

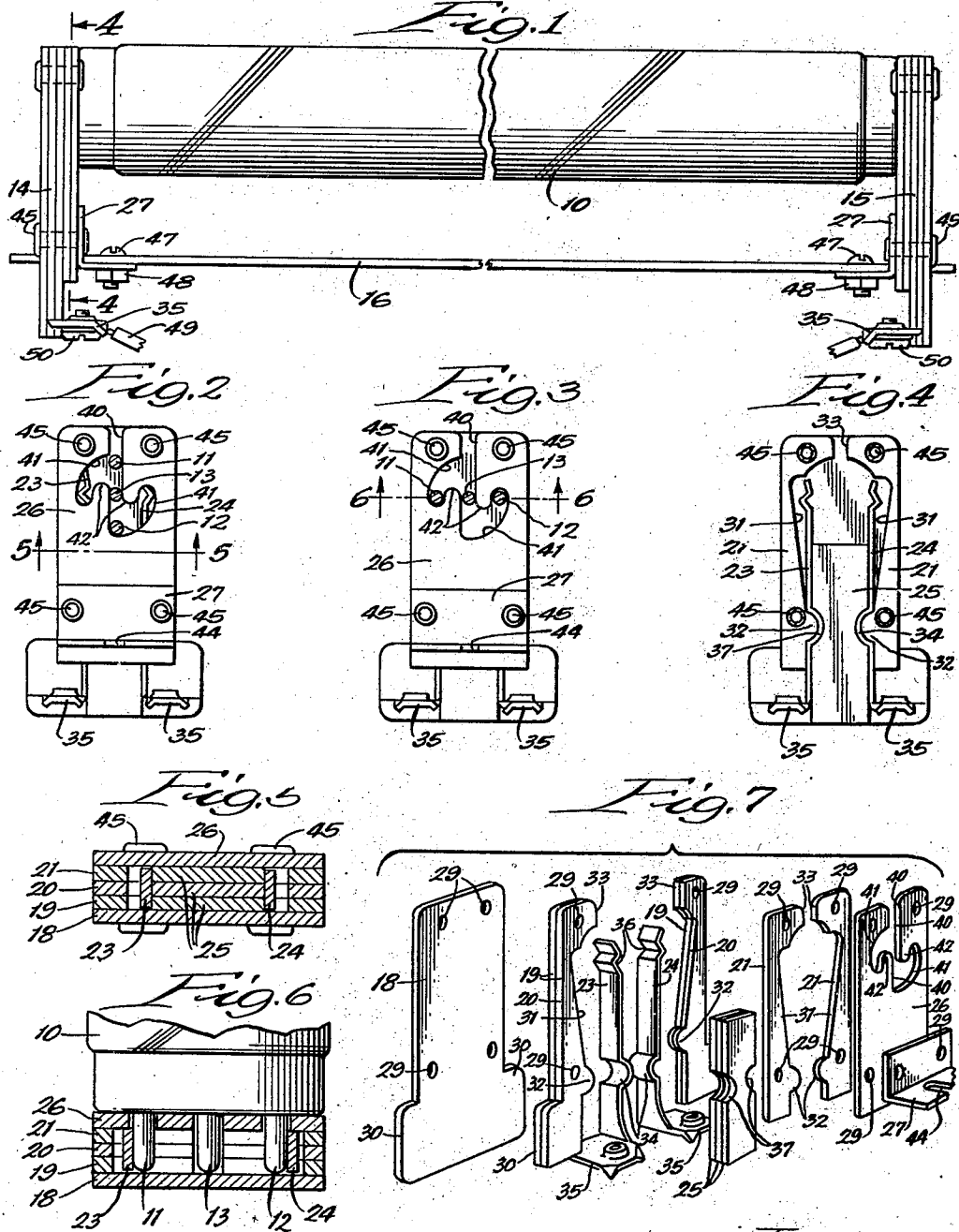
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ELECTRICAL SOCKET

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ELECTRICAL SOCKET

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2 Claims. (Cl. 173-328)

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This invention relates to sockets for electrical devices and is particularly adaptable for use with fluorescent lamps.

