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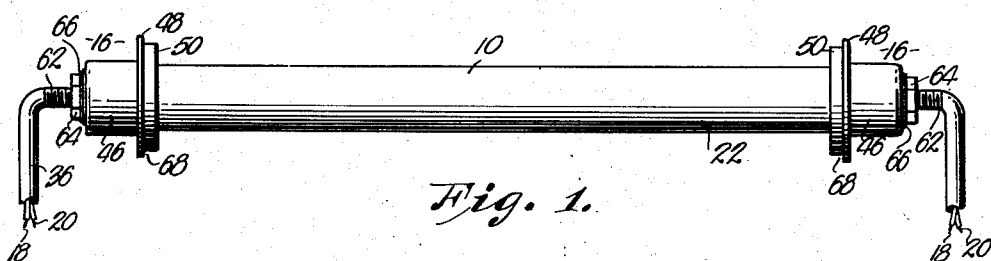
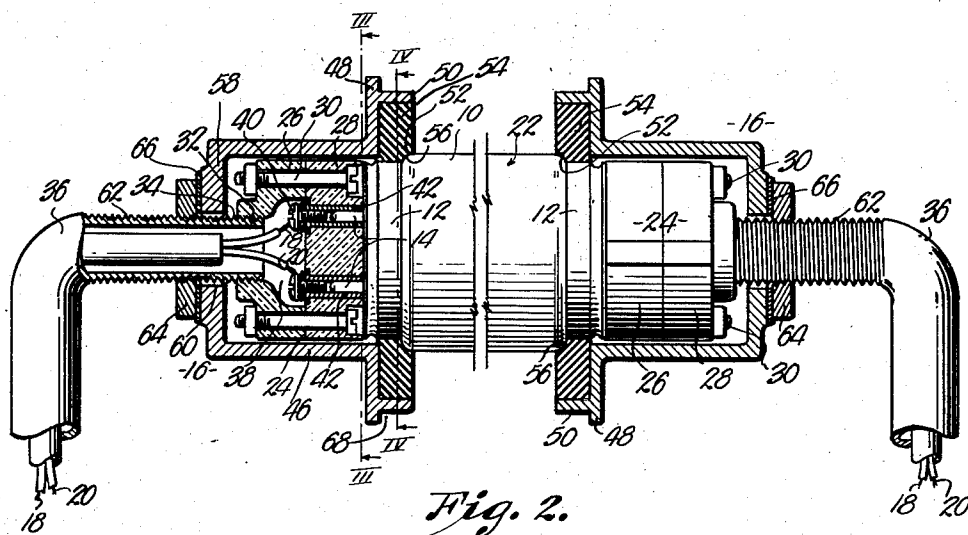
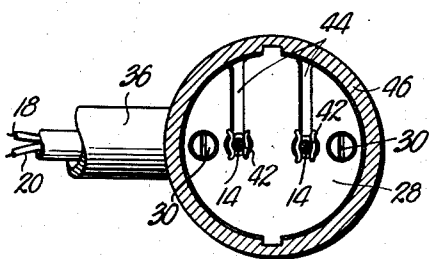
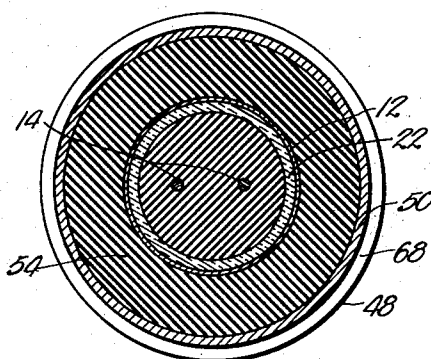
V. N. WILLIAMS

