Sept. 3, 1929. E. C. WHITE 1,727,148

ELECTRIC LAMP SOCKET

Filed May 6, 1925

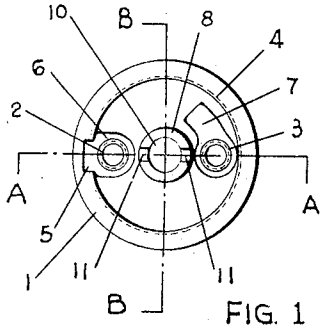

FIG. 1

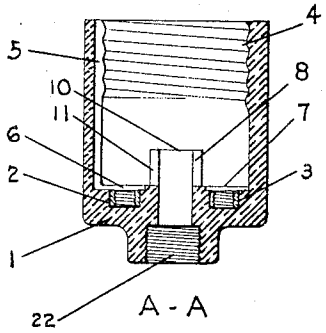

FIG. 2

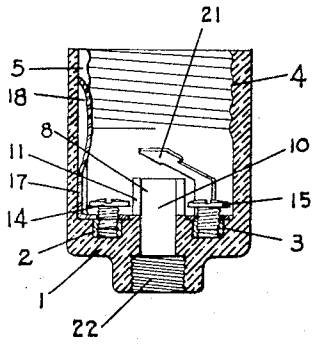

FIG. 4

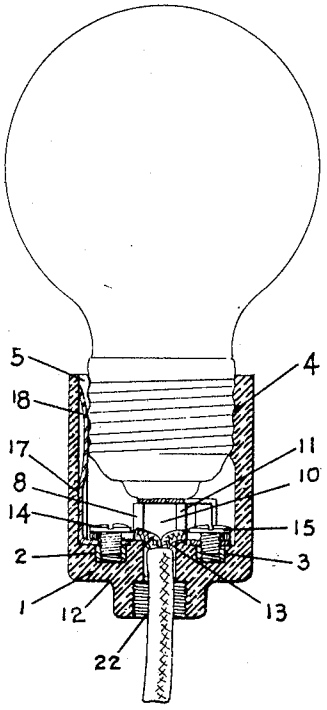

FIG. 5

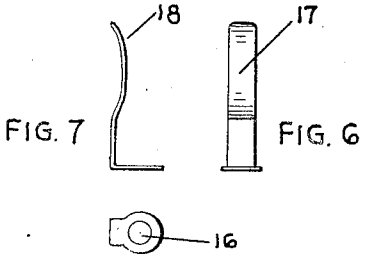

FIG. 7 FIG. 6

FIG. 8

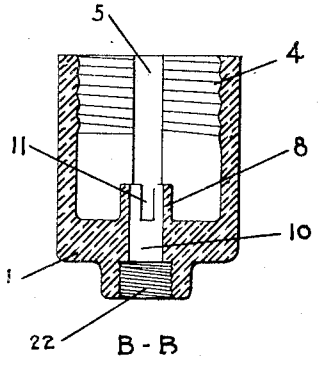

FIG. 3

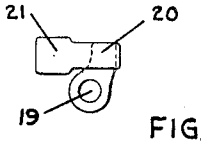

FIG. 9

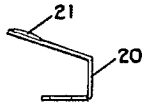

FIG. 10

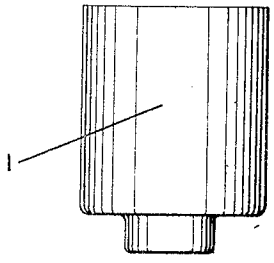

FIG. 11

INVENTOR.

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Patented Sept. 3, 1929. 1,727,148

UNITED STATES PATENT OFFICE.

ERNEST CANTELO WHITE, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO R. FENTON FISHER, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC-LAMP SOCKET.

Application filed May 6, 1925. Serial No. 28,377.

My invention relates to the construction of electric sockets for the reception of electric lamps, attachment plugs, and any other connecting or consuming devices having a screw type of base, whether the said socket be a separate article as shown in the drawings herewith or be formed as an integral part of any device on which it is used. The screw lamp base above referred to is well known and consists of one contact formed as a metallic screw-shell for supporting the lamp and a center contact at the end which also acts as a stop when the lamp is screwed into a socket.

The objects of my present invention are to provide a socket of smaller size in proportion to the size of the lamp base received thereby, to greatly diminish the number of parts used in the construction of a socket and to make all of these parts simple in form and easily assembled so as to reduce the cost of the socket. A further object is to combine with the aforesaid advantages the security to be derived from the best insulation of all current conducting parts and the decorative advantages of the simplest possible form and most pleasing and durable finish.

In the accompanying drawings Fig. 1 is a plan view of the moulded socket body before the contact members are attached; Fig. 2 is a cross-section of the socket body on the line A—A; Fig. 3 is a cross-section of the socket body on the line B—B; Fig. 4 is a cross-section of the socket body on the line A—A showing contact members and binding screws assembled therewith; Fig. 5 is a cross-sectional view similar to Fig. 4 but showing the position of parts when supply wires are connected to the binding screws and a lamp (shown in side elevation) is screwed into the socket; Fig. 6 is a side view of the side contact member and Figs. 7 and 8 are edge and plan views respectively of the same; Fig. 9 is a plan view of the center contact member and Fig. 10 is an edge view of the same; Fig. 11 is a side view of the complete socket.

