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(54) **A MODULAR FLAG ASSEMBLY AND METHOD OF MANUFACTURING AND ASSEMBLING SAME**

(57) A modular flag assembly comprises a flag (7) having a flag pole rim (36) and an upper rim (35), which rims (35;36) have means to receive opposite ends (21;25) of a flexible bar (40), which forms a curve that extends upwards adjacent a flagpole (37) towards a free upper corner (38) of the flag (7) to keep said flag (7) distended while it is attached to the flagpole or the like. The means to receive opposite ends (21;25) of the flexible bar (40) includes at least one elongate hollow profile (4a,4b) comprised of a tubular main body with at least one attachment flap (3a,3b) along it's length. The distending of the flag can be changed according to desire and in response to the position and length of the elongate hollow profile as well as to the resilience of the flexible bar (40).

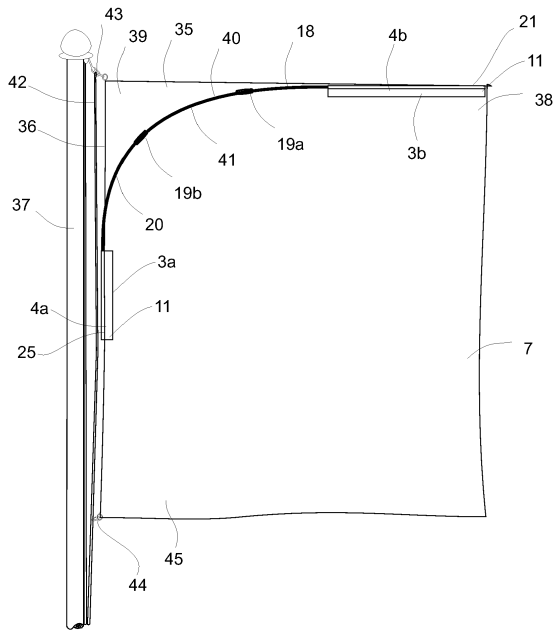

Fig. 11

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Description

[0001] The present invention relates to a modular flag assembly comprising a flag having a flag pole rim and an upper rim, which rims have means to receive opposite ends of a flexible bar so that said flexible bar forms a curve that extends upwards adjacent a flagpole towards a free upper corner of the flag to keep said flag distended while it is attached to the flagpole or the like.

[0002] Many flags include information, such as a logo, company information, advertising or other message, that cannot be seen and realized by the intended target if the flag just hangs slack.

[0003] International patent application no. WO96/33482 proposes a solution thereto by providing a flag with a means for keeping the flag distended while it is attached to a flagpole or the like. This known flag assembly comprises a continuous flexible bar, one end of which is retained inside a fabric pocket along the upper rim of the flag and the opposite end is retained inside a fabric pocket along the perpendicular rim of the flag adjacent the flagpole.

[0004] The fabric pockets of this known flag are simple, more or less long, casings sewn along the appropriate flag rims, inside which casings the opposite ends of a thin, highly flexible metal rod are inserted so that the flexible rod curves and distends the flag. The fabric of the casings is however vulnerable to wear from the contact with the flexible rod, as well as there is a tendency that the fabric of the flag has a small but disfiguring fold at the transition between the casing at the flagpole and the remaining flag fabric. Yet a disadvantage of this prior art flag is the high number of sewing actions needed to make the casings, and for closing these casings at the otherwise open ends so that the flexible bar has a suitable backstop for assuming the required curvature for distending the flag. Flags are often large and the voluminous fabric must be turned many times during creation of these many sewings. This is cumbersome, takes time and constitutes a challenge to the needleperson to avoid folds and errors.

[0005] German patent publication DE 101 20 644 A1 relates to a modular flag assembly according to the preamble of claim 1.

[0006] It is a main aspect of the present invention to provide a flag with improved means for keeping the flag distended while it is attached to a flagpole.

[0007] It is a further aspect of the present invention to provide a distendable flag that is configured to be kept distended under all wind and weather conditions.

[0008] It is a further aspect of the present invention to provide a distendable flag that is less susceptible to wear than known distendable flags adapted for being attached to flagpoles, in particular to wear along rims.

[0009] It is a further aspect of the present invention to provide a distendable flag assembly that is easy to assemble.

[0010] It is a further aspect of the present invention to provide a distendable flag that can be manufactured faster and easier than hitherto.

[0011] It is a further aspect of the present invention to provide a distendable flag as an alternative to the distendable flag known from International patent application no. WO96/33482.

[0012] It is a further aspect of the present invention to provide a distendable flag that can be manufactured with minimum sewing.

[0013] It is a further aspect of the present invention to provide a distendable flag with an adjusting system for the distending process.

[0014] The novel and unique whereby these and other aspects are achieved according to the present invention consists in that the means to receive opposite ends of the flexible bar includes at least one elongate hollow profile comprised of a tubular main body with at least one attachment flap along its length.

[0015] Compared to the solution proposed by International patent application no. WO96/33482 the casings are replaced with elongate hollow profile(s) to receive the opposite free ends of the flexible bar.

[0016] The at least one attachment flap defines an improved means for attaching the elongate hollow profile to the fabric of the flag in a manner that allows the tubular main body to be free and accessible to receive the flexible bar. During this attachment and combining of flag with elongate hollow profile the attachment flap is placed flat along the relevant fabric rim of the flag and prevents this fabric from wrinkling and folding so that the attachment can be made both flawless and strong, even though it is done very fast and in few steps.

[0017] So instead of providing an integral fabric casing in substantially the plane of the flag, the present invention utilises an elongate hollow profile patched to the flag along a fabric rim. The elongate hollow profile has a three-dimensional shape and protrudes from the plane of the flag when attached.

[0018] In one embodiment the at least one flag attachment flap protrudes along the length of the tubular main body in a plane offset from the longitudinal axis of said tubular main body thereby making the cross-section of the elongate hollow profile asymmetrical. By displacing the flag attachment flap towards the perimeter of the tubular main body the attachment flap will become easier to attach to the flag, simply because the tubular main body is less in the way, e.g. less in the way when using a sewing machine for sewing together flag and elongate hollow profile.

[0019] Optionally the at least one flag attachment flap protrudes along, or in close proximity to, a tangent plane to the tubular main body, e.g. at a perimeter of the tubular main body, so that both the wall of the tubular main body and the attachment flap define a convenient common support and contact surface towards the flag fabric.

[0020] The cross-section of the tubular main body may be substantially circular, which is especially expedient in case the flexible bar also has a circular cross-section.

[0021] Optionally a cross-section of the elongate hollow profile can be substantially P-shaped, which makes it particularly easy to arrange said profile along the appropriate flag rim flat on top of the fabric of the flag for attachment.

[0022] The modular flag assembly will work great with a single flexible bar that extends from a first length of elongate hollow profile at the flagpole rim to a second length of elongate hollow profile at the upper rim of the flag, however in order to take up less space when stored the flexible bar of the modular flag assembly can be comprised of at least two flexible bar members. A connecting component serves for connecting two flexible bar members in lengthwise extension of each other to make up the appropriate required length for creating the curvature that distends the flag when the opposite free ends of the modularly constructed flexible bar are inserted in the first length of elongate hollow profile and the second length of elongate hollow profile, respectively.

