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(54) **Fixing system, fixing element, fence, and method for fixing a fence to a fence support**

(57) Fixing system for fixing a fence to a support. The fixing system comprises a fixing element and a clasp part complementary to the fixing element. The fixing element comprises a base and a support clasp part. The base is provided with a first through hole that is provided with a constriction, such that a tightening element is blocked

and allows securing by displacement of the tightening element along the end part. The fixing system is provided with a sealing cap. During the securing, the tightening element is entirely contained within the first through hole. The sealing cap, in use, is also entirely contained within the first through hole.

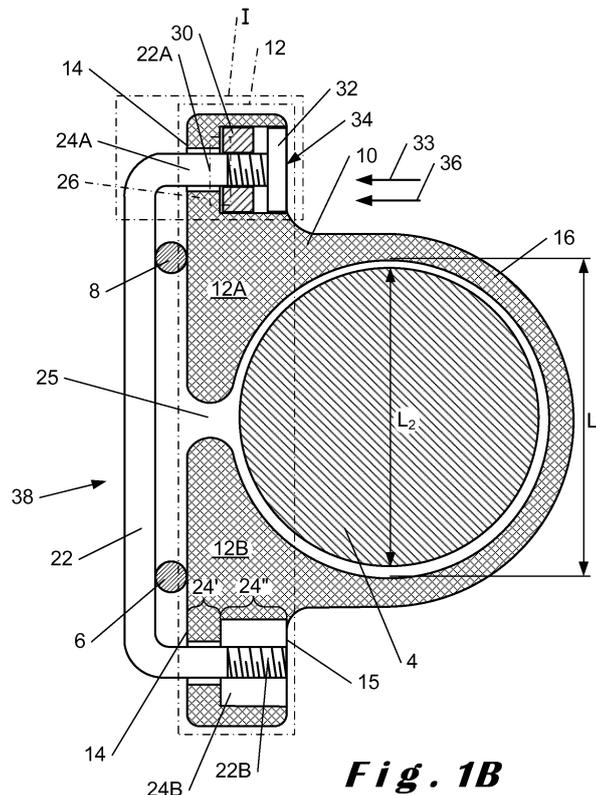


Fig. 1B

Description

Technical field

[0001] The present invention relates to a fixing system for fixing a fence to a fence support, comprising a fixing element and a clasp part complementary to the fixing element, wherein the fixing element comprises a base with a base side that is oriented towards the fence in use, and also comprises a support clasp part connected to a side of the base opposite the base side and arranged to claspingly engage the support. The invention also relates to the fixing element. The invention also relates to a fence provided with the fixing system. The invention further relates to a method for fixing a fence to a fence support.

Background art

[0002] Fences are often used to hinder the passage of a boundary on which the fence is placed. An example of this is a fence to impede entry onto a farmyard. To prevent the crossing of fences, a relatively great importance is attached to their reliability and security today. This importance is widely recognized, particularly for the prevention of theft and burglary.

[0003] A fence can typically be distinguished into fence, a support for the fence, and a fixing system for fixing the fence to the support. An example of a fixing system is known from EP 2 177 694 A2, which, referring to figures 9-16, describes a fixing system which can be clasped onto a support. Using the system of EP 2 177 694 A2, the fence and the support can be claspingly connected to each other. Clasping the fence is achieved by means of a single bolt which can be tightened at an outer side of the fixing system of EP 2 177 694 A2.

[0004] The fact that the central bolt is tightened at the outer side of the fixing element means that the fence can be secured in a relatively simple way. It also means, however, that the bolt can be loosened in a relatively simple way as well. In the interest of safety, this is undesirable, as it can lead to intruder being able to pass the fence relatively easily by disengaging and disassembling the fixing system. This can increase the change of theft, burglary and subsequent damage.

Description of the invention

[0005] An aim of the present invention is to provide an improved fixing system for fixing a fence to a fence support, with which disassembly of the fence can be hindered.

[0006] This aim is achieved by means of a fixing system for fixing a fence to a fence support, the fixing system comprising a fixing element and a clasp part, e.g. a bracket, complementary to the fixing element, wherein the fixing element comprises a base with a base side that is oriented towards the fence in use, and also comprises a support clasp part, e.g. a clip, connected to a side of the

base opposite the base side and arranged to claspingly engage the support, e.g. a post and/or pole, wherein the base is provided with at least a first through hole arranged to receive an end part of the complementary clasp part for securing the fence, said first through hole extending through the base towards the base side and having a constriction such that a tightening element, e.g. a nut, which in use engages the end part, is blocked by the constriction and thus, in use, allows the securing by displacement of the tightening element along the end part, wherein the fixing system is further provided with at least a sealing cap, wherein the first through hole, the sealing cap and the tightening element are dimensioned in such a way that, during the securing, the tightening element is entirely contained within the first through hole and leaves room for the sealing cap which, in use, is also entirely contained within the first through hole and thereby blocks an access to the tightening element offered by the first through hole.

[0007] By said dimensioning of the first through hole, a closing off of the first through hole by means of the sealing cap can be achieved. This closing off makes the tightening element harder to reach, hindering the loosening of the tightening element. As a result, disconnection of the complementary clasp part is also hindered. This makes it more difficult for an intruder to disassemble and cross the fence.

[0008] The sealing cap preferably comprises a deformable material. Preferably, a cap size of the sealing cap in its undeformed state is greater than a through hole size, e.g. a diameter, of the through hole. This allows the sealing cap to be wedged tight in the through hole, hindering the removal of the sealing cap from the through hole. The through hole size can be measured in a direction perpendicular to a through hole direction along which the first through hole extends. The cap size can be measured in a direction perpendicular to a longitudinal cap direction along which the cap extends. The longitudinal cap direction can be parallel to the through hole direction in use.

[0009] In an embodiment, the cap size tapers from a larger cap size to a smaller cap size, whereby the smaller cap size is smaller than the through hole size and the larger cap size is greater than the through hole size. The smaller cap size can facilitate the placement of the sealing cap in the first through hole. The larger cap size can bring about the wedging of the sealing cap in the first through hole.

[0010] Preferably, the constriction separates a narrower part of the first through hole from a wider part of the first through hole. Preferably, the tightening element and the sealing cap are, in use, contained within the wider part of the through hole. Preferably, a cap size of the sealing cap in its undeformed state is greater than a through hole size of the wider part of the first through hole.

[0011] In an embodiment, the support clasp part is executed as a clip arranged to engage the support in an autonomously clasping way. The clip can, in other words,

be arranged to claspingly engage the support without using the complementary clasp part. This allows the fixing element to be permanently positioned on the support before the fence is secured with the complementary clasp part. The fence can be installed while one or more fixing elements are already clasped onto the support. This allows a single person to build, i.e. assemble, the fence. Mounting the fence on the support can thus be made easier, while disassembly is rendered more difficult by means of the sealing cap. The clip can, preferably, be clipped onto and/or shifted over the support, for example shifted over the support in a longitudinal direction thereof.

