July 19, 1955 H. CAHN 2,713,669

PLUG CONNECTOR

Filed March 16, 1953

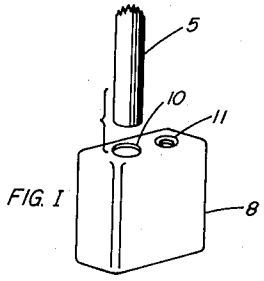


FIG. I

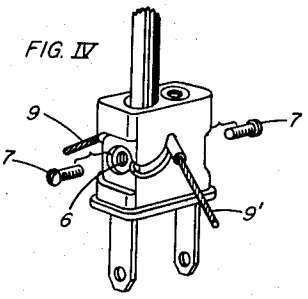


FIG. IV

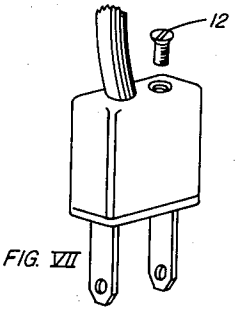


FIG. VII

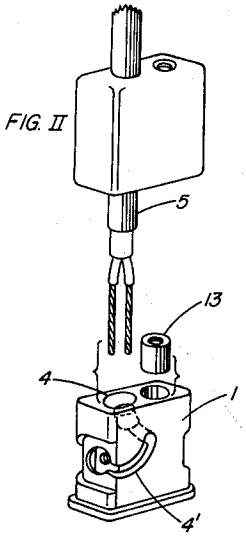


FIG. II

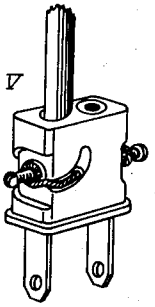


FIG. V

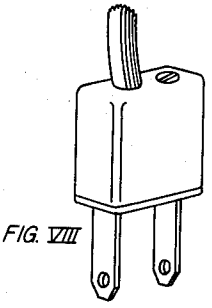


FIG. VIII

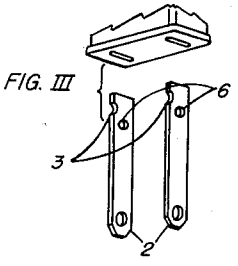


FIG. III

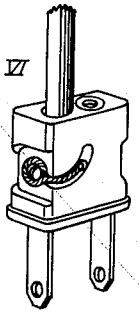


FIG. VI

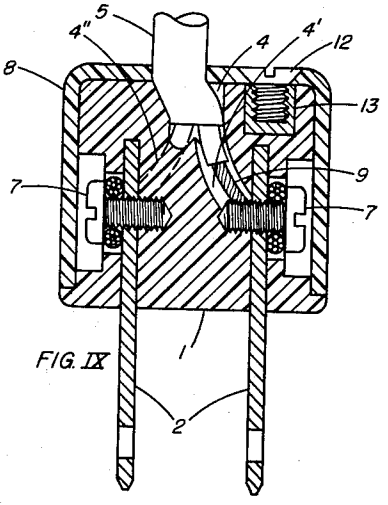


FIG. IX

Herbert Cahn

United States Patent Office 2,713,669 Patented July 19, 1955

2,713,669

PLUG CONNECTOR

Herbert Cahn, Asbury Park, N. J.

Application March 16, 1953, Serial No. 342,760

1 Claim. (Cl. 339—105)

(Granted under Title 35, U. S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment of any royalty thereon.

This invention relates to new and useful terminal plugs for flexible electric power cords, and has for its principal object the provision of safe, convenient, reliable and inexpensive attachment devices for connecting the power cords of electric machines, lamps, appliances, etc. to electric power receptacles.

The invention aims to provide a terminal which encloses and insulates the conducting wires of the cord completely and independently of each other to minimize shock hazard and probability of shorting of the wire ends from which the insulation has been stripped.

Furthermore, the invention aims to clamp the insulating jacket of the cord securely to the plug itself to prevent strain of the wire conductors during flexure of the cord and withdrawal of the plug from cooperating electric power receptacles more reliably and more simply than devices heretofore known.

Furthermore, the invention lends itself to more rugged and durable construction in a smaller and more easily manipulated form than devices heretofore known.

These and other objects of the invention will be more apparent from the following description and claim.

The invention will be more fully understood from the drawings in which Figures I through VIII show sequential stages of assembly of the terminal plug to a flexible electric power cord, and Figure IX is a cutaway view on a larger scale than the previous figures, showing the arrangement of parts in the assembled terminal plug when attached to a power cord.

