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Description

This invention relates to an electrical distribution track in which electrical conductors are enclosed in a duct having an aperture allowing access to the conductors for electrical connection to a switch or the like mounted on the track. It is especially but not exclusively applicable to domestic mains distribution systems in which a plurality of switches or other accessories are to be connected to the conductors at different locations.

It is desirable to provide a distribution system comprising such a track in which an accessory may be connected to the conductors at any desired point along the track and which is cheap to manufacture, easy to install and capable of accommodating a variety of types of accessory.

It is preferred that the track shall be able to receive accessories which are of a design compatible with electrical equipment which is already in use, such as the British Standard 13-amp distribution system.

Australian Patent Specification 25369/71 describes an electrical skirting duct system, which may be formed of aluminium extrusion or plastic moulding, comprising a channel shaped duct for wiring having overhangs on each side of the duct, an upstanding channel in the base of the duct, the width of the open mouth of the duct being such that a standard electrical fitting can seat on the outside surface of the overhangs, and the position of the upstanding channel being such that the electrical fitting can be secured to the duct by screws passing through the electrical fitting and screwed into the upstanding channel, and metal cover strips closing the front of the duct except for those parts where the electrical fitting has been inserted.

US-A-3262083 describes an electrical raceway including a retaining clip to be mounted on a wall surface and an ornamental cover member proportioned to be installed against the wall by snapping the cover member over the retaining clip. Electrical outlets are screwed to the retaining clip while they are held in position by the facing member.

According to one aspect of the invention there is provided an electrical distribution track comprising a longitudinal hollow duct of electrically insulating material,

the duct comprising a base adapted to be mounted on a support surface and a pair of longitudinally extending side walls having a continuous longitudinal opening therebetween to allow insertion into the duct of an electrical accessory at any point along the duct,

the side walls comprising outwardly facing edges capable of engaging flanges on opposite sides of an accessory positioned in the duct, or of a mounting device capable of holding an accessory in the duct,

means for clamping an accessory or mounting device to said outwardly facing edges to hold the accessory or mounting device in the duct,

and cover means adapted to be attached to the duct such that the parts of the opening not occupied by the accessory and the edges of the walls are covered by the cover means,

5 characterised in that the duct contains exposed electrical conductors extending therealong mounted on the base of the duct,

10 the duct has a pair of outer walls extending from the base and the cover means extends over the opening, side wall edges, the outer wall edges of the duct and the flanges of an accessory or mounting device therefor when mounted in the duct,

15 and the cover means and side wall edges are provided with respective grooves and beads such that the beads may snap fit into the grooves to secure the centre part of the cover means to the side walls.

20 The accessory may be a switch socket or other device such as a circuit-breaker.

25 The duct may generally be attached directly to the surface of a wall or like supporting structure to which the track is attached. The duct has upstanding outer side walls covering the duct side walls which come into contact with the accessory and the outer walls engage the cover means. The duct itself is thus completely enclosed and protected against damage and entry of unwanted material such as water which might come into contact with the conductors.

30 The cover means is attached to the duct side walls by means of beads and grooves forming a snap fit. The cover means may comprise a single cover member extending over the opening and duct side walls and abutting the outer side walls of the duct; alternatively it may comprise a central cover part extending over the opening and separate side covers, which may engage the central cover by means of flanges fitting into grooves. The use of beads and grooves for fitting the covering means in place may render the use of screws unnecessary.

35 The accessory may itself have flanges engaging the edges of the duct walls or it may be mounted on a plate which engages the duct side walls. The use of a plate allows many types of standard accessory, which are not provided with flanges, to be mounted on the track.

40 The accessory, or plate carrying the accessory, may be clamped against the edges of the duct wall by screws or it may be held in place on the duct by the covering means itself.

45 The conductors may be mounted on the rear wall of the duct opposite the opening and the rear wall of the accessory may comprise terminals, for example sprung fork terminals, to make electrical contact with the conductors when the accessory is mounted in the duct.

50 Track arrangements according to embodiments of the invention will now be described by way of example with reference to the accompanying drawings in which:

55 Figure 1 is a perspective view of a track having covers and an accessory mounted thereon according to an embodiment of the invention,

Figure 2 is a section of part of the track of Figure 1 on a larger scale,

Figure 3 is a schematic section showing an accessory mounted on the track of Figure 1 or 2,

Figure 4 is a section similar to Figure 3 showing another method of mounting an accessory,

Figure 5 shows a mounting plate used in the embodiment of Figure 4,

Figure 6 is a view of a joint cover used in the embodiment of Figure 1,

Figures 7 and 8 are sections of the joint cover of Figure 6,

Figure 9 shows a corner piece for use with the track of Figure 1,

Figure 10 is a side view of the corner piece of Figure 9,

Figure 11 shows another corner piece, and

Figures 12 and 13 are sections of cleats for holding bus-bars in the track.

The track shown in Figure 1 comprises a longitudinal channel-shaped duct 1 of uniform cross-section formed of electrically insulating plastics material such as polyvinyl chloride. It may be made by extrusion.

Duct 1 comprises a flat base 2 provided with upstanding portions forming grooves 3a, 3b and 3c containing respective longitudinal copper conductors in the form of bus-bars 4a, 4b and 4c. The bus-bars 4 are narrower than the grooves 3 and are held in the grooves by cleats, one of which is shown in Figure 1, distributed at intervals along the grooves.

Duct 1 has upstanding side walls 6 provided at their edges with continuous longitudinal grooves 7 defined by longer outer walls 8 and shorter inner walls 109. The grooves 7 have a portion 110 (Figure 2) of increased width extending along the groove.

The track also comprises a longitudinal cover for closing the duct. The cover comprises a flat front 111 provided with a flange at opposite longitudinal edges. The flanges at opposite edges are identical and as best seen in Figure 2 each flange extends sideways from front 111 and is provided with an outwardly facing groove 112 formed by wall 113 having a lip 114 extending into the groove.

The flange also has an inwardly facing groove positioned to receive wall 109 of the duct when the cover is applied to the duct. One wall defining groove 115 has an inwardly projecting bead 116 which is bifurcated and has bulges 117 dimensioned to fit into portion 110 of the groove 7. When the cover is applied to the duct the bead is pushed into groove 7 and the bead can expand to occupy portion 110 so that the cover is snap fitted to the duct and a significant force has to be applied to remove it. Wall 8 of the duct is shaped as shown to engage part 118 of the flange and a wedge-shaped gap 119 is provided between these members. When the cover is to be removed a screwdriver blade or like device may be inserted in this gap to lever the duct and cover apart.

