

June 10, 1941.

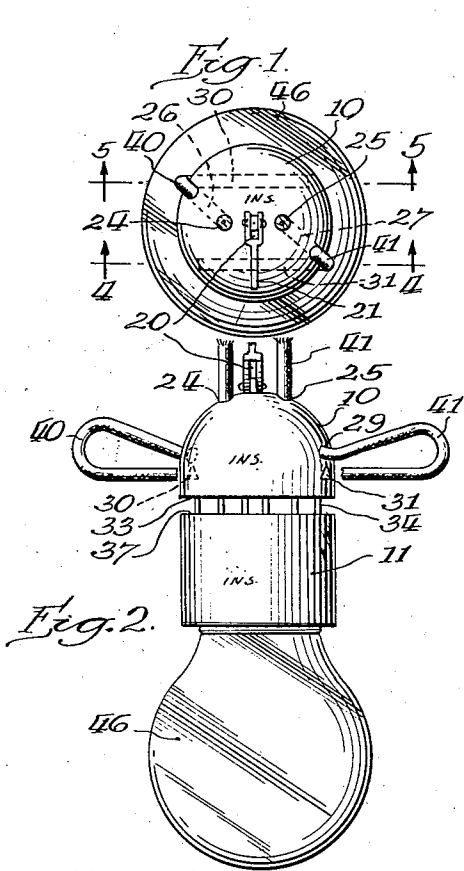
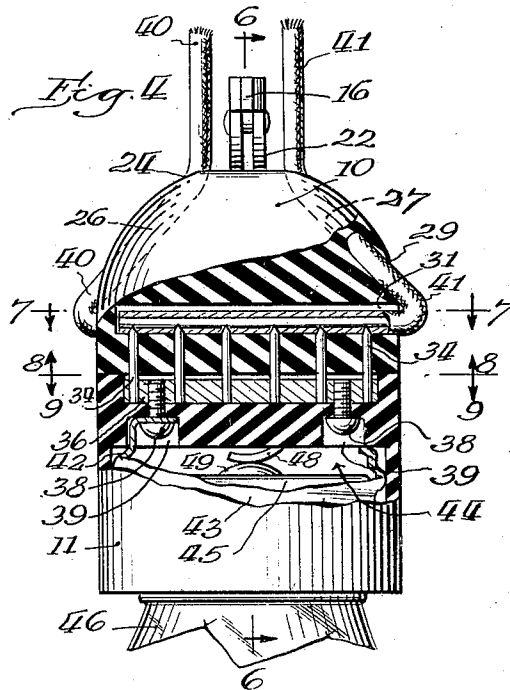
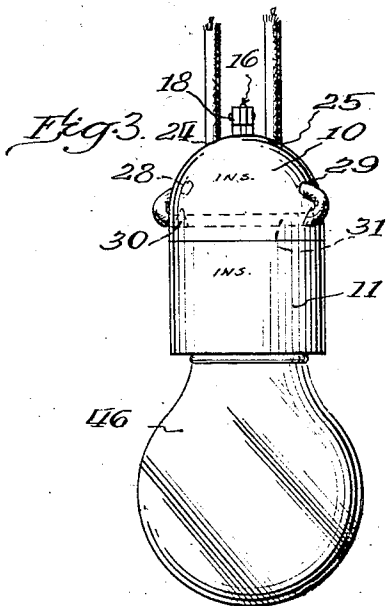
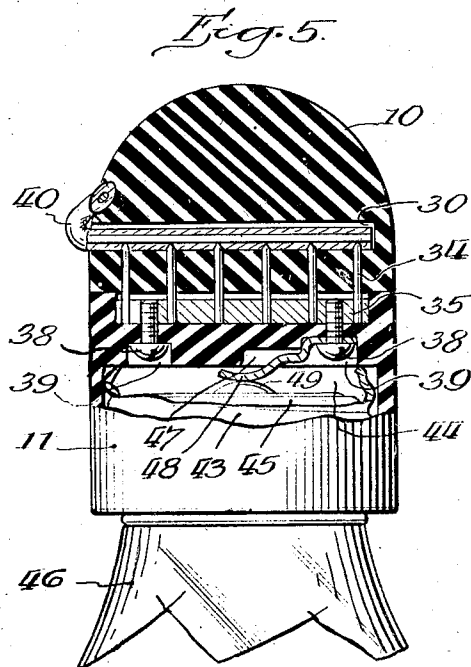
J. J. HOLLANDER

