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(54) **Enclosure, particularly for machines, systems and the like**

(57) An enclosure, particularly for machines, systems and the like, comprising at least one pair of posts (2) and at least one screen (3), which can be positioned vertically so as to face and be proximate to a machine, a system and the like, in order to restrict access. The posts (2) are rigidly associable, on opposite sides, with the screen (3), in order to stably support it in the vertical position.

Each post (2) comprises at least one supporting element (4) for a first substantially perimetric portion of the screen (3), and at least one unit (5) for anchoring to a second substantially perimetric portion of the screen (3), which can slide along the post (2) until the stable clamping of the screen (3), supported by the element (4), occurs; at least one of the first portion and the second portion has a grid-like structure.

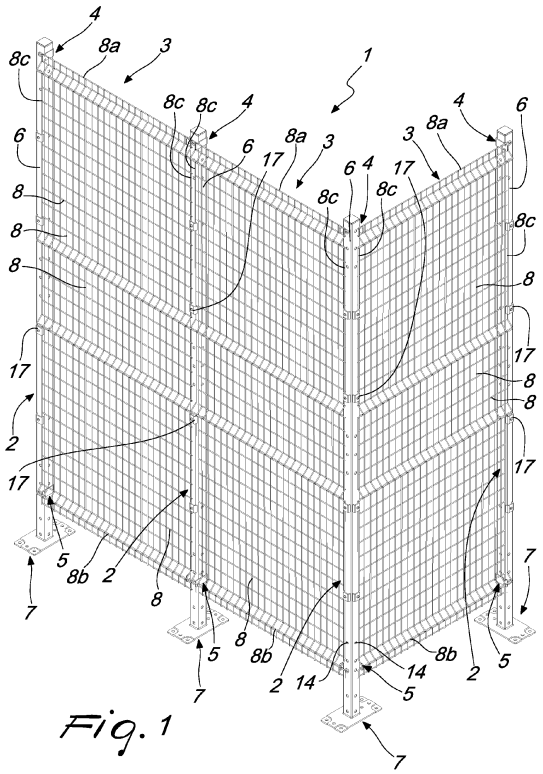

Fig. 1

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Description

[0001] The present invention relates to an enclosure, particularly for machines, systems and the like.

[0002] As is known, the need is now greatly felt (often, moreover, imposed by safety regulations in force) to surround industrial machines with enclosures (or barriers), which prevent personnel from coming into contact, even accidentally, with gearwheels and other elements in motion, thus guarding against the danger of harm and injury (or even in order to prevent damage to the devices concerned).

[0003] Such enclosures are typically obtained by arranging, around the machine, at least two posts, which by way of adapted accessories support a panel that is normally vertical, so as to constitute a barrier adapted to prevent unwanted or accidental access to the exposed elements of the machine.

[0004] As a function of the size and of the space occupation of the specific machine to be protected, the use is thus expected of kits comprising a plurality of posts and panels, which can be conveniently arranged around the perimeter of the machine, thus obtaining an enclosure that is shaped according to the specific requirements (and is usually provided with an opening, in order to allow the operator to interact with the machine, at a predefined command station or work station).

[0005] Such an implementation solution is not however devoid of drawbacks.

[0006] In fact, the need to mutually couple the posts and the panels requires the installation technicians to perform assembly activities which are often laborious and not at all quick to perform, such as the execution of weldings and/or other energy couplings and/or couplings of the screw/female thread type, which have to perform the task of stably coupling the various elements mentioned above.

[0007] Furthermore, it must be noted that often it is necessary to provide specific contrivances on the posts and especially on the panels, which are typically constituted by a plurality of metallic wires interwoven so as to define a grid, in order to ensure the mutual coupling: for example, the use is known of especially provided frames, which are fixed to the edges of the panels, in order to enable their engagement with hooks, protrusions and pins which are fixed to the post.

[0008] This evidently determines an unwelcome rise in the production costs associated with the panels, and also limits the versatility of use of the posts, in that only by using components that are specifically designed and made for mutual engagement it is possible to obtain the desired enclosure, whereas it is substantially impossible to reuse, for example, panels already on the market or lacking an adapted frame or other means of coupling to the respective post.

[0009] Finally, it must be noted that if the upper fastening between post and panel is at a considerable height, the installation technician is forced to use a ladder or an elevator, in order to achieve the coupling, causing further complications and making the assembly activities even more awkward.

[0010] The aim of the present invention is to solve the above-mentioned problems, by providing an enclosure that can be quickly and easily installed.

[0011] Within this aim, an object of the invention is to provide an enclosure that can be installed in a practical and easy manner, using reticulate panels constituted by a plurality of interwoven metallic wires.

[0012] A further object of the invention is to provide an enclosure that can be easily installed, even if the upper fastening between post and panel is at a considerable height.

[0013] Another object of the invention is to provide an enclosure that ensures a high reliability of operation.

[0014] Another object of the invention is to provide an enclosure that can be easily implemented using elements and materials that are readily available on the market.

[0015] Another object of the invention is to provide an enclosure that is low-cost and safe in application.

[0016] This aim and these objects are achieved by an enclosure, particularly for machines, systems and the like, comprising at least one pair of posts and at least one screen, which can be positioned vertically so as to face and be proximate to a machine, a system and the like, for restricting access, said posts being rigidly associable, on opposite sides, with said screen, for the stable support of said screen in the vertical position, **characterized in that** each one of said posts comprises at least one supporting element for a first substantially perimetric portion of said screen, and at least one unit for anchoring to a second substantially perimetric portion of said screen, which can slide along said post until the stable clamping of said screen, supported by said element, occurs, at least one of said first portion and said second portion having a grid-like structure.

[0017] Further characteristics and advantages of the invention will become more apparent from the description of two preferred, but not exclusive, embodiments of the enclosure according to the invention, illustrated by way of non-limiting example in the accompanying drawings wherein:

Figures 1 to 18 show the enclosure according to the invention, in the first embodiment; more specifically:

Figure 1 is a three-quarters perspective front view of an enclosure according to the invention;

Figure 2 is a three-quarters perspective rear view of an enclosure according to the invention;

Figure 3 is an enlarged perspective view of a first detail of Figure 1;

Figure 4 is an enlarged perspective view of a second detail of Figure 1;

Figure 5 is an enlarged perspective view of a third detail of Figure 1;

Figure 6 is an enlarged perspective view of a first detail of Figure 2;

Figure 7 is an enlarged perspective view of a second detail of Figure 2;
Figure 8 is an enlarged perspective view of a third detail of Figure 2;
Figure 9 is an enlarged perspective view of the coupling between anchoring unit and upright;
Figure 10 is an enlarged perspective view of the coupling between supporting element and screen;
Figure 11 is an exploded perspective view of a fourth detail of Figure 1, and shows the coupling of an additional component to the enclosure according to the invention;
Figure 12 is an exploded perspective view of the component in Figure 11, coupled to the enclosure according to the invention;
Figure 13 a perspective view showing the coupling of the supporting element and of the anchoring unit to the upright;
Figures 14 to 16 are perspective views showing the supporting element and the anchoring unit, in different variations of embodiment;
Figures 17 and 18 are perspective views of further components of the enclosure according to the invention;
Figures 19 to 39 show the enclosure according to the invention, in the second embodiment, more specifically:
Figure 19 is a perspective view of the enclosure according to the invention;
Figure 20 is an enlarged perspective view of a first detail of Figure 19;
Figure 21 is an enlarged perspective view of a second detail of Figure 19;
Figure 22 is a perspective view of the enclosure according to the invention during the coupling between anchoring unit and screen;
Figure 23 is an enlarged perspective view of a detail of Figure 22;
Figure 24 is a perspective view of the supporting element according to the invention;
Figure 25 is a perspective view of a component of the anchoring unit, in a first variation of embodiment;
Figures 26 to 29 are perspective views of different variations of embodiment of further components of the anchoring unit, all of which can be coupled to the component in Figure 25;
Figure 30 is a perspective view of the anchoring unit, in a second variation of embodiment;
Figure 31 is a perspective view of the anchoring unit, in a third variation of embodiment;
Figures 32 to 35 are three-quarters perspective front views of the coupling of the anchoring unit, in the first variation of embodiment, to the post;
Figure 36 is an enlarged perspective view of a detail of Figure 32;
Figure 37 is an enlarged perspective view of a detail of Figure 33;
Figure 38 is an enlarged perspective view of a detail of Figure 34;
Figure 39 is an enlarged perspective view of a detail of Figure 35.

[0018] With particular reference to the figures, the reference numeral 1 generally designates an enclosure, which can be used to delimit and prevent access to any predefined area (while remaining within the scope of protection claimed herein), but which is preferably used to restrict access to machines, systems and the like: such use therefore constitutes the preferred application of the present invention and constant reference shall be made to it in the present discussion.

[0019] The enclosure 1 comprises at least one pair of posts 2 and at least one screen 3, which can be positioned vertically so as to face and be proximate to a machine, a system and the like, in order to restrict, as has been seen, access to the apparatus concerned, and thus guard against the danger of harm or injury following contact with exposed gearwheels and devices (and/or, more simply, in order to prevent unwanted interactions with the apparatus itself, and thus breakdowns of the latter).

[0020] The posts 2 can thus be rigidly associated, on opposite sides, with the screen 3, in order to ensure a stable support of the screen 3 in the above-mentioned vertical position.

[0021] According to the invention, each post 2 comprises at least one supporting element 4 for a first substantially perimetric portion of the screen 3, and at least one unit 5 for anchoring to a second substantially perimetric portion of the screen 3, which can slide along the post 2 until the stable clamping of the screen 3, supported by the element 4, occurs. Furthermore, at least one of the first portion and the second portion has a grid-like structure.

[0022] In particular, the enclosure 1 according to the invention comprises a plurality of screens 3 and a plurality of posts 2, which can be associated in pairs with a respective screen 3, by way of respective supporting elements 4 and anchoring units 5, in order to surround at least partially a machine, a system and the like (while optionally retaining a region of discontinuity such as to define an access opening).

[0023] As will be explained in more detail below, the supporting elements 4 and the anchoring units 5 can positively ensure the simultaneous coupling of the same post 2 with two or more screens 3, which are parallel or perpendicular to each other and this makes it possible to provide enclosures 1 according to any configuration and plan, so as to be able to surround and protect any type of machine and system, simply by using a few simple components, described here (which moreover, with obvious and simple modifications, can also enable the provision of enclosures 1 in which contiguous screens 3 are variously inclined with respect to each other, while remaining within the scope of protection claimed herein).

[0024] More specifically, each post 2 comprises an upright 6, which can be associated with at least one respec-

tive screen 3 and which extends from a footing 7 that can be positioned on the ground.

[0025] According to a first embodiment, which is proposed by way of non-limiting example in Figures 1 to 18, the screen 3 is constituted substantially by a plurality of wires (or bars, or the like) 8, 8a, 8b, 8c (which are preferably rigid and made for example of iron or other metallic materials, or even of a polymeric material), which are interwoven so as to define the grid-like structure (which thus in such embodiment affects the entire screen 3).

[0026] Furthermore, with further reference to such first embodiment, each supporting element 4 is constituted substantially by a contoured block which comprises at least one plate 9, which can be rigidly applied, on the side opposite to the footing 7, on a face of the upright 6, which in turn has a transverse cross-section that is substantially polygonal (so that the plate 9 can thus adhere to it with at least one surface region thereof).

[0027] Furthermore, in order to be capable of supporting, at least partially, a respective screen 3, the contoured block 9 comprises at least one tab 10, which is substantially perpendicular to the plate 9, so as to protrude at least partially from the upright 6 (when the plate 9 adheres to the face of the latter): right at its protruding portion, the tab 10 is in fact provided with at least one recess 11, which can be oriented upward, so as to enable the support of a wire 8a (at the above-mentioned first perimetric portion of the screen 3), which is thus in fact hung on the contoured block that constitutes the supporting element 4 (as illustrated in Figure 10).

[0028] Advantageously, the enclosure 1 according to the invention comprises fixing units 12, of the type of bolts, other threaded elements, nails and the like, which can be inserted in a contoured guiding slot 13, which is provided along the plate 9, and in a hole selected from a plurality of holes 14, which are distributed along the upright 6, so as to ensure the stable coupling of the block 11 to the upright 6.

[0029] Conveniently, in the embodiment proposed by way of non-limiting example in Figures 1 to 18, each anchoring unit 5 is also substantially constituted by the contoured block comprising the plate 9, which can be applied (in this case proximate to the footing 7) on the face of the upright 6, and the tab 10.

[0030] Thus in order to be capable of obtaining the stable clamping of the screen 3, which is already supported by the element 4, it is possible to partially insert the fixing unit 12 in the slot 13 and in the selected hole 14: the plate 9 can thus move along the face of the upright 6 while the fixing unit 12 slides in the slot 13, until a wire 8b of the screen 3 (at the previously mentioned second portion) is brought into abutment against the respective recess 11 of the tab 10, which in this case can be oriented downward (as can be seen for example in Figures 3, 4 and 5).

[0031] It should be noted that the choice to provide enclosures 1 according to the invention in which the supporting element 4 and the anchoring unit 5 are constituted by blocks which have the same structure (or, as will be seen below, have some specific structures, which can be used both for supporting and for anchoring the screens 3) makes it possible to reduce the number of components necessary to provide the enclosure 1, with evident logistical advantages.

[0032] In a first variation, therefore, the block can be substantially L-shaped and comprise a plate 9 and a tab 10 which is provided with one recess 11 or with two mutually opposite recesses 11 (as illustrated in Figure 14). Such a variation can for example be effectively used in order to support a screen 3 arranged at the ends of the enclosure 1 (as illustrated in detail in Figure 3).

[0033] In a second variation (proposed in Figure 16), the block is L-shaped (as in the first variation described above) and both the plate 9 and the tab 10 (which in this case are provided with the same shape) can protrude partially from the upright 6 and are provided with respective slots 13, in order to be capable of being associated with uprights 6 that are intended to support two different screens 3 at right angles to each other (as in the detail in Figure 5).

[0034] Conveniently, in a third variation, shown in Figure 15, the block (which is substantially U-shaped) can comprise two mutually opposite plates 9, which can be rigidly applied to respective faces of the upright 6 and are provided with respective recesses 11: in order to support or clamp respective wires 8a, 8b and as a consequence support, at least partially, at least two screens 3 which are laterally adjacent (as in the detail in Figure 4).

[0035] Furthermore, as can be seen for example in Figure 18, in order to guard against the danger of a subsequent extraction of the fixing unit 12, and thus of decoupling the elements 4 or the anchoring unit 5 from the upright 6, the enclosure 1 according to the invention can comprise sleeves 15, which can be keyed on the fixing units 12, and which prevent their extraction from the hole 14 in which they are inserted, by interference thanks to tongues 16 which protrude transversely from the lateral surface.

[0036] Conveniently, as for example can clearly be seen in Figures 11 and 12, the enclosure 1 according to the invention comprises a plurality of substantially U-shaped clips 17 (one of which is shown in a possible embodiment in Figure 17): when the upright 6 is interposed between two screens 3 and is rigidly associated therewith, respective perimetric wires 8c of the screens 3 can be clamped by the clip 17, which in turn can be anchored stably at a predefined height of the upright 6. For example, the anchoring of the clip 17 can be achieved thanks to a pin 18 that extends from the clip 17 (or can be stably associated with it) and that is elastically deformable, thanks to an axial cut 18a with which it is provided, in order to be capable of being inserted in a respective hole 14 provided in the upright 6 (which can furthermore also be used, as previously noted, to receive the fixing unit 12).

