

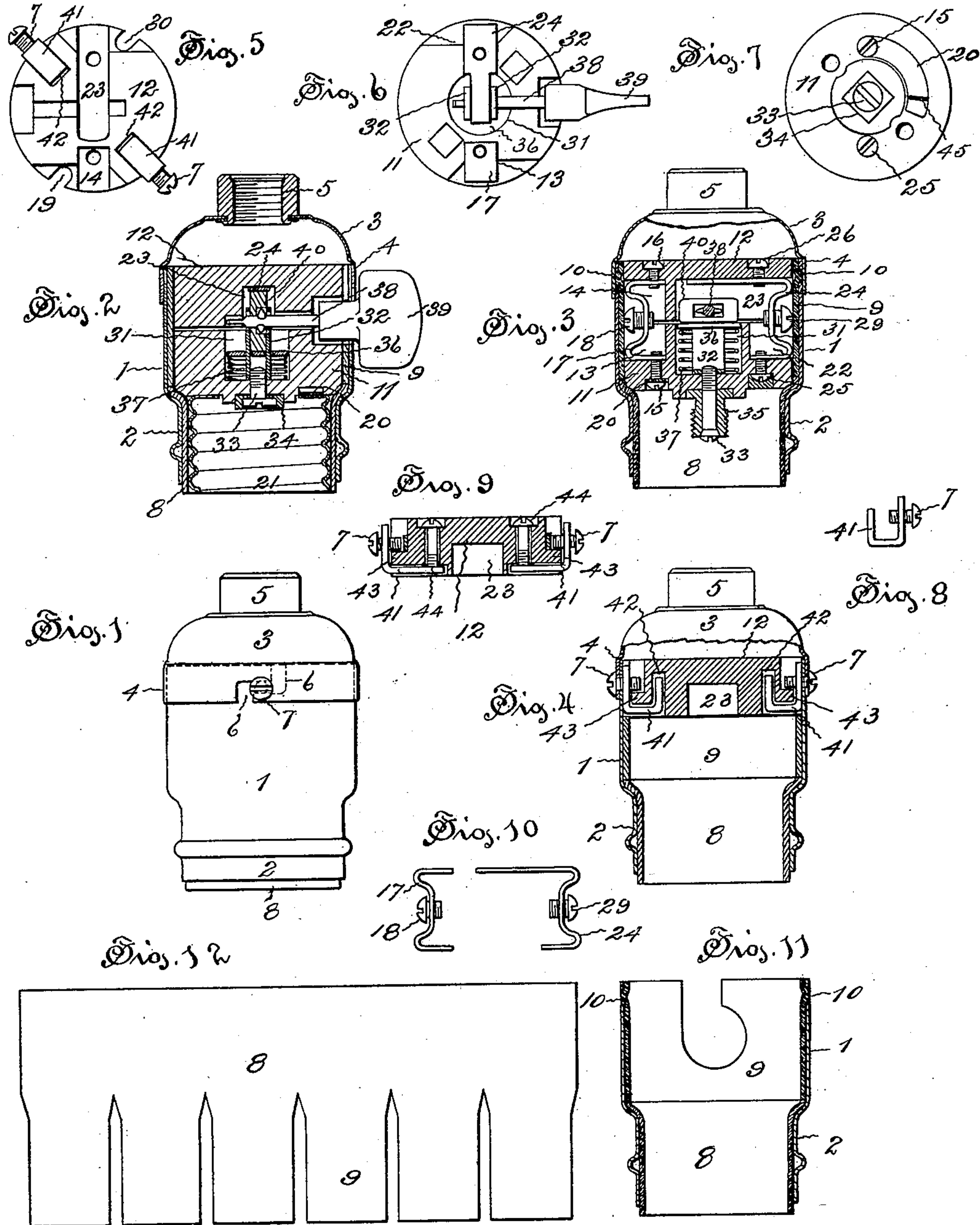
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C. G. PERKINS.
INCANDESCENT LAMP SOCKET.