The flange is also provided with an outwardly facing groove 120 opposite the bead intended to

receive screws 121, of which one is shown in Figure 1. The screws are intended to penetrate the bead inside groove 7 and push bulges 117 apart to secure the cover on the duct. Holes in the bottom of groove 120 may be provided to receive the screws, or alternatively the screws may be capable of penetrating the plastics material of the cover. A suitable screw for this purpose has a pointed pyramidal end for cutting into the plastics material as it is inserted.

The duct 1 is also provided with a pair of upstanding outer walls 122 which may be perpendicular to the base 2, as shown in Figure 2, or be inclined at an angle thereto. The edges of walls 122 are provided with bifurcated beads 123 similar to beads 116 and a shoulder 124. Outer walls 122, together with grooves 112, are intended to hold in place edge covers 125 which may be plastics material or may be of metal such as aluminium. One side of the edge cover has a flange 126 having a widened edge to snap fit in groove 112 behind lip 114. The other side of the edge cover has a groove 127 of part-circular cross-section to snap over bifurcated bead 123. A small gap between shoulder 124 and the edge of side cover 125 is provided to receive a screwdriver blade or other tool to allow the side cover to be removed by leverage.

The track of this embodiment is intended to be mounted with the rear surface of base 2 in contact with a wall and grooves 128 (shown in Figure 2) are provided on the base to facilitate location of screws (not shown) to pass through the base and secure it to the wall in known manner. Such a groove may be provided between both pairs of walls 6 and 122. Grooves 128 may have holes at intervals to receive the screws, alternatively screws capable of penetrating the plastics material of base 2 may be used.

The outermost of the walls defining grooves 3a and 3c are provided with flanges 129 extending at an angle towards walls 6 to receive an edge of strips 130, the opposite edges of the strips being received in grooves 131 on walls 6. The grooves are dimensioned so that the strips may be snapped into place and isolate the spaces 132 in the duct from the remainder of the duct. Spaces 132 may be used to accommodate telephone wires or other services which run along the duct and are not associated with the circuits formed by bus-bars 4.

As shown in Figures 1 and 2, the interior walls of grooves 3 have serrations extending in the longitudinal direction of the track to form internal abutments to retain the cleats holding the bus-bars. Two types of cleat which may be used in these grooves are shown in Figures 12 and 13 respectively. In both cases the outer walls of the cleats have outstanding flanges 38 to engage the abutments to hold the cleats in place in the grooves. The rearward surfaces 39 of the flanges are inclined so that the cleats may easily be inserted into the grooves by pressing.

The interior slot of the cleat of Figure 12, intended to contain the bus-bar, is of uniform

width so that the bus-bar may have a width nearly equal to the overall length of the cleat. The cleat of Figure 13 has a shorter internal slot 40 terminated by constriction 41 to receive a bus-bar of lesser width.

Figure 2 shows one cleat of the type shown in Figure 12 holding a bus-bar 4 in place. Cleats are provided at intervals along each bus-bar.

Figure 1 shows a 13-amp plug socket 151 mounted in the track. This socket is of standard internal construction but is connected to the bus-bars 4 by forked connectors, extending behind the socket to engage a respective busbar. The forked connectors are dimensioned to enter the grooves 3 and bracket the bus-bars, the prongs of the forks being inwardly sprung so that they clamp the bus-bars between the prongs to establish a reliable electrical contact between connector and bus-bar. The connectors connect the socket apertures receiving the plug pins to the bus-bar.

The manner in which the socket is mounted in the track is shown in Figures 1 and 3. The socket itself has a front surface 152 which, when mounted on the track, projects slightly above the surface of cover 111. The socket may be mounted between two lengths of cover 111 in the longitudinal direction, as shown in Figure 1. Its longitudinal side surfaces 153 are aligned with corresponding side surfaces of cover 111 and engage side covers 125 when the track is assembled, the side covers extending beside both the cover 111 and the socket. Side surfaces 153 have flanges 154 which abut the edges of walls 6.

The sides of the socket transverse to the track are provided with outstanding flanges 155 which, when the track is assembled, extend behind and engage the inside surface of cover 111. The socket is thus clamped in place on the track by the cover 111 engaging flanges 155.

Figure 3 shows only one (the upper) longitudinal side of the socket; the lower side is engaged with the track in the same way.

Other electrical accessories, such as switches and circuit-breakers, may be similarly mounted in the track provided that they have similar flanges 155.

A method of mounting a standard accessory, which need not be manufactured with flanges as in the above described embodiments, is illustrated by Figures 4 and 5 with reference to the embodiment of Figure 1. The front plate 156 of the accessory is mounted in front of the track covers, to overlap the edges of the adjacent covers 111 and side covers 125. It is held in place by screws 157 passing through holes 158 in a rectangular mounting plate 159 which has a generally square central aperture 160 to accommodate the working parts of the accessory on the rear surface of plate 156. The edges of the plate are provided with holes 161 positioned so that when the plate is positioned on the track as shown in Figure 4 the holes are aligned with the groove in wall 6 and the mounting plate may be secured to the track by screws 162 passing through holes 161 and engaging the inner surfaces of the grooves.

On assembly of the track the mounting plate may first be attached in this way, followed by mounting of the cover 111 and side covers 125 and mounting of the front plate 156 using screws 157. The mounting plate may have flanges at its edges to increase its rigidity.

This method of mounting may be used for any standard accessory of appropriate dimensions which has holes to receive screws 157 at the required locations.

When the track shown in Figure 1 is installed in a building the duct 1 is first attached to the surface of a wall or like supporting structure by screws applied to grooves 128 (Figures 1 and 2). The bus-bars are then mounted in their grooves using cleats spaced at intervals (if they are not mounted in the duct already) and if desired any telephone cables or the like which are required may be passed through spaces 132 which are then closed by application of members 130. Electrical accessories such as plug socket 151 may then be positioned at any desired point along the duct with their fork terminals in contact with the bus-bars. As shown in Figure 1 the three bus-bars are positioned unsymmetrically with respect to the longitudinal axis of the duct to avoid any risk of an accessory being mounted upside-down. Any accessories requiring use of a mounting plate 159 are similarly mounted at any desired position. The main cover 111 and side covers 125, may then be applied as shown in Figure 1 to close the duct: the covers are easily cut to the appropriate length on site.

