

May 31, 1949.

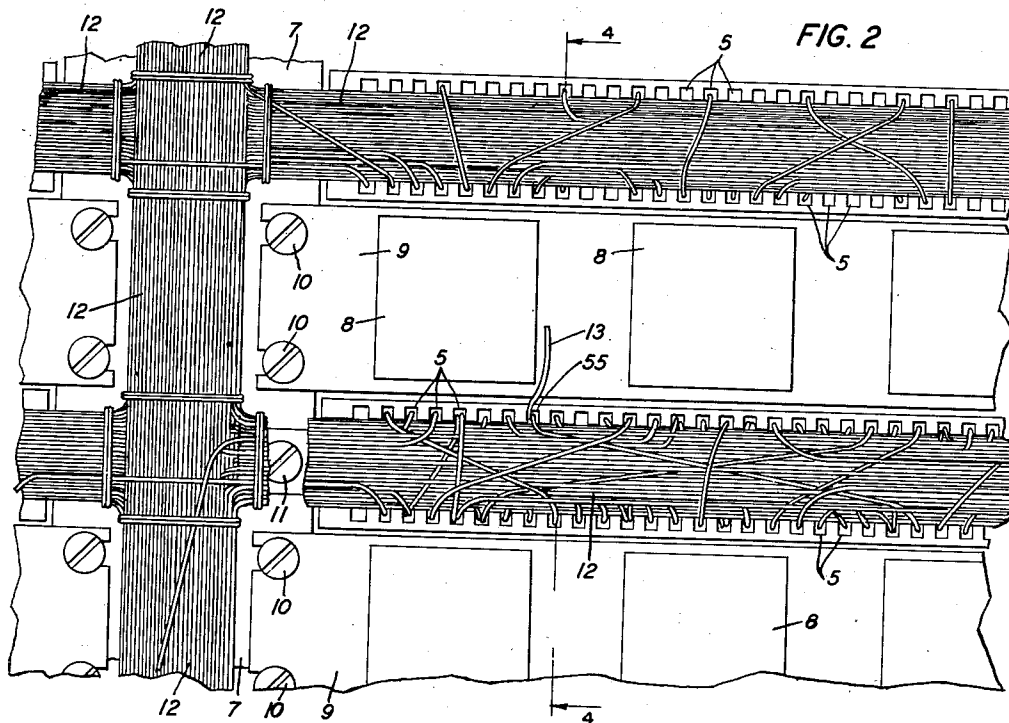
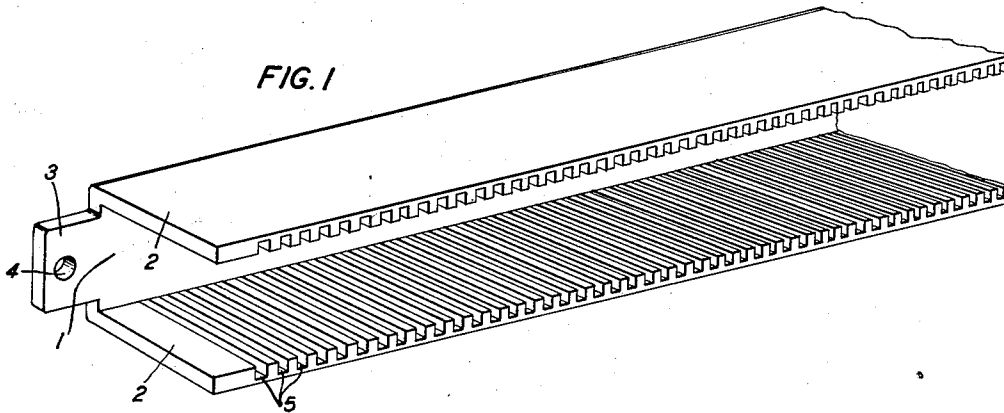
H. A. MILOCHE

2,471,970

WIRING DEVICE

Filed April 23, 1947

2 Sheets-Sheet 1



INVENTOR
BY *H. A. MILOCHE*
P. C. Smith

ATTORNEY

May 31, 1949.

