

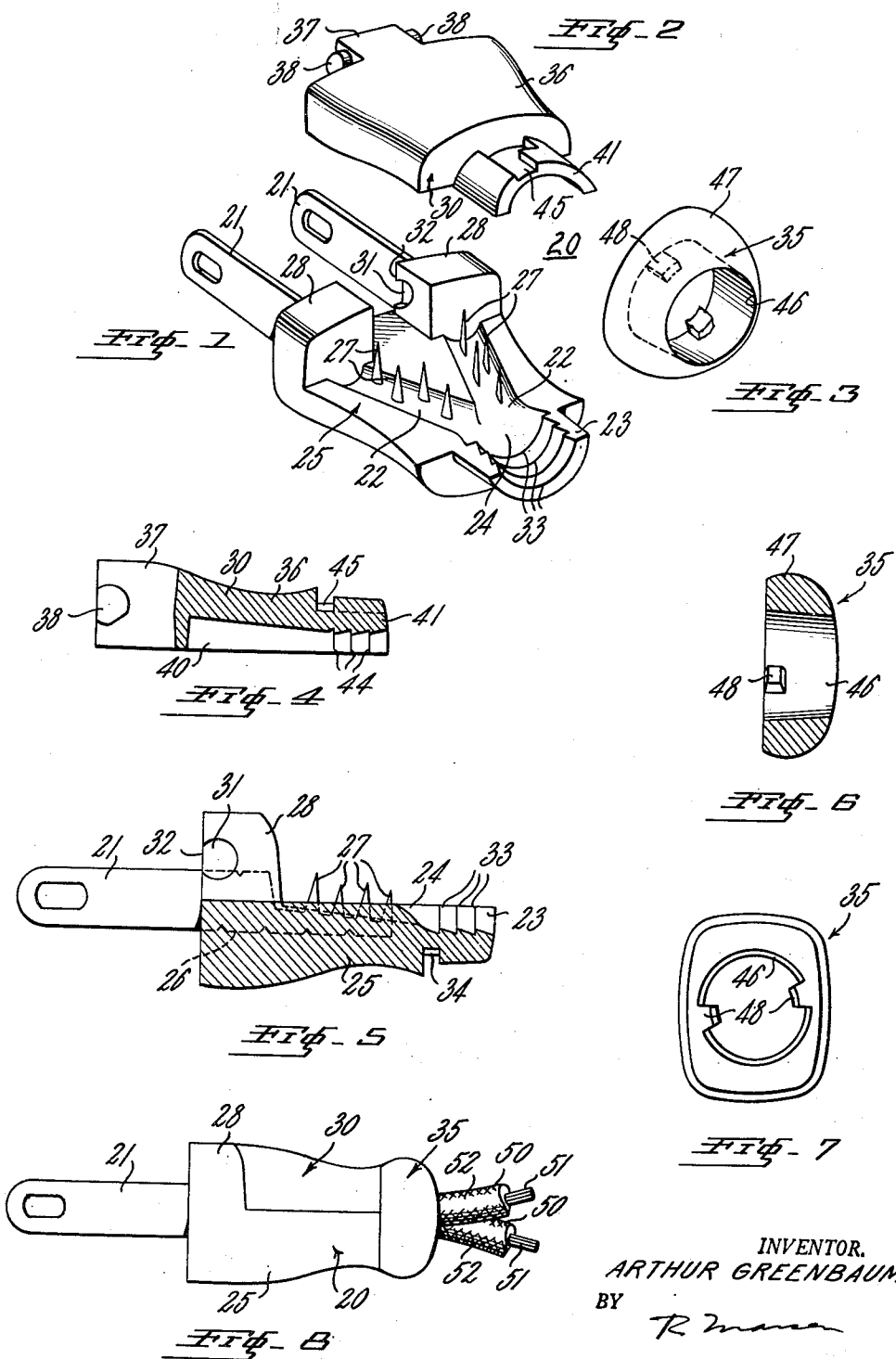
Nov. 3, 1953

A. GREENBAUM
ELECTRICAL CONNECTOR

2,658,184

Filed Oct. 19, 1946

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

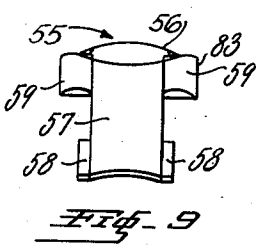


Fig. 9

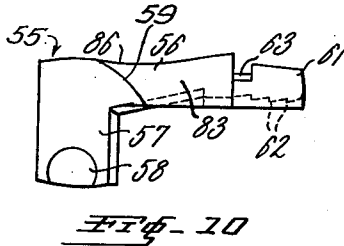


Fig. 10

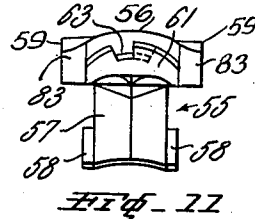


Fig. 11

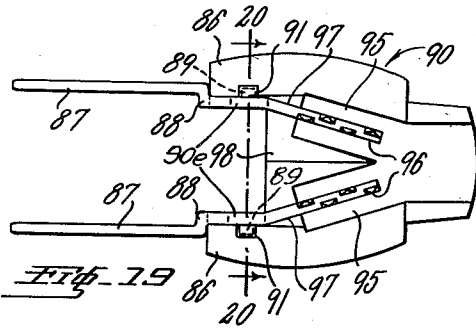


Fig. 19

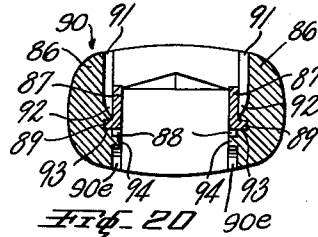


Fig. 20

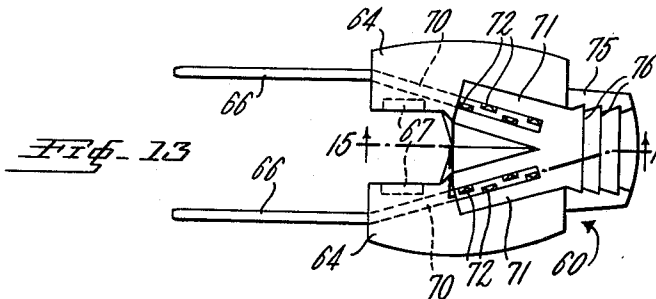


Fig. 13

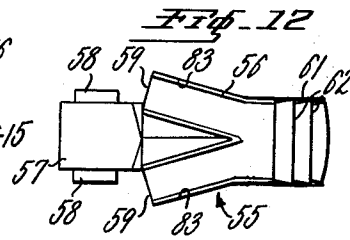


Fig. 12

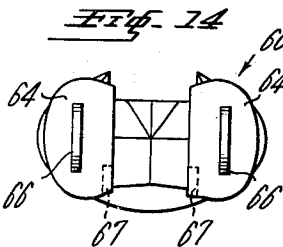


Fig. 14

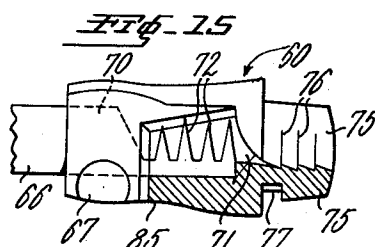