[0037] If an upright 6 is interposed between two screens 3 that are at right angles to each other, as illus-

trated in Figure 1, then respective clips 17 can still be effectively used, in order to add additional stability to the coupling between the upright 6 and a single screen 3.

[0038] In a second embodiment, which does not exhaust the ways of carrying out the invention while remaining within the scope of protection claimed herein and which is illustrated in detail in Figures 19 to 39, the screen 3 has a perimetric framework, which comprises at least one pair of mutually opposite hollow profiles 19, which support a plurality of interwoven wires 8, 8d (of the type of those described in the first embodiment), so as to define the previously mentioned grid-like structure (which in this case therefore does not affect the whole screen 3, but only a central region of it).

[0039] As can be seen in the accompanying figures, the frame can be substantially defined by four profiles 19, which are arranged so as to define a rectangular frame inside which the above-mentioned grid-like structure extends.

[0040] Thus in such embodiment, the supporting element 4 comprises at least one bracket 20 (preferably, but not exclusively, L-shaped), which protrudes (perpendicularly) from a face of the upright 6 proximate to the footing 7, and which is thus capable of supporting, at least partially, a respective profile 19, at the first perimetric portion.

[0041] More specifically, the supporting element 4 comprises a first collar 21, the shape of which is complementary to the transverse cross-section of the upright 6 (which can for example be square, or rectangular), in order to be capable of providing a stable anchoring to the post 2, proximate to the footing 7. Extending from the first collar 21, as for example can be seen in Figure 24, is a plurality of brackets 20, which protrude from the various faces of the upright 6 in different directions, so that the same element 4 can support respective profiles 19 of corresponding screens 3 (which are intended to be arranged side by side, mutually parallel or perpendicular, or even in another manner, by way of simple and straightforward modifications to said element 4).

[0042] Conveniently, in such embodiment the anchoring unit 5 comprises a second collar 22, the shape of which is also complementary to the transverse cross-section of the upright 6, which is provided with at least one curve 22a, which is such as to define a pocket 23 interposed between the second collar 22 and the upright 6, in which a shank 24 (for example constituted by two elastically deformable tines 24a) of a hook 25, which is directed downward, can thus be stably accommodated.

[0043] The second collar 22 (with the hook 25 coupled to it) can slide along the upright 6 until the hook 25 is brought into abutment against a respective wire 8d, thus at the second perimetric portion of the screen 3, which in turn is already supported by the bracket 20, for its stable clamping.

[0044] The possibility is furthermore not ruled out (while remaining within the scope of protection claimed herein) of providing anchoring units 5 comprising a second collar 22 of the type described above, with which there can be associated, instead of the hook 25, an angular element 26 (thanks to, again, a shank 24 with which it is also provided), of the type illustrated for example in Figures 28 and 29, according to specific applicative requirements.

[0045] With reference to Figures 30 and 31, it should furthermore be noted that the enclosure 1 according to the invention can have anchoring units 5, as an alternative to those provided with a second collar 22, in which a third collar 27 (similar to the second collar 22, but lacking the curves 22a) is associated, by welding, gluing, or the like, to hooks 25 or angular elements 26.

[0046] Finally, it should be noted that in the preferred, but not exclusive, embodiment (illustrated for example in Figures 24, 25, 30 and 31), in order to enable an easy fixing at a preset vertical height, the collars 21, 22, 27 can be constituted by a band closed to define a ring: at the two mutually opposite end flaps, two extensions 28 protrude from such band, in which respective, mutually facing eyelets 29 are provided. Such embodiment ensures the elastic deformability necessary in order to make the collars 21, 22, 27 slide on the uprights 6 and at the same time, when the desired height is reached, by inserting screws 30 or the like in the eyelets 29 one achieves the clamping of the respective collar 21, 22, 27 around the corresponding upright 6, thus rendering the mutual coupling stable. Furthermore, with specific reference to the second collar 22, it is sufficient to partially loosen the clamping with the screw 30 still inserted, in order to allow the sliding of the respective anchoring unit 5 along the upright 6, according to the methods and objects previously explained above.

[0047] The use of the enclosure according to the invention is as follows.

[0048] As has been shown, faced with the necessity of surrounding, at least partially, a machine, a system, or the like, it is possible to use the posts 2 and the screens 3, in order to compose in a practical and easy manner a protective enclosure 1, which is capable of preventing access to the apparatus concerned.

[0049] More precisely, each screen 3 can be kept in the vertical position by arranging at its sides a pair of posts 2, which are capable of supporting it and sustaining it thanks to the supporting elements 4 and to the anchoring units 5 (be they different, as in the second embodiment illustrated previously, or constituted by blocks having the same structure, as in the first embodiment proposed).

[0050] Even more specifically, with reference to the first embodiment described and illustrated in the accompanying drawings, which is indicated for screens 3 that are entirely constituted by grids of wires 8, 8a, 8b, 8c, the installation technician can first couple each post 2 to the respective supporting elements 4 (provided with plates 9) and anchoring units 5 (with blocks 11), and then couple them to the uprights 6 thanks to the fixing units 12.

[0051] Typically, the supporting element 4 is thus rig-

idly fixed at the highest hole 14 of the upright 6, whereas the respective fixing unit 12 is partially inserted in the slot 13 of the corresponding anchoring unit 5 and in another hole 14, below, proximate to the footing 7, thus allowing for the possibility of moving the anchoring unit 5 along the face of the upright 6.

[0052] Subsequently, and after having arranged the two posts 2 in the position desired, the installation technician can easily accommodate the highest wire 8a of the screen 3 in the recesses 11 of the plates 9, which protrude from the uprights 6, in fact hanging the screen 3 on the posts 2, as illustrated in Figure 10.

[0053] Then, in order to ensure the clamping of the screen 3, it is sufficient to make the block 11 of the anchoring unit 5 slide downward along each upright 6 (with the contoured slot 13 guiding the movement), until the seat 12 is brought into abutment against a respective wire 8b.

[0054] As has been shown, each supporting element 4 and each anchoring unit 5 can have blocks (L-shaped or U-shaped) which are provided with one or more tabs 10 and one or more recesses 11, so that each post 2 to which they are coupled can support two or more contiguous screens 3, so as to compose, in a practical and easy manner, enclosures 1 with a grid-like structure having any structure and plan.

[0055] Furthermore, in order to consolidate the mutual coupling between two contiguous screens 3 and the post 2 interposed between them (or even just to better couple an upright 6 to a screen 3), the installation technician can use the clips 17.

[0056] If it is desired to surround a machine or a system with screens 3 that only partially have a grid-like structure, it is still possible to use the enclosure 1 according to the invention, using for example supporting elements 4 and anchoring units 5 of the type of those described with reference to the second embodiment shown in the accompanying drawings, which is particularly suitable for screens 3 provided with a frame that is constituted by at least two mutually opposite hollow profiles 19.

[0057] In such case in fact, the installation technician can first make the collars 21, 22, 27 slide on each upright 6 until they are brought to the desired vertical heights, and then clamp them around the posts 2 using the screws 30 which can be inserted in the eyelets 29.

[0058] Subsequently, and after having arranged the two posts 2 in the desired position, the installation technician can simply and easily rest the edge of the profiles 19 which are arranged at the sides of a screen 3 on respective brackets 20 that protrude from the first collars 21 (which will conveniently be positioned proximate to the footings 7).

[0059] Thus, in order to ensure the clamping of the screen 3, it is sufficient to make the hooks 25 slide downward (and the corresponding second collars 22, which are arranged on the side opposite to the footings 7), until they are brought into abutment against respective wires 8d.

[0060] In this case too, as previously noted for the first embodiment, each supporting element 4 can be provided with two or more brackets 20, and each anchoring unit 5 can have two or more hooks 25, so that each post 2 with which they are coupled can support two or more contiguous screens 3, so as to form in a practical and easy manner enclosures 1 with a partially grid-like structure, according to any structure and plan.

[0061] It is thus evident that the enclosure 1 according to the invention can be quickly and easily installed, and that it makes it possible to provide obstacles to unwanted access to machines, systems and the like, using screens 3 having a completely or partially grid-like structure, while ensuring maximum versatility and the possibility of optionally reusing screens 3 already on the market, without having to modify them.

[0062] Furthermore, the simplicity of the necessary assembly activities enables their execution without resorting to ladders or elevators, even if upper fastening is required between post 2 and screen 3 at considerable heights, and on the contrary (at least with reference to the second embodiment) choosing at will the height at which to arrange the supporting elements 4 and the anchoring units 5.

[0063] In practice it has been found that the enclosure according to the invention fully achieves the set aim, in that, by using posts in pairs which are designed to stably support a respective screen, and which comprise an element for supporting a first substantially perimetric portion of the screen, and a unit for anchoring to a second substantially perimetric portion of the screen, which can slide along the post, in order to clamp it stably, with furthermore at least one of the first portion and the second portion having a grid-like structure, it is possible to obtain an enclosure that can be quickly and easily installed.

[0064] The invention, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims. Moreover, all the details may be substituted by other, technically equivalent elements.

[0065] In the embodiments illustrated, individual characteristics shown in relation to specific examples may in reality be interchanged with other, different characteristics, existing in other embodiments.

[0066] In practice, the materials employed, as well as the dimensions, may be any according to requirements and to the state of the art.

[0067] The disclosures in Italian Patent Application No. BO2013A000016 from which this application claims priority are incorporated herein by reference.

[0068] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. An enclosure, particularly for machines, systems and the like, comprising at least one pair of posts (2) and at least one screen (3), which can be positioned vertically so as to face and be proximate to a machine, a system and the like, for restricting access, said posts (2) being rigidly associable, on opposite sides, with said screen (3), for the stable support of said screen (3) in the vertical position, **characterized in that** each one of said posts (2) comprises at least one supporting element (4) for a first substantially perimetric portion of said screen (3), and at least one unit (5) for anchoring to a second substantially perimetric portion of said screen (3), which can slide along said post (2) until the stable clamping of said screen (3), supported by said element (4), occurs, at least one of said first portion and said second portion having a grid-like structure.

2. The enclosure according to claim 1, **characterized in that** it comprises a plurality of said screens (3) and a plurality of said posts (2), which are rigidly associable in pairs with a respective one of said screens (3), by means of said respective supporting elements (4) and said anchoring units (5), in order to surround at least partially a machine, a system and the like, each one of said posts (2) comprising an upright (6), which can be associated with at least one of said respective screens (3) and protrudes from a footing (7) that can be positioned on the ground.

3. The enclosure according to claims 1 and 2, **characterized in that** said screen (3) is constituted substantially by a plurality of interwoven wires (8, 8a, 8b, 8c) so as to define said grid-like structure, each one of said supporting elements (4) being constituted substantially by a contoured block that comprises a plate (9) which can be applied rigidly, on the side opposite to said footing (7), on a face of said upright (6), having a substantially polygonal transverse cross-section, and at least one tab (10), which is substantially perpendicular to said plate (9) so as to protrude at least partially from said upright (6), said tab (10) being provided with at least one recess (11), which can be oriented upward, for supporting one of said wires (8a), at said first portion, and for the consequent at least partial support of a respective one of said screens (3).

4. The enclosure according to claim 3, **characterized in that** it comprises fixing units (12), such as bolts, other threaded elements, nails and the like, which can be inserted in a contoured guiding slot (13) which is provided along said plate (9) and in a hole selected from a plurality of holes (14) which are distributed along said upright (6).

5. The enclosure according to claims 3 and 4, **characterized in that** each one of said anchoring units (5) is constituted substantially by said contoured block that comprises said plate (9), which can be applied, proximate to said footing (7), on said face of said upright (6), and said at least one tab (10), upon the partial insertion of said fixing unit (12) in said slot (13) and in said selected hole (14), said plate (9) being movable along said face of said upright (6), with said fixing unit (12) able to slide within said slot (13), until one of said wires (8b) of said screen (3) is brought, at said second portion, into abutment against said respective recess (11) of said tab (10), which can be oriented downward, for the stable clamping of said screen (3), supported by said element (4).

6. The enclosure according to one or more of claims 3 to 5, **characterized in that** said block comprises two of said mutually opposite tabs (10), each one of said tabs (10) having at least one of said recesses (11), for the support or clamping of one of said wires (8a, 8b) and the consequent at least partial support of at least two of said screens (3).

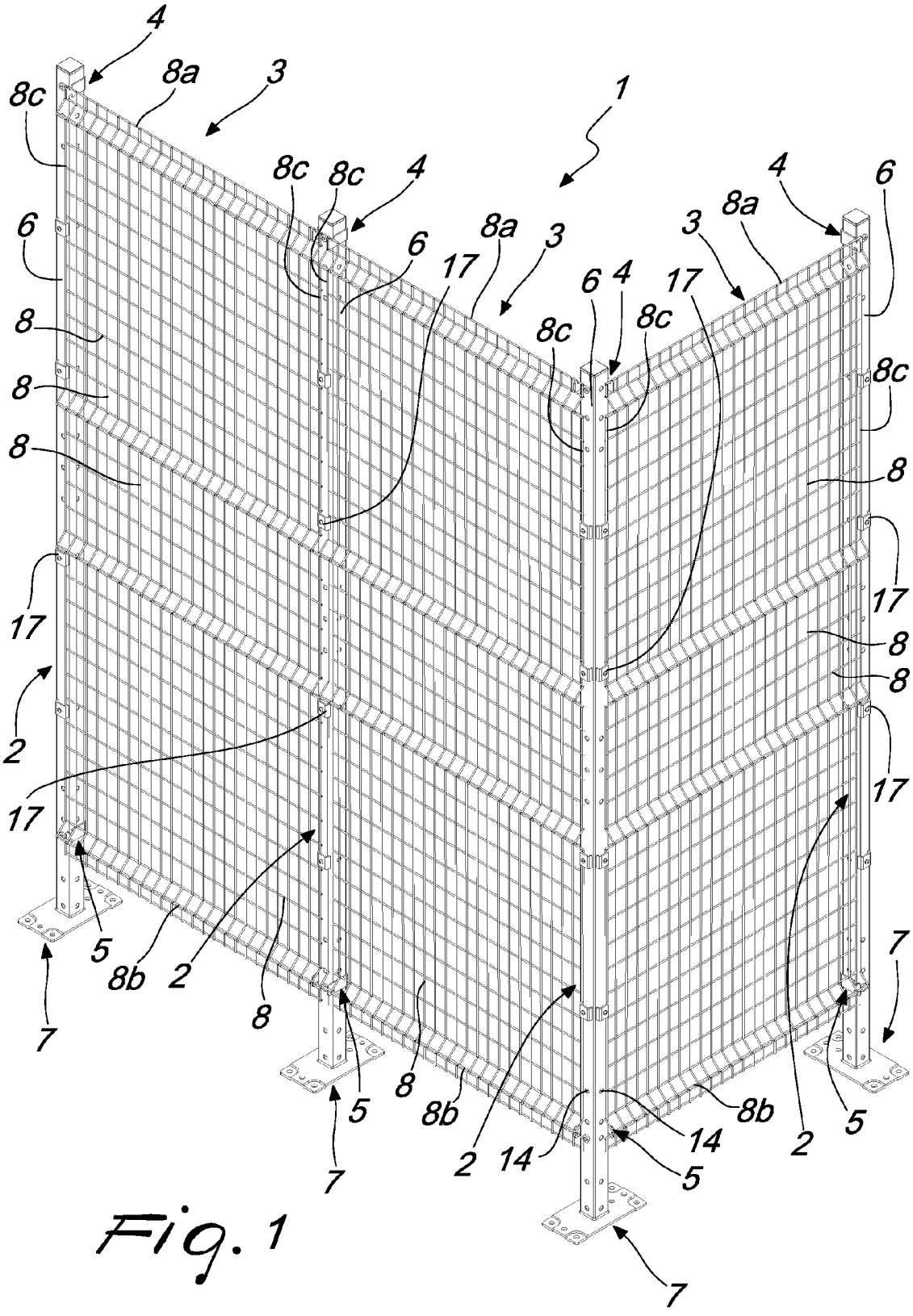
7. The enclosure according to one or more of claims 3 to 6, **characterized in that** it comprises a plurality of substantially U-shaped clips (17), when said upright (6) is interposed between two of said screens (3) and is rigidly associated therewith, respective perimetric wires (8c) of said screens (3) being clamped by said clip (17), which can be anchored stably at a predefined height of said upright (6).

