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(54) **A FENCE POST ASSEMBLY**

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## Description

### TECHNICAL FIELD

**[0001]** This invention relates, *inter alia*, to a fence post assembly having a keeper for holding a fencing member (such as a wire or mesh panel) relative to a fence post. The keeper is movable between a holding position in which the fencing member is held relative to the fence post and a release position in which the fencing member may be released from the fence post. This invention also relates to a method for constructing a fence.

### BACKGROUND ART

**[0002]** In order to construct a wire fence, typically a fencer will first anchor fence posts to the ground at regular intervals. The fencer will then thread plain fencing wires through holes in the posts (if star- or T-shape pickets) or otherwise attach the wires to the posts, then strain those wires, and then finally tie them off. In order to construct a mesh panel fence, typically the fencer will further tie a mesh panel to the strained plain wires, strain those panels, and then finally tie them off.

**[0003]** Disadvantages of the above described method include that it is tedious and time-consuming. In particular, the fencer is required to thread wires through numerous holes, and several trips along a length of the fence may be required in order to do this and to fully strain the fence.

**[0004]** Other disadvantages include that additional fence posts cannot be readily added to the existing fence and damaged fence posts cannot be replaced without first releasing the wires - following which the wires would again require re-threading and straining.

**[0005]** Yet another disadvantage is that such a fence cannot be readily disassembled for relocation or recycling GB 652 789 A discloses a fence post assembly according to the preamble of claim 1.

### DISCLOSURE OF INVENTION

**[0006]** It is an object of the present invention to overcome or minimise at least one of the disadvantages referred to above, or to provide the public with a useful or commercial choice.

**[0007]** According to a first aspect of the present invention, there is provided a fence post assembly according to claim 1 comprising:

a fence post; and

at least one keeper for holding a fencing member relative to the post, wherein the keeper is movable between a holding position in which the member is held relative to the post and a release position in which the member may be released from the post.

**[0008]** The post may be of any suitable size and construction, and may be made of any suitable material or materials. The post is a picket, it may be made of galvanised metal, plastics material or of wood. Preferably, the post is a star picket or a T-shape picket made of coated steel.

**[0009]** The post may be a composite/hybrid of different materials. For instance, the post may comprise a longitudinal metallic portion and a non-metallic portion extending longitudinally along the metallic portion, wherein the non-metallic portion has a plurality of keepers spaced along a length of the non-metallic portion. The longitudinal metallic and non-metallic portions may be connected to one another in any suitable way, eg. fasteners such as nuts and bolts, adhesive or a melt weld.

**[0010]** The keeper comprises an opening extending within the post for receiving the fencing member and at least one retainer connected to the post that is movable between the holding and release positions, wherein in the holding position the retainer retains the fencing member within the opening.

**[0011]** The opening is a slot extending within the post such that the fencing member, when held by the retainer, extends across the post relative to a length of the post. The slot has an open end and a blind end.

**[0012]** The blind end may be tapered so as to "grab" the fencing member. The retainer may be of any suitable size, shape and construction. The retainer is connected to the post and movable relative thereto in any suitable way.

**[0013]** The retainer is pivotally connected to the post and pivoted between the holding and release positions. The retainer has a post mounting region and a fencing member engaging region. The post mounting region is mounted to the post by way of a pin of the retainer. The fencing member engaging region extends across the slot so as to obstruct movement of the fencing member towards the open end of the slot when the retainer is in the holding position. The fencing member engaging region may be hook shaped so as to hook around the fencing member whilst the fencing member is located within the slot. The fencing member engaging region may extend within the post across the slot so as to obstruct movement of the fencing member towards the open end of the slot when the retainer is in the holding position. The fencing member engaging region may locate within the upper and lower grooves of the slot when in the release and holding positions, respectively.

**[0014]** The retainer is biased to move to and remain in the holding position and this is achieved by way of gravity. The retainer has a counter-balance region that causes the fencing member engaging region to pivot such that it extends across the slot so as to obstruct movement of the fencing member towards the open end of the slot.

**[0015]** The keeper may comprise more than one type of retainer for holding the fencing member within the slot.

**[0016]** The keeper may be connectable to the post. That is, the keeper may be connected to, say, a mount

and the mount may be connectable to the post. This may be achieved in any suitable way. In one embodiment, the mount is in the form of a plastic strip having at least one said retainer and slot, and the strip is connectable to a longitudinal edge of the post by way of fasteners.

**[0017]** Any suitable type of fencing member may be held relative to the post. In one embodiment, the fencing member is a plain wire or a length of barbed wire. The post assembly may have a plurality of keepers spaced along a length of the post, so as to form a 2-8 strand high wire fence.

**[0018]** In another embodiment, the fencing member may be a mesh panel, in which case the post assembly may have a plurality of keepers spaced along a length of the post for holding different substantially horizontally extending strands of the mesh panel.

**[0019]** In yet another embodiment, the fencing member may be an insulator, a bracket, a rain gauge or other type of accessory that may usually be found connected to or otherwise associated with a fence. The fencing member may be an accessory that is not usually connected to or otherwise associated with a fence. Such a fencing member will have a keeper-engaging region (as described later in this specification) for being held by the keeper relative to the fence post.

**[0020]** The post assembly may be anchored or otherwise fastened to any suitable surface, such that the post extends vertically, horizontally or at any other desired angle. That is, the post could extend at any suitable angle from, say, a bridge or building. Preferably, the post is anchored to a ground surface by way of being partially driven into the ground.

**[0021]** According to a second aspect of the present invention, there is provided a method of constructing a fence according to claim13, said method comprising the steps of:

anchoring at least one fence post assembly to a surface, wherein the post assembly comprises a fence post and at least one keeper for holding a fencing member relative to the post, wherein the keeper is movable between a holding position in which the member is held relative to the post and a release position in which the member may be released from the post; and

engaging a fencing member with the keeper such that the keeper holds the fencing member relative to the post.

**[0022]** Preferably, the method comprises the additional step of straining (tensioning) the fencing member once, or before, it is held relative to the post.

**[0023]** Preferred embodiments of the invention will now be described by way of example with a reference to the accompanying figures.

## BRIEF DESCRIPTION OF FIGURES

**[0024]**

Figure 1 is a side perspective view of part of a fence post assembly holding a fencing wire, not according to the present invention;

Figure 2 is a side elevation view corresponding to Figure 1;

Figure 3 is a side elevation view of part of a fence post assembly, not according to the present invention;

Figure 4 is a side perspective view corresponding to Figure 3 but holding a fencing wire;

Figure 5 is a side elevation view of part of a fence post assembly, not according to the present invention;

Figure 6 is a side perspective view corresponding to Figure 5 but holding a fencing wire;

Figure 7 is a side elevation view of part of a fence post assembly, not according to the present invention;

Figure 8 is a side perspective view corresponding to Figure 7 but holding a fencing wire;

Figure 9 is a front elevation view corresponding to Figure 8;

Figure 10 is a side elevation view of part of a fence post assembly, according to an embodiment of the present invention;

Figure 11 is a side perspective view corresponding to Figure 10;

Figure 12 is a side elevation view corresponding to Figure 10 but holding a fencing wire;

Figure 13 is a side perspective view corresponding to Figure 12;

Figure 14 is a reverse side perspective view corresponding to Figure 13;

Figure 15 is a front elevation view corresponding to Figure 14;

Figure 16 is a side perspective view of part of a fence post assembly, according to an embodiment of the present invention;

Figure 17 is a reverse side perspective view corresponding to Figure 16;

Figure 18 is a side perspective view of part of a fence post assembly, holding a fencing wire, according to an embodiment of the present invention;

Figure 19 is a reverse side perspective view corresponding to Figure 18;

Figure 20 is a front elevation view corresponding to Figure 19;

Figure 21 is a side perspective view of part of a fence post assembly, not according to the present invention;

Figure 22 is a reverse side perspective view corresponding to Figure 21, but holding a fencing wire;

Figure 23 is a side elevation view corresponding to Figure 22;

Figure 24 is a side elevation view of a fence post assembly, according to an embodiment of the present invention;
Figure 25 is a perspective view of that shown in Figure 24;
Figure 26 is a reverse side elevation view of part of the fence post assembly shown in Figure 24;
Figure 27 is a side perspective view of part of a fence post assembly, according to an embodiment of the present invention;
Figure 28 is the same as that shown in Figure 27 except that it is holding a fencing wire;
Figure 29 is a perspective view of the fence post assembly shown in Figure 27;
Figure 30 is an elevation view of a wire fence constructed from any one of the fence post assemblies of the earlier figures, according to an embodiment of the present invention;
Figure 31 is a perspective view (and magnified views) of a mesh and barbed wire fence constructed from a fence post assembly of an earlier figure, according to an embodiment of the present invention;
Figure 32 is a perspective view of a mesh fence constructed from a fence post assembly of an earlier figure, according to an embodiment of the present invention;
Figure 33 is close up of that shown in Figure 25;
Figure 34 is close up of that shown in Figure 24;
Figure 35 is a side elevation view of part of the fence post assembly shown in Figure 33;
Figure 36 is a reverse side elevation view of that shown in Figure 35;
Figure 37 is a top end view of that shown in Figure 33;
Figure 38 is a side perspective view of a rain gauge fencing member being held by a fence post assembly like that shown in an earlier figure, not according to the present invention;
Figure 39 is a side perspective view of a small ring insulator fencing member being held by a fence post assembly like that shown in an earlier figure, according to an embodiment of the present invention;
Figure 40 is a side elevation view of an insulator fencing member being held by a fence post assembly like that shown in an earlier figure, according to an embodiment of the present invention;
Figure 41 is a reverse side elevation view of that shown in Figure 40;
Figure 42 is a side perspective view of that shown in Figure 41;
Figure 43 is a top plan view of that shown in Figure 40;
Figure 44 is a reverse side perspective view of that shown in Figure 42;
Figure 45 is a perspective view of an insulator fencing member being held by a fence post assembly like that shown in an earlier figure, according to an embodiment of the present invention;
Figure 46 is a side elevation view of that shown in Figure 45;
Figure 47 is a top plan view of that shown in Figure 45; and
Figure 48 is a side perspective view of a fencing wire locator, according to an embodiment of the present invention.

## BEST MODES FOR CARRYING OUT THE INVENTION

**[0025]** In the figures, like reference numerals refer to like features.

**[0026]** Referring first to Figures 1 and 2, there is shown part of a fence post assembly 1 for holding a fencing member, such as a fencing wire 2. The post assembly 1 includes a post 3 and numerous keepers 4 (only one is shown) spaced along a length of the post 3. The post 3 that is shown is in the form of a coated steel star picket and part of an arm 5 of the post 3 is shown.

**[0027]** Each keeper 4 comprises a slot 7 extending within the arm 5 and a retainer 8 that is movable between a fencing member holding position (as shown in Figure 2) and a fencing member release position. The slot 7 extends horizontally within the arm 5 and has an open end 11, a blind end 12, as well as upper 9 and lower 10 grooves (best seen in Figure 2).

**[0028]** The retainer 8 is in the form of a D-shackle wherein a post mounting end 15 of the retainer 8 extends transversely through an aperture in the arm 5 and a fencing member engaging end 16 of the retainer 8 extends across the slot 7. Regions 14 of the retainer 8 that interconnect ends 15 and 16 extend along each side of the arm 5.

**[0029]** The retainer 8 can pivot between the fencing member 2 holding and release positions. When inserting a fencing wire 2 into the slot 7, the wire 2 pushes the fencing member engaging end 16 up into the upper groove 9. In order to release the wire 2 from the slot 7, the retainer 8 must first be pivoted upwardly by hand such that the fencing member engaging end 16 locates within the upper groove 9. In the fencing member holding position, the fencing member engaging end 16 locates within the lower groove 10. The lower groove 10 is there to provide a positive recess for retainer 8 to sit in, so that any pressure from the wire 2 (eg. when livestock push against the fence) will not result in the wire 2 being released from the slot 7 by accident.

**[0030]** Turning now to Figures 3 and 4, there is shown part of a fence post assembly 21 holding a fencing member (wire 2). The post assembly 21 includes a post 23 and numerous keepers 24 (only one is shown) spaced along a length of the post 23.

**[0031]** Each keeper 24 comprises a slot 27 extending within an arm 25 of the post 21, and a retainer 28 that is movable between a fencing member holding position (as shown in Figure 4) and a fencing member release position. The slot 27 extends horizontally within the arm 25 and has an open end 31, a blind end 32, as well as a lower 30 groove, as seen in Figure 3.

**[0032]** The retainer 28 is in the form of a pair of interconnected hooks 20 having a post mounting end 35 pinned to the post 21 with a pin 36, and a fencing member engaging end 37 having an interconnecting crosspiece 40 extending across the slot 27. The hooks 20 extend along each side of the arm 25.

**[0033]** The retainer 28 can pivot between the fencing member holding and release positions. Prior to inserting the wire 2 into the slot 27, the fencing member engaging end 37 of the retainer 28 is first pivoted out of the lower groove 30 by hand towards the blind end 32 (as indicated by the two-headed arrow of Figure 3). The wire 2 is then moved beneath end 37 into the blind end 32 and the retainer 28 is then released such that end 37 locates within the groove 30.

**[0034]** In order to release the wire 2 from the slot 27, the retainer 28 must first be pivoted upwardly by hand such that the fencing member engaging end 37 moves out of the lower groove 30. The wire 2 is then pulled beneath end 37 and out of the slot 27.

**[0035]** Turning now to Figures 5 and 6, there is shown a fence post assembly 50. Again, a fence post 51 of the assembly 50 is in the form of a star picket.

**[0036]** A keeper 53 of the assembly 50 comprises a horizontally extending slot 54 having a blind end 59 and an upper groove 55, and a spring steel retainer 56 that extends across the slot 54. The retainer 56 has an upper end 57 located within the upper groove 55. A lower end of the retainer 56 is fixed to the post 51.

**[0037]** When inserting a wire 2 into the slot 54, the upper end 57 of the retainer 56 flexes from a fencing member holding position (as shown in Figure 5) to a release position such that the wire 2 may be moved and trapped between the retainer 56 and the blind end 59 of the slot 54. Since the retainer 56 is made of spring steel, the upper end 57 of the retainer 56 springs back into abutment with an internal shoulder 58 of the post 51 after the wire 2 has passed between the upper end 57 and the shoulder 58. In order to release the wire 2, the upper end 57 must first be moved out of abutment with the shoulder 58 of the post 51.

**[0038]** Turning now to Figures 7-9, there is shown a fence post assembly 100 for holding a fencing member (eg. wire 2). A fence post 101 of the assembly 100 is in the form of a star picket.