[0023] A flexible bar of several flexible bar members must be able to resist different weather conditions, e.g. so that the flexible bar members do not disconnect under strong wind conditions. To that aspect a connecting component in form of a coupling sleeve may be provided.

[0024] A particular efficient coupling sleeve may have a first part with a first opening and a first channel, a second part in extension of the first part, which second part has a second opening and a second channel, which first channel and second channel taper from the respective first opening and second opening towards a centre part of the coupling sleeve. The first channel and the second channel may be blind due to a solid centre part that constitutes a partition wall between opposite channels, so that a bar member in one channel cannot slide inside the axially opposite other channel. In some embodiments the internal tapering in itself is a means to prevent too long introduction of an inserting end of a bar member in the coupling sleeve. The tapering of the channels may also serve as the means for strong engagement with the flexible bar member. Towards the bottom end of a channel the diameter may gradually reduce to be slightly less than the diameter of the inserting end of the inserted flexible bar members so that a strong coupling by engagement and friction is achieved. Optionally, the connecting component can also have external tapering towards its opposite first opening and second opening to obtain a smooth exterior transition to the flexible bar when inserting ends of flexible bar members are mounted. The length of a flexible bar member can conveniently be longer than a elongate hollow profile so that coupling of two flexible bar members by means of the connecting component takes place outside the respective elongate hollow profile.

[0025] An elongate hollow profile may preferably be an extruded profile, such as an extruded profile made of a plastic material that maintains a given shape after curing, and is both durable and flexible after curing.

[0026] An exemplary synthetic plastic material useful for the present invention is a softened poly(vinyl chloride), PVC, which is chillproofed and otherwise thermally stable when subjected to fluctuating weather conditions.

[0027] The elongate hollow profile can e.g. be extruded as a long continuous profile, which is cut to appropriate lengths for use in the modular flag assembly according to the present invention. The appropriate length of a length of elongate hollow profile for attachment to either the flagpole rim or the upper rim depends a.o. on the size of the flag and on the conditions, which the distended flag is subjected to during and after being placed on the flagpole. Appropriate lengths may be taken from a reel or drum on which continuous extruded hollow profile is wound.

[0028] In order to hold the flexible bar inside the elongate hollow profiles, such as a first flag profile and a second upper rim profile, the modular flag assembly may comprise an end closure. The end closure plugs those ends of the tubular main bodies of said profiles where the flexible bar otherwise could exit beyond the border of the flag fabric, thus those free ends of said profiles farthest away from each other when mounted to the flag. So instead of blinding a conventional casing to achieve same end closing by using a sewing machine to stitch a bend rim, the free end of the elongate hollow profile is simply plugged by an end closure. Contrary to the conventional casings, which blend together with the rest of the flag fabric and therefore are difficult to find, the elongate hollow profile is tactile and easily detected and plugged. So not only are the free ends of the elongate hollow profile closed and blinded faster than the conventional casings, that need to be sewn to be closed, the elongate hollow profile is also much easier and faster to get firm hold on. Thus the manufacturing process for manufacturing the present invention is substantially faster than the manufacturing process for the prior art flag assembly of International patent application no. WO96/33482, so that valuable manufacturing time and costs can be saved.

[0029] A preferred end closure can e.g. be a screw plug. An exemplary screw plug has a free screw end that, via a shank extends into an insertion end. The shank may taper from the free screw end to the insertion end so that it is easy to fit inside a free open end of a tubular main body. Tapering also facilitates displacing the end closure a distance inside a tubular main body to adjust how deep the flexible bar can be inserted in a tubular main body, and thus adjust the curvature of the flexible bar when inserted. A further option is to fit flexible bars of different lengths into different lengths of elongate hollow profiles attached to the flag. To facilitate displacing and removing the screw plug, the screw end may have a slot to engage a tool, such as a screwdriver. The shank may be threaded so that it can be screwed by rotation very easily inside the tubular main body.

[0030] The flexible bar can be made of any of the materials selected from the group comprising steel, glass fibre, carbon-reinforced plastics or another flexible ma-

terial, alone or in combination.

[0031] Since at least some of the flexible bar is exposed to the environment a flexible tubular sheet may be provided on at least some of the length of the flexible bar, in particular the part of the flexible bar outside the tubular main body, to protect the flexible bar from light and wear once the flag has been hoisted in the flagpole. The flexible tubular sheet may even be used as a part of the decoration of the modular flag assembly, e.g. have a certain color or decoration.

[0032] The present invention also relates to a method of manufacturing a modular flag component for the modular flag assembly described above.

[0033] The method comprises the steps of

- providing a flag, a first length of elongate hollow profile, and a second length of elongate hollow profile,
- attaching the first length of the elongate hollow profile to a flag pole rim of the flag a distance from an upper rim of the flag by sewing together the flagpole rim and a first attachment flap belonging to the first length of the elongate hollow profile, and
- attaching the second length of the elongate hollow profile to the upper rim at, or at the vicinity of, a free upper corner of the flag by sewing together the upper rim and a second attachment flap belonging to the second length of the elongate hollow profile.

[0034] The present invention also relates to a method of assembling the modular flag assembly described above.

[0035] The method comprises the steps of

- providing a modular flag assembly including a flag provided with attached elongate hollow profiles for receiving a flexible bar,
- assembling the required number of flexible bar members of the flexible bar by engagingly inserting in a connecting component, such as a coupling sleeve, the opposite ends of two flexible bar members to be connected in lengthwise extension of each other,
- inserting the free ends of the assembled flexible bar in the elongate hollow profiles,
- inserting an end closure at those free ends of the tubular main body of the elongate hollow profiles where the flexible bar otherwise can exit beyond a flag rim, and optionally,
- adjusting the position of the end closure inside the respective tubular main body by screwing the end closure inside said tubular main body.

[0036] The invention is explained in greater detail below with reference to the accompanying drawing, in which

fig. 1a is a perspective enlarged scale view of a small length of a first embodiment of an elongate hollow profile seen from one longitudinal side,

fig. 1b shows the same seen from the opposite longitudinal side,

fig. 2a is a perspective, enlarged scale, view of a small length of a second embodiment of a elongate hollow profile seen from one longitudinal side,

fig. 2b shows the same seen from the opposite longitudinal side,

fig. 3 shows the attachement of the elongate hollow profile seen in figs. 1 and 2 to a flag,

fig. 4 is a perspective, enlarged scale, view of a small length of a third embodiment of a elongate hollow profile seen from one longitudinal side,

fig. 5 is a perspective, enlarged scale, exploded view of the first embodiment of an elongate hollow profile seen in figs. 1a and 1b with an axially aligned end closure,

fig. 6 is a perspective view of two flexible bar members axially aligned with a connecting component,

fig. 7 is an enlarged longitudinal sectional view taken along line VII-VII in fig. 6 of the connecting component,

fig. 8 shows in perspective, an enlarged scale view of a first length of the elongate hollow profile of the second embodiment being guided on a flexible bar member,

fig. 9 shows in perspective an enlarged scale view of a first length of the second embodiment of a elongate hollow profile with an end closure as a backstop for a first flexible bar member,

fig. 10 shows in perspective an enlarged scale view of a second length of the second embodiment of a elongate hollow profile with an end closure as a backstop for a second flexible bar member, and

fig. 11 shows a modular flag assembly on a flagpole.

