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(72) Inventor: **Giorgi, Stefano**
55012 Gragnano - Capannori (LU) (IT)

(74) Representative: **Celestino, Marco**
ABM, Agenzia Brevetti & Marchi,
Viale Giovanni Pisano, 31
56123 Pisa (IT)

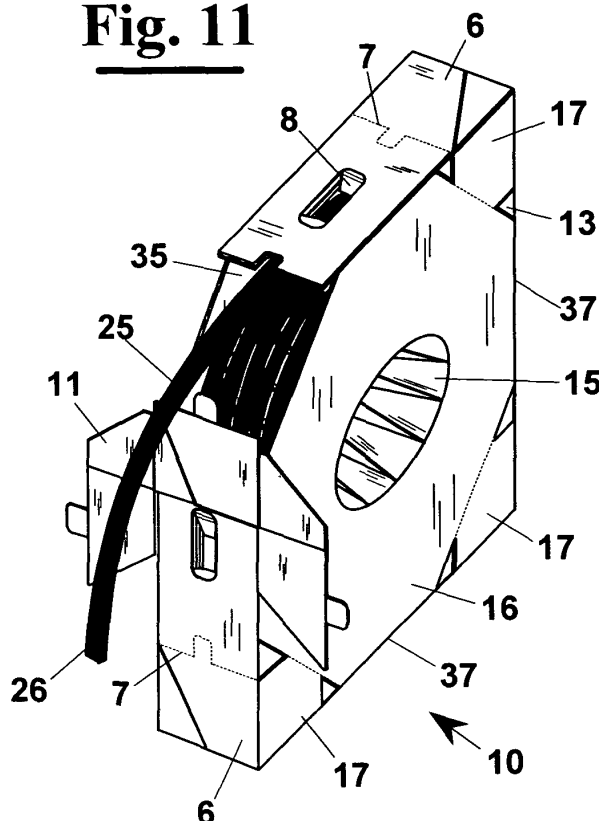
(71) Applicant: **Complastex S.p.a.**
55014 Marlia (LU) (IT)

(54) Container for coils of flexible material

(57) Container for elongated elements of flexible material, for example seals for doors or windows, comprising a first sheet (5a), for example of paper material, and a second sheet (5b), which are also of paper material, parallel to each other, among which a core element (15) is located on which elongated elements of flexible material (25) are wound. In particular, each sheet (5a or 5b) has wings (6) foldable with respect to each other along folding

lines (9). This allows bringing the container (10) from an open configuration, where the wings (6) lay in the plane of the sheets (5a and 5b), to a closed configuration, where the wings (6) are transversal with respect to the plane of the two sheets (5a and 5b) and contain the core element (15). This way, the flexible elongated material (25) wound on the core element (15) is protected by the wrapper (10) during transport or storage.

Fig. 11



Description

Field of the invention

[0001] The present invention relates to a cardboard container of the type having a core element on which flexible elongated objects are wound in order to arrange them compact assisting their transport and/or storage.

Description of the prior art

[0002] As diagrammatically shown in the figures from 1 to 6, cardboard supports 101 exist having a core element 105 on which flexible elongated elements 115, for example metal wire, yarn, rubber seals, are wound into spools or coils to assist their transport and storage.

[0003] In particular, the flexible material 115 is wound about core element 105 of support 101 for example arranging support 101 on a rotating shaft 110 of a manual or motor driven winding device (figures 3 and 4). In particular, once formed a spool 115, or a coil, about support 101, the former is arranged, singularly or with other coils or spools, in a box 120 or another protecting cover for then being transported or stored (figures 5 and 6). Alternatively, the spool or coil can be simply wrapped with a strip of cardboard or plastics.

Summary of the invention

[0004] It is a feature of the present invention to provide a container of paper material for elongated elements of flexible material, capable of achieving the double function of support for flexible wound material and of protection of the material while carried or stored.

[0005] This and other features are accomplished with one exemplary container according to the invention comprising:

- a first and a second sheet parallel to each other;
- a core element, located between the first and the second sheet, on which the flexible elongated material can be wound;

whose main feature is to provide wings foldably connected to the first and to the second sheet, said wings being folded in use with respect to the sheets in order to bring the container from an open configuration, where the wings lay in the plane of the first and of the second sheet, to a closed configuration, wherein the wings are transversal with respect to the plane of the first and of the second sheet and contain the core element.

