

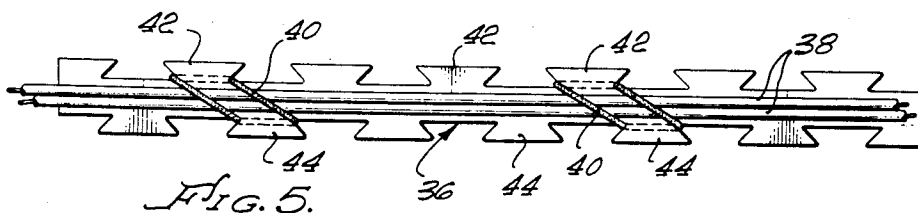
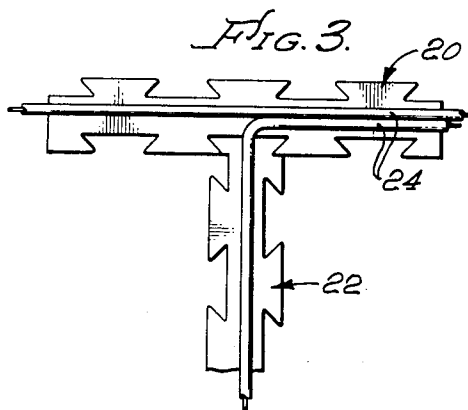
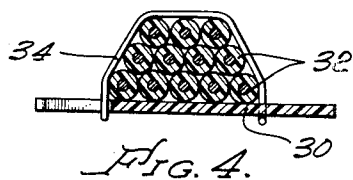
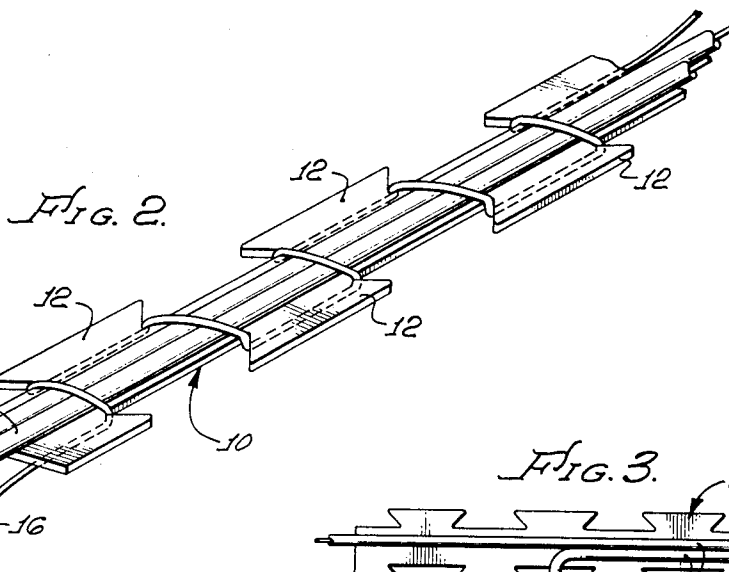
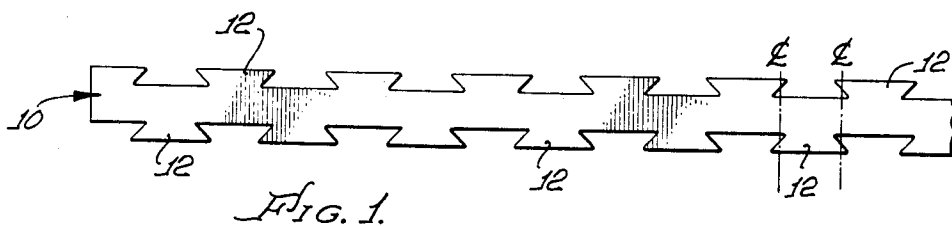
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3,023,692

CABLE HARNESS STRIP

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3,023,692

## CABLE HARNESS STRIP

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1 Claim. (Cl. 100-1)

This invention relates to a means for lacing preformed wire harnesses and, more particularly, to improvements therein.

The lacing of a preformed wire harness, while not difficult, has always been a time-consuming chore in the manufacture of electrical equipment of the type where the number of wires and the length of the wire runs make wire harnesses advisable. The usual practice is to form the wire harness, then tie the wires together with spot ties. Thereafter, the cabling can commence, and this requires considerable manipulation of twine for tying the harness so that the "cable stitches" are taken at spaced distances along the harness to insure that the harness will take and hold a desired shape.

