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2,543,951

ELECTRIC CORD PLUG

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Fig. 1.

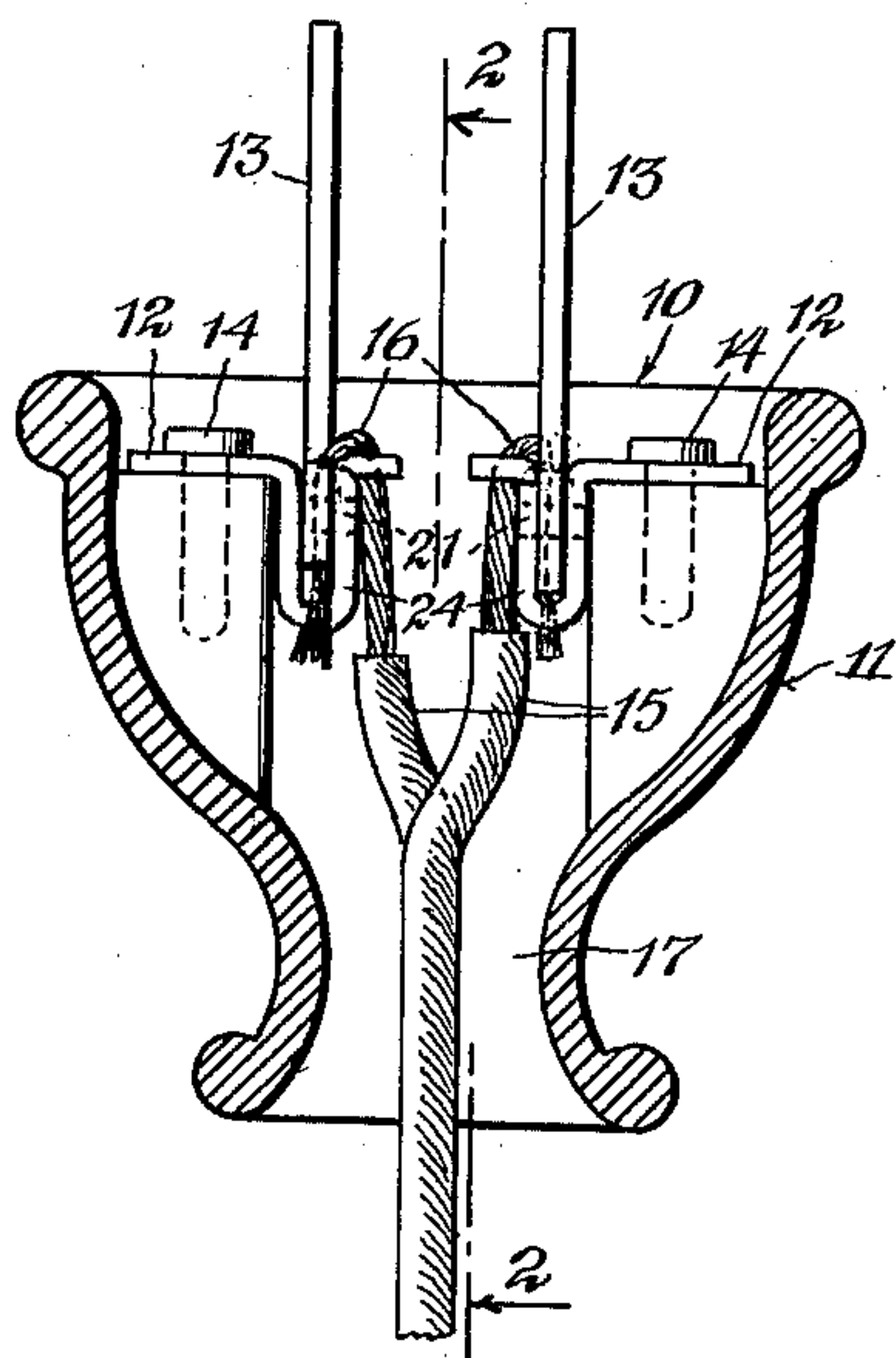


Fig. 2.