**[0039]** A keeper 102 of the assembly 100 comprises a slot 103 and a retainer 104 that is movable between a fencing member holding position (as shown in Figure 8) and a fencing member release position. As shown in Figure 7, the slot 103 is L-shaped and has an open end 105, a blind end 106 and a lateral groove 107.

**[0040]** The retainer 104 is in the form of a spring steel link wherein a post mounting end 108 of the retainer 104 extends transversely through an aperture in an arm 109 of the post 101 and a fencing member engaging end 111 of the retainer 104 extends across the slot 103. As seen in Figure 9, regions 113 of the retainer 104 that interconnect ends 108 and 111 extend along each side of the arm 109.

**[0041]** The retainer 104 can pivot between the fencing member holding and release positions. When inserting a wire 2 into the slot 103, the wire 2 pushes the fencing member engaging end 111 into the groove 107, at which time the wire 2 is movable into the blind end 106 of the slot 103. In the fencing member holding position, the fencing member engaging end 111 is positioned as shown in Figure 8, so that any pressure from the wire 2 (eg. when livestock push against the fence) will not result in the wire 2 being released from the slot 103 by accident. In order to release the wire 2 from the slot 103, the retainer 104 must first be pivoted upwardly by hand such that the fencing member engaging end 111 locates within the lateral groove 107.

**[0042]** Turning now to Figures 10 to 15, there is shown a fence post assembly 120 according to an embodiment of the invention. A fence post 121 of the assembly 120 is in the form of a star picket. A keeper 122 of the assembly 120 comprises an L-shaped slot 123 and a retainer assembly. The retainer assembly comprises a retainer 124, a pivot pin 126 and a travel stop pin 135.

**[0043]** The retainer 124 is pivotally mounted to a post 121 arm and can pivot between fencing member holding and release positions. As shown in Figure 10, the retainer 124 comprises a post mounting region 125, a fencing member engaging region 127 and a counter-balance region 130. The travel stop pin 135 extends laterally of the fence post 121 arm between the fencing member engaging region 127 and the counter-balance region 130. The pivot pin 126 extends through the post 121 arm and mounting region 125, and enables the fencing member engaging region 127 to pivot relative to the post 121 arm. The fencing member engaging region 127 has a tapered nose 131 that is shaped to both allow a fencing member to locate within a blind end 128 of the slot 123 and to be retained within the blind end 128.

**[0044]** Figures 13-15 shows the retainer 124 in the fencing member holding position. When inserting a fencing wire 2 into the slot 123, the fencing wire 2 engages the tapered nose 131 and pushes the fencing member engaging region 127 downwardly. The fencing wire 2 then locates within the blind end 128 of the slot 123, at which time the fencing member engaging region 127 pivots back to the holding position due to the weight of the counter-balance region 130. The travel stop pin 135 resists further downward movement of the counter-balance region 130 and ensures that the fencing wire 2 cannot disengage the slot 123 by accident. In order to release the fencing wire 2 from the slot 123, the fencing member engaging region 127 must be pivoted downwardly by hand, such that the fencing wire 2 can freely move to an open end of the slot 123.

**[0045]** Turning now to Figures 16 and 17, there is shown a fence post assembly 140 according to another embodiment of the invention. A fence post 141 of the assembly 140 is in the form of a star picket. A keeper 142 of the assembly 140 comprises a slot 143 and a

retainer assembly.

**[0046]** The slot 143 has an arcuate portion 148 flanked by linear portions 149, 151. Linear portion 149 corresponds to an open end 149 of the slot 143 whereas linear portion 151 corresponds to a blind end 151 of the slot 143.

**[0047]** The retainer assembly comprises a retainer 144 and a pivot pin 146. The retainer 144 is pivotally mounted to a post 141 arm by way of the pivot pin 146, and can pivot between fencing member holding and release positions. The retainer 144 comprises a post mounting region 145 through which the pivot pin 146 extends, a fencing member engaging region 147, and a counter-weight region 150. The fencing member engaging region 147 has a mouth 160 shaped to receive a fencing member and to guide movement of the member to the blind end 151 of the slot 143. As the retainer 144 pivots to the holding position, the mouth 160 coincides with the arcuate portion 148 of the slot 143.

**[0048]** Figure 16 shows the retainer 144 in the fencing member holding position. When inserting a fencing member into the slot 143, the fencing member engages the mouth 160 and pushes the fencing member engaging region 147 downwardly. As the retainer 144 rotates relative to the post 141 arm, the mouth 160 aligns perfectly with the arcuate portion 148 of the slot 143. The fencing member then locates within the blind end 151 of the slot 143, at which time the fencing member engaging region 147 pivots back to the holding position due to the weight of the counter-balance region 150.

**[0049]** In order to release the fencing member from the slot 143, the fencing member engaging region 147 must be pivoted downwardly by hand, until such time that the fencing member can be received by the mouth 160 and guided to the open end 149 of the slot 143.

**[0050]** Turning now to Figures 18-20, there is shown a fence post assembly 240 according to another embodiment of the invention. A fence post 241 of the assembly 240 is in the form of a star picket. A keeper 242 of the assembly 240 comprises a slot 243 and a retainer assembly.

**[0051]** The slot 243 has an arcuate portion 248 flanked by linear portions 249, 251, as seen in Figure 19. Linear portion 249 corresponds to an open end 249 of the slot 243 whereas linear portion 251 corresponds to a blind end 251 of the slot 243.

**[0052]** The retainer assembly comprises a retainer 244 and a pivot pin 246. The retainer 244 is pivotally mounted to a post 241 arm by way of the pivot pin 246, and can pivot between fencing member holding and release positions. The retainer 244 comprises a mounting region 245 through which the pivot pin 246 extends, a fencing member engaging region 247, and a counter-weight region 250. The fencing member engaging region 247 has a mouth 260 shaped to receive a fencing member and to guide movement of the member to the blind end 251 of the slot 243. As the retainer 244 pivots to the holding position, the mouth 260 coincides with the arcuate portion 248 of the slot 243.

**[0053]** Figure 18 shows the retainer 244 in the fencing member holding position. When inserting a fencing member, such as a wire 2, into the slot 243, the fencing member engages the mouth 260 and pushes the fencing member engaging region 247 downwardly. As the retainer 244 rotates relative to the post 241 arm, the mouth 260 aligns perfectly with the arcuate portion 248 of the slot 243. The fencing member wire 2 then locates within the blind end 251 of the slot 243, at which time the fencing member engaging region 247 pivots back to the holding position due to the weight of the counter-balance region 250.

**[0054]** In order to release the wire 2 from the slot 243, the fencing member engaging region 247 must be pivoted downwardly by hand, until such time that the wire 2 can be received by the mouth 260 and guided to the open end 249 of the slot 243.

**[0055]** Turning now to Figures 21-23, there is shown a fence post assembly 170 for holding a fencing member such as a wire 2. A fence post 171 of the assembly 170 is in the form of a star picket. A keeper 172 of the assembly 170 comprises an arcuate upper slot 173, a lower L-shaped slot 174 having a blind end 180, and a metal flat spring retainer 175 that is movable between a fencing member holding position (as shown in Figure 22) and a fencing member release position.

**[0056]** The flat spring retainer 175 has an arcuate upper portion 177 and a hooked lower portion 178. The arcuate upper portion 177 extends within the upper slot 173 and has a pair of upwardly turned locking tabs 179 that extend along each side of a post 171 arm and together with the arcuate upper portion 177 lock the retainer 175 in position. A portion of the retainer 175 intermediate the upper and lower portions 177, 178 extends along an edge of the post 171 arm. The hooked lower portion 178 extends across the lower slot 174 and is biased to remain in that fencing member holding position. The hooked lower portion 178 has a notch 183 slightly wider than the width of the post 171 arm (see Figure 21).

**[0057]** The hooked lower portion 178 can move between the fencing member holding and release positions. When inserting a fencing member (eg. a wire 2) into the lower slot 174, the member pushes against the hooked lower portion 178 and against a force of the spring until the notch 183 engages the post 171 and the member is locatable within the blind end 180 of the lower slot 174. The hooked lower portion 178 then returns to a resting position and prevents the fencing member from disengaging the lower slot 174 by accident. In order to release the fencing member from the lower slot 174, the notch 183 of the hooked lower portion 178 must again be moved into temporary engagement with the post 171 arm.

**[0058]** Turning now to Figures 27 to 29, there is again shown the fence post assembly 120 of Figures 10 to 15, having keepers 122 spaced along a length of the post 121.

**[0059]** The retainer 124 is the same as shown in Figure 10, except that the travel stop pin 135 and pivot pin 126 each have smaller diameter head.

**[0060]** Figure 28 shows the retainer 124 in the fencing member holding position. Figure 27 shows how the retainer 124 is pivoted when either accepting or releasing a fencing member wire 2 from the slot 123.

**[0061]** Figures 30-32 are examples of different types of fences that may be constructed using the fence post assemblies shown in the earlier figures.

**[0062]** In order to construct the wire fence 400 of Figure 30, posts of the post assemblies 401 are first driven into the ground at the required spacing. All of the plain 402 and barbed 405 fencing wires are then run out at once, tied off to a first strainer post, strained, tied off to a second strainer post, and then brought into engagement with the keepers 403 that are spaced along the length of each post. With the retainers of the keepers 403 in the holding position, if necessary, the wires 402, 405 may then be further strained until completely taut.

**[0063]** Turning now to Figure 31, there is shown a fence 410 constructed using the fence post assembly 120 of Figures 10-15 but utilising a wire mesh panel 412 rather than individual plain wires. However, a barbed wire 413 extends above the mesh panel 412. The mesh panel 412 comprises a repeating pattern of horizontally extending and vertically extending wires.

**[0064]** In order to construct the fence 410, the posts 121 are first anchored to the ground at the required spacing. The mesh panel 412 and barbed wire 413 are then unrolled, tied off to a first strainer post, strained, tied off to a second strainer post, and then the horizontally extending wires of the mesh panel 412 and the barbed wire 413 are brought into engagement with the keepers 122 that are spaced along the length of each post 121. With the retainers of the keepers 122 in the holding position, if necessary, the mesh panel 412 and barbed wire 413 and may then be further strained until completely taut.

**[0065]** Turning now to Figure 32, there is shown a fence 420 constructed using the fence post assembly 120 like that shown in Figure 29 but utilising a different type of wire mesh panel 421. The mesh panel 421 comprises a mesh 423 having orthoganol openings and three horizontally extending straining wires 422 that are connected to the mesh 423.

**[0066]** In order to construct the fence 420, the posts 121 are first anchored to the ground at the required spacing. The mesh panel 421 is then unrolled, tied off to a first strainer post, strained, tied off to a second strainer post, and then the horizontally extending wires 422 of the mesh panel 421 are then brought into engagement with the keepers 122 that are spaced along the length of each post 121. With the retainers of the keepers 122 in the holding position, if necessary, the wires 422 and may then be further strained until completely taut.

**[0067]** Turning now to Figures 24-26 and 33-37, there is shown a fence post assembly 440 having a composite/hybrid post and keepers 441 spaced there along. The post comprises a T-shaped metal support and a plastic strip 445 extending longitudinally along an arm 442 of the support. As seen in Figures 25 and 37, strip 445 has pairs of opposed jaws that extend along opposing longitudinal sides of the arm 442 and are securely bolted to the arm 442.

**[0068]** A plurality of keepers 441 are positioned along the strip 445. The keepers 441 are essentially the same as keepers 122 shown in Figure 29. L-shaped slots 444 are formed in the plastic strip 445. Each retainer assembly 443 comprises a retainer 448, a pivot pin 449 and a travel stop pin 450, as seen in Figures 33 and 34, and as described in respect of keeper 122.

**[0069]** The number and spacing of keepers and the length of the strip 445 may vary and will depend on its intended use.

**[0070]** An advantage of the present invention is that fencing wires and mesh panels can be readily attached to fence posts in one simple operation. The fencer need not thread wires through holes of star picket posts. The fencer can run out all of the fencing wires at once along the whole length of the fence and readily attach the wires to the posts. In this way, several trips along a length of the fence by the fencer may be avoided.

**[0071]** Where mesh panel fencing is required, this can be pre-fabricated, and the entire fence can be run out, tied off and strained by the fencer, then brought into engagement with the keepers and then finally strained and tied off, if required. This saves the fencer having to first thread plain wires through the holes of each post, then straining those wires, then attaching the mesh panel, and then having to strain the mesh panel.

**[0072]** Another advantage of the present invention is that posts can be readily added to, or removed from, an existing fence without having to cut any wires. A new post is driven into the appropriate place and the wires are simply inserted into the slots of the keepers. Likewise, when removing a post, the wires are released from the post and the post is then removed.

**[0073]** Also, in the event that a fence needs to be dismantled, the wires are simply released from the fence posts, unstrained and laid on the ground and rolled up. There is no need to cut any wires or need to feed them back along the entire length of fence through each hole in each post - often an impossible task on older fences and rarely undertaken due to time costs.

**[0074]** Yet another advantage is that the fence can be readily relocated or recycled in that the wires or wire mesh panel can be easily detached from the posts without first cutting those wires.

**[0075]** Turning now to Figure 38, there is shown a rain gauge fencing member 200 being held by a fence post assembly 120 like that shown in Figures 10-15.

**[0076]** The rain gauge fencing member 200 has an elongate support body 201 and a lower end of the body 201 has a ledge 202. A wedge shaped rain collecting vessel 203 is supported by the body 201. A pair of positioning arms 204 extends laterally of the body 201 and straddles the post 121 arm. A pair of pin support arms 206 extends laterally of the body 201 and straddles the post 121 arm. A locking pin 207 extends between the pin

support arms 206 and is retainable within the slot 123 of the keeper 122 by the retainer 124 (as described previously in respect of fencing wire 2). The lower end of the body 201 prevents the member 200 from pivoting about pin 207 when held by the keeper 122. The pin support arms 206 provide clearance for pivoting of the retainer 124 between the holding and release positions.

**[0077]** Turning now to Figure 39, there is shown a small ring insulator fencing member 210 being held by a fence post assembly like that shown in Figures 10-15.

**[0078]** The small ring insulator fencing member 210 has an elongate body 211. A pair of insulator hooks 212 are supported by the body 201. A pair of positioning arms 214 extends laterally of the body 211 and straddles the post 121 arm. A pair of pin support arms 216 extends laterally of the body 211 and straddles the post 121 arm. A locking pin 217 extends between the pin support arms 216 and is retainable within the slot 123 of the keeper 122 by the retainer 124 (as described previously in respect of rain gauge fencing member 200). The lower end of the body 211 prevents the member 210 from pivoting about pin 217 when held by the keeper 122. The pin support arms 216 provide clearance 219 for pivoting of the retainer 124 between the holding and release positions.

