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(71) Applicant: **Plastex SA**
6995 Madonna del Piano (CH)

(72) Inventor: **LOMBARDINI, Marco**
6992 Vernate (CH)

(74) Representative: **Autuori & Partners**
Strada del Megiaro, 261
36100 Vicenza (VI) (IT)

(54) **EDGE GASKET FOR SLAT SHADING CURTAINS, AS WELL AS KIT OF TRANSPORT AND STORAGE THEREOF AND SLAT THAT INCLUDES SUCH EDGE GASKET**

(57) An edge pad for a slat **(L)** of a venetian blind **(T),** comprising: a portion **(10)** for coupling to the longitudinal slot **(C)** of a slat **(L);** a working portion **(20)** protruding from the longitudinal slot **(C)** to remain facing the edge portion **(B')** of the slat **(L).** The working portion **(20)** includes a first zone **(21)** and a second zone **(22)** mutually positioned and configured so that only one of them **(21),** made of an anti-friction polymeric material, comes into contact with the surface **(S)** of the adjacent slat **(L')** upon the sliding of the of the edge area **(B')** of the slat **(L)** thereon, the other of them **(22)** being made of an elastomeric or thermoplastic elastomeric material.

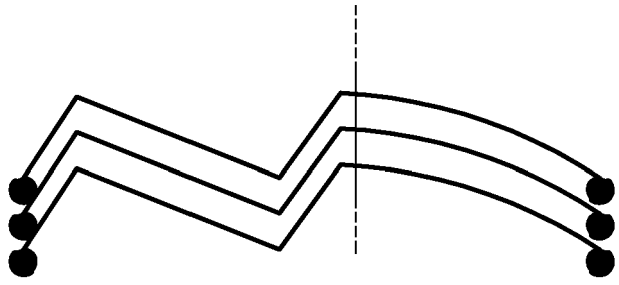

FIG. 1

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Description

Field of the invention

[0001] The present invention generally relates to the technical field of accessories for shading curtains, and it particularly relates to an edge pad to be mounted on the slats of a venetian blind.

[0002] The invention also relates to a kit for transporting and storing one or more of such pads, as well as a slat which includes an edge pad.

State of the Art

[0003] Venetian blinds, which consist of a plurality of slats mutually movable between an inoperative position, in which they are mutually packed, and an operative position, in which they are mutually spaced apart, are known. An example of such venetian blinds is known from the Patent CH384185A.

[0004] The slats are generally provided with pads at one of the edges, so as to absorb the vibrations between the adjacent slats for example due to rushes of wind or impacts. More precisely, each slat is provided with an edge longitudinal slot into which the pad is inserted.

[0005] Such pads generally include a portion for coupling to the longitudinal slot of the slat and a working portion made of soft material protruding from the slot to remain facing the edge portion of the slat and carry out the function mentioned above.

[0006] In venetian blinds currently available on the market, the displacement between the inoperative and operative positions mentioned above includes a step for mutual sliding between two adjacent slats, wherein the edge portion of a slat slides for a predetermined section on the surface of the slat of the adjacent edge.

[0007] The known solution described above reveals the acknowledged drawback of causing vibrations and noise when opening and closing a blind, in particular upon mutual sliding between one slat and the other.

[0008] Besides being unpleasant for the user, such phenomenon stresses the system for moving the slats of the blind and it can cause malfunctions and blocking thereof in the long term.

[0009] The German utility model DE8317650U1 discloses a slat which rotates without translating. When closed, the slats are in contact at the relative pad.

Summary of the invention

[0010] An object of the present invention is to at least partly overcome the aforementioned drawbacks, by providing an edge pad for a slat of a venetian blind that is highly efficient and cost-effective.

[0011] Another object of the invention is to provide an edge pad for a slat of a venetian blind that limits to the maximum or entirely eliminates the vibrations between the slats upon the sliding between them.

[0012] Another object of the present invention is to provide an edge pad for a slat of a venetian blind that is simple and cost-effective to produce.

[0013] Another object of the present invention is to provide a kit that allows a simple, practical and cost-effective displacement, storage and transportation of edge pads for venetian blinds.

[0014] These and other objects that will be more apparent hereinafter, are attained by an edge pad for a slat of a venetian blind and by a transportation and storage kit as described, illustrated and/or claimed herein.

[0015] Advantageous embodiments of the invention are defined according to the dependent claims.

