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(54) **Universal I-shaped fence post with matching securing devices for fixing welded wire mesh to the post**

Universal I-förmiger Zaunpfosten mit entsprechenden Verbindungsvorrichtungen zum Festsetzen von geschweissten Drahtgittern an den Pfosten

Poteau universel en forme de I avec des moyens de connexions correspondants pour fixer des treillis soudés au poteau

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Description

[0001] The present invention relatates to a fence post with a substantially I-shaped cross-section consisting of one central portion and two flanges securing therein the edge wire members of two welded wire mesh panels adjacent to the fence post.

[0002] Such a fence post is known from FR-A-2698417.

[0003] Other posts with a substantially I-shaped cross-section are known from US-A-5702090 ; US-A-4007919 ; GB-A-2248643 and FR-A-2554156.

[0004] Fastening welded wire mesh panels to posts is a common technique for forming a fencing section. Special fence posts for the securing thereto of welded wire mesh panels are also described, inter alia, in European patent applications 0368778, 0478454, 0481100 and 0596825.

[0005] European patent applications 0478454 and 0596825 describe very typical fence posts to accommodate welded wire mesh panels, each fence post in reality consisting of a double post, i.e., one fence post with a round or a rectangular cross section, and one connecting I-shaped post. The I-shaped post always accommodates the two welded wire mesh panels adjacent to the post.

[0006] One serious disadvantage of such fence posts according to European patent applications 0478454 and 0596825 is the special design of the posts, i.e. the double structure of these posts, which adversely affects the cost price.

[0007] A further disadvantage of the fence post according to the European patent application 0478454 is the defective connection of the welded wire mesh panels to the post, in that the fastening elements used can be disengaged with ease, as described, inter alia, in the introduction of the European patent application 0596825.

[0008] A further disadvantage of the fence post according to the European patent application 0596825 is the relatively time-consuming procedure for the securing of the panels to the central portion of the I-shaped fence post.

[0009] The present invention aims to provide a universally useful fence post of the type mentioned in the introduction which would avoid the above-mentioned problems.

[0010] Accordingly, the present invention proposes that both flanges of the I-shaped fence post are hollow and have internal apertures accommodating the securing devices.

[0011] Other embodiments and advantages of the post according to the present invention Will now be explained in more detail with reference to the accompanying drawing, in which :

Fig. 1 shows a perspective view of a universal I-shaped post according to the invention and a matching securing device for holding a three-dimensional welded wire mesh panel to the fence post ;

Fig. 2 shows a perspective view of the same post as in Fig. 1 for securing a flat panel of welded wire mesh to the post ;

Fig. 4 shows a perspective view of a universal I-shaped fence post according to the present invention with a matching cap ;

Fig. 5 shows a detailed perspective view of the securing device according to Fig. 1 ;

Figs. 6a and 6b show a plan view of a fence post with a matching securing device in open and closed position :

Fig. 7. shows a detailed perspective view, as in Fig. 5, of the modified embodiment of a securing device according to the present invention ; and

Fig. 8. shows a perspective view, as in Fig. 4, of another alternative embodiment of the fence post according to the present invention with cap and securing device.

[0012] Fig. 1 shows a universal I-shaped fence post 1 according to the present invention. The fence post 1 has a practically I-shaped cross-section, consisting of a central portion 2 and two flanges 3 and 4. The fence post is preferably made of sheet steel of a thickness of 1 mm to 2 mm. It is, for example, possible to form a fence post 1 of sheet steel by bending the plate to the desired I profile and then welding it shut. It is also possible to form the fence post 1 from hollow extruded tubes. The fence post 1 is preferably of hollow construction. The flanges 3 and 4 of the I-shaped fence post 1 have internal apertures or notches 5 and 6 at regular intervals from each other. It should be apparent that the apertures or notches 5 and 6 do not necessarily have to be spaced at regular intervals. The apertures or notches 5 and 6 can be made in the sheet steel by cutting out the sheet steel at the points of the desired apertures for most of the perimeter of the aperture and then pressing it out into the hollow interior of fence post 1. This is, for example, clearly shown in fence post 1 in Fig. 8. The purpose of these apertures or notches 5 and 6 will be explained in more detail later.