[0006] In a preferred exemplary embodiment the wings are foldably connected to the sheets along a tear-off line. This way, by removing in use the wings a coil is obtained on which the flexible material is wound comprising the single core element laterally defined by the sheets further tear-off lines can be provided on the sheets.

[0007] Advantageously, corresponding wings, i.e.

which overlap once assembled the container, have mutual engagement elements suitable for keeping the container same in a closed configuration.

[0008] Furthermore, between each sheet and at least one of the wings to it connected at least one opening can be made. The or each opening can be used to assist finishing operations of the container in the closed configuration such as the union of the overlapping wings with adhesive tape, or by stapling.

[0009] In particular, the first and the second sheet can be made of material selected from the group: paper material, plastic material, in particular polypropylene, polyethylene, foldable metal material.

[0010] In particular, the core element can be a tubular element, for example of cardboard or plastics, having two ends connected respectively to the first sheet and to the second sheet.

[0011] Alternatively, the first and the second sheet have a central hole and a plurality of foldable wings arranged peripherally about the central hole where the respective flexible portions of the two sheets have ends connected to each other. The foldable wings can move from a first position, where they lay in the plane of the relative sheet, to a second position, where they are inclined and within the planes of the sheets in order to form said core element. The first and the second sheet lay in planes substantially parallel both at the first and the second position. More in detail, the diameter of the hole increases running from the first to the second position by folding the foldable wings.

[0012] Il hole can be used for engaging with the container on winding shaft, manual or motor driven, which causes the object of flexible material to be wound about the core element del container.

Brief description of the drawings

[0013] In the drawings, the figures from 1 to 6 have been already commented in the introductory part, and:

- figure 1 shows a top plan view of an exemplary embodiment of a prior art support for flexible material;
- figure 2 shows a perspective elevational side view of the support for flexible material of figure 1 and of the relative protecting wrapper;
- figures 3 and 4 show diagrammatic elevational side views of the two steps through which the support with the coil spooled on it are inserted on the shaft of the winding device;
- figures 5 and 6 show two steps through which the support with the coil spooled on it is located in the protecting wrapper.

Further characteristics and the advantages of the container for elongated elements of flexible material, in particular seals for doors or windows, according to the present invention will be made clearer with the following description of an exemplary embodiment thereof exemplifying but not limitative, with reference

to the attached drawings wherein:

- figure 7 shows a top plan view of one of the two sheets used to provide the container, according to the present invention;
- figure 8 shows a perspective view of the sheet of figure 7;
- figure 9 shows a perspective view of the relative position of the two sheets that form a container for elongated elements of flexible material, in particular seals for doors or windows, according to the invention, in open configuration;
- figure 10 shows a perspective elevational side view of the container for elongated elements of flexible material, in particular seals for doors or windows, according to the invention, in closed configuration;
- figure 11 shows a perspective elevational side view of the container of figure 9 in which an opening is made along a tear-off line;
- figure 12 shows a perspective elevational side view of the container of figure 9 in the open configuration with the spooled coil;
- figure 13 shows in a partially cross sectioned view a detail of the step of fixing the two sheets that form the container of figure 10 and 11.

Description of a preferred exemplary embodiment

[0014] With reference to figure 9, a container for elongated elements of flexible material, for example seals for doors or windows, according to the present invention, comprises a first sheet 5a, for example of paper material, and a second sheet 5b, which are also of paper material, parallel to each other, and among which a core element 15 is located on which the elongated elements of flexible material 25 are wound. In particular, each sheet 5a, or 5b, has wings 6 foldable with respect to each other along folding lines 9. This allows bringing the container 10 from an open configuration, where the wings 6 lay in the plane of the sheets 5a and 5b (figure 9), to a closed configuration where the wings 6 are transversal with respect to the plane of the two sheets 5a and 5b and contain core element 15 (figure 10).

[0015] This way, the flexible elongated material 25 wound on core element 15 is protected by the wrapper 10 when carrying or storing.

[0016] In the exemplary embodiment shown in figures 8 and 9, first sheet 5a and second sheet 5b have a plurality of foldable wings, or "triangles", 12 that are folded from a first position, where they lay in the plane of the relative sheet and are adjacent to each other (figure 8), to a second position, where they are inclined with respect to the relative sheet and are distanced from each other (figure 9). In particular, the foldable wings 12 are connected at the respective ends and in the second position they form core element 15 on which, before winding the flexible elongated material 25, it is possible to position a cylindrical reinforcement not shown. Alternatively, according to an exemplary embodiment not shown in the

figures, core element 15 can be a tubular element engaged in order to the two sheets.