[0012] In an embodiment, the base comprises two base parts, separate from each other and interconnected by means of the support clasp part. The support clasp part preferably comprises a deformable, preferably resilient, connection between the two base parts which allows movement of the two base parts in relation to each other. This allows the clasping action of the support clasp part to be enhanced. In particular, the clip can be formed by means of the separate base parts. The clip can preferably be folded, e.g. by means of the deformable connection. This facilitates the mounting of the clip onto the support.

[0013] In an embodiment, the base also comprises a second through hole arranged for receiving a further end part of the complementary clasp part, said second through hole extending through the base towards the base side and having a shape similar to that of the first through hole. Preferably, the first through hole is arranged for receiving an end part of the complementary clasp part for securing the fence, e.g. for securing the fence between the complementary clasp part and the support. Preferably, the second through hole is arranged for receiving a further end part of the complementary clasp part for securing the fence, e.g. for securing the fence between the complementary clasp part and the support.

[0014] In an embodiment, one of the two base parts is provided with the first through hole, and the other of the two base parts is provided with the second through hole.

[0015] Preferably, the support clasp part and the base are rigidly connected to each other, and optionally made as a single piece. Such embodiments allow a reliable and secure connection. In an embodiment, the support clasp part, and optionally the base, substantially comprise a plastic material. Plastic is a suitable material for forming the support clasp part as a clip.

[0016] In an embodiment, the complementary clasp part is rigid and optionally made as a single piece. Such embodiments allow a reliable and secure connection. In an embodiment, the complementary clasp part consists of a bracket. The bracket is preferably U-shaped.

[0017] In an embodiment, the complementary clasp part comprises a slab-shaped part and at least a bolt having a bolt head. Preferably, the slab-shaped part has at least an opening, dimensioned in such a way that the at least one bolt, excluding the bolt head, can be moved through the at least one opening.

[0018] The invention also provides a fixing system according to the invention, combined with the support, wherein an inner diameter of the support clasp part corresponds to an outer diameter of the support, such that the support clasp part fits tightly, and optionally claspingly, around the support. Preferably, an inner shape of the support clasp part is at least partly similar to an outer shape of the support. Such combinations allow an improved clasping action of the support part onto the support.

[0019] In an embodiment, the fixing system is provided in combination with a covering element, e.g. a covering cap, arranged to be mounted onto the support. The covering element is dimensioned in such a way as to block displacement of the support clasp part along the support at the covering element. This way, removal of the fixing element from the support can be rendered more difficult.

[0020] The invention also provides the fixing element. The invention provides a fixing element for fixing a fence to a fence support, wherein the fixing element comprises a base with a base side that is oriented towards the fence in use, and also comprises a support clasp part connected to a side of the base opposite the base side and arranged to claspingly engage the support, the base being provided with at least a first through hole arranged to receive an end part of a clasp part complementary to the fixing element for securing the fence, said first through hole extending through the base to the base side and provided with a constriction so that a tightening element which in use engages the end part, is blocked by the constriction and thus, in use, allows the securing by displacement of the tightening element along the end part, wherein the first through hole, the sealing cap and the tightening element are dimensioned in such a way that, during the securing, the tightening element is entirely contained within the first through hole and leaves room for a sealing cap that, in use, is also entirely contained within the first through hole and thereby blocks an access to the tightening element offered by the first through hole.

[0021] The invention also provides a fence provided with the support, the fence, and the fixing system according to the invention.

[0022] The invention additionally provides a method for fixing a fence to a fence support, the method comprising the following steps: - providing a fixing system comprising a fixing element and a clasp part complementary to the fixing element, wherein the fixing element comprises a base with a base side that is oriented towards the fence in use, and also comprises a support clasp part connected to a side of the base opposite the base side; - making the support clasp part claspingly engage the support; - inserting an end part of the complementary clasp part into a first through hole provided in the base, extending through the base to the base side and provided with a constriction; - making a tightening element engage the end part, wherein the tightening element is blocked by the constriction; - securing the fence by displacement of the tightening element along the end part so that the

tightening element is entirely contained within the first through hole; - blocking an access to the tightening element offered by the first through hole by means of a sealing cap so that the sealing cap is also entirely contained within the first through hole. The method is preferably executed using a fixing system in accordance with the invention.

Brief description of the drawings

[0023] The invention will be elucidated in further detail by means of the following description and the appended drawings.

Figure 1A shows a part of a fence in an embodiment according to the invention;

Figure 1B shows a fixing element in a cross section perpendicular to a longitudinal direction of a post, as indicated in figure 1A;

Figure 1C shows a detail of figure 1 B;

Figure 2 shows two fixing elements, each combined with a complementary clasp part;

Figure 3A shows a part of a fence in a further embodiment according to the invention;

Figure 3B shows a fixing element in a cross section perpendicular to a longitudinal direction of a post indicated in figure 3A; and Figure 4 shows a support combined with a covering element.

Embodiments of the invention

[0024] The present invention will hereafter be described on the basis of specific embodiments and with reference to certain drawings, but the invention is not limited thereto and is solely defined by the claims. The drawings shown here are schematic depictions only and are non-limiting. The sizes of certain parts may be enlarged in the drawings, meaning that the parts in question are not depicted to scale, and for illustration purposes only. The sizes and relative sizes do not necessarily correspond to the actual embodiments in practice of the invention.

[0025] Furthermore, terms like "first", "second", "third" and the like are used in the description and claims to distinguish between similar elements, and not necessarily to indicate a sequence or chronological order. The terms in question are mutually interchangeable in the appropriate circumstances, and the embodiments of the invention can work in other orders than those described or illustrated here.

[0026] Moreover, terms like "top", "bottom", "above", "below" and the like are used in the description and claims for descriptive purposes, and not necessarily to indicate

relative positions. The terms thus used are mutually interchangeable in the appropriate circumstances, and the embodiments of the invention can work in other orientations than those described or illustrated here.

[0027] The term "comprising" and derivated terms, as used in the conclusions, should not be interpreted as limited to the means mentioned in each case thereafter; the term does not exclude other elements or steps. The term should be interpreted as a specification of the properties, integers, steps, or components that are referred to, without excluding the presence or addition of one or more further properties, integers, steps, or components, or groups thereof. Thus, the scope of an expression such as "a device comprising the means A and B" is not limited to devices consisting solely of components A and B. What is meant, by contrast, is that, with respect to the present invention, the only relevant components are A and B.

[0028] Figure 1A shows a part of a fence 2 in an embodiment according to the invention. The fence 2 is provided with a support 4, in this example a post. The fence is also provided with fence 6. In the example of figure 1A, the fence 6 comprises rails 8. Alternatively, the fence 6 may comprise a mesh. The mesh can, for example, be made substantially of welded or woven steel wire, optionally provided with a coating. The fence 2 is further provided with a fixing element 10 in a first embodiment according to the invention. The fixing element 10 is arranged for fixing the fence 6 to the support 4 for the fence 6. Figure 1B shows the fixing element 10 in a cross section perpendicular to a longitudinal direction 11 of the post 4, as indicated in figure 1A. Figure 1C shows a detail I of figure 1B.