2,245,194

ELECTRIC LAMP RECEPTACLE

Filed Jan. 27, 1939

2 Sheets-Sheet 1



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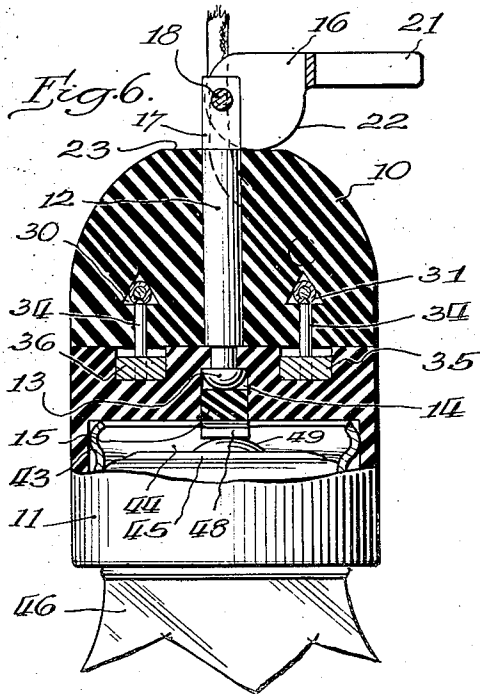
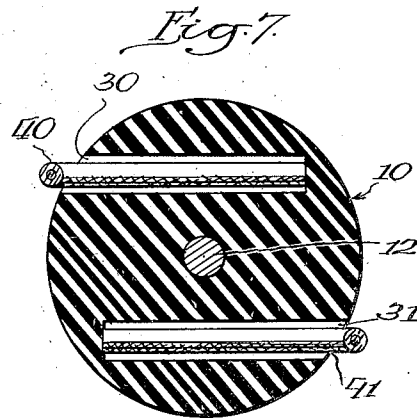
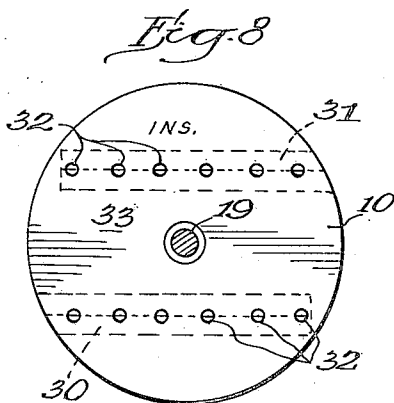
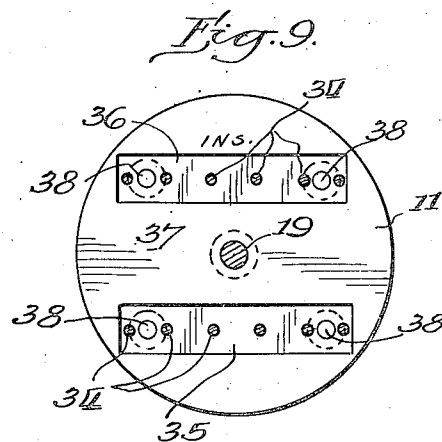
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ELECTRIC LAMP RECEPTACLE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ELECTRIC LAMP RECEPTACLE

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3 Claims. (Cl. 173-340)

This invention relates to electrical connections, and more particularly, to one adapted to be used where a speedy positive connection is to be made, either permanently or temporarily, as for example when lamps are to be used for decorative devices.

Heretofore, electrical connections of a similar type have been used, but a disadvantage has been that the arrangement of parts has been such that a plurality of parts has been necessary. It is, therefore, the purpose of this invention to provide a quick electrical connection which will consist of substantially one assembled device to which the wires constituting the connection may be efficiently and immediately attached.

It is a further object of this invention to provide a device of the character described which will enable a quick electrical connection to be made without the necessity of stripping wires and without the use of tools of any kind.

It is a further object of this invention to provide in a device of the character described means for inserting wires which will permit the insertion and subsequent positive contacting of wires of a variety of thicknesses.