[0017] As shown in figures from 7 to 12, first sheet 5a and second sheet 5b have a central portion 16, for example of octagonal shape, and four angle portions 17 separated from the central portion 16 by tear-off lines 27. First sheet 5a and second sheet 5b of paper material are arranged substantially parallel both at the first and the second position. As shown in detail in figure 13, first sheet 5a and second sheet 5b are connected to the flexible portions 12 by means of staples 22.

[0018] The winding step of flexible element 25 about core element 15 is made when the container is in an open configuration, with sheets 5a and 5b distanced to allow the access to core element 15 (figure 9). In particular, in this position the flexible elements 12 of the central portion 16 are folded and form a hole 30, which is large enough to allow an engagement with the container 10 on a shaft of a winding device, manual or motor driven, for winding the flexible material 25 about core element 15 as already described with reference to the prior art.

[0019] Through the tear-off lines 7 it is possible to form an opening 35 in the container 10, removing a sole portion 11, allowing an inspection of the material within it (figure 11).

[0020] Once assembled container 10, the overlapping wings are constrained with respect to each other by means of mutual engagement elements 8 that allow keeping the container 10 same in the closed configuration. For a further steadiness of the container 10 in the closed configuration it is, furthermore, possible to join the two overlapping wings by means of an adhesive tape, or by staples made, for example with a stapler 35 (figure 10), either manual or automatic. This step is assisted by apertures 13 made between central portion 16 of the sheets 5 and angle portions 17.

[0021] The tear-off lines 7 define onto the wings 6 a retractable portion in the container 10 for assisting the step of separation of the wings 6 by the sheets 5. The separation of the wings 11 from the sheets 5 is then completed following the further tear-off lines 37 and 27 in order to obtain a coil supporting core element 15, on which the flexible elongated element 25 is wound, and with portions 16 (figure 12). The coil 50 can then be mounted on a shaft of unwinding about which is carried out rotate tightening the flexible elongated element 25 same for causing the unwinding the coil.

[0022] The foregoing description of a specific embodiment will so fully reveal the invention according to the conceptual point of view, so that others, by applying current knowledge, will be able to modify and/or adapt for various applications such an embodiment without further research and without parting from the invention, and it is therefore to be understood that such adaptations and modifications will have to be considered as equivalent to the specific embodiment. The means and the materials to realise the different functions described herein could have a different nature without, for this reason, departing

from the field of the invention. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

Claims

1. Container for flexible elongated material comprising:

- a first and a second sheet parallel to each other;
- a core element, located between said first and said second sheet, on which said flexible elongated material can be wound;

characterised in that it provides wings foldably connected to said first and to said second sheet, said wings being folded in use with respect to said sheets in order to bring said container from an open configuration, where said wings lay in the plane of said first and second sheet, to a closed configuration, where said wings are transversal with respect to said plane of said first and second sheet and contain said core element.

2. Container, according to claim 1, wherein said wings are foldably connected to said sheets along a tear-off line, whereby removing in use said wings a coil is obtained on which said flexible elongated material is wound comprising said core element laterally defined by said sheets.

3. Container, according to claims 1 and 2, wherein further tear-off lines on said sheets are provided.

4. Container, according to claim 1, wherein corresponding wings, i.e. those that once assembled said container are overlapped, have mutual engagement elements suitable for keeping said container in a closed configuration.

5. Container, according to claim 1, wherein between each sheet and at least one of the wings to it connected have at least one opening.

6. Container, according to claim 1, wherein said first and said second sheet are made of material selected from the group: paper material, plastic material, in particular polypropylene, polyethylene, foldable metal material.

7. Container, according to claim 1, wherein said core element is a tubular element having two ends connected respectively to said first sheet and to said second sheet.

8. Container, according to claim 1, wherein said first and second sheet have a central hole and a plurality of foldable wings arranged peripherally about said

central hole, where the respective flexible portions of said sheets have ends connected to each other.

9. Container, according to claim 8, wherein said foldable wings can move from a first position, where they lay in the plane of the relative sheet, to a second position, where they are inclined and within said planes of the sheets in order to form said core element.

10. Container, according to claim 8, wherein said first and second sheet lay in planes substantially parallel both to said first and to said second position, the diameter of said hole increasing in the passage from said first to said second position by folding said foldable wings.