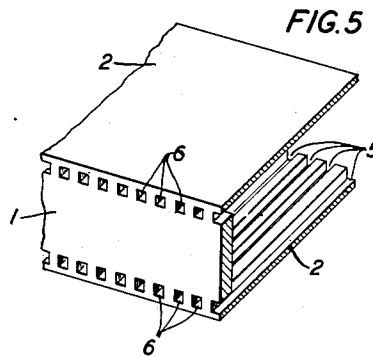
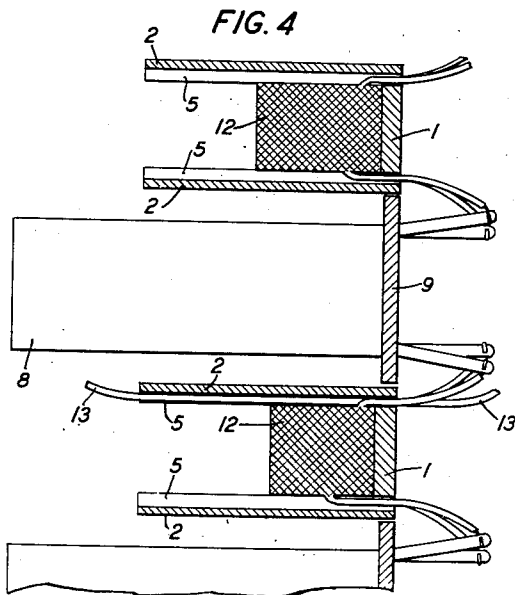
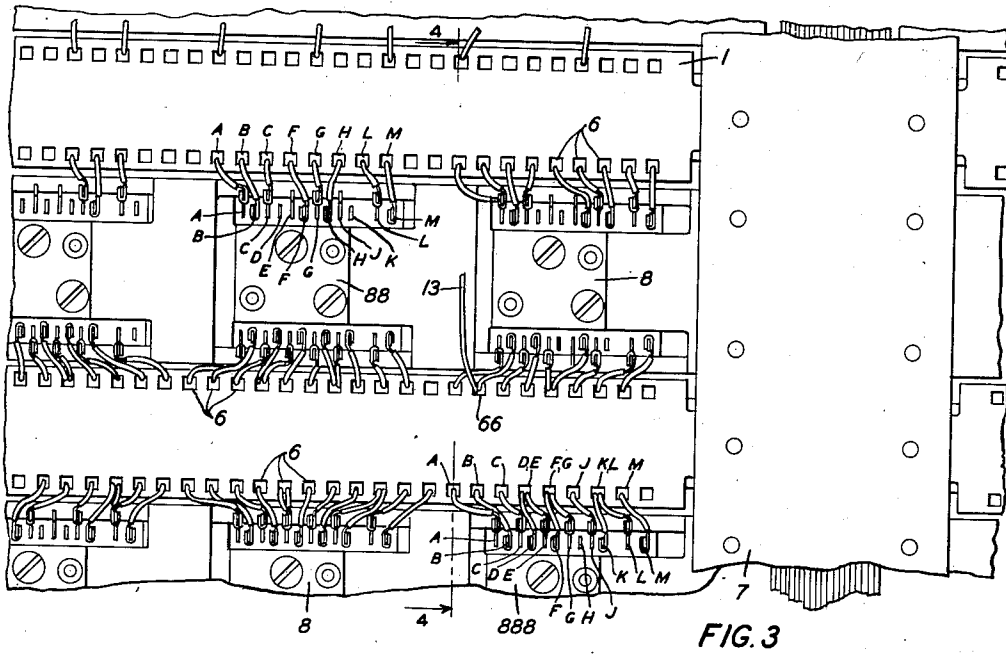
H. A. MILOCHE

2,471,970

WIRING DEVICE

Filed April 23, 1947

2 Sheets-Sheet 2



INVENTOR
H. A. MILOCHE
BY *P. C. Smith*

ATTORNEY

UNITED STATES PATENT OFFICE

2,471,970

WIRING DEVICE

Herman A. Miloche, Teaneck, N. J., assignor to
Bell Telephone Laboratories, Incorporated, New
York, N. Y., a corporation of New York

Application April 23, 1947, Serial No. 743,446

5 Claims. (Cl. 174—68)

1

This invention relates to means for routing electrical wires and more particularly to a novel trough type of distributing or routing means.

