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FIG.1

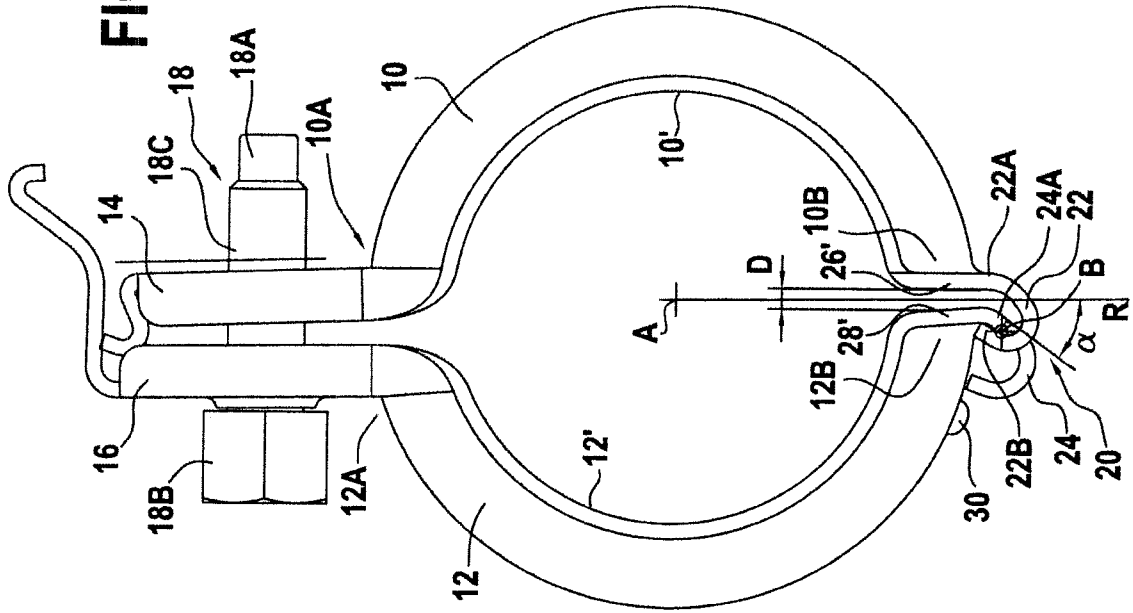


FIG.6

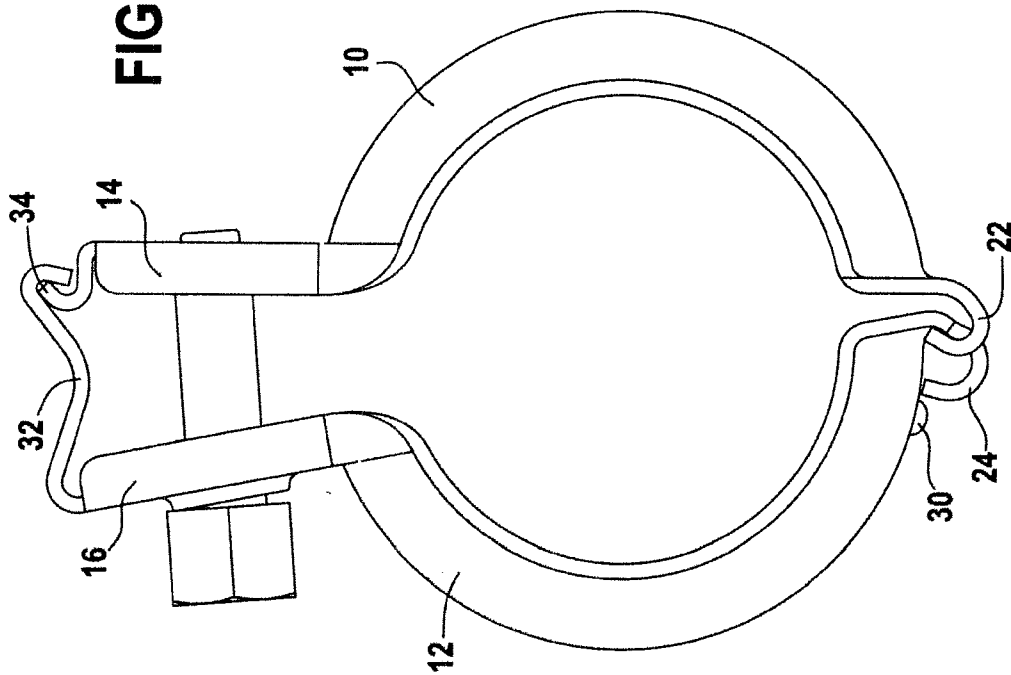
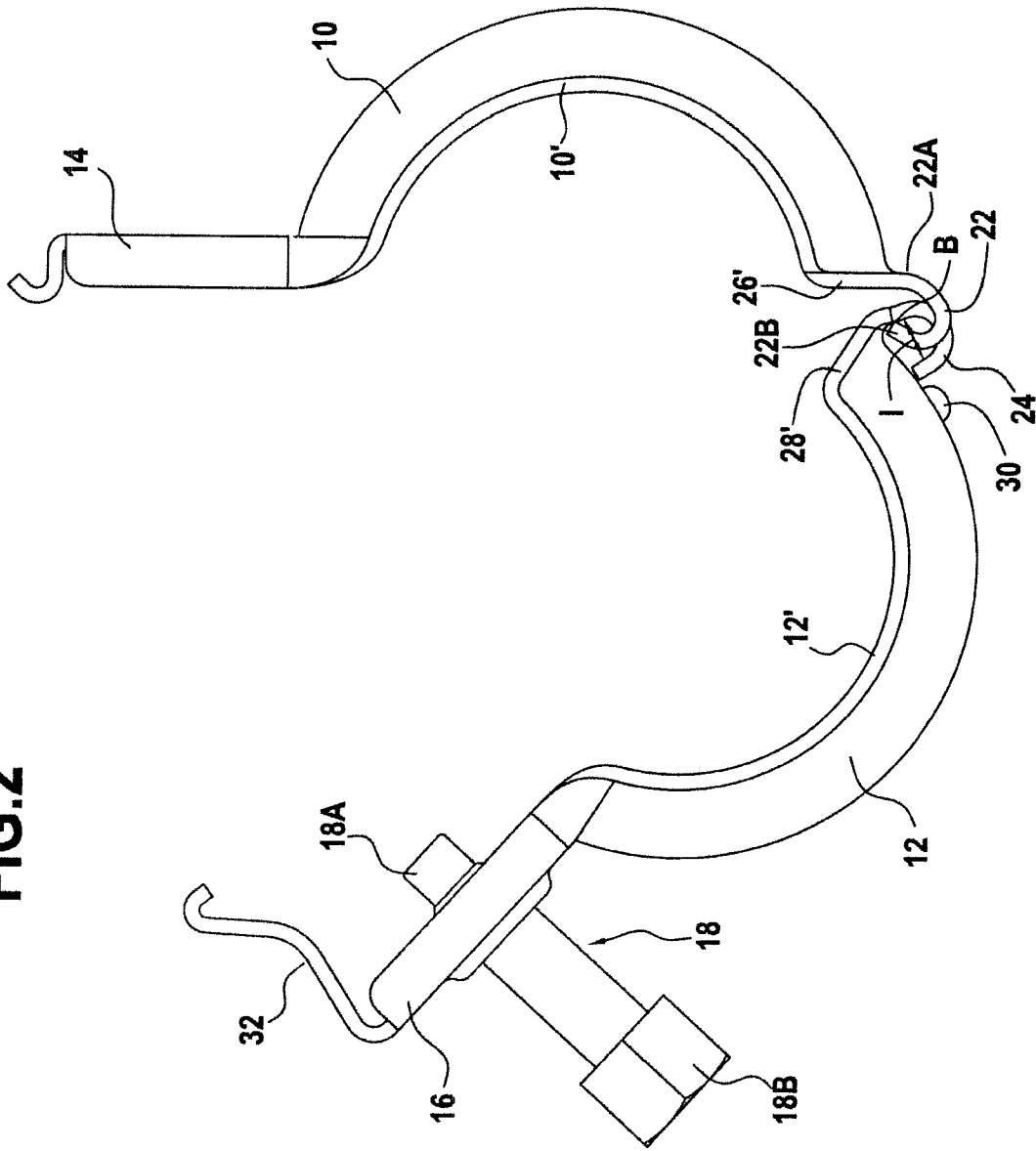