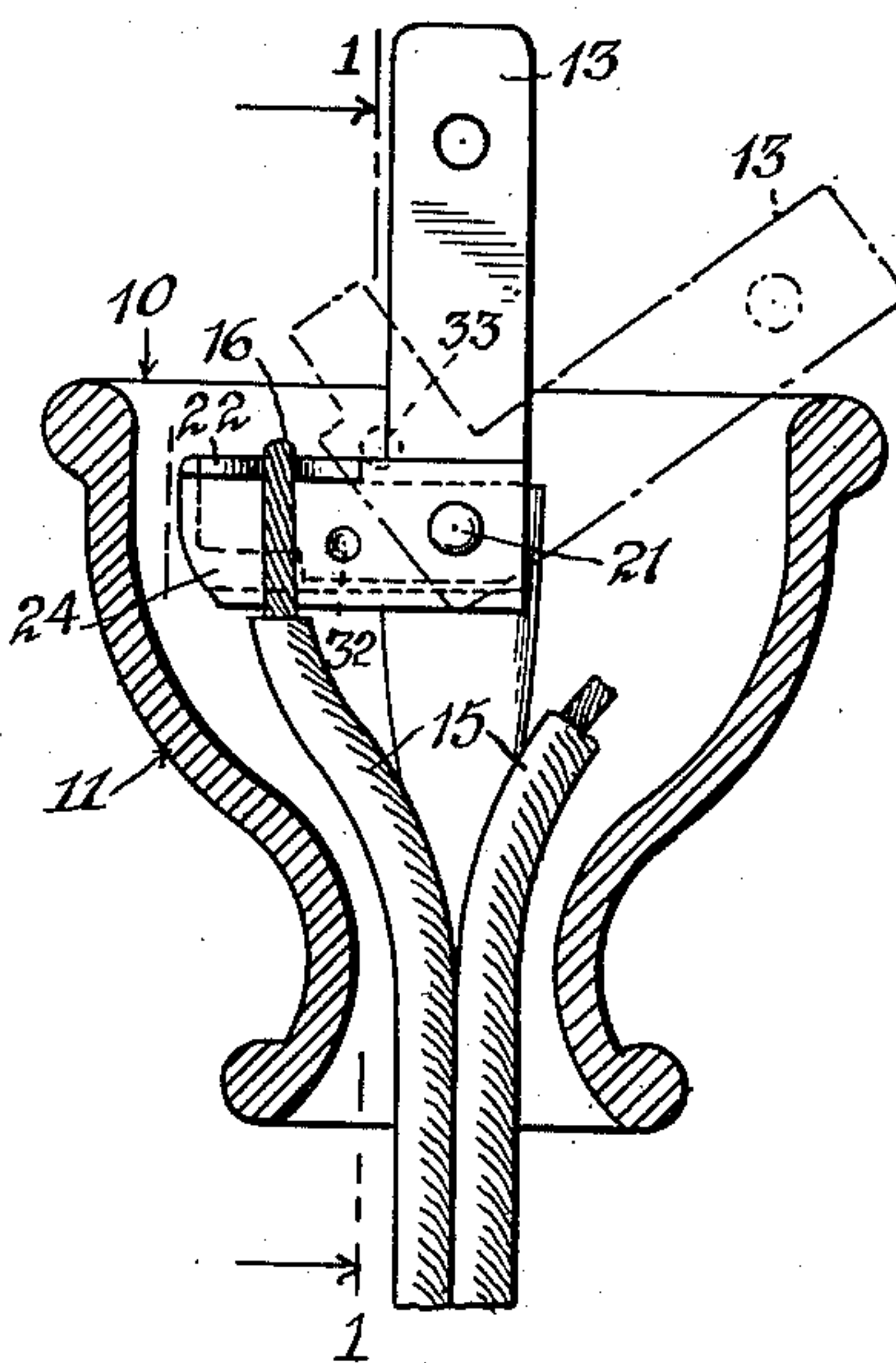


Fig. 3.