Fluorescent lamps are usually provided with electrical contact pins at each end thereof and are held in place by a pair of spaced sockets co-operating with the contact pins. The inner faces of the sockets are provided with slots for receiving the pins of the fluorescent lamps and provision is made in the sockets to permit rotation of the lamp so that the electrical contact pins thereof may engage spring contacts in the sockets to complete the electrical circuits.

However, in such arrangements the lamp may be rotated in either direction and the rotation of the lamp is not limited. This is disadvantageous in that the lamp may be rotated too far with the result that it is not securely held in the sockets and that the proper electrical connections to the lamp from the sockets would not be made.

The principal object of this invention is to provide an improved socket arranged wherein the lamp or other electrical device is held firmly in place in the sockets and wherein the lamp or other electrical device may be rotated in one direction only through a limited amount of rotation, thereby insuring proper electrical connections thereto and proper maintenance of the lamp in the sockets.

Further objects of this invention reside in the details of construction of the improved sockets.

Other objects and advantages will become apparent to those skilled in the art upon reference to the accompanying specification, claims, and drawing in which—

Fig. 1 is an elevational view of a fluorescent lamp applied to the sockets of this invention;

Fig. 2 is an end view of the left hand socket of Fig. 1 looking from the right with the contact pins of the lamp shown in one position;

Fig. 3 is a view similar to Fig. 2 but showing the contact pins of the lamp in another position;

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 1;

Fig. 5 is a sectional view taken substantially along the line 5—5 of Fig. 2;

Fig. 6 is a sectional view taken substantially along the line 6—6 of Fig. 3; and

Fig. 7 is an exploded view of the various parts making up the socket.

The electrical device or fluorescent lamp is designated at 10 and it includes contact pins 11, 12 and 13 which are received by the sockets 14 and 15 suitably mounted on a supporting base 16.

The socket 14 includes a body portion which

may be of laminated construction including a base 18 and side walls 19, 20 and 21, all preferably made of insulating material. Spring contacts 23 and 24, preferably made of spring brass, are carried between the side walls 19, 20 and 21 and are held in place by insert laminations 25, also made of insulating material. A face plate 26 of insulating material covers the recess formed between the side walls 19, 20 and 21. The socket also includes a mounting bracket 27.

Laminations 18, 19, 20, 21 and the face plate 26 are provided with holes 29 for receiving rivets 45 for clamping all of the laminations in assembled relation. The base plate 18 and the side wall laminations 19 and 20 are provided with extensions 30 and the laminations 19, 20 and 21 are provided with inner wall surfaces 31 for accommodating the spring contacts 23 and 24. These laminations 19, 20 and 21 are also provided with inwardly extending lugs 32 which cooperate with detents 34 formed in the spring contacts 23 and 24 for locating the spring contacts with respect to the side wall laminations. The inner surfaces 33 of the laminations 19, 20 and 21, being spaced apart, permit the insertion of the contact pins 11, 12 and 13 therebetween.

The spring contacts 23 and 24 are provided with ears 35 to which electrical connections may be made and are also provided with detents 36 for cooperating with the pins 11 and 12 of the fluorescent lamp 10. The insert laminations 25 are provided with notches 37 conforming to the detents 34 of the spring contacts 23 and 24 and these notches 37 on the insert laminations 25 operate to clamp the spring contacts 23 and 24 in place. The connecting ears 35 also cooperate with the extensions 30 of the laminations 18, 19 and 20 to add strength thereto particularly when the electrical connections are being made thereto.

The face member 26 is provided with a slot 40 extending to the edge of the face member for the purpose of receiving the pins 11, 12 and 13 of the fluorescent lamp 10. The face member 26 is also provided with diametrically opposed quadrant openings 41 merging with the slot 40 for receiving the pins 11 and 12 of the fluorescent lamp 10 when the lamp is rotated in one direction through substantially 90 degrees. The face member 26 may be provided adjacent the quadrant openings 41 with extensions 42 which, in turn, may cooperate with the pin 13 of the fluorescent lamp for adding stability to the arrangement.