It will be appreciated that this method of assembly is quick and easy, especially when no screws are required for assembling the duct and covers. No separate crosspieces are needed to support the duct covers or accessories. The assembly is easily dismantled using the reverse procedure. The track is highly suitable for installation at floor level around a room but it may equally be installed in the middle of a wall, running horizontally or vertically.

When the track is installed the duct and covers may be supplied in standard lengths and it may be necessary to join adjacent pieces of duct and cover end-to-end, in which case the joint should be protected especially to prevent entry of water or other unwanted matter from the outside. Such protection may be provided by a joint cover 171 shown in Figure 1 and in Figures 6-8.

Figure 6 shows the outside surface of the joint cover as seen in Figure 1 but without the intervening cover parts, Figure 8 is a section through the joint cover and Figure 7 is a view of the joint cover seen from the side. The joint cover comprises a strip of plastics material forming side walls 173 which fit over the walls 122 of the duct and central portion 172 extending between the walls 122 of the duct and shaped so that the outer surface of the cover joint is substantially flush with the outer surfaces of the main cover 111 and side covers 125.

The inner surface of the joint cover is provided with projections 174 to enter grooves 7 of walls 6

and the adjacent parts of the inner surface are shaped to abut the edges of walls 8 and 9 around the grooves. Grooves 175 are provided to engage the bead 123. The joint cover has flanges 177 to extend sideways to fit underneath the ends of the adjacent covers so that the latter hold the joint covers in place and prevent access to the interior.

Figure 1 also shows an end plate 180 which is of similar construction to joint cover 171 except that it also comprises a wall closing off the open end of the track.

Figures 9 and 10 show a corner-piece which may be used when the surface-mounted power track of Figure 1, mounted on a wall, is to continue around a convex rightangle corner. Surfaces 181 of the corner-piece engage the wall and surfaces 182, 183 provide a continuation of the outer surfaces of the covers 111 and 125 around the corner. Surfaces 182 are substantially flush with the outer surfaces of the covers 111, 125 of an adjacent length of track and projections shown generally at 184 engage the adjacent track behind the covers to join the track to the corner-pieces. The interior surfaces behind surfaces 182 are of similar profile to the inner surface of covers 111 and 125 to engage the end portions of adjacent ducts 1 and clip the corner-piece to the track.

Figure 11 shows a corner-piece for a concave rightangled corner. Surfaces 185 will engage the walls of the room and surfaces 186 will be flush with corresponding surfaces of the covers of the adjacent track lengths. Projections 187 extend behind the adjacent covers, as in the corner-piece of Figure 9.

With both these types of corner-piece the adjacent duct 1 will extend up to the corner itself, the bus-bars of the adjacent ducts being joined by suitable connectors at the corner, and the ends of the ducts at the corner are covered by the corner-piece.

The embodiments shown in the drawings have been described in relation to the mounting of a 13-amp switch on the track but it will be understood that a wide variety of circuit accessories, including circuit breakers, may be mounted on the track and connected to the bus-bars in the same manner. When the accessory is a socket of the type shown current is supplied from the bus-bars to the point of use through a plug inserted in the socket. With other types of accessory the accessory itself may be provided with cables running to the point of use and these cables may extend from the front of the accessory, which is exposed when mounted on the track. Alternatively cables may extend from the back or a side of the accessory which are enclosed in the assembled track and holes in the duct, and channel when used, are then required to allow passage of the cables. These holes may be provided by knock-out portions formed in known manner in the duct and channel.

The duct, bus-bars, track cover and channel may all be supplied in a variety of standard lengths or may be cut to any required length on site so that the length of the track is easily

adapted to any given requirement, for example installation in a room of a house where the length of a wall is non-standard.

Once the duct and its bus-bars are installed the switch sockets or other accessories may be mounted on the track at any arbitrary point so that they may be positioned to suit the requirements of an individual customer. The track cover may then be cut to length using a tenon saw or the like and mounted in place on the brackets.

Alternatively the various components may be assembled in a workshop, for example to a previously determined arrangement thus saving assembly time on site.

Any number of accessories may be mounted on the same track, either side-by-side or spaced along the track, and spaces between the accessories are occupied by the track cover so that the track is completely enclosed. The snap-on track cover is held firmly by beads in grooves so that it will not be removed accidentally and there is little risk of unauthorized removal, for example by a child.

The bus-bars may be designed to carry any required current, for example up to 60 or 100 amps. As shown in the drawings, the distance between bus-bars 4a and 4b may differ from that between 4b and 4c. This unsymmetrical arrangement avoids any risk of a switch or other accessory being mounted on the track upside-down.

The embodiments described above use three bus-bars, intended for use as live, neutral and earth in a domestic power supply but substantially the same arrangement may be used with a different number of bus-bars for example in a polyphase system.

The dimensions of the track may be such that switches and other accessories mounted on it may be of standard types and sizes which are already established in the art. The track will then be compatible with existing equipment.

Claims

1. An electrical distribution track comprising a longitudinal hollow duct (1) of electrically insulating material,

the duct comprising a base (2) adapted to be mounted on a support surface and a pair of longitudinally extending side walls (6) having a continuous longitudinal opening therebetween to allow insertion into the duct of an electrical accessory (151) at any point along the duct,

the side walls comprising outwardly facing edges capable of engaging flanges (154) on opposite sides of an accessory (151) positioned in the duct, or of a mounting device (159) capable of holding an accessory in the duct,

means (111, 154; 161, 162) for clamping an accessory or mounting device to said outwardly facing edges to hold the accessory or mounting device in the duct,

and cover means (111, 125) adapted to be attached to the duct such that the parts of the

opening not occupied by the accessory (151) and the edges of the walls (6) are covered by the cover means,

characterised in that the duct (1) contains exposed electrical conductors (4) extending there-
5 along mounted on the base (2) of the duct,

the duct has a pair of outer walls (122) extend-
10 ing from the base (2) and the cover means (111, 125) extends over the opening, side wall (6) edges, the outer wall (122) edges of the duct and the flanges (154) of an accessory (151) or mount-
ing device therefor (159) when mounted in the duct,

and the cover means and side wall edges are provided with respective grooves (7) and beads (116) such that the beads (116) may snap fit into the grooves (7) to secure the centre part of the cover means (111) to the side walls.

2. A track according to claim 1, in which the beads (116) are bifurcated and capable of expand-
20 ing in the grooves (7).