[0029] The fixing element 10 in the first embodiment comprises a base 12. The base has a base side 14. The base side 14, in use, is oriented towards the fence 2. The fixing element 10 also comprises a support clasp part 16. The support clasp part 16 is connected to a side 15 of the base 12 opposite the base side 14. More generally, the first through hole 22A can extend through the base 12 from the side 15 of the base 12 opposite the base side to the base side 14.

[0030] The support clasp part 16 is arranged to claspingly engage the support 4. To that end, an inner diameter L_1 of the support clasp part 16 may correspond to an outer diameter L_2 of the support. The support clasp part can, as a result, fit tightly, and optionally claspingly, around the support. This can improve the clasp action of the support clasp part 16 onto the support 4.

[0031] The fixing element 10 may be provided in combination with a clasp part 22 that is complementary to the fixing element 10, e.g. a bracket. The bracket 22 is preferably U-shaped. The bracket can for example be made substantially of steel, for example stainless steel. Figures 1A and 1B show an example of such a combination in operation, i.e. during the fixing or releasing, or in a fixed state. By means of the complementary clasp part 22 and the fixing element 10, the fence 6 can be secured between the complementary clasp part 22 and the support

4, in particular between the base 12 and the complementary clasp part 22, as shown for example in figures 1A and 1B. Alternatively, the first and complementary clasp part can be provided separately from each other, optionally without the fence 6.

[0032] The base 10 can be provided with at least a first through hole 24A. The first through hole 24A is arranged for receiving an end part 22A of the complementary clasp part 22. The first through hole 24A extends through the base 12 to the base side 14. The first through hole 24A is provided with a constriction 26.

[0033] The base can comprise two base parts 12A and 12B that are separate from each other. Said separation can be achieved by providing an opening 25 between the base parts 12A and 12B. The base parts 12A and 12B may be connected to each other by means of the support clasp part 16. More in particular, the support clasp part 16 can form a deformable connection between the two base parts that allows displacement of the two base parts with respect to each other. The support clasp part can, for instance, connect the two base parts 12A and 12B resiliently with respect to each other. The support clasp part may be elastically deformable. The support clasp part can form a clip that can be snapped and/or shifted onto the support. This way, a clasping action of the support clasp part onto the support can be enabled or improved.

[0034] In an embodiment, the support clasp part comprises a plastic material. Preferably, the support clasp part is made substantially of the plastic material. This allows the deformable connection between the two base parts to be achieved. The plastic material is preferably a fireproof plastic material. Such fireproof plastic material makes it harder for an intruder to disconnect the fence from the support. In an embodiment, the whole fixing element is substantially made of the plastic material.

[0035] In use, a tightening element may be provided on the end part 22A of the complementary clasp part 22. The tightening element, in use, engages the end part 22A. The tightening element may for example be a nut. To bring about said engaging, the end part 22A can be threaded. The constriction 26 is formed in such a way that the tightening element 30 is blocked by the constriction. This blocking allows the securing through displacement of the tightening element 30 along the end part 22A, for example by tightening said nut. It shall thus be clear that the complementary clasp part 22 can be fixed to the fixing element 10 by means of the tightening element 30. The fixing element 10 thus, more generally, cooperates with the complementary clasp part 22. The fixing element 10 and the complementary clasp part 22 can each engage a different side of the fence.

[0036] In the first embodiment, the first through hole 24A and the tightening element 30 are dimensioned in such a way that, during the securing, the tightening element 30 is entirely contained within the first through hole 24. Room is left therein for placing a sealing cap 32 or, in other words, a finishing cap inside the first through

hole. In use, the sealing cap 32 is contained within the first through hole 24. The sealing cap 32 thereby blocks an access 34 to the tightening element 30 offered by the first through hole 24. A complete blocking by the sealing cap 32 can be particularly advantageous. As shown in figure 1B, the sealing cap 32 can, in use, be entirely contained within the through hole 24. The sealing cap 32 renders the removal of the tightening element 30 more difficult, and thus also makes it harder to disconnect the complementary clasp part 22 from the fixing element 10, and to disassemble the fence 2.

[0037] The constriction can separate a narrower part 24' of a through hole 24A,B from a wider part 24" of a through hole 24A,B (see figures 1B and 1C). From the above, it shall be clear that the tightening element 30 and the sealing cap 32 can, in use, be contained within the wider part of the through hole 24A,B. A depth H_1 of the wider part 24" of the first through hole 24A can therefore be greater than the sum of a height H_2 of the tightening element and a height H_3 of the sealing cap 32. The depth H_1 of the wider part of the first through hole 24A, the height H_2 of the tightening element 30 and the height H_3 of the sealing cap 32 can be measured in a direction parallel to a through hole direction 33 in which the first through hole extends. The wider part 24" of the first through hole 24A, in other words, forms a cavity with an enlarged diameter (compared to the constriction) for receiving the nut. The depth H_1 of the cavity is greater than the height H_2 of the nut, so that room is left for receiving the sealing cap 32.

[0038] The sealing cap can be substantially level with an outer side 35 of the base, as shown in figure 1C. Preferably, however, the sealing cap is sunk inside the base 12. In that case, the sealing cap 32 is sunk inside the first through hole 24A. Such a sunk position generally renders loosening of the sealing cap more difficult. In both positions, the sealing cap is considered to be entirely contained within the first through hole.

[0039] Thus described, in an embodiment according to the invention and with reference to figures 1A-C, is a fixing system 38 for fixing a fence to a fence support, the fixing system comprising the fixing element in the first embodiment, the complementary clasp part, and the sealing cap.

[0040] In an embodiment, the sealing cap 32 can comprise a deformable material. The deformable material may be plastically and/or elastically deformable. The deformable material can for example comprise a plastic material, and optionally be made substantially of the plastic material. The sealing cap 32 may for example comprise a rubber material, and optionally be made substantially of the rubber material. In an embodiment, the sealing cap is made substantially of a fireproof plastic material. This can hinder or even prevent removal of the sealing cap 32 by burning the sealing cap 32, rendering the loosening of the tightening element 30 more difficult. The sealing cap 32 can for example be substantially cylindrical, or have the shape of a truncate cone or a cone frustum.

Other frustum shapes are also possible.

[0041] In general, a cap size, e.g. an outer diameter D_1 , of the sealing cap 32 may be greater in its undeformed state than a through hole size, e.g. an inner diameter D_2 of the wider part 24" of the first through hole 24A. This way, a clasping action of the sealing cap 32 inside the first through hole 22A can be achieved. The through hole size can be measured in a direction perpendicular to the through hole direction 33 along which the first through hole extends. The cap size can be measured in a direction perpendicular to a cap longitudinal direction 36. In use, the cap longitudinal direction 36 is approximately parallel to the through hole direction 33 along which the first through hole extends. In other words, with the sealing cap contained within the first opening, the cap longitudinal direction 36 and the through hole direction 33 are approximately parallel. Said clasping action of the sealing cap 32, combined with the complete containment of the sealing cap 32 within the first through hole, hinders the removal of the sealing cap 32 from the first through hole 24A, and thus also the loosening of the tightening element 30. As a result, disconnecting the fixing element 10, as well as disassembling the fence 2, is rendered more difficult. Figure 1B shows the sealing cap 32 in its deformed state and entirely contained within the first through hole 22A. In the deformed state of figure 1B, the cap size D_1 of the sealing cap 32 in its deformed state equals the through hole size D_2 of the wider part of the first through hole 24A.

