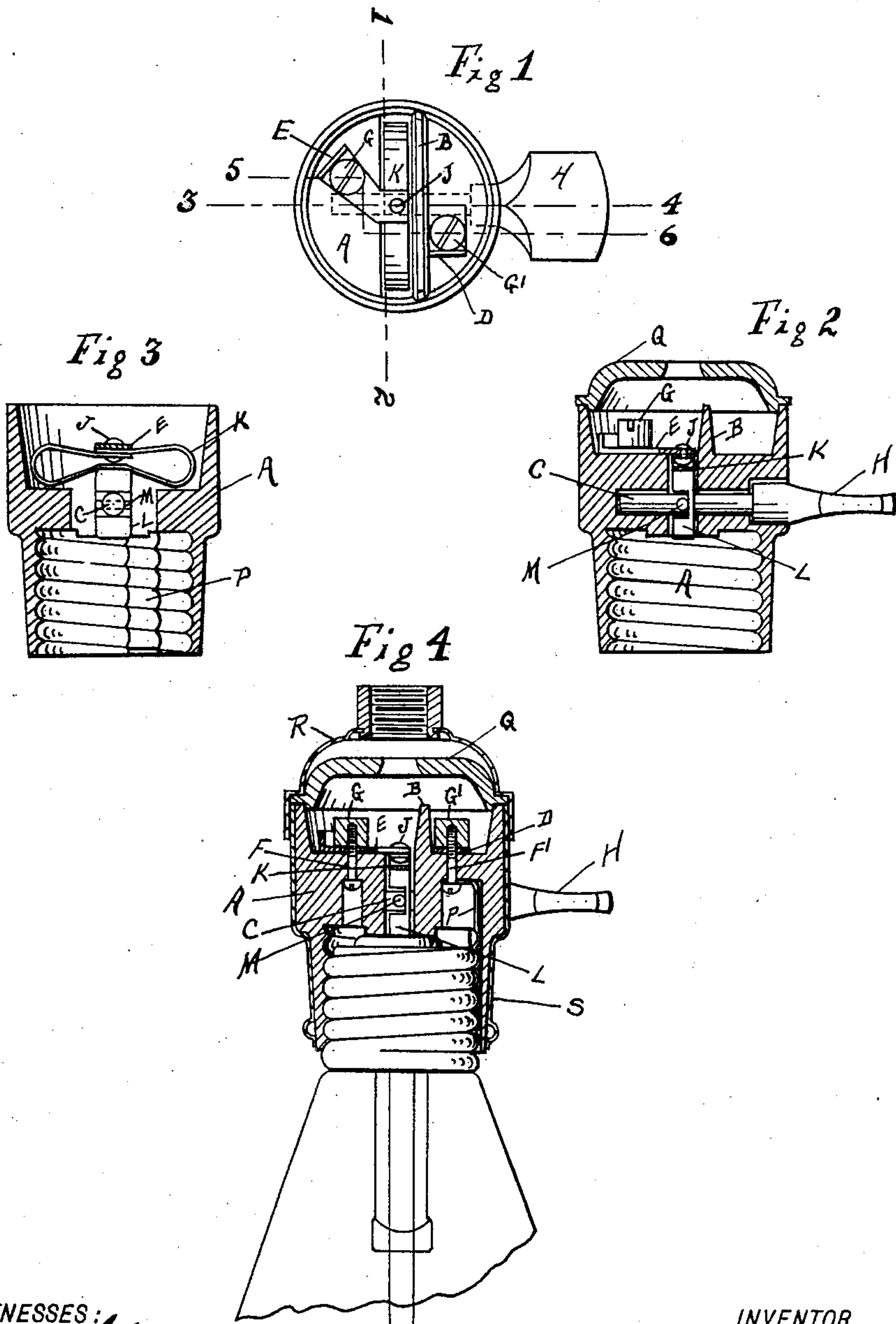
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G. B. PAINTER.

SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

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NO MODEL.



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UNITED STATES PATENT OFFICE.

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SOCKET FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 771,569, dated October 4, 1904.

Application filed October 9, 1899. Renewed September 22, 1900. Serial No. 30,852. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. PAINTER, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented a new and useful Improvement in Sockets for Incandescent Electric Lamps, of which the following is a specification.

This invention relates to lamp-sockets, and a socket constructed according to the invention possesses the advantages of simplicity and cheapness in construction, of perfectly insulated parts, and a reliable and safe spring-actuated switch. All the conducting parts are secured in place mechanically, so that they can be readily assembled and detached and are but few in number, the necessarily complicated parts of the socket being embodied in the insulating-base, the structure of which is such that it can be easily molded separately in one piece. The conducting parts are all insulated from each other and from the exterior of the inclosing shell by portions of the base designed for this purpose.