[0013] Fig. 1 shows how a three-dimensional panel of welded wire mesh 7 is secured between the flanges 3 and 4. The panel 7 consists of upright or vertical wires 8 and transverse or horizontal wires 9. welded together. The panel 7 is provided with some breasts 10 in the transverse direction to give the panel 7 an increased rigidity. The depth of the breasts 10 roughly corresponds with the distance between the flanges 3 and 4. The depth of the breast 10 is preferably smaller than the distance between the flanges 3 and 4. The panel 7 is fixed to the fence post 1 by means of special securing devices 11.

[0014] Each securing device 11 features a groove-like

longitudinal channel 12 and at least two pens or studs 13 and 14. The dimensions of the studs 13 and 14 correspond with the dimensions of the apertures 5 and 6 in the flanges 3 and 4 in such a way that the studs 13 and 14 can engage solidly in the apertures 5 and 6.

[0015] Fig. 1 shows how such a securing device 11 can fix a panel 7 between the flanges 3 and 4 of the post to the I - shaped fence post 1. The longitudinal channel 12 of the securing device 11 is pushed over the vertical wire 8 and the studs 13 and 14 are driven into the notches 5 and 6 of the flanges 3 and 4 by means of, e.g.. a hammer. It is, for example, possible to attach three securing devices over the full height of the fence post 1. thus making it impossible for the panel 7 to be moved off in the vertical direction.

[0016] Fig. 2 shows how a flat welded wire mesh panel 7 with the same securing device 11 is fastened to the same I - shaped fence post 1. It is apparent that the same I - shaped fence post 1 with the same securing devices 11 can be used to trap a totally different welded wire mesh panel 7 against the fence post 1. This brings out directly the universal application of the new fence post 1 and its accessory securing devices 11 to fasten welded wire mesh panels to fence post 1 according to the present invention.

[0017] Fig. 4 shows a slightly modified embodiment of the fence post 1 shown in Fig. 1 and 2, in which the hollow I-shaped fence post 1 can be fitted with a cap 17, with hooks 18, made to the cross-sectional dimension of the fence post 1. The cap 17 can be pressed over the top of the fence post 1 and fastened, the hollow interior of the fence post 1 thus being completely sealed by the cap 17. When the two panels 7 adjacent to the fence post 1 are being secured, the two panels 7 are first hung by the topmost horizontal wire 9 on the hooks 18 of the cap 17 fitted to the fence post 1. as a result of which the cap 17 is gripped more tightly in place atop the hollow post 1. The actual securing devices 11 are then fitted into their corresponding apertures 5 and 6 in the flanges 3 and 4. Once the securing devices 11 have been fitted, the cap 17 cannot be removed from the hollow post 1. It is clear that the mounting and securing of the panels 7 on the post 1 can be easily managed by one person thanks to the panels 7 being hung from the hooks 18.

[0018] Fig. 5 shows a perspective view of the detail of a securing device 11 with groove-like channel 12 and two protrusions or studs 13 and 14. where the edge wire 8 of a panel 7 is engaged in the groove-like channel 12. The construction of the securing device 11 is preferably of a hard plastic and, as Fig. 5 shows, it is possible to have the studs 13 and 14 can be pressed into the securing device 11 to facilitate the insertion of the studs 13 and 14 in their corresponding apertures 5 and 6. The gripping action of the studs 13 and 14 can be obtained in various ways : e.g., by the correct choice of material of the securing device 11, the thickness of the securing device.... as generally known in plastics technology.

[0019] Figs. 6a and 6b show, in plan view or in cross section, a section of a fence post 1 with a matching securing device 11 with an engaged edge wire member 8 before and after the fitting of the securing device 11 in the flanges 3 and 4 of the I-shaped fence post 1.

[0020] Fig. 7 shows a perspective view of the detail of a modified embodiment of a securing device 11 according to the present invention. The securing device 11 still has a longitudinal groove 12 to accommodate an edge wire member 8. but the securing device 11 here also has a transverse aperture 19 to accommodate a horizontal wire member 9. With a flat panel of welded wire mesh, as shown in Fig. 2, or with a three-dimensional panel of welded wire mesh, of which the height of the breasts 10 is less than the distance between the flanges 3 and 4 of the fence post 1 : it is possible to rotate the panel 7 in relation to the fence post 1 through a certain angle around the edge wire member 8. This can be useful if the fencing does not follow a rectilinear course.