FIG.2



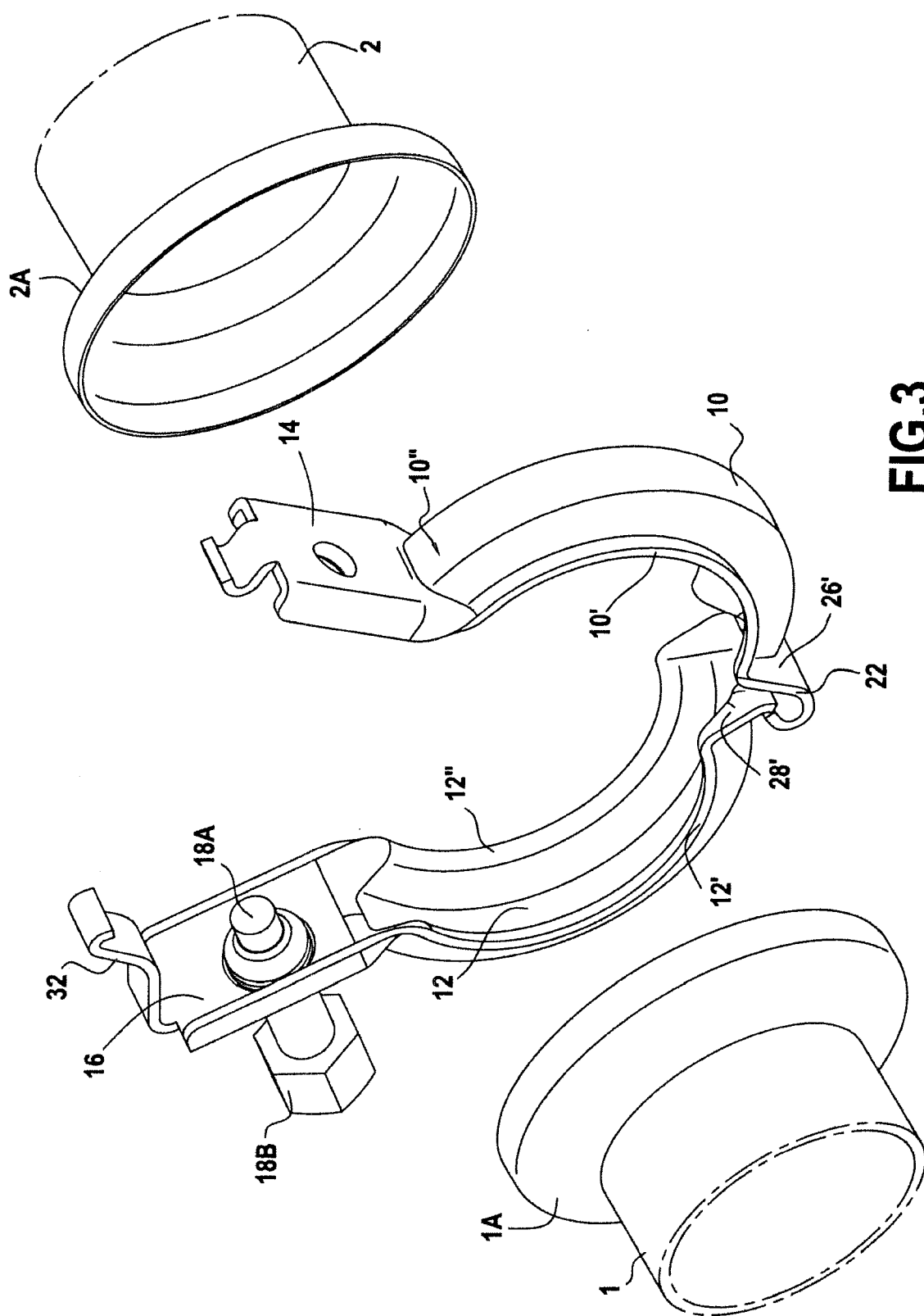
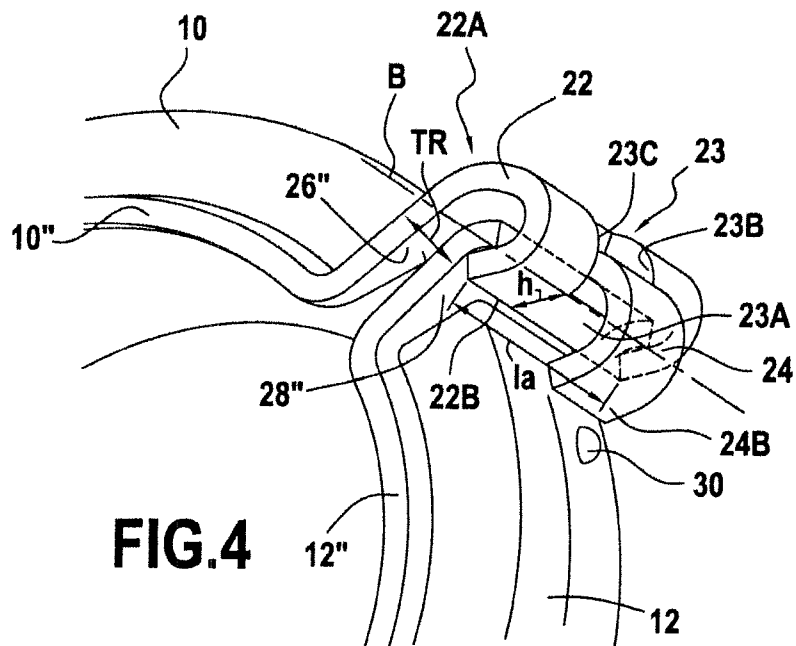
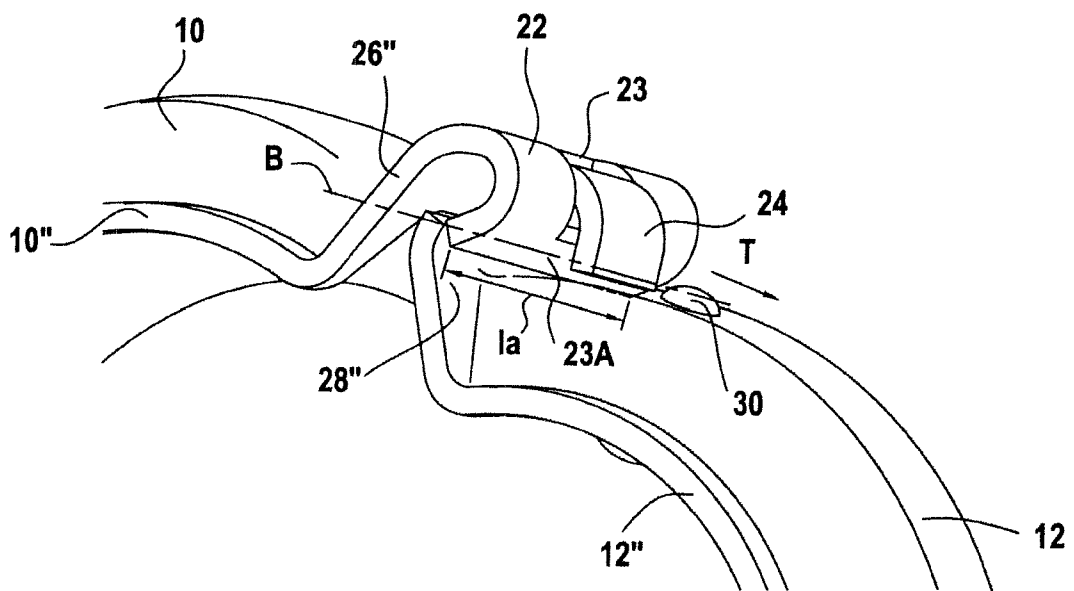