2,295,883

GAS PROOF SOCKET FOR FLUORESCENT LAMPS

Filed June 5, 1940

2 Sheets-Sheet 1



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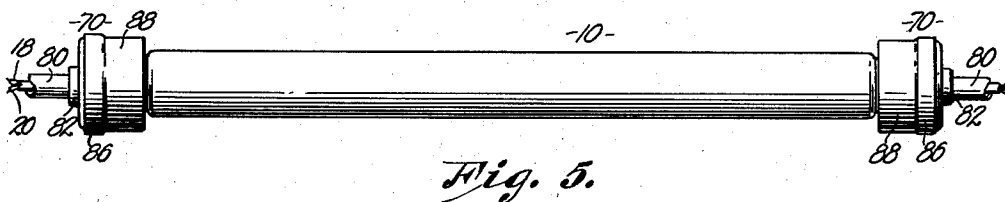
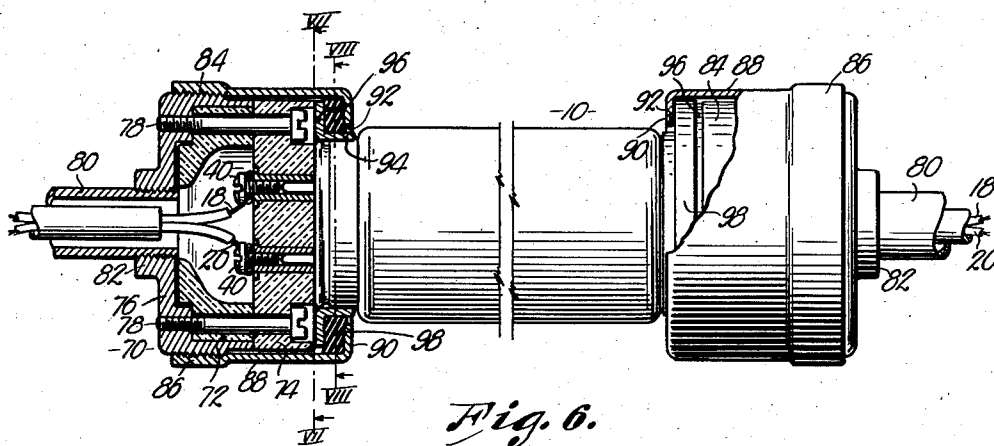
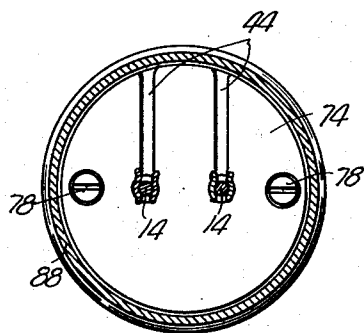
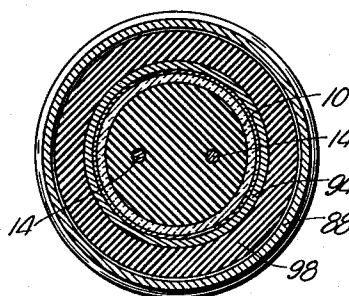
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GAS PROOF SOCKET FOR FLUORESCENT LAMPS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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GASPROOF SOCKET FOR FLUORESCENT LAMPS

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Application June 5, 1940, Serial No. 338,904

1 Claim. (Cl. 173—328)

This invention relates to improvements in a gas proof socket for fluorescent lamps and has for its principal object the provision of an electrical connector of the socket type wherein the interconnecting parts are housed in a gas tight compartment for protection against fire hazards and weathering.

A further object of the present invention is the provision of a gas proof socket for fluorescent lamps wherein parts thereof are relatively adjustable to permit easy changing of lamps.

Other objects are simplicity and economy of construction, and ease and efficiency of operation.

Minor objects and advantages will appear during the course of the following specification, referring to the drawings wherein:

Figure 1 is an elevation of a fluorescent lamp mounted in sockets, embodying this invention.

Fig. 2 is an enlarged longitudinal foreshortened view, partly in section, of the sockets with the fluorescent lamp in position therein.

Fig. 3 is a cross sectional view taken on line III—III of Fig. 2.

Fig. 4 is a cross sectional view taken on line IV—IV of Fig. 2.

Fig. 5 is an elevational view of a modified form of socket in operative relation with a fluorescent lamp.

Fig. 6 is an enlarged foreshortened elevation, partly in section, of the sockets and lamp.

Fig. 7 is a sectional view taken on line VII—VII of Fig. 6; and

Fig. 8 is a cross sectional view taken on line VIII—VIII of Fig. 6.

Throughout the several views, like reference characters designate similar parts and the numeral 10 is a gaseous discharge lamp of the fluorescent type, having end caps 12, smaller than the lamp tube, and pin terminals 14. These terminal pins are adapted to be fitted into a socket 16, to form connections with electrical conductors 18 and 20, whereby current is fed to the electrodes sealed in the lamp tube 22.

The socket has a two-piece porcelain member 24 having members 26 and 28 joined together by means of assembly screws 30. The porcelain member 26 has a threaded central opening 32 adapted to receive the threaded end portion 34 of conduit 36. This porcelain 26 butts against porcelain member 28 and is provided with an enlarged chamber 38 to receive the terminal screws 40 of split sleeves 42, which receive pins 14.