8. The enclosure according to claims 1 and 2, **characterized in that** said screen (3) has a perimetric framework, which comprises at least one pair of mutually opposite hollow profiles (19) for supporting a plurality of interwoven wires (8, 8d) in order to define said grid-like structure, said supporting element (4) comprising at least one bracket (20), which protrudes from a face of said upright (6) proximate to said footing (7), for the at least partial support of a respective one of said profiles (19) at said first perimetric portion.

9. The enclosure according to claim 8, **characterized in that** said supporting element (4) comprises a first collar (21), the shape of which is complementary to the transverse cross-section of said upright (6), for its stable anchoring to said post (2), proximate to said footing (7), a plurality of said brackets (20) protruding from said first collar (21) and projecting in different directions for the at least partial support of respective profiles (19) of said corresponding screens (3).

10. The enclosure according to claims 8 and 9, **charac-**

terized in that said anchoring unit (5) comprises a second collar (22), the shape of which is complementary to the transverse cross-section of said upright (6) and has at least one curve (22a) that defines a pocket (23), which is interposed between said second collar (22) and said upright (6), for the stable accommodation of a shank (24) of a hook (25), which is directed downward, said second collar (22) being able to slide along said upright (6) until said hook (25) is moved into abutment against a respective one of said wires (8d), at said second perimetric portion of said screen (3), supported by said bracket (20), for stable clamping.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8a
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8c
8c
8c
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8a
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8a
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17
6
4
8c
8c
8c
8
8
8
8
8c
8
17
17
8
8
2
17
17
5
8b
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8b
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14
5
8b
2
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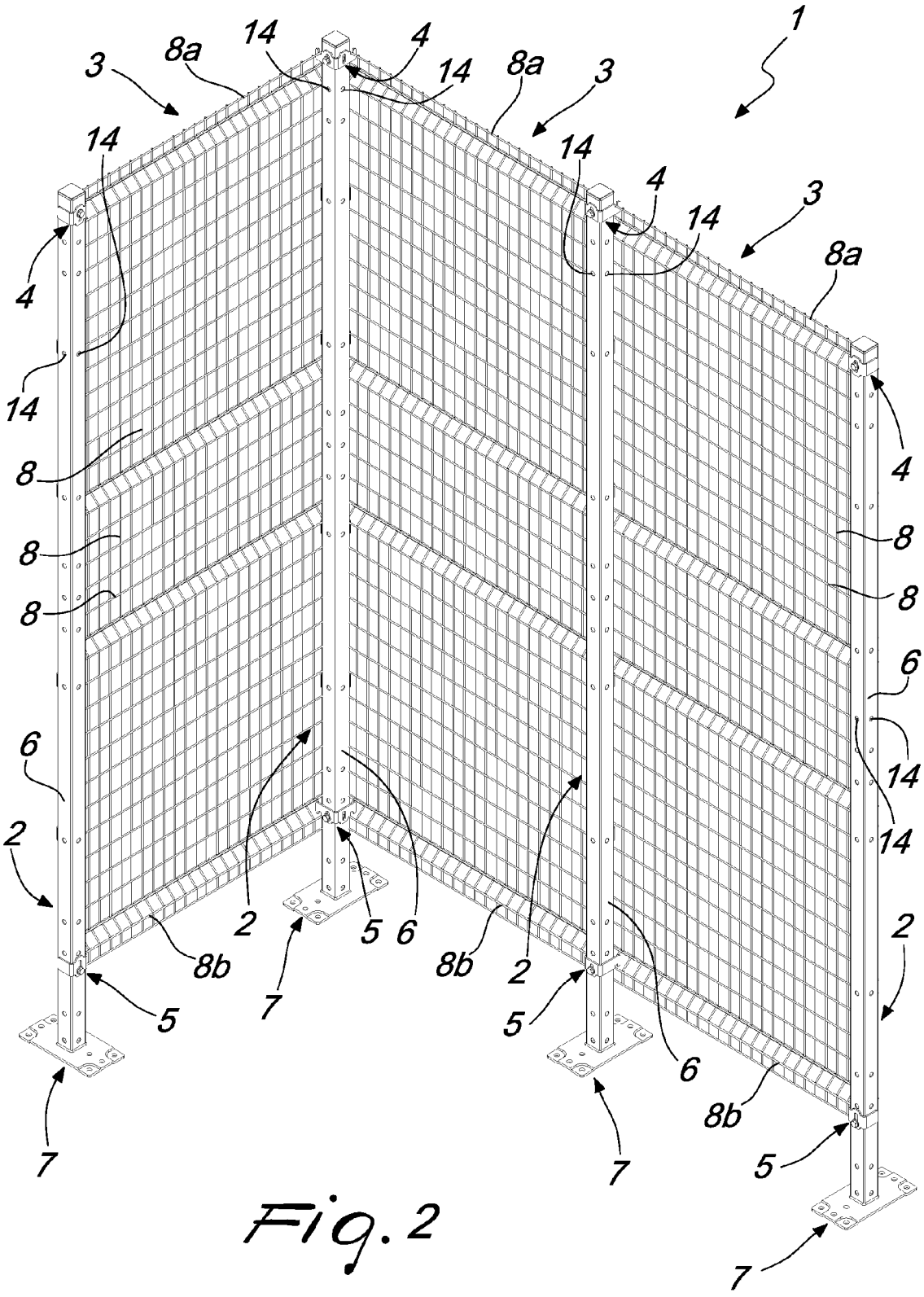
7

Fig. 1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6
6
14
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8b
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8b
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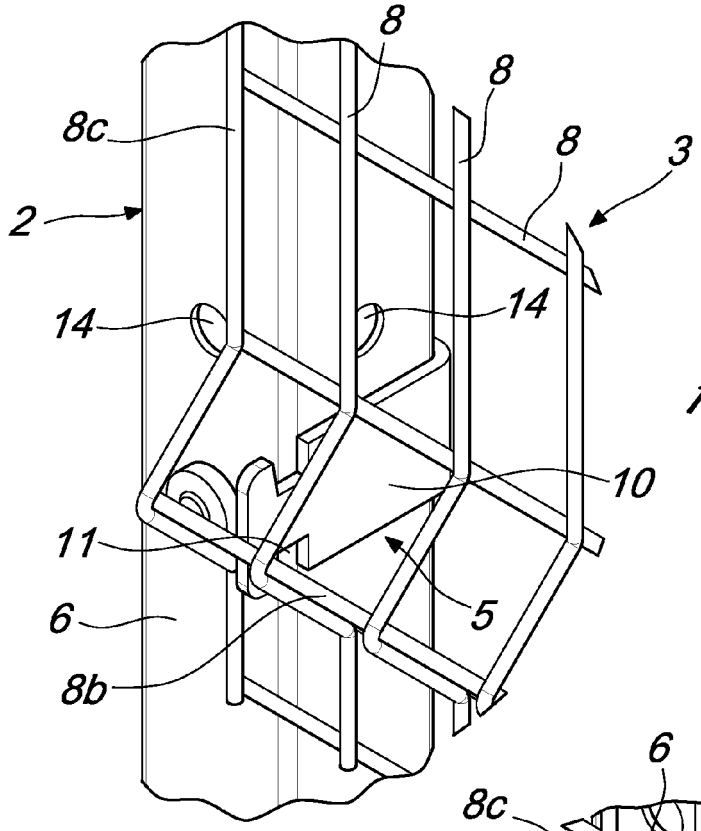
7

Fig. 2



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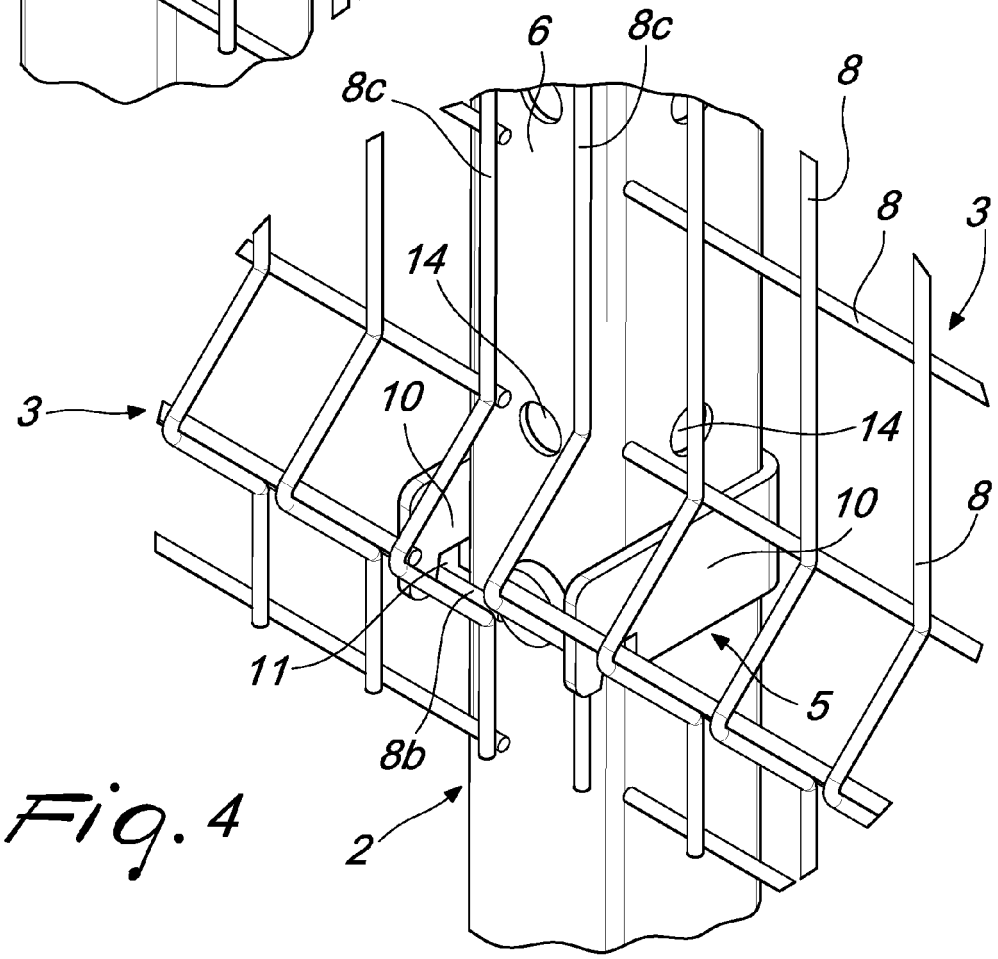

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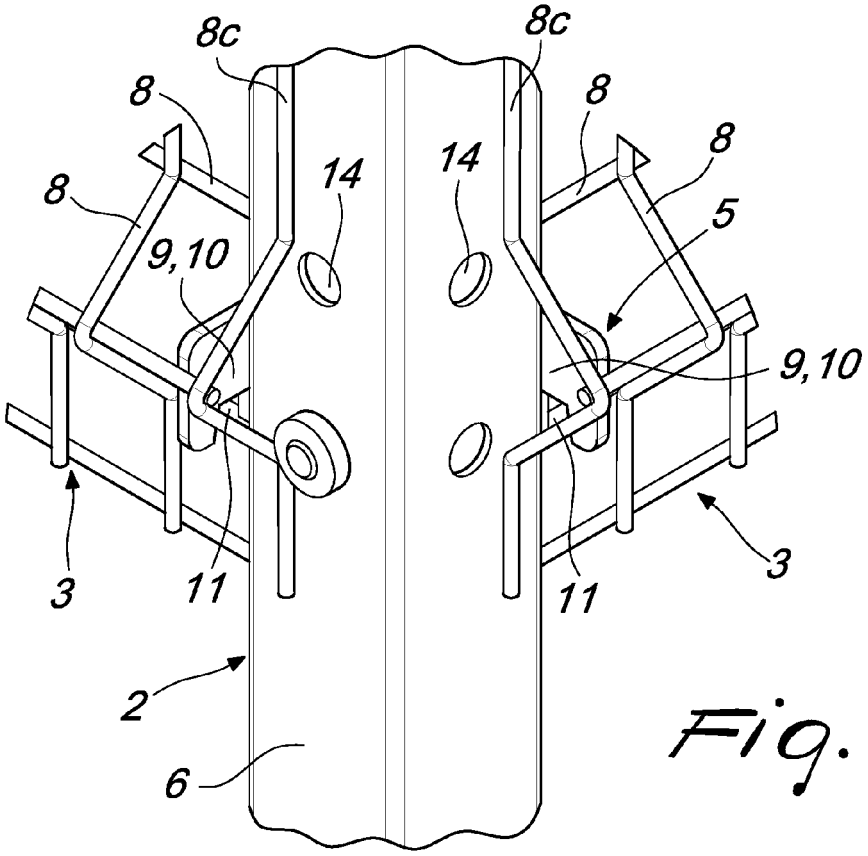
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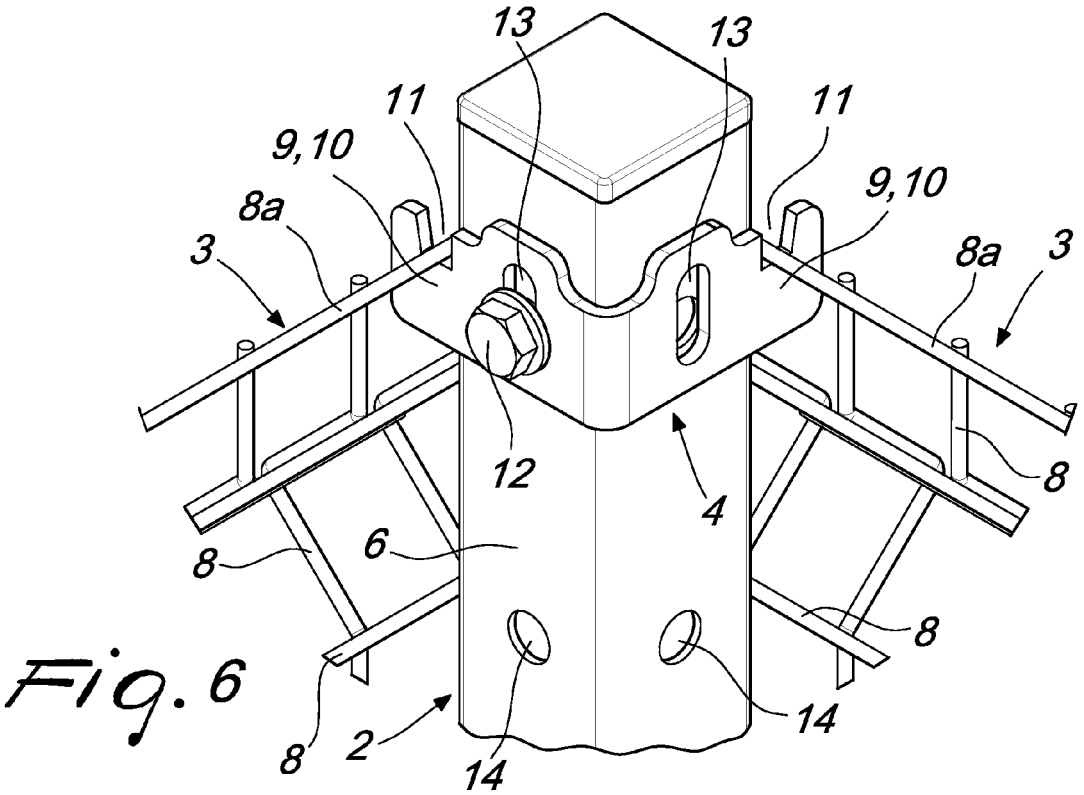
6