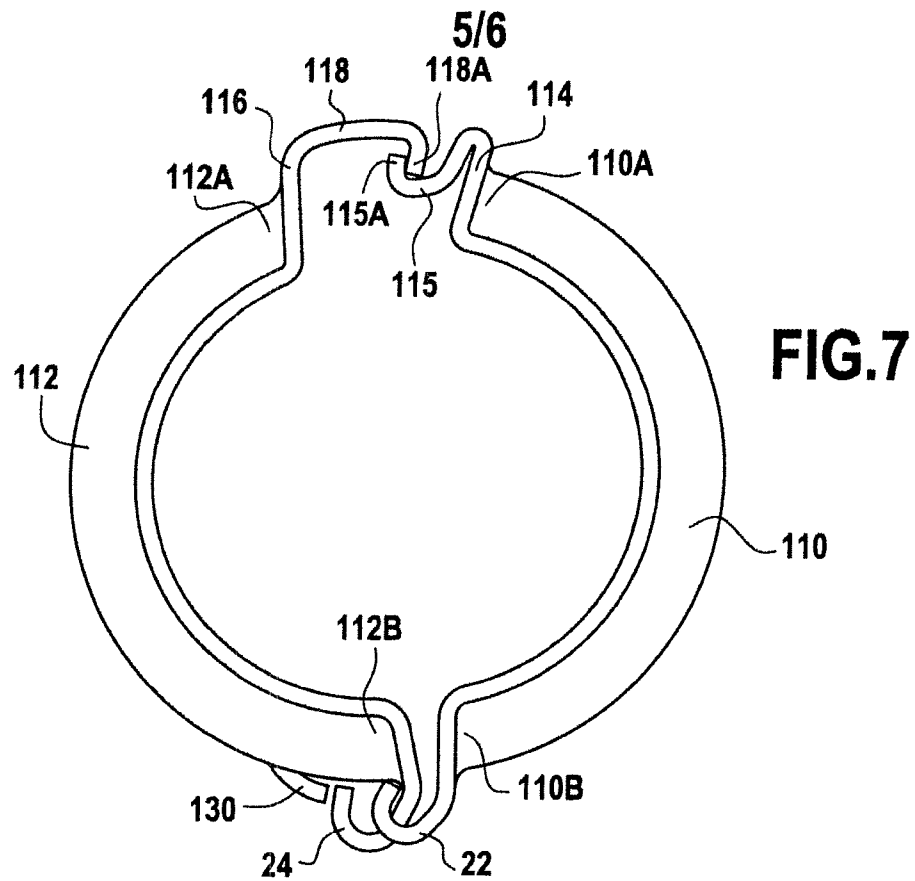
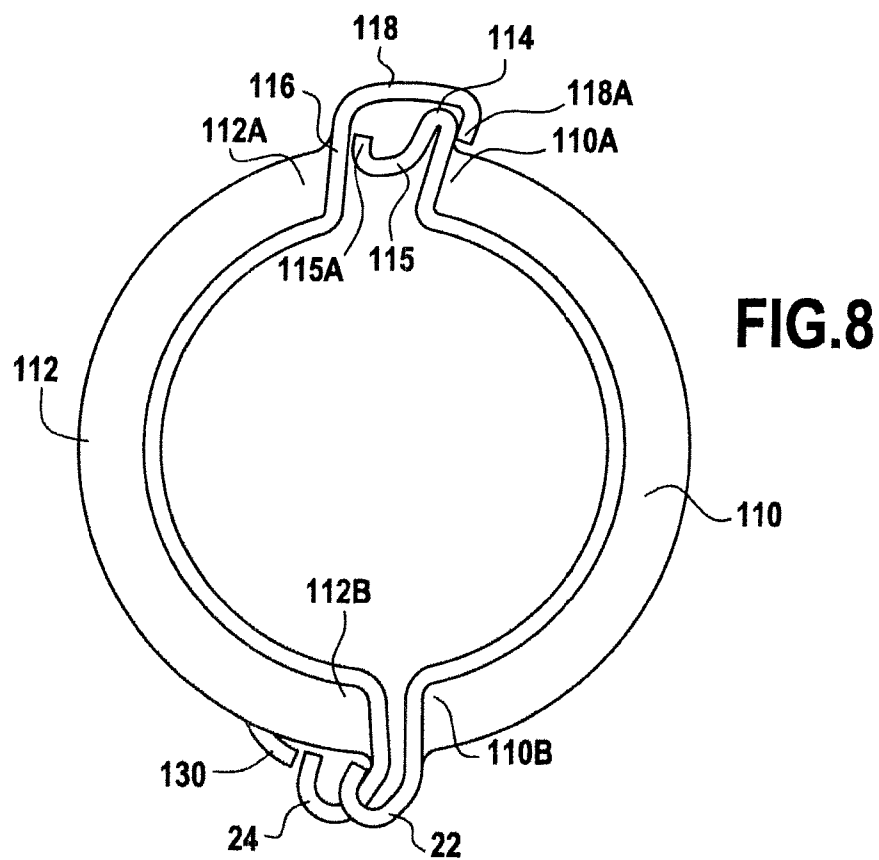