[0021] Fig. 8 shows a perspective view, as in Fig. 4. of another slightly modified embodiment of a fence post 1 according to the present invention, with cap 17 and one securing device 11. The securing device 11 features a groove-like longitudinal channel 12 for the accommodation of an edge wire member 8 and, also, a transverse aperture 19 for the possible inclusion of a transverse wire member 9. The securing device 11 is also fitted with four small protrusions or studs 13 and 14. The dimensions of these studs 13 and 14 correspond to the dimensions of the apertures 5 and 6 in the flanges 3 and 4 : during assembly, the two studs 13 snap into the two notches 5 and the two studs 14 snap into the two notches 6. The cap 17 shows a cross-sectional form adapted to the profile of the fence post 1. the hollow interior of the fence post 1 being thus completely sealed when the cap 17 is pressed on top of the fence post 1. The cap 17 is provided with two hooks 18 to engage the top horizontal wires 9 of the two panels 7 adjacent to the fence post 1.

Claims

1. A fence post (1) with a substantially I-shaped cross-section consisting of one central portion (2) and two flanges (3, 4) securing therein the edge wire members (8) of two welded wire mesh panels (7) adjacent to the fence post by means of securing devices (11), **characterized in that** both flanges (3, 4) of the I-shaped fence post (1) are hollow and have internal apertures (5, 6) accommodating the securing devices (11).

2. A fence post according to claim 1, **characterized in that** the fence post (1) is of hollow construction.

3. A fence post (1) according to claim 1 or claim 2, whereby each securing device (11) is provided with a groove-like longitudinal channel (12) accommodating the edge wire member (8) of the welded wire

mesh panel (7) adjacent to the fence post, **characterized in that** each securing device (11) is fitted with at least two protrusions or studs (13, 14) corresponding to the apertures (5, 6) in the flanges (3, 4) engaging the studs (13, 14) solidly in the apertures or notches (5, 6) of the flanges (3, 4).

4. A fence post (1) according to claim 3, **characterized in that** each securing device (11) has an additional transverse aperture (19) engaging a horizontal wire member (9) of the adjacent welded wire mesh panel (7).

5. A fence post (1) according to one or more of the claims 1 - 4, **characterized in that** the fence post (1) is provided with a cap (17) adapted to the cross-sectional dimension of the fence post (1) ; the cap (17) has hooks (18) engaging the top horizontal wires (9) of the two welded wire mesh panels (7) adjacent to the fence post (1).

Patentansprüche

1. Zaunpfahl (1) mit einem im Wesentlichen I-förmigen Querschnitt, bestehend aus einem Mittelteil (2) und zwei Flanschen (3, 4), in denen die äußeren Drahtelemente (8) von zwei am Zaunpfahl anliegenden Schweißdrahtgittern (7) mit Befestigungsvorrichtungen (11) befestigt werden, **dadurch gekennzeichnet, dass** beide Flansche (3, 4) des 1-förmigen Zaunpfahls (1) hohl sind und an der Innenseite Öffnungen (5, 6) aufweisen, die die Befestigungsvorrichtungen (11) aufnehmen.

2. Zaunpfahl nach Anspruch 1, **dadurch gekennzeichnet, dass** die Konstruktion des Zaunpfahls (1) hohl ist.

3. Zaunpfahl (1) nach einem der Ansprüche 1 oder 2, wobei jede Befestigungsvorrichtung (11) einen rillenartigen Längskanal (12) aufweist, der das äußere Drahtelement (8) des am Zaunpfahl anliegenden Schweißdrahtgitters (7) aufnimmt, **dadurch gekennzeichnet, dass** jede Befestigungsvorrichtung (11) mindestens zwei Vorsprünge oder Ansätze (13, 14) aufweist, die den Öffnungen (5, 6) in den Flanschen (3, 4) entsprechen, wobei die Ansätze (13, 14) fest in den Öffnungen oder Aussparungen (5, 6) der Flansche (3, 4) befestigt werden.

4. Zaunpfahl (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** jede Befestigungsvorrichtung (11) eine zusätzliche Queröffnung (19) aufweist, die ein horizontales Drahtelement (9) des anliegenden Schweißdrahtgitters (7) aufnimmt.

5. Zaunpfahl (1) nach einem der Ansprüche 1-4, **dadurch gekennzeichnet, dass** der Zaunpfahl (1) einen Deckel (17) aufweist, der den Querschnittsmaßen des Zaunpfahls (1) angepasst ist; der Deckel (17) weist Haken (18) auf, die die oberen horizontalen Drähte (9) der beiden am Zaunpfahl (1) anliegenden Schweißdrahtgitter (7) festhalten.

