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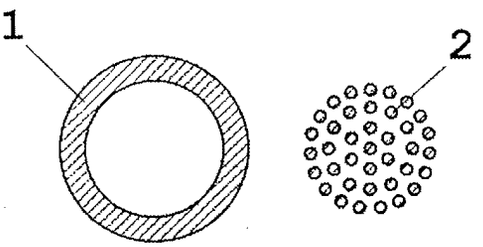
(54) Flexible cable for power transmission

(57) Flexible cable for the transmission of electricity, characterised essentially in that its comprises at least three individual conductors, each comprising a conducting core that is fully sheathed by an insulating cover of its own. These three conductors are all linked together to form a single whole by means of a join between their respective sheaths, thus defining the transverse section of the cable.

Fig 1



EP 1 544 868 A1

Description

[0001] This invention relates to a flexible cable for the transmission of electricity.

[0002] This is a new compound flexible cable, insulated with PVC or another plastic material with similar or better quality characteristics, for use in electrical installations and in buildings.

[0003] The main object of this invention lies in the development of a new type of flexible cable, comprising "n" conductors 1 which are individually insulated and linked together by a low-strength join made of the same insulating material. When used in conjunction with the additional mechanical-protection system adopted - cable duct or tray - this new type of cable affords better use of the space available, on account of its orderly layout.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] To aid understanding of this invention and to make it clearer, the cable of this invention is illustrated in a number of figures, in which:

Figure 1 is a cut-away view showing the breakdown of the two parts that make up the basic individual conductor.
Figure 2 is a set of views showing variations in the grouping of a number of basic conductors linked together by a tangential join between the various insulating sheathes.
Figure 3 is another set of views also showing groupings of basic conductors, though here linked together using intermediate membranes.
Figure 4 is a perspective view of one example of a continuous join using membranes.
Figure 5 is a variant of the same example seen in Figure 4, with the membrane divided into spaced lengths.
Figure 6 is a perspective view of a length of single-piece homogeneous membrane for the join, as an example for three basic conductors.
Figure 7 shows the same view as Figure 6 but with a variant, the membrane having cut-aways.
In the Figures, similar or corresponding parts or elements are marked with the same signs.

DESCRIPTION

[0005] The cable concerned is a cable with individual flexible conductors 1 insulated with PVC (polyvinyl chloride) or another plastic material with similar or better quality characteristics, comprising 3, 4, 5 or "n" conductors, with rated alternating-current voltages of 330 V / 500 V or above, as allowed by the regulations, for use in industrial installations and in buildings in which an additional mechanical protection system is used, such as cable trays or ducts.

[0006] These "n" conductors run in parallel alongside each other, and are linked by a low-strength join "a" in PVC or another plastic material with similar or better quality characteristics, thus linking the individual insulation covers of the conductors together.

[0007] Each of these conductors complies with standard IRAM 2183/91 and belongs to a flexible formation that may be of class 4 or class 5.

[0008] Figures 2 and 3 show cut-away examples of the various ways in the which said join "a" may be arranged, the parts in black 1 being the insulation in PVC or another plastic material with similar or better quality characteristics, and the central part 2 being the conductor itself - Fig. 1.

[0009] The linking between the various individual basic conductors may be arranged in various ways:

1.- Join "a" of the tangential type, as shown in Figure 2, with the special feature that the join may be arranged:

a) continuously all the way along;
b) in an alternating manner every so-many centimetres, the width and continuity varying.

2.- Join "a" with membrane 3 as illustrated in Figure 3, with the following embodiments:

a) continuously, as shown in the example of Figure 4;
b) in an alternating manner every so-many centimetres, the width and continuity varying, as shown in the example of Figure 5.

3.- An alternating join using points of varying shape, size, width and continuity, as shown for example in the illustration of Figure 5, though with other forms of join.

4.- It should be added that the joining membrane 3 can be:

a) homogeneous, without breaks, as illustrated in Figure 6.
b) with holes, cut-aways or similar arrangements 3', in various shapes and sizes, repeated as frequently as may be required for the flexibility of the whole (the cable), as illustrated in Figure 7.

[0010] It is to be noted that the forms shown by way of example in Figures 4, 5, 6 and 7 correspond to instances of three conductors, and are some of the variants that are possible, though with the clear, specific reservation that any other form of linking, for any number "n" of basic individual conductors, is also covered.

[0011] The forms shown in those Figures may be adopted, or any other as required for the safety and flexibility of the whole.

Claims

1. Flexible cable for the transmission of electricity, **characterised in that** it has at least three individual conductors, each comprising a conducting core that is fully sheathed by an insulating cover of its own, these three conductors all being linked together to make a single whole by means of a join between their sheathes, thus defining the transverse section of the cable.