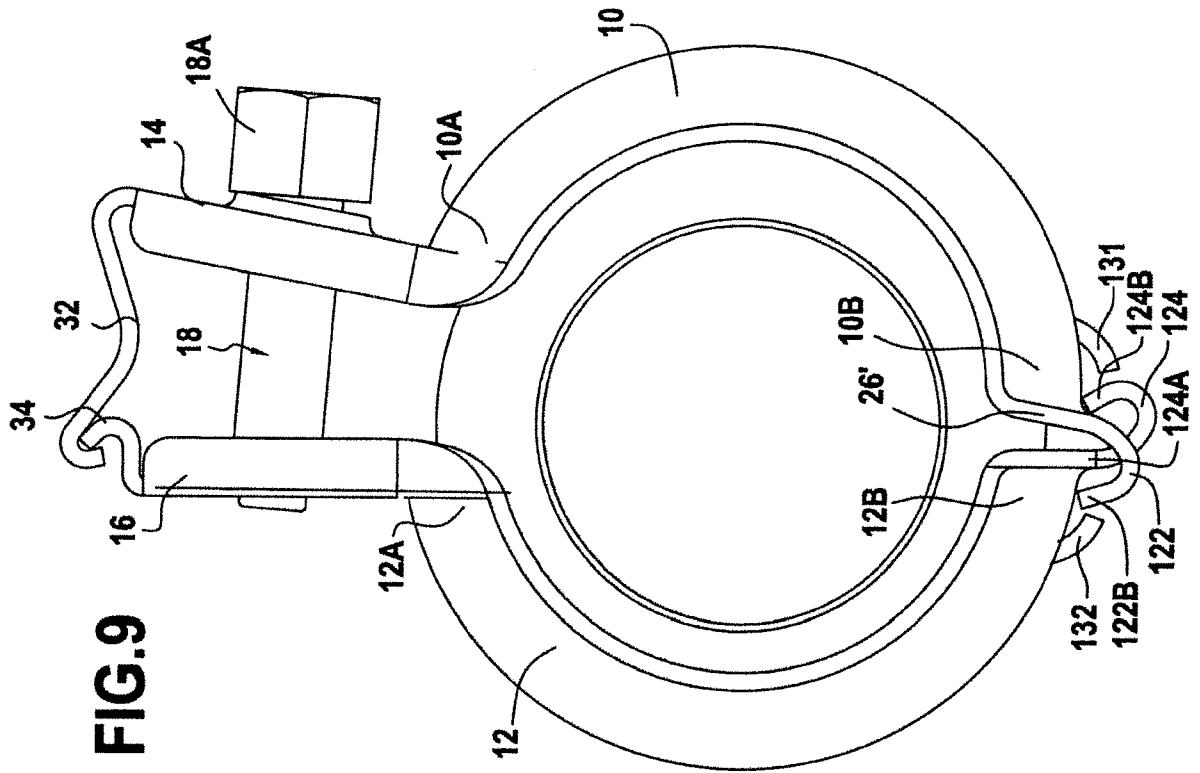
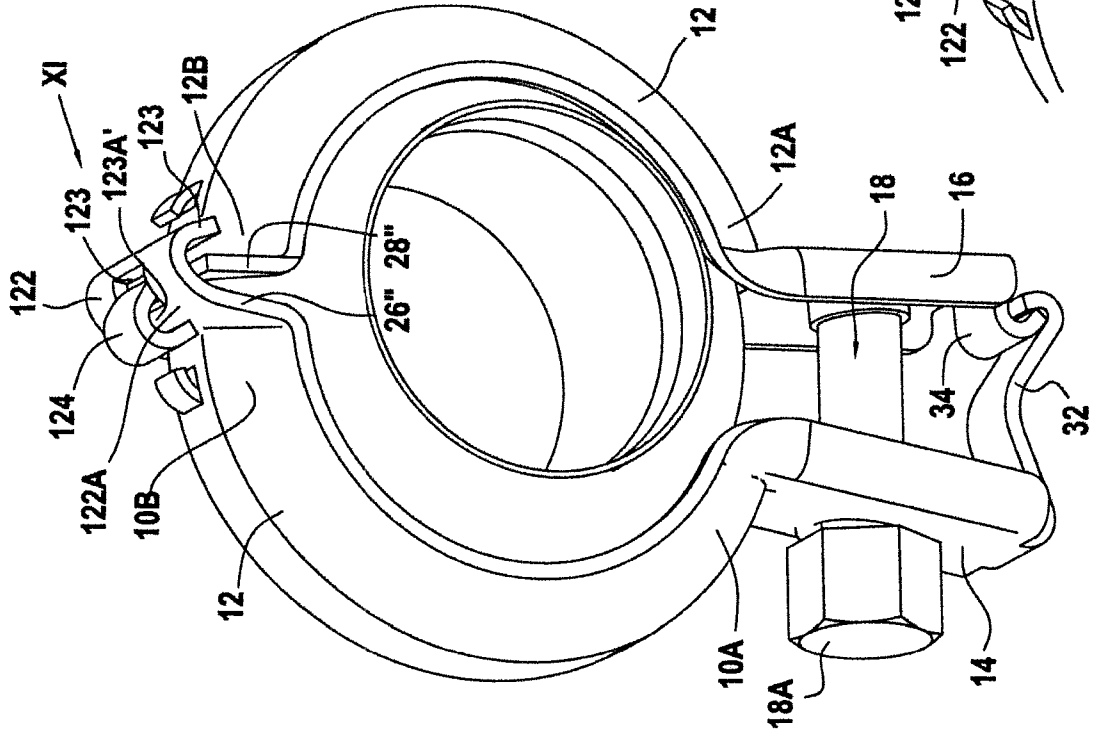
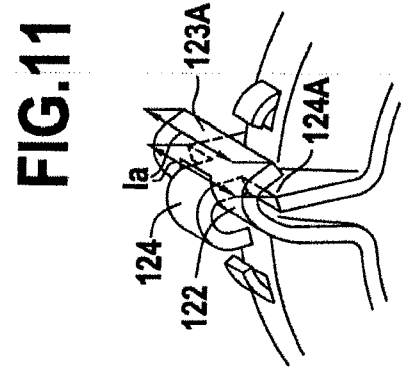


