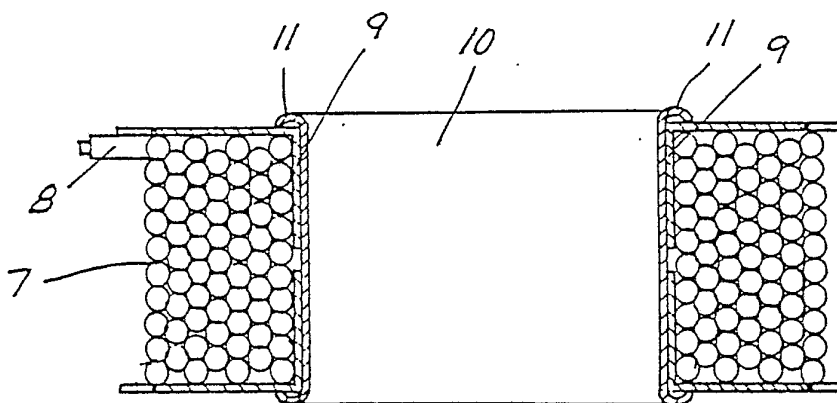




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(54) Title: METHOD FOR PRODUCING A PACKAGE**(57) Abstract**

A method for producing a package for an in advance to a ring (7) reeled to a predetermined length cut wire or tube or the like, especially an electrical line (8). The ring (7) is introduced between two perpendicularly to the centre axis directed along at least one ridge connected substantially square panels of rigid material, e.g. cardboard or the like. A substantially tubular at least in the axial direction rigid means (10) is after said introducing moved through both panels and the centre opening of the ring (7) and is thereafter locked in the introduced position in relation to as well the ring (7) as the panels. The package can be used as a reel by removing a protective shell of the package. As an alternative said rigid means can be removed, whereby the line or the like is detached from the centre of the package.

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METHOD FOR PRODUCING A PACKAGE

The present invention relates to a method for producing a package for an in advance to a ring reeled to a predetermined length cut wire or tube or the like, especially an electrical line, in which the ring is introduced
5 between two perpendicularly to the centre axis directed along at least one ridge connected substantially square panels of rigid material, e.g. cardboard or the like.

Electrical lines with slender dimensions are often distributed in the form of rings with a predetermined
10 number of windings without reel. The reason for this is that great demands are made upon the strengths of the reel so that it can be gripped in a modern reel machine, which in turn leads to that the costs for the reels become too high in view of the fact that they normally are thrown away
15 after the line is unreeled. Further, it takes less time to reel in a reeling machine if the reel has not the need to be exchanged after every reeling process. Moreover, prefabricated empty reels are bulky and, therefore, take up a great space of a reeling machine.

20 Such line rings are often packed simply in plastic bags. A plastic bag is a simple and cheap package which, however, is not adapted for keeping the line ring in order during use on a place of work. Accordingly, such line rings also have been packed in cartons, in which a hole is
25 made to detach the line from the centre of the ring. Hereby the line is turned, which is not to be tolerated at certain types of lines.

To prevent that at unreeling the line is turned, it is accordingly necessary to unreel the line in the tangen-
30 tial direction from the outer circumference of the ring. To accomplish this it is necessary that the line ring is arranged on a reel with flanges which keep the line ring in order during unreeling.

It is an object of the present invention to provide
35 a simple and cheap reel for an in advance to a ring reeled electrical line or other cord formed goods.

This object will be achieved according to this invention by a package in which a substantially tubular at least in the axial direction rigid means 10 is after said



introducing moved through both panels and the centre opening of the ring 7 and is thereafter locked in the introduced position in relation to as well the ring 7 as the panels.

5 Other objects of the invention will be apparent from the following detailed description of the drawings:

Fig. 1 is a perspective view of a stack of sheet formed blanks for use at the manufacturing of a reel according to the method of the invention.

10 Fig. 2 is a perspective view of a blank according to Fig. 1, said blank being provided with fold lines, perforation lines and cuts.

Fig. 3 is a perspective view of the blank of Figs. 1 and 2 showing the folding to a carton.

15 Fig. 4 is a perspective view of a finished carton and a ring made of a predetermined number of windings of an electrical line etc., said carton being adapted to receive said ring.

20 Fig. 5 is a perspective view showing the closed carton in which a line ring is enclosed and a non-mounted hub means.

Fig. 6 is a perspective view showing the finished carton with the mounted hub means.

25 Fig. 7 is a perspective view showing the line ring on a reel taken away from the carton.

Fig. 8 is a sectional view through the line ring and the reel of Fig. 7.

30 Fig. 9 is a schematical view showing the two steps at using the carton to detach the line from the centre of the carton.