Fig. 15

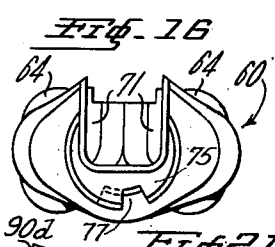


Fig. 16

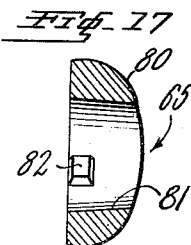


Fig. 17

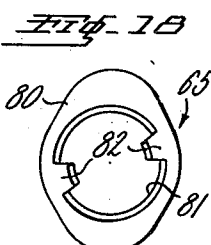
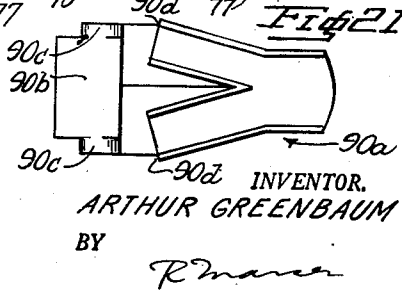


Fig. 18



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2,658,184

ELECTRICAL CONNECTOR

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Application October 19, 1946, Serial No. 704,339

8 Claims. (Cl. 339-99)

1

This invention relates to electrical connectors of the terminal species and provides improvements in cord plug connectors and the like used for quick connect and disconnect contact with electrical outlet receptacles.

