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(54) **Label for cable marking sleeves for electric cables**

(57) This invention concerns a label for cable marking sleeves for electric cables, in particular it concerns the strip composed of said labels.

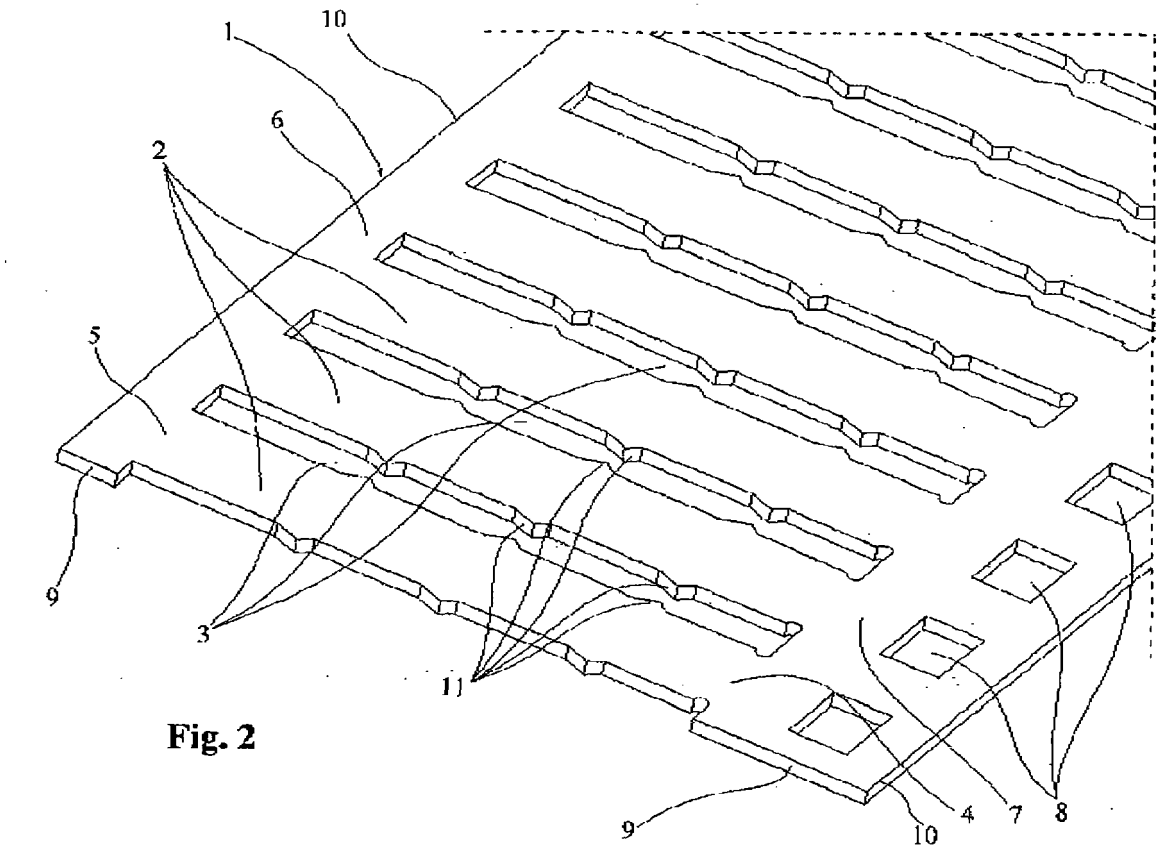

Fig. 2

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Description

[0001] The field of application of this invention concerns a label for a cable marking sleeves for electric cables.

[0002] In particular, it concerns a strip composed of the set of labels.

Prior art

[0003] Labels for the purpose set out above are well known, namely to be inserted inside cable marking sleeves for electric cables in order to identify their terminals.

[0004] Said labels, which come from a strip, composed of a set of labels joined together and paired, are first printed and then each one is inserted inside a single marker.