**[0079]** Turning now to Figures 40 to 44, there is shown an insulator fencing member 220 being held by a fence post assembly like that shown in Figures 10 to 15.

**[0080]** The insulator fencing member 220 has an elongate body 221 and a tapered insulator bracket 225 extending laterally of the elongate body 221. The bracket 225 has a reinforced rim 258 as seen in Figure 42. A keeper 222, like keeper 122, is located at a narrow end of the bracket 225. Keeper 222 comprises an L-shaped slot 223 and a retainer assembly, for retaining a fencing member, such as an electrified wire. As seen in Figure 41, the retainer assembly comprises a retainer 224, a pivot pin 226 and a travel stop pin 227.

**[0081]** A pair of positioning arms 245 extends laterally and rearwardly of a lower end of the body 221 and straddles the post 121. A pair of pin support arms 246 extends laterally of an upper end of body 221 and straddles the post 121. A locking pin 257 extends between the pin support arms 246 and is retainable within the slot 123 of the keeper 122 by the retainer 124 (as described previously). The lower end of the body 221 prevents the member 220 from pivoting about pin 257 when held by the keeper 122. The pin support arms 246 provide clearance for pivoting of the retainer 124 between the holding and release positions.

**[0082]** Turning now to Figures 45 to 47, there is shown another insulator fencing member 280 being held by a fence post assembly like that shown in Figures 10 to 15.

**[0083]** The insulator fencing member 280 has a body 281 and a pair of pin support arms 283 extends laterally of the body 281 and straddles the post 121. A locking pin 287 extends between the pin support arms 283 and is retainable within the slot (not shown) of the keeper 122 by the retainer 124 (as described previously). A lower end of the body 281 prevents the member 280 from pivoting about pin 287 when held by the keeper 122. The pin support arms 283 provide clearance for pivoting of the retainer 124 between the holding and release positions.

**[0084]** The body 281 also has a retainer assembly 286 for holding a fencing member such as an electrified wire. Upper and lower walls 290, 291 extend forwardly of the body 281 and provide a slot/recess 282 of the retainer assembly 286. As seen in Figure 46, the retainer assembly comprises a retainer 294, a pivot pin 295 and a travel stop pin 287 (ie. locking pin 287).

**[0085]** In use, a wire is inserted within the slot/recess 282 such that the retainer 294 pivots to the release position and allows the wire to be placed within a blind end of the slot/recess 282. The retainer 294 then returns to the holding position and holds the wire in place.

**[0086]** Yet another advantage of the present invention is that fencing members, such as those described above, can be readily attached to fence posts having keepers as described herein.

**[0087]** Turning now to Figure 48, there is shown a fencing wire locator 268, according to an embodiment of the present invention. The locator 268 is used to insert fencing wires as a group or a wire mesh panel into the slots of keepers of a fence post, such as the posts and keepers described in the earlier embodiments herein.

**[0088]** The locator 268 has an elongate body 261, a pair of handles 262, 263 extending from the body 261, and a row of teeth 264 extending from the body 261.

**[0089]** In use, either plain fencing wires or wires of a wire mesh panel are made to engage the teeth 264 and the teeth 264 are then moved by an installer relative to the post such that each wire engages its respective keeper (one at a time). That is, the installer walks up to the post, jiggles the locator 268 until all of the wires engage the teeth 264 and align with one another, and then pushes the locator 268 against the post until all of the wires have engaged their respective keepers.

**[0090]** The foregoing embodiments are illustrative only of the principles of the invention, and various modifications and changes will readily occur to those skilled in the art. The invention defined by the appended claims is capable of being practiced and carried out in various ways and in other embodiments. It is also to be understood that the terminology employed herein is for the purpose of description and should not be regarded as limiting.

**[0091]** The term "comprise" and variants of the term such as "comprises" or "comprising" are used herein to denote the inclusion of a stated integer or stated integers but not to exclude any other integer or any other integers, unless in the context or usage an exclusive interpretation of the term is required.

## Claims

1. A fence post assembly (120, 420, 440) comprising:

   a fence post (121) being in the form of a picket and having an arm; and
   at least one keeper (122) for holding a fencing member relative to the post (121), wherein the at least one keeper (122) comprises:

   a slot (123, 444) extending within the fence post (121) arm for receiving the fencing member; wherein the slot (123, 444) is substantially L-shaped and has an open end and a blind end (128); and
   a retainer assembly connected to the fence post (121), wherein the retainer assembly comprises a pivot pin (126) and a retainer (124, 448), wherein the retainer (124, 448) is pivotable relative to the fence post (121) arm between a holding position in which the fencing member is holdable relative to the fence post (121) and a release position in which the fencing member is releaseable from the fence post (121), wherein the retainer (124, 448) comprises:

   a post mounting region (125) at which the retainer (124, 448) is mounted to the arm by way of the pivot pin (126);
   a fencing member engaging region (127, 147, 247); and
   a counter-balance region (130, 150, 250) for biasing the retainer (124, 448) by way of gravity to pivot to the holding position,
   **characterized in that**
   in the holding position the fencing member engaging region (127, 147, 247) extends across the slot (123, 444) at a point in substantially vertical alignment with the pivot pin (126) so as to obstruct movement of the fencing member from the blind end (128) towards the open end of the slot (123, 444).

2. The fence post assembly (120) of claim 1, wherein the fence post assembly (120) comprises a plurality of said at least one keeper (122) spaced along a length of the fence post (121) arm.

3. The fence post assembly (120) of claim 1, wherein the fence post (121) arm comprises a longitudinal metallic portion and a non-metallic portion extending longitudinally along the metallic portion, wherein the non-metallic portion has a plurality of said at least one keeper (122) spaced along a length of the non-metallic portion.

4. The fence post assembly (440) of claim 1, wherein the fence post arm comprises a metallic support and a plastic strip (445) extending longitudinally along the metallic support, wherein the plastic strip (445) has a plurality of said at least one keeper retainers (448) and slots (444) spaced along a length of the strip (445).

5. The fence post assembly (420) of any one of claims 1 to 4, wherein the fencing member is a mesh panel (421) and the fence post assembly (420) comprises a plurality of said at least one keeper (122) spaced along a length of the fence post (121) arm for holding different substantially horizontally extending wire strands (422) of the mesh panel (421).

6. The fence post assembly (120) of any one of claims 1 to 5, wherein the fencing member is selected from the group consisting of a plain wire (2), a barbed wire (413), a mesh panel (421), an insulator (220), a bracket (225) and a rain gauge (200).

7. The fence post assembly (120) of any one of claims 1 to 6, wherein the retainer assembly further comprises a travel stop pin (135).

8. The fence post assembly (120) of claim 7, wherein the travel stop pin (135) extends laterally of the fence post (121) arm between the fencing member engaging region (127, 147, 247) and the counter-balance region (130, 150, 250).

9. The fence post assembly (120) of claim 7, wherein when in the holding position the travel stop pin (135) resists further downward movement of the counter-balance region (130) and ensures that the fencing member cannot disengage the slot (123) by accident.

10. The fence post assembly (120) of any one of claims 1 to 9, wherein the fencing member engaging region (127) is shaped to both allow a fencing member to locate within the blind end (128) of the slot (123) and to be retained within the blind end (128).

11. The fence post assembly (120) of any one of claims 1 to 10, wherein the post is a star picket or a T-shape picket made of coated steel.

12. The fence post assembly (120) of any one of claims 1 to 11, wherein the retainer (124, 448) is exterior to the slot (123, 444).

13. A method of constructing a fence, said method comprising the steps of:

    anchoring at least one fence post assembly (120, 420, 440) to a surface, wherein the fence

post assembly (120, 420, 440) is as defined in any one of claims 1 to 12; and
engaging a fencing member with the at least one keeper (122) such that the at least one keeper (122) holds the fencing member relative to the post (121).

**14.** The method of claim 13, wherein the fencing member is a mesh panel (421) and the fence post assembly (420) comprises a plurality of said at least one keeper (122) spaced along a length of the fence post (121) arm for holding different substantially horizontally extending wire strands (422) of the mesh panel (421).

**15.** Use of a fencing member in the fence post assembly (120, 420, 440) of any one of claims 1 to 12.

**Patentansprüche**

**1.** Zaunpfostenbaugruppe (120, 420, 440), umfassend:

einen Zaunpfosten (121) in der Form einer Zaunlatte und einen Arm aufweisend; und
mindestens einen Halter (122) zum Halten eines Zaunelements relativ zu dem Pfosten (121), wobei der mindestens eine Halter (122) Folgendes umfasst:

einen Schlitz (123, 444), der sich innerhalb des Arms des Zaunpfostens (121) erstreckt, um das Zaunelement aufzunehmen; wobei der Schlitz (123, 444) im Wesentlichen L-förmig ist und ein offenes Ende und ein blindes Ende (128) aufweist; und
eine Halterungsbaugruppe, die mit dem Zaunpfosten (121) verbunden ist, wobei die Halterungsbaugruppe einen Drehstift (126) und eine Halterung (124, 448) umfasst, wobei die Halterung (124, 448) relativ zu dem Arm des Zaunpfostens (121) zwischen einer Halteposition, in der das Zaunelement relativ zu dem Zaunpfosten (121) haltbar ist, und einer Loslöseposition, in der das Zaunelement von dem Zaunpfosten (121) lösbar ist, drehbar ist, wobei die Halterung (124, 448) Folgendes umfasst:

einen Pfostenanbringungsbereich (125), in welchem die Halterung (124, 448) anhand des Drehstifts (126) an dem Arm angebracht ist;
einen Zaunelementeingriffsbereich (127, 147, 247); und
einen Gegengewichtsbereich (130, 150, 250), um die Halterung (124, 448) anhand von Schwerkraft vorzuspannen, damit sie sich in die Halteposition dreht,

**dadurch gekennzeichnet, dass**
sich in der Halteposition der Zaunelementeingriffsbereich (127, 147, 247) über den Schlitz (123, 444) an einer Stelle mit im Wesentlichen vertikaler Ausrichtung auf den Drehstift (126) erstreckt, um die Bewegung des Zaunelements von dem blinden Ende (128) in Richtung des offenen Endes des Schlitzes (123, 444) zu blockieren.

**2.** Zaunpfostenbaugruppe (120) nach Anspruch 1, wobei die Zaunpfostenbaugruppe (120) eine Vielzahl des mindestens einen Halters (122) entlang einer Länge des Arms des Zaunpfostens (121) beabstandet umfasst.

**3.** Zaunpfostenbaugruppe (120) nach Anspruch 1, wobei der Arm des Zaunpfostens (121) einen länglichen metallischen Abschnitt und einen nichtmetallischen Abschnitt, der sich längs entlang des metallischen Abschnitts erstreckt, umfasst, wobei der nichtmetallische Abschnitt eine Vielzahl des mindestens einen Halters (122) entlang einer Länge des nichtmetallischen Abschnitts beabstandet aufweist.

**4.** Zaunpfostenbaugruppe (440) nach Anspruch 1, wobei der Arm des Zaunpfostens eine metallische Stütze und einen Kunststoffstreifen (445), der sich längs entlang der metallischen Stütze erstreckt, umfasst, wobei der Kunststoffstreifen (445) eine Vielzahl der mindestens einen Halterhalterungen (448) und Schlitze (444) entlang einer Länge des Streifens (445) beabstandet aufweist.

**5.** Zaunpfostenbaugruppe (420) nach einem der Ansprüche 1 bis 4, wobei das Zaunelement eine Maschenplatte (421) ist und die Zaunpfostenbaugruppe (420) eine Vielzahl des mindestens einen Halters (122) entlang einer Länge des Arms des Zaunpfostens (121) beabstandet umfasst, um verschiedene sich im Wesentlichen horizontal erstreckende Drahtlitze (422) der Maschenplatte (421) zu halten.

**6.** Zaunpfostenbaugruppe (120) nach einem der Ansprüche 1 bis 5, wobei das Zaunelement aus der Gruppe ausgewählt ist, die aus einem einfachen Draht (2), einem Stacheldraht (413), einer Maschenplatte (421), einem Isolierstoff (220), einer Klammer (225) und einem Regenmesser (200) besteht.

**7.** Zaunpfostenbaugruppe (120) nach einem der Ansprüche 1 bis 6, wobei die Halterungsbaugruppe ferner einen Bewegungssperrenstift (135) umfasst.

**8.** Zaunpfostenbaugruppe (120) nach Anspruch 7, wo-

bei sich der Bewegungssperrenstift (135) seitlich des Arms des Zaunpfostens (121) zwischen dem Zaunelementeingriffsbereich (127, 147, 247) und dem Gegengewichtsbereich (130, 150, 250) erstreckt.

**9.** Zaunpfostenbaugruppe (120) nach Anspruch 7, wobei der Bewegungssperrenstift (135) in der Halteposition einer weiteren Abwärtsbewegung des Gegengewichtsbereichs (130) widersteht und sicherstellt, dass sich das Zaunelement nicht versehentlich von dem Schlitz (123) lösen kann.

**10.** Zaunpfostenbaugruppe (120) nach einem der Ansprüche 1 bis 9, wobei der Zaunelementeingriffsbereich (127) derart geformt ist, dass einem Zaunelement ermöglicht wird, sich sowohl innerhalb des blinden Endes (128) des Schlitzes (123) zu platzieren als auch innerhalb des blinden Endes (128) gehalten zu werden.

**11.** Zaunpfostenbaugruppe (120) nach einem der Ansprüche 1 bis 10, wobei der Pfosten eine Sternzaunlatte oder eine T-förmige Zaunlatte ist, die aus beschichtetem Stahl hergestellt ist.

**12.** Zaunpfostenbaugruppe (120) nach einem der Ansprüche 1 bis 11, wobei sich die Halterung (124, 448) außerhalb des Schlitzes (123, 444) befindet.

**13.** Verfahren zum Bau eines Zauns, wobei das Verfahren die folgenden Schritte umfasst: Verankern von mindestens einer Zaunpfostenbaugruppe (120, 420, 440) an einer Oberfläche, wobei die Zaunpfostenbaugruppe (120, 420, 440) wie in einem der Ansprüche 1 bis 12 definiert ist; und
Ineingriffnehmen eines Zaunelements mit dem mindestens einen Halter (122), sodass der mindestens eine Halter (122) das Zaunelement relativ zu dem Pfosten (121) hält.