3. A track according to claim 1 or 2, in which the centre part of the cover means is provided with grooves (120) in its surface opposite the beads to receive screws (121) to penetrate the cover and extend through the beads within the grooves of the side wall edges.

4. A track according to claim 1, 2 or 3 in which the cover means comprises a centre cover (111) and side covers (125) covering the track on
30 respective sides of the centre cover part (111) having surfaces substantially flush with the centre cover part.

5. A track according to claim 4, in which the side covers (125) comprise flanges engaging inside a
35 corresponding groove formed in the centre cover.

6. A track according to claim 4 or 5, in which the side covers and the edges of the side walls have respective grooves (112) and beads (126) engageable with each other to secure the side
40 covers to the duct.

7. A track according to any preceding claim, in which the exposed conductors (4) are mounted in parallel channels (3) on the base of the duct.

8. A track according to claim 7, in which the conductors (4) are metal strips held in their channels (3) by cleats gripping the strips and engaging the interior surfaces of the channels.

9. A track according to claim 8, in which the channels (3) containing the conductors (4) are provided with interior abutments to retain the cleats in the channels.

10. A track according to claim 7, 8 or 9 in which the conductors (4) are three in number and the transverse distances between the middle conductor and the outer conductors are unequal.

11. A track according to any preceding claim, in which the interior of the duct is provided with at least one chamber (132) extending longitudinally along the duct and isolated from the remainder of
60 the duct interior by a removable strip (130).

12. A track according to any preceding claim, in which adjacent lengths of said cover means attached to the duct are joined together at their ends by connectors (172) covering the opening

and the edges of the outer walls (122) of the duct and extending to the wall of the support surface, at least the parts of the connectors (172) covering the opening and the edges of the walls (122) of the duct having an outer surface substantially
5 flush with that of the cover means.

13. An assembly comprising a track according to any one of the preceding claims and an electrical accessory, in which the accessory (151) is mounted in the opening of the duct and has a pair of outstanding flanges (154) abutting the edges of the side walls of the duct.

14. An assembly comprising a track according to any one of claims 1 to 12 and an electrical accessory, in which the accessory is secured to a mounting plate (159) and is mounted in the opening of the duct with the mounting plate abutting the edges of the side walls of the duct.

15. An assembly according to claim 13 or 14, in which the flange of the accessory or the mounting plate is clamped to the edges of the side walls (6) of the duct by screws (121).

16. An assembly according to claim 13 or 14, in which the accessory or the mounting plate is clamped in position by the cover means (111).

17. An assembly according to any one of claims 13 to 16, in which the accessory (151) is provided with sprung forked terminals to make electrical contact with the conductors (4) when the accessory is mounted in the track.

Patentansprüche

1. Elektrischer Installationskanal, umfassend einen längs verlaufenden hohlen Kanal (1) aus elektrisch isolierendem Material,

der Kanal umfaßt einen Boden (2), der zur Anbringung auf einer Auflagefläche bestimmt ist, und ein Paar von sich längs erstreckenden Seitenwänden (6) mit einer sich dazwischen befindlichen durchgehenden längs verlaufenden Öffnung, um die Einsetzung eines elektrischen Ausrüstungsteils (151) an jedem Punkt entlang dem Kanal zu ermöglichen,

die Seitenwände umfassen nach außen gekehrte Kanten, die befähigt sind mit Flanschen (154) an entgegengesetzten Seiten eines in dem Kanal angeordneten Ausrüstungsteils (151) oder einer Befestigungsvorrichtung (159) für die Halterung eines Ausrüstungsteils in dem Kanal einzugreifen,

Mittel (111, 151; 161, 162) zum Festklemmen eines Ausrüstungsteils oder Befestigungsvorrichtung an den nach außen gekehrten Kanten, um das Ausrüstungsteil oder die Befestigungsvorrichtung in dem Kanal zu halten,

und Deckelmittel (111, 125), die zur Anbringung an dem Kanal bestimmt sind, derart, daß die Bereiche der Öffnung, die nicht durch das Ausrüstungsteil (151) besetzt sind, und die Kanten der Wände (6) durch die Deckelmittel abgedeckt sind,

dadurch gekennzeichnet, daß der Kanal (1) sich in seiner Längsrichtung erstreckende, an dem Boden (2) des Kanals befestigte, freiliegende elektrische Leiter (4) enthält,

der Kanal besitzt ein Paar von Außenwänden (122), die von dem Boden (2) ausgehen, und die Deckelmittel (111, 125) erstrecken

sich über die Öffnung, die Kanten der Seitenwände (6), die Kanten der Außenwände (122) des Kanals und die Flansche (154) eines Ausrüstungsteils (151) oder einer Befestigungsvorrichtung (159) dafür, wenn in dem Kanal befestigt,

und die Deckelmittel und die Seitenwandkanten sind mit Nuten (7) und Wülsten (116) derart versehen, daß die Wülste (116) in die Nuten (7) einrasten können, um das Mittelteil (111) der Deckelmittel an den Seitenwänden zu befestigen.

2. Kanal nach Anspruch 1, bei welchem die Wülste (116) gegabelt und befähigt sind, sich in den Nuten (7) zu spreizen.

3. Kanal nach Anspruch 1 oder 2, bei welchem das Mittelteil der Deckelmittel in seiner Außenfläche den Wülsten gegenüberliegend mit Nuten (120) zur Aufnahme von Schrauben (121) versehen ist, die den Deckel durchdringen und sich durch die Wülste innerhalb der Nuten der Seitenwandkanten erstrecken.

4. Kanal nach Anspruch 1, 2 oder 3, bei welchem die Deckelmittel einen Mitteldeckel (111) und Seitendeckel (125) enthalten, die den Kanal an den Seiten des Mitteldeckelteils (111) abdecken und Außenflächen aufweisen, die mit dem Mitteldeckelteil im wesentlichen bündig sind.

5. Kanal nach Anspruch 4, bei welchem die Seitendeckel (125) Flansche einschließen, die in eine entsprechende in dem Mitteldeckel eingeformte Nut eingreifen.

6. Kanal nach Anspruch 4 oder 5, bei welchem die Seitendeckel und die Kanten der Seitenwände Nuten (112) und Wülste (126) aufweisen, die zum Befestigen der Seitendeckel an dem Kanal miteinander in Eingriff bringbar sind.