[0005] The end section of an electric cable is then inserted inside the assembly, the label inserted inside the sleeve, so that the electric cable itself can be easily identified.

[0006] Particularly because of the numerous and conflicting requirements, current labels on the market do not satisfy all the requirements of cable technicians, namely professional operators working in this area: making cabling for various electric and electromechanical devices.

[0007] In fact, there are many types of labels that protrude horizontally, side by side and equidistant, from a roll-up strip.

[0008] Basically, this is a support that supports a series of protruding labels.

[0009] This method provides a rapid process in the phase when the labels are inserted inside the relative sleeve; however said labels are not appreciated so much because of the poor print quality and because of the high cost of the support.

[0010] In fact, said labels protruding horizontally from support or a roll-up strip, do not have the required stability during printing, as they slightly follow the course of the print head and/or other movements during their handling with respect to the support from which they protrude. This causes some deterioration in the print quality, which is bad to the point of being illegible.

[0011] To avoid this problem, the support selected is sufficiently thick in order to provide the desired stability, arriving at a thickness of over 1.5 mm.

[0012] The material, which is generally a plastic, is a PVC, polycarbonate (PC) or polypropylene (PP) film.

[0013] This expedient, although not completely resolving the problem of the print quality, has led to numerous other serious drawbacks. In fact, these reels, on which the strip is generally wound, and which is composed of thousands of labels, have become unmanageable because of the weight, the dimension and also because of the unit cost.

[0014] The compromise that was found, with labels with acceptable thicknesses, still only provides a mediocre print quality.

[0015] Another drawback of the reel of label strips concerns poor adaptability.

[0016] In fact, each reel has a certain width, corresponding to the length of the label that is increased by the support.

[0017] For labels with a different length, cable technicians have to use different reels.

[0018] This change of reel involves a considerable slowdown in all the cable operations, and considerably affects costs.

[0019] In fact, all the labels, joined at their base directly to the strip support, have a suitable profile at their free end, which is quite tapered and apt for being inserted inside the cable sleeve. It is very clear that a label needs to have this part in order to facilitate the insertion into the cable sleeve.

[0020] In fact, just recently there was an attempt to automate this operation with the insertion of the labels inside the cable holder tube, excluding any use of manual work; however the solutions attempted proved to be unsatisfactory.

[0021] Finally, all the labels can be detached from their support only after having been inserted inside the relative sleeve.

[0022] Indeed, the strips are fitted with notches for moving forward, which do not allow a label that has detached from the support to be handled, nor a label that has detached from the strip itself, except after it has been inserted inside the relative tube.

Presentation of the invention

[0023] The object of this invention is to make available a label that overcomes all the drawbacks of the prior art.

[0024] A further object of this invention is to make available a strip, namely the series of labels, that overcomes all the drawbacks of the prior art.

[0025] An even further object of this invention is to make available a label that can easily adapt to the requirements of cable technicians. Another object of this invention is to make available a label that can easily be printed with a high print quality.

[0026] A further object of this invention is to make available a label that provides the same qualities as the best labels but at a lower unit cost.

[0027] An even further object of this invention is to make available a label that allows for individual handling, separate from the strip from which it was taken.

[0028] Another object of this invention is to make available a label that provides a high level of productivity.

Description of the invention

[0029] All the above-mentioned objects, as well as others that will become apparent below, are attained by a strip of labels for cable marker tubes set out in the enclosed claims.

[0030] In particular, the purpose of the invention consists of a sheet of labels for cable marking sleeves in the form of a strip in the form of a tape comprising a sheet composed of a series of labels regularly arranged beside each other and regularly spaced, joined together at the ends, and on at least one side of said sheet there are gripper elements for handling each single label.

[0031] In particular it concerns a sheet, in the form of a strip in the form of a tape, composed of the series of labels regularly paired and evenly spaced

[0032] Basically this is a sheet composed of the series of labels, namely a sheet die-cut in such a way as to identify a sequence of labels connected together at the top and bottom and there are elements with the same footprint for handling the labels individually.