Referring to Fig. 3, it will be noted that transverse slots 44 extend outwardly from sleeves 42 to the periphery of porcelain 28, thus making it

possible to insert the terminal pins transversely into the split sleeves therethrough. This portion of the socket, just described, is well-known in the art and might be substituted by many of the other different types now being used. It is the following connector sealing means that constitutes the present invention.

Slidably mounted on conduit 36 is a housing 46 having an outturned flange 48 provided with a ring flange 50 in axial alignment with the socket 16. This flange 50 overhangs end cap 12 when the parts are in the relative operative relation.

The fluorescent tube 22 is of greater diameter than the end caps 12, thus presenting a shoulder 52. An elastic ring or gasket 54, made of rubber or any other material having similar elastic qualities, is adapted to be snugly fitted over end caps 12 with the notched corner 56 resting against shoulder 52. The outer periphery of ring 54 fits against ring flange 50, while one side wall contacts flange 48. The inside diameter of housing 46 is slightly greater than the outside wall of caps 12, thus permitting free movement of the housing thereover to force the gasket ring 54 tightly against shoulder 52 and flange 48 to form an air seal between the parts.

The outer end wall 58 of housing 46 is perforated at 60 to receive the end portion of conduit 36, which is threaded at 62 to receive an adjustable nut 64. The threaded end portion of conduit 36 operatively engages porcelain 26 and communicates with chamber 38.

A fiber washer 66 is positioned between nut 64 and wall 58 to form a seal therebetween.

The conduits 36 should be considered as stationarily mounted on some structure or base so that as the nut 64 is screwed to force it inwardly against the housing, the housing will compress the ring gasket 54 against shoulder 52. When changing lamps, the nut 64 is screwed outwardly until the housing can be moved away from lamp 10 a sufficient distance to permit the contact pins to be raised out of position through slots 44. Another lamp can now be moved into the operating position and the nut 64 again set to close the housing, as described above.

The ring flange 50 is spaced apart from the outer periphery of flange 48, thereby producing an annular notch 68 suitable for receiving the extremities of a tubular housing (not shown) in spaced relation to lamp tube 22.

While housing 46 may be mounted to form a hermetically sealed chamber, with its associated parts for the reception of the electrical connector, however, since the main object is to provide a

socket to prevent accidental fire due to sparking of the connector and to prevent water from contacting the connector parts, it is not necessary that the chamber be entirely free from air leakage.

Reference will now be had to the modified form shown in Figs. 5, 6, 7 and 8, wherein the same fluorescent lamp 10 is used. The socket 70 comprises porcelain members 72 and 74 and a metal end base 76, all secured together by bolts 78 which are threaded into base 76. Conduit 80 is tightly threaded into hub 82 of base 76. Sockets 70, screws 40 and electrical conductors 18 and 20 are as shown and described in the preferred form.

The outer periphery of base 76 is threaded at 84 to receive the internally threaded end 86 of take-up sleeve housing 88. The end wall 90 of housing 88 is provided with an annular opening 92, slightly greater in diameter than the outer diameter of the lamp tube 22. A ring 94 is soldered, cemented or otherwise securely attached to the end cap 12 of the fluorescent lamp, and has an outwardly projecting flange 96, see Fig. 6.

A rubber gasket 98 is positioned between end wall 90 and flange 96 to seal the inner end of the housing when the housing is rotated relative to base 76 to compress said gasket. It is apparent that the electrical connector is sealed within the structure and will be protected from the natural elements and also explosive gases will be excluded therefrom.

The connector sockets for fluorescent tubes described above, are simple, easily adjusted and will

eliminate to a large degree, the fire hazards usually encountered when using electrical connectors for fluorescent lamps.

A further advantage gained by the use of the present invention is the cushioned mounting for the lamp which reduces the amount of lamp breakage.

Many minor changes might be made in the structure as described, without departing from the spirit of the invention, and it is desired to be limited by the scope of the appended claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

In an adaptor for a tubular fluorescent lamp having electric contact pins, a fixed conduit having its end portion externally threaded, a socket threaded to cooperatively engage the threads of said conduit and adapted to operatively engage said contact pins whereby said contact pins are electrically connected with conductors passing through said conduit, a housing formed at its opposite end portions to receive the respective adjacent end portions of said tubular lamp and said conduit, a gasket at each end of said housing, and means adjustably carried by said conduit to compress said gaskets between the adjacent members to form tight joints therebetween whereby the socket is sealed in said housing between said conduit and the reduced end portion of said lamp.

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