One of the many well-known means for routing or distributing electrical wiring is by providing a channel or trough type of guide which is adapted to support and route said wires. In some cases such troughs have been provided with suitable holes therein by means of which the individual wires or cables being routed thereby may be diverted at various points along the trough for subsequent electrical connection to electrical apparatus units. One difficulty attendant the use of such wire distribution devices as briefly outlined above has been the difficulty, if not impracticability, of adding or deleting individual wires to or from the said device. More specifically, when said device embraces a plurality of wires it is extremely difficult to add a new wire or wires between terminals of different or the same apparatus units or unit since the bundle of wires already housed in the device tends to obstruct the aforementioned holes in said devices through which the additional wire must be threaded prior to connection with the intended apparatus terminal. The same comment is applicable to deletion or removal of existing connected wires.

It is the main purpose of this invention to obviate the above-mentioned shortcomings of prior art types of trough-like wire or cable distributing devices.

In accordance with one embodiment of the invention a wire distributing trough is provided which is substantially U-shaped. Slots are provided in the inner surfaces of the side walls of said trough substantially vertical relative to the bottom of said trough. These slots are distributed lengthwise of the trough, open at the top edges of said side walls and are continued as holes through the bottom of said trough. The trough is mounted adjacent electrical apparatus serviced thereby such that the outside of the bottom of said trough is facing the terminal or wiring side of said apparatus. Thus no matter how many wires or cables may be accommodated by or housed in said trough a new wire may be routed in said trough and at the suitable slot, at or near the apparatus to which it is to be connected, said wire may be threaded through the slot to project through the hole in the bottom of said trough and then connected to the nearby terminal. The body of whatever bundle of wires may be resting in said slot will not and cannot obstruct or otherwise interfere with the holes in said

2

trough through which the wires are to be threaded.

Another feature of the invention is the capability of utilizing the slots and holes as designations of the apparatus terminals to which wires threaded therethrough are to be connected. This feature may obviate the necessity of color coding of such wires.

A detailed description of an embodiment of the invention described generally above is hereinafter set forth in connection with the drawings forming a part of the disclosure. General descriptions of the several figures of said drawings are as follows:

Fig. 1 is a perspective view of a portion of a wire distributing device embodying the invention;

Figs. 2 and 3 are respectively front and rear, or equipment and terminal sides, of a portion of a framework to which are attached suitable apparatus units and wire distributing devices, such as shown in Fig. 1;

Fig. 4 is a sectionalized view taken along the line 4—4 of Fig. 2 or Fig. 3; and

Fig. 5 is a perspective of a part of the device shown in Fig. 1, Fig. 5 being sectionalized to more clearly show the features of the invention.

Referring to Figs. 1 and 5 in particular, a trough is shown comprising a bottom portion 1 and two side walls or portions 2. The sides 2 and bottom 1 may be integral with each other such as would result if the trough were a unit molding. It is, of course, obvious that the sides 2 may be fabricated separately and attached to the bottom 1 by any one of numerous methods, such as adhesion. The ends of the bottom 1 are provided with end extensions 3 which have holes 4 therein to enable assembly of the trough upon equipment frames or mountings as shown by Figs. 2 and 3.

Spaced lengthwise of the trough are substantially perpendicular (relative to the bottom 1 and sides 2) slots 5 in the inner faces of said sides 2. As shown by the sectionalized view of the trough in Fig. 5, these slots 5 continue as holes 6 through the bottom 1 of said trough. These slots 5 and holes 6 may be of any suitable size, consistent with available dimensions of the trough chosen, such as to accommodate one, two, three or any desired number of wires simultaneously.

