April 28, 1953 A. M. GEIST ET AL 2,636,520

ELECTRICAL CONDUIT STRUCTURE

Filed Aug. 18, 1948

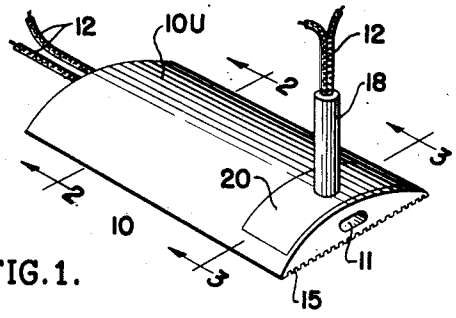
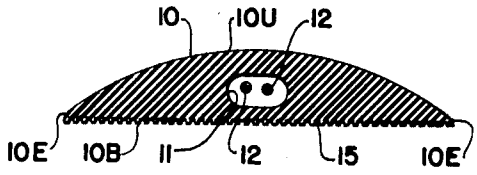


FIG. 1.

FIG. 2.



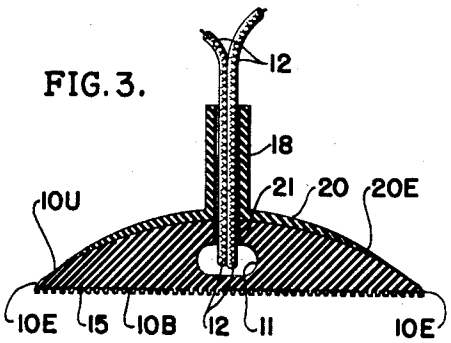


FIG. 3.

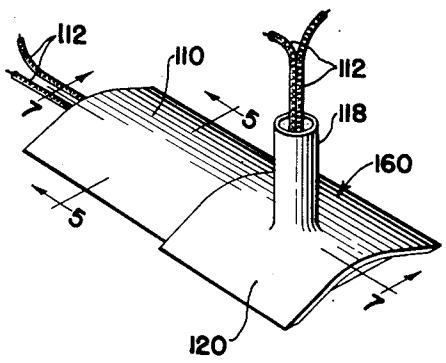


FIG. 4.

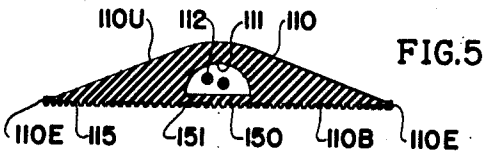


FIG. 5.

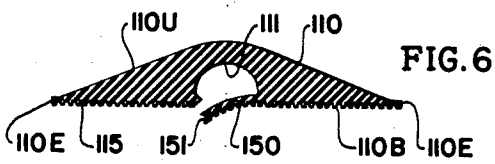
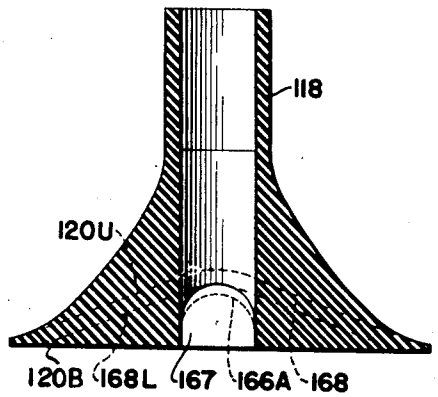


FIG. 6.

FIG. 8.



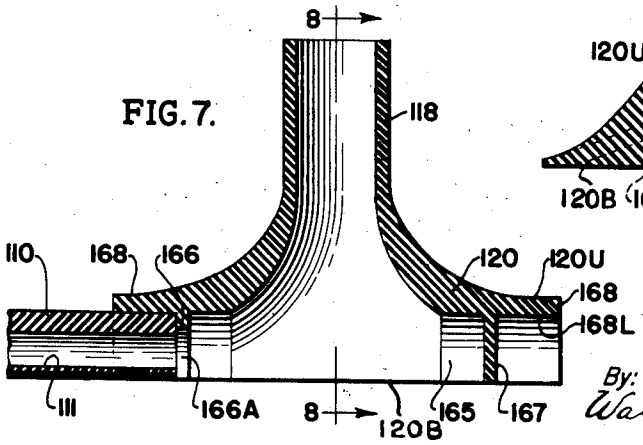


FIG. 7.

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ELECTRICAL CONDUIT STRUCTURE

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Application August 18, 1948, Serial No. 44,908

3 Claims. (Cl. 138—47)

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This application is a continuation in part of our copending application Serial No. 736,559, filed March 22, 1947, now Patent No. 2,595,452.

This invention relates to electrical wiring devices and particularly it relates to a pre-formed floor duct of a type such that it is useful on an exposed floor area or for concealment beneath rugs or other floor coverings.