Fig. 1 shows a number of on each other stacked sheets 1 of rigid material, e.g. cardboard or the like. In a first step a blank is produced according to the present invention to a carton according to the appearance of 35 Fig. 2. The carton blank showed in Fig. 2, which blank is not an object of the invention, presents fold lines 2, perforation lines 3, cuts 4 and recesses 5, which all make it possible to provide a carton of the appearance of Figs. 4

and 5. Fig. 3 shows the initial stage of the folding of the carton.

In Fig. 4 the upwardly open but else already folded carton 6 is shown. Said carton is now ready to receive an in advance to a ring with a predetermined number of windings reeled electrical line 8 etc. Radially extending cuts 4 form substantially triangular flaps 9 which are extended inwardly toward the centre of respective carton side from the level of the inner circumference ridge of the ring 7, which is to be introduced in the carton 6. After the ring 7 is introduced in the carton 6 the flaps 9 are folded into the centre opening of the ring 7 from the outside of the respective carton side. Thereby, the flaps 9 will extend substantially along the centre axis of the line ring.

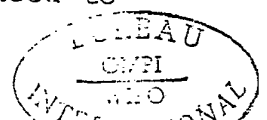
In the opening formed by the flaps 9 folded inwardly from both sides is introduced in the preferred embodiment a substantially tubular expandable at least in the axial direction rigid hub means 10 which is locked in the introduced position in relation to as well the ring 7 as the carton sides by expanding the hub means. At this moment, the inwardly folded flaps 9 will be clamped between the outer side of the tubular means 10 and the inner most windings of the ring 7. To lock the hub means 10 evenly against the respective carton side said side is provided with flanges 11 at both ends, as is best seen in Fig. 8.

The package shown in Fig. 6 can easily be stacked and, hence, it is well adapted for long transports.

When such a package arrives to a consumer he will simply break up the package along the perforation lines 3, obtaining both parts shown in Fig. 7. In this case, the right part consists only of a protective shell for the left part which comprises the line ring 7 mounted on a reel with flanges 9, whereby unreeling of the line 8 from said reel is accomplished in the tangential direction.

As an alternative the package can be used as shown in Fig. 9. In this case the hub means is removed by means of a pair of nippers of the like, whereafter the line can be detached from the centre of the carton.

Of course, both flanges of the reel do not need to



be provided as shown in the drawings starting with the carton blank shown in Fig. 2, but can be provided by means of two separate substantially square panels of rigid material, between which the ring is introduced. These both panels
5 must be provided with the flaps 9 in the same way as at the carton blank shown.

It is also possible to instead of the flaps provide the panels or as an alternative the carton blank with openings of a diameter substantially corresponding to the inner
10 diameter of the ring 7. Of course, the hub means 10 does not need to be expandable, but can present a somewhat greater outer diameter than the inner diameter of the ring 7 and the diameter of said openings. When said hub means
15 is introduced it will be locked by friction against as well the innermost windings of the ring 7 as the inner ridge of the openings in the panels.

The above disclosure is for illustrative purposes only, and not for purposes of limitation of the scope of the invention.



I CLAIM:-

1. Method for producing a package for an in advance to a ring (7) reeled to a predetermined length cut wire or tube or the like, especially an electrical line (8), in which the ring (7) is introduced between two perpendicular-
5 ly to the centre axis directed along at least one ridge connected substantially square panels of rigid material, e.g. cardboard or the like, wherein a substantially tubular at least in the axial direction rigid means (10) is after said introducing moved through both panels and the centre
10 opening of the ring (7) and is thereafter locked in the introduced position in relation to as well the ring (7) as the panels.
2. Method according to claim 1, wherein each panel is provided with a central opening before the ring (7) is in-
15 troduced between said panels, the diameter of said openings substantially corresponding to the inner diameter of the ring.
3. Method according to claim 1, wherein the panels are provided with a predetermined number of centrally placed
20 substantially triangular flaps (9) before the ring (7) is introduced between the panels, said flaps extending inwardly against the centre of the respective panel from the level of the inner circumference ridge of the ring, said flaps being folded into the centre opening of the ring from
25 the outer side of the respective panel after the ring is introduced between the panels.
4. Method according to claims 1-3, wherein the tubular means (10) is locked in the introduced position in relation to as well the ring as the panels by providing that said
30 means expands in such a way that it is clamped against as well the ring as the panels.
5. Method according to claims 1-4, wherein said tubular means (10) in the introduced position is flanged outwardly so that the thereby formed flanges (11) are abutting
35 against the outer side of the respective panel.