(Application filed Feb. 13, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 626,927, dated June 13, 1899.

Application filed February 13, 1899. Serial No. 705,430. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. PERKINS, 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 a specification.

This invention relates to a receptacle for incandescent lamps having a switch mechanism inclosed in a chamber that is insulated from the shell and from the chamber containing the parts forming the other side of the circuit through the socket.

The object of this invention is the production of a key-socket of this nature that will be simple to manufacture and assemble, exceedingly easy to wire, and very durable, efficient, and safe in use, the parts being so arranged that without interfering with the operating mechanisms by a substitution of interchangeable connections the same socket may be employed for lamps having either the Edison, Westinghouse, or Thomson-Houston type of base.

The sockets illustrated by the accompanying drawings have caps and shells of ordinary design. These are lined with insulating material and contain two insulating-blocks with recesses that when the blocks are put together form two separated chambers, one for the switch mechanism and binding-post for the attachment of a circuit-wire and the other for the binding-post for the attachment of the other circuit-wire, so that a spark caused by opening the switch cannot communicate with the other side of the circuit, and if the wiring is carelessly done a short circuit cannot be formed. The means that secure the cap and shell together are loosely connected with one of the blocks, so that the insulating material need not be formed to exact size. One of the insulating-blocks bears a spring-contact that will engage the end of an Edison threaded bushing or the end of a Westinghouse spring-finger thimble or a ring on a Thomson-Houston lamp-base, and this block also is provided with a central contact that may be a plate for contact with the end of an Edison type lamp-base or fingers for the stem of

a Westinghouse lamp-base or a threaded stem for the end of a Thomson-Houston base.

Figure 1 of the drawings shows a side view of a socket embodying the invention. Fig. 2 shows a central section of this socket arranged for an Edison type of lamp-base. Fig. 3 is a central section taken at right angles to the section shown in Fig. 2, with the threaded bushing removed and a threaded stem substituted for the central plate. Fig. 4 is a section taken on a different plane from those of Figs. 2 and 3 to show the manner of securing the cap and shell. Fig. 5 is a view looking at the bottom of the upper insulating-block. Fig. 6 is a view looking at the top of the lower insulating-block. Fig. 7 is a view looking at the bottom of the lower insulating-block. Fig. 8 is a view of one of the parts employed for securing the cap and shell together. Fig. 9 is a section of the upper insulating-block, showing a modified form of holding means. Fig. 10 shows views of the binding-posts used. Fig. 11 is a central section of the shell and insulated lining, showing the manner of securing them together. Fig. 12 shows a shape of insulated lining that may be used.

The shell 1 is formed with a reduced neck 2, and the cap 3 has a rim 4, that fits upon the upper edge of the shell, and also has a hub 5, through which the circuit-wires pass. Both the shell and the cap, which are preferably made of brass, have bayonet-slots 6 for the passage of the shanks of the fastening-screws 7, Fig. 1. The shell is lined with insulating material. This lining may be formed in two parts, the smaller part 8 with an enlarged end, so that it cannot be forced through the neck of the shell, being retained by the larger part 9, which is held by pressing portions 10 outwardly through perforations in the shell, Fig. 11. This lining may, however, be formed from a single sheet of insulating material, cut as shown in Fig. 12, which can be shaped into a cylinder having two different diameters. In the shell and resting upon the insulation at the shoulder between the body and the neck is a block 11 of insulating material, and between this block and the shoulder between the cap and its rim is an insulating-block 12.

