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2,466,930

ELECTRIC FITTING

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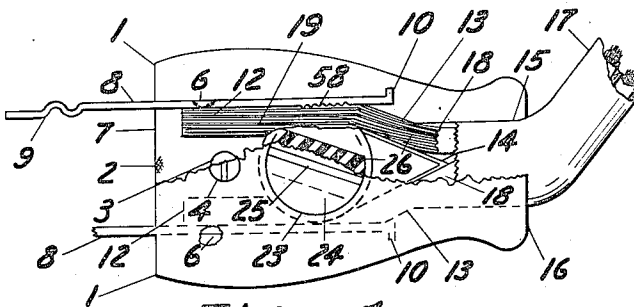


Fig 1

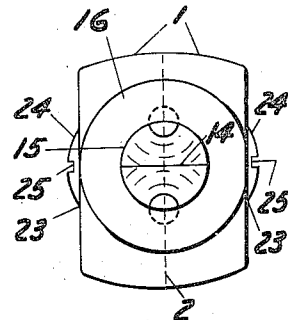


Fig 2

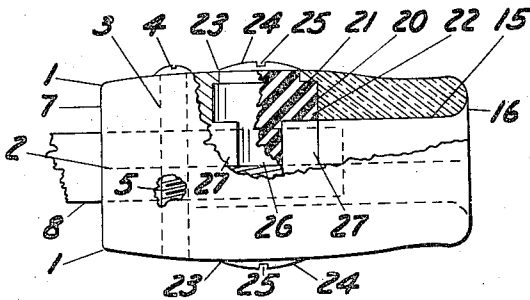


Fig 3

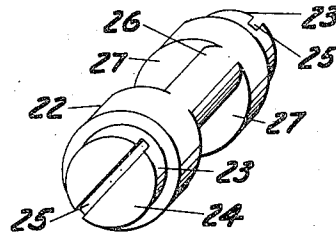


Fig 4

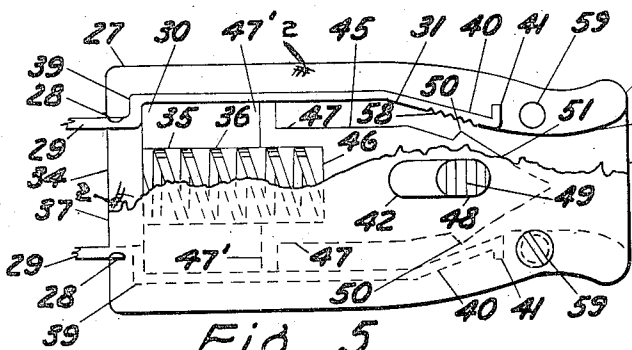


Fig 5

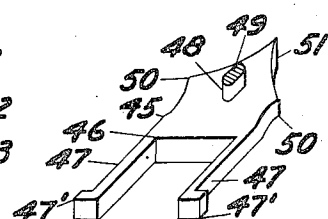


Fig 7

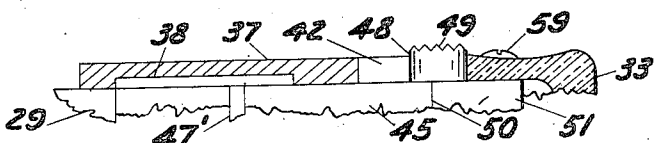


Fig 6

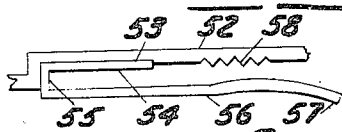


Fig 8

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## UNITED STATES PATENT OFFICE

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## ELECTRIC FITTING

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1 Claim. (Cl. 173—361)

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This invention relates to line-and-terminal connection fittings, more particularly of the multiple prong type for plugging in of an electrical current supply for an appliance.

This invention has utility when incorporated in two-prong plug type of electric fittings, having adaptation for simultaneous binding of the pair of conductor wires separately to the respective terminals; and while such are isolated from touch contact by the one so assembling, there is sufficient transparency for visual check-up of the operation, as well as ready location of a trouble source before opening up the device.