Conventional connectors of the general terminal class, as herein featured, have not been satisfactory in some respects. For example, in order to attach or install a conductor (usually a flexible cord), it is sometimes necessary to partially disassemble the connector and strip the insulation from the ends of the wires, use a screwdriver to fasten the wire to the plug terminals and then reassemble the plug. While this is not much of a task for a trained electrician, it is not an easy operation for an untrained person desiring to replace a plug on a piece of household electrical equipment. Such replacements are frequently necessary due to damaging of the plug, breaking of the wires, or deterioration of the insulating covering of the wires.

Other plugs have been designed for electrical equipment in which the conductors are more or less permanently secured in the plug. However, these arrangements have the defect that the plug cannot be replaced if it is damaged or if the wires become damaged. Additionally, the average electrical connector plug has a substantially hollow space for conductors, terminals and the like and therefore is subject to easy crushing in the event the plug is accidentally stepped on. Another disadvantage is the possibility of short circuiting due to the proximity of the bare wire ends within the plug.

It is among the objects of this invention to provide a novel utensil cord plug which may be easily assembled, disassembled, and connected to conductors without the use of tools; to provide such a plug in which, when the conductors are connected therewith, there is no hollow space, so that the plug is more resistant to breakage by crushing; to provide a utensil cord plug in which adequate connection with the conductors may be obtained without stripping of the conductor insulation; and to provide such a plug which may be easily substituted for another plug by an unskilled person, and which is pleasing in appearance and easy to handle.

These, and other objects, advantages and novel features of the invention, will be apparent from the following description and the accompanying drawings.

Figs. 1, 2 and 3 are perspective views of elements of the novel plug of the invention in disassembled relation.

2

Figs. 4 and 5 are longitudinal sectional views through mating body parts of a plug embodying the present invention.

Fig. 6 is a sectional view of a connecting member or lock ring for locking the body parts in assembled relation.

Fig. 7 is an inner elevation view of the lock ring shown in Fig. 6.

Fig. 8 is a side elevation view of the assembled plug (the first form of the invention) connected to a pair of wires.

Figs. 9, 10 and 11 are a front elevation view, side elevation view, and rear elevation view, respectively, of a body part of a modified (second) form of plug according to the present invention.

Fig. 12 is a bottom plan inside view of the body part cover shown in Figs. 9, 10 and 11.

Fig. 13 is a top plan view of a body part complementary to that shown in Figs. 9 through 12.

Fig. 14 is a front elevation view of the body part shown in Fig. 13.

Fig. 15 is a sectional view on the line 15-15 of Fig. 13.

Fig. 16 is a rear elevation view of the body part shown in Figs. 13 through 15.

Fig. 17 is a sectional view of a connecting member or lock for holding the body parts in assembled relation.

Fig. 18 is an inside elevation view of the lock ring shown in Fig. 17.

Fig. 19 is a top plan view, similar to Fig. 13, of a modified (third) form of body part.

Fig. 20 is a transverse sectional view on the line 20-20 of Fig. 19.

Fig. 21 shows a bottom plan inside view of a molded cover, which cooperates with the molded body part and the electrical contacts of the latter shown in Figs. 19 and 20. These three views show a third species of the invention by providing for the fastening of the metallic contacts within the body part after the latter is molded.

Generally speaking, according to the present invention, a utensil cord plug is provided comprising a pair of body or housing parts which are complementary and which cooperate to provide conductor receiving recesses. A pair of contact blades or prongs project from one of the body parts, either being embedded therein as during a molding operation or being snapped into suitable recesses. These prongs are formed with staggered rows of spikes (electrical-connecting barbs) projecting into the conductor receiving recesses. One of the body parts is formed with a pair of spaced, open side sockets which receive a cooperating pair of trunnions on the other body

part to provide a disengageable hinge connection between the body parts. Each of the body parts is formed with an incompletely annular boss at one end which bosses, in the assembled position of the plug parts, cooperate to provide an annular boss which is engaged by a generally annular member, or lock ring, holding the housing parts in the assembled position to form the body and grip the conductor.