2. Flexible cable for the transmission of electricity, as claimed in claim 1, **characterised in that** the join between the sheaths is arranged tangentially.

3. Flexible cable for the transmission of electricity, as claimed in claim 1, **characterised in that** the join between the sheaths is arranged using an intermediate membrane.

4. Flexible cable for the transmission of electricity, as claimed in any of claims 1 to 3, **characterised in that** the join is unbroken throughout the full length of the cable.

5. Flexible cable for the transmission of electricity, as claimed in any of claims 1 to 3, **characterised in that** said join is arranged by spaced sectors between those sheaths.

6. Flexible cable for the transmission of electricity, as claimed in any of claims 1 to 3, **characterised in that** said join is arranged by points between those sheaths with intermediate spaces along their length.

7. Flexible cable for the transmission of electricity, as claimed in any of claims 1 to 3, **characterised in that** said join is arranged by spaced lengths between those sheaths.

8. Flexible cable for the transmission of electricity, as claimed in any of claims 1 to 3, **characterised in that** said membrane has holes, cut-aways or other similar arrangements throughout its length.

9. Flexible cable for the transmission of electricity, as claimed in any of the above claims, **characterised in that** said transverse section of all the cables together virtually conforms to a polygonal layout.

Fig 1

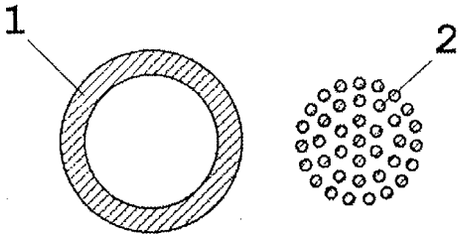


Fig 2

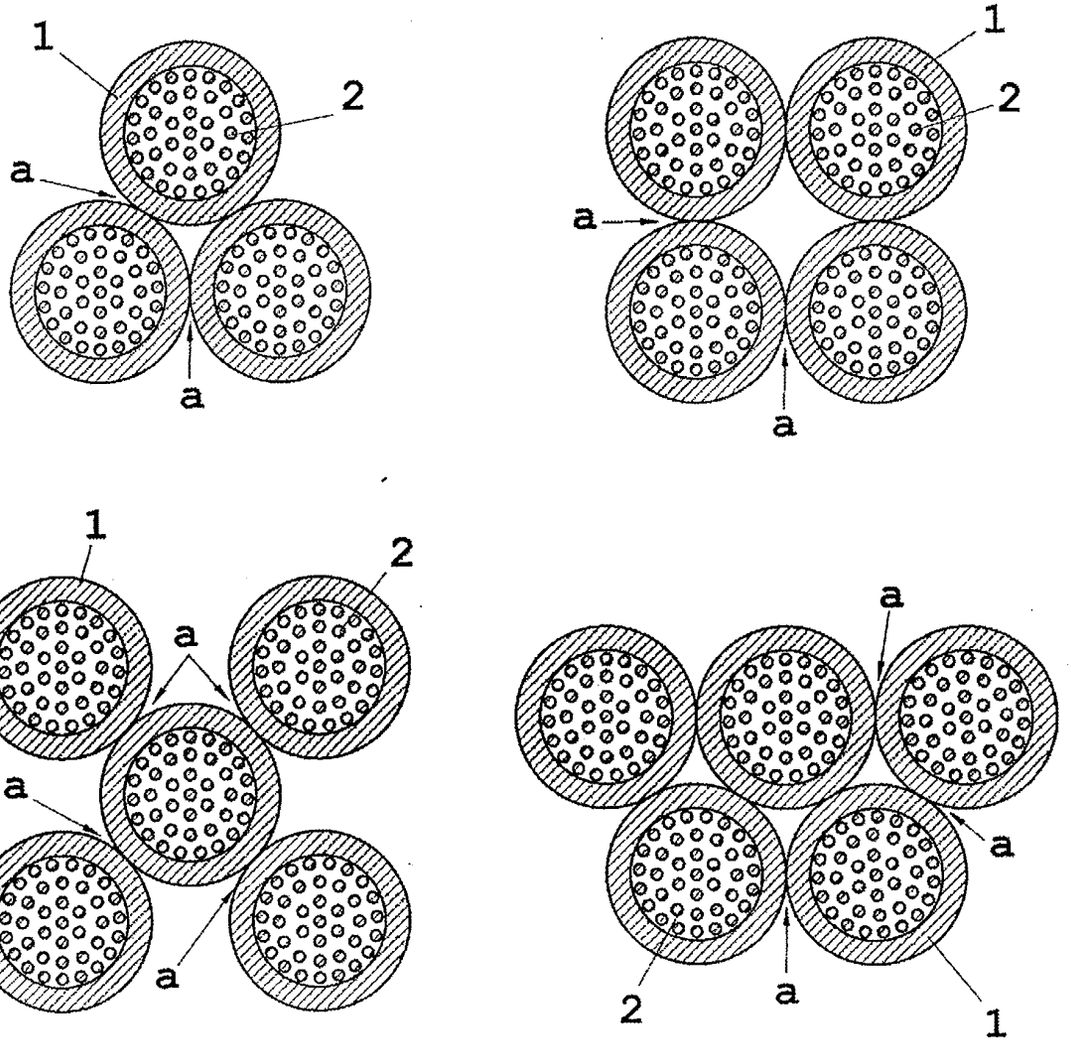


Fig 3

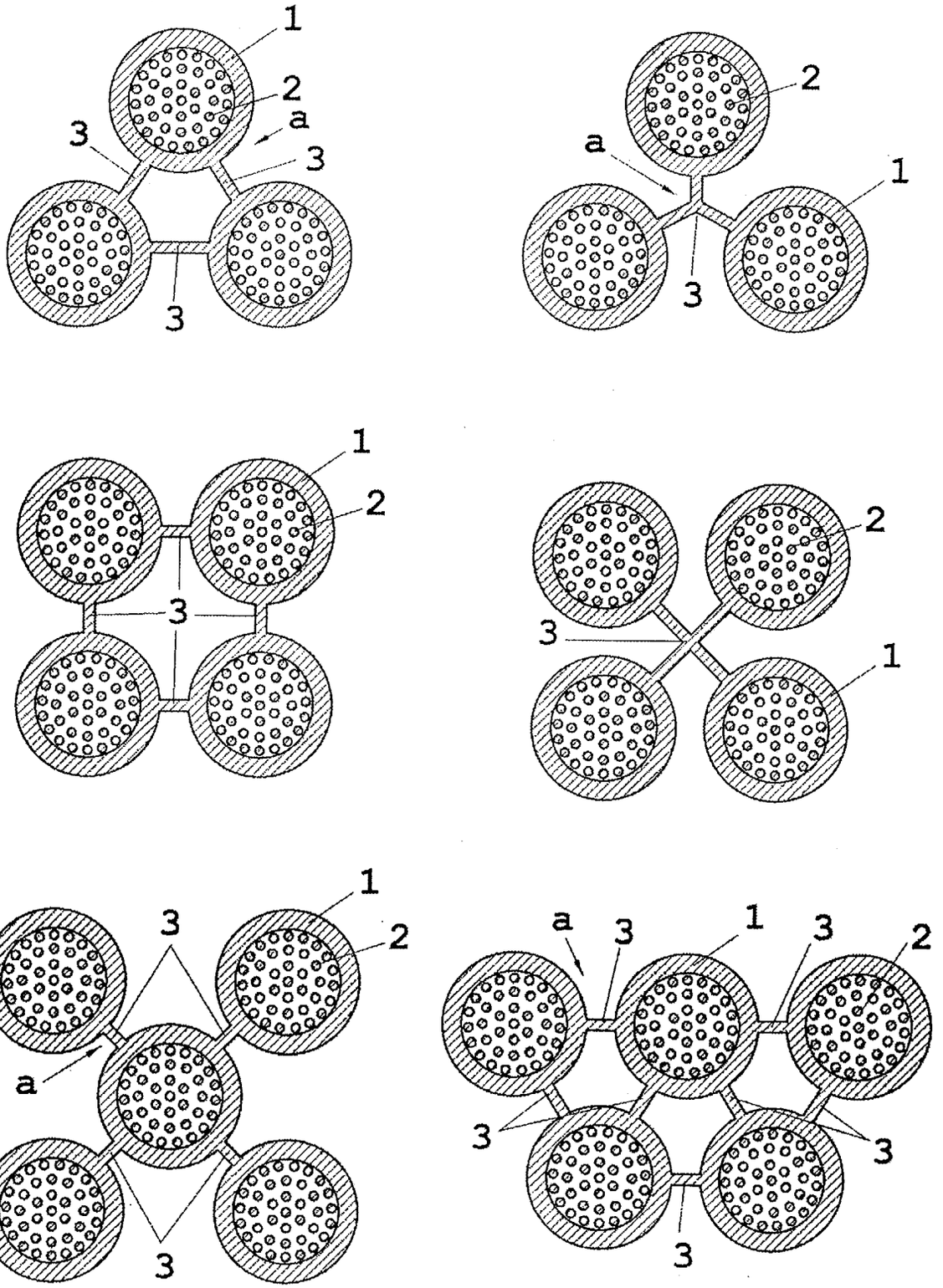


Fig 4

