

[72] Inventors **Derek James Hart;**
Robert Davis, London, England
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 [73] Assignee **British Lighting Industries Limited**
London, England
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[56]

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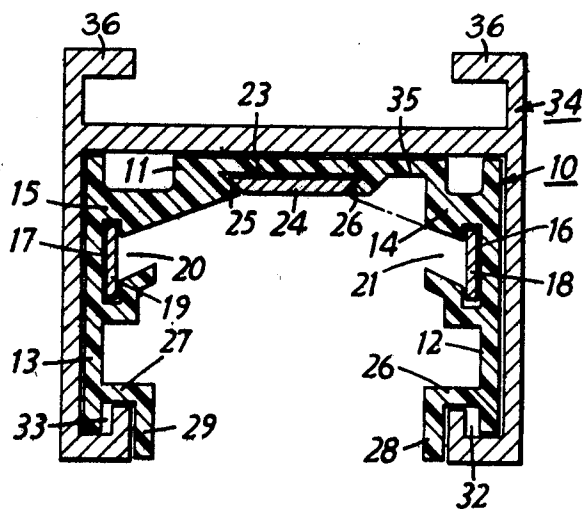
Attorney—Joseph C. Ryan

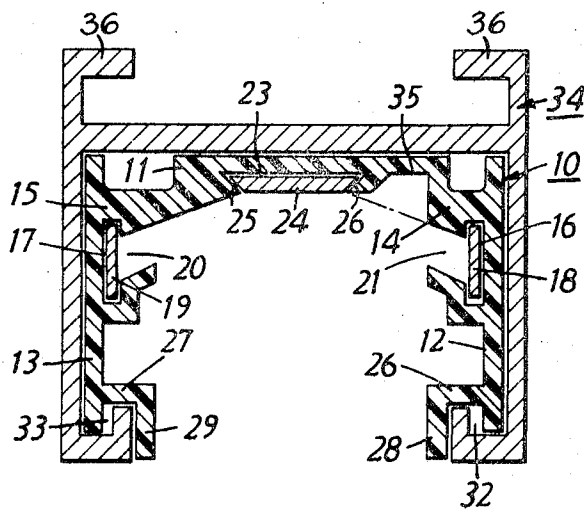
[54] TRACK FOR DISTRIBUTION OF ELECTRICITY

10 Claims, 1 Drawing Fig.

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ABSTRACT: An electricity distribution track suitable for overhead use has a substantially U-shaped cross section and has ledges upon which electrical connectors and outlet adapters can be slidably positioned, the track body having longitudinally extending conducting strips mounted therein which are accessible from the interior of the track by way of slots, the slots effectively shielding the conducting strips from being inadvertently touched thereby preventing personnel receiving shocks therefrom.





DEREK JAMES HART
ROBERT DAVIS

BY *Joseph C. Ryan*
ATTORNEY

TRACK FOR DISTRIBUTION OF ELECTRICITY

The present invention relates to a track for the distribution of electricity and is suitable for use, inter alia, in factories and workshops where a common supply is required to which electrical components can be connected where desired.

The track can be centrally located, conveniently positioned overhead. In one known system, a group of electric cables is carried, for example overhead, by a trunking, and cables are withdrawn from the trunking where a lamp or power tool is to be located. Such trunking is additionally adapted to support lamps. A disadvantage of this system is that tools are necessary to bare the cables and make the desired connections. This is a time consuming process. Furthermore, repositioning of the lamps or tools relative to the trunking will often require making new connections.

According to the present invention, there is provided a track for distribution of electricity comprising an elongate member having a base and sides extending from the longitudinal edges of the base, and a pair of conducting strips which are mounted on or in the inner surfaces of the two sides in longitudinally extending channels, slots being associated with the channels to provide access to the strips from the central region of the elongate member, the sides additionally being provided with projections on which accessory members can be slidably mounted.

The track enables a plurality of components to be readily secured and electrically connected to the track without the use of tools, by means of accessory electrical connectors. The track is so designed that repositioning of the components relative to the track is facilitated by sliding the accessory connectors along the track. It is thus unnecessary to remove the accessory connectors from the track. Furthermore, conventional connections of the components to cables carried by the track is eliminated.

The track includes a pair of conductor strips to which access is provided from the central region of the track through the slots. The slots are so arranged that the conductor strips cannot be touched accidentally, thus preventing the possibility of shocks. A further safety feature is the provision of an earthing strip. The track further includes grooves which are provided so that it can be secured to a surface such as a ceiling by means of a mating mounting track and T-bolts. However it will be appreciated that the track could be directly secured to the surface by means such as screwing or bolting through the base of the track into the said surface.

The elongate member is preferably made from an extrusion of a plastic material, for example from P.V.C. The track is preferably asymmetrical in shape, when viewed in cross section. When using accessory connectors of similar asymmetrical cross section, electric power of the correct polarity is supplied to the associated tool. This results because accessory connector can only be fitted to the track in one way due to the asymmetry.

The present invention will now be described in more detail by way of example with reference to the accompanying drawing which shows a track in cross section.