Fig. 5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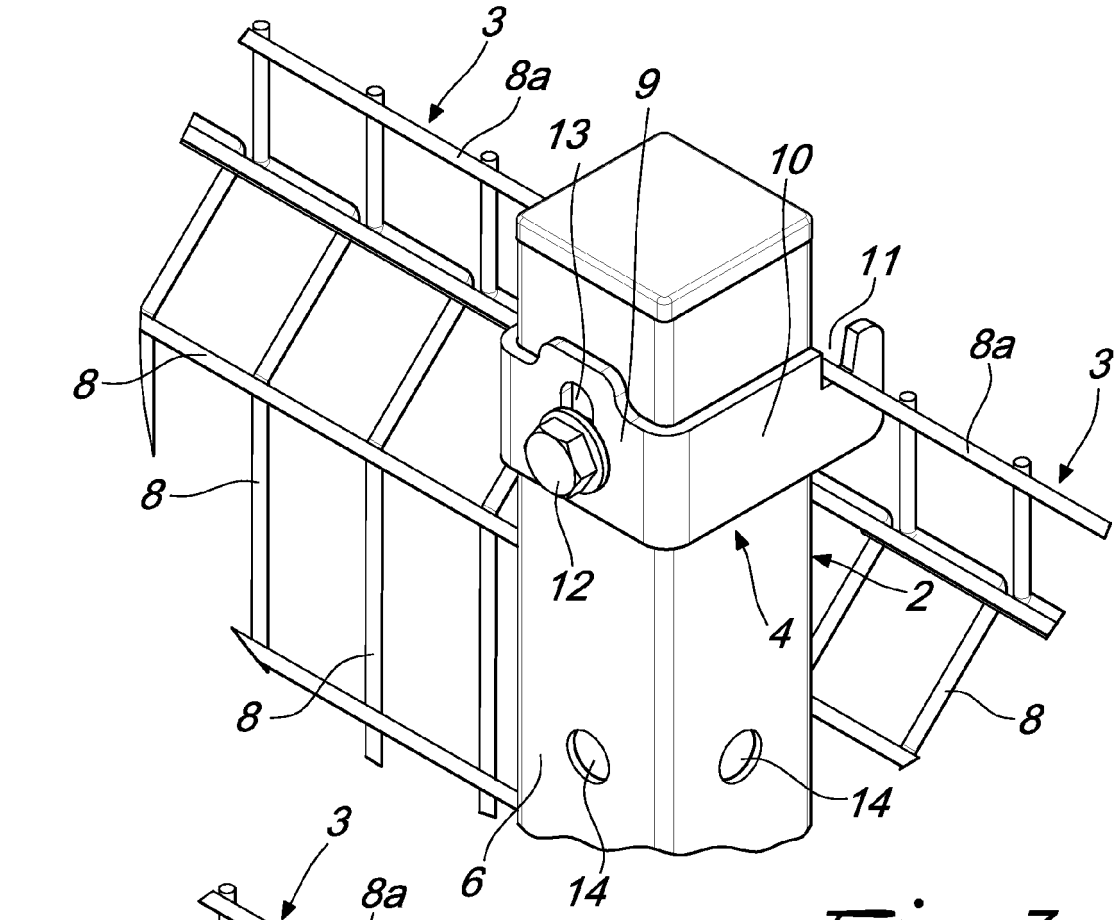
14

Fig. 6



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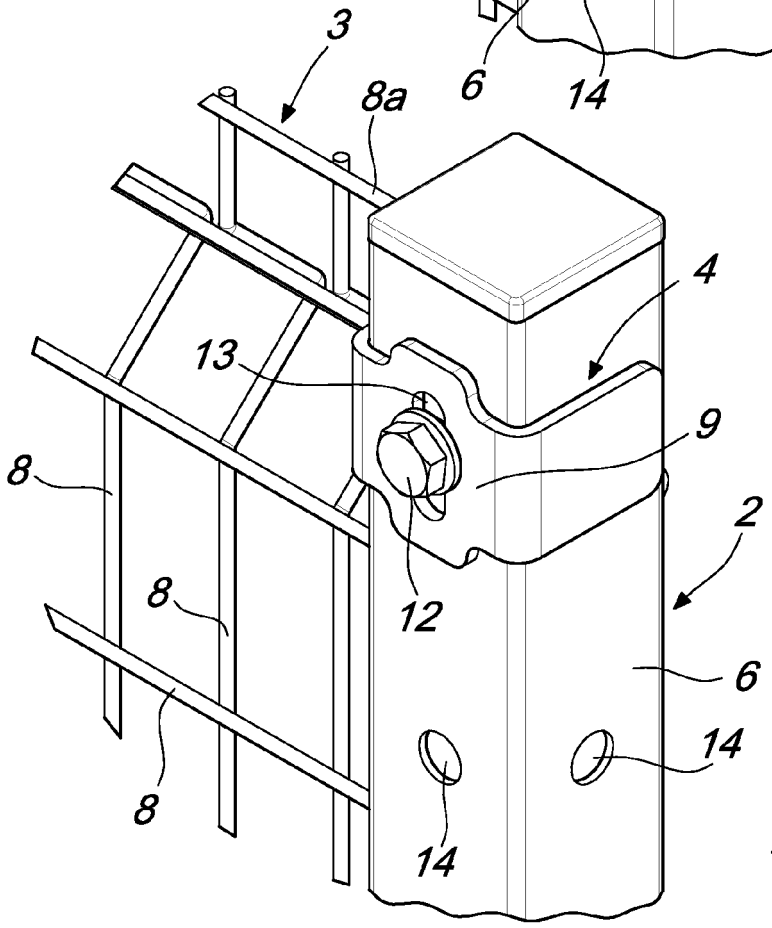

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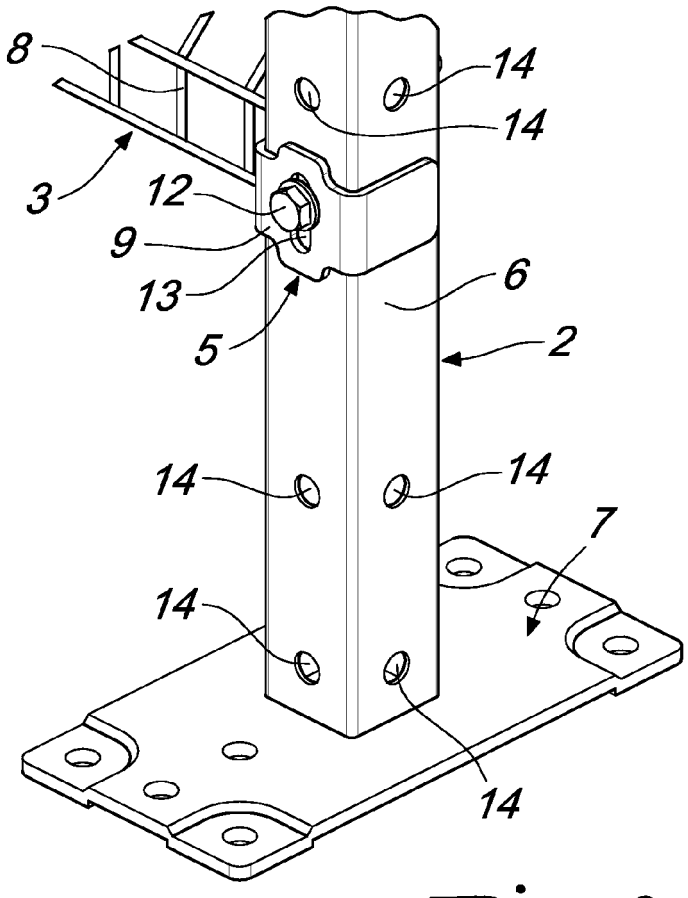
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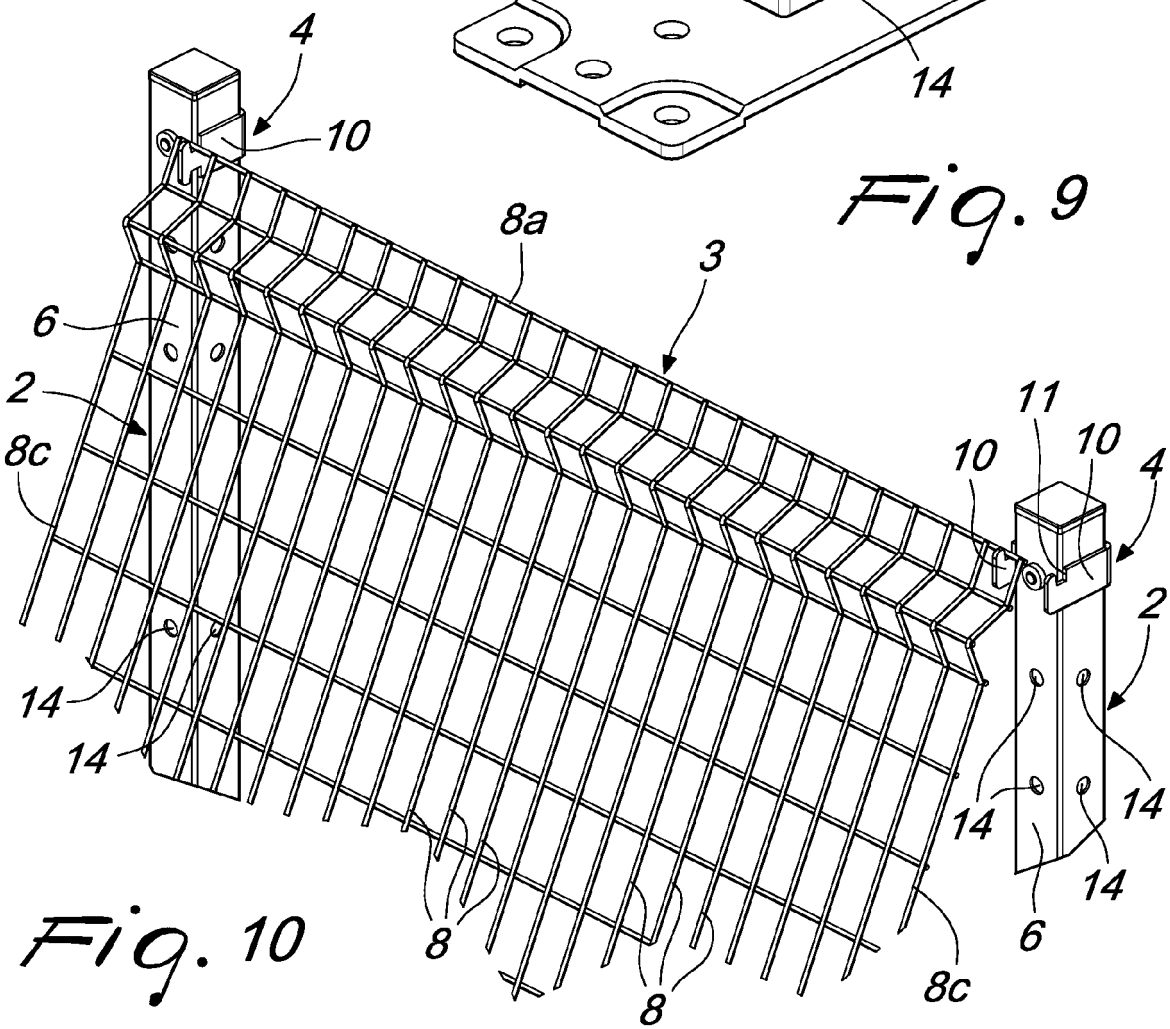
Fig. 9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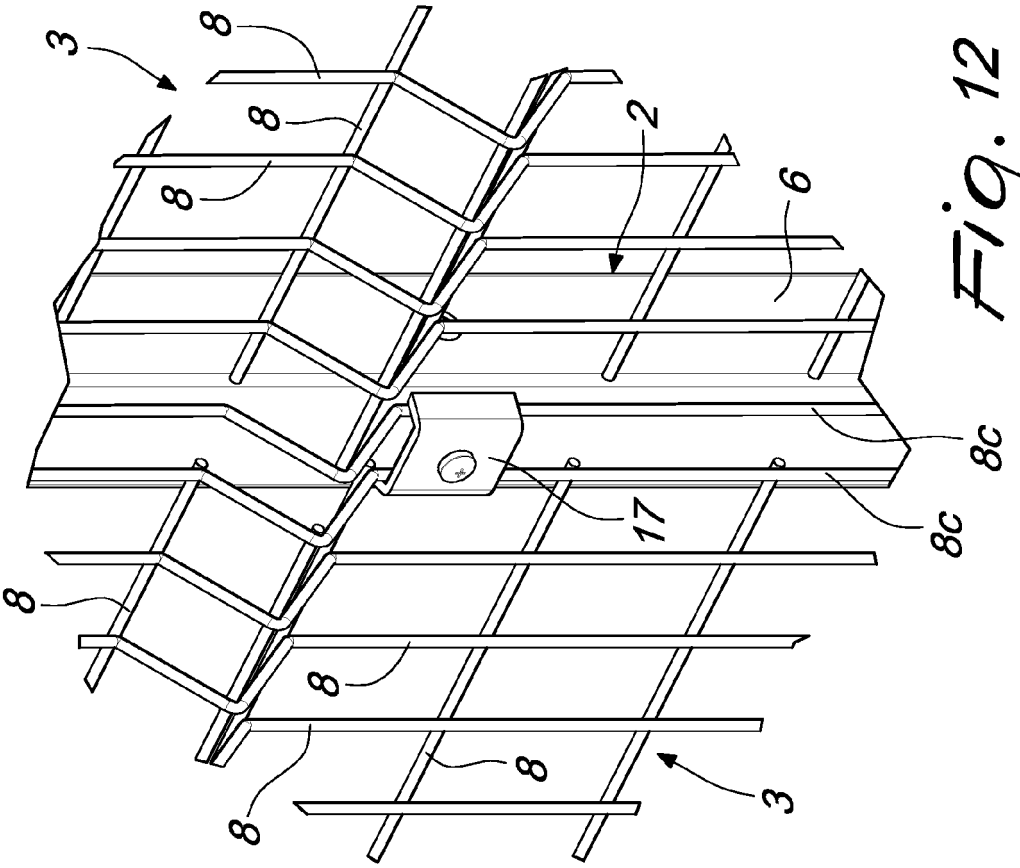
8
8c