A body 1, of electrical insulating material such as phenolic plastic, is of suitable form and dimensions to provide for attachment and support of the remaining parts of the plug described hereafter. The two blades 2, in the form of strips of electrically conductive metal such as brass, are of suitable form to enable their being molded into the body 1 and retained securely thereto by recesses 3 in the blades 2, into which the plastic body material flows during molding to set and permanently lock the blades in proper position. These blades 2 are of suitable shape and dimensions to mate with properly formed cooperating electrical connections such as ordinary convenience outlet receptacles. A branching channel 4 through body 1 allows free passage of the divided conductors of the stripped two conductor power cord ends 5 through the two branches 4′ and 4″ of channel 4. These two branches 4′ and 4″ of channel 4 terminate respectively alongside tapped holes 6 in blades 2. Stripped wire ends 9 and 9′ are thence shaped around the threaded shanks of metal screws 7 which are properly threaded to fit holes 6, then secured under the heads of screws 7 to be placed in intimate electrical contact with blades 2 with screws 7 properly tightened. Cover 8, of electrical insulating material such as phenolic plastic, is of suitable form and dimensions to enclose body 1, including within the enclosure the stripped wire ends 9 and 9′ and their retaining screws 7 but excluding the blades 2. A hole 10 in cover 8 is of proper diameter to allow free passage of cord 5. Hole 10 in cover 8 is so located that when cover 8 is assembled onto body 1, hole 10 is sufficiently misaligned axially from hole 4 in body 1 as to clamp power cord 5 securely in place, as is shown in Figure IX. A second hole 11 in cover 8 provides proper clearance for a machine screw 12. This screw 12 mates with a cooperating tapped metal fitting 13 molded permanently into body 1 and located so as to be in axial alignment with hole 11 in cover 8. Proper tightening of screw 12 into tapped fitting 13 squeezes and retains cord 5 between cover 8 and body 1, in addition to holding cover 8 in its proper place on body 1. Cover 8 provides both electrical insulation and physical protection for parts of the plug which it encloses.

In the form illustrated it will be seen that the invention will function as a safe, convenient, reliable and inexpensive attachment device for connecting the power cords of electric machines, lamps, appliances, etc. to cooperating electric power receptacles such as the ordinary convenience outlet receptacles found in homes, shops, factories, etc.

Such terminations can be attached readily to commonly used types of power cables, with the aid of only a screwdriver and a knife or other wire stripping device, and provide a good electrical connection between the wire conductors and the conducting parts of the termination.

Such terminations provide simple and inexpensive parts for manufacture, provide economy in assembling the terminations to power cords, and provide certainty of proper anchorage of the termination to the cord jacket to prevent strain of the fragile wire conductors during flexure and withdrawal from cooperating receptacles.

Such terminations enclose and insulate the conducting wires of the cord completely and independently of each other to minimize shock hazard and probability of shorting of the stripped wire ends of the cord.

Such terminations provide all these functions and features in a small and easily manipulated form which is capable of being easily assembled and disassembled a great number of times without appreciable wear or damage.

While many variations in size or in arrangement and details may be made, without departing from the spirit of this invention, what is claimed to secure by Letters Patent is:

An electric power cord termination consisting of an insulating body having a generally rectangular parallelpiped form, one face of said body having a centrally located entrance hole leading to a channel which branches into two smaller diverging channels, said diverging channels terminating in openings in opposite surfaces of the body, said opposite surfaces intersecting said entrance hole surface, adjacent to said terminating openings two machine screws respectively fitted into two parallel conductive metal blades molded into said body but projecting outside from its surface opposite said entrance hole, adjacent to said entrance hole and entering the same surface as said entrance hole a tapped metal insert with an engaging machine screw for cover attachment, said body so dimensioned as to permit free passage, into the entrance hole and through the channels, of a stripped two conductor power cord, the bare conductor ends of said cord respectively secured under the heads of two machine screws fitted into said two blades, and a detachable insulating cover for said body, of a generally rectangular parallelpiped form, open on one end, dimensioned to fit snugly over said body, leaving exposed that face of said body from which said blades protrude, that end of said cover opposite said open

end having two circular holes, the first to provide clearance for said power cord and the second to provide clearance for said cover attachment screw, said power cord clearance hole being sufficiently misaligned from said entrance hole in said body to clamp against said power cord threaded through both said power cord clearance and entrance holes with said cover drawn up securely over and against said body by full engagement of said cover attachment screw.

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