Of the drawings, Figure 1 is a plan of the top of the socket, the insulating-cover being removed. Fig. 2 is a vertical section taken on the line 3 4 of Fig. 1, the insulating-cover Q being shown in place. Fig. 3 is a vertical section taken on the line 1 2 of Fig. 1; and Fig. 4 is a vertical section taken on the line 5 6 of Fig. 1, showing also the extra metallic strengthening-shield.

The main portion of the socket—that is to say, the base—is shown at A and is composed of a suitable insulating material, preferably porcelain. This insulating-base is made in one piece, its structure being adapted to receive and retain the base of a lamp, to receive the contacts and conducting parts, the switch-key, and the extra metallic shield.

In looking down upon the top of the socket, as shown in Fig. 1, with the cover removed, the structure of the insulating-base with the terminals for the circuit-wires can be seen. These terminals are suitably secured in a depression in the top of the base, which is in-

closed by the external flange or rim. Binding-screws G and G' for securing the ends of the circuit-wires in good contact with the terminals are shown mounted in suitable relation with respect to the terminals E and D. Extending diametrically across the depression in the top of the insulating-base is a narrow chamber in which the spring K fits, the latter being secured and electrically connected to the terminal E by the rivet J. The right-hand wall B of this chamber is continued upward to a height substantially flush with the edge of the annular rim in order to form an insulating barrier or wall between the terminals E and D. The handle or key H is the means by which the socket-switch is actuated, and is formed of suitable insulating material, such as hard rubber.

Referring to Fig. 2, which is a vertical section along the line 3 4 of Fig. 1, one observes that the cover Q, which is of insulating material similar to that of which the base is composed, is mounted and placed on the base, a hole being formed in the center to permit the passage of the circuit-wires therethrough to engage beneath the binding-screws G G'. The spring K is here shown secured by the rivet J to the terminal E and extending down into the top of the narrow chamber in the insulating-base. The continuation B of the right-hand wall of the chamber is also shown, so it can be seen how completely it divides the cup-shaped depression in the top of the base into two parts in order that the terminals D and E may be perfectly insulated from each other. Transverse holes are formed in opposite walls of the narrow central chamber in the base, and mounted in these holes is the switch-actuating spindle C. The key H is rigidly secured to the spindle C, and the inner end of the key is supported in an enlarged portion of the hole in the exterior of the base. A switch-piece or cam L is located in the narrow chamber in the base and is mounted on the spindle C, the shape of the narrow chamber being determined by that of the switch-piece. The latter is loosely mounted on the spindle and is formed with a groove in which

freely plays a pin M, which is driven transversely through the spindle C. The narrow chamber in the base opens into the lower end thereof, and, as shown in Figs. 2 and 3, this opening is rectangular in shape, being only large enough to permit free movement there-through of the cam L.

In Fig. 3, which is a vertical section along the line 1 2 of Fig. 1, the elliptical spring K is shown in side elevation, being secured by the rivet J to the terminal E, as seen in Fig. 2, and extending into the narrow chamber below the floor of the depression in the top of the base. In Fig. 3 this floor is not seen, as the eye is directed toward the entire wall B of the narrow chamber shown in Figs. 1 and 2. The height of the floor can be judged in Fig. 3, however, since the terminal E rests directly on this floor. In both Figs. 2 and 3 the cam L is shown in its vertical or operative position, its lower portion extending out through the lower opening of the narrow chamber and its upper end engaging with and completing the circuit through the spring K. In this position, as shown in Fig. 4, the lower portion of the cam L is adapted to engage with the center contact of a lamp-base which is held in the lower portion of the insulating-base. For the purpose of holding the lamp-base in position an annular projection is formed on the lower end of the insulating-base with integral interior screw-threads, with which the threaded contact-sleeve of the lamp-base is adapted to engage.

As shown at the right-hand portion of Fig. 4, a vertical groove is formed on the interior screw-threaded portion of the projection, and in this groove extends a spring-contact P, which tends to move out of the groove beyond the screw-threaded portion thereof, and hence to press tightly against the threaded contact-sleeve of the lamp-base when the latter is screwed into position. This contact P is secured in place by a conducting-screw F', which is in turn held in place by the binding-nut G'. The binding-nut G in the other compartment of the top of the insulating-base is held in position by a screw F, which is sufficiently separated from the lower cavity of the base formed by the annular projection, the intervening space being filled with a suitable insulating material, such as pitch or its equivalent. This insulation also anchors the screw F, so that the nut G can be readily screwed and unscrewed. With the parts in position as shown in Fig. 4 the current flows through a circuit-wire secured under one binding-screw G, through the terminal E, spring J, and cam L to the center contact of the lamp-base, thence through the lamp-filament and out through the threaded sleeve on the lamp-base, the contact P, conducting-screw F', terminal D to the other circuit-wire, which is held against the terminal by the binding-screw G'.