An object of this invention is to provide apparatus whereby such harness stitching or lacing can be performed more rapidly.

Another object of this invention is to provide a novel harness-lacing strip which simplifies the operation of lacing a preformed wire harness.

Yet another object of the present invention is the provision of a unique means for affording improved and rapid harness lacing.

These and other objects of the invention are achieved by providing a novel harness-lacing strip which essentially comprises an elongated flat member having a central body portion and a plurality of tabs extending alternately outward from both sides of said central body portion. The preformed wire harness is laid on the central body portion and the lacing cord is passed over the wire of the harness and under the tabs, alternating from side to side, whereby the lacing strip and harness are laced together.

The novel features that are considered characteristic of this invention are set forth with particularity in the appended claim. The invention itself, both as to its organization and method of operation, as well as additional objects and advantages thereof, will best be understood from the following description when read in connection with the accompanying drawings, in which:

FIGURE 1 is a plan view of an embodiment of this invention;

FIGURE 2 is an isometric view showing how the embodiment of the invention is employed in lacing a harness;

FIGURE 3 shows how the invention can be used for allowing wires to be brought out from a main harness at 90°;

FIGURE 4 is a sectional view illustrating how wires are seated on the embodiment of the invention; and

FIGURE 5 illustrates a simple arrangement for making spot ties in accordance with this invention.

Referring now to FIGURE 1, the embodiment of the invention shown comprises a substantially flat, elongate member having a central body portion 10. The plurality of tabs 12 extend outward from both sides to the central body portion 10. The material of which the tabs are made should preferably be one which will not react electrically with the currents being carried over the wires in the harness. A preferred material is a plastic which is sufficiently rigid to prevent the tabs from being bent during and after the operation of lacing.

The tabs extend from both sides of the central body

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portion alternately so that where a tab exists on one side the notch between two tabs exists opposite the tab on the other side. The tab is shaped so that the lacing cord will fit between the tab and the central body portion and not slip out therefrom. Any suitable shape for providing such function may be employed. However, the dovetailed shape of the tab shown is a preferred one. The outside of the tabs on one edge are on the same center lines as the inside of the tabs on the opposite edge. This is essential to produce stitches at right angles to the harness wires.

Reference is now made to FIGURE 2, which shows how the embodiment of the invention is used for lacing a harness. The harness-lacing strip is placed underneath the wires of the harness 14, which pass over the central body portion 10. The lacing cord 16 is then passed over the wires and under the tabs. The sequence of lacing alternates from side to side, as shown in FIGURE 2. The lacing can proceed rapidly and, when finished, the harness is held securely and in the shape in which it is laced.

Reference is now made to FIGURE 3, which shows how the embodiment of the invention can be employed to allow wires to be brought out from the main harness at 90°. There are two lacing strips employed 20, 22. One of these 22 has its end cut to the shape of the notch between tabs. Thereafter, the wire 24 can be taken at right angles from the main harness and can be laced with the lacing strip.

FIGURE 4 illustrates in cross section how the wires seat on a lacing strip. The lacing strip 30 is underneath the wires 32 which are seated thereon in flat layers, rather than in a circular cross section. The wires are tied to the lacing strip by the cord 34.

FIGURE 5 shows how a spot tie may be simply made for holding the harness in place until the lacing can be achieved. The lacing strip 36 supports the wires 38 of the harness. An elastic band 40 can be passed over the wires of the harness and over the two tabs 42, 44, which are on opposite sides of the central body portion, but displaced from one another. Thereafter, the lacing can proceed and when it reaches the position of the holding band, the band can be removed.

There has been accordingly described and shown herein a novel, useful harness-lacing strip which affords a simplification of lacing of harnesses as well as an increase in the speed of lacing.

### I claim:

A method of lacing a multiwire cable to a substantially flat, elongated member having a plurality of tabs extending alternately outward from both sides of a central body portion of said member, said method comprising laying said multiwire cable upon said central body portion to extend longitudinally therewith, passing said lace first under one of said tabs, thereafter over said multiwire cables, thereafter passing said lace under the tab on the other side of said central body portion which is alternate to said one tab, and thereafter successively passing said lace over said multiwire cable and under each one of said alternate tabs until said multiwire cable is completely strapped to said member.

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