Fig. 10



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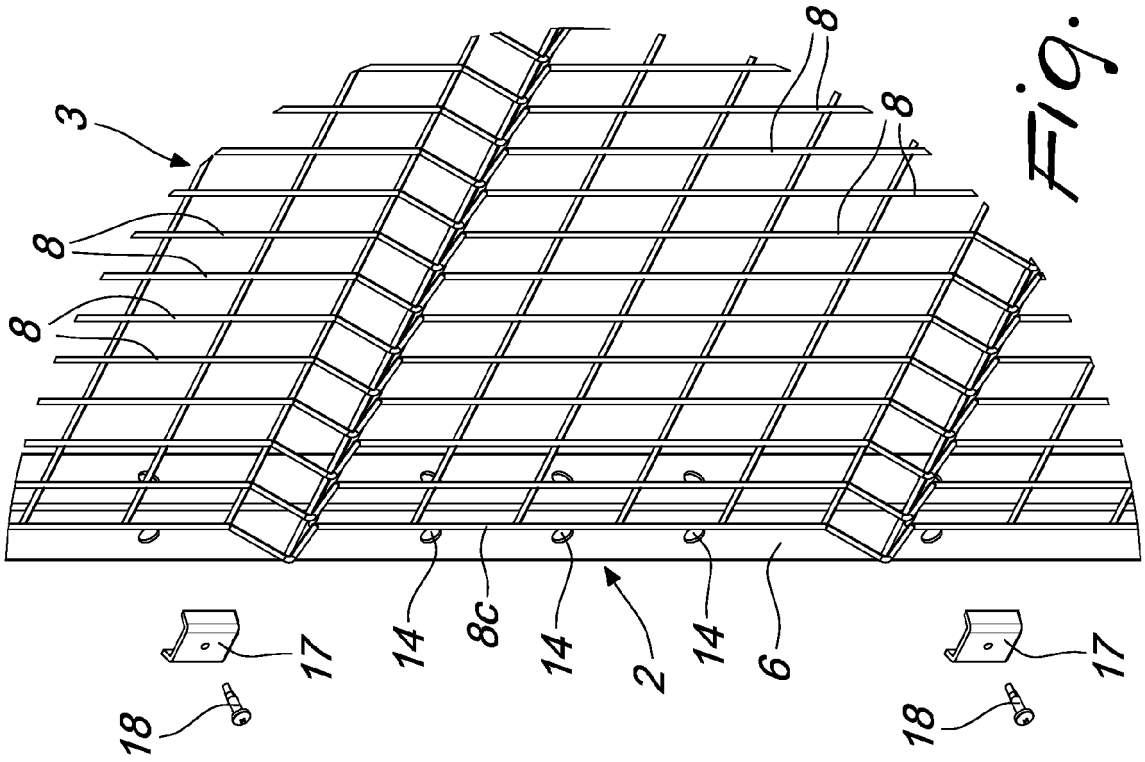

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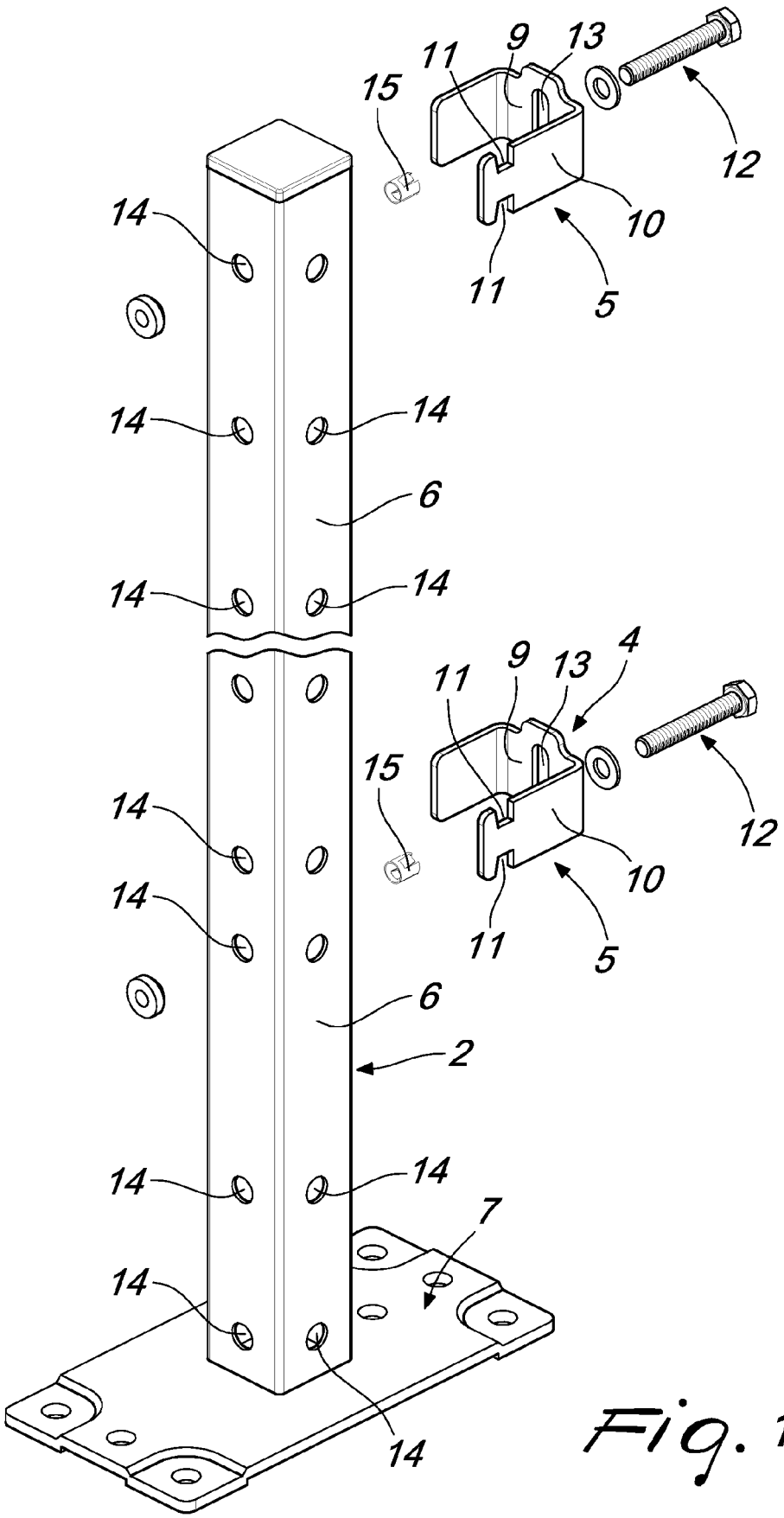
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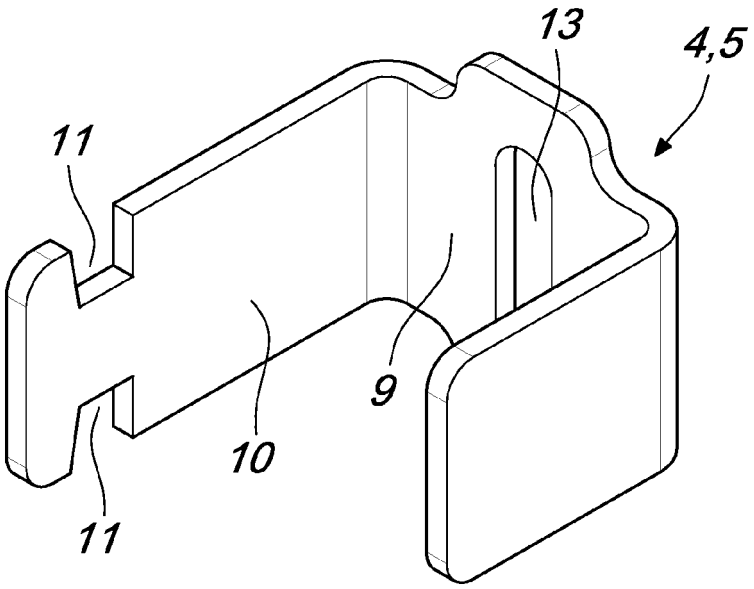
Fig. 13



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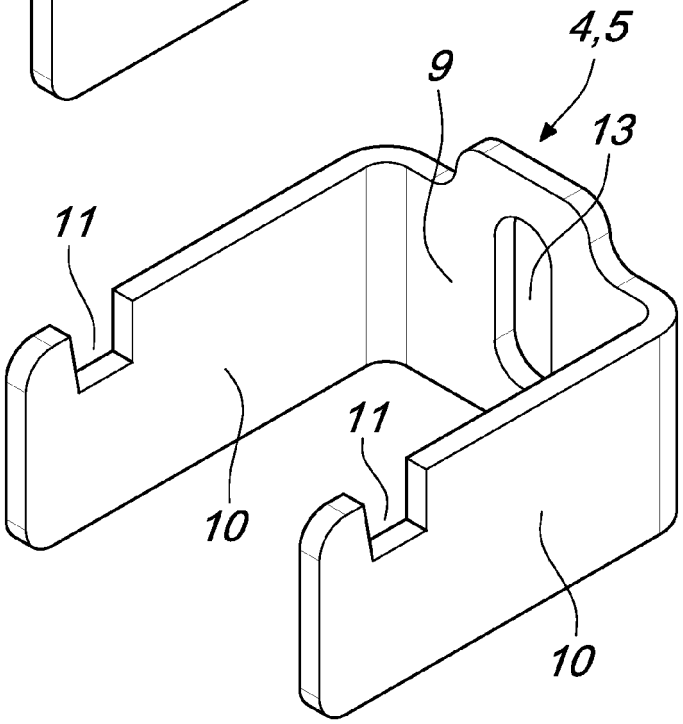

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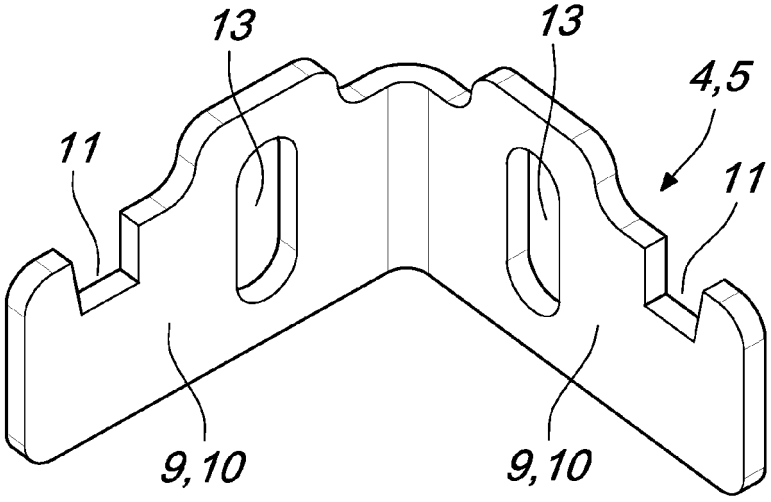
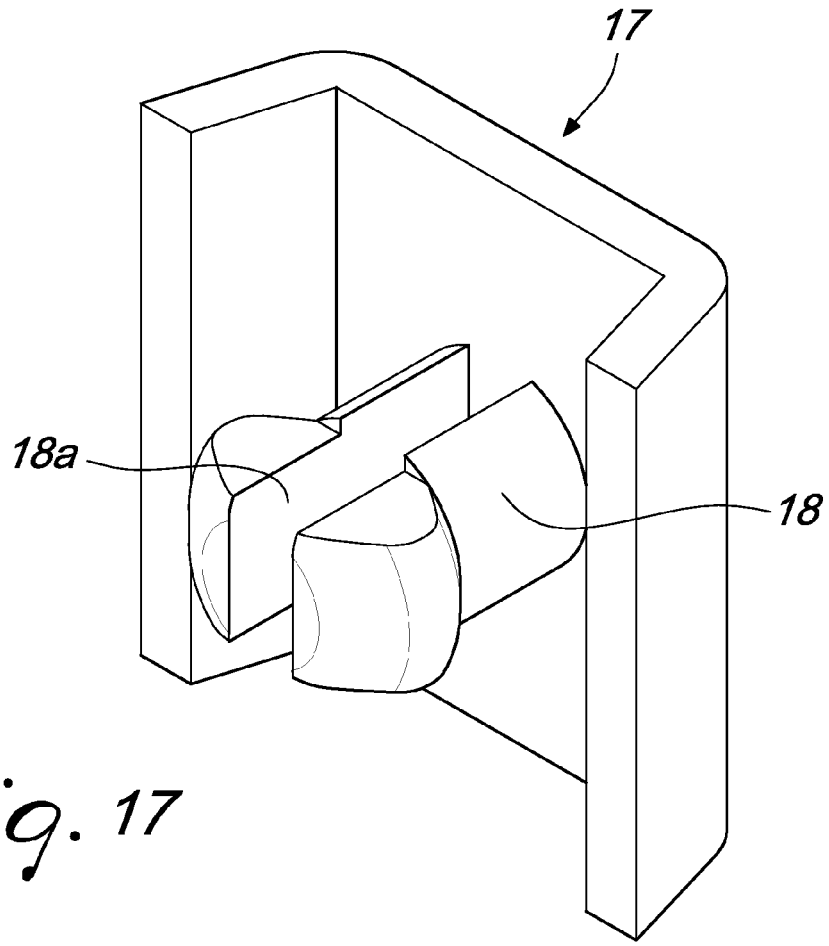


Fig. 16



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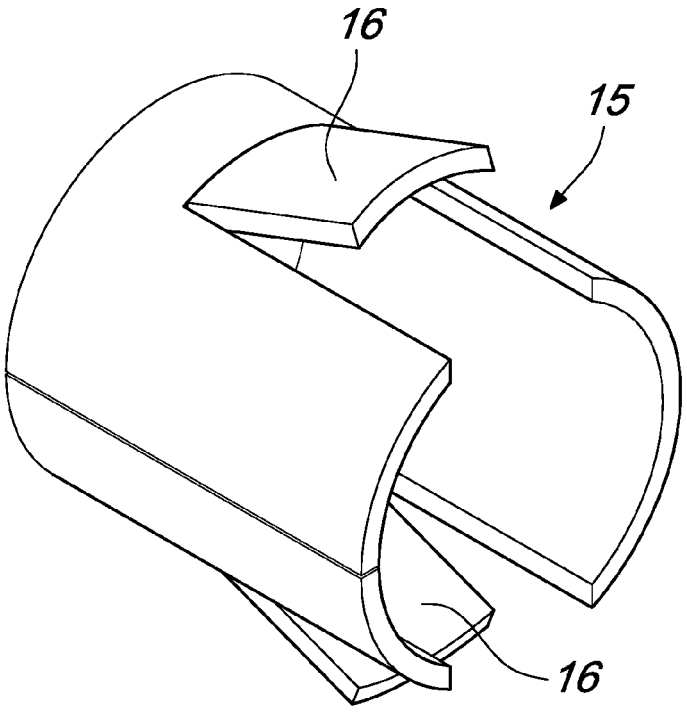