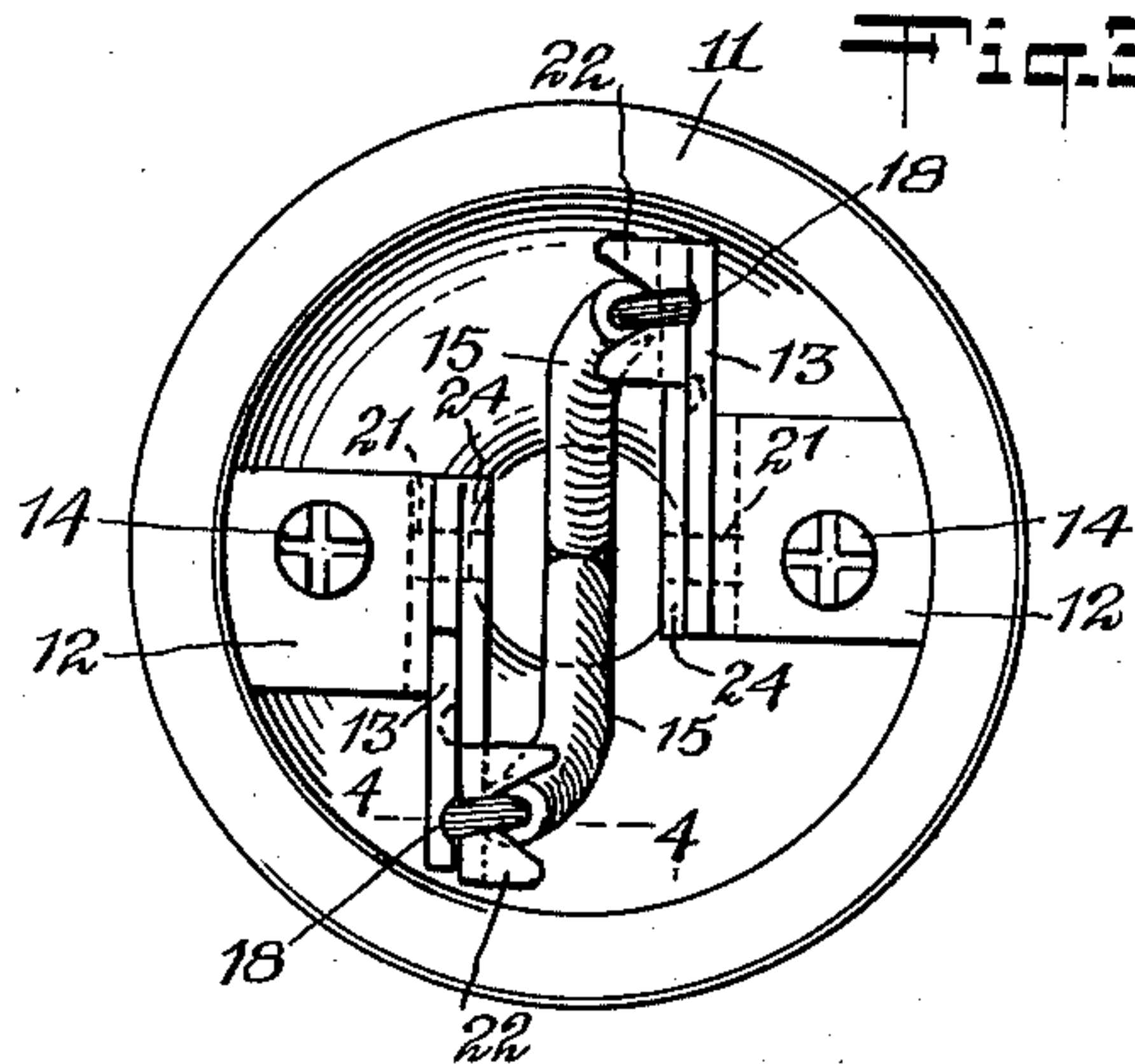


Fig. 4.