If the insulating-base be made with its walls of sufficient thickness, it may be used substantially as shown in Fig. 2 with no reinforcing-shield; but if constructed with walls as thin as those shown in the drawings it is desirable to inclose the entire base and cover by a metallic strengthening-shield, such as that shown in Fig. 4, which comprises the shell S and the metallic cap R. In such case the insulating-cover Q is forced into the metallic cap R, the intention being that these parts shall never thereafter be separated.

As seen in Fig. 4, the horizontal flange of the cover expands the spring metal of the cap, so that the cover is held firmly in position in the cap. Likewise the shell S is forced over the base A, so that they are as one piece, there being no necessity for separating them after they are once secured together. The insulating-cover Q is formed with two flanges, one of which engages the top of the annular rim of the base and the other of which engages the side of this rim. The former flange provides a shoulder, upon which rests a shoulder of the metallic cap R. The base A, with its rigidly-attached shell S, and the insulating-cover Q, with its rigidly-attached metallic cap R, are secured in their proper relative positions by any suitable well-known means which will permit the ready removal of the cap and cover when it is desired to manipulate the binding-screws. Any desired equivalent means may be used for holding the cover Q in place if the metallic cover R is dispensed with. Since the base and cover are made of porcelain, it is not practicable to secure them together by screw-threads, and hence it is necessary to resort to some such means as is described.

I claim—

1. In an incandescent-lamp socket, the combination of the porcelain base A having the barrier B at one end, the metal shield S reinforcing said base, the key-shaft C journaled in said base and provided with the thumb-piece H and the cam L, the pin M, the terminals D and E secured to said base by the screws F and F' and the binding-nuts G and G', the cam-spring K carried by said terminal E, the contact-spring P carried by the screw F', the metal cover R and the porcelain cap Q fastened inside said cover and forming a permanent part thereof.

2. In an incandescent-lamp socket, the combination of the porcelain base A having at one end the barrier B and at the other end internal screw-threads for engaging the lamp-base, the metal shell S reinforcing said base, the shaft C extending into said base and provided with the insulating thumb-piece H, the pin M and the loosely-mounted grooved cam L, the terminals D and E located on opposite sides of said barrier and held in place by screws F and F' and nuts G and G', the cam-spring K carried by the terminal E, the con-

tact-spring P carried by the screw F', the metal cover R and the porcelain cap Q fastened inside said cover and forming a permanent part thereof.

5 3. In an incandescent-lamp socket, the combination of the base A of insulating material having at one end the barrier B and at the other end an internal screw-thread for engaging the lamp-base, the metal shell S fitting the outside of said base so as to form an integral part therewith, the key-shaft C loosely jour-
10 naled in said base and provided with the pin M and the loosely-mounted grooved cam L, the terminals D and E located on opposite
15 sides of said barrier and held in place by the screws F and F' and the nuts G and G', the cam-spring K carried by the contact E, the contact-spring P carried by the screw F', the insulating-cap Q and the metal cover R fas-
20 tened to said cap so as to form a permanent part therewith.

4. An insulating-base for a lamp-socket, which comprises a main portion, provided with a narrow chamber having a rectangular
25 opening into the center of one end of the main portion, an annular projection having integral interior screw-threads and formed on the same end of the base, in combination with a switch-piece mounted in the chamber and adapted to
30 move through the rectangular opening to engage with the center contact of a lamp-base, and a line-terminal carried by said insulating-base.

5. In a lamp-socket, the combination with
35 an insulating-base formed with a narrow chamber opening into an end of the base, and with holes in opposite walls of the chamber, an actuating-spindle mounted in said holes, a switch-piece loosely mounted on the spindle,

and a spring fitting in the chamber and adapted to be engaged by the switch-piece. 40

6. In a lamp-socket, the combination with an insulating-base formed with a narrow chamber opening into both ends of the base, and with transverse holes in opposite walls of the
45 chamber, of an actuating-spindle journaled in the holes, a switch-piece loosely mounted on the spindle, a terminal for a circuit-wire secured on the end of the base, and a spring secured and electrically connected to said ter-
50 minal and fitting in the chamber, to be engaged by the switch-piece when the latter is moved by the spindle.

7. A lamp-socket base, which is molded in a single piece of insulating material and
55 formed on one end with an annular projection having integral interior screw-threads, on the other end with a depression divided into two compartments by an integral barrier, and with a narrow chamber connecting the cavity
60 formed by the projection with one of the compartments in the other end.

8. In a lamp-socket, the combination with an insulating-base adapted to receive a lamp-
65 base in one end, and formed with a narrow chamber through the body portion, of terminals mounted on the other end of the base, one on each side of the chamber, a spring secured to one terminal and fitting in the chamber, and an actuating-spindle on which the switch-
70 piece is mounted, which forces the switch-piece into contact with the spring and out through the chamber, to engage with the center contact of a lamp-base.

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Witnesses:

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