Fig. 1
(prior art)

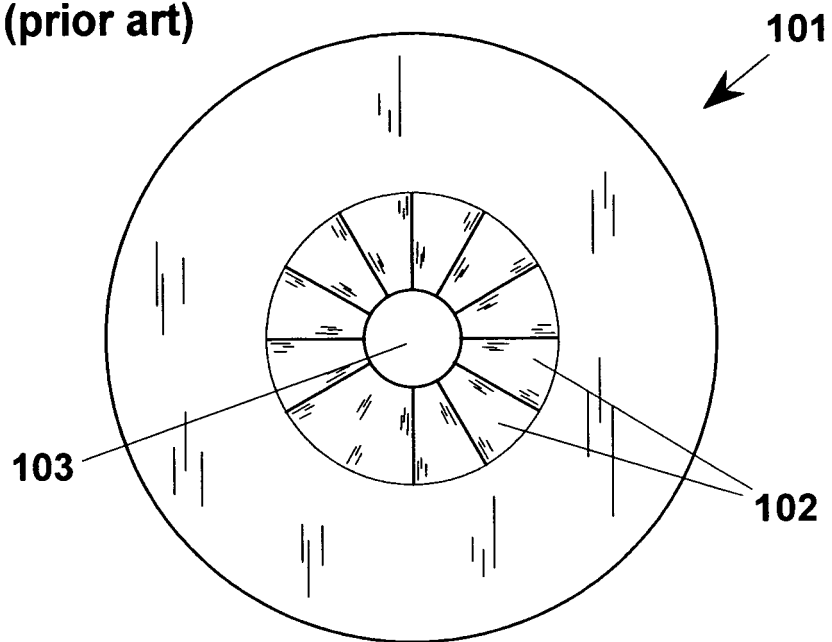
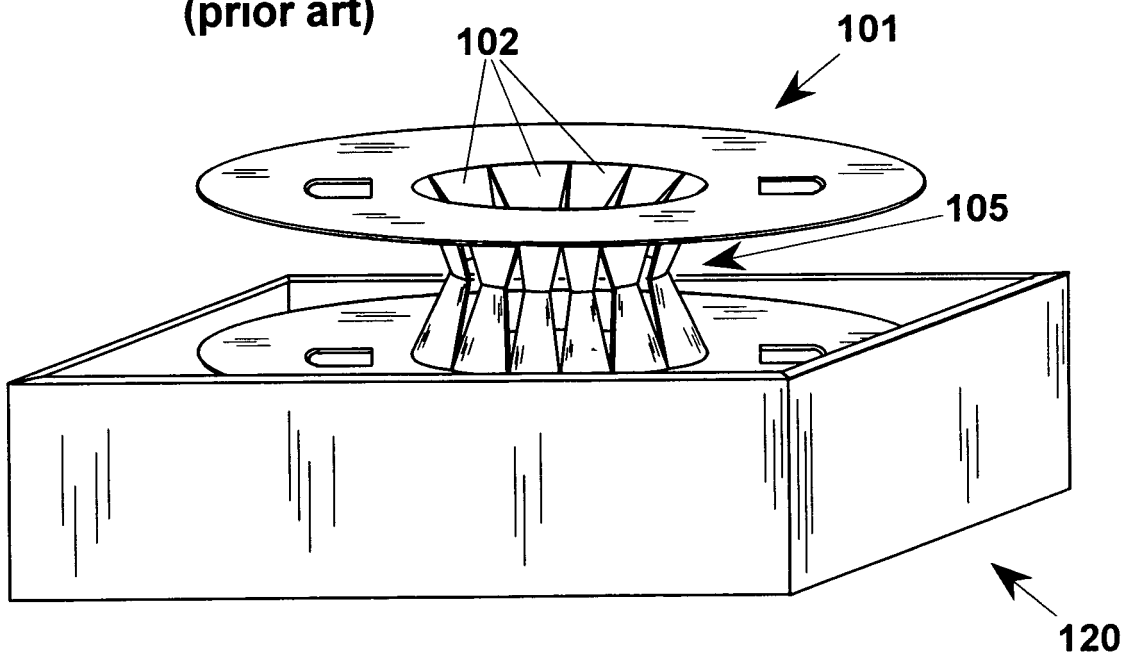


Fig. 2
(prior art)