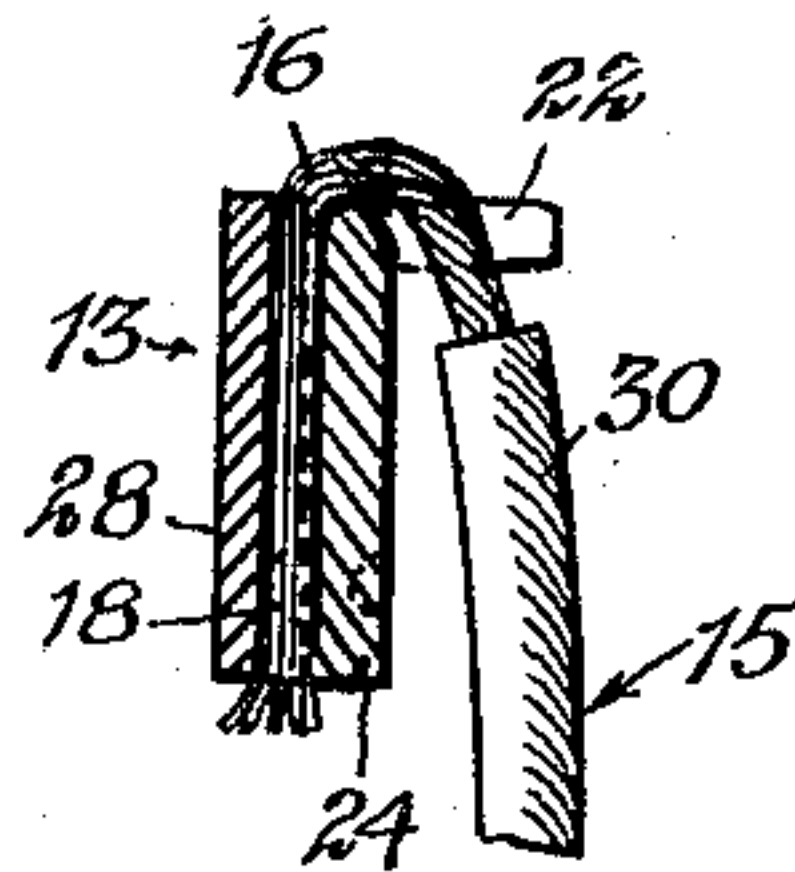


Fig. 5.