Still a further object of this invention is to provide a device of the character described, which will include means for positively piercing and establishing contact with electrical wires inserted in a portion thereof for the purpose of establishing electrical connection.

Still a further object of this invention is to provide a device of the character described, which will include means for the prevention of accidental pulling out of wires inserted therein.

A further object of this invention is to provide a quick electrical connection which will consist of a minimum of simple parts adapted for economical manufacture on a large scale, and which will produce a device adapted to efficiently discharge the duty for which the same is designed.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings, a preferred embodiment thereof, from an inspection of which, when con-

sidered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

Fig. 1 is a top plan view of an embodiment of the present invention;

Fig. 2 is an elevational view of the device in an "open" position with wires partially inserted therein;

Fig. 3 is an elevational view of the device in a "closed" position with the wires completely inserted therein;

Fig. 4 is an elevational view of the device with portions cut away and in section;

Fig. 5 is a sectional view taken along the line 5-5 of Fig. 1;

Fig. 6 is a medial sectional view taken along the line 6-6 of Fig. 4;

Fig. 7 is a transverse sectional view taken along the line 7-7 of Fig. 4 and in the direction of the arrows;

Fig. 8 is a bottom plan view of the upper portion of the device taken generally along the line 3-3 of Fig. 4 and in the direction of the corresponding arrows;

Fig. 9 is a plan view of the top of the bottom member taken as a section along the line 9-9 of Fig. 4 and in the direction of the corresponding arrows.

The device generally consists of two portions, one provided with means for attaching the connecting wires and the other providing an electrical outlet, such as shown in the present embodiment for an incandescent lamp. Said portions are connected together by a permanent pin which is provided at one end thereof with means for separating the two portions a small amount or bringing them together in operative arrangement, as desired by the operator.

The upper portion of the device is provided with channels and grooves for the reception of the connecting wires and has openings in its bottom face communicating with some of said channels for cooperating with pointed prongs of the bottom portion inserted therein. Said prongs serve to pierce and establish contact with wires inserted in said grooves.

The bottom portion of the device is provided with sets of prongs as described above and for the purpose hereinbefore set forth, which are inserted in members contained on the upper face of said

portion. These members are connected electrically with the electrical outlet provided in the bottom face of the bottom portion.

Referring now to more specific details of construction and particular arrangement of parts, the reference characters 10 and 11 will be used to generally designate the upper portion of the present embodiment and the lower portion, respectively. Said portions 10 and 11 are maintained in operative arrangement by a pin member 12 which is fixed to the member 11 by means of the riveted head 13 of said pin 12 being set in the recess 14 provided in the member 11, said recess being plugged by means of the member 15. Thus, the member 11 is fixed on the reduced diameter portion 19.

The pin member 12 extends through the upper member 10 in a sliding fit, and the protruding end is provided with the cam member 16. Said cam member 16 is pinned to the end 17 of the pin member 12 by means of the pin 18, permitting rotary motion of said cam member about said pin 12. Said cam member 16 is provided with a mortised groove 20 which engages over the end 17 of the pin 12, said end 17 acting as a tenon.

It will be noted that the cam member 16 is pinned to said tenon 17 eccentrically, as best shown in Fig. 6. Thus, as the arm 21 is moved clockwise, as viewed in Fig. 6, the riding portion 22 of the cam 16 is forced down against the top 23 of the member 10, causing the portions 10 and 11 to come into closer proximity for purposes to be described, and also permitting the exertion of considerable force in bringing about this condition. When, on the other hand, the arm 21 of the cam member 16 is moved in a counterclockwise direction, as viewed in Fig. 6, the riding portion 22 of the cam 16 tends to leave the upper portion 23 of the member 10, allowing the same to be moved slightly relative to the member 11, permitting the withdrawal of the pinning means from the inserted wires, and the subsequent withdrawal of the wires as will presently be described.

While the embodiment shown is provided with cam means of such a nature as not to permit the complete separation of the members 10 and 11, it is obvious that the means could be substituted for other means which will perform the function similarly, or which may permit the members 10 and 11 to be separated. In that connection, the inventor does not wish to limit himself to specific means disclosed.