Revendications

1. Poteau de clôture (1) présentant une section transversale essentiellement en forme de I consistant en une partie centrale (2) et deux ailes (3, 4) fixant dans celle-ci les éléments de fil de bord (8) de deux panneaux de treillis soudé (7) à proximité du poteau de clôture au moyen de dispositifs de fixation (11), **caractérisé en ce que** les deux ailes (3, 4) du poteau de clôture en forme de I (1) sont creuses et comportent des ouvertures internes (5, 6) destinées à accueillir les dispositifs de fixation (11).

2. Poteau de clôture selon la revendication 1, **caractérisé en ce que** le poteau de clôture (1) présente une structure creuse.

3. Poteau de clôture (1) selon la revendication 1 ou la revendication 2, dans lequel chaque dispositif de fixation (11) est pourvu d'un canal longitudinal en forme de rainure (12) destiné à accueillir l'élément de fil de bord (8) du panneau de treillis soudé (7) à proximité du poteau de clôture, **caractérisé en ce que** chaque dispositif de fixation (11) comporte au moins deux saillies ou crampons (13, 14) correspondant aux ouvertures (5, 6) dans les ailes (3, 4) engageant les crampons (13, 14) solidement dans les ouvertures ou les encoches (5, 6) des ailes (3, 4).

4. Poteau de clôture (1) selon la revendication 3, **caractérisé en ce que** chaque dispositif de fixation (11) comporte une ouverture transversale supplémentaire (19) engageant un élément de fil horizontal (9) du panneau de treillis soudé voisin (7).

5. Poteau de clôture (1) selon une ou plusieurs des revendications 1 à 4, **caractérisé en ce que** le poteau de clôture (1) est équipé d'une coiffe (17) adaptée à la dimension de la section transversale du poteau de clôture (1); la coiffe (17) comportant des crochets (18) engageant les fils horizontaux supérieurs (9) des deux panneaux de treillis soudé (7) à proximité du poteau de clôture (1).