Fig.1

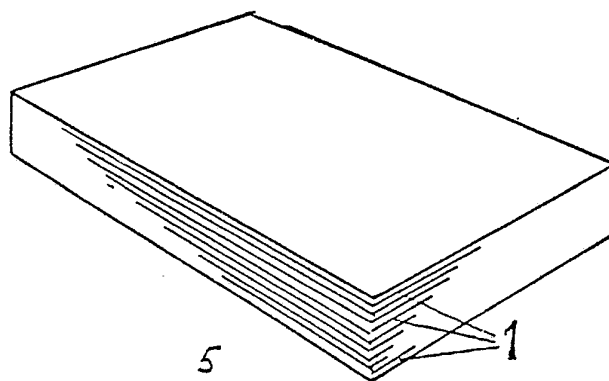


Fig. 2

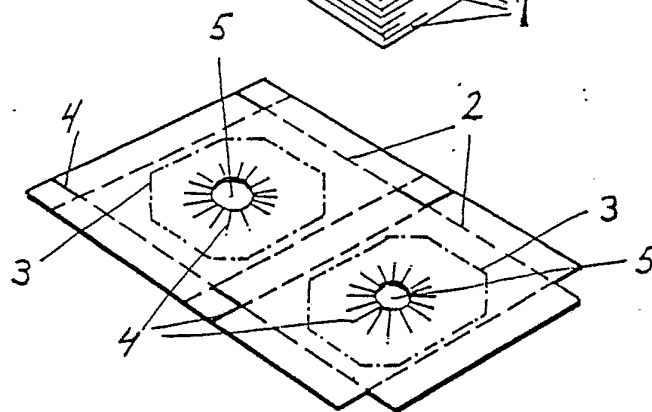


Fig.3

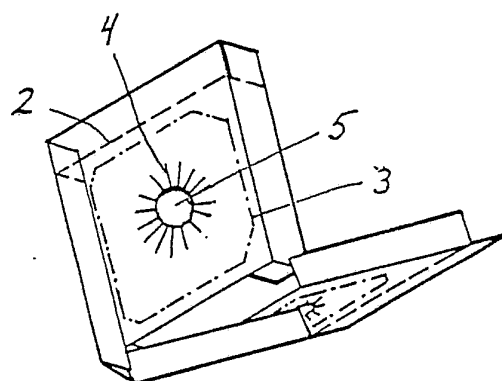
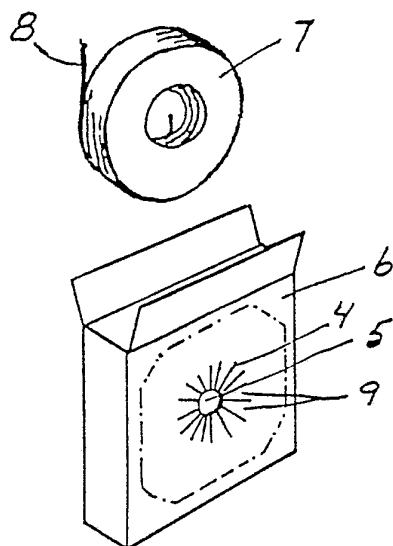


