

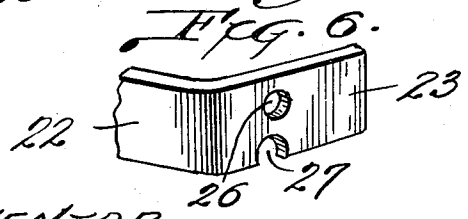
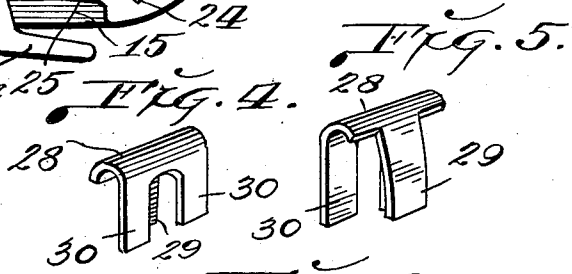
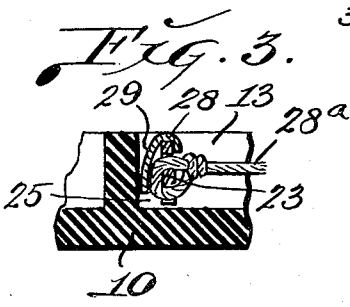
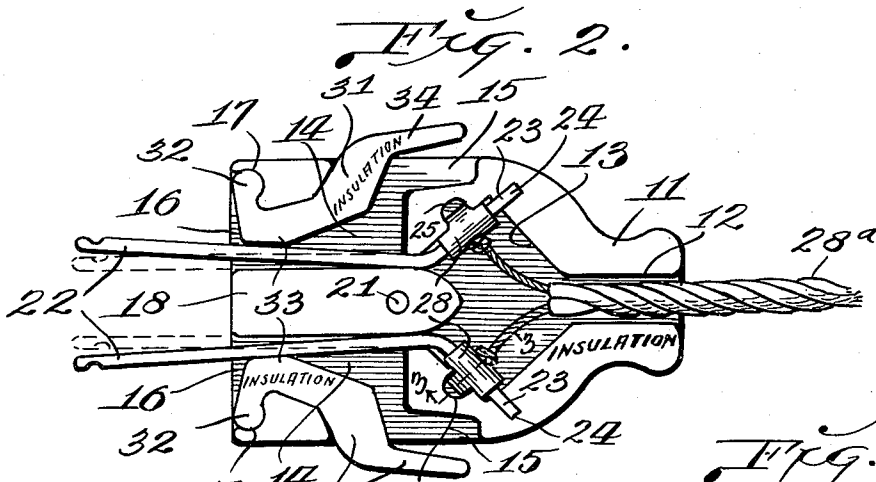
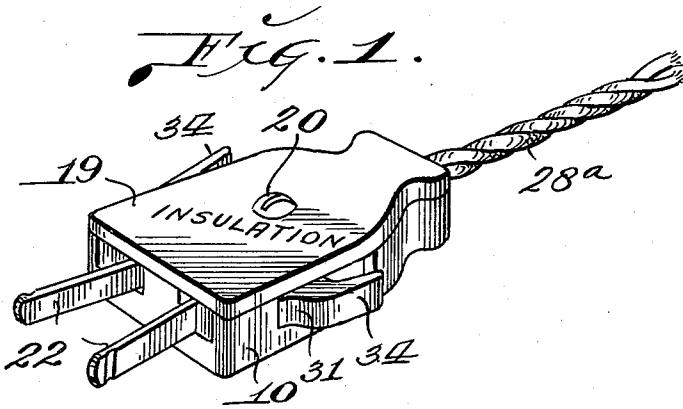
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2,254,754

CONTACT PLUG FOR ELECTRIC CORDS

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CONTACT PLUG FOR ELECTRIC CORDS

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2 Claims. (Cl. 173—361)

My invention relates generally to electrical appliances and more particularly to a contact plug that is attached to the end of current carrying wires and said plug being provided with a pair of resilient fingers that are adapted to enter slots or recesses in a socket for the purpose of establishing an electric circuit to the appliance with which the plug and cord are associated.