FIG.1

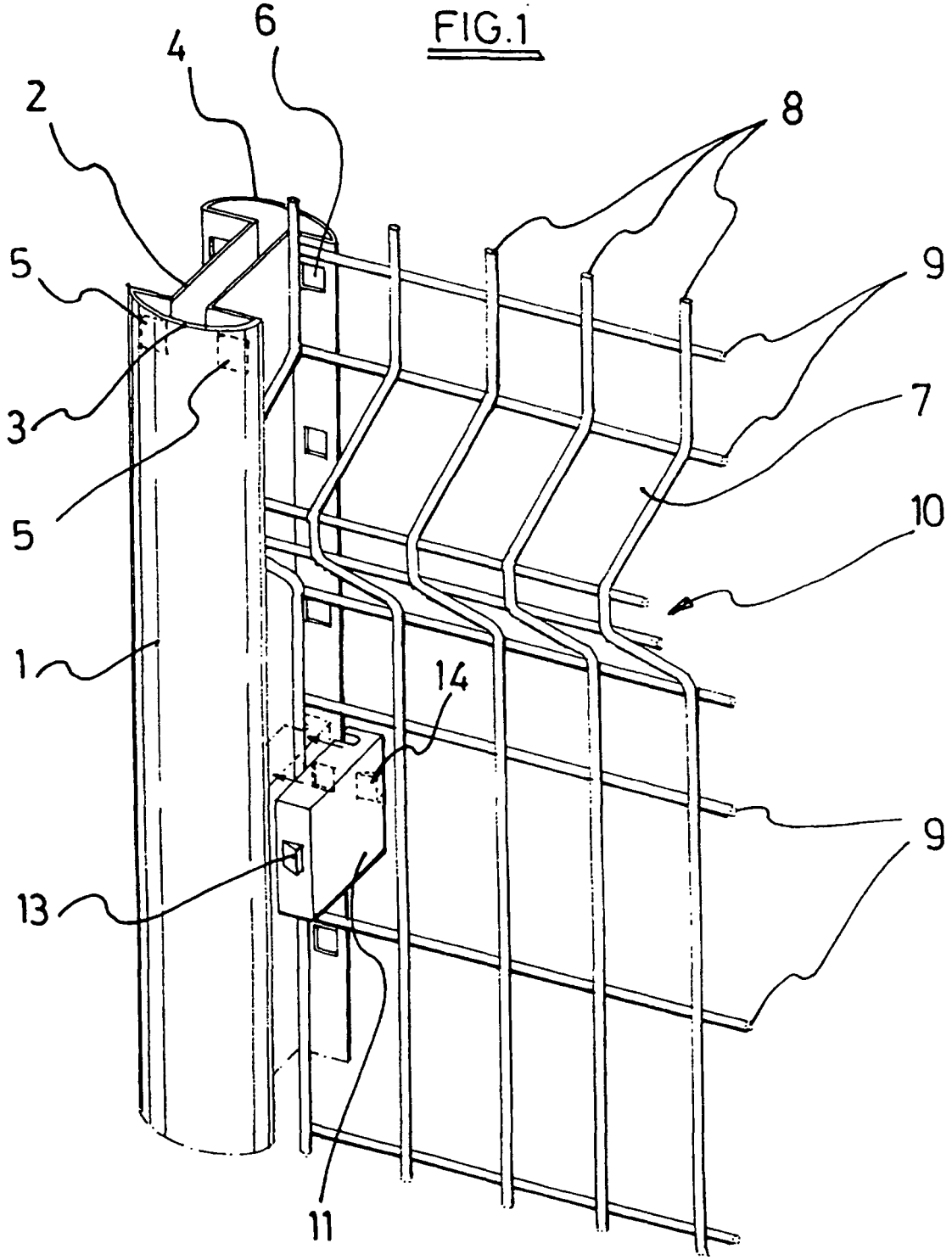