The track 10 is an elongate member which is an extrusion of a plastics material, preferably P.V.C. The track 10 has a base 11 from the longitudinal edges of which sides 12, 13 project substantially perpendicularly to the plane of the base 11. It will be seen therefore that the track 10 is generally of U-shaped cross section. The sides 12 and 13 have portions 14 and 15 of increased thickness which extend away from the base part way along the inner surfaces of the sides. Channels 16 and 17 are formed within the thickened portions 14 and 15 and the channels extend longitudinally along the sides 12, 13 of the track. Housed within the channels 16, 17 are a pair of conductor strips 18, 19 made of copper. The conductor strips are made a close fit within the channels to prevent movement relative to the channel. Access to the conductor strips 18, 19 is provided by slots 20, 21 which are formed in the thickened portions 14, 15. As will be seen from the drawing, the slots 20, 21 are inclined towards the base 11 of the track 10. The slots

20, 21 allow contacts of accessory electrical connectors (not shown) to touch the conductor strips so that electrical power can be supplied to the connector strips and withdrawn therefrom as required. The width and depth of the slots 20, 21 however are such that it is impossible for personnel to touch the conductor strips 18, 19 with the fingers. The risk of receiving shocks is therefore eliminated.

The inner surface of the base 11 includes a recess 23 in which a further conductor strip 24 is located. This further conductor strip 24 can be used for example as an earth line. As will be seen from the drawing, the lateral surfaces 25, 26 of the recess are inclined and diverge away from the inner surface of the base 11. The further conductor strip 24 fitted in the recess 23 is of corresponding shape. The strip 24 is therefore prevented from disengagement with the recess 23. It will be appreciated the strip 24 could be retained in the recess 23 in other ways. For example, the strip 24 could be of rectangular cross section, and the recess 23 could be provided with lips to prevent the strip 24 from dropping out of the recess 23. Alternatively, the strip could be riveted or otherwise secured to the base 11. The conductor strip can be a material such as aluminium.

The sides 12, 13 are each further provided with a flange 26, 27 which, in the embodiment shown, projects in part towards the opposite side. The flanges 26, 27 form projections or ledges on which accessory electrical connectors can be slidably mounted. In addition, the flanges 26, 27 include extensions 28, 29 which are arranged substantially parallel to the plane of the sides. Grooves 32, 33 are therefore formed adjacent the end of the sides remote from the base. The grooves allow the track 10 to be slid into a correspondingly shaped external mounting track 34 which is secured to a surface such as a ceiling or wall. The external mounting track 34 can be secured to the surface by using T-bolts (not shown), which engage the grooves formed by flanges 36. When required, the track 10 can be withdrawn from the mounting track with ease. It will be appreciated that the track 10 could be provided with a row of apertures, for example in the base 11. The track 10 could therefore be directly secured to the surface by screwing or bolting thereto. Thus an external mounting track would be unnecessary.

The track 10 is asymmetrical about a plane parallel to the sides, through the centre line of the elongate member. In particular, the base 11 includes a longitudinal groove 35 located adjacent the side 12. The inner surface of the base is additionally inclined in a direction towards the conductor strip mounted in the side 13. Owing to the asymmetrical shape of the track 10, a correspondingly shaped accessory electrical connector (not shown) can only be inserted one way round. When the conductor strips 18, 19 are connected to an electrical supply, the correct polarity of the power supplied to an appliance, by way of such a connector, is thus ensured.

We claim:

1. A track for the distribution of electricity, comprising: an elongate insulating member having a base; two sides projecting away from the longitudinal edges of said base, each side having a channel formed therein; a pair of electrically conducting strips carried by the sides in said channels; said sides having projections on which accessory members can be slidably mounted; and said sides having longitudinally-extending slots formed therein thereby providing access to said conducting strips from the central region of said elongate insulating member.
2. A track according to claim 1, wherein the said two sides are grooved at locations remote from said base to position and retain said elongate insulating member in an external mounting track.
3. A track according to claim 2, in which both said projections and the grooved portions of said sides are formed by common inwardly projecting flanges carried on the inner surfaces of said sides.

4. A track according to claim 1, in which the longitudinally extending slots associated with the said channels are defined by inclined surfaces which incline away from said sides towards said base of said elongate member.

5. A track according to claim 1, wherein the said track is asymmetrical, in cross section, about a plane parallel to the said two sides.

6. A track according to claim 5, wherein the inner surface of said base adjacent one of the said sides has a longitudinal groove formed therein, the inner surface of said base being inclined towards the said conductor strip carried by the other side.

7. A track according to claim 1, wherein the inner surface of

said base is longitudinally recessed.

8. A track according to claim 7, wherein a further conducting strip is mounted in the longitudinal recess formed in said inner surface of said base.

9. A track according to claim 8, wherein said recess has lateral surfaces which diverge away from the inner surface of said base, said further conductor strip having correspondingly divergent lateral edge surfaces whereby disengagement of said further conductor strip from said recess is prevented.

10. A track according to claim 1, wherein said elongate member is a plastics-material extrusion.

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