The principal objects of my invention are, to provide a plug having a pair of resilient contact fingers to which the ends of current carrying wires are connected and said plug including a pair of levers fulcrumed within the body of the plug, and portions of which levers project on opposite sides of the plug body in order to be conveniently engaged by the thumb and finger to be pressed inwardly, thereby flexing the contact fingers so that the same may be conveniently inserted in the slots of the socket, thus completing the electric circuit.

A further object of my invention is, to construct the contact finger actuating levers and to mount the same in the body of the plug so that very little pressure is required in order to flex the contact fingers that project from the plug.

A further object of my invention is, to provide simple and efficient means for electrically connecting the ends of the current carrying wires to the ends of the contact fingers that are located within the plug, and which improved connection eliminates the requirement for the screws that are ordinarily used in securing the wires to the contact fingers.

A further object of my invention is, to provide a plug of the character referred to that is of strong, durable construction and which comprises few parts, thereby minimizing the possibility of the plug becoming inoperative due to failure of the parts to function properly.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts that will be hereinafter more fully described and claimed and illustrated in the accompanying drawing in which:

Fig. 1 is a perspective view of a contact plug constructed in accordance with my invention.

Fig. 2 is a plan view of the body of the plug with the cover plate removed so as to show the construction and arrangement of the operating parts of the plug.

Fig. 3 is an enlarged cross section taken on the line 3—3 of Fig. 2.

Figs. 4 and 5 are perspective views of a clip

of resilient metal that is utilized for connecting the current carrying wires to the resilient contact fingers of the plug.

Fig. 6 is a perspective view of the inner end portion of one of the contact fingers or the end that is positioned within the body of the plug.

Referring by numerals to the accompanying drawing which illustrates a preferred embodiment of my invention, 10 designates a substantially rectangular block that forms the main body of the plug, said body being formed of suitable insulating material, and projecting from the rear end of said block is a short neck 11, in the upper face of which is formed a groove or channel 12 for the reception of the wires forming the cord to which the plug is connected. The inner end of groove 12 communicates with a substantially rectangular recess 13 that is formed in the upper portion of block 10, and formed in the front upper portion of the block are recesses 14, the rear portions 15 of which are open on the sides of the block. The front ends of recesses 14 are open on the front face of block 10 as designated by 16, and the outer ends of these portions 16 terminate in semi-circular bearings 17 that are formed in the block 10 adjacent its front corners.

A longitudinally disposed rib 18 is formed between the recesses 14, and the rear end of this rib projects a short distance into the recess 13.

Applied to the top of the block 10 and closing the recesses therein is a cover plate 19 of insulating material that has the same shape although thinner than said block, and this cover plate is detachably secured to the block 10 in any suitable manner, preferably by means of a screw 20 that enters a threaded recess 21 that is formed in the rear portion of rib 18.

A pair of contact fingers 22 of metal having a certain degree of resiliency are positioned in the recesses 14 adjacent the sides of the rib 18, and these fingers project through the inner portions of the open forward ends 16 of the recesses 14 and extend a short distance forwardly from the body of the plug.

The rear portions 23 of the contact fingers 22 and which occupy angular positions with respect to the straight forward portions are positioned in the forward side portions of recess 13, and the terminal portions of said ends 23 occupy notches 24 that are formed in the body 10 at the sides of recess 13. Formed in body 10 immediately in front of or to the sides of the inclined rear portions 23 of the contact fingers are recesses 25.

The inclined rear portion 23 of each contact finger is provided with an aperture 26, and formed in the lower edge of the portion 23 immediately below said aperture is a notch 27.

The current carrying wires or cables 28a that enter the body of the plug through the groove or channel 12 extend through the apertures 26, and from the latter said wires extend downwardly through the recesses 25 and thence through the notches 27 in the portions 23 and the terminal portions of said wires are then looped or coiled about those portions of the wires that extend from the rear portions 23 of the contact fingers to the insulated covering that passes through groove 12.

Thus, the current carrying wires are electrically connected to the rear portions of the contact fingers 22, and in order to clamp the connected portions of the wires to the contact fingers, clips 28 of resilient metal are applied to the inclined rear portions 23 of said contact fingers.