FIG.3







A HINGED CLAMPING COLLAR

The present invention relates to a clamping collar made up of two half-shells, each half-shell having a first end provided with an outwardly projecting
5 tightening tab, the tightening tabs co-operating with each other to tighten the collar, the second ends of the half-shells co-operating with each other via a hinge.

In such known collars, the half-shells can be made in one piece so as to form a continuous strap, and the
10 hinge can be formed by a zone of weakness in said strap, making it possible, by folding said zone of weakness, for the half-shells to be hinged relative to each other. Unfortunately, the presence of such a zone of weakness affects clamping performance. Firstly, the tightening
15 tension to which the strap can be subjected is necessarily limited in order to avoid damaging the zone of weakness. Secondly, the zone of weakness is obtained by removing material, thereby causing significant discontinuity in bearing of the strap against the part(s)
20 to be clamped. In addition, when the half-shells present concave sections into which radially projecting bearing surfaces of the part(s) to be clamped are inserted, the longitudinal cheek plates formed by said concave sections are interrupted in the zone of the hinge in which there
25 is therefore no corresponding bearing on the above-mentioned surfaces, which adversely affects the quality of the clamping because of the length of the zone of weakness.

In FR 2 761 452, the two half-shells are formed by
30 distinct parts, the second end of one of the half-shells having a hook, while the second end of the other half-shell has a lug inserted into said hook. In that document, initially, the two half-shells are interconnected at their first ends, and are mounted on
35 the articles to be clamped by moving the second ends of said half-shells apart, and then by assembling them together by inserting the above-mentioned lug into the

hook. However, that mounting process is relatively complex since inserting the lug into the hook can be difficult to implement in situ.

5 The invention prefers a solution in which, in order to mount the collar around the articles to be clamped, it is the first ends of the half-shells that are moved apart by bringing the hinge into play.

10 Document US 5 018 768 discloses a collar of the above-mentioned type, in which, in order to form the hinge, the second end of the first half-shell has a first hook that is outwardly projecting and that is provided with a hooking window defined by a retaining edge, while the second end of the second half-shell has a second hook that is outwardly projecting and that passes through the
15 hooking window in the first hook in such a manner as to be able to co-operate with the retaining edge.

That solution is advantageous insofar as it makes it possible to hinge the two half-shells about that hinge, without any risk of the hinge coming apart in untimely
20 manner. However, that hinge constitutes a zone of weakness for the collar. The traction forces exerted on the half-shells in their circumferential direction while the collar is being tightened or after it has been tightened, due to the expansion of the clamped article,
25 are applied to the zone of contact between the outside surface of the retaining edge of the hooking window and the inside surface of the second hook, the hooking co-operation, which opposes coming apart of the collar under traction, taking place between the second hook and the
30 retaining edge which, in that document, embodies the hinge axis of the hinge. Unfortunately, in order to be able to pass into the hooking window, the second hook necessarily has a width that is smaller than the width of the retaining edge of the hooking window. Thus, the very
35 large forces to which the hinge is subjected when the collar is tightened (under traction) are applied to a

zone of small width, corresponding to the smaller width of the second hook.

Due to developments in materials and in technical specifications, the tightening and clamping forces
5 involved are increasingly high. Therefore, applying the forces to which the hinge is subjected to a zone of width that is small relative to the width of the half-shells adversely affects the general mechanical strength of the collar and can give rise to ruptures.

10 An object of the invention is to remedy those drawbacks, by combining the practicality of the hinge with increased mechanical strength.

To this end, the invention provides a clamping collar made up of two half-shells, each half-shell having
15 a first end provided with an outwardly projecting tightening tab, the tightening tabs co-operating with each other to tighten the collar, the second ends of the half-shells co-operating with each other via a hinge, in which collar, in order to form the hinge, the second end
20 of the first half-shell has a first hook that is outwardly projecting and that is provided with a hooking window defined by a retaining edge, while the second end of the second half-shell has a second hook that is outwardly projecting and that passes through the hooking
25 window in the first hook in such a manner as to be able to co-operate with the retaining edge, said clamping collar being characterized in that the second hook has an outwardly upstanding base, in that the retaining edge of the first hook is hooked over the upstanding base of the
30 second hook in such a manner that the traction forces exerted on the hinge due to the collar being tightened are applied to the zone of contact between said retaining edge and said upstanding base, and in that said retaining edge and said upstanding base present widths that are
35 substantially equal to each other.

Thus, in accordance with the invention, the first and second hooks formed at respective ones of the second

ends of the first and second half-shells are hooked one in the other. In this region, the thickness of material can remain analogous to the thickness of material that exists in the main portions of the half-shells, so as to avoid any significant weakening. In addition, the hooks can be closely interlinked so that, in the tightened state, they do not give rise to any significant discontinuity in bearing of the strap of the collar against the article(s) to be clamped. In addition, the traction forces on the hinge are exerted between the retaining edge of the first hook and the upstanding base of the second hook, over zones of substantially equal width. Firstly, this makes it possible to procure good distribution of the traction forces by avoiding subjecting a zone of smaller width to excessive stress, as occurs in the prior art. Secondly, this makes it possible to keep the two half-shells together well, whereas the collar of US 5 018 768 needs to be equipped with a separate split spacer ring mounted on the side of the second hook for that purpose. In addition, with the invention, the traction forces on the hinge are exerted at the base of the second hook and thus a small distance from the outside diameter of the collar, thereby maintaining optimal clamping snugly against the clamped article, whereas in the US 5 018 768 collar, those forces are offset radially outwards.

Advantageously, the hooking window is formed at the top of the first hook.

It is then via the top of the first hook that the second hook is hooked. This hooking is facilitated, and it is easy to check that the second hook is properly in place relative to the first hook.

Advantageously, the base of the second hook and the retaining edge are inclined relative to the radial direction going inwards towards the first end of the first half-shell.

On tightening, the tightening tension is applied in the longitudinal direction of the strap of the collar formed by the assembly of the half-shells. This tension would tend naturally to move the two ends of the half-shells apart. However, by means of the above-mentioned inclination, the tightening tension actually tends to slide the retaining edge against the base of the second hook, radially inwards, thereby making the co-operation between the first hook and the retaining edge more secure. In other words, the higher the tightening force, the better the hooks are interlinked.

In a first embodiment, the retaining edge is formed on the side closer to the free end of the first hook, and the first hook is hooked over the base of the second hook, under said second hook.

The two hooks then face in the same direction, the second hook coming out of the first hook on the same side as the second half-shell.

In a second embodiment, the retaining edge is formed on that side of the first hook that is further from the free end thereof, and the first hook is hooked over the base of the second hook, behind said second hook.

The two hooks then face in opposite directions, the second hook coming out of the first hook on the same side as the first half-shell.

The collar advantageously serves to interconnect two tubes, the facing ends of which present bearing surfaces projecting relative to the cylindrical outside surfaces of said tubes. The half-shells then present concave sections in their main portions, the concave side of each concave section facing inwards so as to receive said bearing surfaces inside them.

With such half-shells having concave sections, it is advantageous for the base of at least one of the first and second hooks to be connected to the lateral edges of the second half-shell that carries it via connection cheek plates.