[0042] In the first embodiment of the fixing element 10, the base 12 may also comprise a second through hole 24B. The through hole 24B is arranged for receiving a further end part 22B of the complementary clasp part 22. The end part 22A and the further end part 22B can for example, when the complementary clasp part 22 is U-shaped, be formed by a part of the legs of the U. The second through hole 24B extends through the base 12 to the base side 14. More generally, the second through hole 24B can have a similar shape to that of the first through hole 24A. The term "similar shape" can mean that the second through hole 24B may be provided with a further constriction such that a tightening element, which in use engages the further end part, is blocked by the further constriction and thus, in use, allows securing by displacement of the further tightening element along the further end part. The second through hole, an further sealing cap and the further tightening element can be dimensioned in such a way that, during the securing, the further tightening element is entirely contained within the second through hole and leaves room for the placement of the further sealing cap, which, in use, is also entirely contained within the second through hole and thereby blocks an access to the further tightening element offered by the second through hole. It shall thus also be clear that, more generally, one of the two base parts 12A,B can be provided with the first through hole, and the further of the two base parts can be provided with the second through hole.

[0043] The second through hole, however, is not necessary. The further end part 22B of the complementary end part can be mechanically connected to the base of the support clasp part in a different way as well. For example, the further end part 22B can be connected to the base by means of a hinge. Alternatively, the further end part 22B is connected to the base by means of an opening in the base 12 that cooperates with a protrusion of the complementary clasp part, the protrusion having a shape that corresponds to the opening so that the protrusion can engage with the opening in use.

[0044] Figure 2 shows two fixing elements 10, each combined with a complementary clasp part 22. In the variant of figure 2, the complementary clasp part comprises a slab-shaped part 40 and bolts 42. The bolts are provided with bolt heads 44. The slab-shaped part 40 is provided with openings. These openings are dimensioned in such a way that the bolts, excluding the bolt heads, can be moved through the openings. In this variant of the complementary clasp part 22, the bolts form the end part 22A and further end part 22B of the complementary clasp part 22.

[0045] In another variant of the complementary clasp part, as shown for example in figures 1A and 1 B, the complementary clasp part is substantially rigid. This can be achieved by making the complementary clasp part 22 substantially from one piece. In this other variant, the complementary clasp part 22 may be formed by the bracket, which can be, for example, U-shaped. A leg of the bracket can form the end part 22A, and the other leg of the bracket can form the further end part 22B. The bracket can be mounted to the fixing element in two places, i.e. with the end part 22A and with the further end part 22B. A bracket-shaped complementary end part, mounted to the fixing element in two places, can further hinder the disconnection of the fixing element, since such a complementary end part can, at the base side 14 of the base 12 of the fixing element, be devoid of any points of application for disconnecting the complementary end part.

[0046] Figure 3A shows a part of a fence 2 in a further embodiment according to the invention. The fence 2 is provided with the support 4, in this example the post 4, and with the fence 6. The fence 2 is further provided with a fixing element 10 in a second embodiment according to the invention. The fixing element 10 is arranged for fixing the fence 6 to the support 4 for the fence 6. Figure 3B shows the fixing element 10 in a cross section perpendicular to the longitudinal direction 11 of the post 4, as indicated in figure 3A.

[0047] The fixing element 10 in the second embodiment comprises the base with the first base part 12A and the second base part 12B. The base has the base side 14, which, in use, can be oriented towards the fence 2. The fixing element 10 also comprises a support clasp part 16. The support clasp part 16 is connected to the side 15 of the base 12 opposite the base side 14. The support clasp part 16 is arranged to claspingly engage

the support 4.

[0048] The support clasp part 16 and the base 12 can be rigidly connected to each other. In this example, the base 12 and the support clasp part 16 are made from one piece. The support clasp part 16 and the base 12 can substantially comprise a plastic material. The plastic material is preferably fireproof.

[0049] Figures 3A and 3B also show the first through hole 24A, the second through hole 24B, and the complementary clasp part 22 with the end part 22A and the further end part 22B. Figures 3A and 3B show the complementary clasp part 22 in a configuration wherein the end parts 22A,B are contained within, respectively, the first opening 24A and the second opening 24B. Figure 3B also shows constrictions 26 separating a narrower part 24' of a through hole from a wider part 24" of that through hole.

[0050] Figure 3B also shows the sealing cap 32. In the example of figure 3B, the sealing cap 32 has the shape of a cone frustum. Such a shape has a cap size that varies along the sealing cap, said cap size being measured in a direction perpendicular to a cap longitudinal direction 36 of the sealing cap. More generally, the sealing cap 32 can have a cap size, e.g. the outer diameter D_1 , that tapers along the sealing cap from a larger cap size to a smaller cap size. The smaller cap size can facilitate the placement of the sealing cap in the first through hole, in particular when the smaller cap size is smaller than an inner diameter of the first through hole. The larger cap size can bring about the clasping of the sealing cap within the first through hole. This way, a good clasping action can be combined with a good installability of the sealing cap 32. In a particular embodiment, the sealing cap is substantially spherical. A diameter of the spherical sealing cap is preferably greater than the inner diameter of the first through hole. Such a spherical shape offers the advantage that the sealing cap can be placed inside the first through hole with an arbitrary orientation with respect to the first through hole. This facilitates the placement of the sealing cap. The fence 2 can be provided with a plurality of fixing systems, and thus with a plurality of sealing caps. For a fence with a relatively large amount of sealing caps 32, ease of placement of the sealing caps can become relatively important.

[0051] The wider part of the first through hole can, for example, be cylindrical or have the shape of a cone frustum. Such shapes, and other shapes as well, may be considered as similar.

[0052] Thus, with reference to figures 3A and 3B, an embodiment of a fixing system 38 according to the invention for fixing a fence to a support is provided, the fixing system comprising the fixing element in the second embodiment, the complementary clasp part, and the sealing cap.

[0053] In an embodiment, an inner shape of the support clasp part 16 is at least partially similar to an outer shape of the support 4. Figures 1B and 3B show examples of such a similarity of shape. Figure 1B shows a

round, in particular substantially circular inner shape of the support clasp part 16, combined with a round, in particular substantially circular outer shape of the support 4. Figure 1B shows a rectangular inner shape of the support clasp part 16, combined with a rectangular outer shape of the support 4. An inner shape of the support clasp part 16 which is at least partially similar to an outer shape of the support 4 can improve the clasping action of the support clasp part onto the support.