Referring to the drawings:

Fig. 1 is a plan view, with parts broken away, looking down upon an embodiment of the invention in a two-prong plug type electric fitting, wherein the lead-in wires are simultaneously pinched or wedged against the respective terminals of the prongs by an arc turn control member;

Fig. 2 is an end view of the device of Fig. 1, showing the entrance ways for the lead-in wires;

Fig. 3 is a side view, with parts broken away, of the device of Fig. 1;

Fig. 4 is a perspective view of the oscillable element effective to grip the lead-in wires against the prong terminals;

Fig. 5 is a longitudinal section, with parts broken away, of another transparent electric fitting, wherein the pinching of the lead-in wires against the terminals of the prongs is effected by a slide or reciprocable wedge member;

Fig. 6 is a side elevation of the electric fitting slidable wedge of Fig. 5, with parts broken away;

Fig. 7 is a perspective view of the lead-in wires engaging slidable wedge member; and

Fig. 8 is a view of a spring arm to be wedge or cam thrown to grip the wire strands against the prong terminal.

A preferred form of embodiment of the invention has to do with the housing of transparent plastic, which may be a polymer of methylmethacrylate, or other substance of sufficient rigidity to withstand electric fitting normal use, say as for household appliances as against weathering and temperature. An advantage in manufacture has to do with a minimum number of different parts and that there be few dies therefor. In line therewith, the housing is of two similar sections 1. Acetic acid or other adhesive 2 may bond the sections 1 into a homogeneous unit. However, in addition thereto, or rather in lieu thereof, a screw 3 may have its head 4 engage one of the sections 1, while threaded portion 5 of the screw

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3 may have holding coaction with the companion section 1, thereby even providing for disconnectable assembly of the fitting. Registering grooves or channels 6 of the adjacent sides of the sections 1, provide an anchoring seat extending from fitting end 7 for prongs 8 having wavy portions 9 for effective socket engagement. The prongs 8 in their extent inward of the housing along the channels 6 have remote from the end 7 a spread-anchor portion 10.

In the housing formed by the assembled sections 1, between the entrance portion for the channel 6, and the anchorage 10, there is along the inner face of such prong terminal 8, a clear-way or passage 12, which in its extent away from the end 7 has an inwardly deflected portion 13 to an intermediate spread portion 14. Therefrom is a common entrance way 15 from end 16 of the fitting remote from the end 7.

Into the way 15 may be thrust electric conductor means comprising an insulation jacket 17, partially cleared to expose a pair of subordinate insulation jackets 18 in each of which is stranded wire 19 of a pair of electrical conductors. These wire strands 19 as intertwined may be thrust along the way 15 from the jacket 17, to be spread by the portion 14 for one lead to be into one way 13 away from the other.

Centrally thru the housing of the assembled sections 1, back from the spread portion 14 and between the terminal faces of the prongs 8 is a cylindrical passage 20 having at its outer ends slight overhang regions 21. As the prongs 8 are introduced into their assembly relation with the sections 1 before the sections are assembled; likewise before such assembly, a control member or plug 22 is seated in the passage 20, to have its terminal reduced portions 23 engaged at the respective overhangs 21, thereby holding the wedge member against axial shifting. Exposed ends 24 of the member 22 may have a transverse groove or screw driver slot seat 25 for a screw driver, or even a coin, to turn or angularly shift the plug 22. As a visible check for the control position of the wedge, there may be in alignment with the slot 25 a medial full diameter portion 26 between cut-outs 27. The portion 26 is accordingly a pinch section, cam or wedge, which at oscillation of the member 22 may bring the portion 26 to close, or nearly close the passage 12 from communication with the way portion 13. This means that as the slot 25 approaches transverse position as to the assembled housing sections 1, wire strands 19 as thrust past the spread portion 14 and along the prong terminal 8 in extent from

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the way 13, and into the passage 12, have such clearance restricted by the wedge portion 26 crowding the strands 19 against the respective prongs 8. This is a simultaneously effective positive locking of the lead-in wires with the prong terminals, as well as with the housing mounting the terminals.

Due to the transparent wall structure of the housing sections 1, the one who has prepared the lead-in wires by the removal of the different insulation jacket portions, may conveniently see that such removal has been done in a proper manner and extent for ample strand exposure at the wedge locking; for insulation 18 in the ways 13 so that there may not be short circuiting in the fitting, and for the major jacket 17 as a reinforcement at the flex-responsive region as coming from the way 15.

Normally lead-in wire substitution or replacement may be conveniently and quickly, as well as effectively accomplished. No special tools are required. A coin or pocket knife blade may serve to angularly shift the member 22 so that the slot 25 approaches alignment or rather parallelism as to the prongs 8. There is thus full clearway from the end 16, thru the way 15, each slant-away portion 13 to the passages 12. To repair the old conductor lines, or refit with a new or different extension, the connection-to-be-made should have the insulation removed to clear the strands to such extent as to be along the portion 12 and to the portion 13, with minor insulation along the portions 13 to the major insulation section in the way 15. The only step now required is to thrust such prepared conductor into the way 15 from the end 16, to have the spread portion 14, deflect one set of strands each way therepast. The operator may plainly see thru the transparent housing that this course is taken by the wires. When the thrusting has brought the minor insulation 18 into the ways 13, the member 22 may be given a sufficient turn to have the portion 26 in each way 12 bind in pinching the lead-in strands each against its terminal 8. Inasmuch as occasion for separating the sections 1 normally should arise, not with lead-in wire connection, but only with prong trouble, it is evident that the normal utility life of the fitting should not require severance of the sections, and that bonding 2 may be preferable, with omission of the screw 3.