Beneficial characteristics of the invention

[0033] Beneficially said connection elements join the labels on the horizontal side, thereby being able to make use of the extension of the pre-cut, to obtain a label with a length that is at least equal to the pre-cut.

[0034] A further benefit of the object of the invention consists of the fact that said gripping elements are arranged in a continuous manner, and preferably in axis and in line with each label on the strip support or on the connecting element between the labels.

[0035] A valuable benefit of this invention consists of the fact that said gripping elements are positioned along one side of the strip, making the sheet less wide.

[0036] Another benefit comes from the previous arrangement of the gripping elements on both sides of the sheet, making it extremely versatile.

[0037] A further benefit of this invention lies in the fact that the distance between labels is minimal, with the die-cut being identified by an incision or cut.

[0038] An even further benefit of this invention comes from the fact that said gripping elements keep the label in the pre-set position, preventing it from inadvertently moving and/or rotating with respect to said gripping elements.

[0039] An important benefit of this invention lies in the fact that a single strip satisfies most requirements of cable technicians for various label lengths; in fact during the cutting to separate the labels the head-end of the label that has been cut to measure is shaped with a guide to facilitate insertion inside the relative cable holder tube.

[0040] A further benefit is attained with the use as part of the head of the label, which is configured as a guide, the head connection part of the labels on one side of the sheet, thereby obtaining a label almost as long as the width of the strip itself.

[0041] After describing this invention, reference will be made to a specific and preferred embodiment having as its object a pre-cut strip on which are single labels with the advantageous characteristics set out above, without any intention of restricting the protection, which can generally be included in the definition of the invention in its fundamental characteristics.

Brief description of the drawings

[0042] The technical characteristics of the invention, according to the above-mentioned aims, can be clearly found in the claims below and the benefits will be clearer in the detailed description that follows, made with reference to the attached drawings, which represent an embodiment that is purely by way of example, and in no way restrictive, where:

- fig. 1 shows a part of the sheet from a perspective view;
- fig. 2 shows an enlargement of some labels still connected together at the ends;
- fig. 3 shows a plane view from above of an enlargement of a label.

Detailed description

[0043] With reference to the drawings, the sheet 1 is composed of a sheet with a pre-cut series of labels 2, side by side and spaced out in an equidistant manner, with constant spacing 3.

[0044] Said labels 2 are connected at the head 5, along the transverse side, by a first connection element, called a head connection 6.

[0045] Said labels are also joined at the base 4, along the opposite transversal side, by a second connection element, called a base connection 7. On at least one connection element 6, 7, preferably on the base connection 7 there are gripping and handling devices 8. Said gripping elements 8 are advantageously arranged in a continuous manner and aligned with each label 2, so as to be able to handle them individually.

[0046] In fact, conveniently, said gripping elements 8 are configured in such a way as to prevent the label 2 moving or rotating with respect to said gripping elements 8, with there being no possibility that the label 2, after being removed from the relative sheet 1, becomes unmanageable, blocking the automatic handling procedure.

[0047] The advantage of having a tape of pre-cut material is that it allows you to have the same thickness 9, continuous side edges 10, elements inside the tape firmly held that do not pile up when the tape is unwound, a mirror-like symmetry that can be used for use on both sides of the product without distortions or undesired shrinkages.

[0048] In fact, an easy way for handling the sheets is through their movement in reels, which are appropriately unwound for the necessary amount before being printed and used.

[0049] This configuration of the roll-up sheet can be easily handled by the cable technician, which can be used only for the stretch to be treated.

[0050] Said sheet 1, which is joined continually on the side bands using the band of head 6 and the band of

base 7, can be printed with high quality using a pre-set printer without any danger that it will get jammed.

[0051] The retention on the ends of the label 2, both the head 5 and the base 4, makes the individual labels extremely stable and immune from any external mechanical stresses.

[0052] Evidently the thickness of the sheet 1 is therefore very small, though attaining all the aims that cable operators want from the relative labels.