[0054] Figure 4 shows the support 6 in combination with a covering element 46. The covering element may be executed as a covering cap. The covering element is arranged to be mounted to the support 6. The covering element is dimensioned in such a way that displacement of the support clasp part along the support 6 is blocked at the covering element 46. This way, removal of the fixing element from the support can be impeded.

[0055] The fixing system can be used in a method according to the invention for fixing a fence to a fence support. An embodiment of such a method comprises the providing of a fixing system, comprising a fixing element and a clasp part complementary to the fixing element. The fixing element can for example be the fixing element 10 in the first or second embodiment, as shown in figures 1A-3B. The complementary clasp part can for example be the bracket 22 as shown in figures 1A, 1B, 3A, and 3B. Alternatively, the complementary clasp part may be formed by the assembly of a slab-shaped part 40 and bolts 42, as shown in figure 2. However, other embodiments of the fixing element and the complementary clasp part are also possible. The embodiment of the method will be further described with reference to figures 1A-3B.

[0056] The fixing element comprises the base side 14, which in use is oriented towards the fence 6, and also comprises the support clasp part 16, which is connected to a side of the base 12 opposite the base side. The embodiment of the method further comprises making the support clasp part 16 claspingly engage the support. This is preferably followed by the insertion of an end part 22A of the complementary clasp part 22 into the first through hole 24A, which is provided in the base 12, extends through the base 12 to the base side 14, and is provided with the constriction 26. The insertion of the complementary clasp part into the base is facilitated by the fact that the fixing element 10 can be mounted to the support 4 by means of the support clasp part 16. Said mounting allows the fixing element 10, and thus the base 12 with the first through hole 24A, to be permanently positioned onto the support 4, without requiring a user to support 4 the fixing element 10 thereafter. This allows the user to keep both hands free for installing and securing the fence 6. As a result, the fence 6 can be mounted to the support 4 by a single user.

[0057] The embodiment of the method further comprises making the tightening element 30, e.g. the nut, claspingly engage the end part 22A. In use, the tightening element 30 will be blocked by the constriction 26. This can be followed by securing the fence through displacement

of the tightening element along the end part 24A. The tightening element can thus, in use and during the securing, be tightened against the constriction 26. During the tightening, the tightening element preferably is entirely contained within the first through hole. This way, the fence 6 can be secured onto the support 6 by means of the tightening element 30.

[0058] The embodiment of the method further comprises blocking the access 34 to the tightening element 30 offered by the first through hole, by means of the sealing cap 32, so that the sealing cap 32 is also entirely contained within the first through hole 22A.

Claims

1. Fixing system for fixing a fence to a fence support, said fixing system comprising a fixing element and a clasp part complementary to the fixing element, wherein the fixing element comprises a base with a base side that is oriented towards the fence in use, and also comprises a support clasp part connected to a side of the base opposite the base side and arranged to claspingly engage the support, the base being provided with at least a first through hole arranged to receive an end part of the complementary clasp part for securing the fence, said first through hole extending through the base to the base side and being provided with a constriction such that a tightening element, which in use engages the end part, is blocked by the constriction and thus, in use, allows the securing by displacement of the tightening element along the end part, wherein the fixing system is further provided with at least a sealing cap, wherein the first through hole, the sealing cap and the tightening element are dimensioned in such a way that, during the securing, the tightening element is entirely contained within the first through hole and leaves room for the sealing cap which, in use, is also entirely contained within the first through hole and thereby blocks an access to the tightening element offered by the first through hole.
2. Fixing system according to claim 1, wherein the sealing cap comprises a deformable material.
3. Fixing system according to claim 1 or 2, wherein a cap size of the sealing cap in undeformed state is greater than a through hole size of the first through hole.
4. Fixing system according to claim 3, wherein the constriction separates a narrower part of the first through hole from a wider part of the first through hole, and wherein the tightening element and the sealing cap, in use, are contained within the wider part of the through hole, wherein a cap size of the sealing cap in undeformed state is greater than a through hole size of the wider part of the first through hole.
5. Fixing system according to claim 3 or 4, wherein the cap size tapers from a larger cap size to a smaller cap size, wherein the smaller cap size is smaller than the through hole size and the larger cap size is greater than the through hole size.
6. Fixing system according to any of the claims 1-5, wherein the support clasp part is formed as a clip arranged to engage the support in an autonomously clasping way.
7. Fixing system according to any of the claims 1-6, wherein the base comprises two base parts, separate from each other, connected to each other by means of the support clasp part.
8. Fixing system according to claim 7, wherein the support clasp part forms a deformable, preferably resilient, connection between the two base parts that allows displacement of the two base parts with respect to each other.
9. Fixing system according to any of the claims 1-8, wherein the base also comprises a second through hole, arranged to receive a further end part of the complementary clasp part, said second through hole extending through the base to the base side and having a similar shape to that of the first through hole.
10. Fixing system according to any of the claims 1-9, wherein the support clasp part and the base are rigidly connected to each other, and optionally are made from one piece.
11. Fixing system according to any of the claims 1-10, wherein the support clasp part and optionally the base comprise substantially a plastic material.
12. Fixing system according to any of the claims 1-11, wherein the complementary clasp part is rigid and optionally made from one piece.
13. Fixing system according to any of the claims 1-12, wherein the complementary clasp part is formed by a bracket, which is preferably U-shaped.
14. Fixing system according to any of the claims 1-11, wherein the complementary clasp part comprises a slab-shaped part and at least a bolt provided with a bolt head, wherein the slab-shaped part is provided with at least an opening, dimensioned in such a way that the at least one bolt, excluding the bolt head, can be moved through the at least one opening.
15. Fixing system according to any of the claims 1-14, combined with the support, wherein an inner diam-

eter of the support clasp part corresponds to an outer diameter of the support, so that the support clasp part fits tightly, and optionally claspingly, around the support.

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- 16.** Fixing system according to claim 15, wherein an inner shape of the support clasp part is at least partially similar to an outer shape of the support.
- 17.** Fixing system according to claim 15 or 16, combined with a covering element arranged to be mounted to the support, said covering element being dimensioned in such a way as to block displacement of the support clasp part along the support at the covering element.
- 18.** The fixing element according to any of the claims 1-17.
- 19.** Fence provide with the support, fence and fixing system according to any of the claims 1-17.
- 20.** Method for fixing a fence to a fence support, said method comprising the following steps:
- providing a fixing system, comprising a fixing element and a clasp part complementary to the fixing element, wherein the fixing element comprises a base with a base side that is oriented towards the fence in use, and also comprises a support clasp part connected to a side of the base opposite the base side;
 - causing the support clasp part to claspingly engage the support;
 - inserting an end part of the complementary clasp part into a first through hole which is provided in the base, extending through the base to the base side, and provided with a constriction;
 - causing a tightening element to engage the end part, said tightening element being blocked by the constriction;
 - securing the fence by displacement of the tightening element along the end part so that the tightening element is entirely contained within the first through hole;
 - blocking an access to the tightening element offered by the first through hole by means of the sealing cap, so that the sealing cap is also entirely contained within the first through hole.
- 21.** Method according to claim 20, executed using a fixing system according to any of the claims 1-17.