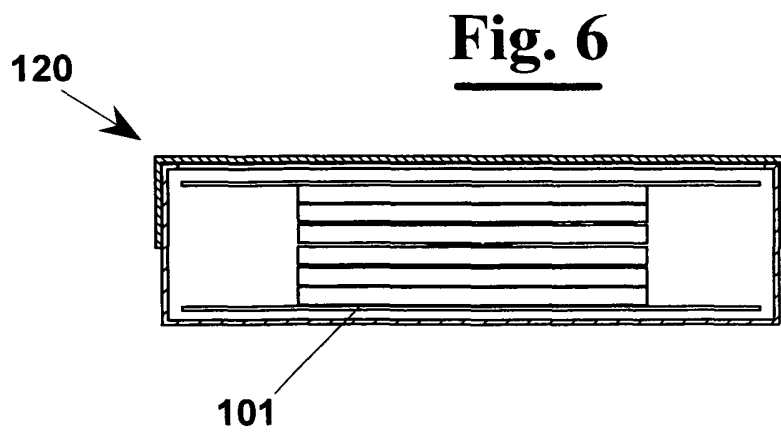
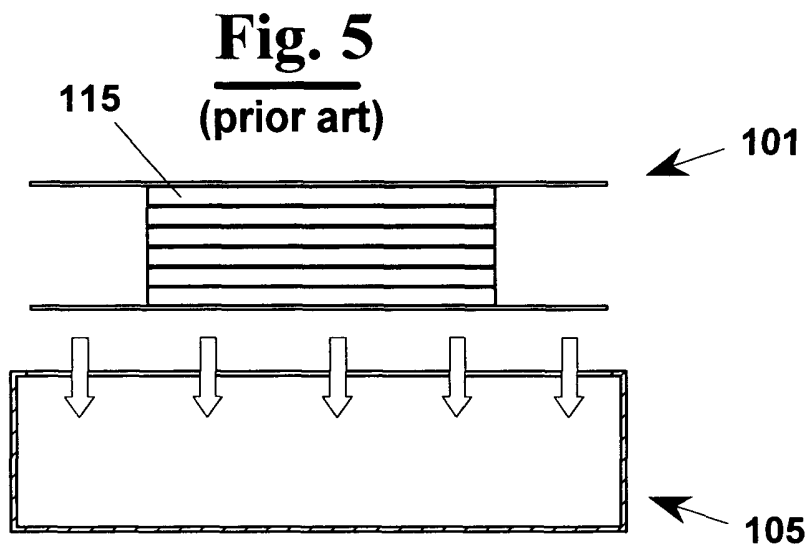
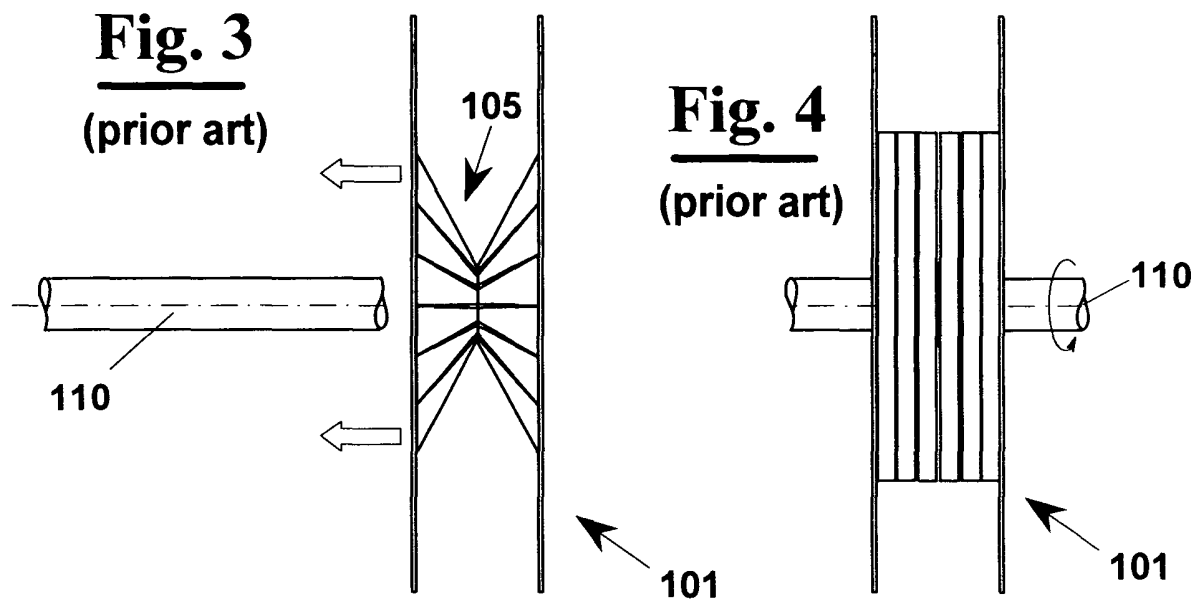