7. Kanal nach einem vorausgehenden Anspruch, bei welchem die freiliegenden Leiter (4) in parallelen Nuten (3) an dem Boden des Kanals befestigt sind.

8. Kanal nach Anspruch 7, bei welchem die Leiter (4) Metallstreifen sind, die in ihren Nuten (3) durch Klammern gehalten sind, welche die Streifen fassen und in die Innenflächen der Nuten eingreifen.

9. Kanal nach Anspruch 8, bei welchem die die Leiter (4) enthaltenden Nuten (3) mit inneren Widerlagern zum Festhalten der Klammern in den Nuten versehen sind.

10. Kanal nach Anspruch 7, 8 oder 9, bei welchem drei Leiter (4) vorgesehen sind, wobei die Querabstände zwischen dem mittleren Leiter und den äußeren Leitern ungleich sind.

11. Kanal nach einem vorausgehenden Anspruch, bei welchem das Innere des Kanals mit mindestens einer Kammer (132) versehen ist, die sich längs verlaufend entlang dem Kanal erstreckt und von dem Rest des Kanalinneren durch einen entfernbaren Streifen (130) isoliert ist.

12. Kanal nach einem vorausgehenden Anspruch, bei welchem benachbarte Längen von an dem Kanal angebrachten Deckelmitteln an

ihren Enden durch Verbinder (172) zusammengefügt sind, welche die Öffnung und die Kanten der Außenwände des Kanals abdecken und sich zu der Wand der Auflagefläche erstrecken, wobei mindestens die Teile der Verbinder (172), welche die Öffnung und die Kanten der Wände (122) des Kanals abdecken eine Außenfläche aufweisen, die mit der der Deckelmittel bündig ist.

13. Aus einem Kanal nach einem der vorausgehenden Ansprüche und einem elektrischen Ausrüstungsteil bestehende Baugruppe, bei welcher das Ausrüstungsteil (151) in der Öffnung des Kanals befestigt ist und ein Paar von hervorragenden Flanschen (154) aufweist, die den Kanten der Seitenwände des Kanals anliegen.

14. Aus einem Kanal nach einem der Ansprüche 1 bis 12 und einem elektrischen Ausrüstungsteil bestehende Baugruppe, bei welcher das Ausrüstungsteil an einer Befestigungsplatte (159) befestigt und in der Öffnung des Kanals angebracht ist, wobei die Befestigungsplatte den Kanten der Seitenwände des Kanals anliegt.

15. Baugruppe nach Anspruch 13 oder 14, bei welcher der Flansch des Ausrüstungsteils oder die Befestigungsplatte an den Kanten der Seitenwände (6) des Kanals durch Schrauben (121) befestigt ist.

16. Baugruppe nach Anspruch 13 oder 14, bei welcher das Ausrüstungsteil oder die Befestigungsplatte durch die Deckelmittel (111) positioniert festgeklammert ist.

17. Baugruppe nach einem der Ansprüche 13 bis 16, bei welcher das Ausrüstungsteil mit federnd gegabelten Anschlußklammern versehen ist, um elektrischen Kontakt mit den Leitern (4) herzustellen, wenn das Ausrüstungsteil in dem Kanal angebracht wird.

Revendications

1. Rail de distribution électrique qui comprend un conduit longitudinal creux (1) en un matériau électriquement isolant;

le conduit comportant une base (2) conçue de manière à être montée sur une surface de support et une paire de parois latérales (6) s'étendant longitudinalement, présentant entre elles une ouverture longitudinale continue pour permettre l'insertion dans le conduit d'un accessoire électrique (151) en tout point le long du conduit,

les parois latérales comprenant des rebords dirigés vers l'extérieur, pouvant venir en prise avec des flasques (154) sur les côtés opposés d'un accessoire (151) positionné dans le conduit, ou d'un dispositif de montage (159) pouvant maintenir un accessoire dans le conduit,

des moyens (111, 154, 161, 162) pour verrouiller un accessoire ou un dispositif de montage sur lesdits rebords orientés vers l'extérieur afin de maintenir l'accessoire ou le dispositif de montage dans le conduit,

et des moyens de recouvrement (111, 125) conçus de manière à être fixés au conduit afin que les parties de l'ouverture non occupées par l'accessoire (151) et les rebords des parois (6) soient

recouverts par les moyens de recouvrement, caractérisé en ce que le conduit (1) contient des conducteurs électriques dénudés (4) s'étendant tout le long du conduit et montés sur la base (2) de ce dernier,

le conduit comporte une paire de parois extérieures (122) s'étendant à partir de la base (2), et les moyens de recouvrement (111, 125) s'étendent sur l'ouverture, sur les rebords des parois latérales (6) sur les bords des parois extérieures (122) du conduit et sur les flasques (154) d'un accessoire (151) ou d'un dispositif de montage (159) pour un tel accessoire lorsqu'il est monté dans le conduit,

et les moyens de recouvrement et les bords des parois latérales sont munis de rainures (7) et de cordons (116) respectifs, tels que les cordons (116) puissent s'engager en s'ajustant dans les rainures (7) afin de fixer la partie centrale des moyens de recouvrement (111) aux parois latérales.

2. Rail selon la revendication 1, dans lequel les cordons (116) comportent deux branches et ils peuvent s'épanouir dans les rainures (7).

3. Rail selon la revendication 1 ou 2, dans lequel la partie centrale des moyens de recouvrement est munie de rainures (120) dans sa surface opposée aux cordons de manière à recevoir des vis (121) traversant le couvercle et s'étendant au travers des cordons dans les rainures des bords des parois latérales.

4. Rail selon la revendication 1, 2 ou 3, dans lequel les moyens de recouvrement comprennent un couvercle central (111) et des couvercles latéraux (125) recouvrant le rail sur des côtés respectifs de la partie de couvercle central (111) comportant des surfaces sensiblement de niveau avec la partie du couvercle central.

5. Rail selon la revendication 4, dans lequel les couvercles latéraux (125) comportent des flasques venant en prise dans une rainure correspondante ménagée dans le couvercle central.

6. Rail selon la revendication 4 ou 5, dans lequel les couvercles latéraux et les bords des parois latérales possèdent des rainures (112) et des cordons (126) respectifs venant s'engager les uns dans les autres pour fixer les couvercles latéraux au conduit.

7. Rail selon l'une quelconque des revendications précédentes, dans lequel les conducteurs dénudés (4) sont montés dans des canaux parallèles (3) sur la base du conduit.