To connect the plug to a pair of conductor wires of a utensil cord, the two body parts are first hingedly connected together at their front ends by engaging the trunnions of one part in the sockets of the other part. The cord is then threaded through the lock ring and the conductors are laid upon the projecting, staggered spikes of the contact blades or prongs. In one embodiment of the invention, the conductor receiving recesses or grooves are in the body part complementary to that which has the spiked prongs. In this case, the conductors are laid in the recesses and then the two parts are swung together so that the spikes pierce the conductor insulation and, due to the staggered relation of the spikes, firm electrical contact is made between the projecting prongs and the conductors.

In another embodiment of the invention (Sheet 2 showing two species), the conductor receiving recesses are formed in the body part having the the spiked prongs embedded therein, and are made deep enough so that the conductors may be laid in the recesses on top of the spikes. In these two embodiments of the invention, a novel self-locking arrangement is provided whereby, when the two body parts have been hinged together, they may be swung to an open position but cannot be completely disengaged. However, in all three embodiments, after the two body parts are swung into engagement to pierce the spikes through the insulation of the conductors, the lock ring is engaged with the two complementary partially annular bosses to lock the body parts in the closed position.

In manufacturing either embodiment of the plug, the spiked prongs are first stamped out and then embedded or set in proper position in one of the body parts either during the molding operation of that part or after molding of the part. Thus the steps of manufacturing and assembling the plug are reduced to an absolute minimum. As a further feature, the body parts may be so molded as to form a hand grip for inserting and removing the plug from a receptacle or socket.

Referring more particularly to the embodiment of the invention shown in Figs. 1 through 8, the plug 20 comprises a pair of complementary body parts 25 and 30 and a connector member, or lock ring, 35. Body member 25 may be molded from a suitable plastic or the like, having the desired insulating characteristics, and may be made colored or plain as may be deemed expedient. If desired, the body member or parts may be molded from a phosphorescent plastic so that the plug is readily visible in the dark. Part 25, during the molding operation, has a pair of disconnect-contact blades or prongs 21, 21 embedded therein, for making electrical connection with a current-supply receptacle or the like. Alternatively, the prongs may be secured in part 25 after the molding operation.

The body part 25 is formed with a pair of elongated recesses or grooves 22, 22 which converge rearwardly toward a partially annular boss 23, and terminate in a common neck portion 24. The contact prongs 21 extend into body part 25 and

have portions 26 aligned with each of the recesses 22. By a suitable stamping operation, the rear end portions 26 of the contacts 21 are provided with rows of wedge-shaped spikes or barbs 27, which are staggered laterally and in length, and which project outwardly into and intersect the conductor-receiving passage formed by the recesses 22. The main parts of portions 26 are, however, fully embedded in the material of body part 25.

At the forward ends of recess 22, the body part 25 is formed with a pair of spaced ears 28, 28, and in their forward faces these ears are each formed with a recess or socket bearing 31, which recesses are open at their forward ends as indicated at 32. The purpose of this arrangement will be apparent as the description proceeds.

In the drawings and this description, the end of the device from which the contact blades or prongs extend is regarded as the forward or front end, and the rear end receives the electrical conductor.

To securely lock the cord in the assembled plug by crimping the cord, there is provided a wire clamping boss 23 formed internally with saw-toothed (strain-relief) ribs 33. On its external periphery, boss 23 is provided with an L-shaped locking recess 34, likewise for a purpose to be described.

Body part 30 is complementary to body part 25, and likewise may be molded, in a single operation, from a suitable plastic or other insulating material. Body part 30 includes a main portion 36 having a lug 37 projecting forwardly therefrom and equal in width and depth to the space between ears 28 of part 25. This lug is formed with a pair of oppositely projecting trunnions 38, 38 which are cooperable with recesses or sockets 31 in ears 28. Body portion 36 is likewise formed with a pair of converging conductor receiving recesses or grooves 40 which are complementary to recesses 22 in body part 25 to act as closures for these recesses.

At its rear end, body part 30 is provided with a semi-annular wire-clamping boss 41, complementary to boss 23 and formed with conductor gripping strain-relief ridges 44. On its outer periphery, boss 41 is provided with an L-shaped recess 45 which, in the assembled position of the plug, is substantially diametrically opposite locking recess 34 in body part 25.

Lock ring 35 is generally annular, and has an inner surface 46 conforming to the exterior surfaces of bosses 23 and 41. The outer surface 47 of member 35 is formed to be a continuation of the exterior surfaces of the main portions of body parts 25 and 30, to provide a streamline outer hand-grip surface for the plug. A pair of lugs 48, 48 project inwardly from surface 43 for cooperation with locking recesses 34 and 45 in body parts 25 and 30, respectively.