Brief description of the drawings

[0016] Further characteristics and advantages of the invention will be more apparent in light of the detailed description of a preferred but non-exclusive embodiment of the invention, illustrated by way of non-limiting example with reference to the attached drawings, wherein:

FIGS. 1 and **2** are schematic figures of a venetian blind **T** respectively in inoperative position, in which it is fully closed, and in a first operative position;

FIGS. 3A and **3B** are schematic figures of a venetian blind **T** in a second operative position, in which it is fully open, respectively in minimum and maximum shading configuration;

FIGS. 4A and **4B** are respectively axonometric and radial cross-sectional figures of a first embodiment of the edge pad 1;

FIGS. 5A and **5B** and are respectively exploded and assembled schematic figures of the slat **L** and of the first embodiment of edge pad **1** of FIGS. 4A and 4B;

FIGS. 6A and **6B** are schematic figures of the slat **L** and of the first embodiment of the edge pad **1** of FIGS. 4A and 4B respectively with the venetian blind **T** in an operative position and in the inoperative position;

FIGS. 7A and **7B** are respectively axonometric and radial cross-sectional figures of a first embodiment of the edge pad **1;**

FIG. 8 is an axonometric schematic figure of a transportation and storage kit **100.**

Detailed description of a preferred embodiment

[0017] With reference to the mentioned figures, herein described is an edge pad **1** for the slats **L** of a venetian blind **T.**

[0018] In a per se known manner, the venetian blind **T** consists of a plurality of slats **L,** possibly made of metal material, which can be displaced between an inoperative position, for example shown in FIG. 1, and several operative positions, for example shown in FIGS. 2, 3A and 3B.

[0019] In the inoperative position, which defines the fully closed configuration and with minimum overall di-

mensions of the venetian blind **T,** all the slats **L** are packed, and both front and rear edge areas **B', B"** of each slat **L** are proximal to, and preferably in contact with, the corresponding front and rear edge areas **B', B"** of the previous and/or subsequent slat.

[0020] In the operative positions, one or more slats are spaced from the previous and/or subsequent slat, so that the front and rear edge areas **B', B"** of each spaced slat are distal from the corresponding front and rear edge areas **B', B"** of the previous and/or subsequent slat.

[0021] FIGS. 3A and 3B define the fully open configuration and with the maximum overall dimensions of the venetian blind **T,** while FIG. 2 defines an intermediate configuration between the fully closed and open configuration.

[0022] In particular, upon opening the venetian blind **T,** the latter passes from the inoperative position (FIG. 1) in which it is fully closed to the intermediate operative position of FIG. 2, in which the edge area **B'** of the slat **L** slides for a predetermined section on the surface **S** of the adjacent slat **L'.** Suitably, the sliding direction of the edge area **B'** of the slat **L** may be substantially perpendicular to the longitudinal axis **X** defined by the pad **1,** better explained hereinafter.

[0023] Continuing to open the venetian blind **T** the latter passes from the intermediate operative position of FIG. 2 to the open fully operative position shown in FIGS. 3A and 3B.

[0024] In a per se known manner, in such position the slats **L** rotate around an axis **R** substantially parallel to the front and rear edge areas **B', B",** so as to move between the minimum and maximum shading configurations, respectively shown in FIG. 3A and 3B.

[0025] The edge pad **1** may have an extended shape along an axis **X,** and be suitable to be mounted in a longitudinal slot **C** arranged at the edge portions **B'** and/or **B",** and it may comprise a portion **10** for coupling for the longitudinal slot **C,** a working portion **20** and a connection position **30** interposed between them. However, it is clear that the latte may be absent without departing from the scope of protection of the attached claims.

[0026] In order to allow an easy assembly and disassembly of the edge pad **1** on the slat **L,** besides a stable coupling, the coupling portion **10** may preferably be counter-shaped with respect to the longitudinal slot **C.**

[0027] The working portion **20** may protrude from the longitudinal slot **C** to remain facing the edge portion **B** of the slat **L,** so as to slide on the surface **S** upon opening and / or closing of the venetian blind **T** and absorb the possible impact of the slat **L** with the previous and/or subsequent slats, for example due to rushes of wind or impacts, and/or act as soundproof means and/or maximise the shading effect of the venetian blind **T.**

[0028] To this end, the working portion **20** may consist of a first zone **21** e and a second zone **22,** whose functions will be clearer hereinafter.

[0029] Generally, the zones **21, 22** may be mutually positioned between each other and configured so that only the first zone **21** comes into contact with the surface **S** of the adjacent slat **L'** upon the sliding mentioned above.

[0030] Furthermore, preferably the zones **21, 22** may be mutually positioned between each other and configured so that upon closing the venetian blind **T,** the second zone **22** remains facing the adjacent slat **L'** only after the sliding of the first zone **21** on the surface **S** of the latter.

[0031] Therefore, in such configuration the first zone **21** has the function of facilitating the sliding of the edge area **B'** of the slat **L** on the surface **S** of the adjacent slat **L',** while the second zone **22** has the function of absorbing the possible impact of the slat **L** with the previous and/or subsequent slats.

[0032] The second zone **22** may also act as soundproof means and/or maximise the shading effect of the venetian blind **T.** To this end, the second zone **22** may at least partially come into contact with the previous and/or subsequent slat.

[0033] In order to carry out the function mentioned above, the working portion **20** may consist of a substantially curved laminar element in which the first zone **21** is the front and the second zone **22** is rear.