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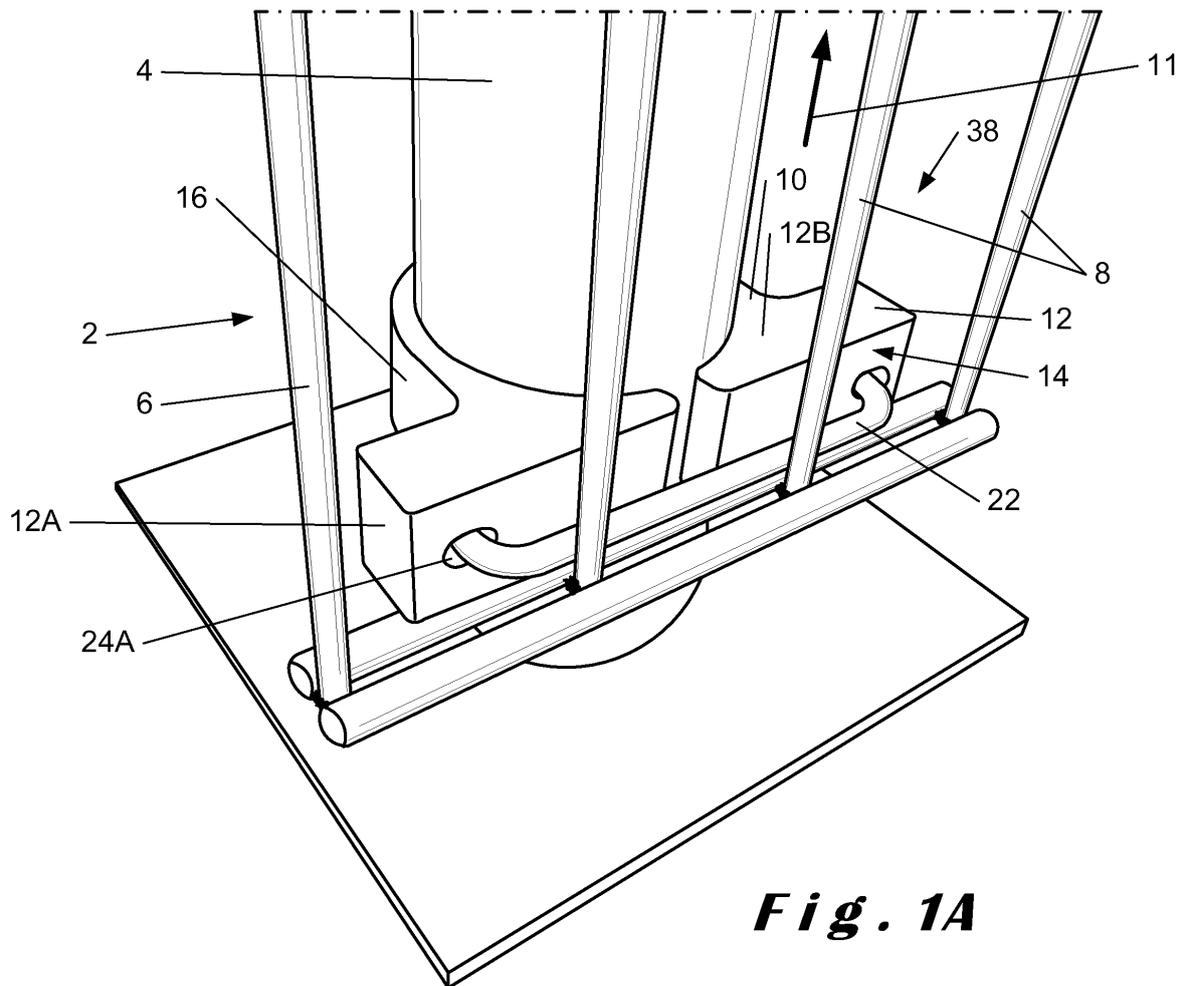
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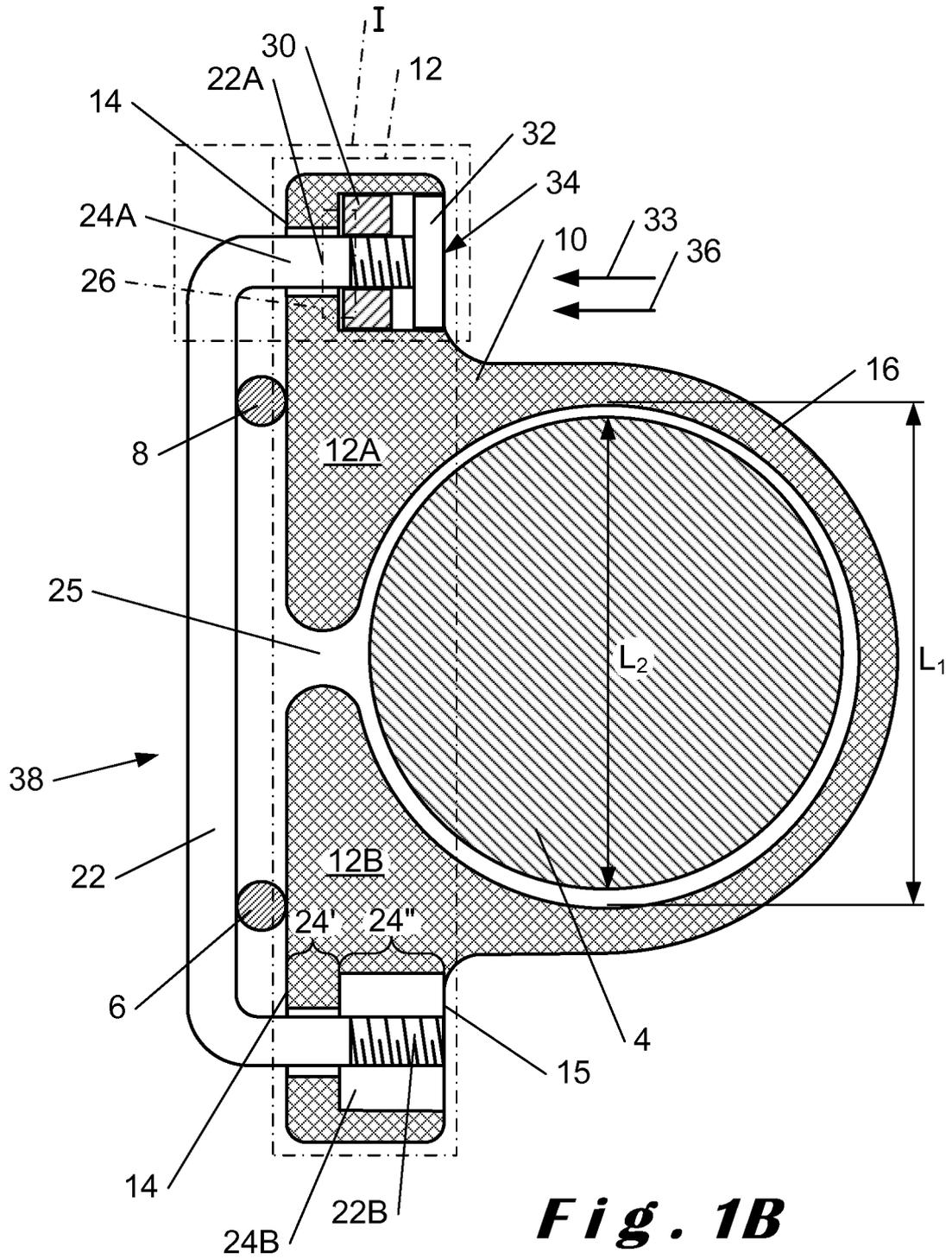