Fig. 7

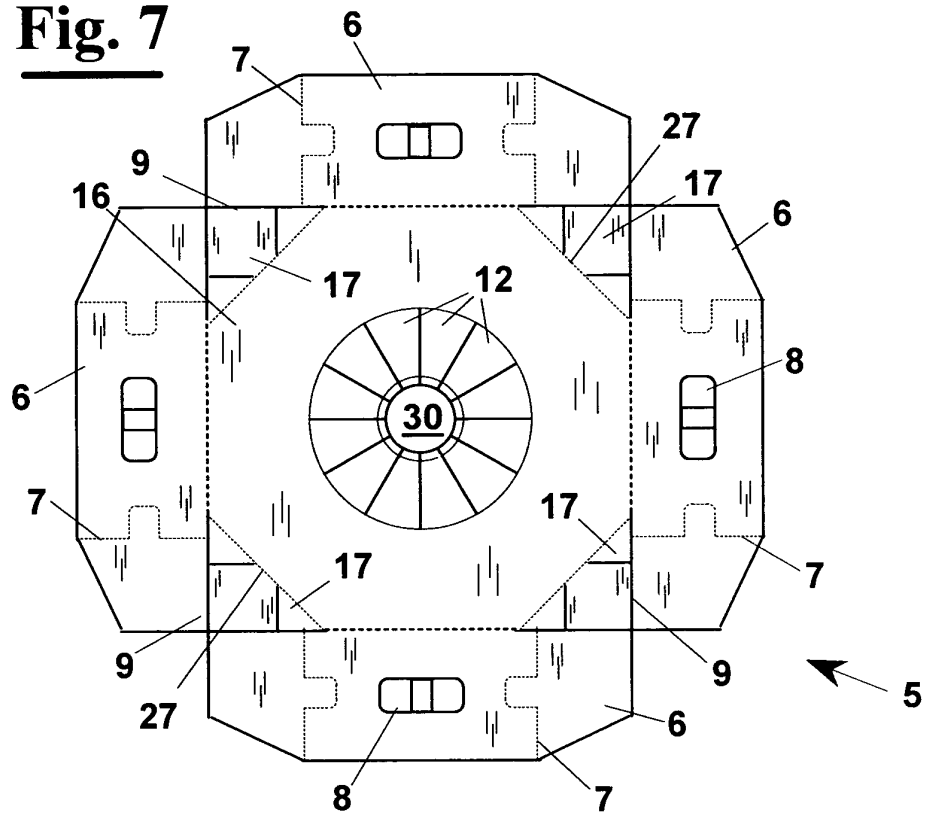


Fig. 8

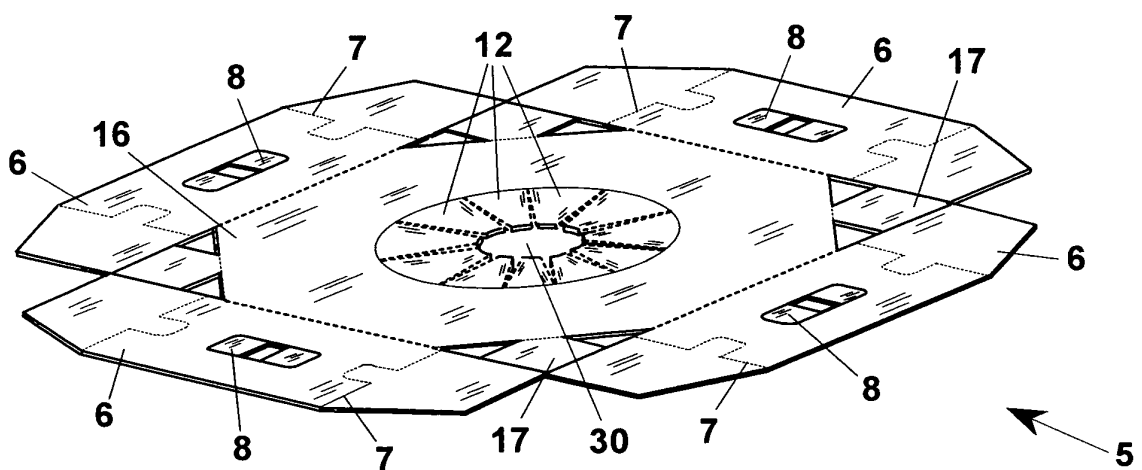


Fig. 9

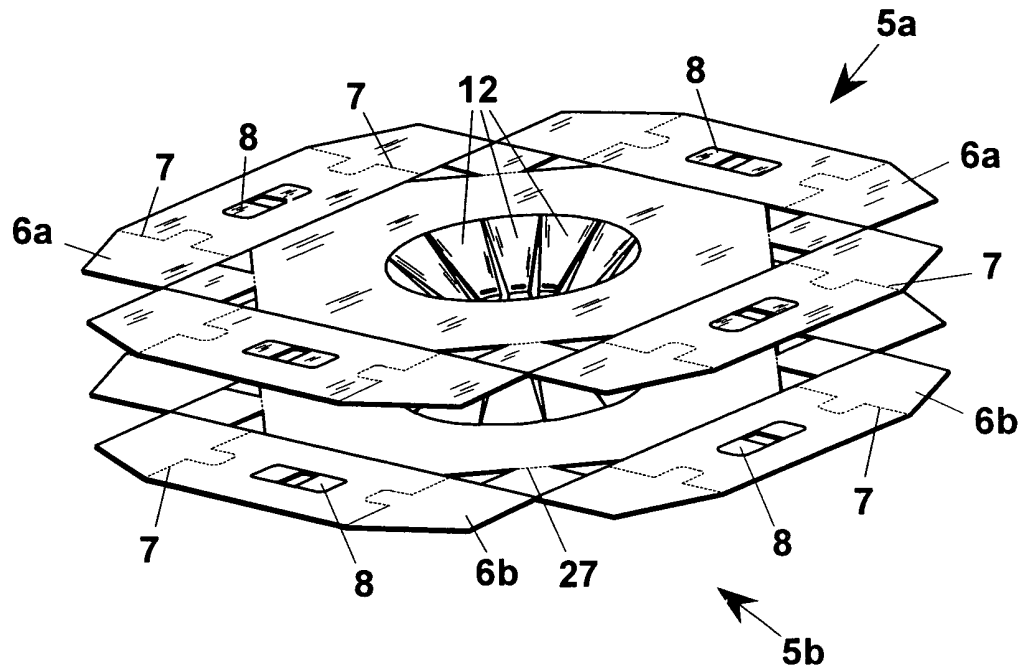


Fig. 10

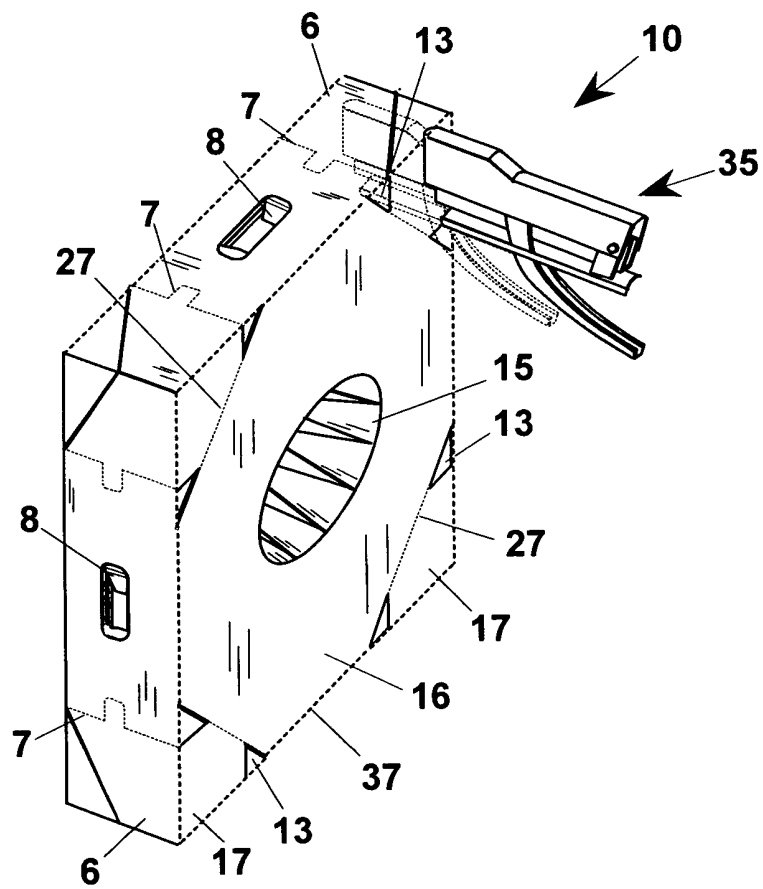


Fig. 11

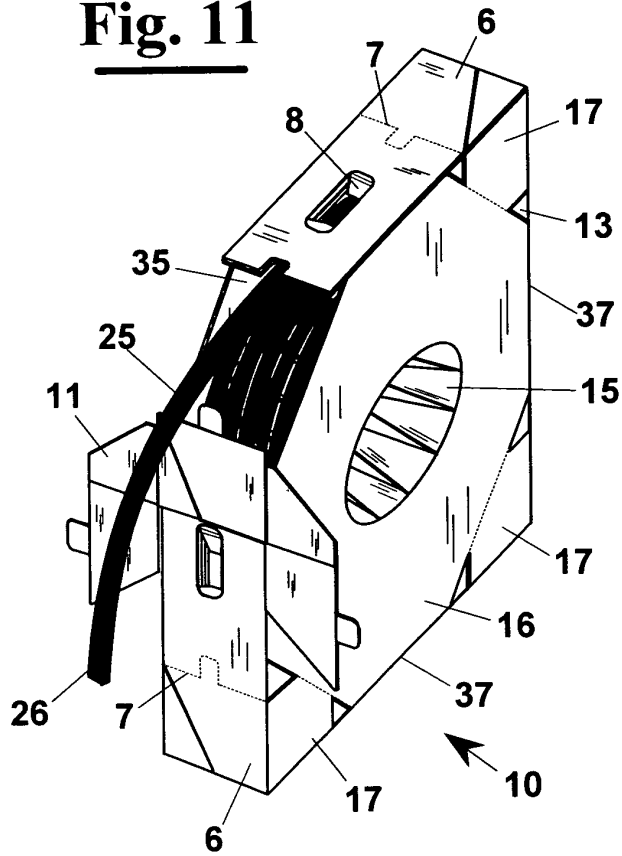


Fig. 12

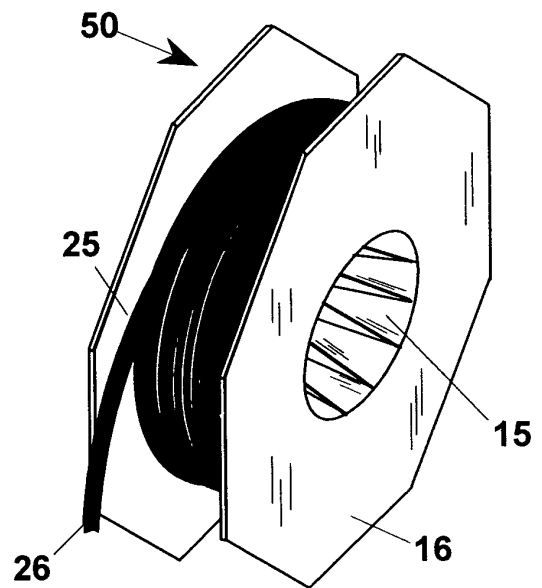