[0034] In particular, in such configuration the working portion **20** may have a first end edge **23** operatively connected with the coupling portion **10** through the connection portion **30** and a second vacant opposite end edge **24.** The first zone **21** may include the vacant edge **24,** while the second zone **22** may include the edge **23** connected with the coupling portion **10.**

[0035] Furthermore, the zones **21, 22** may have respective edges **25, 26** opposite to the edges **24, 23** in contact with each other, so that the zones **21, 22** are consecutive to each other.

[0036] It is clear that the configuration mentioned above shall be deemed by way of non-limiting example of the invention: for example, between the first and second zone **21, 22** there may be provided other zones and/or the working portion may have any configuration and/or the zones may have any configuration without departing from the scope of protection of the attached claims.

[0037] In order to carry out the functions mentioned above, the portions **10, 20** and, if present, **30** may be obtained by means of suitable materials.

[0038] In a preferred but non-exclusive embodiment, the coupling portion **10** may be made of a thermoplastic polymeric material. If present, the connection portion **30** may be monolithic with the coupling portion **10** and made of the same material or different material.

[0039] The working portion **20** may be made of at least two materials.

[0040] The first zone **21** may be made of an anti-friction polymeric material, preferably a thermoplastic polymeric material may identical or not identical to that of the coupling portion **10** and, if need be, to that of the connection portion **30.**

[0041] The second zone **22** may be made of an elas-

tomeric or thermoplastic elastomeric material.

[0042] For example, the material of the first zone **21** and possibly of the coupling portion **10** may preferably be a polyolefin, for example polypropylene, while the material of the second zone **22** may be a thermoplastic elastomer compatible therewith, for example a TPE-O.

[0043] Advantageously, from the second zone **22** there may extend one or more appendages **28,** whose function will be clearer hereinafter, which may be made of the same material as the zone **22** or of a different elastomeric or thermoplastic elastomeric material.

[0044] It is clear that one or more appendages **28** may extend from the second zone **22** in any direction, for example below and/or above, without departing from the scope of protection of the attached claims.

[0045] Preferably, the materials mentioned above may be coextruded, so as to obtain the working portion **20** through a single extrusion step.

[0046] The hardness of the anti-friction polymeric material of the first zone **21** may be greater than that of the elastomeric or thermoplastic elastomeric material of the second zone **22.**

[0047] For example, the elastomeric or thermoplastic elastomeric material of the second zone **22** may have a Shore A hardness comprised between 65 ShA and 90 ShA, while the anti-friction polymeric material of the first zone **21** may have a Shore D hardness comprised between 25 ShD and 60 ShD. The hardness may be determined according to the known DIN EN ISO 868 standard.

[0048] In this manner, the first zone **21** will facilitate the sliding of the edge area **B'** of the slat **L** on the surface **S** of the adjacent slat **L',** as shown in FIG. 6A, while the second zone **22** will absorb the possible impact of the slat **L** with the previous and/or subsequent slats, as shown in FIG. 6B.

[0049] In the embodiment provided with one or more appendages **28,** the latter may come into contact with the surface **S** of the adjacent slat **L'** towards the end of the sliding of the first zone **21** thereon, so as to act as soundproof means and/or the shading effect of the venetian blind **T.**

[0050] The particular configuration shown above will also allow to have a hinge effect between the various zones, and in particular between the connection portion **30** and the second zone **22** at the edge **23.**

[0051] In an alternative embodiment, shown in FIGS. 7A and 7B, at the first zone **21** there may be provided one or more projections extending outwards so as to come into contact with the surface **S** of the adjacent slat **L'** after the sliding step, so as to keep the slats **L, L'** spaced from each other.

[0052] Suitably, the kit **100** shown in FIG. 8 may be used in order to transport and store the edge pads **1.**

[0053] Such kit may essentially include a plurality of reels **110** inserted into a rack **120,** which is provided with removable stacking means **130, 131** of one or more identical racks.

[0054] One or more edge pads **1** with predetermined length, to be cut whenever required by the manufacturer of the venetian blinds **T,** may be wound around each reel **110.**

[0055] The rack **120,** may consist of metal tubular elements, may be suitable to be loaded on a truck and, once unloaded, suitable to be stacked with other similar.

[0056] In a preferred but non-exclusive embodiment, the rack **120** may include one or more cradles **140** suitable to house a plurality of reels **110** arranged adjacent to each other along the axis thereof.

[0057] Each cradle **140** may define a storage plane designed to remain substantially parallel to axis of the reels **110** arranged side by side.

[0058] Advantageously, the storage plane may be defined by at least two profiles **141, 142,** which may possibly be triangular-shaped in plan view.

[0059] This allows to both transport the pads in a simple and quick manner without the need for cardboard packaging or the like and store the pads once it reaches the destination without the need for shelves or the like, by simply stacking the racks **120** on each other.

[0060] Furthermore, due to such configuration, the displacement of the reels **110** will be extremely simplified, given that it is sufficient to pick up and load them by laterally accessing the cradle **140.**

[0061] As a matter of fact, the particular configuration of the rack **120** will allow to keep the reels in vertical position, that is with horizontal axis, and avoid stacking them with the vertical axis.