**14.** Verfahren nach Anspruch 13, wobei das Zaunelement eine Maschenplatte (421) ist und die Zaunpfostenbaugruppe (420) eine Vielzahl des mindestens einen Halters (122) entlang einer Länge des Arms des Zaunpfostens (121) beabstandet umfasst, um verschiedene sich im Wesentlichen horizontal erstreckende Drahtlitze (422) der Maschenplatte (421) zu halten.

**15.** Verwendung eines Zaunelements in der Zaunpfostenbaugruppe (120, 420, 440) nach einem der Ansprüche 1 bis 12.

**Revendications**

**1.** Ensemble poteau de clôture (120, 420, 440) comprenant :

un poteau de clôture (121) se présentant sous la forme d'un piquet et possédant un bras ;
et au moins un porte-fil (122) destiné à tenir un élément de clôture par rapport au poteau (121), ledit au moins un porte-fil (122) comprenant :

une fente (123, 444), s'étendant dans le bras de poteau de clôture (121) pour recevoir l'élément de clôture ; ladite fente (123, 444) étant sensiblement en forme de L et possédant une extrémité ouverte et une extrémité aveugle (128) ; et
un ensemble de retenue relié au poteau de clôture (121), ledit ensemble de retenue comprenant un axe de pivotement (126) et un dispositif de retenue (124, 448), ledit dispositif de retenue (124, 448) pouvant pivoter par rapport au bras de poteau de clôture (121) entre une position de tenue dans laquelle l'élément de clôture est tenue par rapport au poteau de clôture (121) et une position de libération dans laquelle l'élément de clôture peut être libéré du poteau de clôture (121), ledit dispositif de retenue (124, 448) comprenant :

une zone de montage de poteau (125) au niveau de laquelle le dispositif de retenue (124, 448) est fixé au bras au moyen de l'axe de pivotement (126) ;
une zone de mise en prise de l'élément de clôture (127, 147, 247) ;

et une zone de contrepoids (130, 150, 250) permettant de solliciter le dispositif de retenue (124, 448) au moyen de la gravité pour le faire pivoter jusqu'à la position de tenue,
**caractérisé en ce que**
dans la position de tenue la zone de mise en prise de l'élément de clôture (127, 147, 247) s'étend à travers la fente (123, 444) au niveau d'un point dans un alignement sensiblement vertical avec l'axe de pivotement (126) afin d'obstruer le mouvement de l'élément de clôture depuis l'extrémité aveugle (128) vers l'extrémité d'ouverture de la fente (123, 444).

**2.** Ensemble poteau de clôture (120) selon la revendication 1, ledit ensemble poteau de clôture (120) comprenant une pluralité dudit ou desdits porte-fils (122) espacés le long d'une longueur du bras de poteau de clôture (121).

**3.** Ensemble poteau de clôture (120) selon la revendication 1, ledit bras de poteau de clôture (121) comprenant une partie métallique longitudinale et une

partie non métallique s'étendant longitudinalement le long de la partie métallique, ladite partie non-métallique possédant une pluralité dudit ou desdits porte-fils (122) espacés le long d'une longueur de la partie non-métallique.

**4.** Ensemble poteau de clôture (440) selon la revendication 1, ledit bras de poteau de clôture comprenant un support métallique et une bande plastique (445) s'étendant longitudinalement le long du support métallique, ladite bande plastique (445) possédant une pluralité dudit ou desdits dispositifs de retenue de porte-fil (448) et de fentes (444) espacés le long d'une longueur de la bande (445).

**5.** Ensemble poteau de clôture (420) selon l'une quelconque des revendications 1 à 4, ledit élément de clôture étant un panneau de grillage (421) et ledit ensemble poteau de clôture (420) comprenant une pluralité dudit ou desdits porte-fils (122) espacés le long d'une longueur du bras de poteau de clôture (121) pour tenir les différents torons de fils métalliques s'étendant sensiblement horizontalement (422) du panneau de grillage (421).

**6.** Ensemble poteau de clôture (120) selon l'une quelconque des revendications 1 à 5, ledit élément de clôture étant choisi dans le groupe constitué par un fil métallique ordinaire (2), un fil de fer barbelé (413), un panneau de grillage (421), un isolateur (220), une patte de fixation (225) et un pluviomètre (200).

**7.** Ensemble poteau de clôture (120) selon l'une quelconque des revendications 1 à 6, ledit ensemble de retenue comprenant en outre un axe de butée de fin de course (135).

**8.** Ensemble poteau de clôture (120) selon la revendication 7, ledit axe de butée de fin de course (135) s'étendant latéralement du bras de poteau de clôture (121) entre la zone de mise en prise de l'élément de clôture (127, 147, 247) et la zone de contrepoids (130, 150, 250).

**9.** Ensemble poteau de clôture (120) selon la revendication 7, lorsque dans la position de tenue, ledit axe de butée de fin de course (135) résiste en outre au mouvement descendant de la zone de contrepoids (130) et assure que l'élément de clôture ne puisse pas sortir de la fente (123) par accident.

**10.** Ensemble poteau de clôture (120) selon l'une quelconque des revendications 1 à 9, ladite zone de mise en prise de l'élément de clôture (127) étant façonnée pour permettre à un élément de clôture de se positionner dans l'extrémité aveugle (128) de la fente (123) et d'être retenu dans l'extrémité aveugle (128).

**11.** Ensemble poteau de clôture (120) selon l'une quelconque des revendications 1 à 10, ledit poteau étant un piquet à tige en étoile ou un piquet en forme de T en acier revêtu.

**12.** Ensemble poteau de clôture (120) selon l'une quelconque des revendications 1 à 11, ledit dispositif de retenue (124, 448) se trouvant à l'extérieur de la fente (123, 444).

**13.** Procédé de construction d'une clôture, ledit procédé comprenant les étapes de :

ancrage d'au moins un ensemble poteau de clôture (120, 420, 440) à une surface, ledit ensemble poteau de clôture (120, 420, 440) étant selon l'une quelconque des revendications 1 à 12 ; et mise en prise d'un élément de clôture avec le au moins un porte-fil (122) de sorte que le au moins un porte-fil (122) assure la tenue de l'élément de clôture par rapport au poteau (121).

**14.** Procédé selon la revendication 13, ledit élément de clôture étant un panneau de grillage (421) et ledit ensemble poteau de clôture (420) comprenant une pluralité dudit ou desdits porte-fils (122) espacés le long d'une longueur du bras (121) de poteau de clôture pour tenir les différents torons de fils métalliques, s'étendant sensiblement horizontalement (422), du panneau de grillage (421).

**15.** Utilisation d'un élément de clôture dans ledit ensemble de poteau de clôture (120, 420, 440), selon l'une quelconque des revendications 1 à 12.

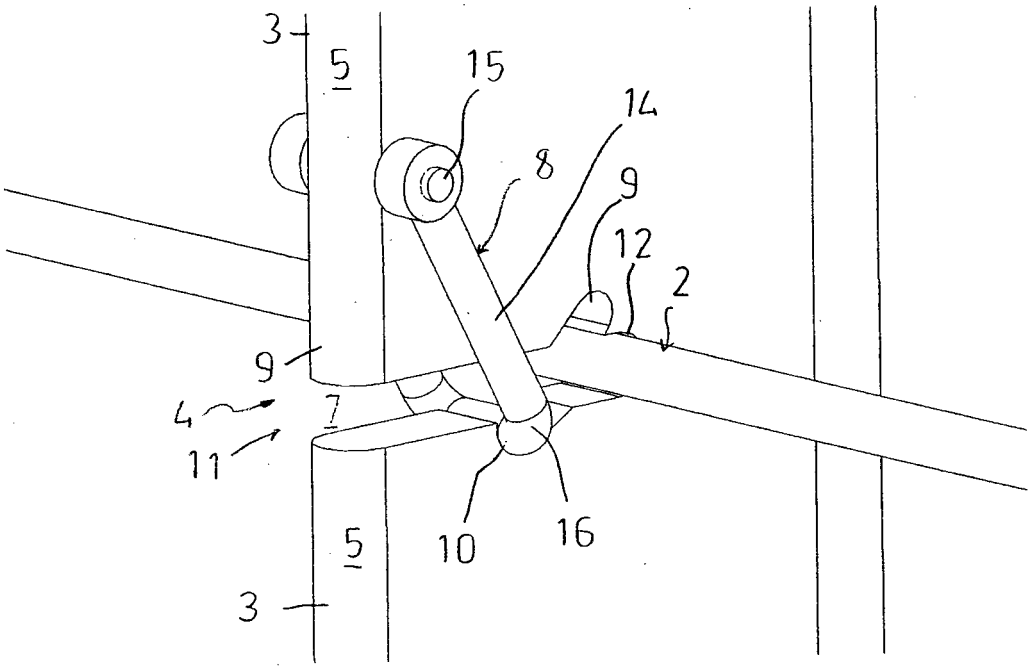
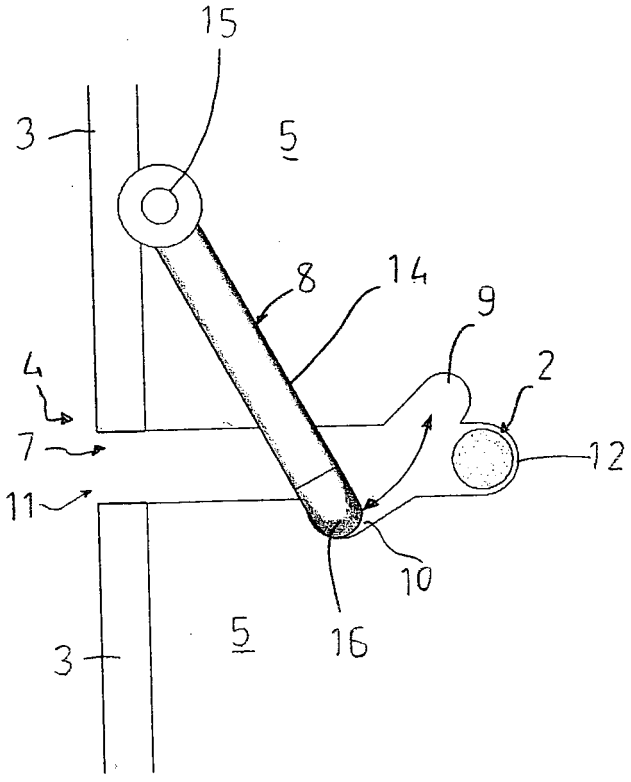