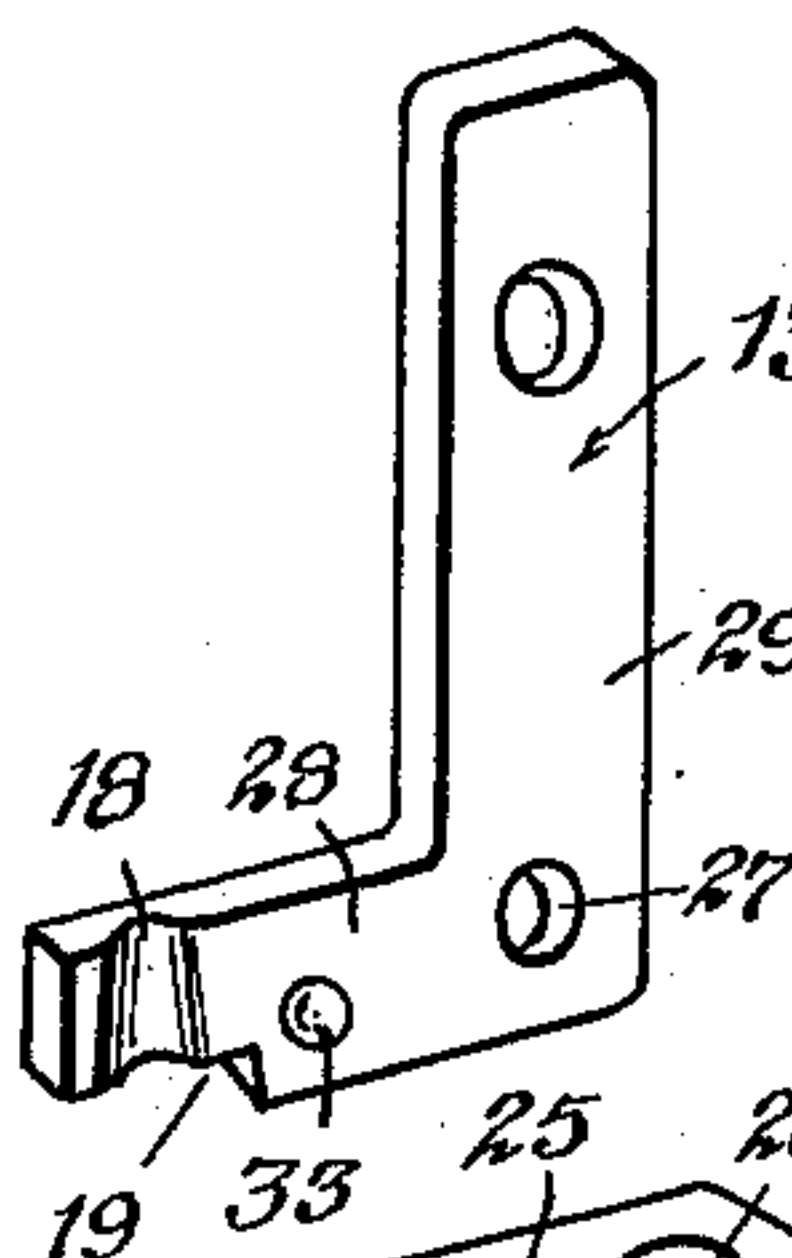
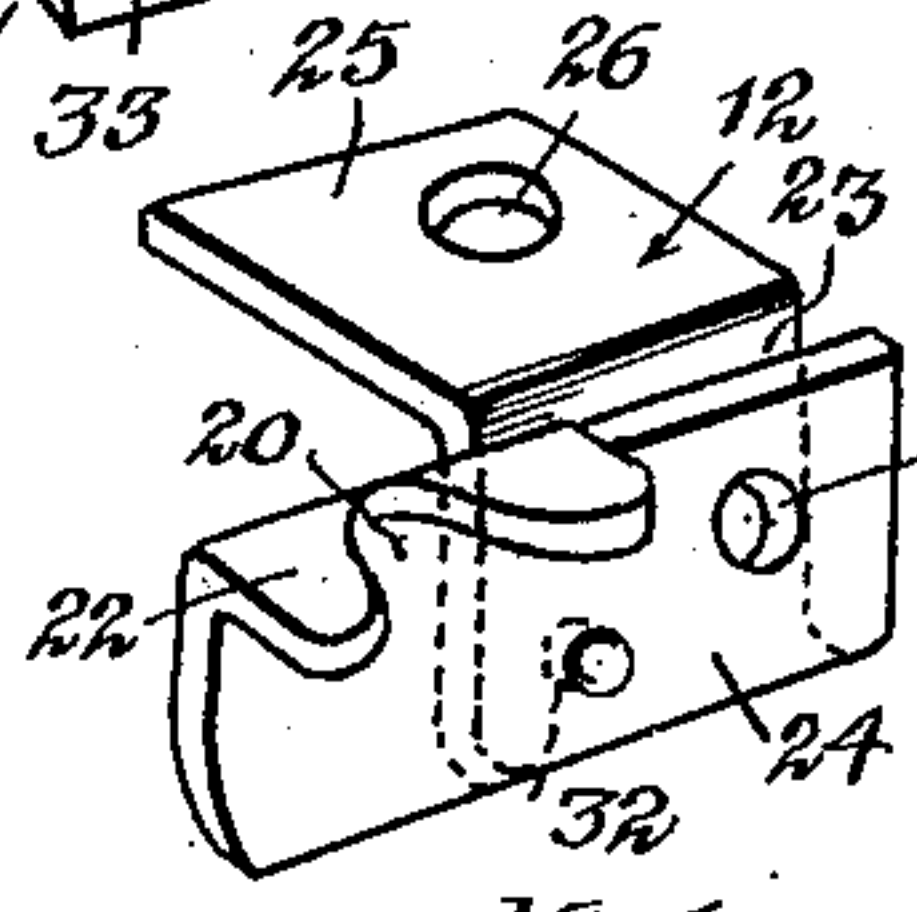


Fig. 6.