[0053] In fact a limited thickness 9 allows the relative sheet to be wound in less cumbersome and lighter reels.

[0054] Moreover, said limited thickness 9 directly affects the costs of the material used.

[0055] Last but not least, the value of the limited thickness 9 is independent of the quality obtained.

[0056] Conveniently said pre-cut of the spacing 3 of the labels 2 can be of any kind, eventually having some roughness and small protrusions 11 that ensure the label 2 is held securely inside the cable marker. Said retention and gripping devices 8 are configured so as to make retention possible also for a single label 2. In particular said gripping devices 8 have one or more edges or notches that prevent the free rotation of the label with respect to the device that engages inside said gripping devices 8.

[0057] This handling of the single labels 2 in an individual way, which can be cut by the amount needed for each single cable without having to change the entire reel for each different requirement, makes the work of the cable technician extremely simple since he does not need to worry about all the specific requirements of each single job.

[0058] Conveniently with the same cutting of the part of head 5 of the label 2, bringing the label to the desired size, is easy and useful that this cut creates the notches 12 that shape the label so that it is easily inserted inside the relative cable marker

Claims

1. Tape of labels for cable marking sleeves in the form of a strip in the shape of a tape, **characterised by** the fact that said sheet (1) is composed of a series of labels (2) regularly positioned next to each other and regularly spaced from each other by spacing (3), whose labels (2) are reciprocally joined at the head (5) by a head joining element (6) and are reciprocally joined at the base (4) by a base joining element (7) and on at least one side of the tape (1) there are gripping elements (8) for handling each individual label (2).

2. Sheet of labels for cable marking sleeves according to claim 1, **characterised by** the fact it can be wound in a reel.

3. Sheet of labels for cable marking sleeves according to claim 1 **characterised by** the fact that said head joining elements (6) and said base joining elements (7) join said labels (2) on their transversal side.

4. Sheet of labels for cable marking sleeves according to claim 1 **characterised by** the fact that said gripping elements (8) are one after the other and in line with each label (2), and preferably along the axis, on the sheet support (1) or on the joining element (6, 7) between the labels themselves.

5. Sheet of labels for cable marking sleeves according to claim 1 **characterised by** the fact that said gripping elements (8) are arranged at least on one side of said tape (1).