These connection cheek plates constitute reinforcements that prevent the bases of the hooks, via which bases the hooks are connected to the respective half-shells, from tending to flatten under the effect of the tightening tension.

Preferably, the base of each of the two hooks presents connection cheek plates, and these cheek plates are substantially parallel to each other when the collar is in the tightened state.

Advantageously, the outside periphery of one of the half-shells, against which periphery the free edge of one of the first and second hooks finds itself, has a projection forming an abutment for said free edge.

This abutment-forming projection thus limits opening of the second hook under the effect of the tightening forces.

The invention also provides a method of manufacturing a clamping collar, which method consists in providing two half-shells, each half-shell having a first end provided with an outwardly projecting tightening tab that serves to co-operate with the tightening tab of the first end of the other half-shell, and in forming a hinge between the second ends of the half-shells.

As regards the method, the invention aims to propose a manufacturing method that is simple for manufacturing the clamping collar of the invention, this collar remedying the above-mentioned drawbacks of the state of the art.

In accordance with the invention, in order to form the hinge, the method consists in providing a first hook at the second end of the first half-shell, which first hook is outwardly projecting and is provided with a hooking window defined by a retaining edge, in providing a tongue at the second end of the second half-shell, which tongue is provided with an upstanding base having a width substantially equal to the width of the retaining edge, in inserting said tongue into the hooking window

and in folding over said tongue to form a second hook presenting an upstanding base over which the retaining edge of the first hook is hooked in such a manner that the traction forces exerted on the hinge due to the collar being tightened are applied to the zone of contact between said retaining edge and said upstanding base.

The tongue in which the second hook is formed is initially in a position enabling it to be inserted easily into the hooking window. In particular, this tongue may simply be caused to be upstanding relative to the second half-shell in a substantially radial direction, with it still remaining to be curved over. It is only after it is inserted into the hooking window that it is folded over to form the second hook. This step is easy to implement.

Advantageously, said tongue is folded over such that the inside width of the second hook, as measured tangentially to the circumferential direction of the second half-shell, is at least substantially equal to the height of the retaining edge.

The internal space formed under the second hook is thus relatively large, in such a manner as to facilitate the half-shells moving through a large angular hinging amplitude before the collar is tightened.

Advantageously, with the outside periphery of one of the half-shells having a projection at a small distance from its second end, the method further consists in folding over the tongue while placing the free end of said tongue between said projection and said second end of the half-shell provided with the projection.

Thus, by means of this projection, an extreme position is defined for the free edge of the second hook, thereby preventing said free edge from being flattened under the effect of tightening tension.

The invention can be well understood and its advantages appear more clearly on reading the following detailed description of embodiments shown by way of non-

limiting example. The description refers to the accompanying drawings, in which:

- Figure 1 is a side view of a first variant of a collar of the invention, in the tightened state;
- 5 • Figure 2 is a side view of the Figure 1 collar, in the open state;
- Figure 3 shows the collar in the same situation as in Figure 2, in perspective;
- Figure 4 is a fragmentary perspective view showing the hinge between the two half-shells with the collar being in the tightened state;
- 10 • Figure 5 is a view analogous to Figure 4, showing the hinge in the open state;
- Figure 6 is a side view, showing the collar in the pre-clipped state, prior to being tightened;
- 15 • Figure 7 is a side view of a variant embodiment of a collar, also in the pre-clipped state;
- Figure 8 shows the Figure 7 collar in the tightened state;
- 20 • Figure 9 is a side view, showing a second embodiment of a collar;
- Figure 10 is a view of the Figure 9 collar, in perspective; and
- Figure 11 is a fragmentary perspective view, seen looking along arrow XI of Figure 10.
- 25

Firstly, Figures 1 to 3 are described. The collar shown in these figures is made up of a first half-shell 10 and of a second half-shell 12. The first end 10A of the first half-shell carries a first outwardly projecting tightening tab 14. Similarly, the first end 12A of the second half-shell 12 carries a second outwardly projecting tightening tab 16. These tabs co-operate with each other to tighten the collar. In the example shown in Figures 1 to 3, these tabs are provided with through holes (visible in Figure 3) through which the shank 18A of a bolt 18 passes, the head 18B of the head being retained on that side of the tightening tab 16 that is

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further from the tab 14. Said shank 18A co-operates with a nut 18C retained by the tab 14 on that one of its sides that is further from the tab 16. This nut may be a separately mounted part or else it may be formed by a tapped flange of the hole in the tab 14. It can be understood that tightening the bolt or the nut tends to move the tabs 14 and 16 closer together so as to tighten the collar.

Throughout the description below, it is considered that the outward direction is the direction going away from the axis A of the collar.

The second ends, respectively 10B and 12B, of the half-shells co-operate with each other via a hinge 20. More precisely, the second end 10B of the first half-shell 10 has a first hook 22 that is outwardly projecting. The second end 12B of the second half-shell 12 has a second hook 24.

As can be seen more clearly in Figures 4 and 5, the first hook 22 has a hooking window 23 through which the second hook 24 passes. This hooking window 23 defines a retaining edge 23A. In this example, the retaining edge 23A extends on either side between the two lateral sides 23B and 23C of the window 23. It can thus be seen that the hooks are hooked one in the other. More precisely, the retaining edge 23A that forms the lip or free edge of the first hook 22 is hooked over the base 24A of the second hook 24, this base being, in the example shown in Figures 1 to 5, situated on the inside of the second hook 24. In other words, the first hook 22 is hooked over the base 24A of the second hook, underlying it. It can be seen that said base is slightly outwardly upstanding on the outside periphery of the second half-shell 12. In addition, it can be seen that the second hook 24 co-operates with the retaining edge 23A. Although, when the collar is in the tightened state, the hooking free edge 24B of the second hook 24 is somewhat distant from the retaining edge 23A as shown in Figure 4, it can be

understood that this retaining edge opposes unhooking of the second hook 24 relative to the first hook. In particular, if an attempt is made to move the second half-shell 12 away from the first half-shell 10 in the direction T indicated in Figure 5, the hooking edge limits the extent to which it can move away and remains inside the second hook 24. Thus, once the two hooks are hooked together, the hinge keeps its structural integrity. In other words, the second ends of the half-shells can be caused to come apart only by means of complex manipulations requiring the hooks to be deformed by means of a special tool.

The traction forces due to the collar being tightened and that put the two half-shells under tension and tend to move the two ends of the half-shells apart as indicated by the double-headed arrow TR in Figure 4 are exerted between the inside face of the retaining edge 23A of the first hook 22 and the outside face of the upstanding base 24A of the second hook 24.

As can be seen more clearly in Figure 3, in their main portions, the two half-shells have concave sections, with their concave sides facing inwards.

The collar serves in particular to interconnect two tubes 1 and 2, the facing ends of which have bearing surfaces, respectively 1A and 2A, that project relative to the cylindrical outside surfaces of said tubes. In order to interconnect them, the two tubes are disposed end-to-end, and the collar is disposed around the bearing surfaces 1A and 2A, which are received inside the concave sides of the half-shells 10 and 12. It can be seen that the base 22A of the first hook 22 that is opposite from the free edge 22B of said first hook is connected to the lateral sides 10', 10" of the first half-shell 10 via first connection cheek plates 26', 26".