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# UNITED STATES PATENT OFFICE

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## ELECTRIC CORD PLUG

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5 Claims. (Cl. 173—361)

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This invention concerns an electrical device and, more particularly, a connecting plug such as used on the majority of the conventional household electrical appliances.

The principal objective of this invention was to design an electrical plug whereby the wire connections to that plug could be easily and quickly made.

My invention is a simple device wherein it is possible for anybody to make the necessary adjustments with the final result being a strong electrical connection.

There are many advantages of this device, one of them being that it is cheap to manufacture due to the fact that it has less component parts than the conventional outlet plug.

Another advantage is that it is both a time and labor saving device which can be adapted for both home and industry use.

It also has a further advantage of assuring a maximum separation of the connection leads so that there is no possibility of a short circuit.

A further advantage is that the wire need only be bared a short distance and the insulated portion of the wire can be brought in direct contact with the stationary contact assuring a strong and safe connection.

This device can be manufactured in various sizes and can be utilized on all of the household electrical equipment. Further advantages and unique features of my device will be apparent as I proceed with the description.

With reference to the drawings—

Figure 1 shows a cross section view of Figure 2 on line 1—1.

Figure 2 shows a cross section view of Figure 1 on line 2—2.

Figure 3 shows a plan view of my device.

Figure 4 shows a cross section view of Figure 3 on line 4—4.

Figure 5 shows a perspective view of the movable contact member.

Figure 6 shows a perspective view of the stationary contact member.

With reference to Figure 1, I have shown an electrical plug 10 which is made of plastic or other similar material. The plug 10 is equipped with a pair of identical connectors each of which consists of a stationary contact 12 and a pivotally mounted contact 13 constituting a prong electrode of L shape. The lower portion of the plug 10 has an opening 17 through which are brought the electrical conductors 15. Mounted in the plug and located in spaced relation to each other are two stationary contact members 12 which are identical in every respect.

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As shown in the drawing, these stationary members 12 are held in position through screws 14. However, if desired, other suitable means of holding these contacts in the plug such as moulding them into the shell, may be utilized.

Figure 6 shows a close-up view of the stationary contact 12 which consists of a single piece of metal shaped intermediate its ends to form a substantially U-shaped area 23 and the ends of which are bent at right angles to form shoulders 22 and 25. The shoulders 22 and 25 are in the same horizontal plane but are laterally offset from each other. The shoulder 25 is equipped with a hole 26 through which screw 14 attaches the stationary member 12 to the shell 11. Shoulder 22 is equipped with a notch 20 through which the electrical conductor 15 is brought when making a connection. The notch 20 assists in holding the wire in place until the movable contact 13 is pivoted into position making the final connection. In to the U-shaped area 23 is mounted the movable contact 13. The movable contact 13 consists of an L-shaped member with two legs 28 and 29. Leg 28 is approximately half the length of leg 29 and positioned in the corner of the movable contact 13 is a hole 27. The movable contact member 13 is pivoted to the stationary contact through the means of a pin 21 which extends through the holes 31 on both sides of the U-shaped member 23 and the hole 27 in the movable contact 13. The leg 28 of the movable contact 13 which is normally in a horizontal position, is equipped with a groove 18 for the purpose of receiving the wire when it is placed between the movable and stationary contact. Directly under the groove 18 is a small area 19 that has been removed from the leg 28 to facilitate making the electrical connection. The notch 20 assists in holding the wire in place until the movable contact is pivoted into position making the final connection.

Figure 4 shows a close-up of the electrical conductor 15 which consists of the flexible wire 16 covered by the insulation 30. To make an electrical connection, the ends of the conductor 15 are "skinned" for a short distance so that the flexible wire 16 is bared. These wires are then fed through the opening 17 in the bottom of the electrical plug 10 and brought up in the vicinity of the stationary contact 12. The movable contact 13 is then pushed in a direction away from notch 20 in the stationary contact member with the result that the area where the wire is to be connected to the stationary contact is clear.