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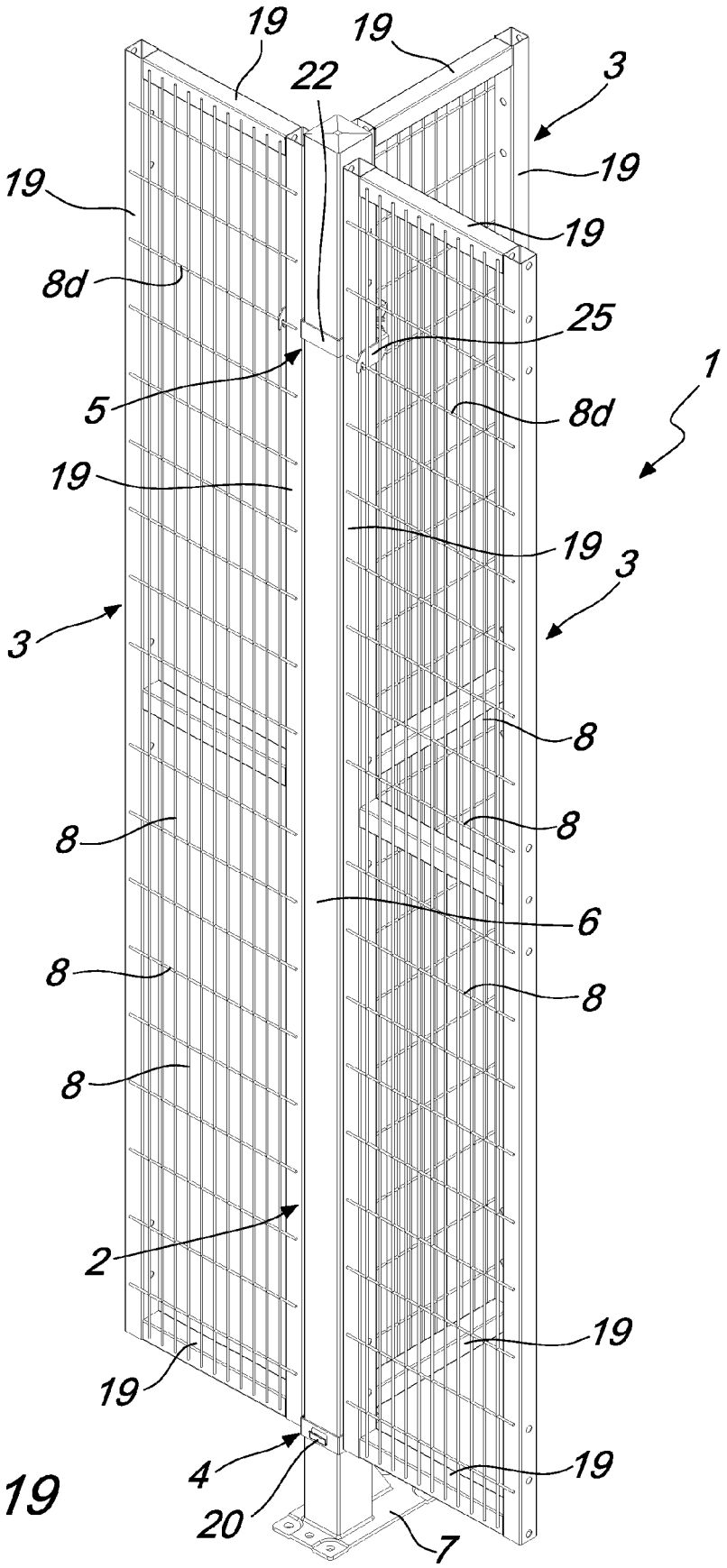

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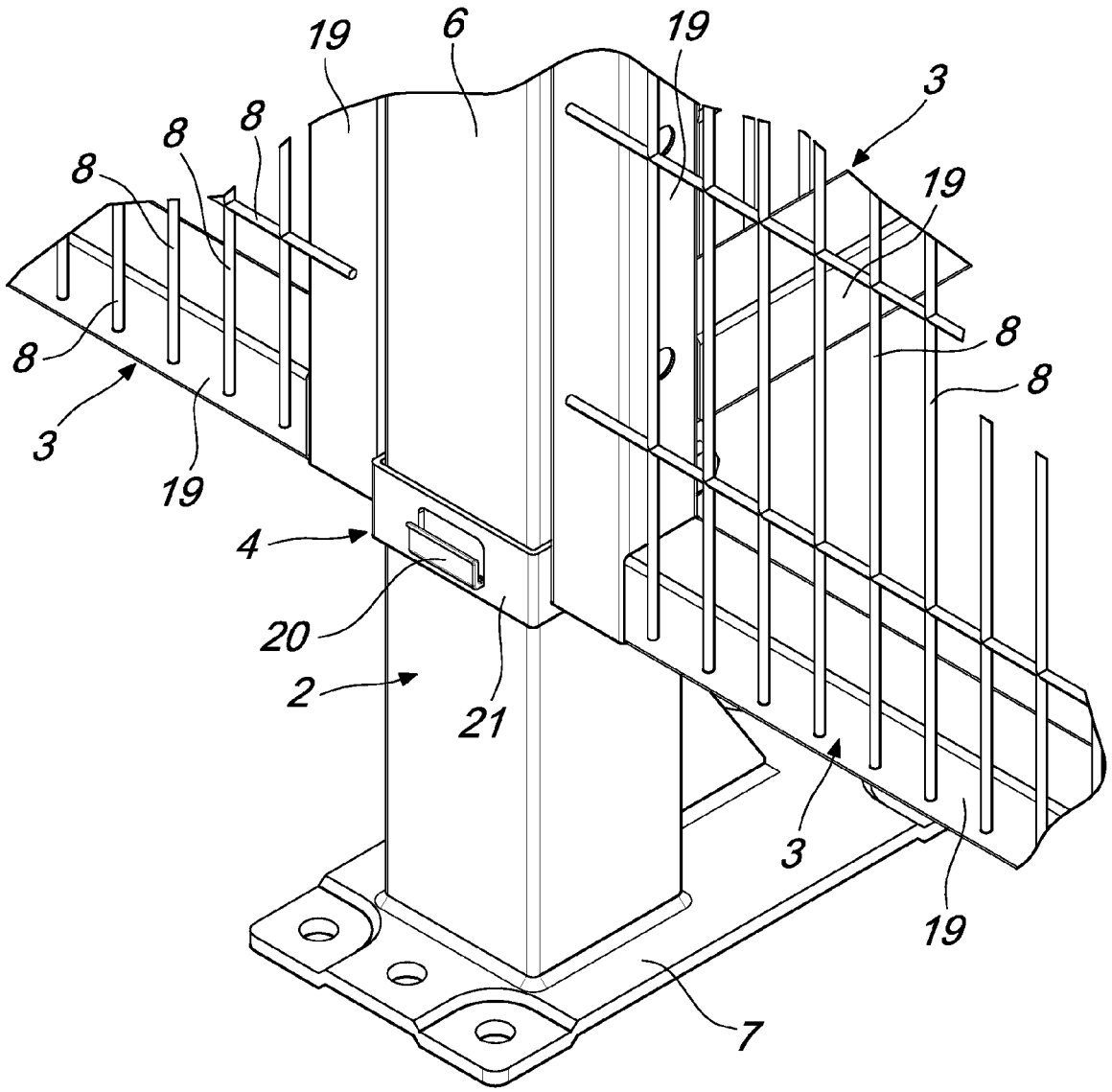

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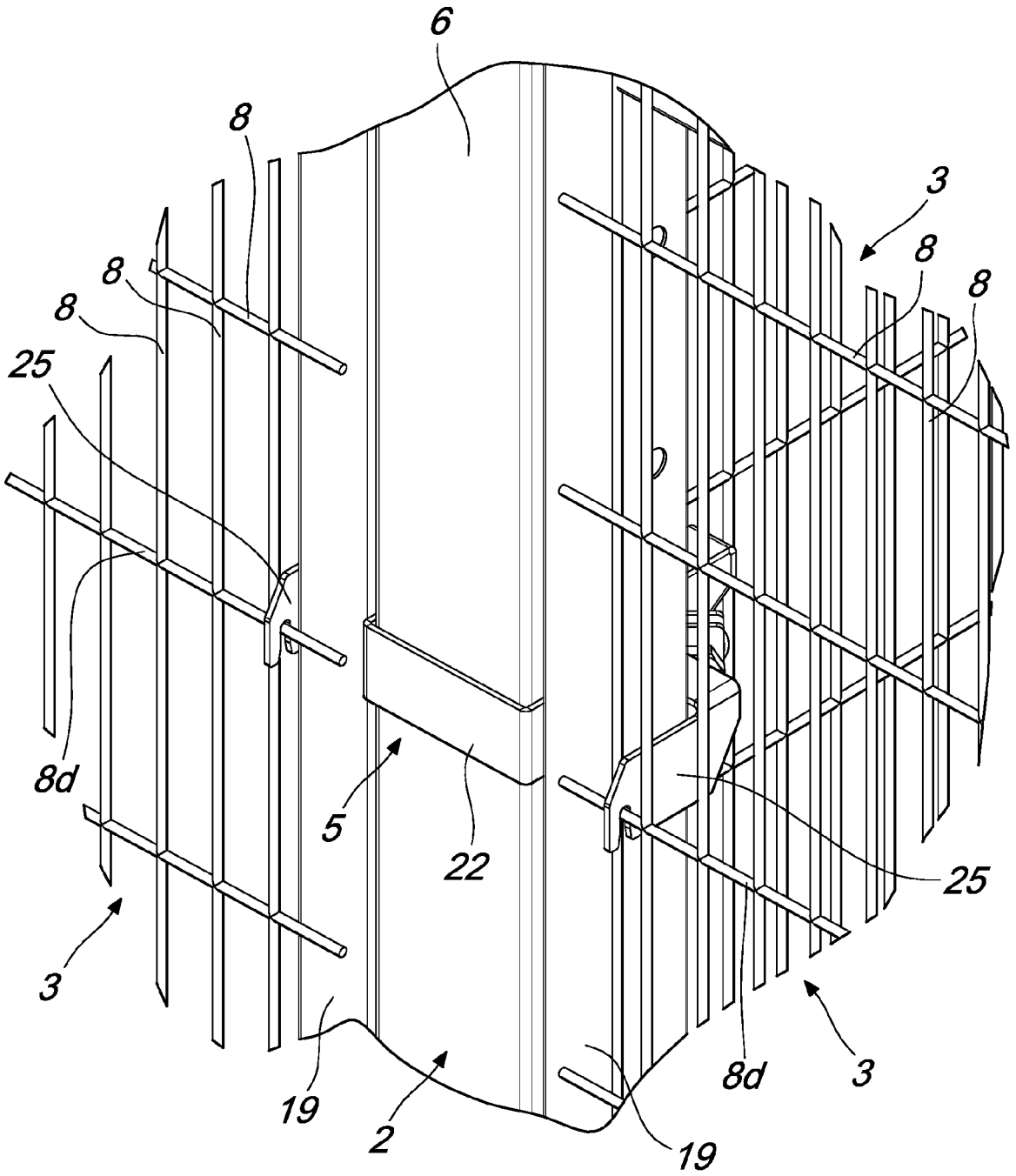

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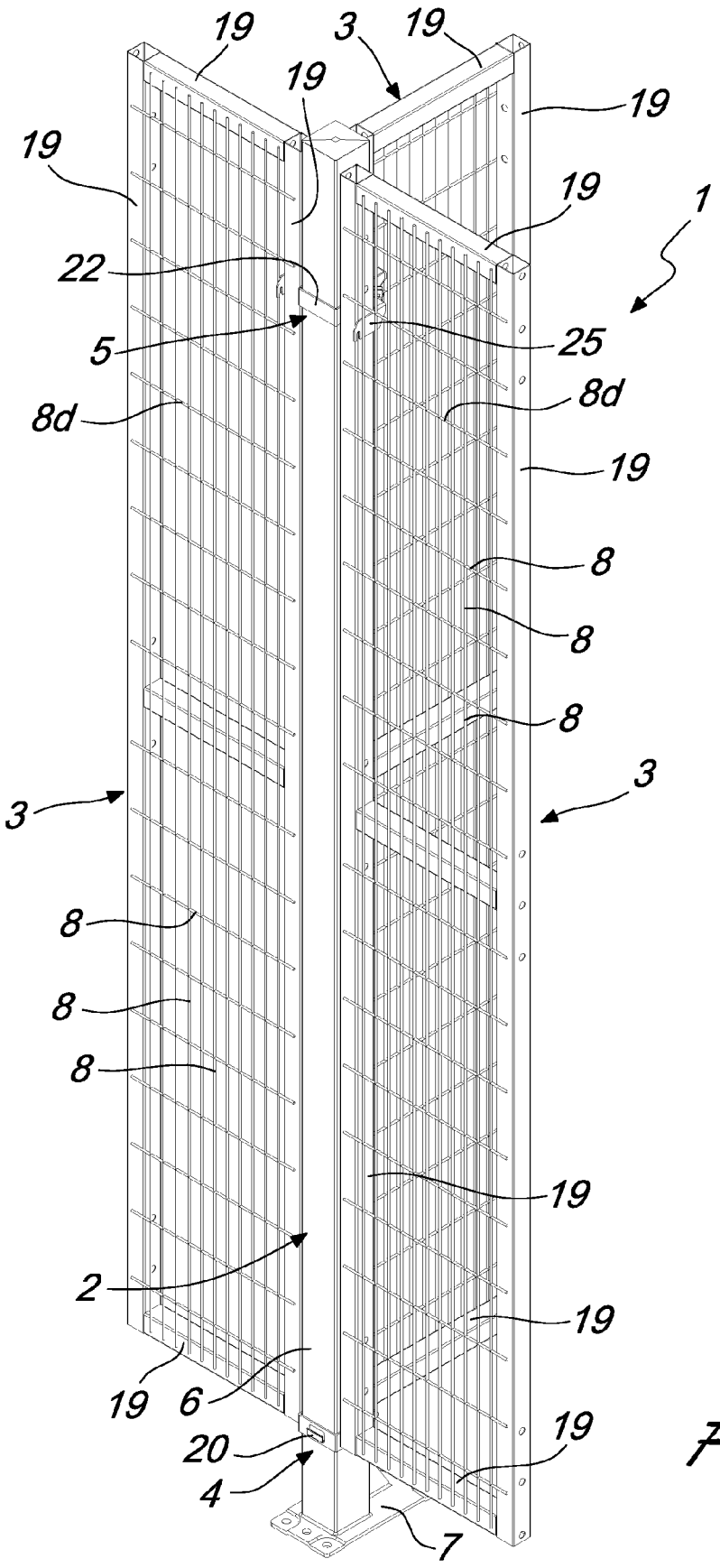

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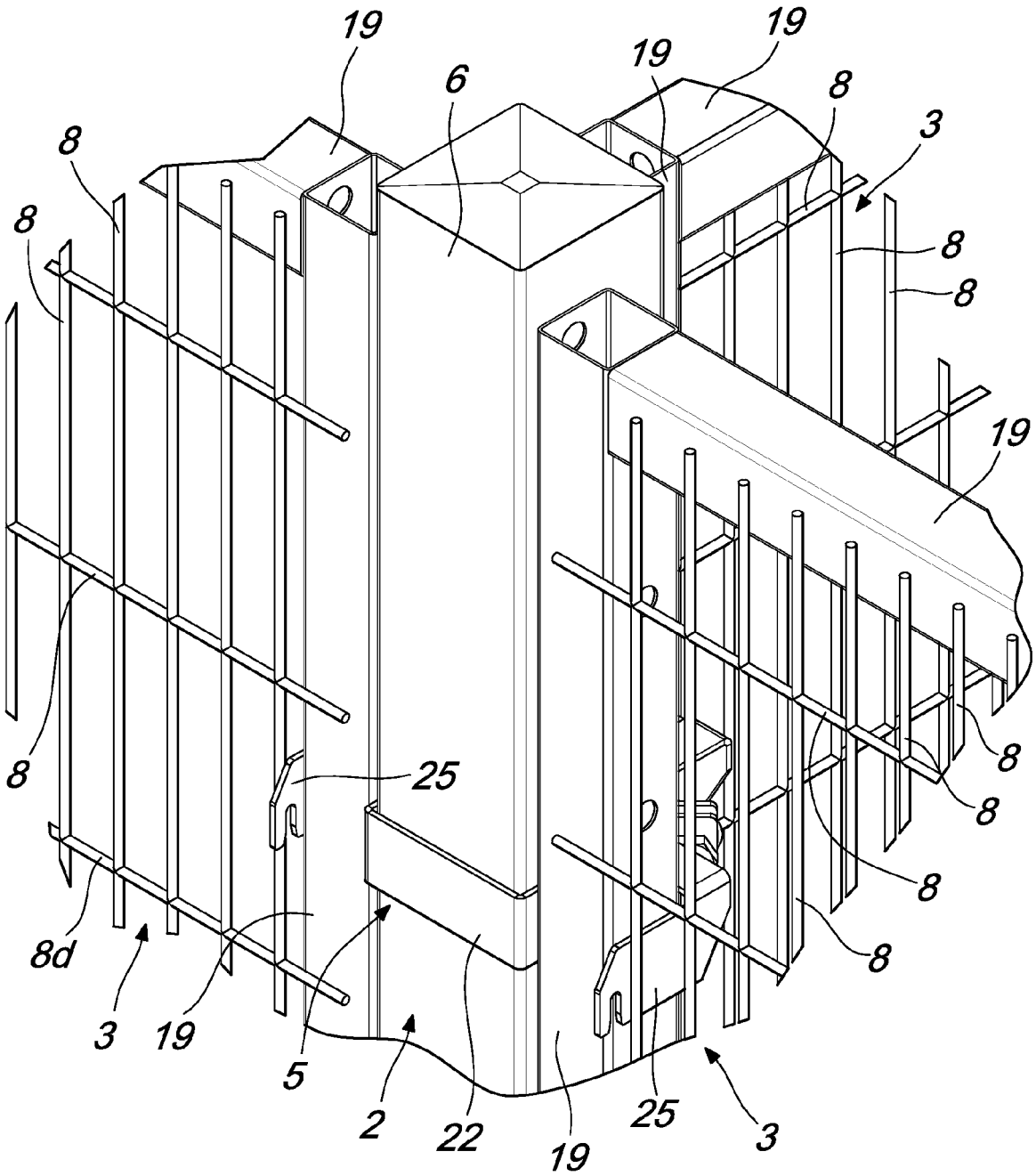