Similarly, the base 24A of the second hook 24 is connected to the lateral edges, respectively 12' and 12" of the second half-shell 12 via second connection cheek

plates 28' and 28". Considered in a direction perpendicular to a radial plane passing through them, the cheek plates 26' and 26" together form a U-shaped web that reinforces the hook 22. Similarly, considered
5 perpendicularly to a radial plane passing through them, the cheek plates 28' and 28" together also form a U-shaped web that reinforces the hook 24 in the region of its base. The connection cheek plates extend substantially parallel to the axis A of the collar.

10 As can be seen in Figure 1, when the collar is in the tightened state, the first connection cheek plates 26' and 26" are substantially parallel to the second connection cheek plates 28' and 28", these cheek plates then being disposed facing one another in pairs. Thus,
15 the distance D between the inside faces of said facing cheek plates is extremely small, as can be seen in Figure 10. As a result, the discontinuity in bearing of the half-shells against the articles to be clamped is not very significant in spite of the presence of the hinge,
20 so that the clamping effectiveness is improved compared with the clamping effectiveness of prior art collars having integrated hinges. Advantageously, as shown in Figure 1, the connection cheek plates are substantially parallel to the radial direction R. The discontinuity in
25 bearing between the cheek plates is, at the most, of the same order of magnitude as the discontinuity in bearing that exists between the tightening tabs 14 and 16 when the collar is in the tightened state.

As can be seen more clearly in Figures 4 and 5, the
30 hooking window 23 is formed at the top of the first hook 22.

In addition, the upstanding base 24A of the second hook 24 and the retaining edge 23A defined by the hooking window 23 are inclined relative to the radial direction R
35 going inwards towards the first end 10A of the first half-shell. This inclination α advantageously lies in the range 30° to 70°, and preferably lies in the range

40° to 55°, and is preferably in close to 45°. Thus, while the collar is being put under tension, the hooking edge of the first hook hooks to a greater extent over the base of the second hook.

5 As can be seen in the figures, the hinge axis B of the hinge is offset relative to the opening plane of the half-shells. This axis is embodied by the contact between the edge of the first hook 22 and the base of the second hook while the collar is being opened. This makes
10 it possible to have a certain amount of freedom in designing the hooks, since the hinge is dissociated from the join plane between the two ends of the half-shells, at which plane, as indicated above, it is desirable for the spacing between the two ends to be as small as
15 possible so as to limit bearing discontinuities. The inside width l of the second hook 24, as measured tangentially to the circumferential direction of the second half-shell 12, is at least substantially equal to the height h of the retaining edge 23A. This makes it
20 possible for the half-shells to have considerable angular mobility relative to each other. During opening of the collar, the retaining edge turns inside the second hook. It is also desirable for the length of the hooking window 23 to be substantially of the same order of magnitude as
25 the inside width of the first hook 22.

 It can also be seen in Figures 1 to 5 that the outside periphery of the half-shell 12, against which periphery the free edge 24B of the second hook 24 finds itself, has a projection 30 forming an abutment for said
30 free edge. Said abutment may be formed by a protuberance on the second half-shell or indeed by a punched-out portion, i.e. formed out of a protuberance having one of its edges cut out, which edge is the one facing towards the free edge of the second hook. It may also be a
35 tongue that is upstanding relative to the half-shell 12. This projection makes it possible to define the maximum position for the free edge of the hook towards the first

end of the second half-shell and thus to prevent said hook from being unrolled.

It can also be seen in Figures 1 to 6 that one of the tightening tabs (the tab 16 in this example) has a pre-clipping hook 32 suitable for co-operating with the other tightening tab (the tab 14 in this example) in order to keep the collar in a closed but non-tightened state. This is the situation that is shown in Figure 6. In order to facilitate this pre-clipping, the tightening tab 14 may be provided with an upstanding end portion 34 that engages under the hook 32. The hook 32 is deformable and it can be seen in Figure 1 that, when the collar is in the tightened state, said hook is deformed outwards in such manner as to enable the tightening tabs 14 and 16 to be moved closer together as desired.

There follows a description of Figures 7 and 8 that show a variant embodiment. In this variant, the first and second hooks 22 and 24 are identical to what is described above and they are formed respectively at the second end 110B of the first half-shell 110 and at the second end 112B of the second half-shell 112. This variant differs from the above variant by the means for tightening the collar. The tightening tab 114 formed at the first end 110A of the first half-shell is in the form of a tightening lug 114, over which a tightening hook 118 hooks, the tightening hook being carried by the tightening tab 116 that is formed at the first end 112A of the second half-shell 112. This hook 118 also acts as a pre-clipping hook, as can be seen in Figure 7, which shows that the hooking edge 118A of the hook 118 is hooked over the upstanding edge 115A of a bib 115 that extends the lug 114 towards the first end 112A of the second half-shell 112.

In addition, in Figures 7 and 8, the protuberance 130 that makes it possible to prevent the second hook 24 from unrolling is formed by a punched-out portion.

A second embodiment is described below with reference to Figures 9 to 11.

In this second embodiment, the half-shells 10 and 12 are analogous to the half-shells of Figures 1 to 6. The second embodiment differs from the first embodiment that is described with reference to Figures 1 to 6 by the inverse configuration of the hooks that form the hinge 120. In addition, although this is incidental, the position of the bolt 18 is inverted, its head 18A co-operating with the tab 14, while the tab 16 presents an integrated nut. The pre-clipping hook 32 is carried by the tab 14 and it hooks onto the upstanding end portion of the tab 16. In this embodiment, the first hook 122, formed at the second end 10B of the first half-shell 10 is analogous to the hook 22 of Figures 1 to 6, in particular in that it has a hooking window 123 situated in the region of its top, in that its base is connected to the second end 10B of the first half-shell by cheek plates 26' and 26", and in that it has a retaining edge 123A situated in the side closer to its free end.

The second hook 124 that is formed at the second end 12B of the second half-shell 12 is inverted relative to the second hook 24 of Figures 1 to 6. It faces in the direction opposite from the direction in which the first hook 22 faces. Thus, this second hook 124 passes through the hooking window 123 and co-operates with an auxiliary retaining edge 123A', defined by the hooking window 123 and formed in the vicinity of the base 122A of the first hook. In other words, said retaining edge 123A' is formed on that side of the first hook 122 that is further from the free end 122B of said first hook.

The first hook 122 is hooked over the upstanding base 124A of the second hook 124, therebehind, i.e. on that side of said base that is further from the free edge 124B of the second hook. Thus, unlike in the preceding embodiment, the first hook 122 of this embodiment has two retaining edges, respectively a free retaining edge 123A

via which the first hook hooks over the base of the second hook, and an auxiliary retaining edge 123A' that can retain the free edge of the second hook 124.