In our prior Patent No. 2,391,409, patented December 25, 1945, several forms of floor duct are illustrated that are intended and adapted for the same uses as the ducts of the present invention, and the present invention constitutes an improvement upon the various forms of floor ducts shown in our aforesaid prior patent. The primary object of the present invention is to enable floor ducts of the aforesaid character to be formed in a continuous manufacturing process, and more specifically it is the object of the present invention to enable such ducts to be formed by processes of extrusion from a material such as relatively hard rubber. Further and related objects are to simplify the installation and mounting of floor ducts of the aforesaid character, and particularly it is an object of this invention to afford means on the lower face of such ducts to prevent creeping or undesired movement of the duct relative to the floor surface upon which it is mounted. Another important object of the present invention is to simplify the extension of wires from the mounting passage of such a duct, and to enable a lateral or upwardly extending riser to be associated with such a duct in a manner which affords a support as well as the housing for wires that are extended laterally from the main duct.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show preferred embodiments and the principle thereof and what we now consider to be the best mode in which we have contemplated applying that principle. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a perspective view illustrating a duct embodying the invention and having a riser conduit associated therewith;

Fig. 2 is a transverse sectional view taken substantially along a line 2—2 of Fig. 1;

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Fig. 3 is a transverse sectional view taken substantially along the line 3—3 of Fig. 1 and showing the manner in which the riser conduit is associated with the duct;

Fig. 4 is a perspective view illustrating another emboiment of the invention;

Fig. 5 is a transverse sectional view taken along the line 5—5 of Fig. 4;

Fig. 6 is a view similar to Fig. 5 and showing the bottom wall of the duct in a separated and open relation;

Fig. 7 is a view taken along the line 7—7 of Fig. 4; and

Fig. 8 is a view taken along the line 8—8 of Fig. 7.

For purposes of disclosure the invention is herein illustrated in Figs. 1 to 3 of the drawings as embodied in floor conduit 10 that is a longitudinal passage 11 extended therethrough so as to be adapted to receive one or more wires 12 that are to be extended across a floor. The duct 10 is formed from a plastic material such as relatively hard rubber that may be formed by processes of extrusion, and the duct 10 has a rounded or arcuate upper surface 10U so that the duct is relatively thick along its longitudinal center line and tapers downwardly to relatively thin side edges 10E that meet a generally flat bottom surface 10B.

The passage 11 that is to receive the wires 12 is formed along the longitudinal center line of the duct 10, or in the relatively thick portion of the extruded body of the duct, and in the form of the invention illustrated in Figs. 1 to 3 of the drawings, the lower side of the passage 11 is solid or unbroken so as to fully enclose the wires 12 so as to thereby adapt the duct 10 for use with relatively high voltage wires.

When a duct is mounted in position on a floor, either in an exposed position or beneath a rug or similar floor covering, there is a tendency for such a duct to be displaced, particularly in a lateral direction, and under and in accordance with the present invention means are afforded on the lower or bottom face 10B of the duct to reduce such tendency toward lateral shifting movement. Such means are under the present invention of such a character that they may be formed as an incident to the extrusion operation in which the main body of the conduit is formed, as will be evident in Figs. 1, 2 and 4 of the drawings, and such means take the form of a plurality of relatively small longitudinal ridges 15 that are extended along lower surface 10B of the duct.

When the duct of the present invention is utilized, particularly in a home or residence, it is often desirable, at one end of the duct, to extend the wires upwardly from the duct, and in Figs. 1 and 3 of the drawings, means have been illustrated whereby this may be readily and easily accomplished. Thus a riser fitting is afforded that comprises a tubular member 18 formed preferably from relatively hard rubber, and at one end this tubular member has a mounting base 20 that is secured to or integral with the tubular member 18 and which extends laterally therefrom as will be evident in Fig. 1 of the drawings. The member 20 tapers gradually toward opposite edges thereof so that these edges are relatively thin as indicated at 20E, Fig. 3, and thus when the fitting is put in place on the top of the rounded surface 10U of the duct, the fitting affords a neat continuation of the normal upper surface of the duct. In thus mounting the fitting in place on the duct 10, a vertical bore or opening 21 is formed downwardly through the upper surface of the duct and into the passage 11, as will be evident in Fig. 3 of the drawings, and the fitting is then put in place with the tubular member 18 in alignment with the opening 21. The fitting is then secured in place by suitable rubber cement or other adhesive which fastens the base member 20 in position on the rounded upper surface of the duct 10.