The plug of Figs. 1 through 8 is assembled in the following very simple manner. Trunnions 38 on body part 30 are engaged with sockets 31 of body part 25, thus hinging the two parts together. Conductors 50, forming a utensil cord and each comprising a wire 51 covered with insulation 52, are then inserted through ring 35 from the back to the front thereof. The conductors are then separated and laid in recesses 40 of body member 30, which is inverted for this purpose. The two body members are then swung together about the disengageable hinge connection, forcing conductors 50 down on spikes 27 which pierce insulation 52 and automatically making good electrical

cal contact with wires 51. The plug parts are then locked together by moving lock ring 35 axially onto partially annular bosses 23 and 41 with lugs 43 entering the axially directed portions of locking grooves 34 and 45. Lock ring 35 is then turned slightly, locking body parts 25 and 30 in assembled relation.

The resulting utensil cord plug may thus be automatically connected without the use of any tools or without requiring stripping of insulation from the wire. The plug is as small or smaller than conventional cord plugs, and the wedge-shaped spikes 27 make positive electrical contact with wires 51 and prevent the conductors 50 from being pulled out while the connector is in use. As the insulation of conductors 50 remain intact, there is no danger of exposed wires coming together to cause a short circuit.

The metallic contacts 21 cannot come loose since they either are embedded in the body of part 25 during molding of the latter, or permanently set therein after molding, as will be described. In the locked or closed position, the plug resists breakage by crushing since it has no hollow areas which can permit such crushing. Additionally, a manufacturer can assemble electrical cord sets with the present plug in a fraction of the time normally required with conventional plugs or with the various types of plugs now known.

The modified (or second) form of the plug shown in Figs. 9 through 18 has several advantages over that shown in Figs. 1 through 8. For example, a tapered shoulder is provided on one body part, which latter may be thus slipped between the prongs of the other body part but cannot fall back between the prongs. This effects a more or less permanent hinge connection between the two body parts, facilitating wiring of the plug. Additionally, relatively deep recesses are provided in alignment with the spiked prongs on the one body part so that the conductors may be laid directly on the spikes. This also facilitates wiring of the plug.

Referring to Figs. 9 through 18, the plug comprises body members 55 and 60 and a lock ring or connector 65. Body member 55, which may be termed the cover or lid member, consists of an upper or main portion 56 having a perpendicular lug or leg 57 integral with its forward end. The sides 83 of portion 56 flare outwardly in a forward direction to provide shoulders 59 adjacent lug 57 for a purpose to be described.

A pair of trunnions 58, 58 project in opposite directions from either side of lug 57. At its rearward end member 55 is formed with a partially annular boss 61 which has a peripheral extent much less than half a circle. Boss 61 is formed with an L-shaped locking recess 63 and with conductor gripping ridges 62.

Body part 55 is cooperable with body cover part 60, shown more particularly in Figs. 13 through 16. Part 60 is formed with spaced forwardly projecting ears 64, 64 from which project contact blades or prongs 66. The latter are embedded in part 60 during molding thereof. The transverse spacing between ears 64 substantially equals the width of lug 57 on part 55, and ears 64 are formed with downwardly opening bearing socket recesses 67 adapted to receive trunnions 58.

Prongs 66 have portions 70 extending in a converging manner rearwardly through part 60 and aligned with conductor receiving recesses 71, 71. Wedge-shaped spikes or barbs 72 project from portions 70 into recesses 71, and the latter 75

are made sufficiently deep so that the conductor wires may be laid in the recesses. The recesses converge rearwardly toward the interior of a partially annular boss 75 which is complementary to boss 61 of body part 55, and therefore has a peripheral length greater than that of half a circle. Boss 75 is formed with conductor gripping ridges 76 and has an L-shaped locking groove 77 on its outer surface.

Lock ring 65 is shown in Figs. 17 and 18 as having an external surface 80 conforming to the external surfaces of parts 55 and 60. Ring 65 is annular and has an inner surface 81 tapered to conform with the surface of bosses 61 and 75. A pair of lugs 82 project in diametrically opposite relation from inner surface 81 for cooperation with locking grooves 63 and 77.