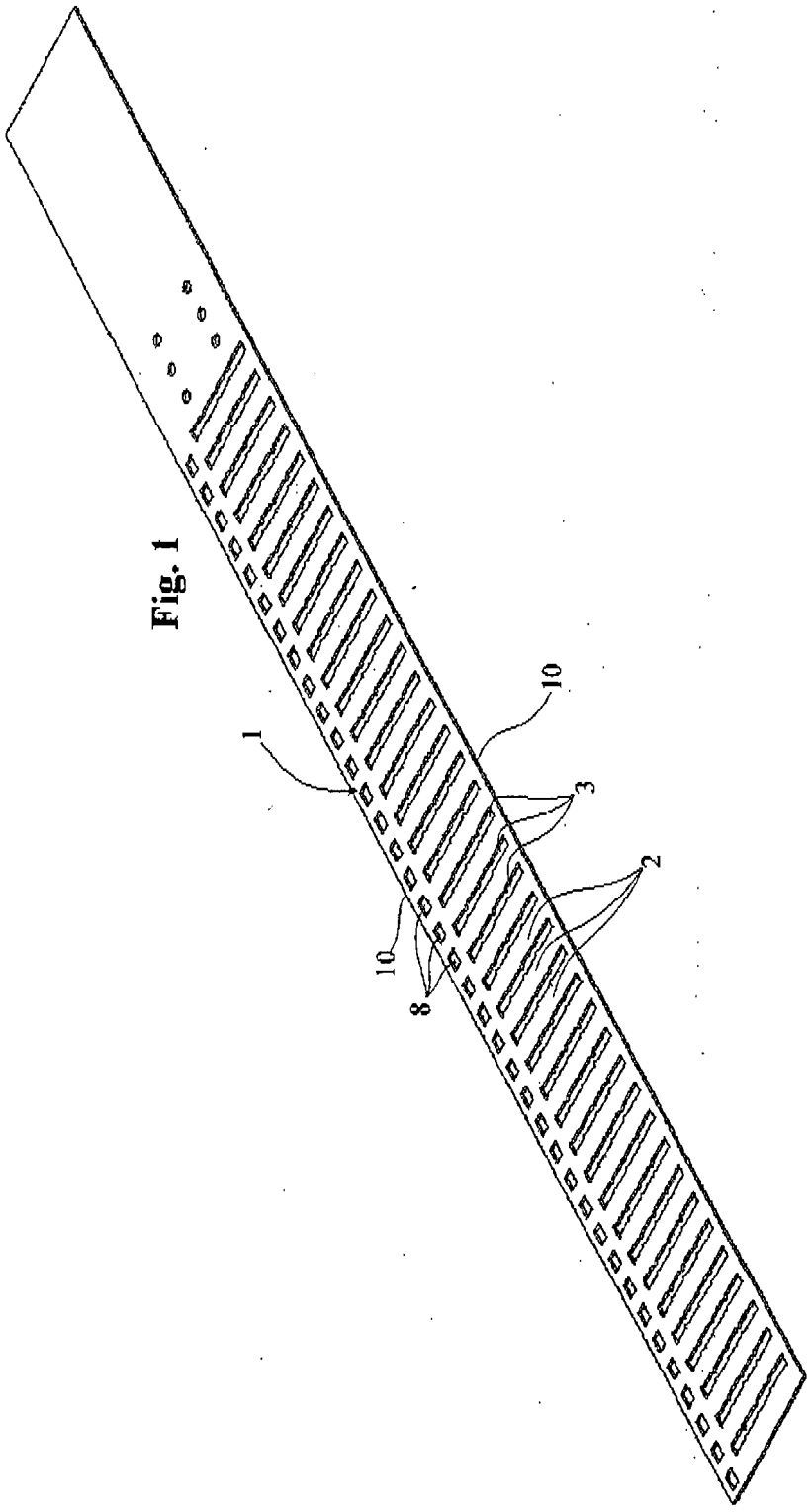
6. Sheet of labels for cable marking pipes according to claim 1 **characterised by** the fact that said die cutting creates a separation element (3) with a minimum width, at the minimum limit of an incision or cut.

7. Sheet of labels for cable marking sleeves according to claim 1 **characterised by** the fact that said gripping elements (8) keep the label (2) in the pre-set position, preventing it from inadvertently moving and/or rotating with respect to said gripping elements (8).

8. Sheet of labels for cable marking sleeves according to claim 1 **characterised by** the fact that the head part (5) of the label (2) is shaped with guide (12) during the cutting separating from the sheet (1).

9. Sheet of labels for cable marking sleeves according to the previous claim, **characterised by** the fact that said head part (5) of the sheet (2) is part of the head joining element (6).