In the alternative form of the invention illustrated in Figs. 4 to 8 of the drawings, a duct 110 is formed by extrusion from rubber or similar material to afford a rounded upper surface 110U and flat bottom surface 110B that meet in relatively thin side edges 110E. The lower or bottom face has relatively small longitudinal ribs 115 formed therealong so as to prevent undesired transverse slipping of the duct. A continuous passage 111 is formed in the duct member midway between the edges 110E, and the upper side of the passage 111 is arcuate while the lower side is flat and is spaced from the bottom surface 110B so as to define a continuous and unbroken bottom wall 150. It will be observed, however, that adjacent the left hand edge of the passage 111, a pair of V-notches or grooves 151 are formed longitudinally in the opposed relation in the upper and lower faces of the wall 150.

The upper and lower grooves 151 terminate short of each other so that while the wall 150 remains solid and unbroken as shown in Fig. 5, the opposed grooves 151 afford a weakened separating line so that when necessary or desirable, for insertion, removal or inspection of wires 112 extended through the passage 111, the wall 150 may be broken and moved to an open position as shown in Fig. 6. When the duct is thereafter put in position on the floor, the wall 150 will, of course, be returned to its closed relation.

The duct 110 may readily be associated with a riser 160 which is molded from a material such as rubber to afford a base 120 having a flat bottom face 120B which rests on the floor. The base 120 is somewhat wider than the duct 110, and has a rounded upper surface 120U which generally conforms with the shape of the surface 110U but is somewhat wider and higher. An integral sleeve 118 extends upwardly from the upper surface 120U, and its central bore opens downwardly into a longitudinal recess 165 that opens through the bottom surface 120B of the base 120. The recess 165 is bounded at its ends by end walls 166 and 167 which terminate in the plane of the bottom surface 120B, and beyond these end walls, end ledges 168 extend for a substantial distance as continuations of the upper surface 120U. The lower faces 168L of these ledges 168 are complemental to the upper face 110U of the conduit, so that these faces 168, the end surfaces of the base, and the end walls 166 and 167 afford end-opening sockets into either of which an end of a duct may be extended as shown in Fig. 7. When this is done, the adjacent end wall, as 166, is cut away as at 166A, at a point opposite the passage 111 of the duct so that wires, as 112, may pass from the duct and into the riser.

From the foregoing description it would be apparent that the present invention enables floor ducts to be manufactured and installed in a simple and inexpensive manner, and such ducts, being of a one-piece construction, are extremely rugged in use. The form of the duct, of course, enables the duct to be installed upon the floor where there is considerable traffic, and wheeled vehicles may be run across the duct without damage to the duct or to the wires that are enclosed therein.

Thus, while we have illustrated and described preferred embodiments of our invention, it is to be understood that these are capable of variation and modification and we therefore do not wish to be limited to the precise details set forth, but desire to avail ourselves of such changes and alterations as fall within the purview of the following claims.

We claim:

1. In a riser fitting for association with the end of a wiring duct, an elongated base having a flat bottom surface and a transversely rounded upper surface to afford a relatively thick central section and relatively thin longitudinal edges, a tubular member formed integrally with said base and extended upwardly therefrom, said base having a longitudinally extended recess formed in the bottom surface thereof and extended upwardly and opening into said tubular member, end walls formed as integral portions of said base and closing the ends of said recess, and end ledges along opposite ends of said base adjacent to said upper surface and extended beyond said end walls to define end-opening sockets into either of which the end of a duct may be extended to associate such a duct with the riser.

2. In an enclosure for electrical conductors, a duct comprising an elongated member of uniform cross section throughout its length and formed from material such as rubber, said member having a transversely rounded upper surface and a generally flat bottom surface so as to afford a relatively thick central portion and relatively thin longitudinal edges, said member having a continuous passage formed longitudinally through said member in the relatively thick central portion thereof, and a riser fitting associated with said duct and comprising an elongated base having a flat bottom surface and a transversely rounded upper surface to afford a relatively thick central section and relatively thin longitudinal edges, a tubular member formed integrally with said base and extended upwardly therefrom, said base having a longitudinally extended recess formed in the bottom surface thereof and extended upwardly and opening into said tubular member, end walls formed as integral portions of said base and closing the ends of said recess, an end ledge along one end of said base adjacent to said upper surface and extended beyond the adjacent end wall to define an end-opening socket into which one end of said duct is extended to associate said duct with the riser, said adjacent end

wall having an opening cut therethrough opposite said passage of said duct.

3. In a riser fitting for association with a wiring duct, an elongated base having a flat bottom surface and a transversely rounded upper surface to afford a relatively thick central section and relatively thin longitudinal edges, a tubular member formed integrally with said base and extended upwardly therefrom, said base having a longitudinally extended recess formed in the bottom surface thereof and extended upwardly and opening into said tubular member, end walls formed as integral portions of said base and closing the ends of said recess, and an end ledge along one end of said base adjacent to said upper surface and extended beyond the adjacent end wall to define an end-opening socket into which the end of a duct may be extended to associate such a duct with the riser.

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REX R. WINDERS.

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