This embodiment (Figs. 9-18) of the plug is assembled in the following manner. Portion 56 (Figs. 10 and 12) of body part 55 (Figs. 9-12) is forced upwardly between prongs 66 (Fig. 13) which slide along tapered surfaces 83 (Fig. 12) and expand the prongs to permit passage of body part 55. During this movement, trunnions 58 enter the open bottom ends of recesses 67, after which prongs 66 snap over shoulders 59, preventing disassembly of the two body parts without forcing prongs 66 apart. However, the two body parts 55 and 60 may be swung to their fully open position. The conductors are then threaded through ring 65 and laid in recess 71 on top of spikes 72. The two body parts are then swung together to engage the conductors and force them down over the spikes, which latter pierce the insulation and make a positive electrical contact with the conductor wires. Ring 65 is then slid over the complementary bosses 61 and 75 with lugs 82 entering the axial portions of locking recesses 63 and 77. The engagement of the locking ring with the bosses is greatly facilitated due to the small peripheral area of boss 61 as compared with that of boss 75. A slight turning movement of ring 65 then locks each of the body parts together.

The embodiment of the plug shown in Figs. 9 through 18 has the advantage that the two parts are substantially permanently hinged together once they have been assembled. However, the parts may be easily swung to the open position to permit changing wire connections by simply disengaging ring 65 from the bosses. Additionally, the wires may be laid directly over the spikes 72 because the walls of recesses 71 are higher than in the first embodiment of the plug. The hinged connection is in a more favorable position to resist breakage when pressing the two body parts into the closed position. As in the embodiment of the plug shown in Figs. 1 through 8, the plug of Figs. 9 through 18 has its exterior surface preferably formed to provide hand gripping surfaces for withdrawing the plug from a receptacle or inserting it therein.

Figs. 19 and 20 and 21 (third form) illustrate a body part and cover wherein the prongs are set into their receiving body part after the latter has been molded. In this modification, body part 90 generally resembles body part 60. However, wall portions or ears 86, 86 are made somewhat thinner than ears 64, and do not extend inwardly beyond the inner surfaces of contact blades or prongs 87, 87. The latter are formed with shoulders 88 and with struck out tongues 89 which extend outwardly.

Vertical channels 91 are formed on the inner surfaces of wall sections 86, and slope inwardly

at their bottom ends as indicated at 92. Immediately below the lower ends of channels 91, recesses 93 are formed in alignment with the channels. Below these recesses, the inner surfaces of walls 86 are formed with ledges 94 on which prongs 87 rest. Conductor receiving recesses 95 are likewise formed in body part 90 and have grooves 96 of substantially the thickness of prongs 87, continuing outwardly through central section 98 as grooves 97. Also, a pair of bearing sockets 90e are provided.

The prongs are assembled as follows. Each prong 87 is aligned with grooves 96, 97, with its tongue 89 set in the upper end of a channel 91. The prong is then pressed downwardly into the grooves and tongue 89 rides along channel 91, being forced inwardly by sloping portion 92. The tongue then snaps into notch 93, with a lower edge of the prong resting on a ledge 94. Due to the springiness of the prong, the latter is firmly locked in position in the body part. The width between the outer ends of the prongs 87 is the same as that between prongs 66 of body part 60, so as to receive body part cover 90a (Fig. 20) next described and lock the same in hinged relation with body part 90 in the same manner as described previously, for Figs. 9-18.

A molded cover 90a, shown in Fig. 21, is adapted to fit the molded body 90 and contacts 87 of the latter, and is similar in structure as well as being identical in function to the pivoted cover shown in Figs. 9-12. Accordingly, the cover 90a also has a lug or leg 90b with trunnions 90c which fit into the bearing sockets 90e of the body 90. The long portion of this swingable cover 90a is initially inserted up through and between the two spaced parallel and stationary contact members 87.

A pair of shoulders 90d on the cover, spaced apart slightly more than the two contacts 87, engage the latter and at first will not pass through. However, a little force applied to the pivoted cover 90a, with its trunnions 90c now pivotally mounted in the bearings 90e, causes the shoulders 90d to momentarily expand or flex the parallel contacts 87 outward to each other, whereupon the interfering shoulders pass or snap through, and the contacts then spring back and latch behind the shoulders. In this way, the two molded body parts 90 and 90a are interlocked or latched into pivotal relation.