In carrying out my invention according to the illustrated embodiment thereof, I provide a socket body 1 formed of moulded insulating material with two threaded metallic inserts 2 and 3 moulded into the socket body. It is not essential that these inserts be provided if the socket body is made with threaded recesses occupying the same relative position as the threads of the inserts 2 and 3. The socket body is provided with internal threads 4 to receive the threads of a lamp screw-shell. These threads are interrupted on one side of the socket by a vertical groove 5 which for convenience in moulding may extend all the way from the edge of the socket to the inside floor thereof and which is connected with the recess 6 in the floor of the socket, in which recess the insert 2 is located. Another recess 7 is provided in the floor of the socket and in this the insert 3 is located.

Rising from the floor of the socket is a cylindrical boss 8 having a center hole 10 which extends through the floor of the socket to provide an entrance passage for electric wires and which has cross groove 11 through which wires 12 and 13 may pass and be connected to binding screws 14 and 15 which screw into inserts 2 and 3 respectively as illustrated in assembled form in Fig. 5.

In order to assemble the socket, the binding screw 14 is first slipped through the hole 16 in the contact member 17, which is preferably formed of spring brass or any resilient conducting material. This contact member or side contact 17 is then placed in the groove 5 and recess 6 as shown in Fig. 4 and the binding screw 14 screwed into the insert 2. It will plainly be seen from the drawings that when the base of the side contact 17 is held down in the recess 6 by the binding screw 14, the vertical portion of the side contact 17 will be held in the groove 5 which is just wide enough to accommodate the side contact 17, and the bent portion 18 of the side contact will intersect the space which will be occupied by the screw portion of a lamp base when used in the socket. The depth of the groove 5 is sufficient so that when a lamp is screwed into the socket as shown in Fig. 5 the portion 18 of the side contact may be compressed below the bottom of the internal threads in the socket body in which position it applies a spring pressure contact against the screw threads of the lamp base.

The other binding screw 15 is slipped through the hole 19 in the center contact member 20, which is also formed of resilient conducting material and the base of which fits into the recess 7 in the socket body and which is held therein by the binding screw 15 screwed into the insert 3. The center contact may have an enlarged end 21 to accommodate the variations in the position of center contacts on lamp bases. This enlarged end will normally occupy the position shown

in Fig. 4. When a lamp is screwed into the socket, the center contact yields until it seats on top of the boss 8. It will then be in the position shown in Fig. 5 where it exerts a spring contact pressure against the center contact of the lamp base. The height of the boss 8 is such as to prevent accidental contact between parts of opposite polarity.

It will be understood that the binding screws 14 and 15 exert retaining pressure on the contact members 17 and 20 through the bare ends of the wires 12 and 13, which insures good electrical contact between the said wires and the contacts 17 and 20 respectively. It is not, however, essential that the binding screws be depended upon for holding the contact members in position, as it is common practice to provide metallic inserts such as 2 and 3 with a thin tubular extension over which the openings 16 and 19, slightly enlarged, may be slipped, and the said extensions of the inserts then riveted over to retain the contact members in assembled position and still leave entrance way for the binding screws 14 and 15, which then have only the remaining function of retaining the ends of the wires. I have not illustrated the construction of riveting contact members to the inserts as this method in itself is not new. One advantage of the construction shown in the drawings is that no assembling need be done until the socket is wired.

In the form illustrated the outside end of the wirehole 10 is provided with an enlarged threaded portion 22 for attaching the socket to lighting fixtures or other appliances. This end of the socket, which is usually called the "socket cap" when made separately, may be easily made in all of the different forms in which socket caps are now made, such as with male or female threads or plain openings which will not chafe the insulation of an electric cord, for which last use this form of socket has the additional advantage that no separate insulating bushing is required; it is also important when using sockets supported on conductor wires to know that these wires are actually retained under the binding screws and it should be noted that it is only necessary to remove the lamp from the socket to see clearly whether the connections are intact. This is an advantage over all types of constructions in which the binding screws are inaccessible until the socket itself is taken apart.

It is also easy to see which binding screw is connected to the side contact of the socket so that it is unnecessary to specially mark this binding screw for the connection of the grounded conductor.

It will be understood that the new methods of construction herein described are applicable to lamp sockets in many different sizes and forms, including sockets having some form of circuit breaking device as well as those commonly described as "keyless" and my invention, therefore, includes all devices in which the construction and assembly of parts include what I claim as new, which is:

1. An electric lamp socket comprising a socket body formed of moulded insulating material and having internal threads for engaging a lamp base, a groove intersecting the said threads, a resilient contact member positioned in the said groove, a resilient center contact member, a center boss in the socket body adapted to limit the displacement of the center contact member when a lamp is screwed into the socket, openings in the center boss for the passage of leading-in wires and threaded means adapted to fasten the leading-in wires to the contact members and to retain the contact members in position with respect to the socket body.

2. An electric lamp socket comprising a body formed of moulded insulating material open at one extremity and having an integral end wall at its opposite extremity, said end wall having an inwardly leading opening for the entrance of circuit wires, an internal center boss extending from said end wall and within which said inwardly leading opening terminates, said center boss having oppositely disposed lateral passages through which terminal portions of said circuit wires respectively extend to opposite sides of said body interior, internal threads formed on the body to engage a lamp base, said body having a groove to intersect said threads, a resilient side contact member positioned in said groove and having a base-portion secured to said end wall to which the terminal portion of one circuit wire is attached, a resilient center contact member to overlie said center boss whereby yielding displacement thereof is limited, and said center contact member also having a base secured to said end wall to which the terminal portion of the other circuit wire is attached.

Signed at New York, N. Y., on this 5th day of May, 1925.

ERNEST CANTELO WHITE.