Fig. 2 shows a portion of the front, or equipment, side of an apparatus framework mounting 7 to which are fastened apparatus units, such as relays 8, by means of apparatus unit mounting plates 9 and screws 10. The apparatus units, such as relay 8, may of course represent any electrical

apparatus unit which may be required to be so mounted and wired. The trough, such as the one shown in Fig. 1, may be mounted on frame 7 between mounting plates 9 of the apparatus units by means of screws 11. It is not necessary that this staggered relationship be used since it is obvious that there may be numerous ways of so mounting the apparatus units in relation to the wire troughs. Bundles 12 of wires are bound and routed to various parts of frame 7 and are housed in the wire troughs as shown. It is seen from Fig. 2 that the bundles 12 of wires in the troughs do not obstruct or interfere in any way with the slots 5 into which any wire may be inserted at will. For instance, wire 13 may be threaded through slot 55 so as to protrude from hole 66 (see Fig. 3) and the operation is done irrespective of whatever maze of wires may be housed in the trough.

It may be noticed by reference to Fig. 3 that the holes 6 through the bottoms 1 of the troughs are readily adapted as terminal designations so as to obviate color coding of wires. For instance, relay 88 has terminals marked A, B, C, D, E, F, G, H, J, K, L and M. The holes 6 adjacent this relay 88 may be marked as shown to instruct a wireman which wires are to be threaded into which holes in order that the same or another man will correctly wire same to the terminals of relay 88. Two wires may be inserted through holes 6, as for example, the two wires designated for terminals D and E or F and G or K and L of relay 888. In these instances, color coding would, of course, be required. Three or even more wires may be accommodated by any one slot 5 or hole 6 depending upon the particular embodiment of the invention which meets the needs of the application thereof desired.

Fig. 4 is a section of Fig. 2 or Fig. 3 taken along the lines 4—4 of those figures. The physical relationship between bundles 12 of wires and the slots 5 of sides 2 of the wire troughs clearly shows the fact that there is no obstruction of these slots 5 no matter how large said bundle 12 of wires may become.

It will be apparent that embodiments of the invention other than the exemplary one used herein as a disclosure of said invention will be suggested by this disclosure. Whenever, in the appended claims, the word "trough" is used, unless further modified by a more specific recitation of its configuration, it is intended to contemplate other types of trough as well as a U-shaped trough. For instance a V-shaped trough might be used or other categorically similar configurations to which might be applied the teachings of the present invention.

Having fully described one embodiment of the invention and not intending that the scope of the invention be limited to said one embodiment I append claims which alone describe the scope of this invention.

What is claimed is:

1. A wire distributing device comprising a trough adapted to accommodate wires therein, recessed passageways in at least one of the side walls of said trough opening outside the outer layers of said wires and continuing as holes through the bottom of said trough, said passageways and holes provided for the accommodation thereby of some of said wires.

2. A wire distributing device comprising a trough adapted to accommodate wires therein, recessed passageways in the inner surfaces of the side walls of said trough opening outside the outer layers of said wires and continuing as holes through the bottom of said trough, said passageways and holes provided for the accommodation thereby of said wires.

3. A wire distributing device comprising a trough adapted to accommodate a plurality of wires therein, the inner surfaces of the side walls of said trough having slots therein spaced along the length of said trough, continuing beyond the outer layers of said wires and continuing as holes through the bottom of said trough, said slots and holes provided for the threading thereof through of said wires.

4. A wire distributing device comprising a trough having a U-shaped cross-section adapted to accommodate a plurality of wires therein, the inner surfaces of the side walls of said trough having slots therein spaced along the length of said trough, opening on the upper edges of said walls and continuing as holes through the bottom of said trough, said slots and holes provided for the threading therethrough of said wires irrespective of the density of wires in said trough.

5. A wire distributing device comprising a trough having a U-shaped rectangular cross-section adapted to accommodate a plurality of wires lengthwise therein, the inner surfaces of the side walls of said trough having slots therein substantially perpendicular to the bottom of said trough, spaced along the length of said trough, opening on the upper edges of said walls and continuing as holes through the bottom of said trough, said slots and holes provided for the threading therethrough of wires irrespective of the density of wires in said trough, the said holes arranged to designate the terminations of respective wires threaded therethrough.

HERMAN A. MILOCHE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
507,424	Ford et al.	Oct. 24, 1893
540,117	Spencer	May 28, 1895
1,122,290	Mack et al.	Dec. 29, 1914
1,680,940	Emmons	Aug. 14, 1928
1,681,284	Dickie	Aug. 21, 1928