Thus it is seen that the metallic parts 87 (like the contacts 66 of the second form of the invention) perform the novel function of aiding in the assembly of the hinge and maintaining it in operative condition. This is a feature and function in addition to that of acting as contacts for transmitting current, which simplifies electrical connectors of the pivoted type and reduces the number of parts.

It will be appreciated that the two metallic contact members 87 (Figs. 19 and 20) may be snap-latched into their receiving grooves 96, 97 of the molded body 90 either before or after the pivoted cover 90a is latched into place. Thus if the contacts 87 are first inserted within the body 90, the cover shoulders 90d are forced up through the spaced contacts. But if the cover 90a is first placed in open position on the body 90, the contacts 87 are forced and expanded down over and past the cover shoulders 90d.

The arrangement shown in Figs. 19 and 20 reduces the cost of manufacturing the plug, as it is not necessary to mold the prongs into the body parts during the molding of the latter. This

reduces the costs of the necessary molds and also of the molding process. The prongs may be quickly attached by snapping them into place after the body part is molded, in the manner described. While, for all practical purposes the prongs are permanently united with the body part, they may, if necessary, be disassembled therefrom by exertion of inward pressure sufficient to release tongues 89 from notches 93.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the principles thereof, it will be understood that the invention may be otherwise embodied without departing from such principles.

What is claimed is:

1. A cord plug comprising, in combination, a first body part formed with a pair of transversely spaced sockets at one end, a semi-annular boss at the other end, and a pair of elongated conductor receiving recesses converging toward said boss; a pair of prongs within said body part, each aligned with one of the recesses, and projecting from said one end; said prongs having spike portions projecting into said recesses to pierce the insulation of the conductors and make electrical contact therewith; a second body part having a pair of spaced trunnions at one end disengageably receivable in said sockets, a semi-annular boss at the other end complementary to the boss on said first body part, and a pair of elongated conductor receiving recesses complementary to said first-named recesses; said trunnions and sockets forming a hinge connection whereby said body parts may be engaged at such hinge connection and swung thereabout toward each other to enclose the conductors in said recesses and pierce said spike portions through the conductor insulation; and a member engageable with said bosses to lock said body parts in conductor enclosing relation.

2. A cord plug comprising, in combination, a first body part formed with a pair of transversely spaced sockets at one end, a semi-annular boss at the other end and a pair of elongated conductor receiving recesses converging toward said boss; a pair of prongs within said body part, each aligned with one of the recesses, and projecting from said one end; said prongs having spike portions projecting into said recesses to pierce the insulation of the conductors and make electrical contact therewith; a second body part having a pair of spaced trunnions at one end disengageably receivable in said sockets, a semi-annular boss at the other end complementary to the boss on said first body part and a pair of elongated conductor receiving recesses complementary to said first-named recesses; said trunnions and sockets forming a hinge connection whereby said body parts may be engaged at such hinge connection and swung thereabout toward each other to enclose the conductors in said recesses; each of said bosses having a locking groove; and an annular member, formed with a pair of lugs respectively engageable in said locking grooves to lock said body parts in conductor enclosing relation.

3. A cord plug comprising, in combination, a first body part formed with a pair of transversely spaced ears at one end, each ear having a transverse, laterally open socket, a semi-annular boss at the other end and a pair of elongated conductor receiving recesses converging toward said boss; a pair of prongs within said body part, each aligned with one of the recesses, and projecting

from one end; said prongs having spike portions projecting into said recesses to pierce the insulation of the conductors and make electrical contact therewith; a second body part having a lug at one end receivable between said ears and formed with a pair of spaced trunnions disengageably receivable in said sockets, a semi-annular boss at the other end complementary to the boss on said first body part, and a pair of elongated conductor receiving recesses complementary to said first named recesses; said trunnions and sockets forming a hinge connection whereby said body parts may be engaged at such hinge connection and swung thereabout toward each other to enclose the conductors in said recesses and pierce said spike portions through the conductor insulation; each of said bosses having a locking groove; and an annular member formed with a pair of lugs respectively engageable in said locking grooves by rotation of said member, to lock said body parts in conductor enclosing relation.