5 As can be seen more clearly in Figure 11, the width of the upstanding base 124A and the width of the hooking edge 123A' of the first hook are substantially mutually equal and are substantially equal to the width of the half-shell main portions.

10 It can also be seen in Figures 9 and 10 that the outside periphery of the first half-shell 10 has a first projection 131 that forms an abutment for the free edge 124B of the second hook 124, opposing unrolling of said second hook. In this example, said abutment is formed by a punched-out portion, but it could also be formed merely
15 by a protuberance.

Similarly, the outside periphery of the second half-shell 12 has a second projection 132 that forms an abutment for the free edge 122B of the second hook 122, opposing unrolling of said second hook.

20 Otherwise, this embodiment is analogous to the embodiment of Figures 1 to 6, in particular as regards the dimensional characteristics of the internal spaces of the hooks and of the hooking window, and the presence of the connection cheek plates.

25

CLAIMS

1. A clamping collar made up of two half-shells (10, 12; 110, 112), each half-shell having a first end (10A, 12A; 110A, 112A) provided with an outwardly projecting
5 tightening tab (14, 16; 114, 116), the tightening tabs co-operating with each other to tighten the collar, the second ends (10B, 12B; 110B, 112B) of the half-shells co-operating with each other via a hinge (20; 120), in which collar, in order to form the hinge, the second end (10B;
10 110B) of the first half-shell (10; 110) has a first hook (22; 122) that is outwardly projecting and that is provided with a hooking window (23) defined by a retaining edge (23A; 123A), while the second end (12B; 112B) of the second half-shell (12; 112) has a second
15 hook (24; 124) that is outwardly projecting and that passes through the hooking window in the first hook in such a manner as to be able to co-operate with the retaining edge;

said clamping collar being characterized in that the
20 second hook (24, 124) has an outwardly upstanding base (24A, 124A), in that the retaining edge (23A, 123A) of the first hook is hooked over the upstanding base of the second hook in such a manner that the traction forces exerted on the hinge due to the collar being tightened
25 are applied to the zone of contact between said retaining edge and said upstanding base, and in that said retaining edge (23A, 123A) and said upstanding base (24A, 124A) present widths that are substantially equal to each other.

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2. A collar according to claim 1, characterized in that the hooking window (23) is formed at the top of the first hook (22; 122).

35 3. A collar according to claim 1 or claim 2, characterized in that the base (24A) of the second hook (24) and the retaining edge (23A) are inclined relative

to the radial direction going inwards towards the first end (10A; 110A) of the first half-shell (10; 110).

4. A collar according to any one of claims 1 to 3,
5 characterized in that the retaining edge (23A) is formed on the same side as the free end (22B) of the first hook (22), and in that the first hook is hooked over the base (24A) of the second hook (24), under said second hook.
- 10 5. A collar according to any one of claims 1 to 3, characterized in that the retaining edge (123A) is formed on that side of the first hook (122) that is further from the free end (122B) thereof, and in that the first hook (122) is hooked over the base (124A) of the second hook
15 (124), behind said second hook.
6. A collar according to any one of claims 1 to 5, characterized in that, with the collar serving to interconnect two tubes (12), the facing ends of which
20 present bearing surfaces (1A, 2A) projecting relative to the cylindrical outside surfaces of said tubes, the half-shells (10, 12; 110, 112) present concave sections in their main portions, the concave side of each concave section facing inwards, and in that the base (22A; 122A)
25 of the first hook (22; 122) is connected to the lateral edges (10', 110') of the first half-shell (10; 110) via first connection cheek plates (26', 26").
7. A collar according to any one of claims 1 to 6,
30 characterized in that, with the collar serving to interconnect two tubes (12) of which the facing ends present bearing surfaces (1A, 2A) projecting relative to the cylindrical outside surfaces of said tubes, the half-shells (10, 12; 110, 112) present concave sections in
35 their main portions, the concave side of each concave section facing inwards, and in that the base (24A; 124A) of the second hook (24; 124) is connected to the lateral

edges (12', 12") of the second half-shell (12; 112) via second connection cheek plates (28', 28").

5 8. A collar according to claims 6 and 7, characterized in that the first and second connection cheek plates (26', 26"; 28', 28") are substantially parallel to each other when the collar is in the tightened state, while preferably being substantially parallel to the radial direction (R).

10

9. A clamping collar according to any one of claims 1 to 8, characterized in that the hinge axis (B) of the hinge (20; 120) is offset relative to the opening plane of the half-shells (10, 12; 110, 112).

15

10. A collar according to any one of claims 1 to 9, characterized in that the inside width (l) of the second hook (24; 124), as measured tangentially to the circumferential direction of the second half-shell (12; 112), is at least substantially equal to the height (h) of the retaining edge (23A; 123A).

20

11. A collar according to any one of claims 1 to 10, characterized in that the outside periphery of one of the half-shells (10, 12; 110, 112), against which periphery the free edge (24B; 124B) of one of the first and second hooks (22, 24; 122, 124) finds itself has a projection (30, 130; 131, 132) forming an abutment for said free edge.

30

12. A collar according to any one of claims 1 to 11, characterized in that one of the tightening tabs (14, 16) has a pre-clipping hook (32) suitable for co-operating with the other tightening tab in order to keep the collar in a closed but non-tightened state.

35

13. A method of manufacturing a clamping collar, which method consists in providing two half-shells (10, 12; 110, 112), each half-shell having a first end (10A, 12A; 110A, 112A) provided with an outwardly projecting
5 tightening tab (14; 114) that serves to co-operate with the tightening tab (16; 116) of the first end of the other half-shell, and in forming a hinge (20; 120) between the second ends of the half-shells;

said method being characterized in that, in order to
10 form the hinge, it consists in providing a first hook (22; 122) at the second end (10B; 110B) of the first half-shell (10; 110), which first hook is outwardly projecting and is provided with a hooking window (23) defined by a retaining edge (23A; 123A), in providing a
15 tongue at the second end (12B; 112B) of the second half-shell (12; 112), which tongue is provided with an upstanding base having a width substantially equal to the width of the retaining edge, in inserting said tongue into the hooking window (23) and in folding over said
20 tongue to form a second hook (24, 124) presenting an upstanding base (24A, 124A) over which the retaining edge of the first hook (22; 122) is hooked in such a manner that the traction forces exerted on the hinge due to the collar being tightened are applied to the zone of contact
25 between said retaining edge and said upstanding base.

14. A method according to claim 13, characterized in that it further consists in folding over said tongue so that the inside width (l) of the second hook (24; 124), as
30 measured tangentially to the circumferential direction of the second half-shell (12; 112), is at least substantially equal to the height (h) of the retaining edge (23A; 123A).

35 15. A method according to claim 13 or claim 14, characterized in that, with the outside periphery of one of the half-shells having a projection (30; 130; 132) at

a small distance from its second end, the method further consists in folding over the tongue while placing the free end of said tongue between said projection and said second end of the half-shell provided with the
5 projection.