FIG. 1




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FIG. 2

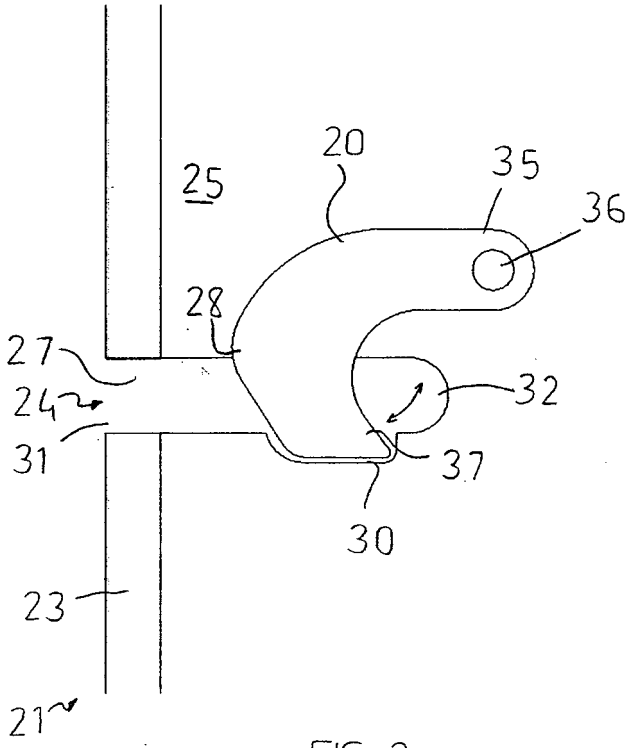

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FIG. 3

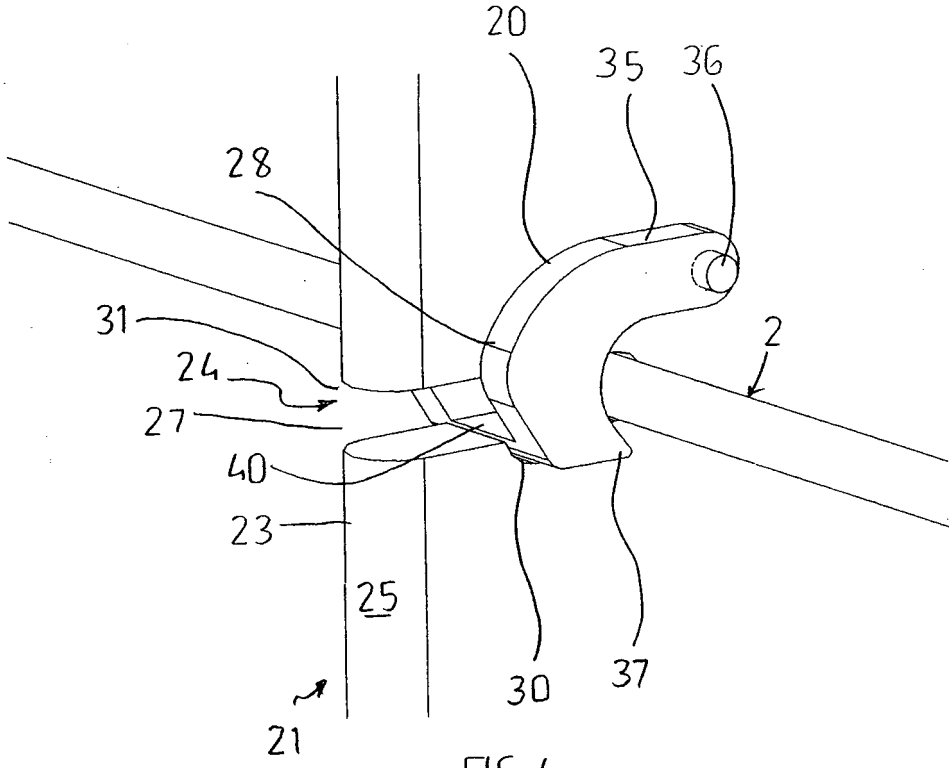

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FIG. 4

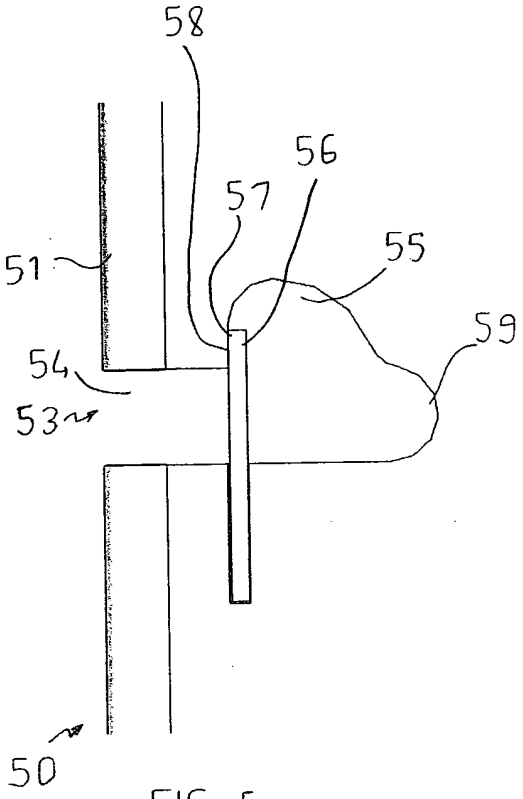



FIG. 5

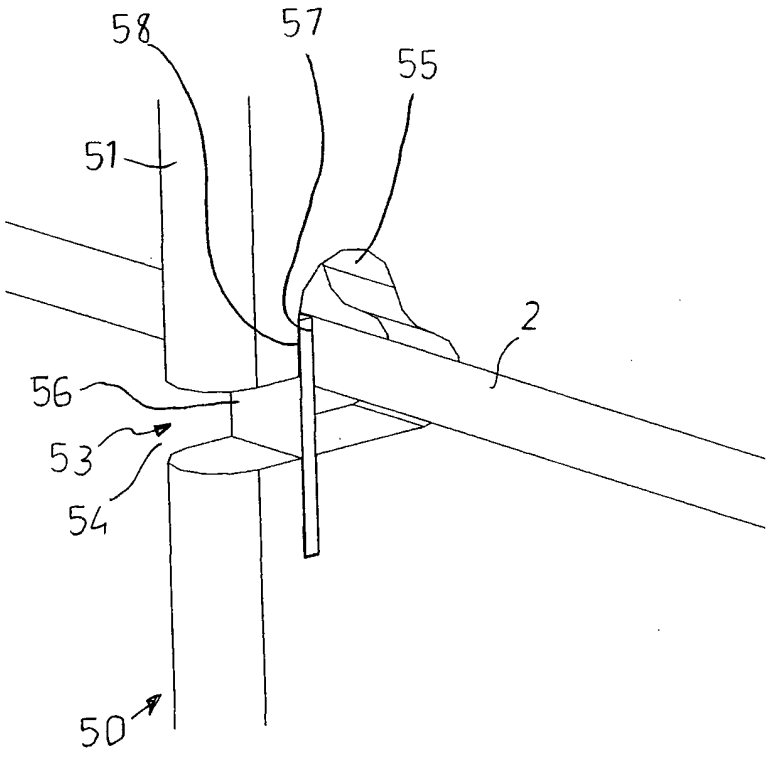



FIG.6

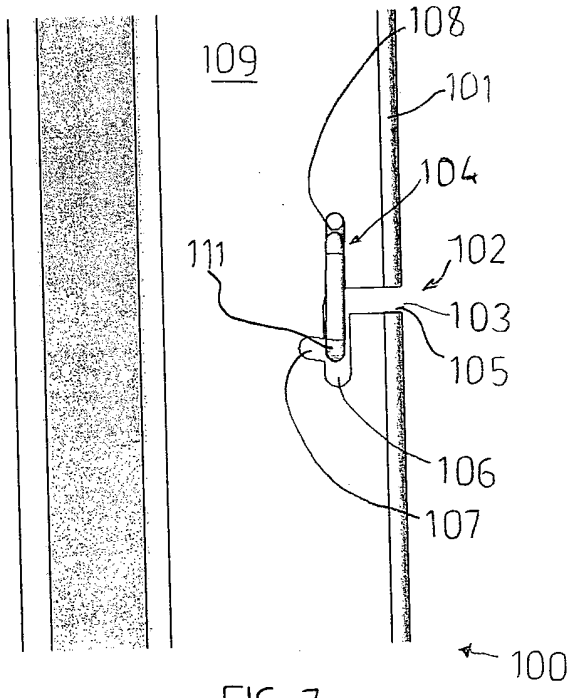



FIG. 7

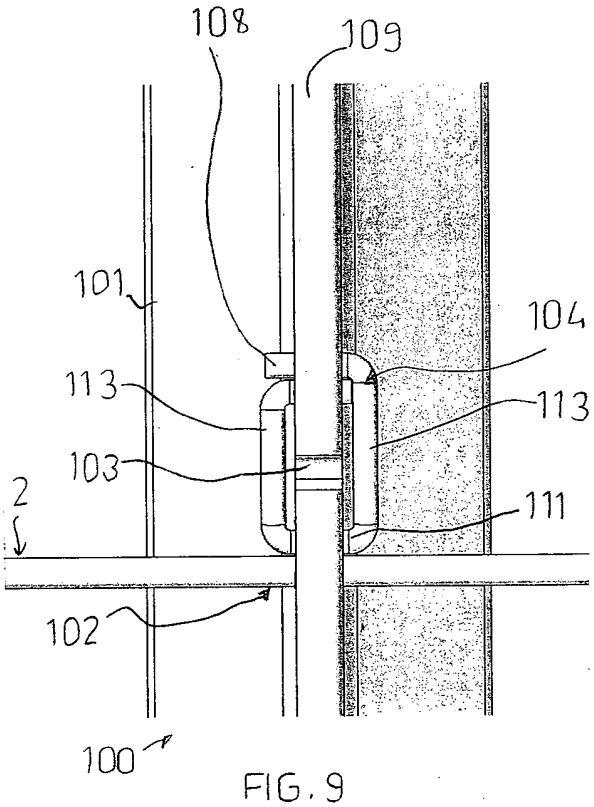



FIG. 9

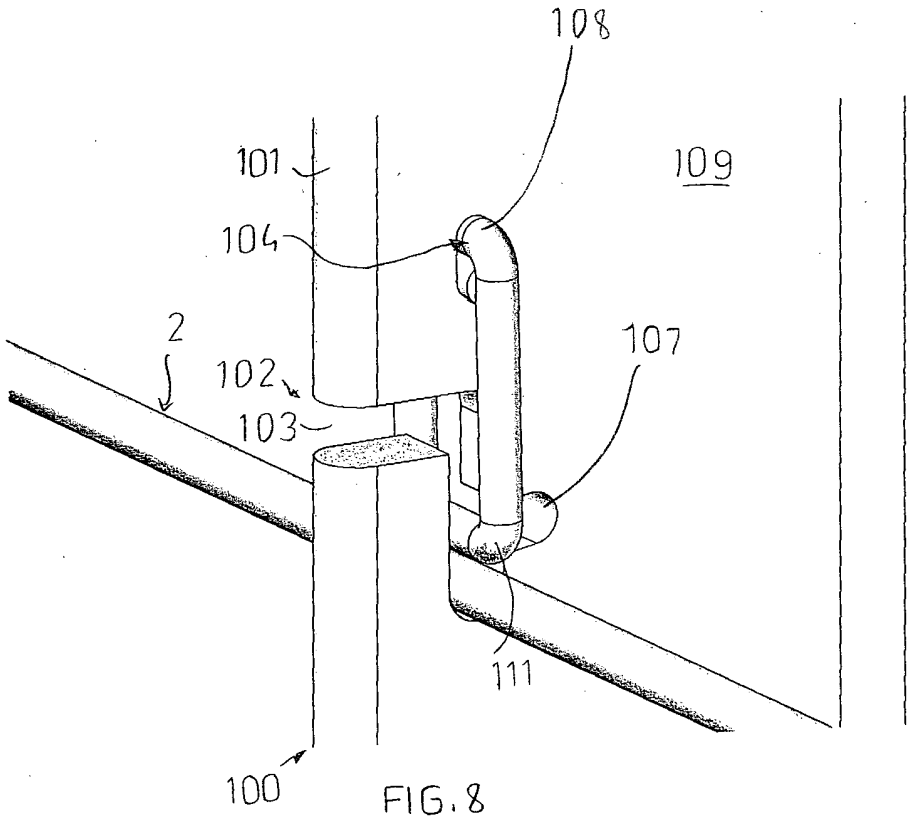



FIG. 8

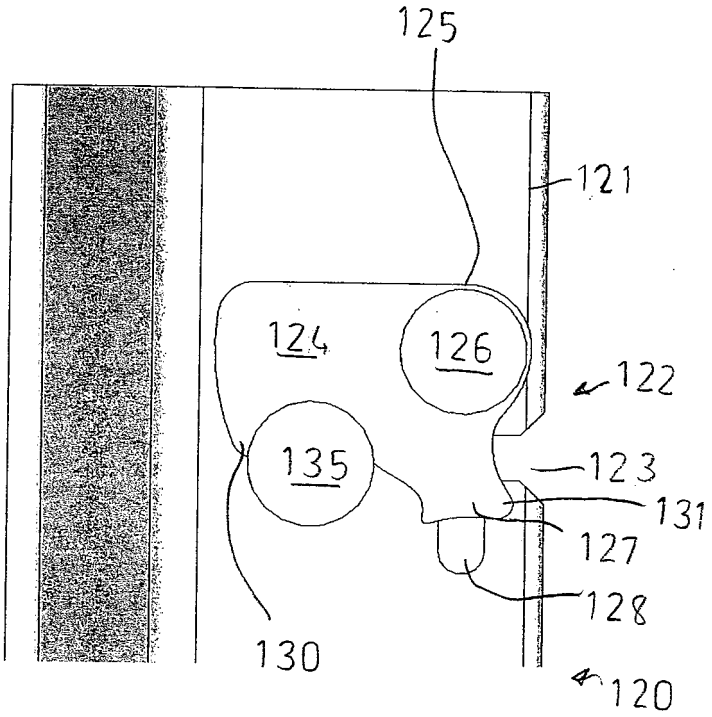

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FIG.10

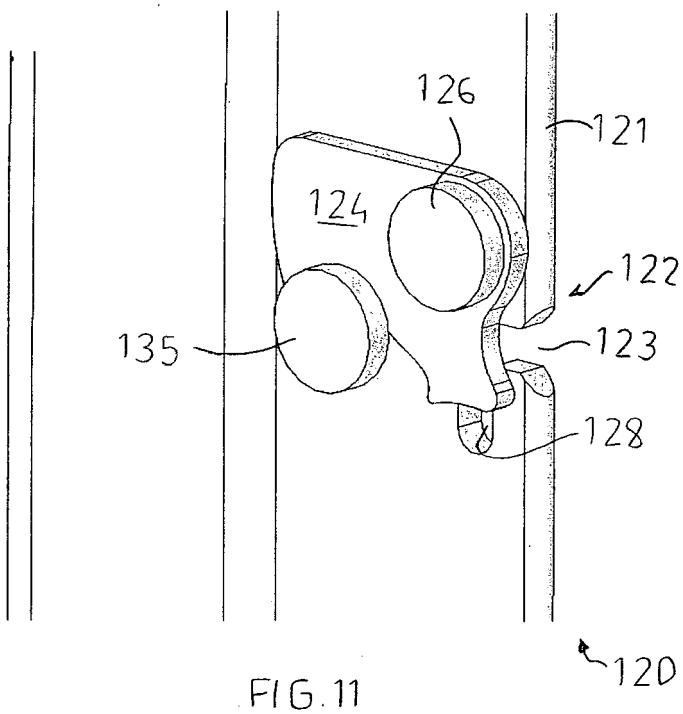

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FIG.11

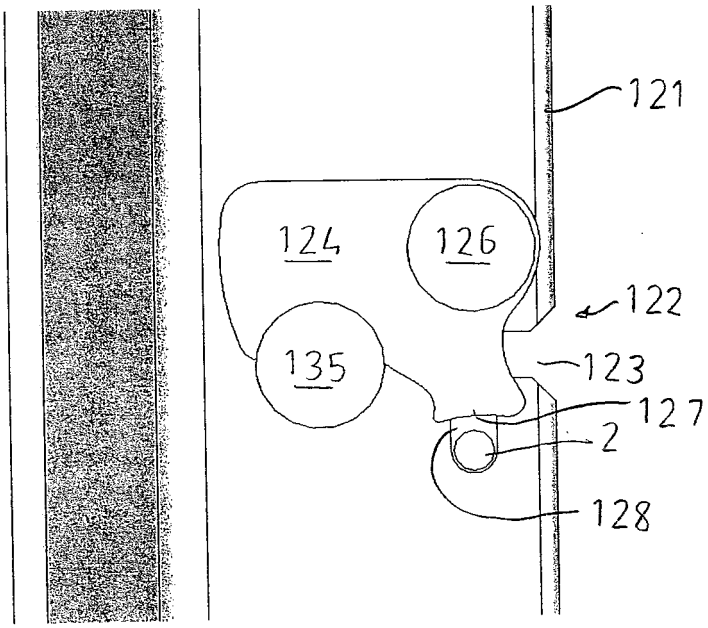



FIG.12

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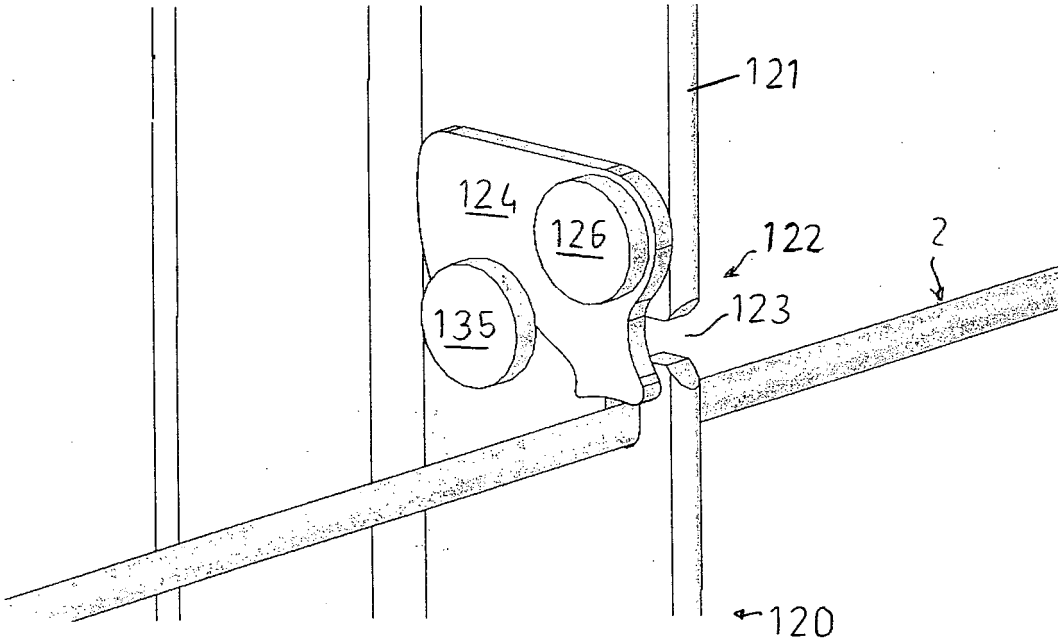