The block 11 has a recess 13, and the block 12 has a recess 14. These recesses are so arranged that when the blocks are put together they form an insulated chamber. In this chamber, with one end fastened to the block 11 by a screw 15 and the other end fastened to the block 12 by a screw 16, is a conducting-plate 17, Fig. 3. This plate has a binding-screw 18, arranged to secure the end of one of the circuit-wires, that may lead through the hub of the cap and the groove 19 in the side of the block 12, Fig. 5, to the chamber in which the plate is located. The plate-fastening screw 15 secures a spring-finger 20, Fig. 7, that may be employed as the conditions necessitate to make contact with the end of a screw-threaded Edison bushing 21, Fig. 2, that may be secured to the block 11 by screws in the usual manner, or to make contact with the end of a spring-finger Westinghouse bushing that may be used in place of the threaded bushing, or to make contact with the base-ring on the end of a Thomson-Houston type lamp that may be turned into the socket. The end of this finger may have a dentation 45, Fig. 7, adapted to enter a recess in the end of a lamp-base part and prevent that part from vibrating loose.

In the block 11 is a recess 22 and in the block 12 is a recess 23, arranged to form an insulated chamber when the blocks are together. This chamber contains a conducting-plate 24, that has one end fastened to the block 11 by a screw 25 and has its other end fastened to the block 12 by a screw 26, Fig. 3. This plate has a binding-screw 29 for the attachment of the end of the other circuit-wire that, after passing through the hub of the cap, runs through the groove 30, Fig. 5, in the edge of the block 12.

In a socket 31, that forms a part of the insulated chamber in which the plate 24 is located, is a post 32. At its lower end this post is secured by a screw 33, that extends through the block 11, so that its head may hold a plate 34, Fig. 2, adapted to make contact with the end of an Edison type lamp-base, or may hold a threaded stem 35, Fig. 3, adapted to engage the threaded socket of a Thomson-Houston type of lamp-base, or that may fasten a pair of spring-fingers adapted to receive the stem of a Westinghouse type of lamp-base. The post has a mortise through its center, and movable upon the post, with a portion in the mortise, is a disk 36. A spring 37 is placed in the socket 31 about the post, so as to thrust the disk outwardly, Figs. 2 and 3.

Extending between the insulating-blocks and through slots in the upper ends of the parts of the post is a spindle 38, that on its outer end has a key-handle 39 and on its inner end loosely bears an oblong switch-block 40. The spring 37 presses the disk 36 into contact with the switch-block. When the switch-block is turned so as to extend longitudinally of the socket, as in Fig. 2, it makes

contact with the disk and also with the upper end of the plate 24 for completing the circuit, but when turned transversely of the socket, as in Fig. 3, the switch-block is only in contact with the disk, and the circuit is open. As the block is loose upon the key-spindle, the thrust of the spring upon the disk throws it back and causes a sudden break.

The fastening-screws 7 extend through the bayonet-slot 6 in the shell and the rim of the cap and through threaded perforations in the upwardly-projecting ends of the fastening-plates 41. The upwardly-bent inner ends of these plates project loosely into mortises 42 in the insulating-block 12. When the screws are loosened, the cap and shell may be separated by the disconnection of the bayonet-joint in the usual manner, but when the screws are tightened they clamp the upper edge of the shell and the rim of the cap tightly between their heads and the fastening-plates, which are loosely connected with the block 12.

The inner ends of the fastening-screws extend above shoulders 43, while the plates 41 pass below the shoulders, so that the plates, although loosely retained in position, will not become separated from the block 12, Fig. 4. In the form shown in Fig. 9 this looseness of the holding means in order to allow for variations in the size of the insulating-blocks is obtained by making the perforations for the passage of screw 44, that in this form are used to hold the plates, larger than the screws.

In the socket above described the blocks are retained firmly in position, although variation in their size will not interfere with their being properly and quickly assembled. The cap and shell are very securely fastened together by convenient and simple means. The break is quick and the contacts are certain and close. If there should be an arc formed at the opening of the switch, it cannot be communicated to the other side of the circuit, for the switch mechanism is located in an entirely-insulated chamber, and as both of the chambers for the two parts of the circuit are insulated from the shell no moisture can accumulate, so as to charge the shell or short-circuit the current, nor can a short-circuit be formed by careless wiring. By a simple substitution of parts this socket may be employed for the principal forms of lamps now used, and after the removal of the shell this socket can be wired very easily.