[0037] Figs. 1a and 1b show in perspective a first embodiment of a elongate hollow profile 1 that has a tubular main body 2 defining a longitudinal axis X. An attachment flap 3 protrudes in a plane offset this longitudinal axis X along the length of the tubular main body 2, which plane is a tangent plane to the exterior perimeter of said tubular main body 2.

[0038] Figs. 2a and 2b show in perspective a second embodiment of a elongate hollow profile 4 from opposite longitudinal sides. The elongate hollow profile 4 has a tubular main body 5 and an attachment flap 6 that protrudes in a plane offset the longitudinal axis X' along the

length of the tubular main body 5, which plane is slightly retracted from the tangent plane to the exterior perimeter of said tubular main body 5 towards the longitudinal axis X', in which case the tubular main body 5 of the second embodiment of the elongate hollow profile 4 can protrude slightly on opposite sides of a flag if desired.

[0039] In the illustration of fig. 3 a small length of the first embodiment of the elongate hollow profile 1 according to the present invention has been sewn together with a fragmentarily shown flag 7 along sewing 8. In order to do that the elongate hollow profile 1 is placed along a selected rim part 9 of the flag 7 in a manner wherein the tubular main body 2 faces upwards and the attachment flap 3 is aligned along the rim part 9. This arrangement allows the flag rim 9 with the elongate hollow profile 1 on top of it to be placed in a sewing machine (not shown) in order to be stitched together without the tubular main body 2 is in the way, simply because the tubular main body 2 protrudes to the free beyond or adjacent the rim of the flag. So by arranging the elongate hollow profile 1 with the tubular main body 2 facing away from the flag 7 instead of towards the flag 7 when mounted in the sewing machine (not shown) a presser foot (not shown) can be operated freely to make the sewing 1 in the sewing direction indicated by arrow D. This arrangement is preferred although not mandatory in that the opposite arrangement where an attachment flap is placed towards the rim, and the tubular main body is facing towards the centre of the flag fabric, also is possible, although less preferred because the flexible bar is then retracted towards the flag instead of away from the flag, which might result in a less elegant distending result.

[0040] The almost perpendicular transition between the tubular main body 2 and the attachment flap 3 may advantageously also serve as a guide surface for the presser foot when making the sewing. An additional advantage is that the elongate hollow profile 1 holds the flag fabric 7 in place when making the sewing 8 so that this fabric 7 does not fold of wrinkle. Once the elongate hollow profile 1 is firmly secured to the flag 7 this part of the flag is even substantially stretched and self-supported, and keeps this rim part extended.

[0041] For illustrative purpose the first embodiment of an elongate hollow profile is used in fig. 3 to show how the elongate hollow profile of the present invention is attached by sewing to the flag rim. Any embodiment of elongate hollow profile of the present invention can be attached in a similar manner, such as e.g. the second embodiment shown in figs. 2a and 2b, and the third embodiment shown in fig. 4.

[0042] The third embodiment of an elongate hollow profile 10 corresponds substantially to the first embodiment of an elongate hollow profile 1 and for like parts same reference numerals are used. The third embodiment of a elongate hollow profile 10 differs in having two opposite attachment flaps 3a,3b, between which the rim part 9 of the flag 7 is arranged to be attached by sewing to said elongate hollow profile 10. The third embodiment of a elongate hollow profile 10 will always protrude beyond the rim 9, whereas the first embodiment of an elongate hollow profile 1 and the second embodiment of an elongate hollow profile 4 both offer the possibility to have the respective tubular main body 2;5 superjacent and overlapping the flag fabric 7 if expedient and/or preferred.

[0043] Fig. 5 illustrates an end closure 11 axially aligned with the logitudinal axis X of the first embodiment of the elongate hollow profile 1. The end closure 11 has a threaded tapered shank 12 with a slotted 14 free screw end 13 and an opposite insertion end 15. The slot 14 serves to receive a screw driver (not shown) to displace the end closure 11 along the axis X inside the bore 16 of the tubular main body 2 as far as desired to achieve an appropriate length of the flexible bar seen in fig. 6, and for removing the end closure 11 from said bore 16 again by rotating in opposite direction also using a screw driver. Rotation inside the bore 16 is facilitated by the threading 17 of the shank 12 and the tapering of same. The threading 17 engages the interior wall of the elongate hollow profile, so that unintentional disengagement between end closure 11 and elongate hollow profile 1 cannot take place.

[0044] The perspecitve view of fig. 6 shows a first flexible bar member 18, a connecting component 19 and a second flexible bar member 20.

[0045] Carbon fibre is particular suited for manufacturing the flexible bar members of the present invention because of its extremely high tensile strength combined with lightweight and good tensile modulus. Furthermore carbon fibre is substantially lighter than metal for the same strength, and the high degree of resistance to fatigue failure, the very low coefficient of expansion and the good resistance to both acid and alkaline corrosion makes carbon fibre, including carbon fibre composites, a preferred material for manufacturing the flexible bar members. Emphasis is made that a bar member need not be solid, it can also be a tube, and it can be made of other materials than carbon fibre, such as metal or glass fibres. Furthermore, as long as the cross-section of the flexible bar is selected to fit to engage firmly inside the tubular main body, any such cross-sections are foreseen within the scope of the present invention.

[0046] The first flexible bar member 18 has a first free end 21 with a first end cover 22 and an opposite first connecting end 23 that is inserted into a first tapering channel 24 of the connecting component 19. In a similar manner the second flexible bar member 20 has a second free end 25 with a second end cover 26 and an opposite second connecting end 27 that is inserted into a second tapering channel 28 of the connecting component 19. The channels 24;28 of the connecting component 19 are seen better in the longitudinal sectional view of fig. 7. The end covers 22,26 of the present embodiment of a flexible bar are blunt and/or domed to make inserting into a tubular main body 2;5 easy.

[0047] A first part 29 of the connecting component 19 has a first opening 30 to the first tapering channel 24.

The first part 29 tapers externally as a frustocone from the first opening 30 towards a wider partition wall 31, which partition wall also defines the bottom of the first channel 24. The first opening 30 is wider than the first tapering channel 24 at the bottom to force-fittingly engage a first connecting end 23 of a first flexible bar member 18. The partition wall 31 is thus a bottom back-stop for the first connecting end 23 of the first flexible bar member 18.

[0048] Similarly, a second part 32 of the connecting component 19 has a second opening 33 to the second tapering channel 28. The second part 32 tapers externally as a frustocone from the second opening 33 towards the wider partition wall 31, which partition wall also defines the bottom of the second tapering channel 28. The second opening 33 is wider than the second tapering channel 28 at the bottom to force-fittingly engage the second connecting end 27 of the second flexible bar member 20. The partition wall 31 is thus the bottom back-stop for the second connecting end 27 of the second flexible bar member 20 as well.