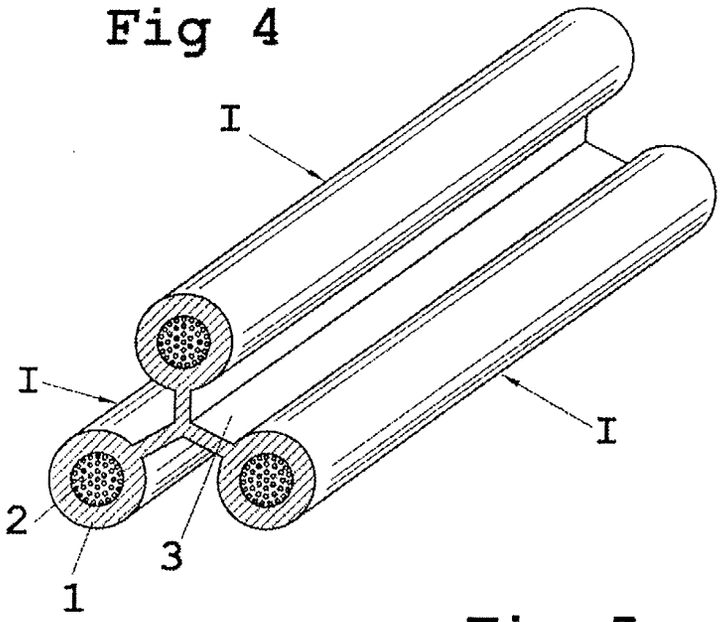


Fig 5

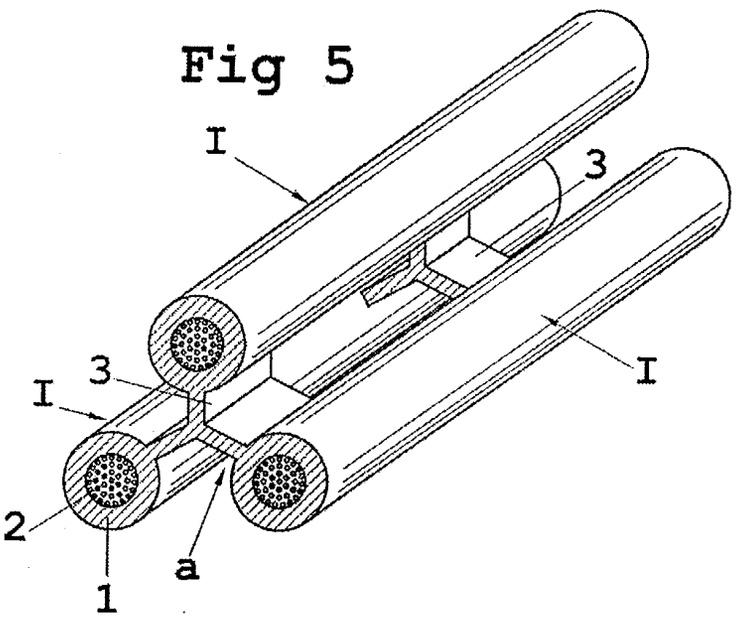


Fig 6

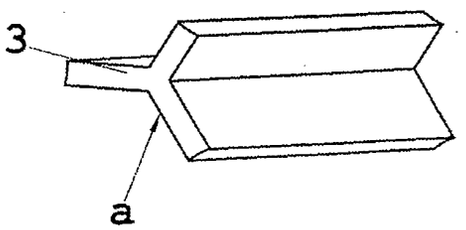
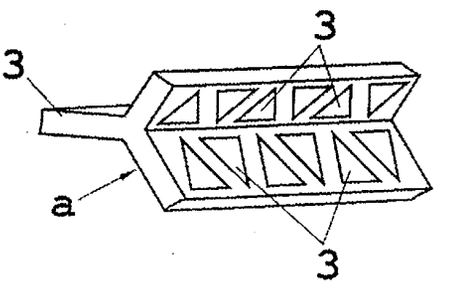


Fig 7



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EUROPEAN SEARCH REPORT

Application Number
EP 03 38 0290

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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A	BE 512 151 A (MANUFACTURES DE CABLES) 15 July 1952 (1952-07-15) * figure 1 * -----	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H01B H02G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21 April 2004	Colombo, A

CATEGORY OF CITED DOCUMENTS

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2

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 38 0290

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82