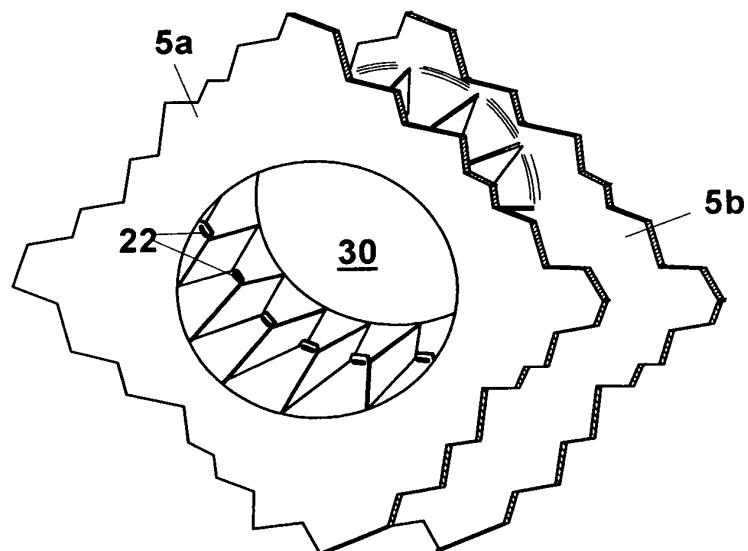


Fig. 13





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 04 42 5655

DOCUMENTS CONSIDERED TO BE RELEVANT			
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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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 27 January 2005	Examiner Fachin, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 42 5655

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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27-01-2005

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