[0049] To summarize the present embodiment of a connection component 19 is a coupling sleeve consisting of two frustocones assembled at their bases to a common partition wall 31, and both having bores or channels 24;28 that taper towards said partition wall 31. So the channels 24;28 are finished to the required tolerance based on the diameter of the connecting ends 23;27 of the flexible bar members 18;20.

[0050] Fig. 8 illustrates how the first flexible bar member 18 slides inside the bore 16 of the tubular main body 5 of a first length of elongate hollow profile 4a. The first free end 21 of the first flexible bar member 18 is introduced into the bore 16 with the first end cover 22 in front, and guided inside the bore 16 of the length of the tubular main body 5.

[0051] In fig. 9 the end closure 11 has been mounted, e.g. screwed, into the first end opening 34a of the bore 16 of the tubular main body 5 of the first length of elongate hollow profile 4a to plug this first end opening 34a, thereby keeping the first flexible bar member 18 constrained inside the bore 16 of said first length of elongate hollow profile 4a, which first flexible bar member 18 otherwise would pass out of the first end opening 34a of the tubular main body 5, as shown in fig. 8.

[0052] In a similar manner, as seen in fig. 10, a second flexible bar member 20 is inserted into the bore 16 of a second length of elongate hollow profile 4b, the second end opening 34b has been plugged with an end closure 11 as well.

[0053] Fig. 11 shows the modular flag assembly in use. The flag 7 has an upper rim 35 and a flag pole rim 36 facing a flagpole 37. A first flag profile in form of a first length of elongate hollow profile 4a has been attached by sewing the first attachment flap 3a to the flagpole rim 36 a suitable distance below the upper flagpole corner 39 opposite the upper free corner 38. A second upper rim profile in form of a second length of elongate hollow profile 4b has been attached by sewing the second attachment flap 3b to the upper rim 35 at the upper free corner 38 of the flag 7. Opposite free ends 21,25 of a flexible bar 40, comprised of three flexible bar members 18,20,41 connected by coupling sleeves 19a,19b, are inserted in respective end closed 11 first and second lengths of elongate hollow profile 4a,4b whereby said flexible bar 40 assumes a bend curvature that inevitably distends the flag 7. The distance of the flag profile 4a from the upper flag pole corner 39, the distance between the flag profile 4a and the upper rim profile 4b, and the length of the flexible bar 40 determines the curvature of said flexible bar 40 and thus the extent and degree of distending of the flag 7. In the present exemplary embodiment the first flag profile 4a is placed a distance corresponding to about half the length of the flexible bar 40 from the upper rim 35. The rim positions of the first flag profile 4a and the second upper rim profile 4b varies depending in particular on the length of the flexible bar 40 and the need for curvature to distend the flag 7.

[0054] The flag 7 may be hoisted in distended state using the flag halyard 42 attached to an upper ring assembly 43 at the upper flag pole corner 39 of the flag 7, and a lower ring assembly 44 at the lower flag pole corner 45 of the flag 7. Alternative means for hoisting and securing the flag to the flagpole is within the scope of the present invention.

[0055] The modular flag assembly is shown in fig. 11 on a vertical flagpole 37, however the person skilled in the art of flagpoles will understand that the present invention can be used on flag poles in any angular orientation, including flagpoles suspended in angular relation to e.g. a wall of a building, e.g. protruding from said wall at an angle of about 45°.

[0056] The distending of the flag can be changed according to desire and in response to the position and length of the elongate hollow profile as well as to the resilience of the flexible bar.

Claims

1. A modular flag assembly comprising a flag (7) having a flag pole rim (36) and an upper rim (35), which rims (35;36) have means to receive opposite ends (21;25) of a flexible bar (40); said flexible bar (40) forms a curve that extends upwards adjacent a flagpole (37) towards a free upper corner (38) of the flag (7) to keep said flag (7) distended while it is attached to the flagpole (37) or the like, the means to receive opposite ends (21;25) of the flexible bar (40) includes at least one elongate hollow profile (1;4;4a,4b;10) comprised of a tubular main body (2;5), **characterised in that** the tubular main body (2; 5) has at least one attachment flap (3;6;3a,3b) along it's length.

2. A modular flag assembly according to any of claim 1, **characterised in that** the at least one flag attach-

ment flap (3;6;3a,3b) protrudes along the length of the tubular main body (2;5) in a plane offset from the longitudinal axis (X;X') of said tubular main body (2; 5), optionally the at least one flag attachment flap (3;6;3a,3b) protrudes along, or in close proximity to, a tangent plane to the tubular main body (2;5).

3. A modular flag assembly according to any of claims 1 or 2, **characterised in that** a cross-section of the tubular main body (2;5) is substantially circular, optionally a cross-section of the elongate hollow profile (1;4;4a,4b;10) is substantially P-shaped.

4. A modular flag assembly according to any of the preceding claims 1, 2 or 3, **characterised in that** the flexible bar (40) is comprised of at least two flexible bar members (18;20;41), and a connecting component (19;19a,19b) for connecting two flexible bar members (18;20;41) in lengthwise extension of each other.

5. A modular flag assembly according to claim 4, **characterised in that** the connecting component (19;19a,19b) is a coupling sleeve, the coupling sleeve has

- a first part (29) with a first opening (30) and a first channel (24),
- a second part (32) in extension of the first part (29), which second part (32) has a second opening (33) and a second channel (28),
- which first channel (24) and second channel (28) tapers from the respective first opening (30) and second opening (33) towards a centre part (31) of the coupling sleeve.

6. A modular flag assembly according to any of the preceding claims 1 - 5, **characterised in that** the elongate hollow profile (1;4;4a,4b;10) is an extruded profile (1;4;4a,4b;10) of a plastic material that maintains a given shape after curing.

7. A modular flag assembly according to any of the preceding claims 1 - 6, **characterised in that** it comprises an end closure (11) for a tubular main body (2; 5).

8. A modular flag assembly according to claim 7, **characterised in that** the end closure (11) is a screw plug, optionally a screw plug having a free screw end (13) that via a shank (12) extends into an insertion end (15), which shank (12) tapers from the free screw end (13) to the insertion end (15), optionally the screw end (13) has a slot (14), optionally the shank (12) is threaded (17).

9. A method of manufacturing a modular flag component for a modular flag assembly according to any of the preceding claims 1 - 8, **characterised in** the steps of

- providing a flag (7), a first length of elongate hollow profile (4a), and a second length of elongate hollow profile (4b),
- attaching the first length of the elongate hollow profile (4a) to a flag pole rim (36) of the flag (7) a distance from the upper rim (35) of the flag (7) by sewing together the flagpole rim (36) and a first attachment flap (3a) belonging to the first length of the elongate hollow profile (4a), and
- attaching the second length of the elongate hollow profile (4b) to the upper rim (35) of the flag (7) at, or at the vicinity of, a free upper corner (38) of the flag (7) by sewing together the upper rim (35) and a second attachment flap (3b) belonging to the second length of the elongate hollow profile (4b).