FIG.13

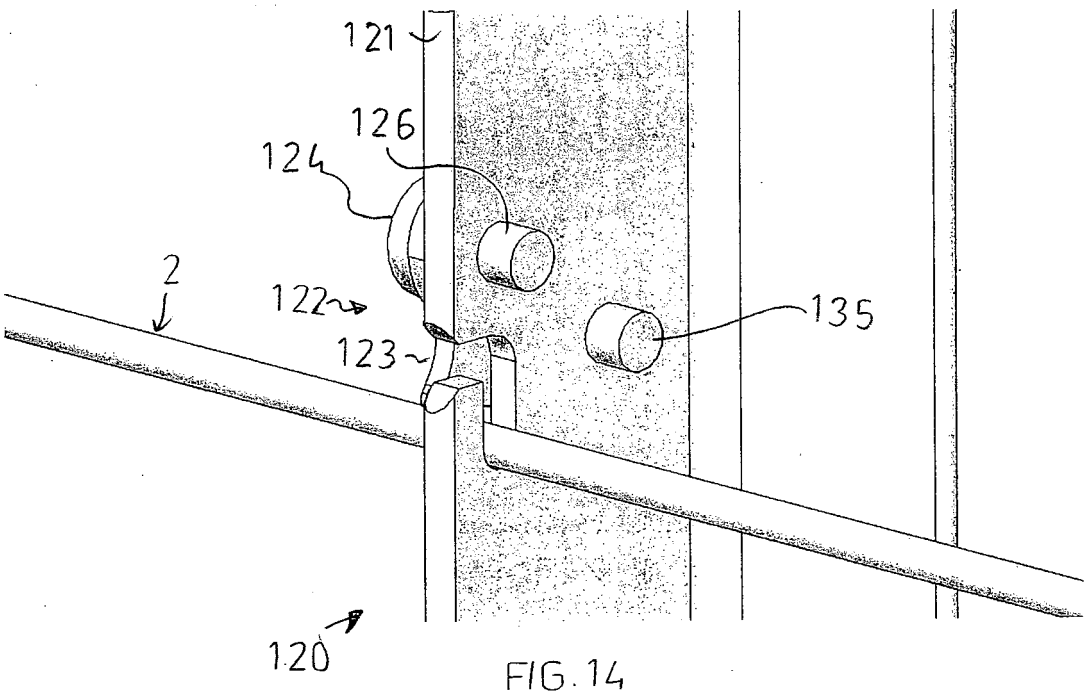



FIG. 14

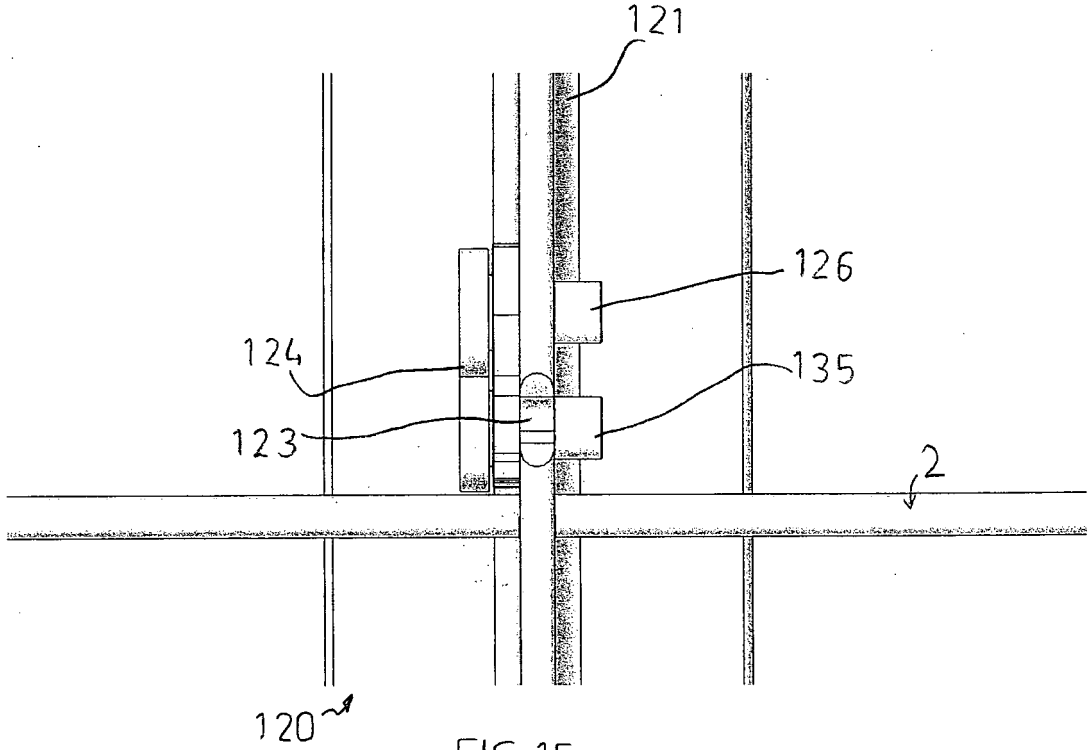



FIG. 15

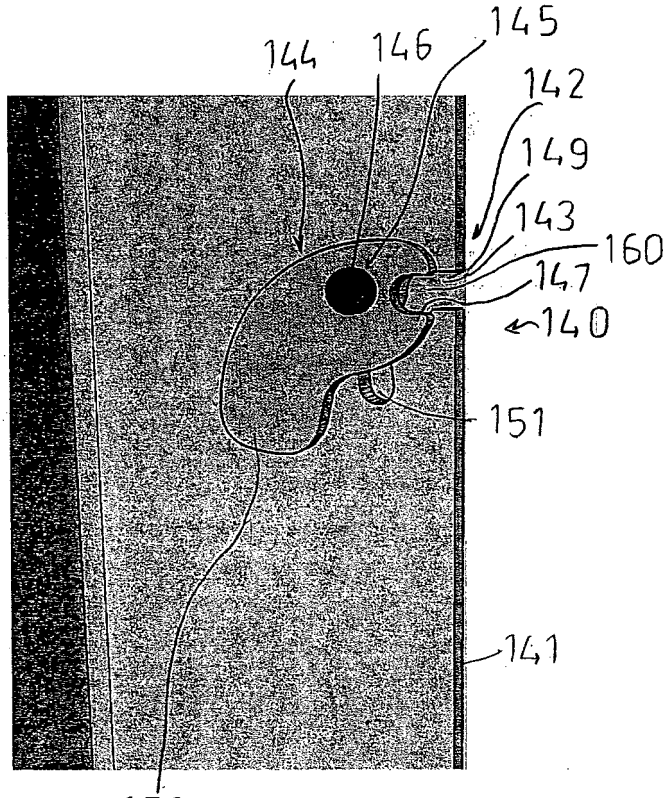

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FIG. 16

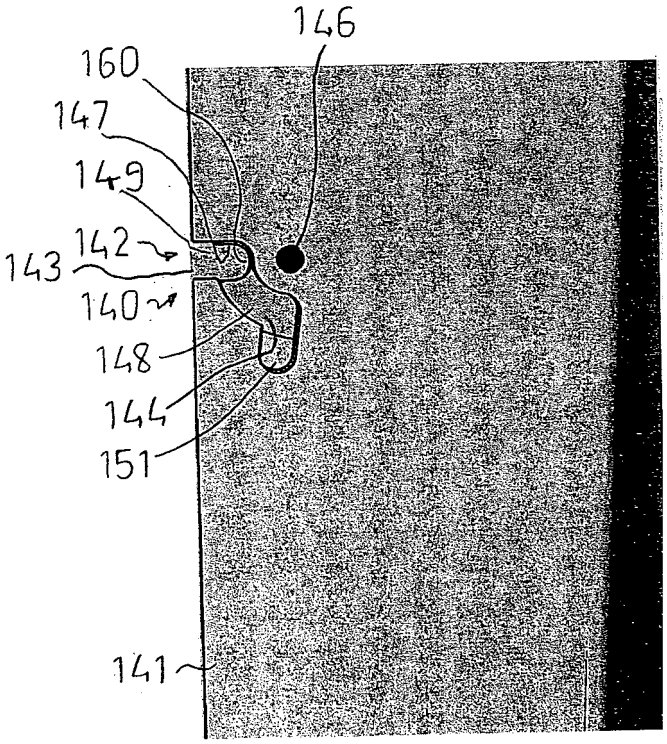

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FIG. 17

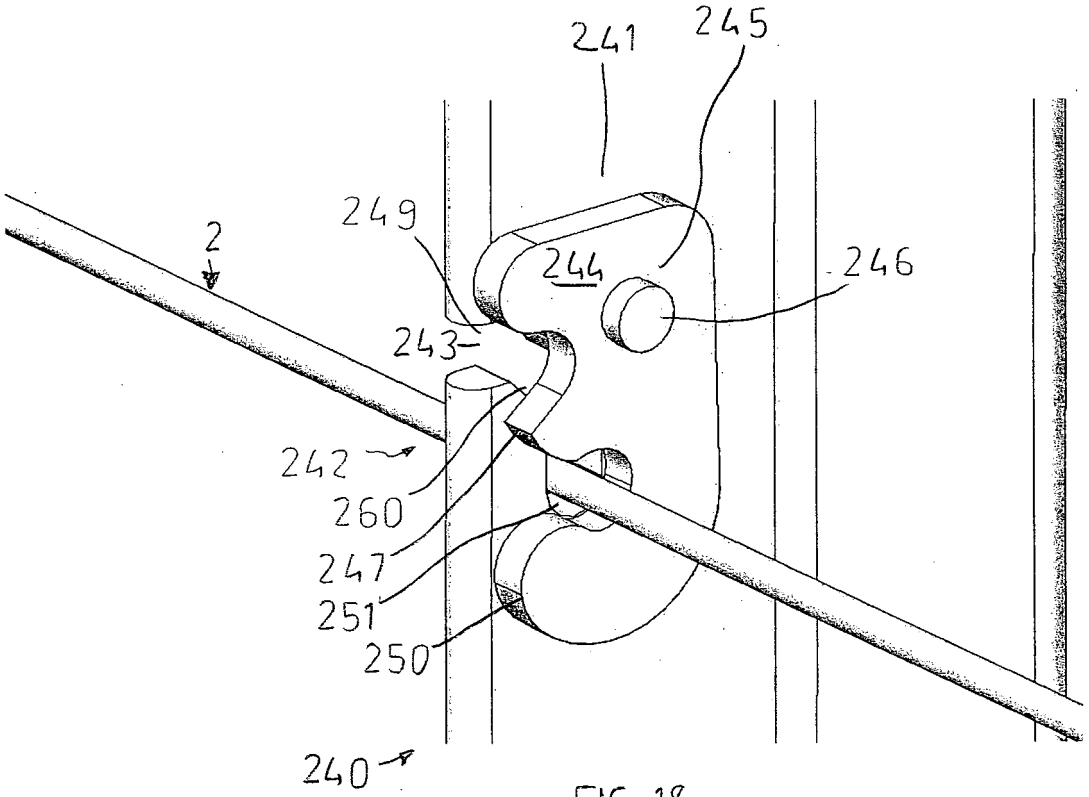

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FIG.18

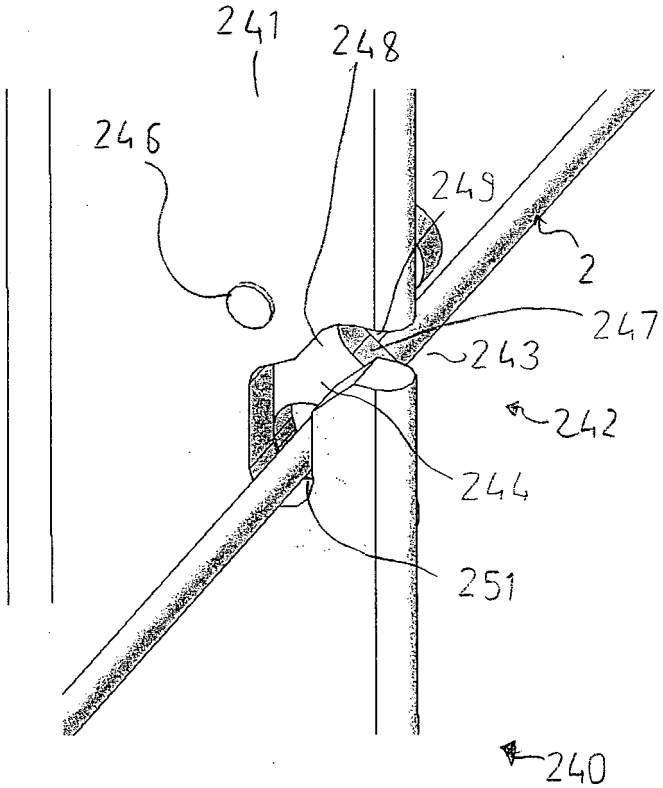

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FIG.19

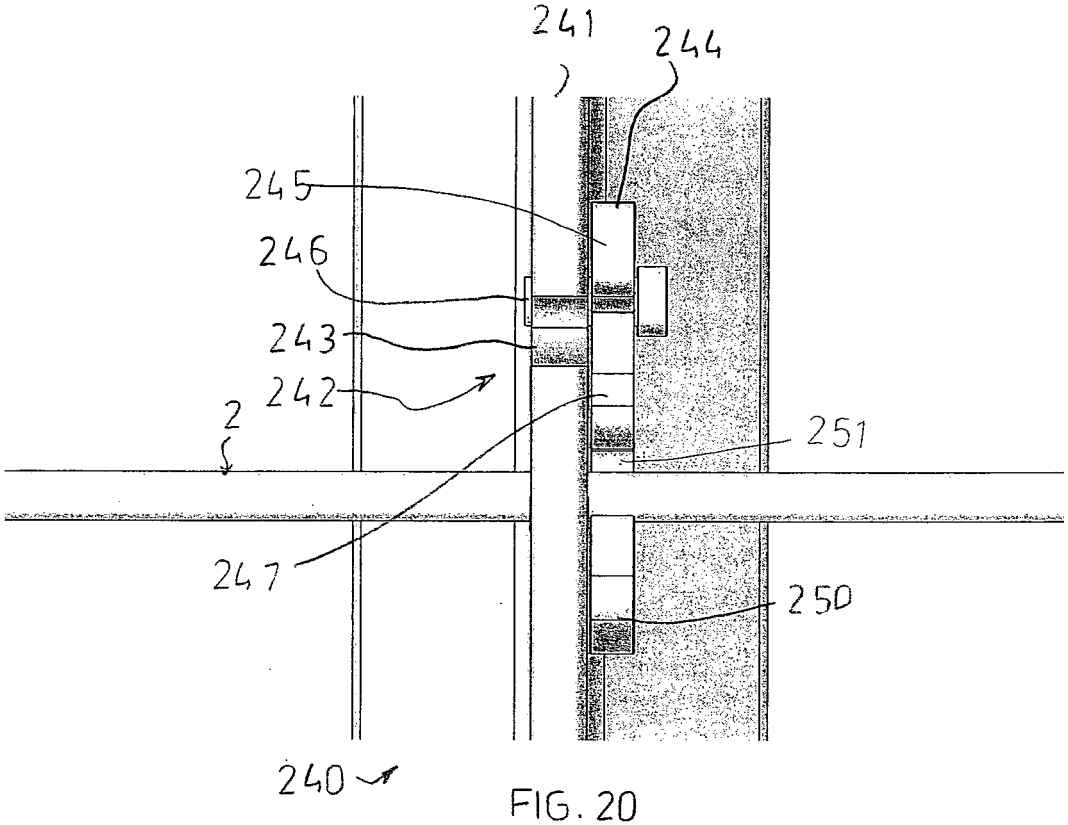

