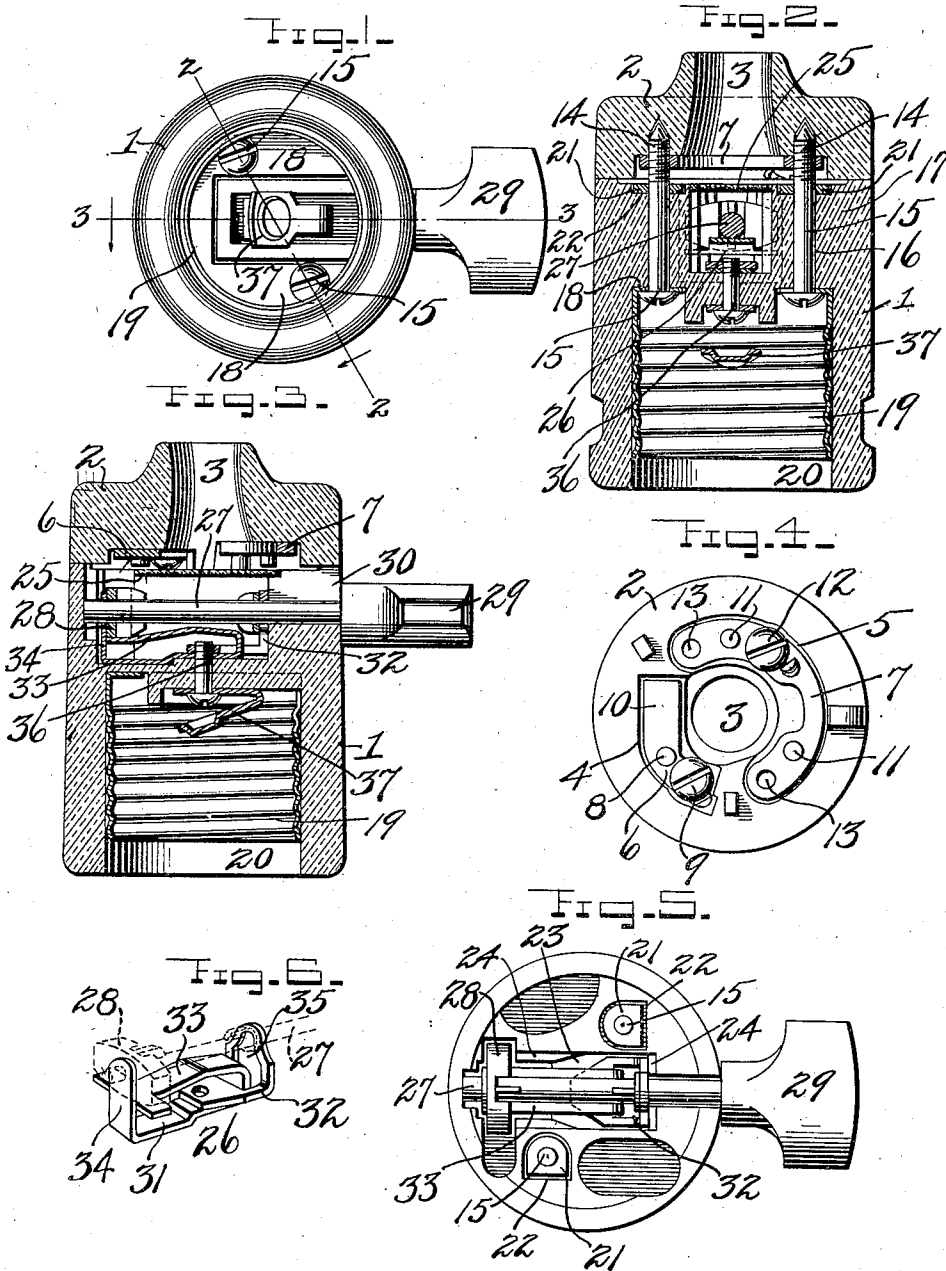


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ALL PORCELAIN ELECTRICAL LAMP SOCKET.
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ALL-PORCELAIN ELECTRICAL LAMP-SOCKET.

1,005,635.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDGAR H. FREEMAN, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvement in All-Porcelain Electrical Lamp-Sockets, of which the following is a specification.

This invention relates to the subject of electrical lamp sockets of the key-type and has particularly in view an improvement in that class of electrical incandescent lamp sockets which are known as all-porcelain sockets, and are intended to entirely dispense with the use of the usual outer metallic shell and cap ordinarily employed in the large majority of electrical lamp sockets in commercial use.