10. A method of assembling a modular flag according to any of the preceding claims 1 - 9, **characterised in** the steps of

- providing a modular flag assembly including a flag (7) provided with attached elongate hollow profiles (1;4;4a,4b;10) for receiving a flexible bar (40),
- assembling the required number of flexible bar members (18;20;41) of the flexible bar (40) by engagingly inserting in a connecting component (19;19a;19b), such as a coupling sleeve, the opposite ends (23;27) of two flexible bar members (18;20) to be connected in lengthwise extension of each other,
- inserting the assembled flexible bar (40) in the elongate hollow profiles (1;4;4a,4b;10),
- inserting an end closure (11) at those ends (34a,34b) of the tubular main body (2;5) of the elongate hollow profiles (1;4;4a,4b;10) where the flexible bar (40) otherwise can exit beyond a flag rim (9; 35; 36), and optionally,
- adjusting the position of the end closure (11) inside the respective tubular main body (2;5) by displacing, optionally by screwing, the end closure (11) inside said tubular main body (2;5).

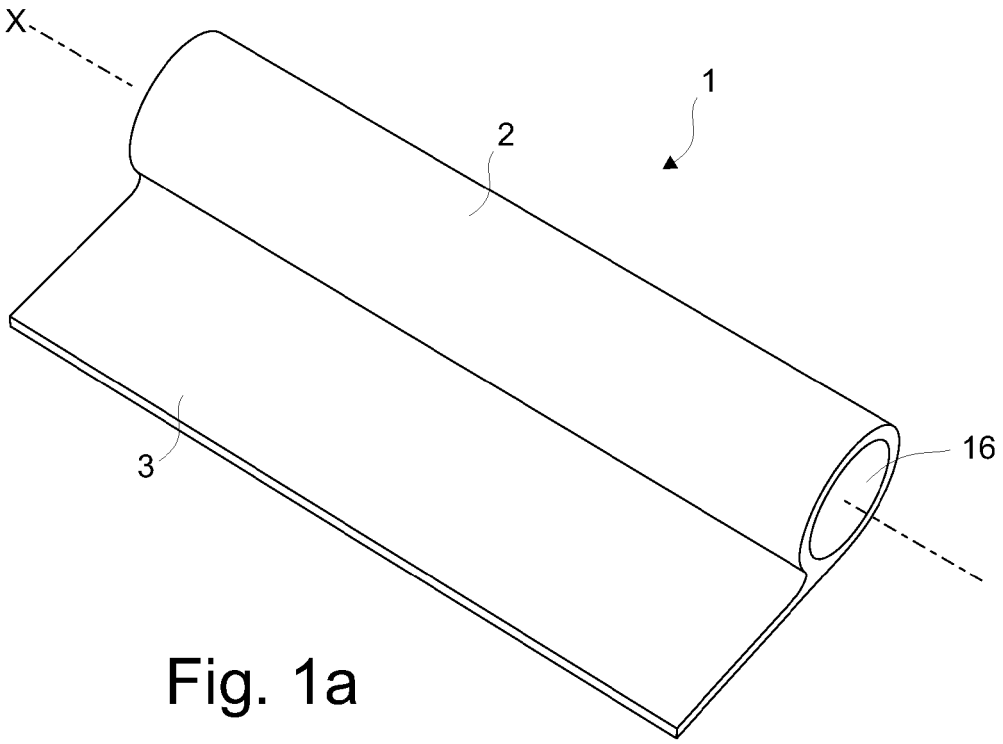

Fig. 1a

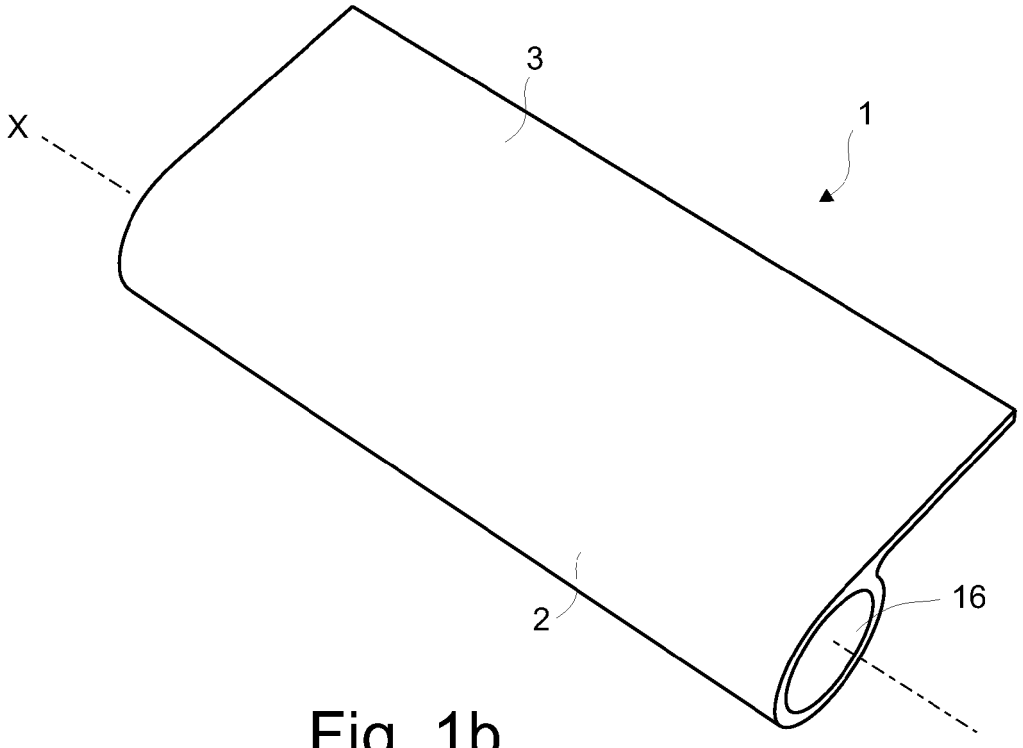

Fig. 1b

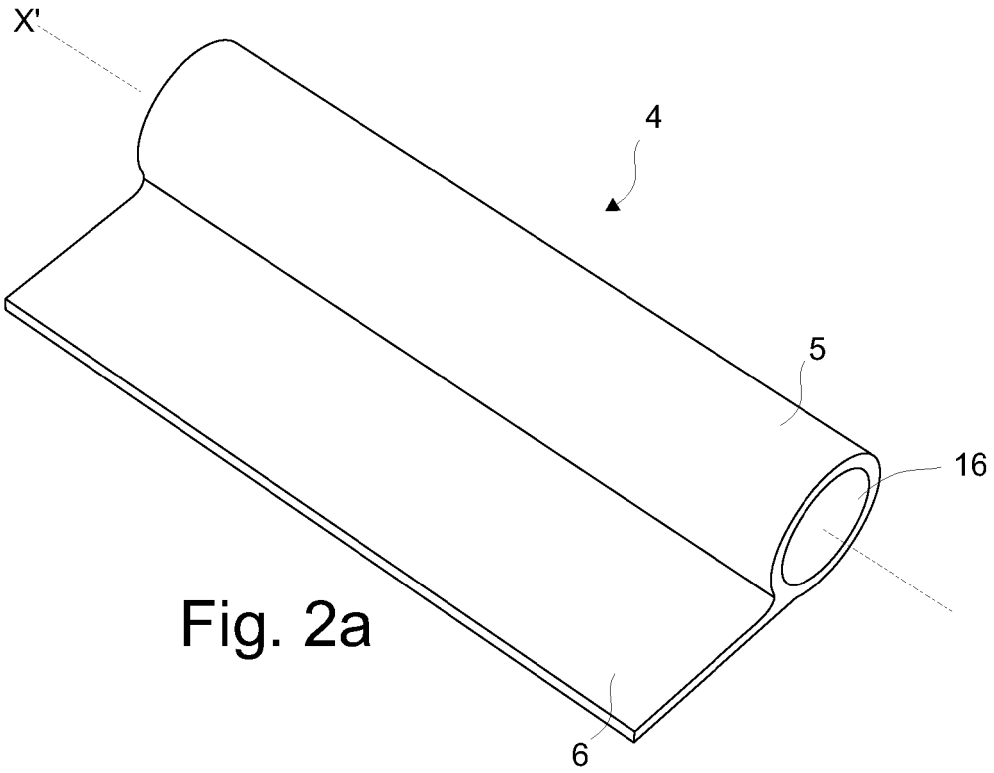

Fig. 2a

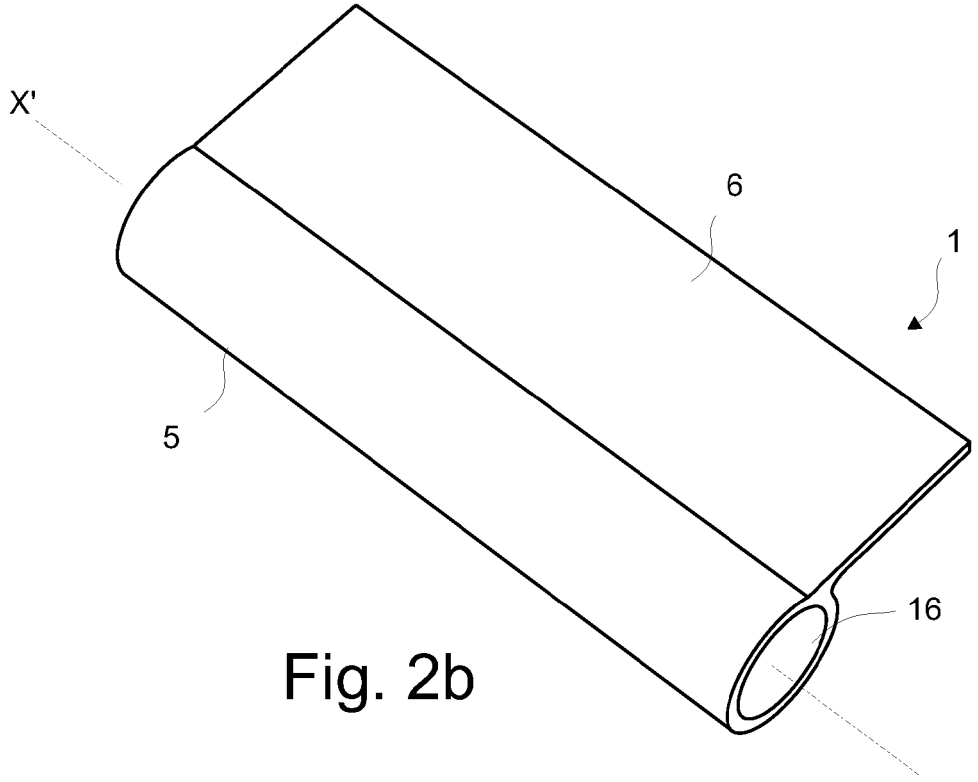

Fig. 2b

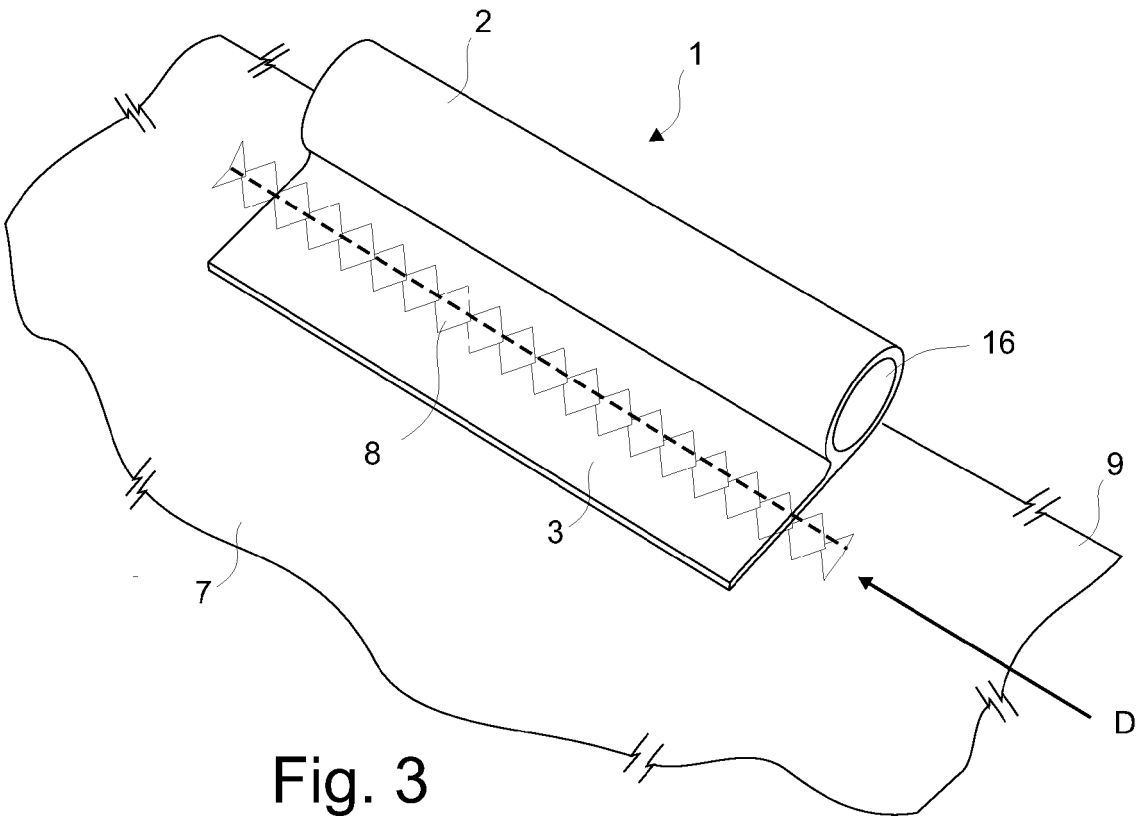

Fig. 3

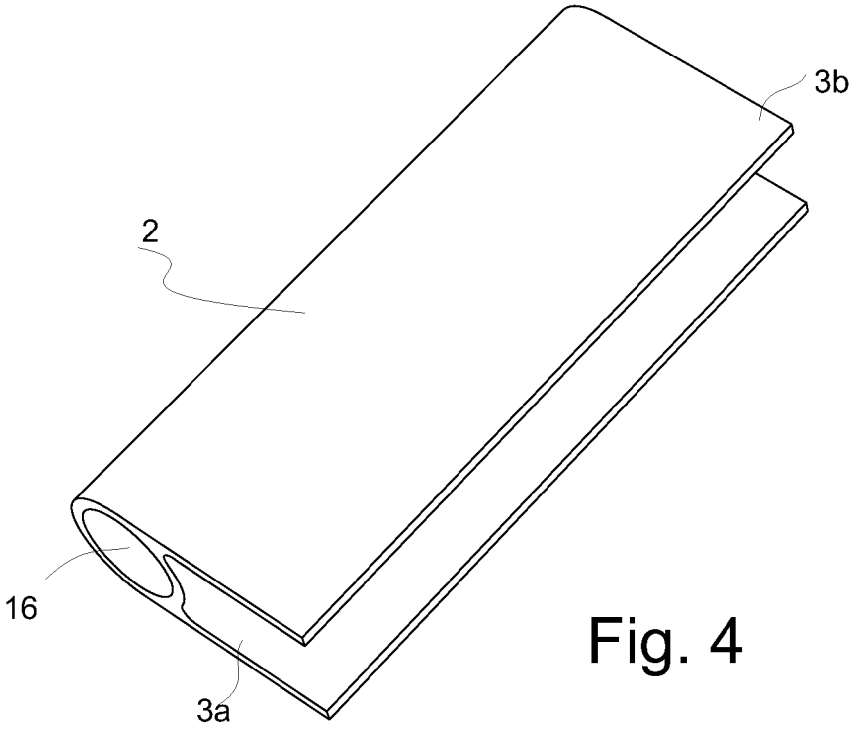

Fig. 4

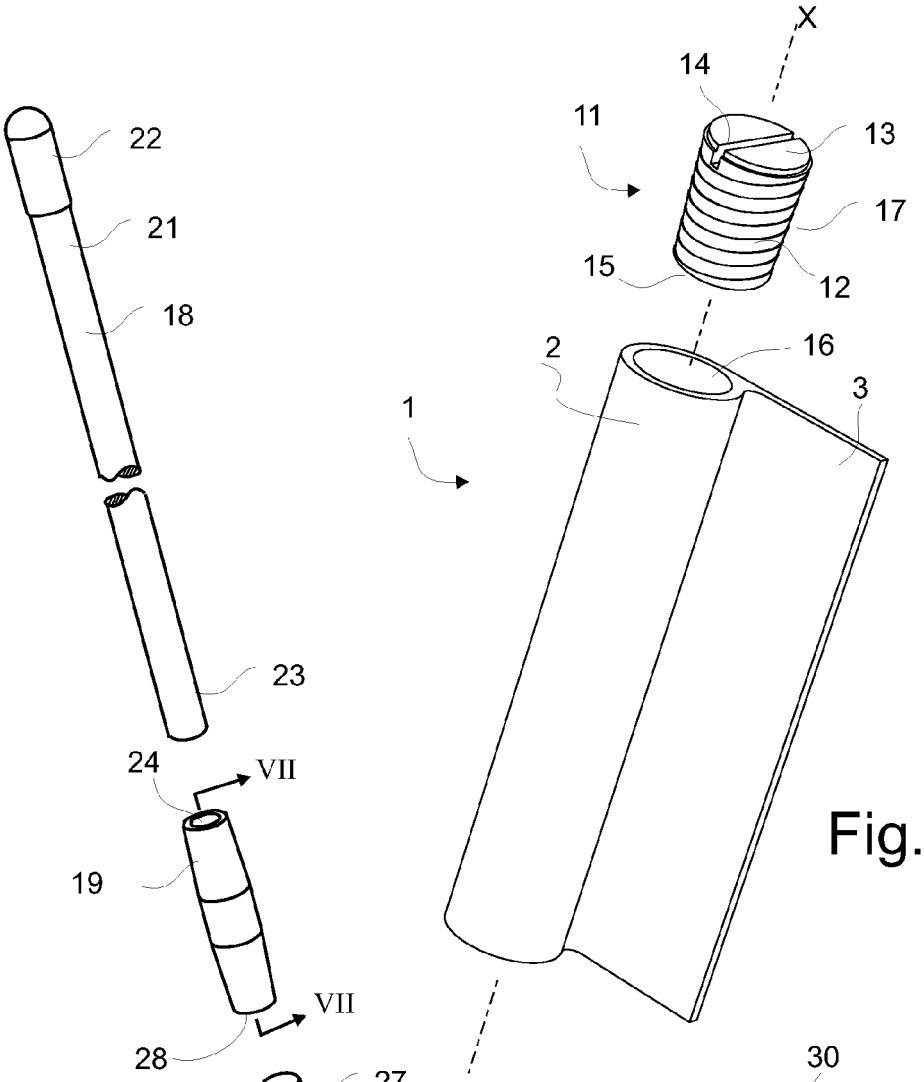

Fig. 5

Fig. 6