I claim as my invention—

1. In combination in a lamp-socket, a cap, a shell, insulating material located within the shell, fastening-plates loosely connected with the insulation, fastening-screws extending through the cap and shell and the fastening-plates, and binding-posts and contacts held by the insulation, substantially as specified.

2. In combination in a lamp-socket, a cap having bayonet-slots, a shell having bayonet-slots, two blocks of insulating material lo-

cated within the shell, fastening-plates having their inner ends loosely held in mortises in one of the insulating-blocks, fasteningscrews extending through the bayonet-slots of the cap and shell and through the ends of the fastening-plates above shoulders on the insulating-block in which the fastening-plates are located, and binding-posts and contacts held by the insulation, substantially as specified.

3. In combination in a lamp-socket, a cap, a shell, two blocks of insulating material with recesses arranged to form two insulating-chambers, a plate with a binding-screw located in one of the chambers and having its ends secured to the respective blocks, a plate with a binding-screw located in the other of the chambers and having its ends secured to the respective blocks, and grooves in the edges of the upper block for the passage of the circuit-wires of the respective binding-screws, substantially as specified.

4. In combination in a lamp-socket, a shell, two blocks of insulating material with recesses arranged to form insulated chambers, a plate with a binding-screw located in one of the chambers, a plate with a binding-screw located in the other of the chambers, and a switch-block located in one of the chambers and adapted to make contact with the end of the plate in the same chamber, substantially as specified.

5. In combination in a lamp-socket, a shell, two blocks of insulating material with recesses arranged to form two insulated chambers, a plate with a binding-screw located in one of the chambers and having its ends secured to the respective blocks, a block with a binding-screw located in the other of the chambers and having its ends secured to the respective blocks, grooves in the edge of the upper block for the passage of the circuit-wires to the respective binding-screws, a switch-block located in one of the chambers and adapted to make contact with the end of the plate in that chamber, and a disk held in yielding contact with the switch-block, substantially as specified.

6. In combination in a lamp-socket, a cap, a shell, an insulating-lining fitting the shell, two blocks of insulating material with recesses arranged to form two insulated chambers, a plate with a binding-screw located in one of the chambers, a plate with a binding-screw located in the other of the chambers,

and a switch-block located in one of the chambers and adapted to make contact with the end of the plate in the same chamber, substantially as specified.

7. In combination in a lamp-socket, a cap, a metallic shell, perforations through the walls of the shell near its larger end, an interior lining-shell formed of a coiled sheet of stiff insulating material that springs outwardly against the inner walls of the metallic shell, and outwardly-extending knobs on the exterior side of the insulating-shell projecting into the perforations through the metallic shell, substantially as specified.

8. In combination in a lamp-socket, a cap, a metallic shell having a reduced neck, a lining-shell formed of two pieces of sheet insulation, one piece extending through the neck of the shell and having an enlarged end resting on the shoulder between the neck and body of the shell and the other piece extending through the body of the shell, with portions of the latter piece expanded outwardly into perforations in the metallic shell, substantially as specified.

9. In combination in a lamp-socket, a cap, a shell, two blocks of insulating material located within the shell, insulated chambers formed by recesses in the insulation, and plates bearing outwardly-extending binding-screws located in the recesses and having their ends secured by screws to the respective insulating-blocks, substantially as specified.

10. In combination in a lamp-socket, a cap, a shell, two blocks of insulating material located within the shell, insulated chambers formed by recesses in the insulation, plates bearing outwardly-extending binding-screws located in the recesses and having their ends secured by screws to the respective insulating-blocks, and a spring-finger with an indentation near its free end held by one of the plate-securing screws, substantially as specified.

11. In combination in a lamp-socket, a block of insulating material having two separated recesses and two fastening-plate mortises, fastening-plates with the inner ends loosely extending into the mortises, and screws passing through the outer ends of the fastening-plates, substantially as specified.

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