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FIG. 20

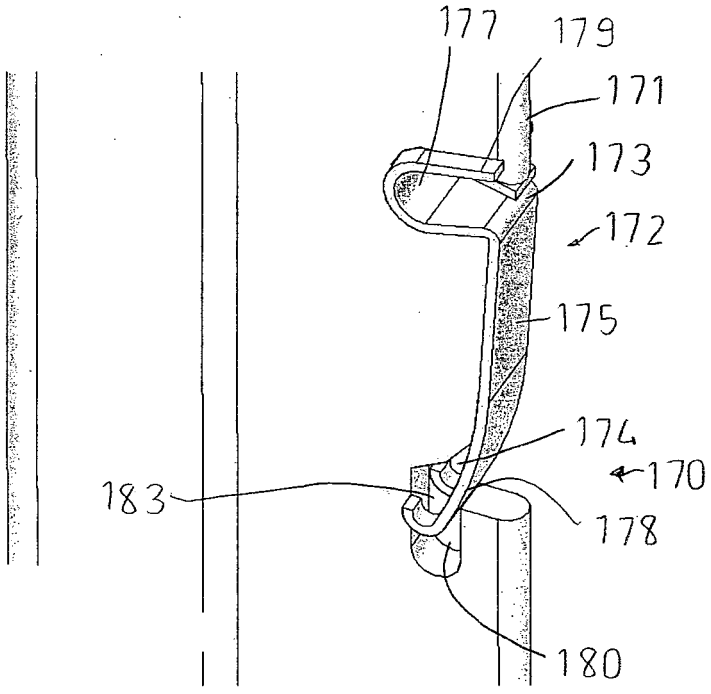

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FIG. 21

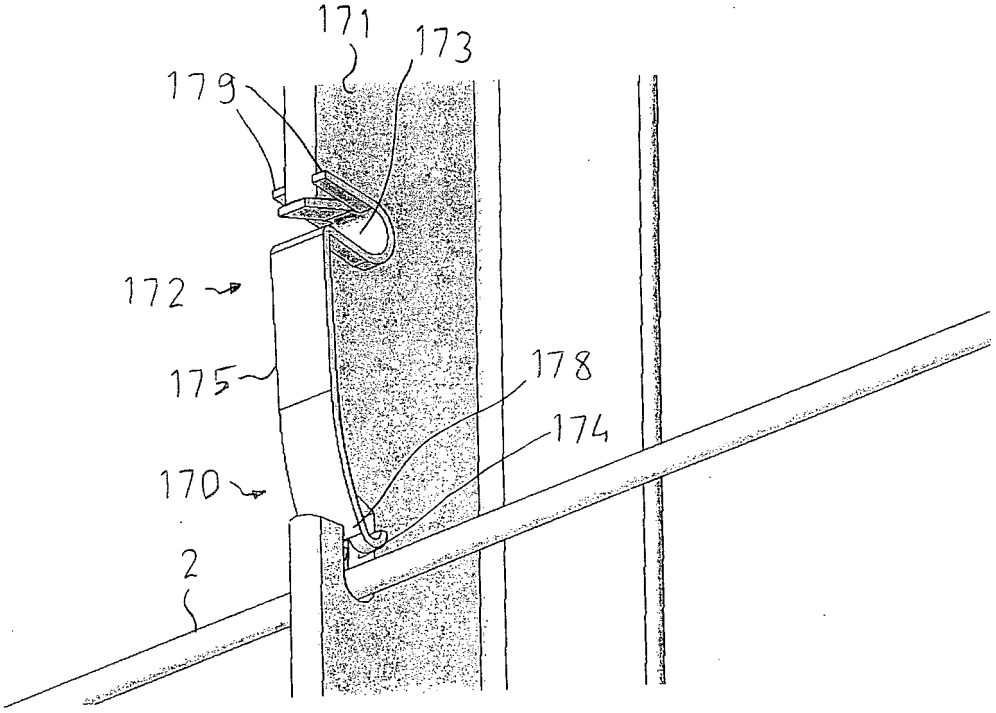

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FIG. 22

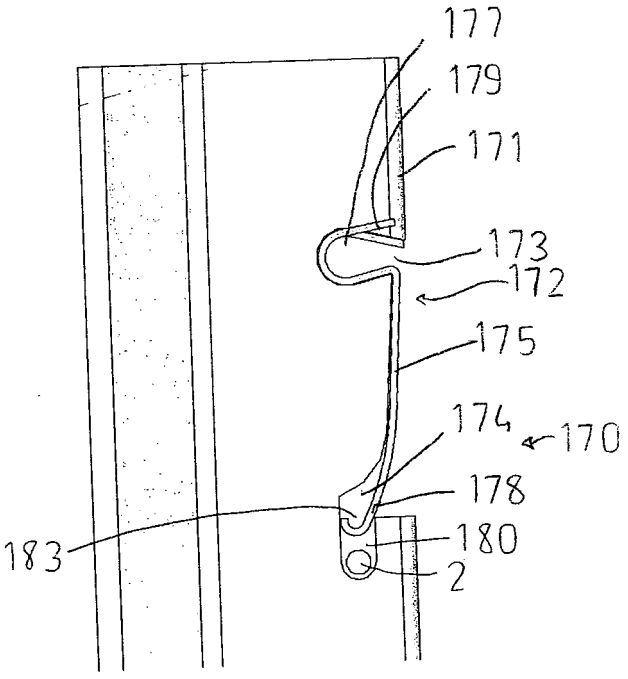

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FIG. 23

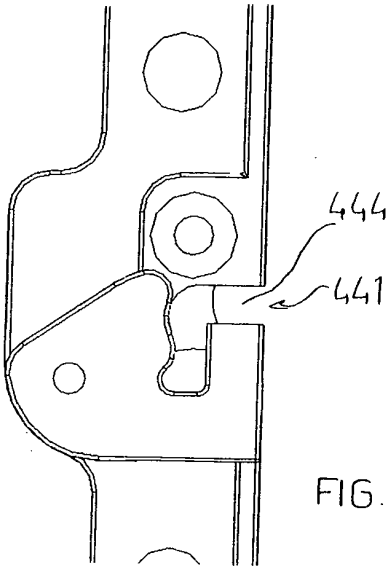



FIG. 26

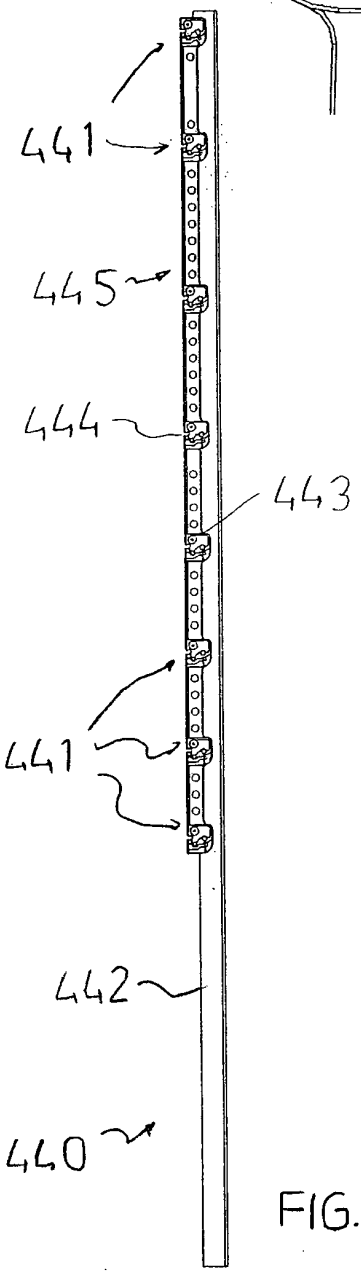



FIG. 24

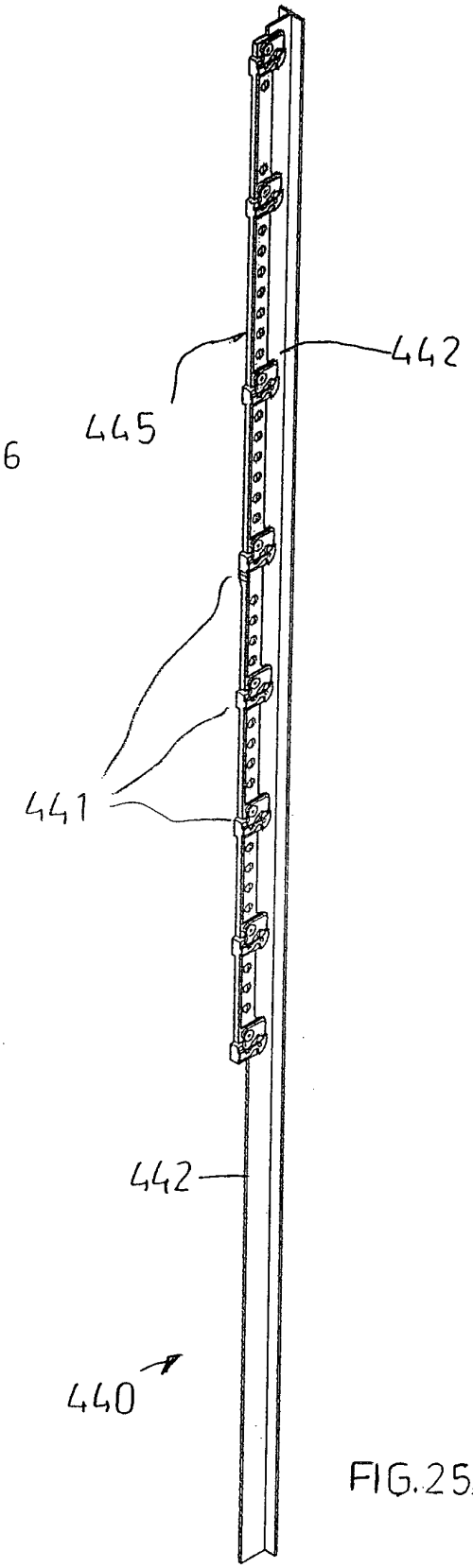



FIG. 25

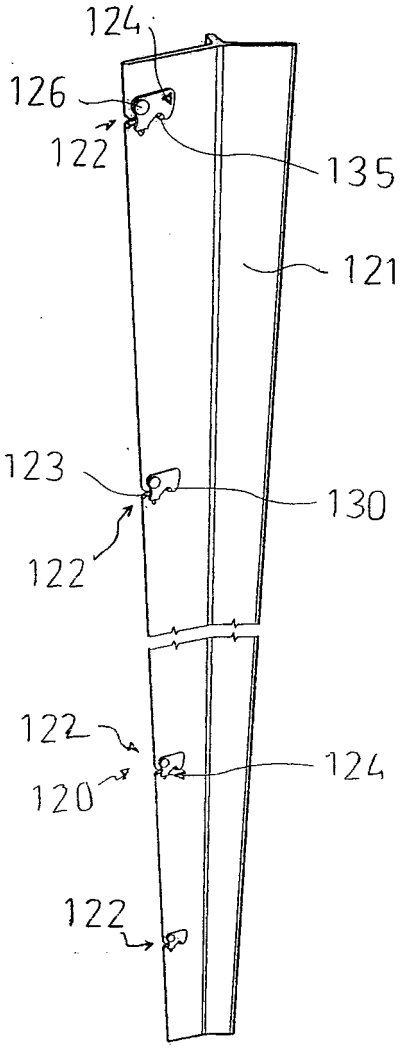



FIG.29