The upper member 10 is provided in its top surface with two openings 24 and 25, which enter into diagonal channels 26 and 27, said channels opening out to the sides of the upper members at 28 and 29 respectively. Said openings and channels are for the loose insertion and maintenance of ordinary insulated wires, as designated by the characters 40 and 41. Directly below the openings 28 and 29, transverse slots 30 and 31 are respectively formed in the member 10, said slots being of triangular cross-section and extending substantially across the entire diameter of the member 10. In the present embodiment, the channels or slots 30 and 31 extend to within a short distance of the end of the member 10.

The triangular cross-sectional shape of the slots 30 and 31 is such that the base of the triangle faces the bottom portion of the member 10. A plurality of openings or tubules 32 connect the face 33 of the bottom of the member 10

with the triangular sectioned slots 30 and 31. Said tubules accommodate the sharpened prongs 34 which are fixed in the members 35 and 36, said members being set in grooves formed therefor in the surface 37 of the member 11.

When wires 40 and 41 are inserted, as shown in Figs. 3 to 7, within the triangular slots 30 and 31, and the members 10 and 11 are brought together in a manner described hereinbefore, said sharpened prongs 34 pierce the insulation of the wires 40 and 41, causing electrical contact to be established therewith. If the diameter of the wire is of varied thicknesses, it will be seen how the wire is jammed up to the apex of the triangular slot and is pierced by the prongs 34. Thus, the device will accommodate wires of varying thicknesses.

The members 10 and 11 are constructed of an insulating material, such as "Bakelite" or the like, and the prongs 34 and members 35 and 36 are of electrically conducting material. Said members 35 and 36 are held in slots in the surface 37, as hereinbefore described, by means of the screws 38 threaded into the bottom of the member 35, and similar screws being threaded into the members 36. Said screws enter said members 35 and 36 by reason of their being inserted in recesses 39 formed in the bottom of the socket-like opening of the member 11. One of said recesses is enlarged for the accommodation of a conducting member 42 which connects the member 36 with a metallic screw socket 43 inserted in the socket opening 44 for the insertion of the ferrule 45 of an incandescent electric bulb 46 therein.

Another of said recesses 39 is provided with an extension thereof 47, which accommodates a spring contact member 48, which is attached to a screw 38 in the member 35. Said spring contact 48 is adapted for contacting the tip 49 of the bulb ferrule 45 for establishing electrical contact therewith.

From the above description, it will be seen how contact is established between the wire 40 and the tip 49, and between the wire 41 and the ferrule 45, establishing a positive electrical contact therebetween, said connection being made quickly, positively and entirely without tools.

The invention has been shown embodied in a device providing a quick connection with an electrical socket, but it is obvious that same could be adapted for use in any of a variety of other ways, such as outlets, adapters, and the like.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

I claim:

1. In a device of the character described, an upper body portion and a lower body portion, said lower body portion being provided with contacting means for contacting electrical devices associated therewith, piercing means electrically connected with said contacting means, said piercing means comprising a plurality of pointed members spaced from one another set into said lower body portion and protruding from the upper end thereof, said upper portion being provided with means for the insertion of wires

therein and means for causing the piercing means of said lower body member to enter said upper body member and pierce said wires, said means comprising a plurality of tubules formed in said upper body portion and adapted to receive said pointed members, said means for insertion of said wires consisting substantially of two channels for each wire, said channels being disposed at an angle with one another to remove strain from said piercing means, and means for maintaining said body members in cooperative relation.

2. In combination with a device of the character described, comprising means for inserting electrical wires in a member and means for piercing said wires and causing contact to be made between same and an electrical device adapted to be associated with said member, means for the prevention of said wires from being withdrawn from said inserting means, said withdrawal prevention means consisting of a

channel in said member disposed at an angle to each of said inserting means and adapted to have one of said wires pass therethrough before entering such inserting means, said inserting means and said channel being entirely disconnected from one another.

3. In combination with a device of the character described, comprising means for inserting electrical wires in a member and means for piercing said wires and causing contact to be made between the same and an electrical device adapted to be associated with said member, means for adapting said inserting means to receive wire of variable sizes, consisting of providing said inserting means with a substantially triangular shape cross sectional channel, the base of said channel including means for the insertion of said piercing means to pierce wires inserted in said channels.

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