4. A cord plug comprising, in combination, a first body part formed with a pair of transversely spaced, longitudinally projecting ears at one end, each ear having a transverse socket opening into a surface of said body part, a semi-annular boss at the other end and a pair of elongated conductor receiving recesses converging toward said boss; a pair of prongs within said body part, each aligned with one of the recesses, and each projecting from one of said ears; said prongs having spike portions projecting into said recesses to pierce the insulation of the conductors and make electrical contact therewith; a second body part having a lug projecting perpendicularly from one end, and formed with oppositely projecting trunnions disengageably receivable in said sockets, and a semi-annular boss at the other end complementary to said first-named boss; said trunnions and sockets forming a hinge connection whereby said body parts may be engaged at such hinge connection and swung thereabout toward each other to enclose the conductors in said recesses and pierce said spike portions through the conductor insulation; and a member engageable with said bosses to lock said body parts in conductor enclosing relation.

5. A cord plug comprising, in combination, a first elongated body part having a pair of prongs projecting longitudinally therefrom and a pair of conductor receiving recesses in continuation of said prongs; a second elongated body part arranged to complement said first body part and to enclose said recesses; one of said body parts being formed at one end with trunnion means and the other at one end with a socket means to receive said trunnion means to provide a disengageable hinge connection, whereby said body parts may be engaged at such hinge connection and swung thereabout toward each other to enclose the conductors in said recesses; and a member detachably engageable simultaneously with the other ends of both body parts to lock the same in juxtaposed relation; said one body part being tapered to wedge between said prongs to engage said trunnion means in said socket means and having reversely directed abutment means effective to abut said prongs and prevent disengagement of the hinge connection while providing for opening of the body parts about the hinge connection.

6. A cord plug comprising, in combination, a first body part formed with a pair of transversely spaced, longitudinally projecting ears at one

end, each ear having a transverse socket opening into a surface of said body part, a semi-annular boss at the other end and a pair of elongated conductor receiving recesses converging toward said boss; a pair of prongs within said body part, each aligned with one of the recesses, and each projecting from one of said ears; said prongs having spike portions projecting into said recesses to pierce the insulation of the conductors and make electrical contact therewith; a second body part having a lug projecting perpendicularly from one end, and formed with oppositely projecting trunnions disengageably receivable in said sockets, and a semi-annular boss at the other end complementary to said first-named boss; said trunnions and sockets forming a hinge connection whereby said body parts may be engaged at such hinge connection and swung thereabout toward each other to enclose the conductors in said recesses and pierce said spike portions through the conductor insulation; and a member engageable with said bosses to lock said body parts in conductor enclosing relation; said lug being tapered to wedge between said prongs to engage said trunnion means in said socket means and having a reversely directed abutment means effective to abut said prongs and prevent disengagement of the hinge connection while providing for opening of the body parts about the hinge connection.

7. An electrical quick-disconnect terminal comprising, in combination, a first member having an elongated recess adapted to receive and closely fit the end of an insulation-covered conductor therein, a second member having a barb; hinge means, which has its hinge axis transverse to the length of said elongated recess, and which has a disengageable trunnion and bearing socket means integrally formed with said members, pivotally connecting said second member at one end to said first member, to swing said barb into the recess of said first member, thus into insulation-piercing and electrical connection with said conductor in said recess, and also to swing said second member to a position extending lengthwise relatively to said elongated recess; said second member having an electrical-disconnect contact portion integral with said barb, said contact portion being mounted in engaging relation with a shoulder formed on said first member for holding the disengageable trunnion and bearing socket means pivotally together on said hinge axis; and locking means engageable with said two members to lock them in said insulation-piercing and electrical-connecting position.

8. An electrical quick-disconnect terminal comprising, in combination, a first member having an elongated recess adapted to receive and closely fit the end of an insulation-covered conductor therein, a second member having a pair of barbs; hinge means, which has its hinge axis transverse to the length of said elongated recess, and which has a disengageable-trunnion and bearing-socket means integrally formed with said member, pivotally connecting them together, to swing said barbs into the recess of said first member, and thus into insulation-piercing and electrical connection with said conductor in said recess; said second member having a pair of spaced-apart electrical-disconnect contact portions integral, respectively, with said barbs; shoulder means formed on said first member, said shoulder means being forced between the

11

spaced-apart contact portions, to expand and latch said shoulder means against said contact portions, for permanently holding the disengageable-trunnion and bearing-socket means pivotally together on said hinge axis; and locking means engageable with said two members to lock them in said insulation-piercing and electrical-connecting position.

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