Instead of a rockable or oscillable wedge 26 (Fig. 1), there may be adopted a reciprocable or slidable wedge (Fig. 5). With such, there may be retained the assembly and operating advantages of a transparent plastic substance for the body of the fitting. Major body section 27 has entrance notches 28 for the respective prongs 29. The notches 28 extend to a general passage-way 30 having a narrowing portion 31 to way 32 from end 33 remote from end 34 at which the notches 28 occur.

Below the general floor for the way 30, and extending from and between the notches 28 is a deepened section or directing channel 35 for a compression helical spring 36. A second or minor upper transparent housing section 37 has a complementary similar spring guide or channel 38 to the channel 35.

From the notches 28 the prongs 29, as entering the housing section 27, have outward offset portions 39, and therefrom along the outer side wall of the way 30, have terminal portions 40 to offset embedded anchoring ends 41, from the narrowing portions 31.

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The section 27, from slightly away from the guide 38, has a slot 42 in the roof or top side closure for the way 30. Before assembling the transparent housing sections 27, 37, either by bonding agent or adhesive 2, or detachable by or in addition screws, while the terminal prongs have been set, a control member or slide 45 is placed in the way 30. A face 46 thereof may be abutted by the spring 36. Parallel legs 47 laterally hold the spring 36 from buckling and for riding properly in the guides 35, 38. Outwardly extending ledges or feet 47' from the legs 47 have slide coaction with the terminal portions 40 in their extent away from the offset portions 39. This provides a partial centering and directing means for the member 45. Supplemental guide and control is possible from the upward lug or projection 48 thru the slot 42. Upper roughened face 49 is sufficiently above the plane of the body member 37 for ready finger pushing of the member 45 against the action of the spring 36, thereby to retract wedge shoulders 50 from tendency to crowd the way portion 31. The member 45 has a further narrowing or tapering portion 51 to a spread portion extending into the way 32. It is necessary here to hold the wedge or control member retracted while the properly prepared lead-in wires are spread by the portion 51 to be directed along the opposite terminal prongs 29 for the minor insulation 18 to be past the tip of the portion 51. At such position, release of the member 45 allows the spring 36 to thrust the member 45 to grip the strands 19.

Instead of the one-piece prong 8 or 29, there may be adopted herein a terminal prong 52 (Fig. 8), having a seat portion 53 in which may be press located a short leg 54 extending to a return bend 55 with a yieldable long-arm 56 therefrom extending parallel to the terminal 52 but spaced therefrom to leave a way into which the lead-in conductor or wire strands 19 may be thrust. A swing-out free end 57 may cooperate as a spread means or divider for the inwardly thrust conductor, as to the face of this arm 56, 57, toward the terminal 52; while along the opposite face the arm 56, 57, may be pushed by a wedge corner 50 or a cam 26. One way of pushing, against the yield of the spring, is to grip the conductor against a roughened portion 58 of the terminal 52. Roughening 58 as to the terminals 8, 40, affords supplemental anchoring in thereby more firmly attaching the conductor 17 with the housing for the fitting.

While the housing sections 1 (Figs. 1, 2, 3), may be partible and assembled detachably by a screw 3, adhesive bond 2 may be sufficient or omitted. Likewise, as to the sections 27, 37 (Fig. 5), adhesive or bond 2 may be used, in addition to screws 59, or either thereof omitted.

What is claimed and it is desired to secure by Letters Patent is:

A two prong plug electric fitting device comprising a pair of complementary insulation sections, each forming a half of a housing and having a pair of channel seats deeper than wide, a pair of strap-like-body terminals on-edge in the channel seats of one section and projecting approximately half narrow-wise to on-opposite-edge enter the channel seats of the complementary section in thereby substantially and directly keying the sections in register assembly against relative movement, there being passage means in the assembled sections including a clearway between the terminals, conductor leads insertable into the passage means into proximity with the

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terminals at the clearway, and a movable insulation member seated in the clearway against shifting outwardly from the sections and movable directly to pinch the leads against the respective terminals.

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