Fig.4



2/2

Fig. 5

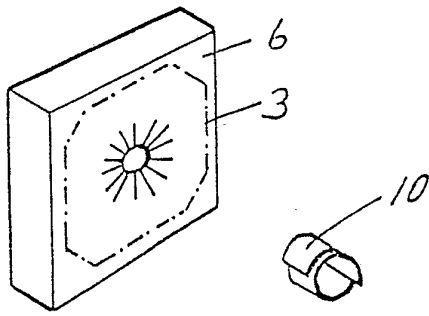


Fig. 6

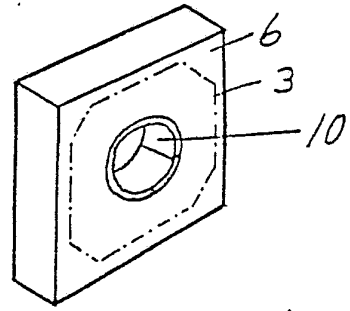


Fig. 7

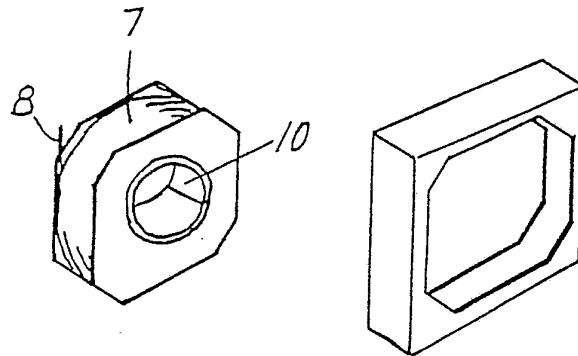


Fig. 8

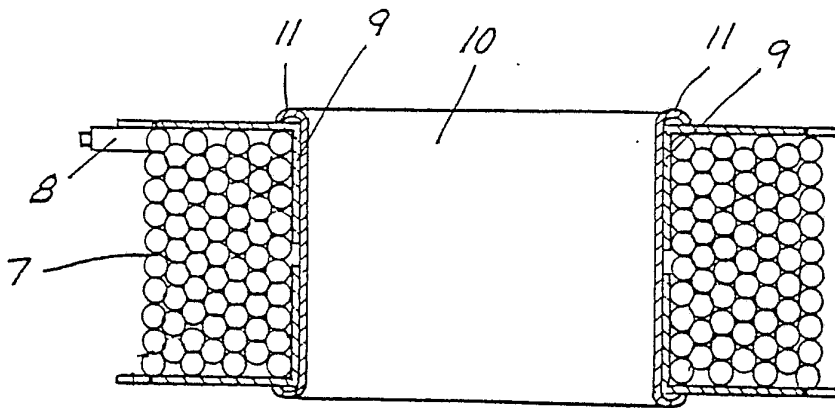
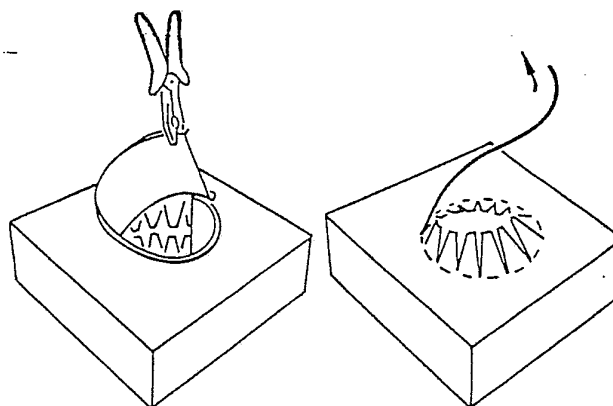


Fig. 9



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE81/00124

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ³		
According to International Patent Classification (IPC) or to both National Classification and IPC 3		
B 65 D 85/04, B 65 H 75/5C, 49/38		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁴		
Classification System	Classification Symbols	
IPC 3	B 65 B 25/24, 43/00, 43/26, B 65 D 85/02-85/04, 85/67-85/677, B 65 H 35/07, 49/00, 49/38, 75/00-75/04, 75/08-75/18, 75/22, 75/24, 75/50 .../...	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁵		
SE, NO, DK, FI classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁴		
Category [*]	Citation of Document, ¹⁶ with Indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No. ¹⁸
A	US, A, 1 691 995 published 1928, November 20, A W Saulter	
A	US, A, 2 101 355 published 1937, December 7, C E Wonder	
A	US, A, 2 527 401 published 1950, October 24, L J Daoust	
A	US, A, 2 694 486 published 1954, November 16, R J Schaefer	
A	US, A, 2 727 703 published 1955, December 20, R N Bonnett	
A	US, A, 2 991 958 published 1961, July 11, see column 5, lines 5-20, S L Eifrid	
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A	US, A, 3 041 006 published 1962, June 26, F B Eckert .../...	
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IV. CERTIFICATION		
Date of the Actual Completion of the International Search ²	Date of Mailing of this International Search Report ³	
1981-08-07	1981-08-18	
International Searching Authority ¹	Signature of Authorized Officer ¹⁰	
Swedish Patent Office	Rune Larsson	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, ¹⁶ with indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No ¹⁸
A	US, A, 3 307 802 published 1967, March 7, F A David	
A	US, A, 3 329 259 published 1967, July 4, L Mayer	
A	US, A, 3 587 840 published 1971, June 28, Baxter Laboratories	
A	FR, A5, 2 029 959 published 1970, October 23, Société des textiles en biais	
A	DE, A1, 2 528 962 published 1977, January 13, Gerhard Peter KG	

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

II

Fields Searched (continuation)

US Cl 53:3, 13, 203, 204, 396, 409;
 206:389, 395-397, 403-409, 412;
 225:39, 46-50, 54; 229:17;
 242:115, 118-118.4, 118.7, 118.8,
 128, 137, 137.1, 138, 146

National Cl 47k:5/08, 5/10; 76d:17-18;
 81a:7/10; 81c:27

V. ☐ OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE ¹⁰

This international search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1. ☐ Claim numbers because they relate to subject matter ¹³ not required to be searched by this Authority, namely:

2. ☐ Claim numbers because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out ¹³, specifically:

VI. ☐ OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING ¹¹

This International Searching Authority found multiple inventions in this international application as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims of the international application.

2. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:

3. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:

Remark on Protest

- ☐ The additional search fees were accompanied by applicant's protest.
☐ No protest accompanied the payment of additional search fees.