Generally speaking, the main object of the present invention is to provide a simple, strong, and thoroughly practical electrical lamp socket, particularly of the all-porcelain type.

A further object of the invention is to provide an all-porcelain electrical lamp socket possessing special utility as a water-proof receptacle and specifically meeting all requirements of the fire underwriters' associations with respect to sockets of this character.

The invention also contemplates a novel construction and arrangement of elements which secure a thorough and complete insulation of opposite polarity parts, while at the same time completely housing and concealing all metallic parts within the socket structure so that none of the same are exposed to outside conditions or influences. Furthermore, in the same connection, the invention is intended to provide a compact arrangement of parts securing the greatest efficiency in the making and breaking of the electrical circuit through the switch mechanism and the related elements.

Another practical and important feature of the present invention resides in simple and novel means for holding the two parts of the socket together and permitting of their ready separation and assembling for wiring purposes without the possibility of parts becoming loose and falling out during such manipulation of the socket.

With these and many other objects in view, which will be readily apparent to those familiar with the art as the nature of the invention is better understood, the same

consists in the novel construction, combination and arrangement of parts hereinafter fully described, illustrated and claimed.

The essential features of the invention involved in the carrying out of the above-mentioned objects are susceptible to structural modifications without departing from the spirit or scope thereof, but the preferred and practical details of construction are shown in the accompanying drawings in which,—

Figure 1 is a front end view of an all-porcelain lamp socket constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a similar view on the line 3—3 of Fig. 1. Fig. 4 is an inner plan or face view of the porcelain cap-piece showing the wire terminal plates carried thereby. Fig. 5 is an end elevation or face view of the inner end part of the socket body, showing the switch mechanism seated therein. Fig. 6 is a detail in perspective of the removable two-part switch frame which carries the key-shaft of the switch mechanism, the key-shaft and the switch plug being shown in dotted lines.

Like references designate corresponding parts in the several figures of the drawings.

The improved all-porcelain socket forming the subject-matter of this application includes in its general organization a socket body 1 of porcelain or equivalent insulating material and a cap-piece or cap 2 likewise of porcelain or equivalent insulating material, said cap surmounting what may be termed the inner end of the socket body and forming a part of the latter when united thereto through the medium of the fastening devices hereinafter particularly referred to. The porcelain body 1 and cap 2 preferably preserve the conventional design and are flush fitting so as to present practically an unbroken external body of porcelain, within which body is completely housed and protected the various metallic parts making up the socket contacts and switch mechanism. The cap-piece 2 is provided with the ordinary wiring hole 3 for the line wires, and upon its inner face the said cap-piece is formed with the separate plate recesses 4 and 5 which respectively receive the opposite, opposite polarity, wire terminal plates 6 and 7. The wire terminal plate 6 is held in a fixed position upon the inner side of the cap 2 within the recess 4

by means of a securing screw 8 suitably mounted in the body of the cap. The said plate 6 also carries a binding screw 9 for one of the line wires and includes as a part thereof an integral fixed contact plate-extension 10 forming one of the elements of the switch mechanism, as will hereinafter presently appear. The other of said plate recesses 5, and likewise the wire terminal plate 7 therein, is of a circular or segmental form, and the said plate 7 is held in a fixed position within said recess by means of securing screws 11 suitably mounted in the body of the cap 2. The fixed wire terminal plate 7 is provided at a suitable point between its extremities with a binding screw 12 for the other line wire, and by reason of the segmental form of the plate 7 the opposite terminals thereof are widely separated, that is to say, they are located at diametrically opposite sides of the wiring hole 3 through the cap, and these terminals of the plate 7 are provided with threaded openings 13 which are adapted to detachably receive the threaded end portions 14 of the combined fastening and conducting screws 15 which extend through screw-holes 16 in the solid base portion 17 of the body 1. The combined fastening and conducting screws 15 are also arranged to have their headed ends engage with and hold the retaining flange 18 provided at the inner end of the screw-shell contact 19 arranged within the plug-receiving socket 20 of the socket body 1. The threaded portions 14 of these screws have fitted thereon retaining collars or rings 21 which are located between one face of the base 7 of the body and the wire terminal plate 7 with which the said screws engage. Between this plate 7 and clearance recesses 22 in the base 7, the collars or rings 21 are designed to have a play so as not to interfere at all with the tightening and loosening of the screws 15, but in connection with this construction it will be observed that by reason of the retaining collars or rings 21 it is possible to release the cap 2 from the socket body without disturbing or loosening any of the other elements of the socket or the wiring connections with the terminal plates 6 and 7; that is to say, when the screws 15 are unscrewed from the openings or holes 13 in the plate 7, the cap will be released from the body and the screws will be held from falling out of the shell 19 by the holding engagement of the elements 21 on the base 17. It will thus be seen that the screws 15 perform several functions, namely, to hold the screw-shell contact in place, to carry current from the screw-shell contact to the wire terminal plate 7, and to detachably unite the cap to the body, all of which is of practical importance in the manipulation of a socket of this character.