The end of one of the wires is then brought up through the notch 20 so that the insulation



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is almost up to and touching the shoulder 22. The bared end of the wire is then bent over the side 24 of the U-shaped area and while in this position, the movable contact 13 is pivoted back into its normal position. While moving back into its normal position, the groove 18 in the leg 28 of the movable contact will fit over the wire forcing the wire into close relation between the stationary and movable contact.

As an additional safeguard to prevent the prongs 13 from moving while in operating position, the plug 10 is equipped with a locking device. This device merely consists of a raised portion 32 on the stationary contact 12 which engages a recessed portion 33 on the prongs 13 when the prongs are in their normal operating position. This device is sufficient to hold the prongs in a normal position and prevent any movement that would tend to disengage the conductors 15. The same procedure may then be duplicated for the other wire. After this operation has been concluded, the result is a strong and safe electrical connection which does not leave any bare wires exposed and a connection that can be made with the minimum of effort. My invention has an advantage over that type of electric cord plug wherein the prongs are merely pushed into the body of the plug where they engage the stationary contacts and wire conductors. In that type of plug there is always the possibility of either one or both of the prongs becoming detached from the plug and remaining in the electrical outlet. Due to the construction of my device herein the prongs are pivoted to the stationary contacts. There is no possibility of the prongs becoming separated from the body of the plug.

Whereas I have disclosed the preferred form of my invention, it should be realized that minor changes can be made without departing from the principal scope of the device.

I claim:

1. An electrical plug comprising a shell of insulating material, a pair of stationary contact members arranged in spaced relation, each stationary contact member consisting of a U shape portion, an attaching portion connected with one leg of the U shape portion, and a contact portion connected with the other leg of the U shape portion, each stationary contact member secured to the shell by a fastener engaged with said attaching portion and the shell, a pair of prong members each of which is L shape providing two legs, there being one prong member arranged in the U shape portion of each stationary contact member, a pivot connecting each prong member at the juncture of the legs thereof with the related U shape portion so that the prong member has pivotal movement into and out of a functioning position, one leg of each prong member cooperating with the contact portion of the related stationary contact member for making an electrical connection of an electrical conductor to said members, and the other leg of each prong member projecting exteriorly of the shell.

2. An electrical plug as set forth in claim 1, wherein said contact portion of the stationary contact member has a notch to receive and aid in holding the electrical conductor in place.

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3. An electrical plug comprising a shell of insulating material, a pair of stationary members arranged in spaced relation, each of said members including an attaching portion and a laterally extending contact portion integral with the attaching portion, fastening means securing the attaching portion to the shell, a pair of plug-in prong members each of which is L-shaped provided with two legs, there being one prong member for each stationary member, a pivot connecting each prong member with its related stationary member so that the prong member has pivotal movement on a transverse axis with respect to the longitudinal axis of the shell, one leg of each prong member projecting exteriorly of said shell and movable into a normal position longitudinally thereof for insertion into a female plug member, the other leg of each prong member being movable with a scissors action into a normal position adjacent its related laterally extending contact portion for clamping an electrical conductor therebetween.

4. An electrical plug as set forth in claim 3, and each contact portion having spaced projections providing a notch which receives the electrical conductor and the end portion of the conductor is clamped between the contact portion and the related leg of the prong member.

5. An electrical plug comprising a shell of insulating material, a pair of stationary members arranged in spaced relation in said shell, each of said members including an attaching portion and a laterally extending contact portion integral with the attaching portion, fastening means securing the attaching portion to the shell, a pair of plug-in prong members each of which is L-shaped provided with two legs, there being one prong member for each stationary member, a pivot connecting each prong member with its related stationary member so that the prong member has pivotal movement on a transverse axis with respect to the longitudinal axis of the shell, said prong members being movable in planes substantially parallel, one leg of each prong member projecting exteriorly of said shell and movable into a normal position longitudinally thereof for insertion into a female plug member, said prongs moving in opposed directions when moving into said normal position, the other leg of each prong member being movable with a scissors action into a normal position adjacent its related laterally extending contact portion for clamping an electrical conductor therebetween.

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