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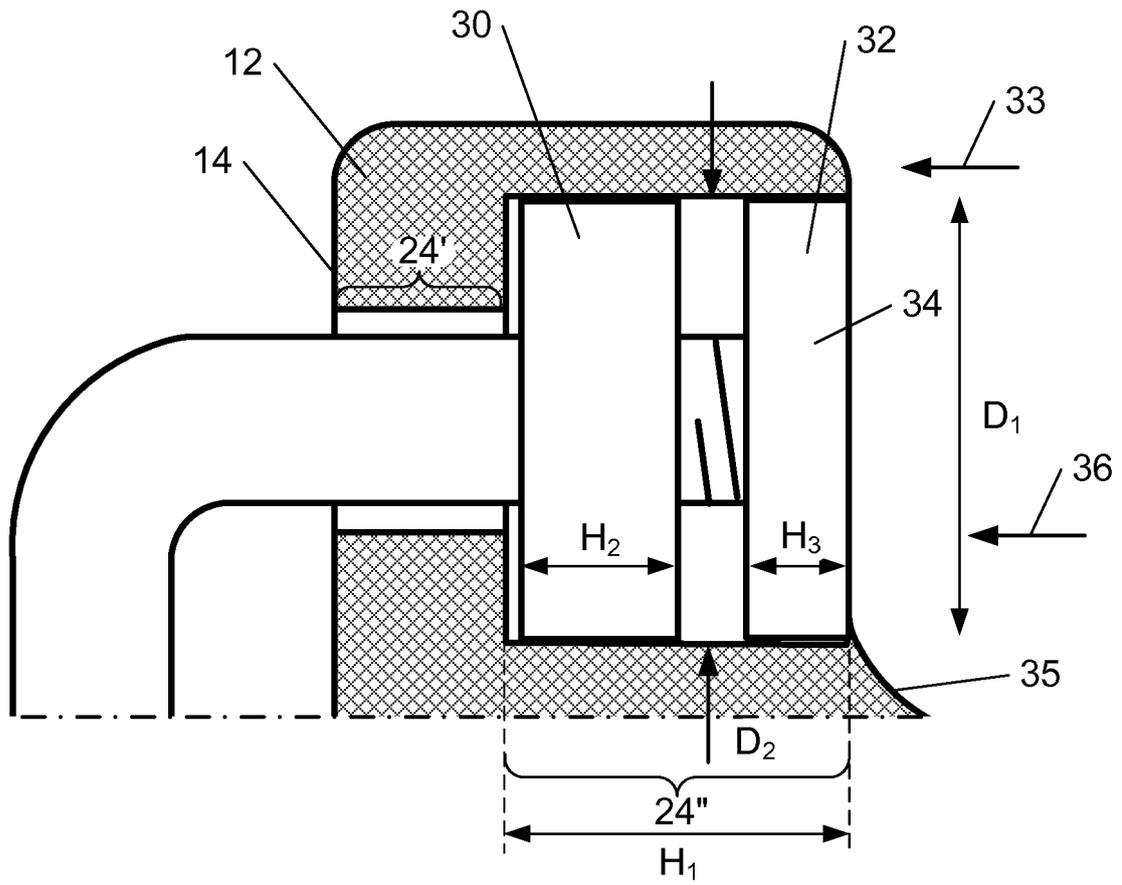
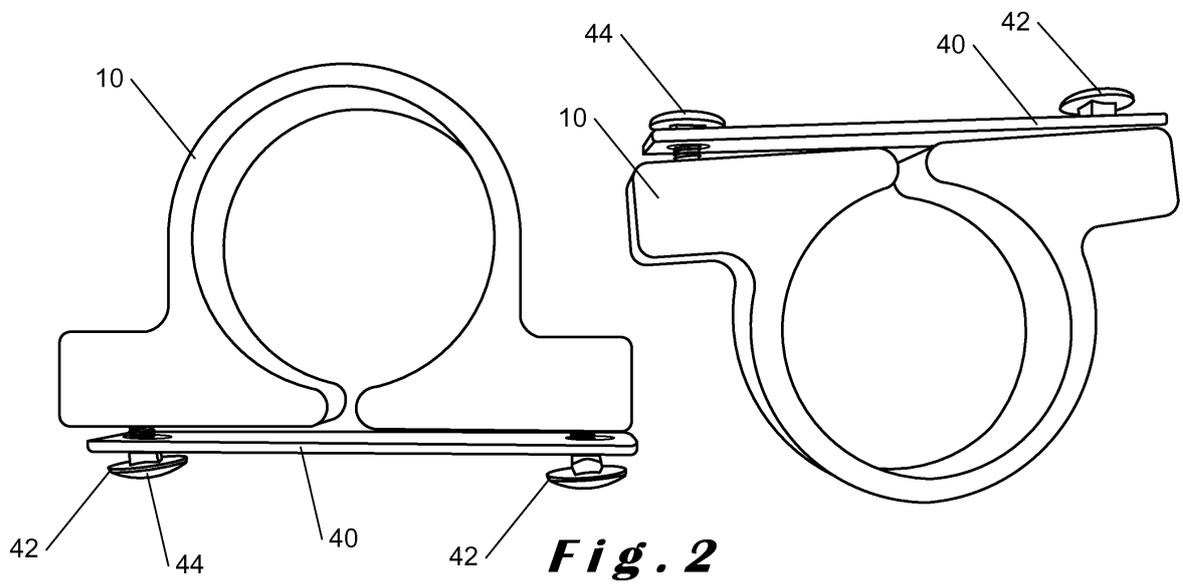
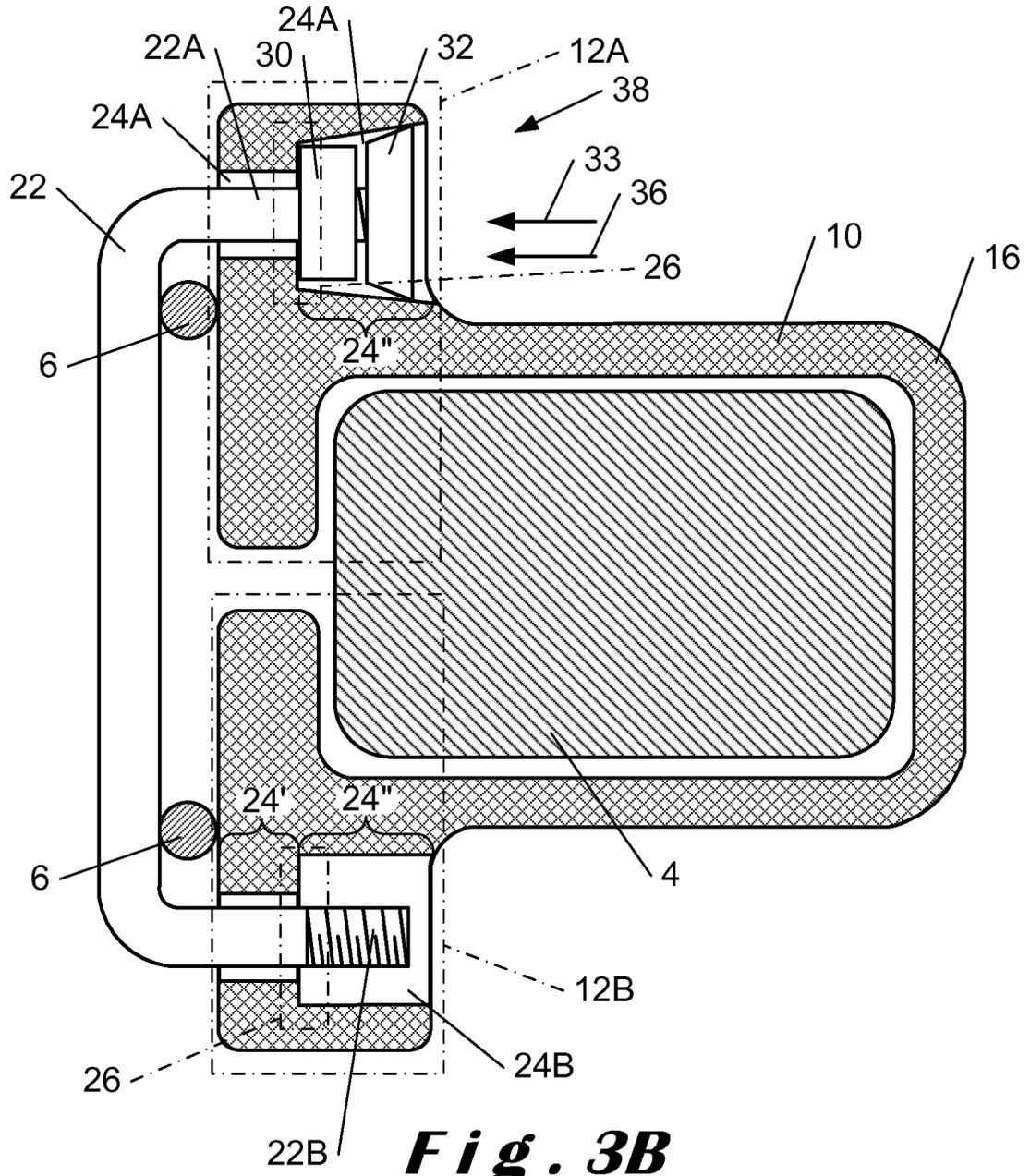


