Oct. 25, 1938. N. CHIRELSTEIN 2,134,074

ELECTRIC PLUG SOCKET CONSTRUCTION

Filed Nov. 6, 1936

Fig. 1.

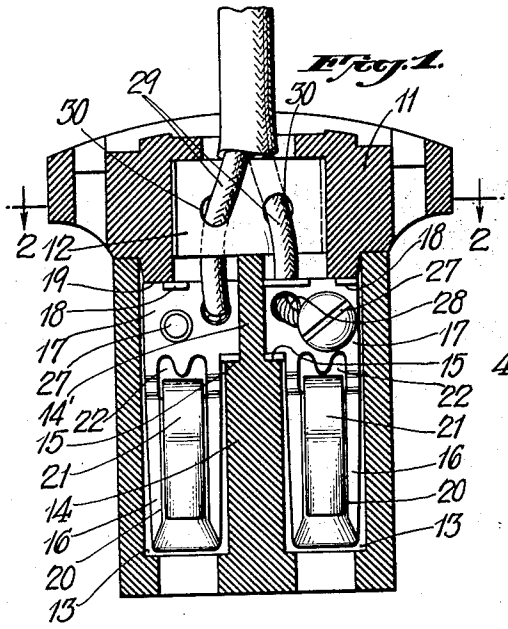


Fig. 4.

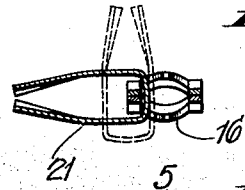


Fig. 3.

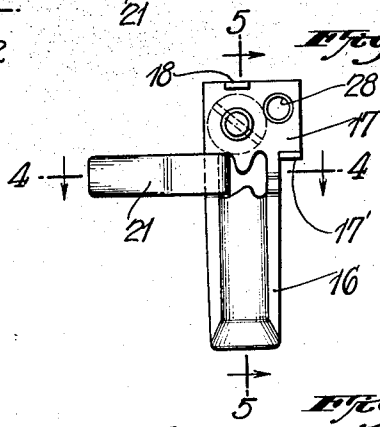


Fig. 5.

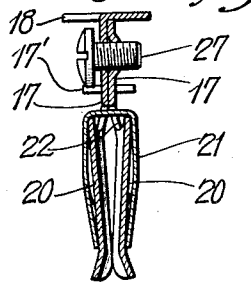


Fig. 2.

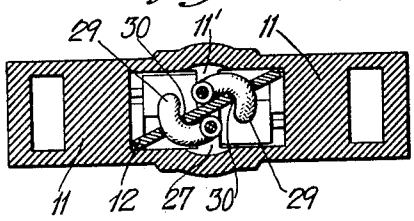


Fig. 6.

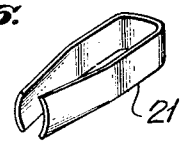


Fig. 8.

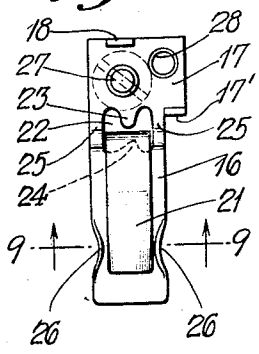


Fig. 9.

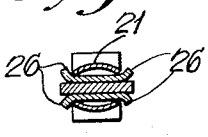
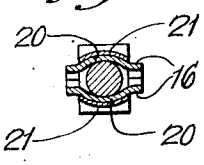


Fig. 7.



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Patented Oct. 25, 1938 2,134,074

UNITED STATES PATENT OFFICE

2,134,074

ELECTRIC PLUG SOCKET CONSTRUCTION

Nathan Chirelstein, Newark, N. J.

Application November 6, 1936, Serial No. 109,408

2 Claims. (Cl. 173—332)

My invention relates to electric plugs and in particular to socket members used therewith, or used as socket members in other types of constructions.

The object of my invention is to provide a socket member that will carry a predetermined current of electricity without overheating.

A further object is to provide a socket having jaws made of soft metal such as brass or copper, which will carry practically all of the current, and a spring made of a flat strip of steel bent into a U shape, the free ends of which rest upon the jaws and hold them in contact with the prongs or blades of the male plug member under a pressure such as to insure a strong clutch action of the jaws on the blades.

A further object is to provide a construction which requires no screws to hold the spring element in co-operative relation with the jaw members; the main elements consisting of but three parts comprising the two jaw members and the spring held together in assembled relation by the spring.

A further object is to so construct the parts that the spring cannot shift from its adjusted position after it has been attached to the jaws, and also, that it may be easily removed from the jaws and exchanged for a spring of less or greater stiffness, as occasion may require.

My improved socket construction is shown in the present application as it appears when constructed for use in a female plug casing; the shank portions being formed with offset flanges by means of which they are held in proper position in the casing, but it will be understood that the shanks may be made of any metal or in any form required for the specific purpose of use.

Referring to the drawing which forms a part of this specification;

Fig. 1 is a vertical sectional view thru the casing of the plug, disclosing the sockets and parts located in their normal positions therein.