8. Rail selon la revendication 7, dans lequel les conducteurs (4) sont des bandes métalliques maintenues dans leurs canaux (3) par des taquets assurant la préhension des bandes et venant en prise sur les surfaces intérieures des canaux.

9. Rail selon la revendication 8, dans lequel les canaux (3) contenant les conducteurs (4) sont munis de butées internes pour maintenir les taquets dans les canaux.

5 10. Rail selon les revendications 7, 8, ou 9 dans lequel les conducteurs (4) sont au nombre de trois et les distances transversales entre le conducteur médian et les conducteurs extérieurs sont inégales.

10 11. Rail selon l'une quelconque des revendications précédentes, dans lequel l'intérieur du conduit est muni d'au moins une chambre (132) s'étendant longitudinalement le long du conduit et qui est isolée du reste de l'intérieur du conduit par une bande amovible (130).

15 12. Rail selon l'une quelconque des revendications précédentes, dans lequel des longueurs adjacentes desdits moyens de recouvrement fixés au conduit sont raccordées par leurs extrémités à l'aide d'éléments de liaison (172) recouvrant l'ouverture et les bords des parois extérieures (122) du conduit et s'étendant vers la paroi de la surface de support, au moins les parties des éléments de liaison (172) recouvrant l'ouverture et les bords des parois (122) du conduit ayant une surface extérieure sensiblement au même niveau que celui des moyens de recouvrement.

20 13. Système comprenant un rail selon l'une quelconque des revendications précédentes et un accessoire électrique dans lequel l'accessoire (151) est monté dans l'ouverture du conduit et possède une paire de flasques s'étendant vers l'extérieur (154) venant en butée sur les bords des parois latérales du conduit.

30 14. Système comprenant un rail selon l'une quelconque des revendications 1 à 12, et un accessoire électrique dans lequel l'accessoire est fixé sur une plaque de montage (159) et il est monté dans l'ouverture du conduit avec la plaque de montage venant en butée contre les bords des parois latérales du conduit.

40 15. Système selon la revendication 13 ou 14, dans lequel le flasque de l'accessoire ou de la plaque de montage est verrouillé sur les bords des parois latérales (6) du conduit à l'aide de vis (121).

45 16. Système selon la revendication 13 ou 14, dans lequel l'accessoire ou la plaque de montage est verrouillée en position par les moyens de recouvrement (111).

50 17. Système selon l'une quelconque des revendications 13 à 16, dans lequel l'accessoire (151) est muni de bornes comportant des branches fendues de manière à réaliser un contact électrique avec les conducteurs (4) lorsque l'accessoire est monté dans le rail.