The various laminations forming the socket are all secured together in a unitary arrange-

ment by means of the rivets 45 extending through the holes 29 in the laminations. Instead of utilizing laminations, as shown in the drawing, the socket may be formed of a unitary molded construction corresponding to the assembled laminations 18, 19, 20 and 21 and the face member 26 may be applied as by the rivets 45 to the molded construction. Also the insert laminations 25 may be of a single molded construction.

When the parts are assembled it will be seen that a recess is formed in the socket by the diverging side walls 31 for receiving the spring contacts 23 and 24 and that a slot 33 is formed to permit the entrance of the contact pins of the fluorescent lamp. It is also seen that the insert member 25 maintains the spring contacts 23 and 24 in place in the recess.

The face member 26 closes the recess with the exception of the slot 40 and the quadrant openings 41. The mounting bracket 27 is secured to the assembled socket by the rivets 45.

The sockets are secured to the supporting base 16 by means of screws 47 and nuts 48 cooperating with an opening 44 in the mounting bracket 27 and the ears 35 may have electrical connections 49 secured thereto by screws 50.

The left hand socket 14 is formed with the parts arranged as shown in Fig. 7 but in forming the right hand socket 15 it is necessary to reverse the face member 26 so that the quadrant openings of the sockets 14 and 15 will correspond.

With the sockets 14 and 15 mounted on the supporting base 16 the fluorescent lamp 10 may be inserted therebetween. In so doing the contact pins 11, 12 and 13 enter the slot 40 from the edge of the face member, as shown in Fig. 2. After the fluorescent lamp assumes the position shown in Fig. 2, it is rotated through 90 degrees, this rotation being permitted by the quadrant openings 41 in the face member 26, and when the lamp is rotated to the position shown in Fig. 3, the contact pins 11 and 12 engage the detents 36 of the spring contacts 23 and 24 respectively, thereby providing electrical connections to the fluorescent lamp.

The quadrant openings 41 permit rotation of the fluorescent lamp 10 in only one direction and through only a limited angle of rotation whereby the proper electrical connections are established and the lamp 10 is properly maintained in the sockets 14 and 15. The fluorescent lamp 10 may be removed from the sockets by turning the lamp through 90 degrees from the position shown in Fig. 3 to that of Fig. 2 and then sliding the lamp along the slot 40.

While for purposes of illustration one form of

this invention has been disclosed, other forms thereof may become apparent to those skilled in the art upon reference to this disclosure and, therefore, this invention is to be limited only by the scope of the appended claims and prior art.

I claim as my invention:

1. A socket for an electrical device having a plurality of pins extending therefrom, comprising, a body member of insulating material having a recess therein provided with inwardly extending lugs, a pair of spring contacts in the recess and having detents engaging the lugs, an insert member of insulating material between the spring contacts and having notches engaging the detents to hold the spring contacts in place in the recess, and a face member of insulating material secured to the body member and covering the recess and holding the spring contacts and insert member in assembled relation therein and provided with a slot extending to the edge of the face member and opening into the recess for receiving the pins of the electrical device and also provided with diametrically opposed quadrant openings adjacent the spring contacts and merging with the slot for receiving and guiding the pins into engagement with the spring contacts when rotated in one direction through substantially ninety degrees.

2. A socket for an electrical device having a plurality of pins extending therefrom, comprising a body member of insulating material having a recess therein, a pair of spring contacts mounted in spaced relation in the recess, and a face member of insulating material secured to the body member and covering the recess and provided with a slot extending to the edge of the face member and opening into the recess for receiving the pins of the electrical device, and also provided with diametrically opposed quadrant openings adjacent the spring contacts and merging with the slot for receiving and guiding the pins into engagement with the spring contacts when rotated in one direction through substantially ninety degrees.

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