[0062] It is clear that the rack **120** and the one or more reels **110** may be used for storing and transporting any pad, not necessarily the pad **1** having the characteristics described above, or of any elongated element.

[0063] In the light of the above, it is clear that the invention attains the pre-established objects.

[0064] The present invention may include various parts and/or similar or identical elements. Unless otherwise specified, similar or identical parts and/or elements will be indicated using a single reference number, it being clear that the described technical characteristics are common to all similar or identical parts and/or elements.

[0065] The invention is susceptible to numerous modifications and variants all falling within the inventive concept outlined in the attached claims. All details can be replaced by other technically equivalent elements, and the materials can be different depending on the technical needs, without departing from the scope of protection of the invention.

[0066] Although the invention has been described with particular reference to the attached figures, the reference numerals used in the description and in the claims are meant for improving the intelligibility of the invention and thus do not limit the claimed scope of protection in any manner whatsoever.

Claims

1. An edge pad for a slat **(L)** of a venetian blind **(T),** the slat **(L)** including at least one edge area **(B')** provided with a longitudinal slot **(C),** the edge area **(B')** of the slat **(L)** being designed to slide on the surface **(S)** of the adjacent slat **(L')** upon opening and / or closing of the venetian blind **(T),** the pad comprising or consisting of:

   - a coupling portion **(10)** for coupling the longitudinal slot **(C)** of the slat **(L);**
   - a working portion **(20)** protruding from the longitudinal slot **(C)** to remain facing the edge portion **(B')** of the slat **(L);**

   wherein said working portion **(20)** includes or consists of a first zone **(21)** and a second zone **(22)** mutually positioned and configured so that only one of said first or second zone **(21)** comes into contact with the surface **(S)** of the adjacent slat **(L')** upon sliding of the edge area **(B')** of the slat **(L)** thereon; wherein the other of said first or second zone **(22)** is made of a first elastomeric or thermoplastic elastomeric material, said one of said first or second zone **(21)** being made of a second anti-friction polymeric material.

2. Pad according to claim 1, wherein said first and second zones **(21, 22)** are mutually positioned and configured so that upon closing the venetian blind **(T)** said other of said first or second zone **(22)** remains facing the adjacent slat **(L')** only after the sliding of said one of said first or second zone **(21)** on the surface **(S)** of the latter.

3. Pad according to claim 1 or 2, wherein said first elastomeric or thermoplastic elastomeric material and said second anti-friction polymeric material are co-extruded with respect to each other.

4. Pad according to claim 1, 2 or 3, wherein the edge pad **(1)** has an extended shape along a longitudinal axis **(X),** the edge area **(B')** of the slat **(L)** being designed to slide on the surface **(S)** of the adjacent slat **(L')** upon opening and / or closing of the venetian blind **(T)** for a predetermined section in a direction substantially perpendicular to said longitudinal axis.

5. Pad according to claim 1, 2, 3 or 4, wherein said second anti-friction polymeric material is a thermoplastic polymeric material, preferably a polyolefin.

6. Pad according to claim 1, 2, 3, 4 or 5 wherein said first elastomeric or thermoplastic elastomeric material has a predetermined hardness, said second anti-friction polymeric material having a hardness greater than that of said first elastomeric or thermoplastic elastomeric material.

7. Pad according to one or more of the preceding claims, wherein said first elastomeric or thermoplastic elastomeric material has a Shore A hardness comprised between 65 ShA and 90 ShA, said second anti-friction polymeric material having a Shore D hardness comprised between 25 ShD and 60 ShD.

8. Pad according to one or more of the preceding claims, wherein said working portion **(20)** includes or consists of a substantially curved laminar element having a first end edge **(23)** operatively connected with said coupling portion **(10)** and a second vacant opposite end edge **(24),** said one of said first or second zone **(21)** including the latter, said other of said first or second zone **(22)** including said first end edge **(23).**

9. Pad according to the preceding claim, wherein said one and the other of said first and second zones **(21, 22)** have respective edges **(25, 26)** respectively opposite to said second and first end edge **(24, 23)** in contact with each other, so that said first and second zones **(21, 22)** are mutually consecutive.

10. Pad according to one or more of the preceding claims, wherein the longitudinal slot **(C)** has a predetermined shape, said coupling portion **(10)** being counter-shaped with respect to the longitudinal slot **(C).**

11. Pad according to one or more of the preceding claims, wherein said coupling portion **(10)** is made of a third thermoplastic polymeric material, said first and third polymeric material being preferably identical.

12. Pad according to one or more of the preceding claims, wherein said one of said first or second zone **(21)** comprises at least one longitudinal projection **(27)** configured to come into contact with the surface **(S)** of the adjacent slat **(L')** after said sliding, so as to keep the slats **(L, L')** mutually spaced apart.

13. Pad according to one or more of the preceding claims, wherein said other of said first or second zone **(22)** made of said first elastomeric or thermoplastic elastomeric material comprises at least one appendage **(28)** extending from the first or second zone **(22)** to come into contact with the surface **(S)** of the adjacent slat **(L')** during or after the sliding of said one of said first or second zone **(21)** on the latter **(S),** said at least one appendage **(28)** being preferably made of a fourth elastomeric or thermoplastic elastomeric material possibly equal to said first elastomeric or

thermoplastic elastomeric material.