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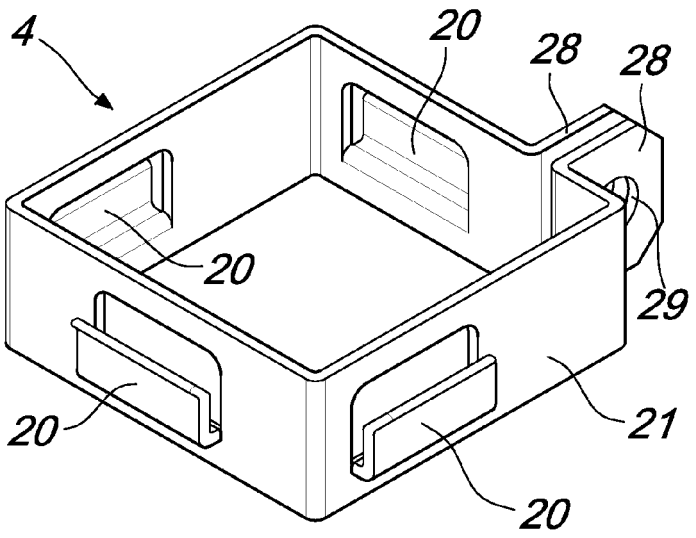

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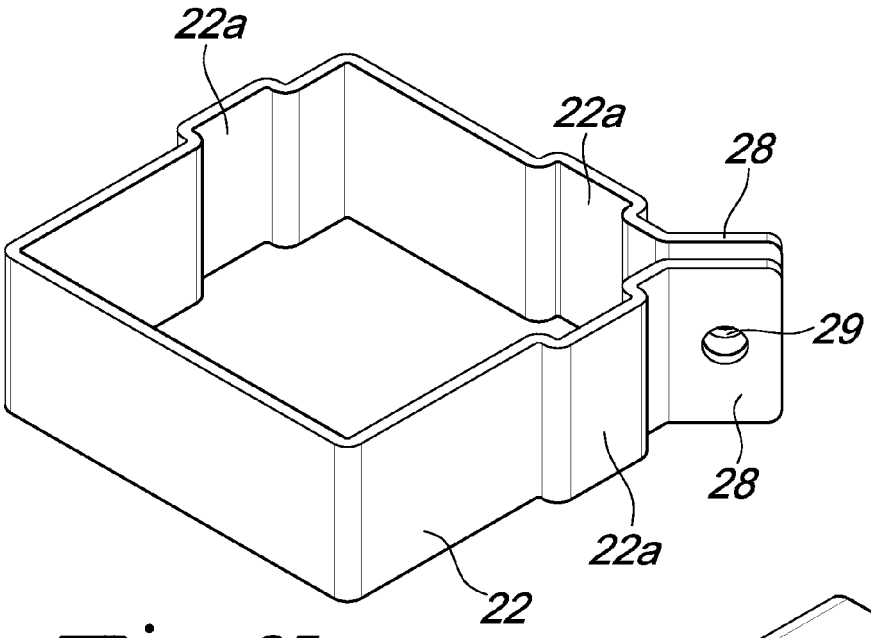

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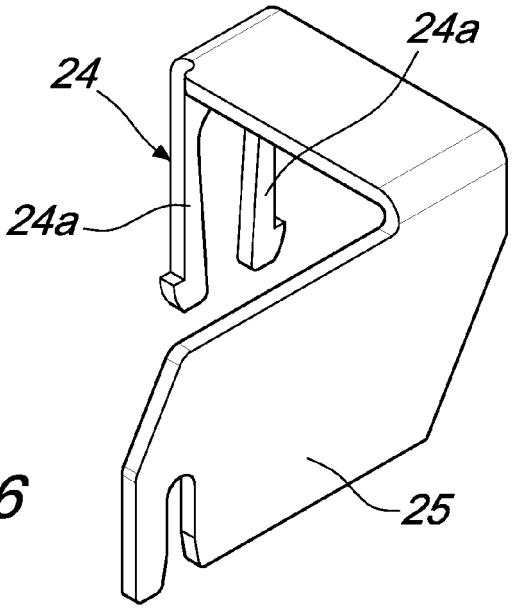

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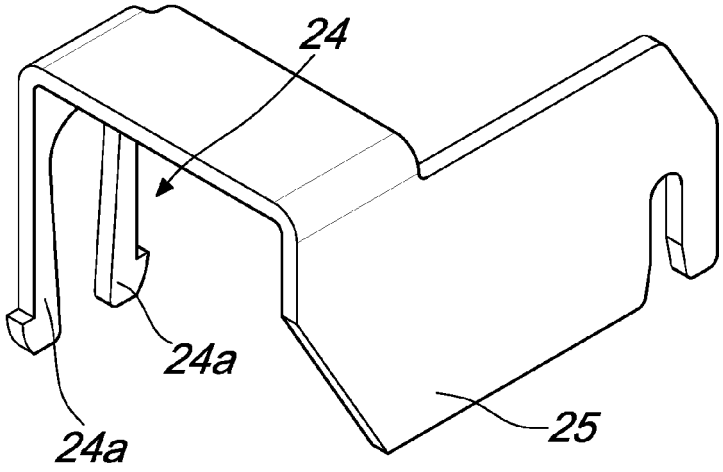

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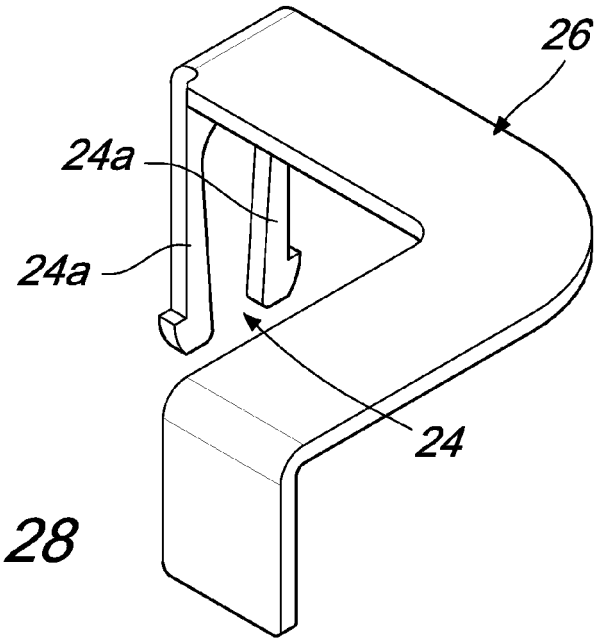

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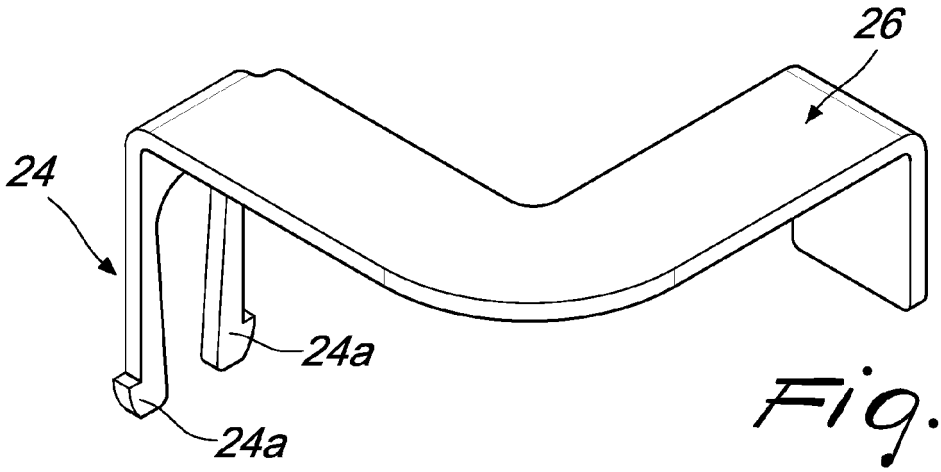

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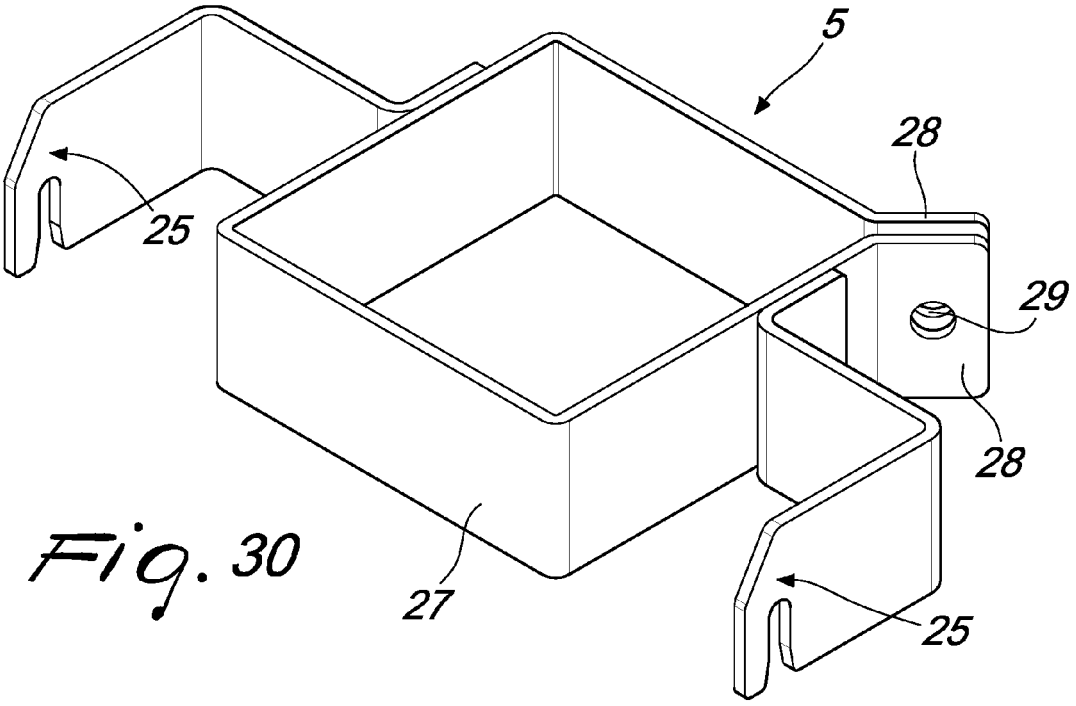

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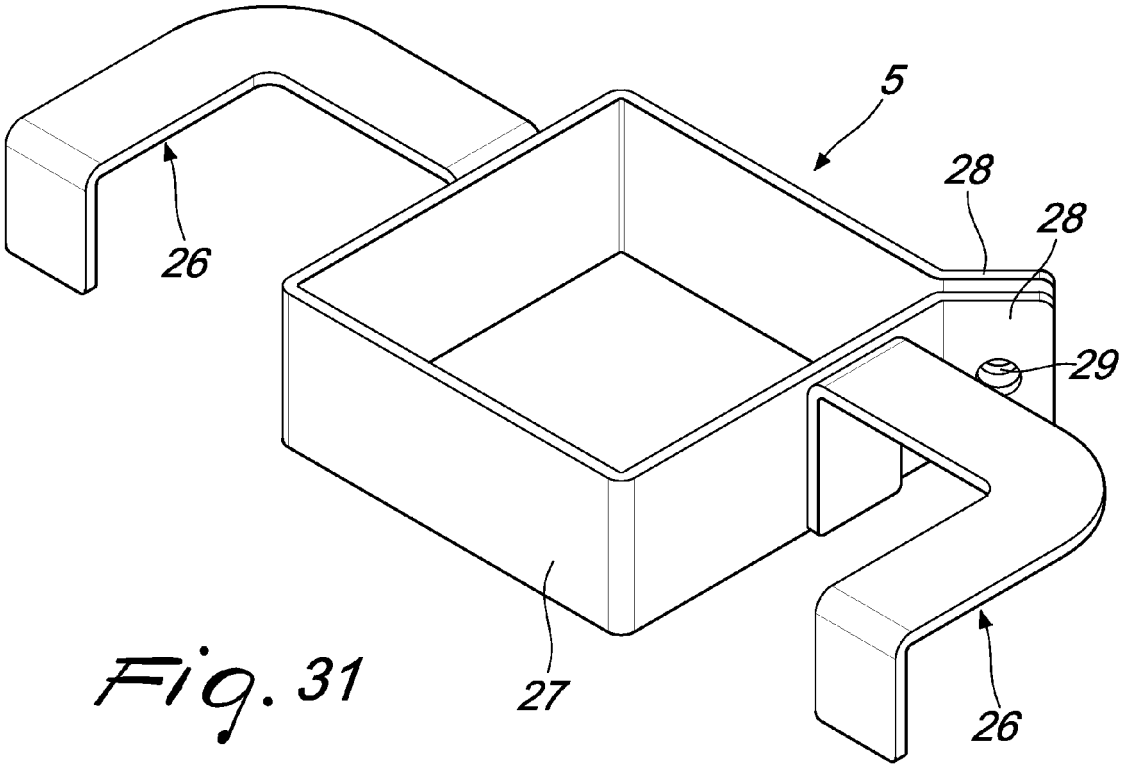

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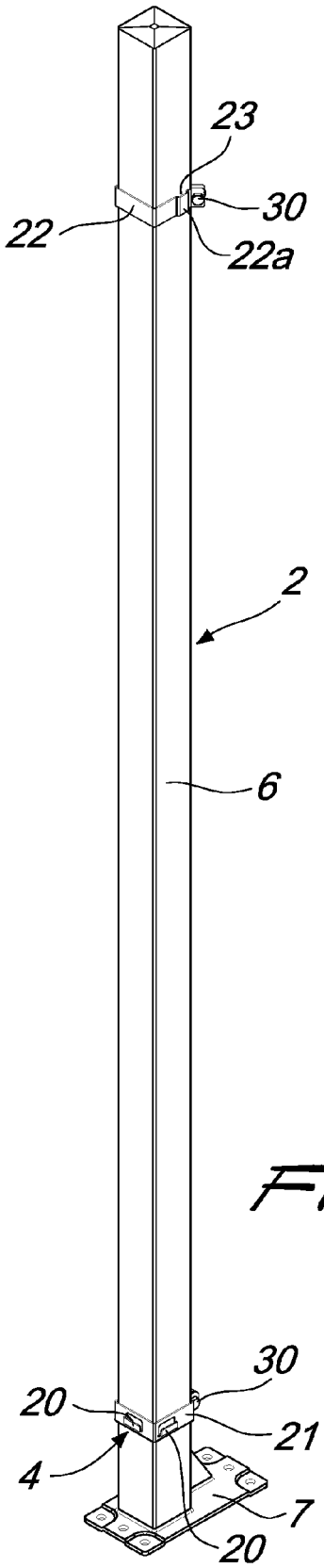