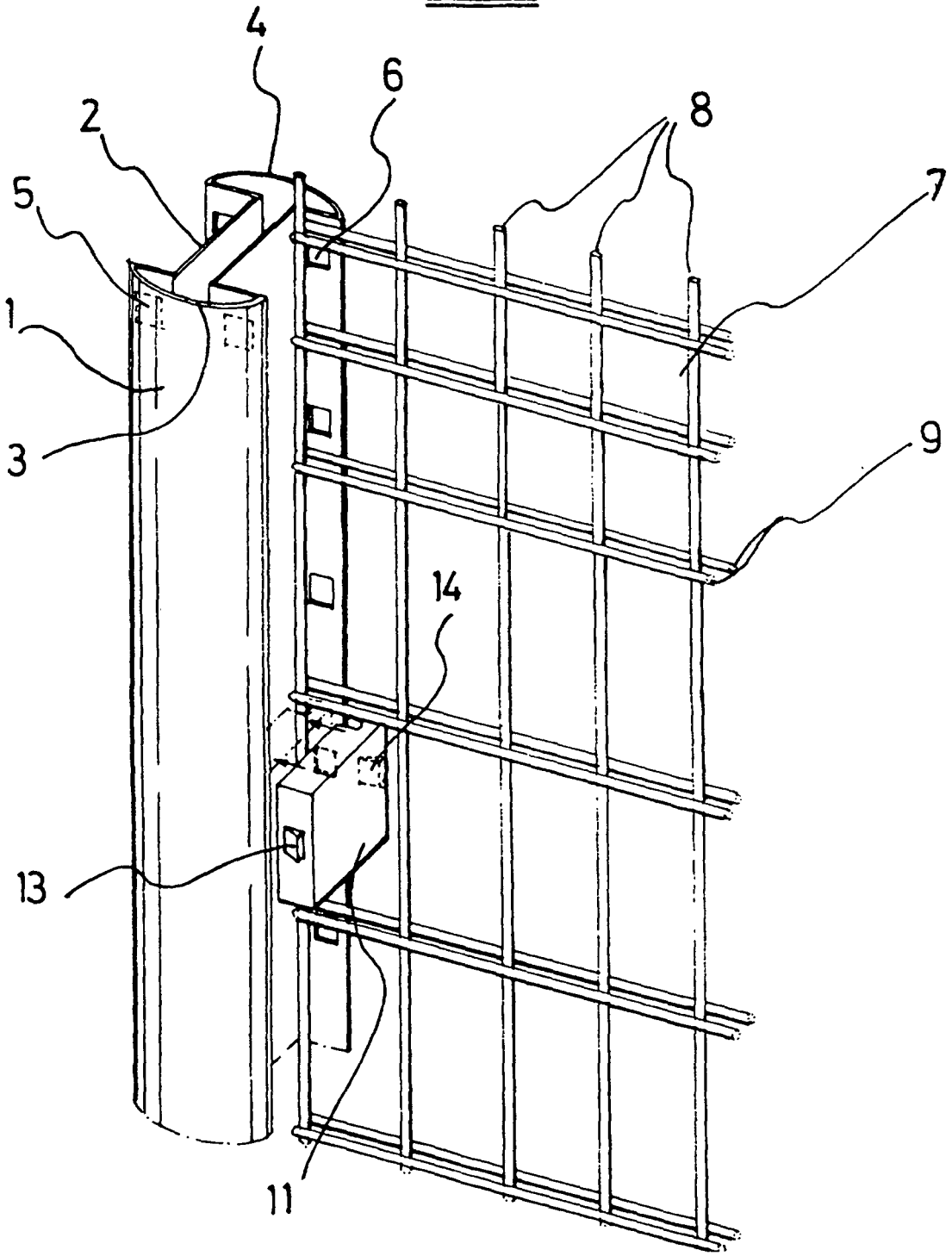