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FIG. 1

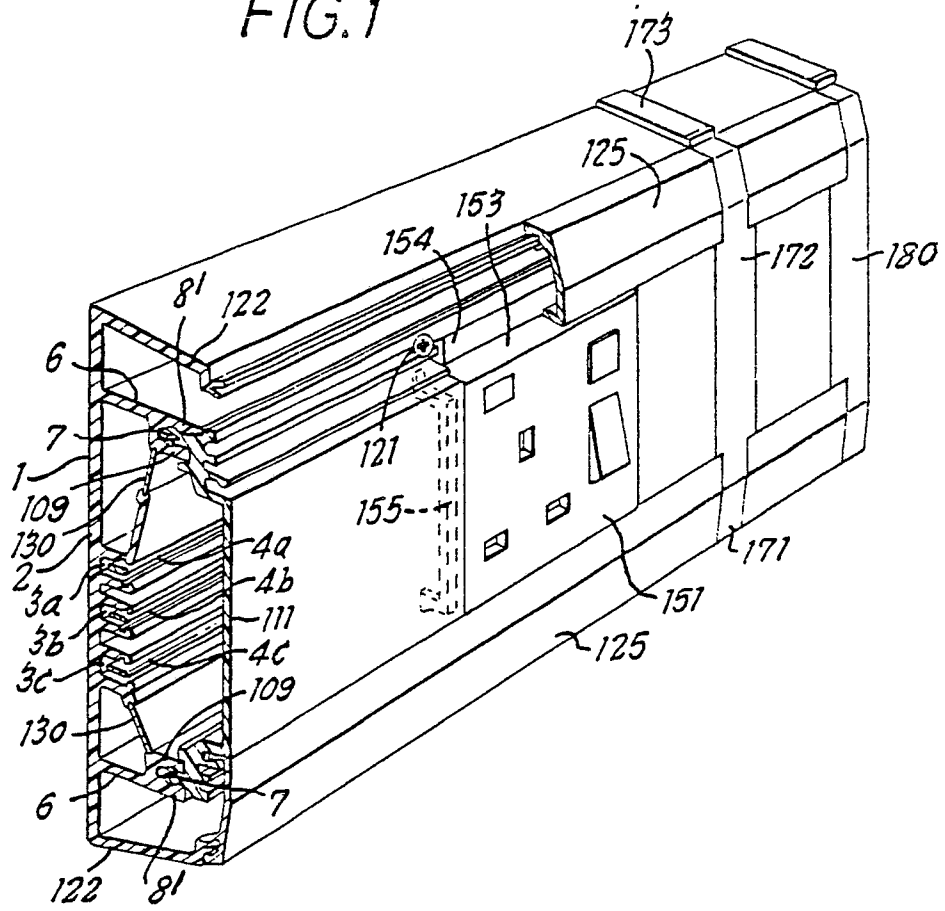


FIG. 2

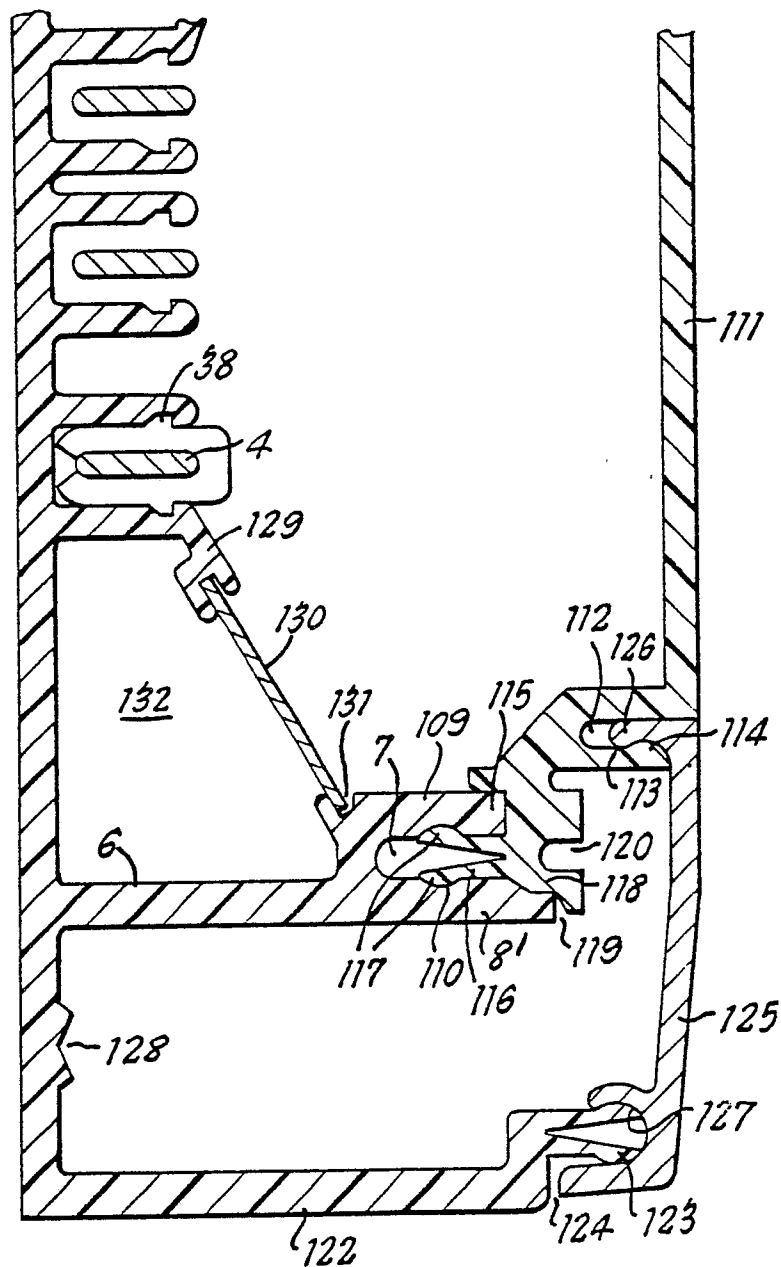


FIG. 3

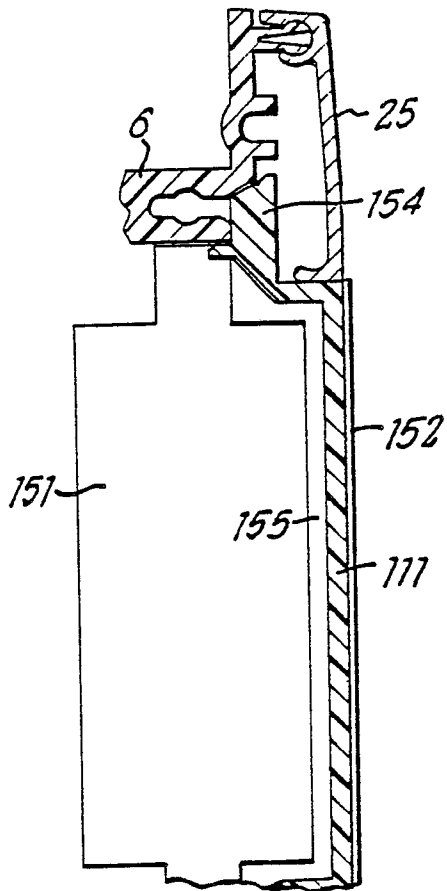


FIG. 4

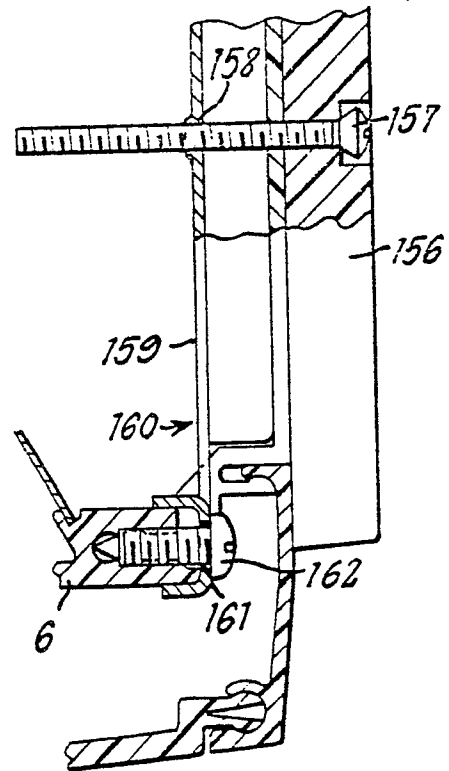


FIG. 5

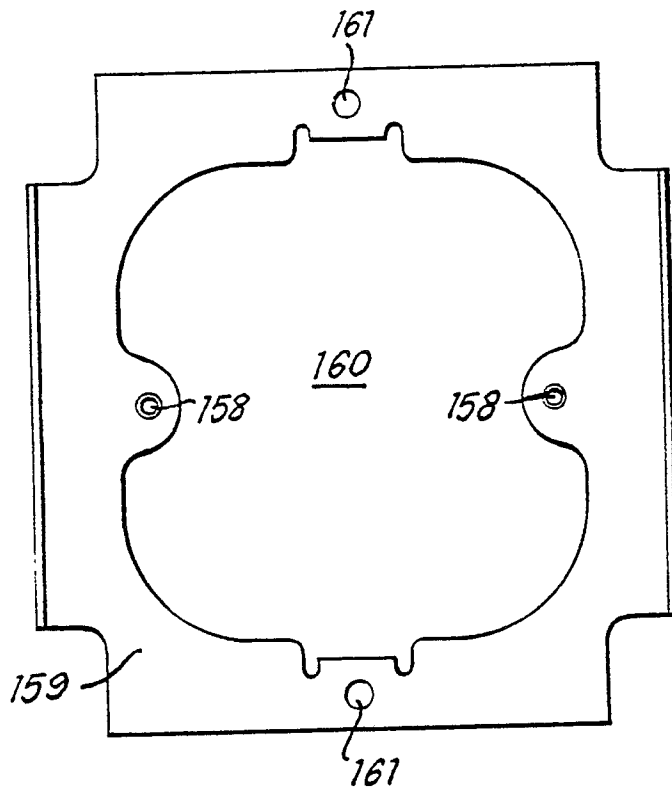


FIG. 6

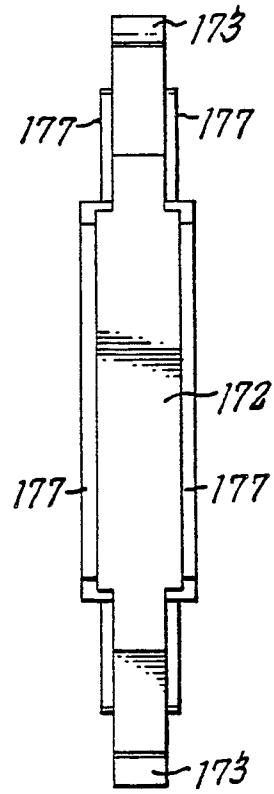