14. A slat for a venetian blind **(T),** comprising at least one edge area **(B)** provided with a longitudinal slot **(C)** and one edge pad **(1)** according to one or more of the preceding claims inserted into said longitudinal slot **(C).**

15. A transportation and storage kit, comprising:

- at least one reel **(110);**
- at least one edge pad **(1)** according to one or more of claims 1 to 13 wound around said at least one reel **(110);**
- at least one metal rack **(120)** for said at least one reel **(110);**

wherein said at least one metal rack **(120)** includes means for removable stacking **(130, 131)** with one or more identical racks.

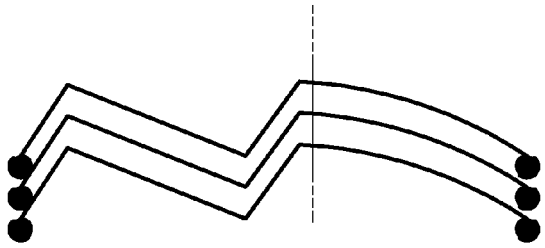

FIG. 1

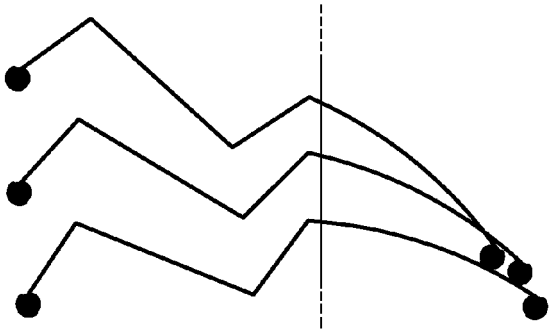

FIG. 2

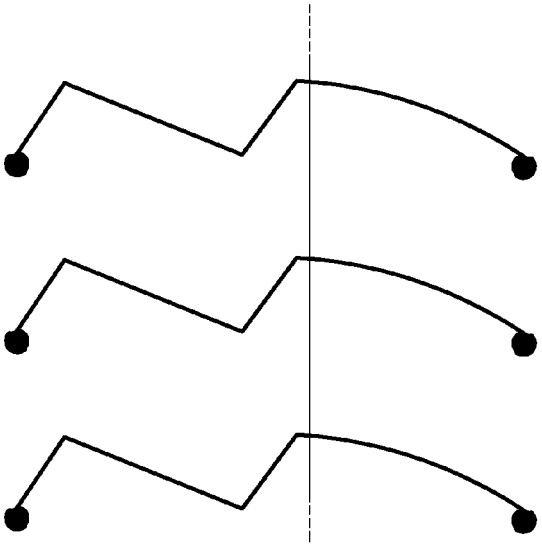

FIG. 3A

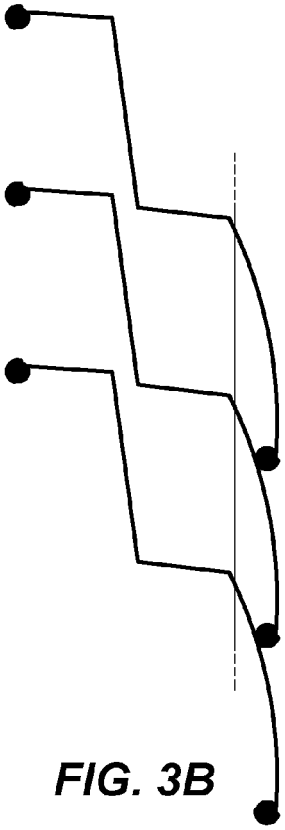

FIG. 3B

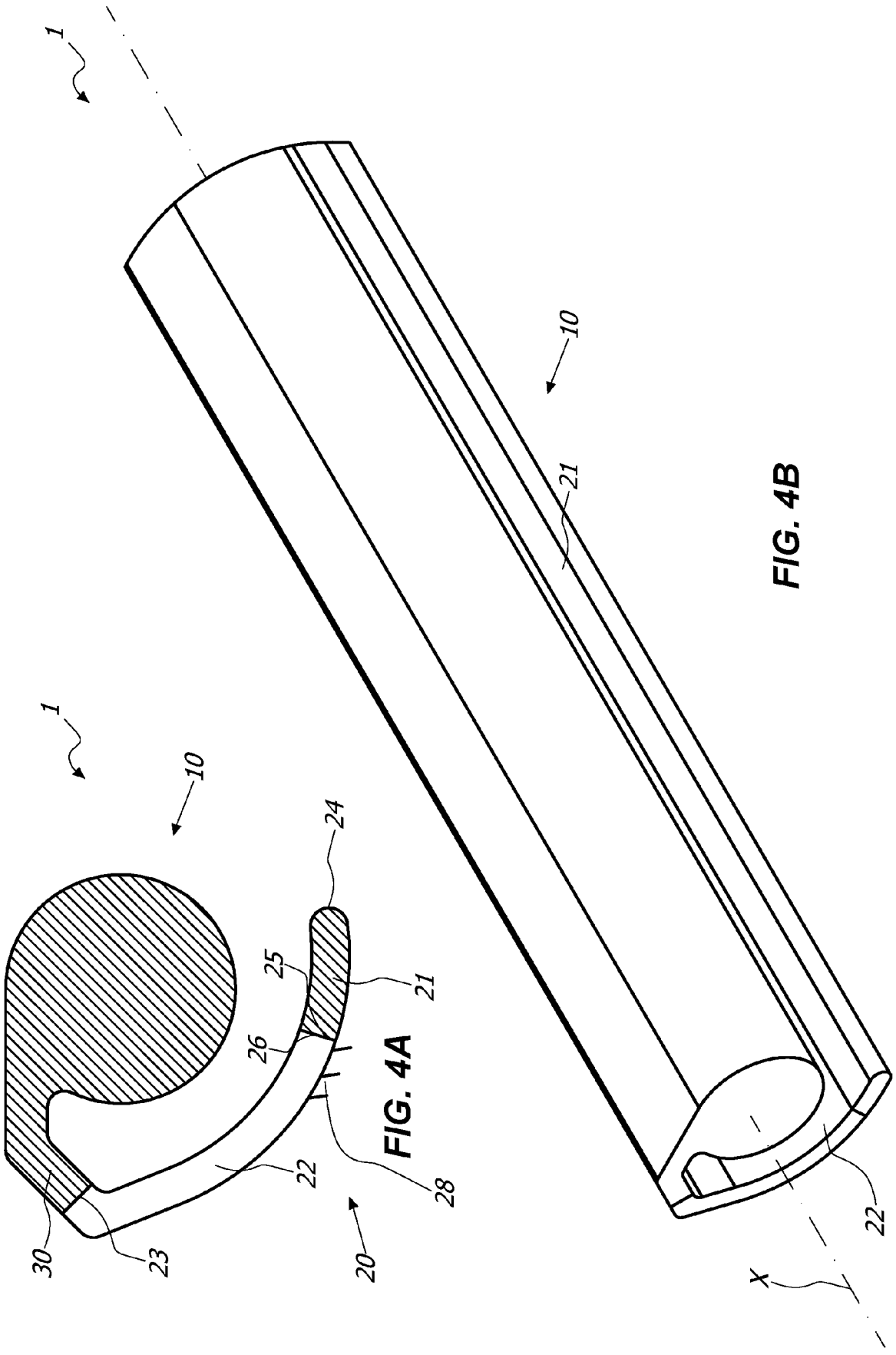

FIG. 4B

FIG. 4A

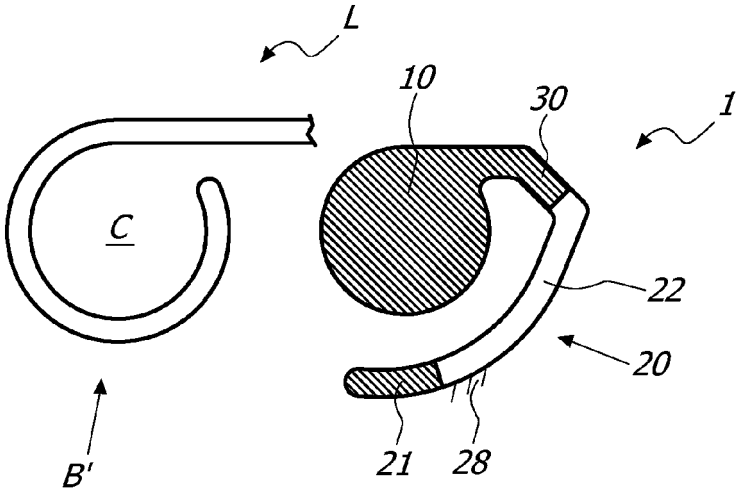

FIG. 5A

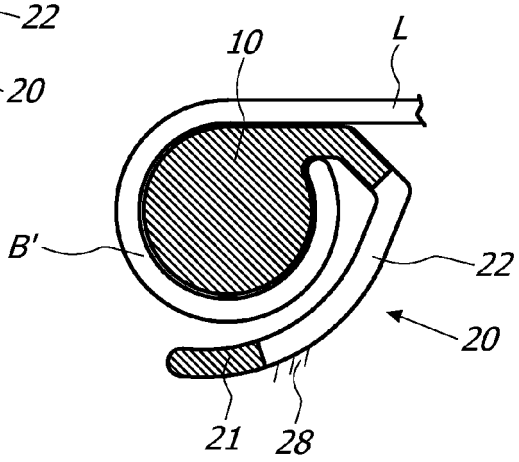