Fig. 2 is a sectional plan view, on line 2—2 of Figure 1, showing the arrangement of the electrical conductors relative to a fibre-board plate thru which they extend.

Fig. 3 is a front elevational view of a socket and a spring member as they appear in the act of assembling and

Fig. 4 is a cross sectional view on line 4—4 of Figure 3, the dotted lines illustrating the spring in its first position of assembly and the full lines showing the spring in the position shown in Figure 3, as it appears prior to being swung laterally over the body of the jaw members, as illustrated in Figure 1.

Fig. 5 is a vertical sectional view of a complete socket construction with the spring member in position on the jaws which are held together under pressure of the spring, the view being taken on line 5—5 of Figure 3, in which view the spring member is not shown in its normal position on the jaws.

Fig. 6 is a perspective view of the spring member in which its closed end is shown to be formed with flat sides and its free ends to be curved to stiffen them laterally and also to hold them in position on the upper or outer curved surfaces of the jaw members.

Fig. 7 is a fragmentary cross sectional view thru one end of a socket construction in which the inner sides of the jaws are formed with curved surfaces to embrace a circular prong.

Fig. 8 is a front elevational view of a socket formed to provide flat jaws to engage with a flat blade terminal member.

Fig. 9 is a cross sectional view thru one end of the socket, taken on line 9—9 of Figure 8, showing a flat blade held in the jaws; the sides of the jaws being turned outwardly to position the ends of the spring member.

10 indicates a casing body portion of insulating material, and 11 an upper end portion held thereon by suitable means.

The upper end portion is formed with a chamber 11' which is rectangular in cross section, and a fibre-board plate 12 extends at an angle from one corner at one side of the chamber to a corner on the opposite side as illustrated in Figure 2.

The body portion 10 is formed with two chambers 13—13 respectively by means of a central partition 14, the upper end part of which is reduced in width to form shoulders 15—15 respectively.

Sockets 16—16 respectively are formed with shank portions 17—17 respectively, each shank portion having an offset flange 17' which rests on a shoulder 14' of the casing, and a similar shoulder 18 which rests under the lower end of the top 11 at 19 and is held thereby in position between the casing portions.

Each socket construction comprises two jaw members 20—20 respectively having shank portions 17—17 respectively formed integral therewith, and a spring member 21 which is formed as illustrated in Figure 6.

Each shank is provided with an opening 22 formed as shown to provide oppositely disposed

projecting parts 22, shown in dotted lines, and 23, which are located midway the width of the opening, and the spring 21, having been placed in position as shown in Figures 3 and 4, is swung laterally over the jaws to their normal position as illustrated.

It will be understood that the length and width of the opening 22 is but slightly greater than the width of the spring, and the projections 22 and 23 are closely positioned to the opposite walls of the spring to prevent it from shifting its position on the jaw members.

The width of the metal side conducting portions 25—25 respectively, is sufficient to carry the current from the shank portion to the jaw without undue resistance and therefore they do not become hot enough to affect the temper of the springs; also the width being reduced permits the jaw portions to bend easily when the blades are forced between them in the act of coupling.

When made for use with cylindrical prongs the jaws are formed with curved inner sides and belled ends as illustrated in Figures 3 and 5, and when flat blade terminals are to be used the jaws may be formed as illustrated in Figures 8 and 9, but it will be understood that the jaws having curved surfaces will also serve to hold a flat blade terminal.

When the jaws are formed to hold flat blade terminals, the side edges are turned outward as illustrated at 26—26 respectively and the free ends of the spring rest between them as illustrated in Figure 8.

The shanks are formed with drilled and tapped openings to receive the binding screws 27, and with holes 28 thru which the lead-in wires 29 extend.

The plate 12 is also provided with holes 30 thru which the wires extend and the parts are assembled as illustrated in Figure 1, as will be readily understood.

The construction as a whole, is simple and efficient, and may be made at a low cost.

Having thus described my invention I claim as new:

1. A socket construction comprising two jaw members, each of which is formed with a shank having an opening adjacent its inner end, said opening being substantially rectangular and having inner, outer and side walls, a projection on each of the inner and outer walls of the opening with said projections being oppositely disposed centrally of the side walls of the opening and terminating in spaced relation and defining a space on each side of the projections and a substantially U-shaped spring having the bight thereof disposed between said projections with the arms of the spring extending over the outer sides of the jaw members to hold them together in operative relation.

2. A socket construction comprising two jaw members, each of which is formed with a shank having an opening adjacent its inner end, said opening being substantially rectangular and having inner, outer and side walls, a substantially U-shaped spring having the bight thereof disposed in said openings with the arms of the spring extending over the outer sides of the jaw members to hold them together in operative relation and oppositely disposed means projecting inwardly into the openings from the inner and outer walls of the openings defining a space on each side of said means and for engagement with the bight of the spring for holding the latter against movement longitudinally of the jaw members.

NATHAN CHIRELSTEIN.