These clips are substantially of inverted U-shape and each clip includes a depending finger 29 which, when the clip is positioned on the rear end portion 23 of the contact finger, extends downwardly over that portion of the conductor that occupies the recess 25 (see Fig. 3).

The opposite side of the clip comprises a pair of spaced resilient fingers 30 that extend downwardly over the face of the portion 23 of the contact finger within the recess 25, and these fingers 30 overlie the corresponding face of the portion 23 immediately to the sides of the looped or twisted end of the conductor, thus holding the same against becoming untwisted and detached from the contact finger.

The main body portions 22 of the contact fingers gradually diverge as they extend forwardly through and from the body of the plug from the points where they engage the side faces of the rib 18 adjacent the inner end of the latter, and in order to flex said contact fingers and move the same into substantially parallel positions in order that they may be inserted into the slots of a socket, levers 31 are mounted for operation in the recesses 14 with the forward ends of said levers occupying the open forward ends 16 of said recesses.

Formed integral with and projecting laterally from the forward ends of the levers 31 are substantially circular heads 32 that engage the semi-circular bearings 17 in the forward corners of the block 10, thus providing fulcrums for the contact finger actuating levers.

The levers 31 are provided on their inner faces adjacent their forward ends with lugs or projections 33 that bear against the outer faces of the intermediate portions of the contact fingers 23. The rear portions of levers 31 extend outwardly through the rear portions 15 of the recesses 14 and terminate in short arms 34 that are adapted to be engaged by the thumb and finger when pressure is applied to the levers to flex the contact fingers toward each other to enable said fingers to be inserted in the socket.

When the levers are thus actuated, the arms 34 pass into the rear portions 15 of the recesses 14, and as such action takes place the lugs 33 on the forward portions of said levers exert inward pressure against the contact fingers so as to move same into practically parallel positions for insertion into the socket.

Thus it will be seen that I have provided an electric contact plug that is relatively simple in construction, inexpensive of manufacture and very effective in performing the functions for which it is intended.

The levers that are utilized in pressing the contact fingers toward each other when said fingers are inserted into a socket are positioned on the sides of the plug where they may be conveniently engaged by the thumb and finger.

By using levers for the flexing of the resilient contact fingers, the pressure required to flex said fingers is substantially less than the pressure required for performing the same function with push pins or buttons that are disposed substantially at right angles to the fingers.

The contact fingers 22 are flexed toward each other into parallel relation in order that they may be readily inserted in the slots or openings in the socket, and after being inserted and pressure on the levers is relieved, the projecting portions of the fingers will spread apart so as to positively engage and make electrical contact with the contacts within the socket.

If desired, the apertures 26 in the rear portions of the contact fingers may be threaded for the reception of screws utilized in attaching the current conducting wires, but by utilizing resilient clips for clamping the wires to the contact fingers the necessity for attaching screws is eliminated.

It will be understood that minor changes in the size, form and construction of the various parts of my improved contact plug for electric cords, may be made and substituted for those herein shown and described, without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim as my invention:

1. In a contact plug for electric cords, a body of insulation provided in its rear portion with a recess and there being recesses formed in the sides of the body in front of the first mentioned recess, a block forming a part of said body and disposed between the recesses in the sides of the body, the rear portion of which block extends into the first mentioned recess, contact fingers of resilient metal having their rear ends seated in the body to the sides of the recess in the rear portion thereof, said contact fingers bearing on the sides of the rear portion of said block, the forward portions of said contact fingers extending on diverging lines forwardly through the inner portions of the recesses in the forward side portions of the body, said diverging forward end portions projecting a substantial distance beyond the forward end of said body, contact finger flexing levers positioned in the forward recesses in said body to the sides of the diverging portions of the contact fingers, lugs projecting outwardly from the forward ends of said fingers, which lugs are fulcrumed in the forward portions of the recesses in the front of said body and the rear portions of which levers project outwardly and rearwardly through the rear portions of the recesses that are formed in the front portion of said body.

2. A contact plug for electric cords as set forth in claim 1 and with contact finger engaging lugs formed on the inner faces of said levers for engaging the intermediate portions of the diverging contact fingers.

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