FIG. 5B

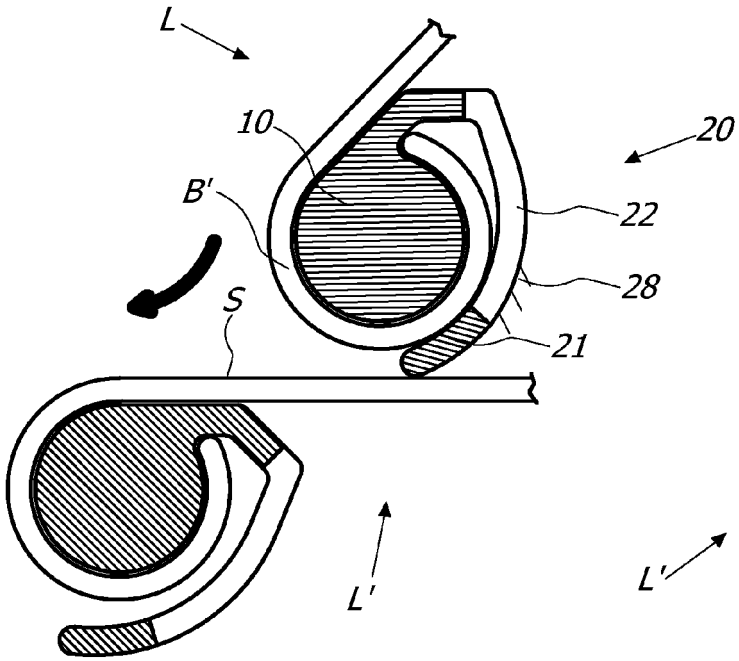

FIG. 6A

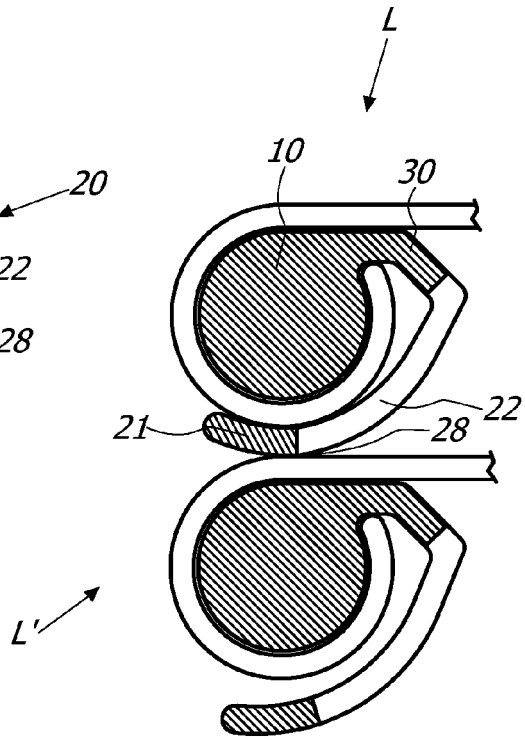

FIG. 6B

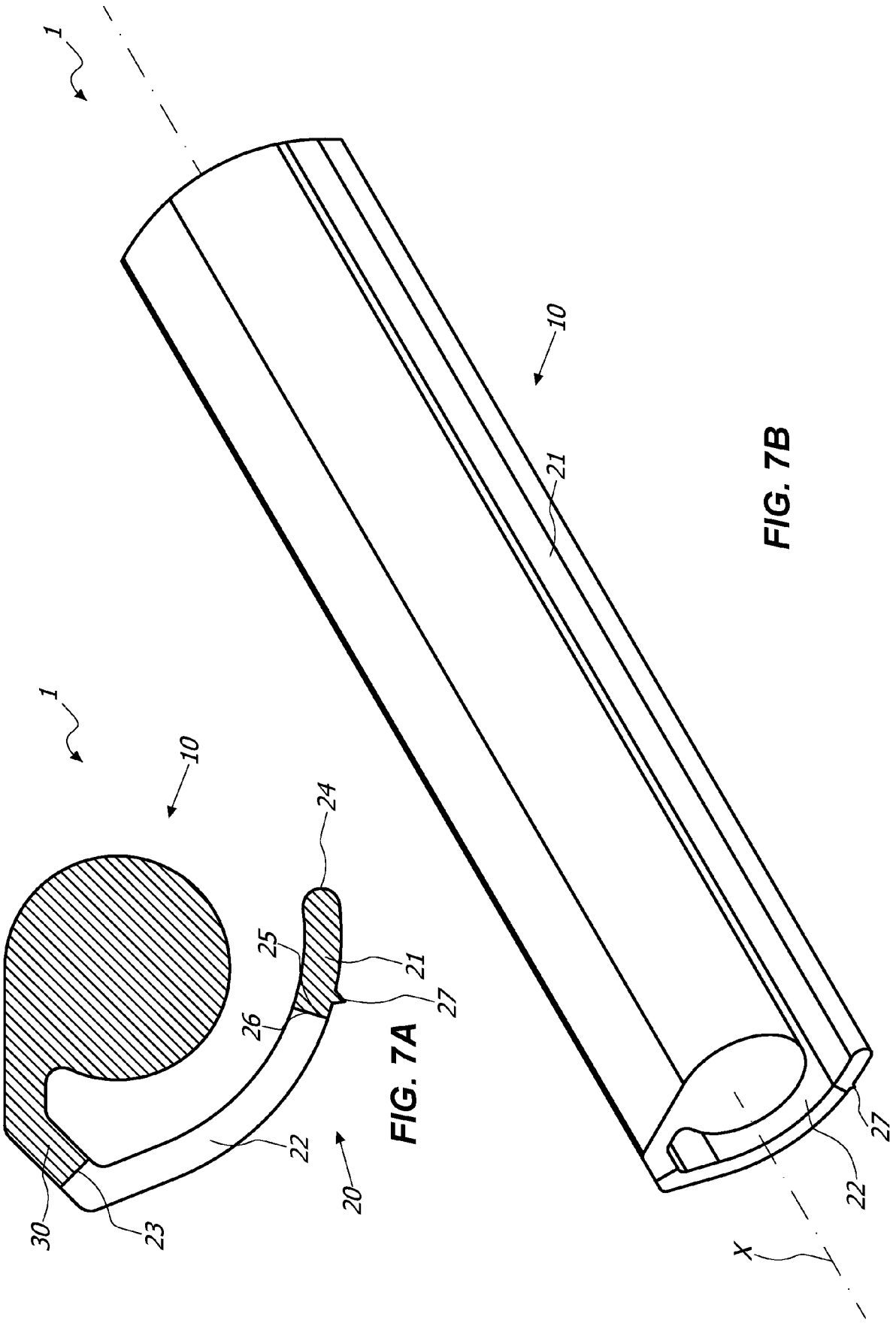

FIG. 7A

FIG. 7B

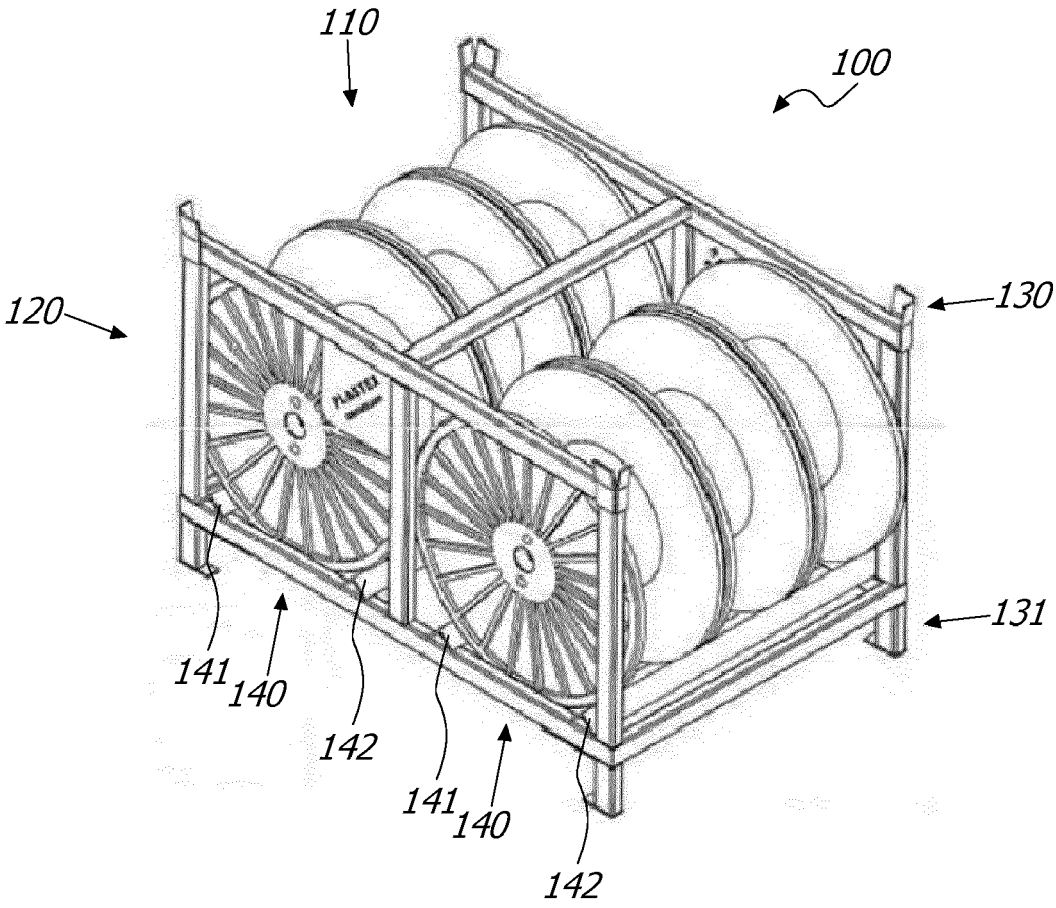

FIG. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CH 384185 A **[0003]**
- DE 8317650 U1 **[0009]**