The switch mechanism for the socket is, with the exception of the fixed contact plate 10, completely housed within a substantially T-shaped switch chamber 23, recessed in the inner face of the solid base 7 of the socket body and to provide for as complete insulation of the switch mechanism as possible, the base 7 is formed about the edges of the chamber 23 with supporting shoulders 24 upon which are seated the edges of a sheet of mica or equivalent insulation 25. The switch mechanism includes in its organization a two-part switch frame 26 detachably held within the switch chamber 23, and the key-shaft 27 carrying the rotatable switch-block 28 and the exterior switch-key 29. This key 29 is, according to the present invention, preferably made of porcelain to carry out the all-porcelain idea, and the rotatable switch block 28 is of the conventional type, that is to say, having a limited play upon the shaft 27 but rotatable therewith so as to make and break the contact. The key-shaft 27 extends through a key-slot 30 in the wall of the body 1 and also through opposite bearings in the two part switch frame 26. The two-part switch frame 26 of the switch mechanism consists of a folded contact member 31 and a separate bearing member 32. The folded contact member 31 is provided with a longitudinally arranged approximately T-shaped spring contact 33, the head of which has a constant spring engagement with the switch-block and said member 31 also includes an angularly arranged bearing arm 34 in which is journaled one end of the key-shaft 27. The bearing member 32 of the two-part switch frame 26 consists of an angled slotted plate whose slot 35 is sufficiently large to receive therethrough the loop of the contact member 31 and is also formed to provide one of the bearings for the key-shaft 27. One end of the angled plate constituting the bearing member 32 overlaps the base portions of the contact member 31 so that the overlapping parts receive therethrough the combined fastening and conducting screw 36, which passes through the bottom portion of the socket body and also passes through one arm of the folded center plug contact plate 37 held upon the bottom of the plug-receiving socket 20 of the body 1. The screw 36 therefore not only holds the center plug contact in position but it also holds in place the switch-frame, and holds together the two members of said frame, besides providing an electrical conductor between the center plug contact and the switch frame.

When the parts are in the assembled positions described, the fixed contact 10 carried by the cap 2 lies in opposition to the head of the spring contact 33 so that when the switch block is rotated to the proper po-

sition it will metallicity, and therefore electrically, connect the said spring contact and the said fixed contact 10. In this connection, it will be observed that sufficient clearance is left by the insulating sheet 25 to permit the ends of the switch block 28 passing out of the switch chamber 23 to make engagement with the fixed contact 10, as will be apparent from the drawings.

10 I claim,—

1. In an electrical lamp socket, the socket body carrying the center and side plug contacts, a cap-piece, separate wire terminal plates fitted to the inner side of said cap-piece and one of which wire terminal plates is of crescent form and provided at diametrically opposite terminals with threaded openings, combined fastening and conducting screws carried by the body and engaging the side plug contact, said screws detachably engaging the said threaded openings in one of the wire terminal plates, and a switch mechanism housed within the body and having a screw-connection with the center plug contact, said switch mechanism including a rotating switch block adapted to make contact with one of the fixed wire terminal plates on the cap-piece.

2. In an electrical lamp socket, the combination with the body, the plug contacts and the wire terminal connections, of a switch

mechanism, a key-shaft carrying a switch block and a two-part switch frame consisting of a folded contact member having a longitudinally arranged spring contact for the switch block and an angularly arranged bearing arm, and a separate bearing member formed of a slotted plate receiving therethrough the looped part of the folded contact member.

3. In an electrical lamp socket, the combination with the body, the plug contacts and the wire terminal connections, of a switch mechanism, a key-shaft carrying a switch block and a two-part switch frame consisting of a folded contact member having a longitudinally arranged spring contact for the switch block and an angularly arranged bearing arm, and a separate bearing member formed of a slotted plate receiving therethrough the looped part of the folded contact member, and a combined fastening and conducting screw engaging the overlapped parts of said contact and bearing members and connecting the latter with one of the plug contacts.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

EDGAR H. FREEMAN.

Witnesses:

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