Fig. 1



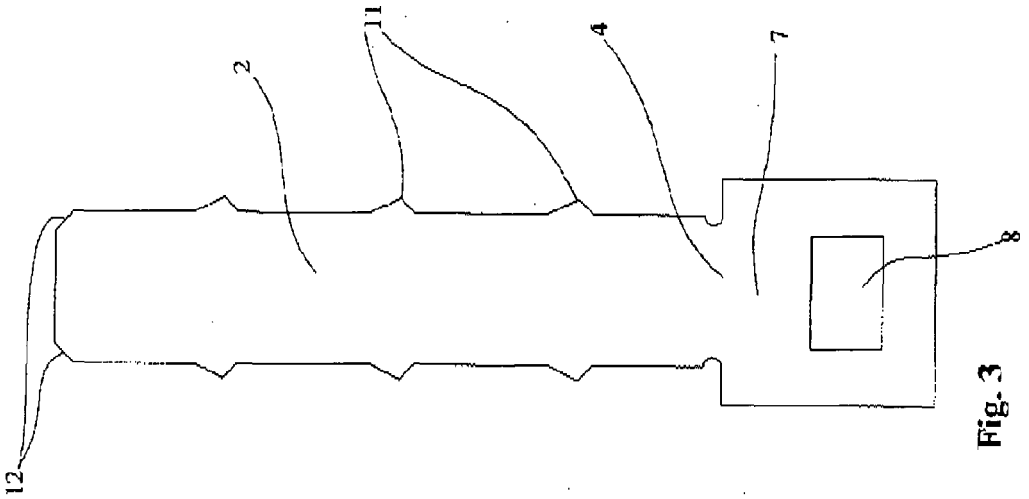


Fig. 3

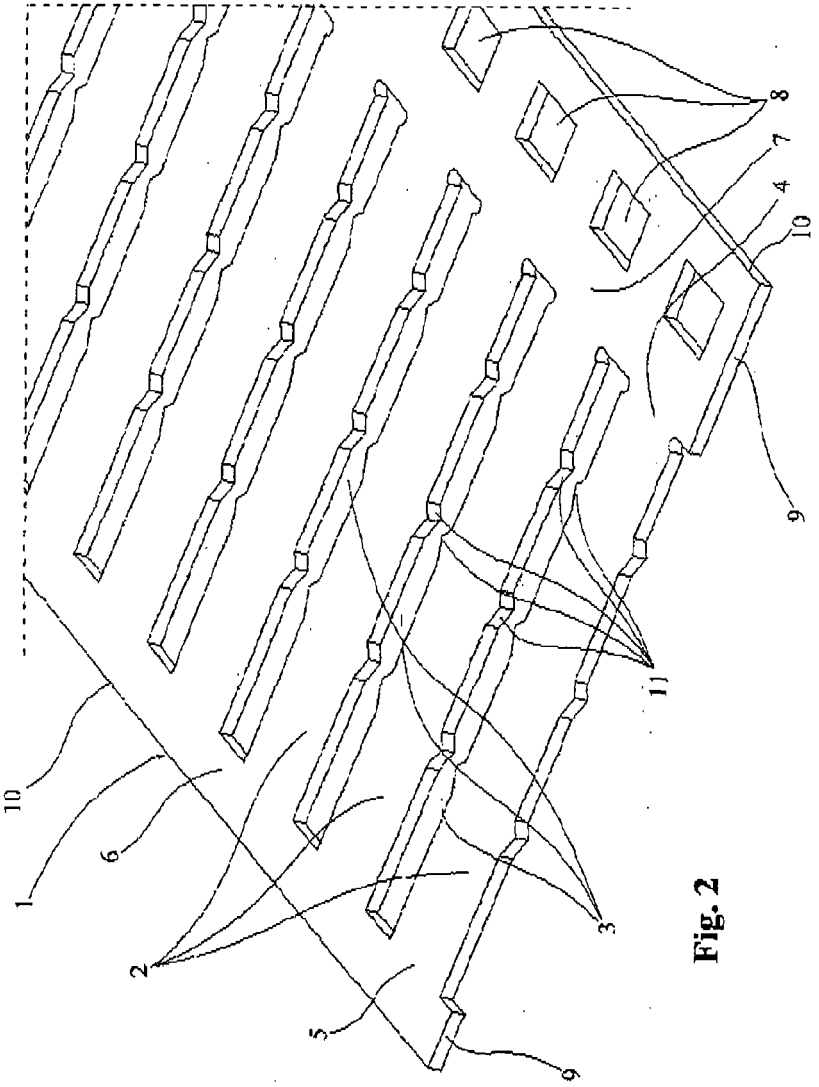


Fig. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 14 00 2575

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TECHNICAL FIELDS SEARCHED (IPC)
G09F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	3 December 2014	Demoor, Kristoffel

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 00 2575

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