Fig. 1C





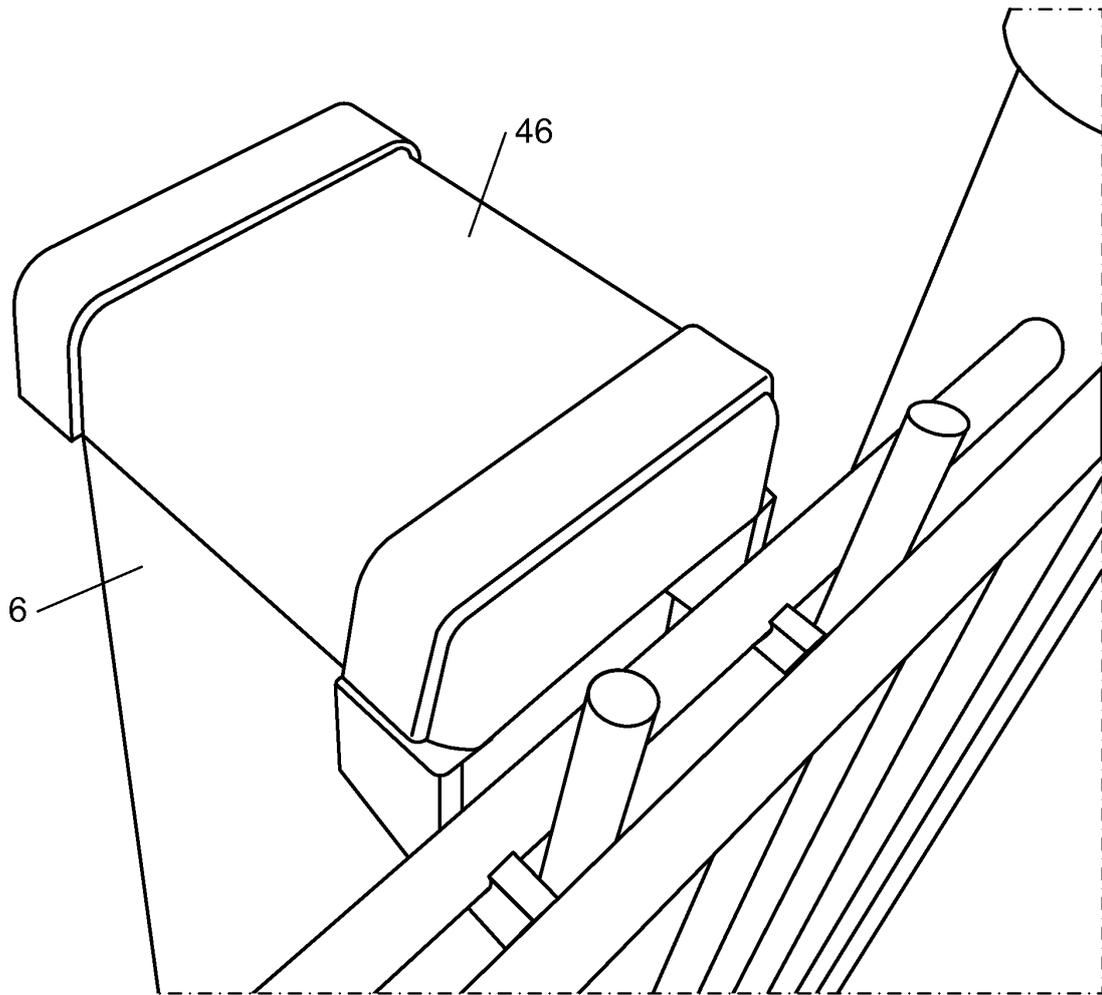


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 12 19 9367

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Place of search The Hague		Date of completion of the search 8 March 2013	Examiner Fordham, Alan
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
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