FIG. 2



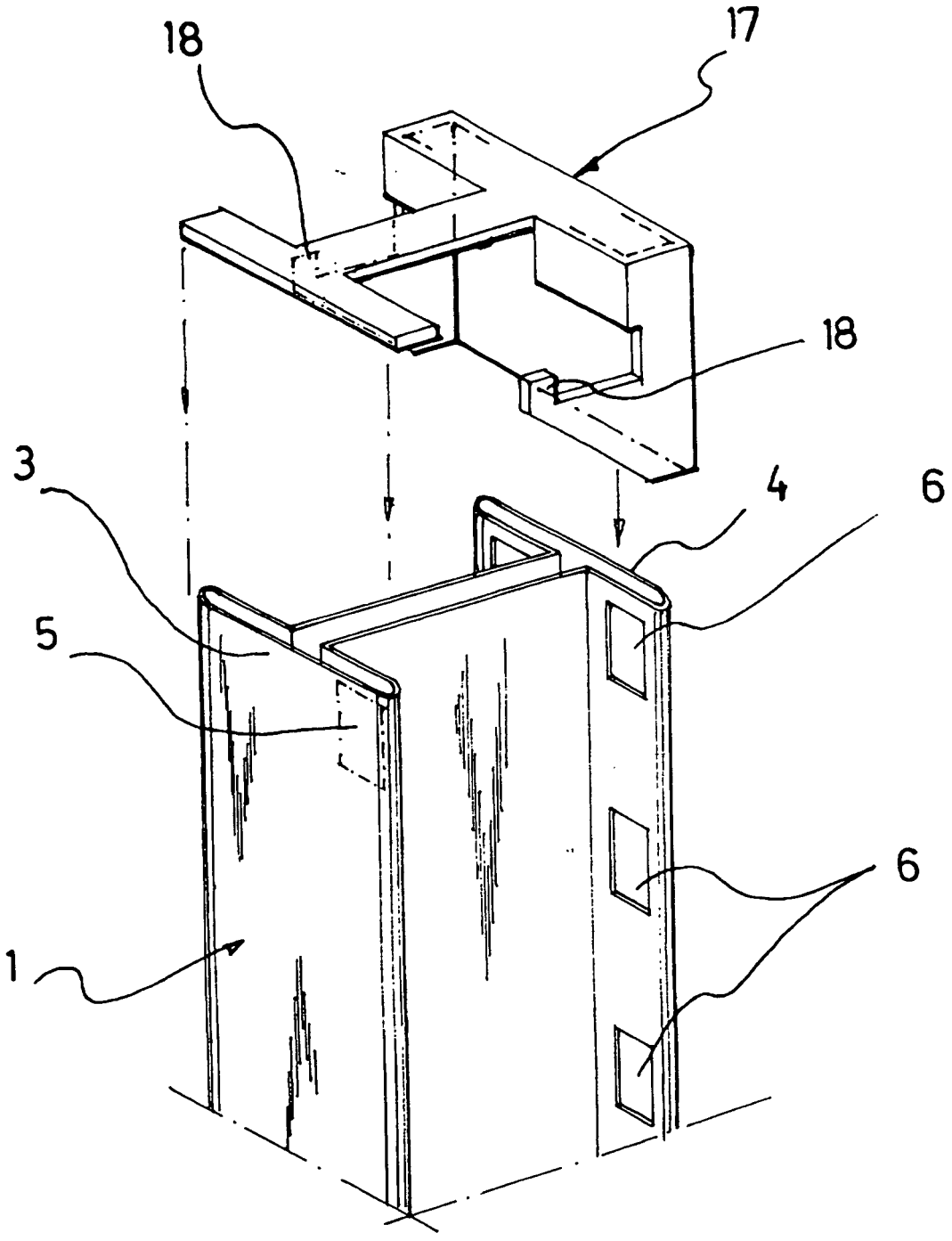


FIG. 4

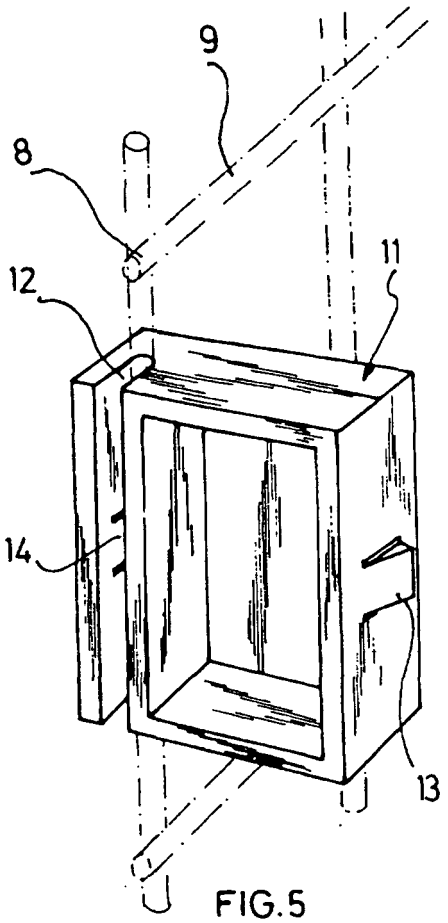


FIG.5

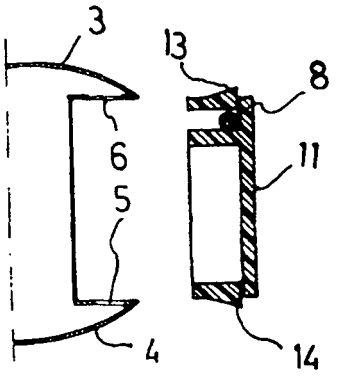


FIG.6a

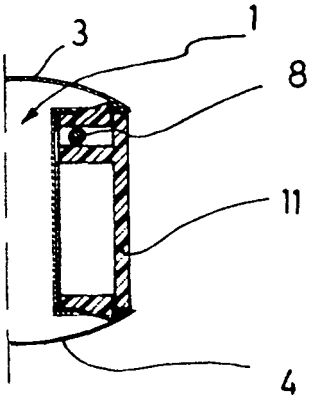


FIG.6b

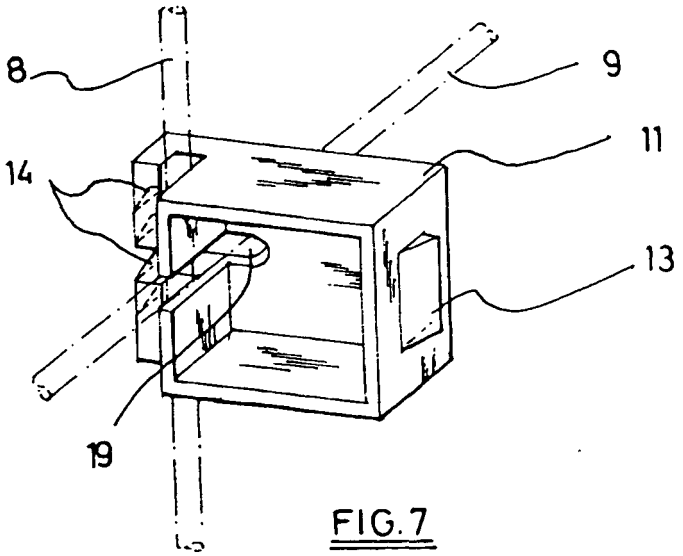


FIG.7

FIG. 8