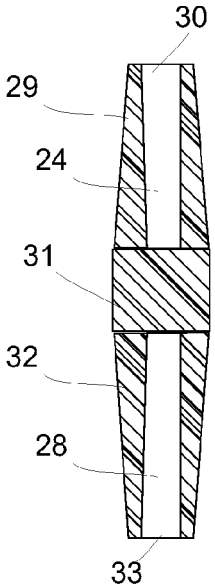

Fig. 7

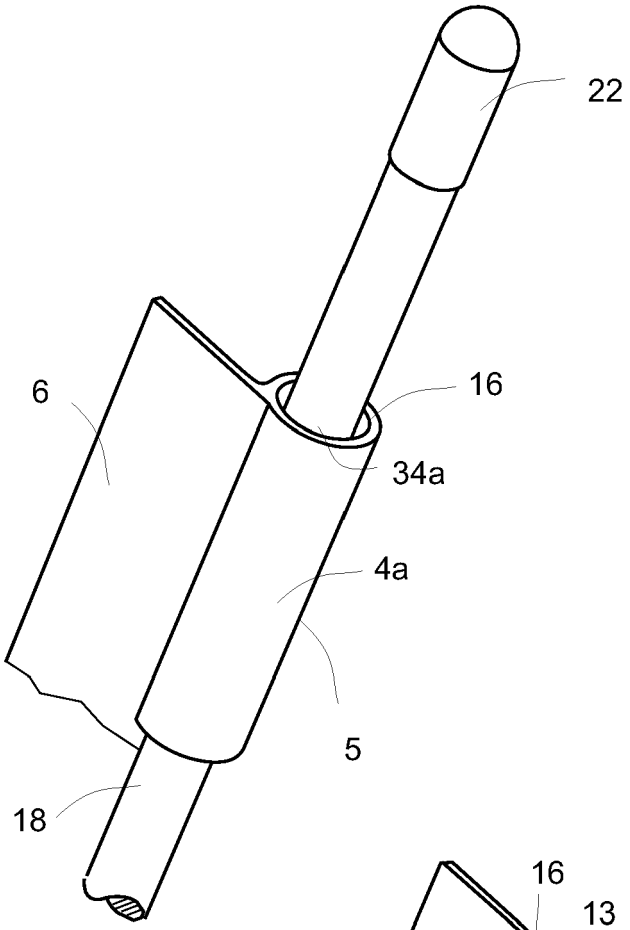

Fig. 8

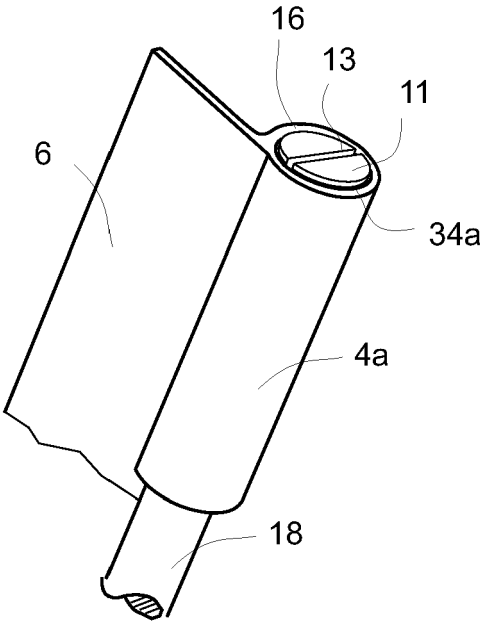

Fig. 9

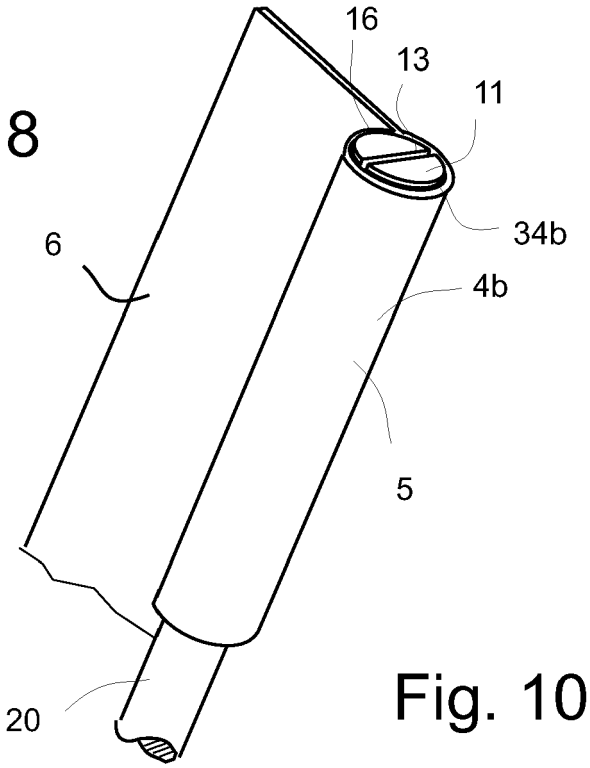

Fig. 10

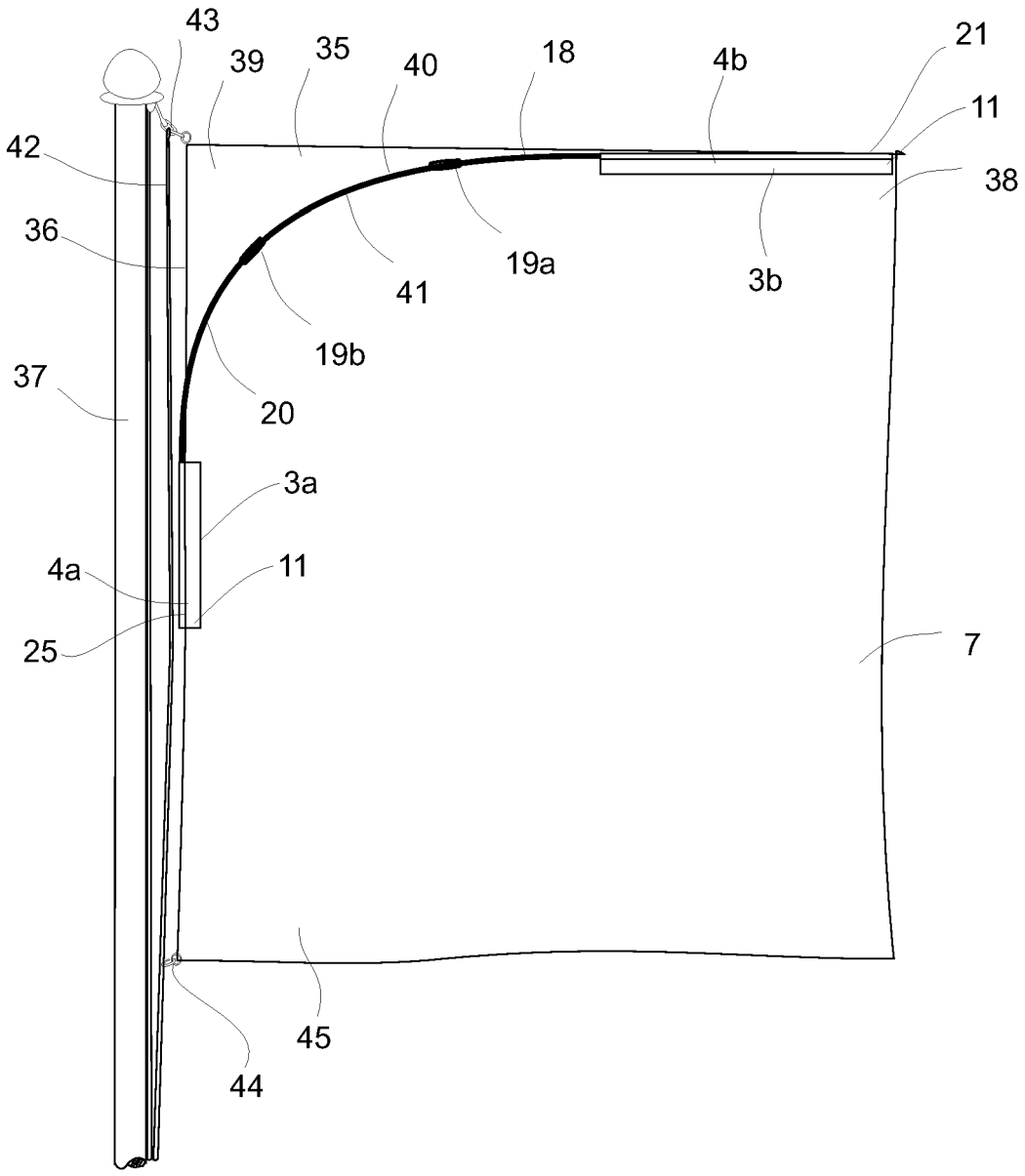

Fig. 11

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EUROPEAN SEARCH REPORT

Application Number
EP 16 15 5868

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 July 2016	Zanna, Argini

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