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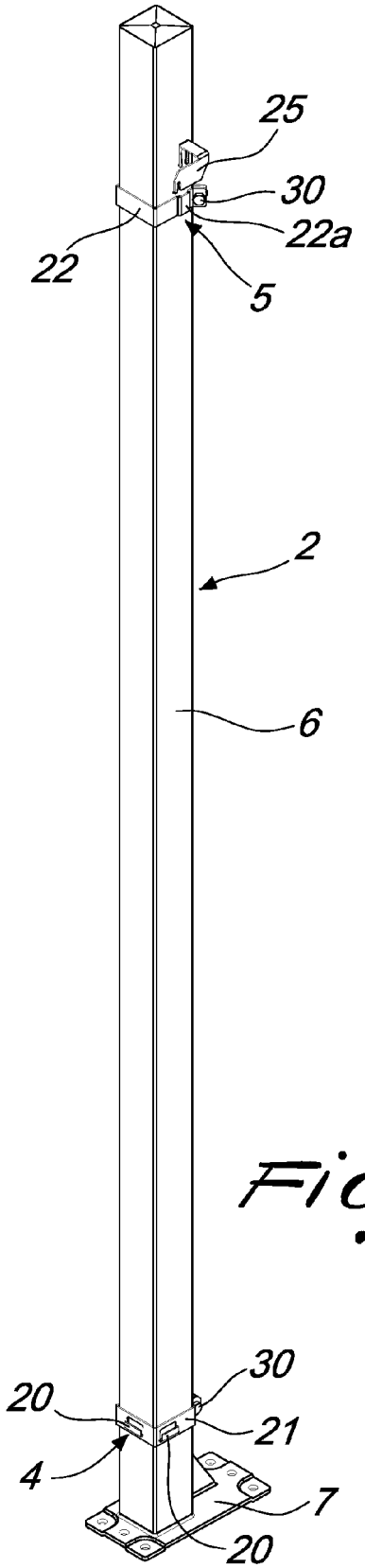

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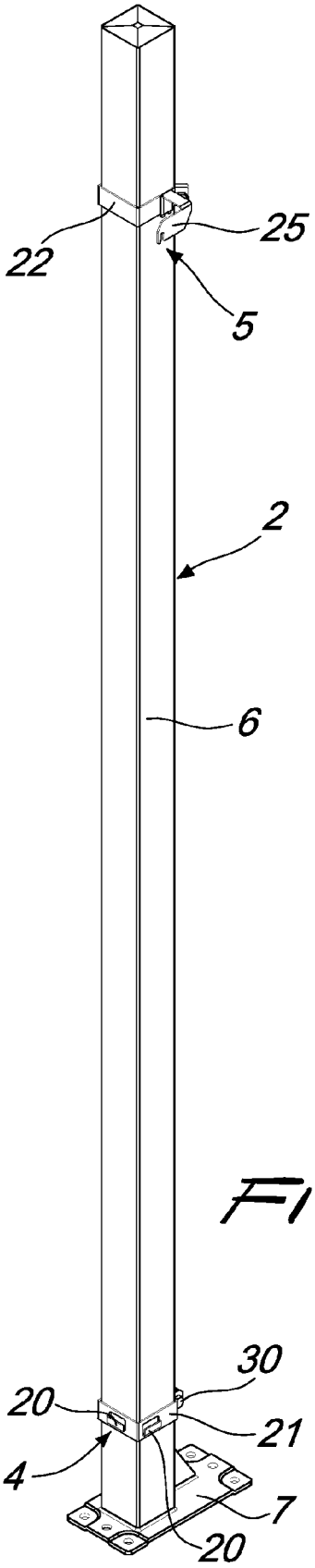

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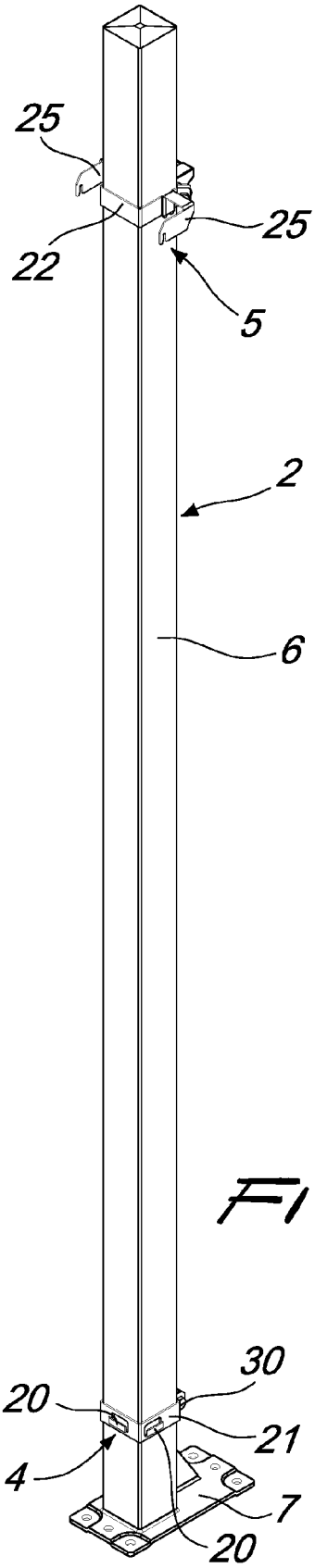

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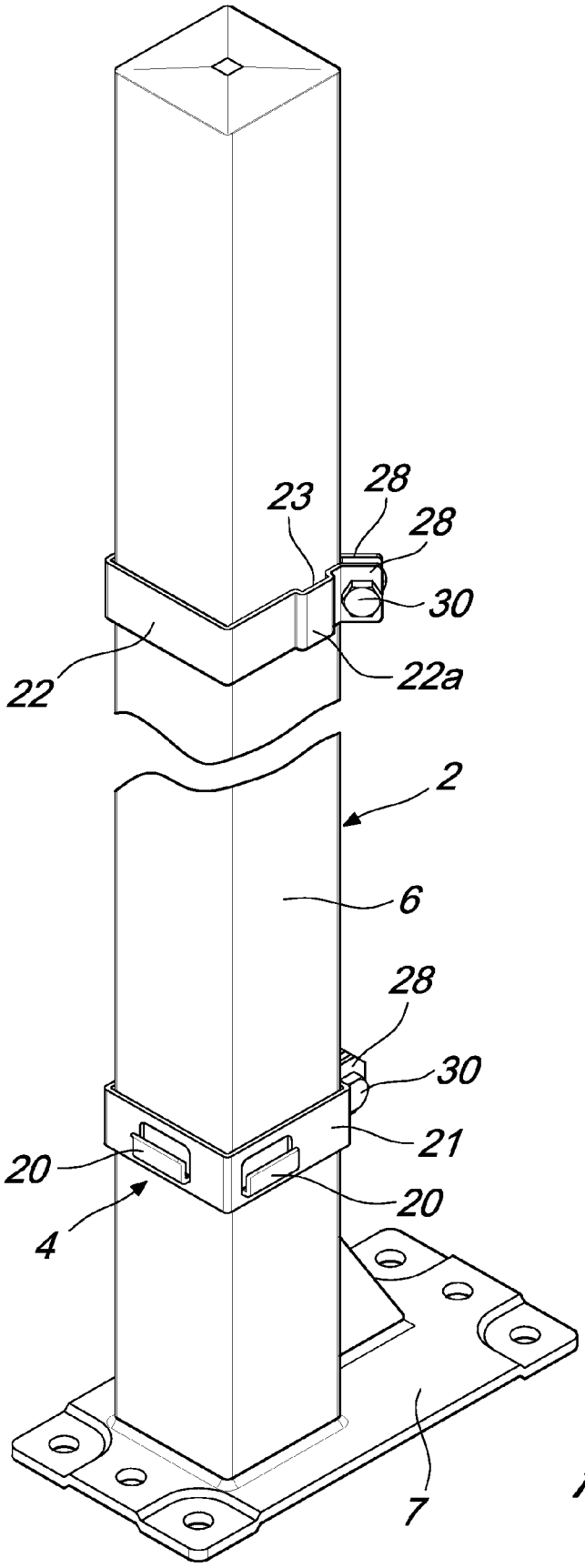

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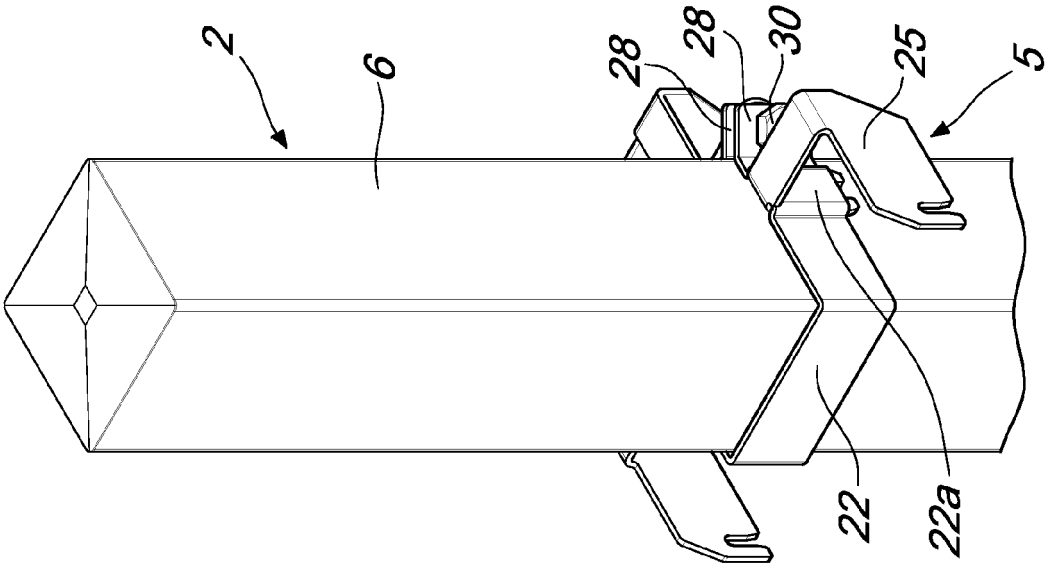

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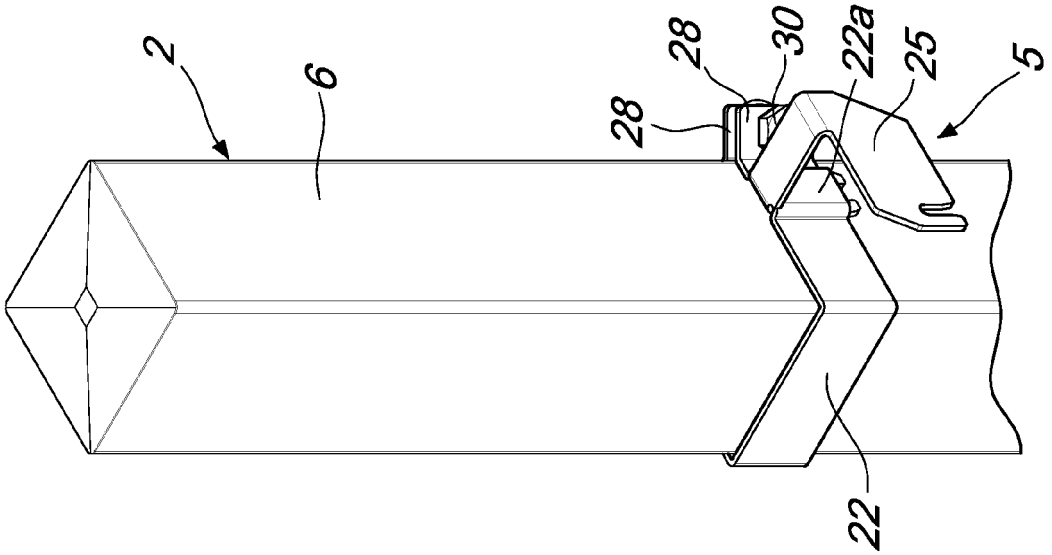

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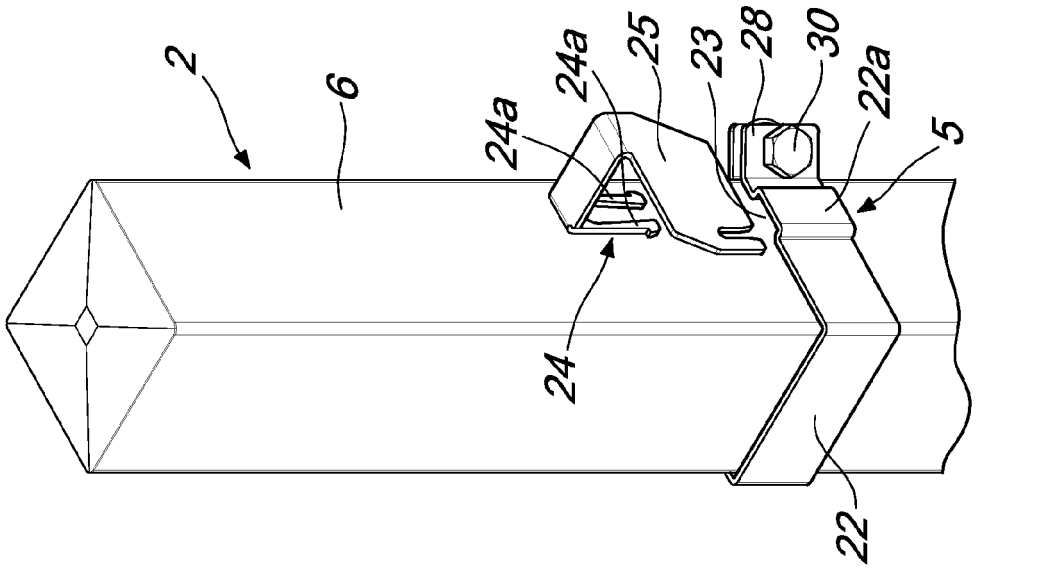

Fig. 37

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EUROPEAN SEARCH REPORT

Application Number
EP 13 19 0486

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 921 240 A1 (SATECH SAFETY TECHNOLOGY S P A [IT]) 14 May 2008 (2008-05-14) * column 2, line 18 - column 5, line 5; figures 1-3 *	1,2,8,9	INV. E04H17/16
X	US 2005/218393 A1 (LARSEN CHARLES [US]) 6 October 2005 (2005-10-06) * page 7, right-hand column, paragraph 107 - page 8, left-hand column, paragraph 115; figures 1,1A,2,4-12 *	1-7	
A	EP 1 712 710 A1 (BETAFENCE HOLDING NV [BE]) 18 October 2006 (2006-10-18) * abstract; figures 1-8 *	3-7	
A	DE 20 2005 011222 U1 (DVM PFOSTENTECHNIK GMBH & CO K [DE]) 13 October 2005 (2005-10-13) * abstract; figures 1-5 *	4-7	
			TECHNICAL FIELDS SEARCHED (IPC) E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	17 April 2014	Stefanescu, Radu

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17-04-2014

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