FIG. 7

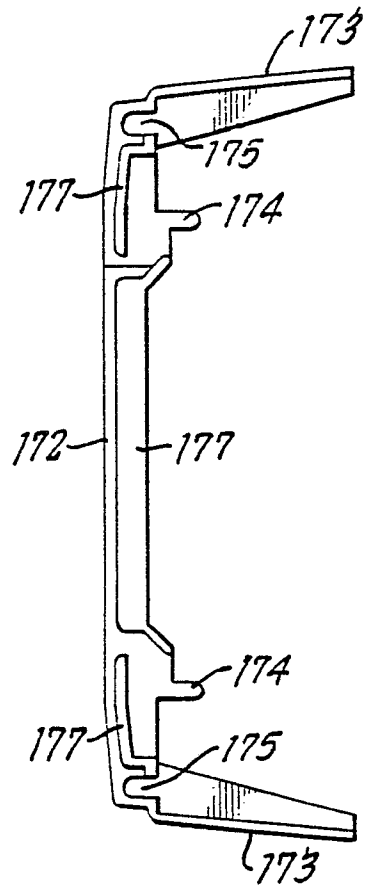


FIG.8

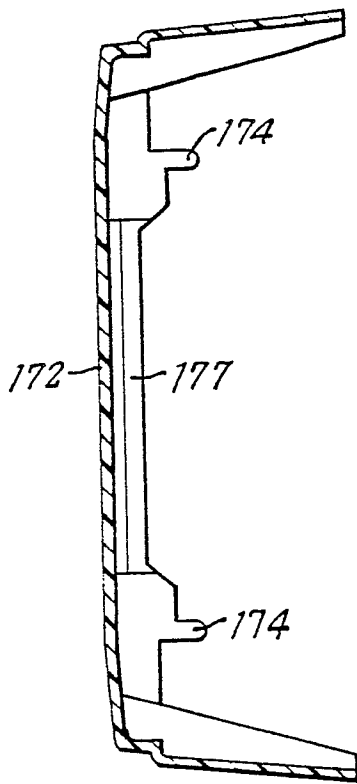


FIG.9

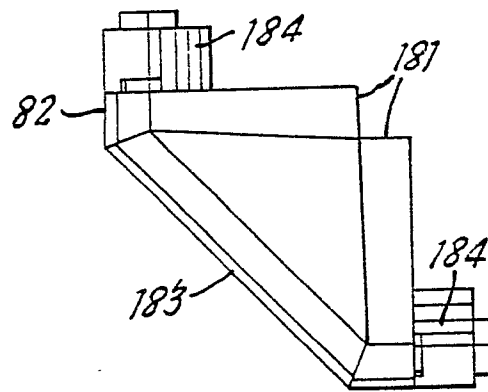


FIG.10

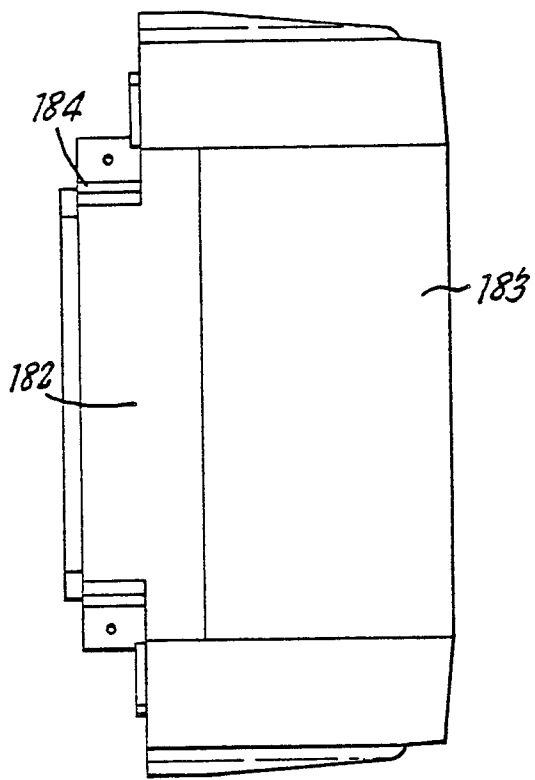
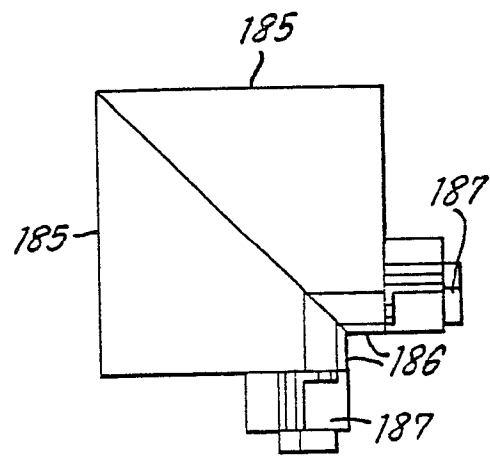


FIG.11



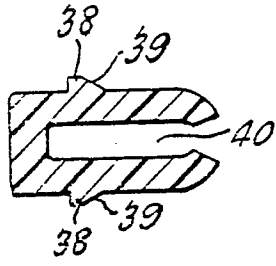


FIG.12

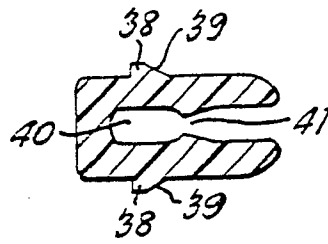


FIG.13