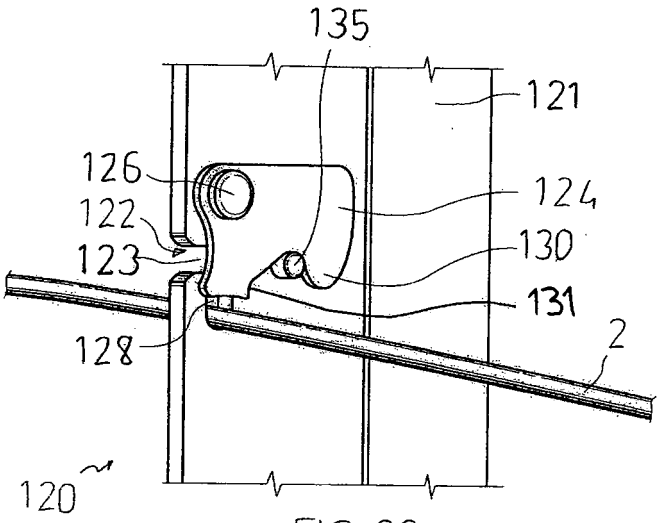



FIG.28

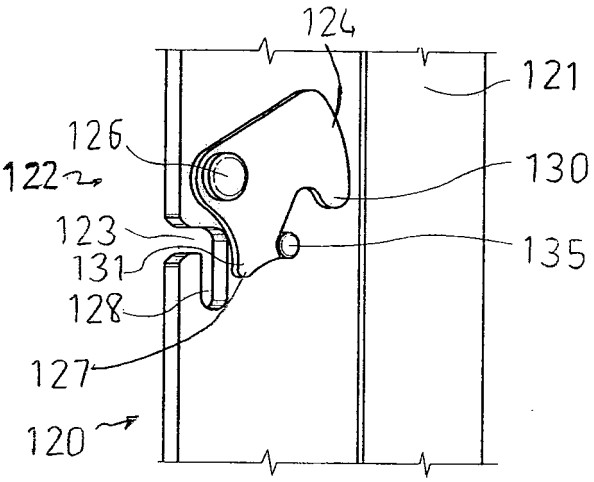



FIG.27

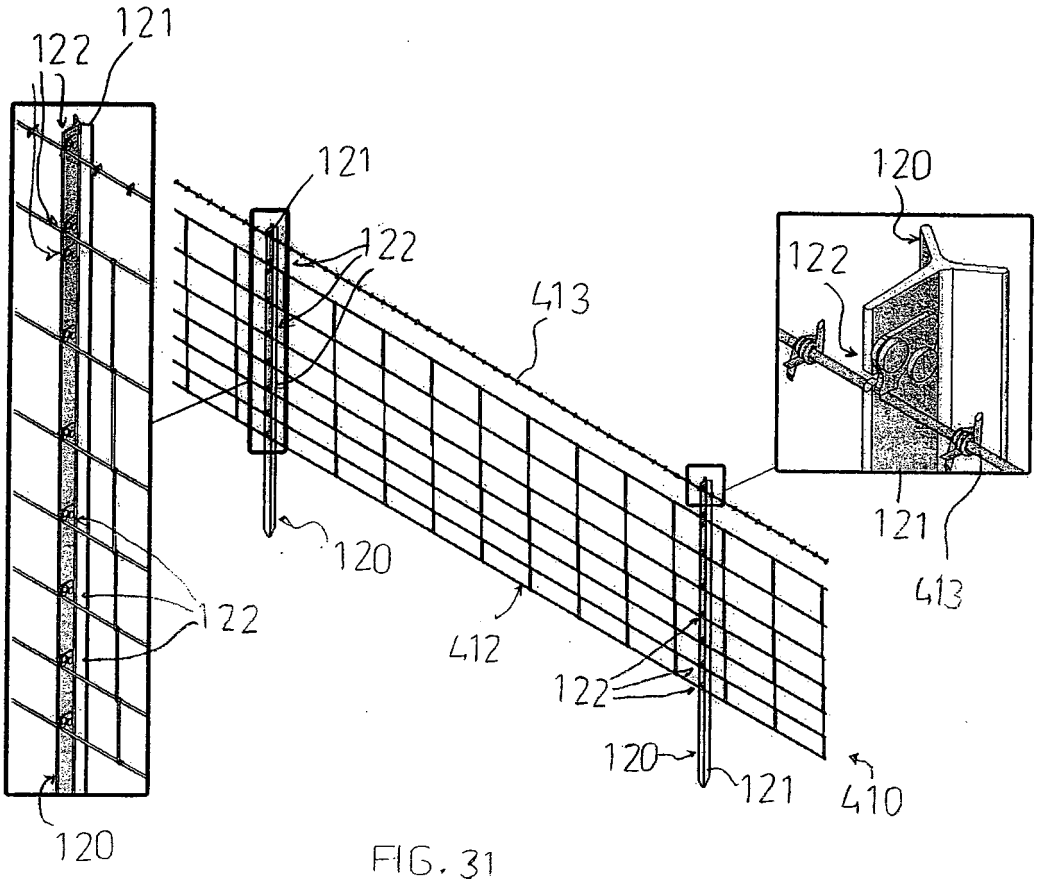

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FIG. 31

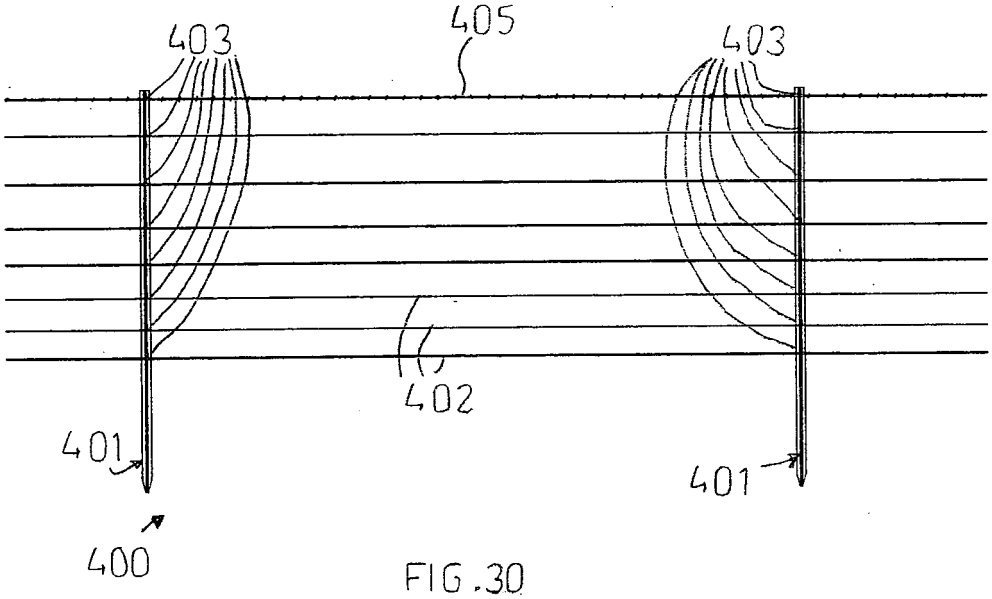

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FIG. 30

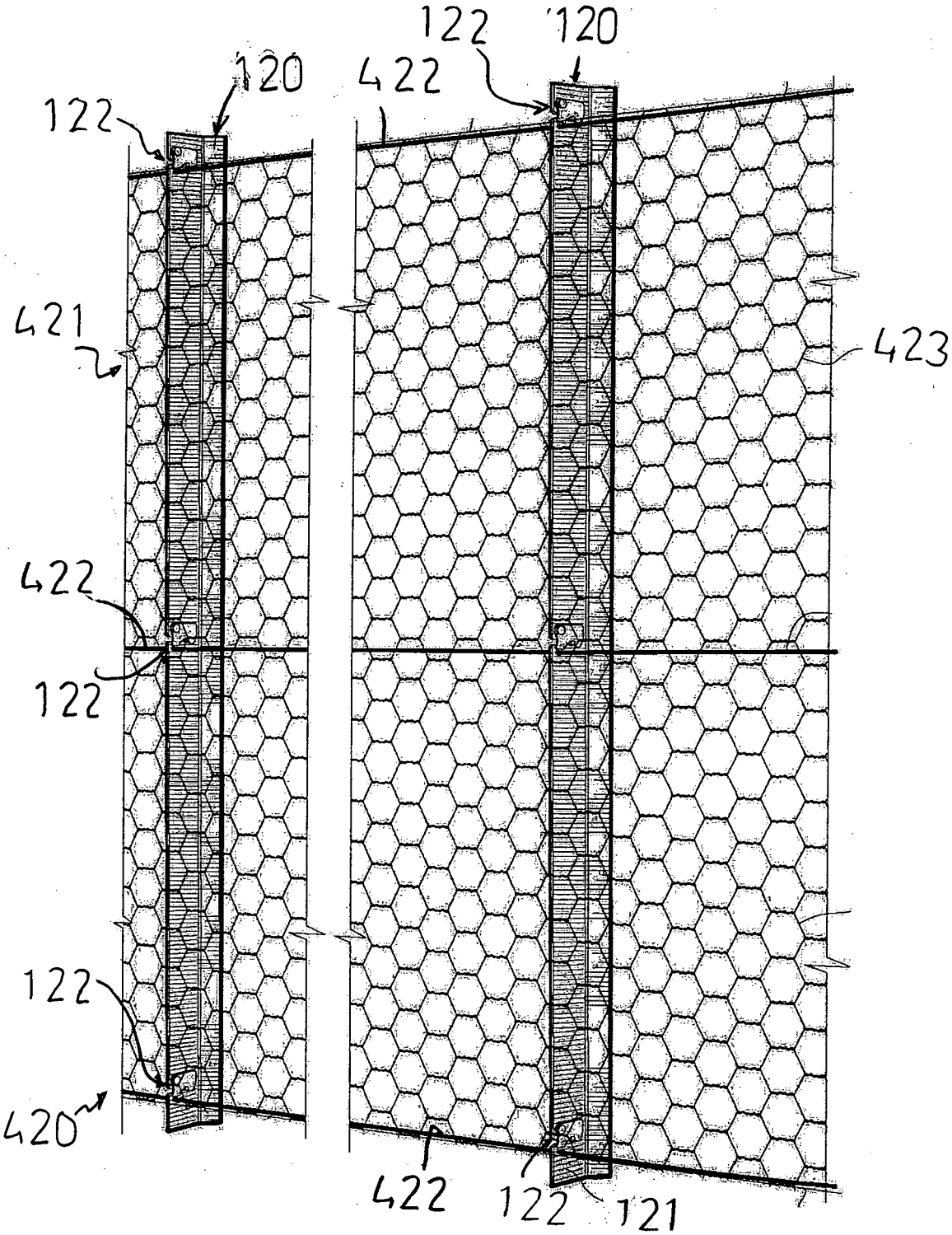



FIG.32

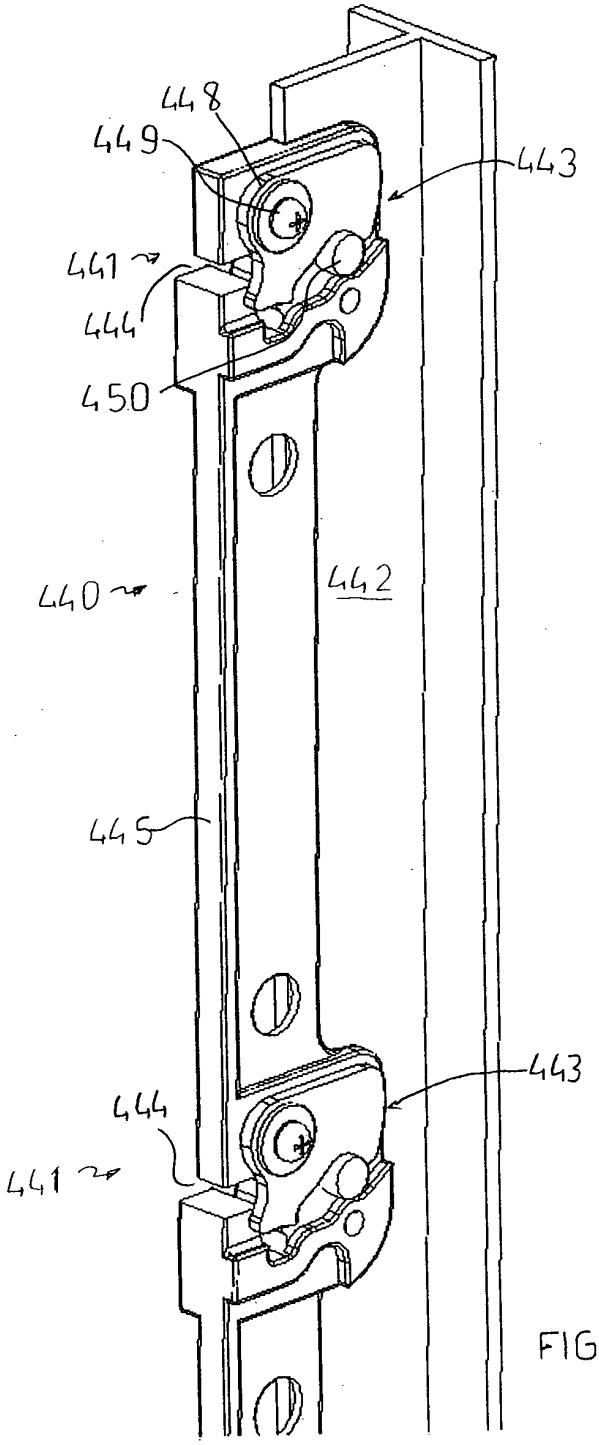

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FIG. 33

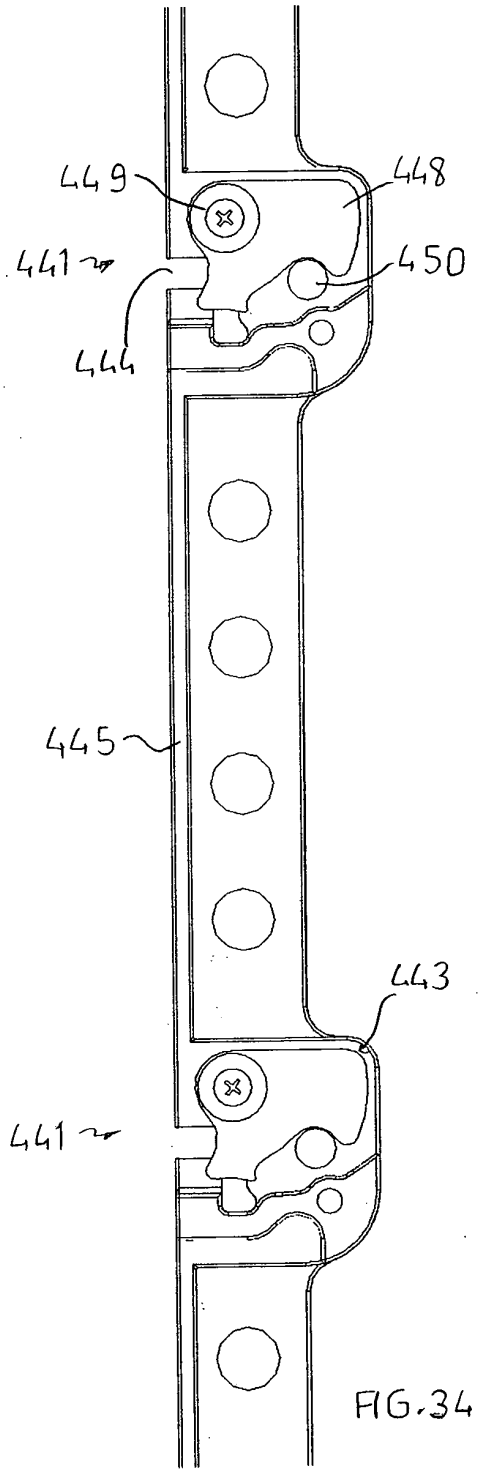

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FIG. 34

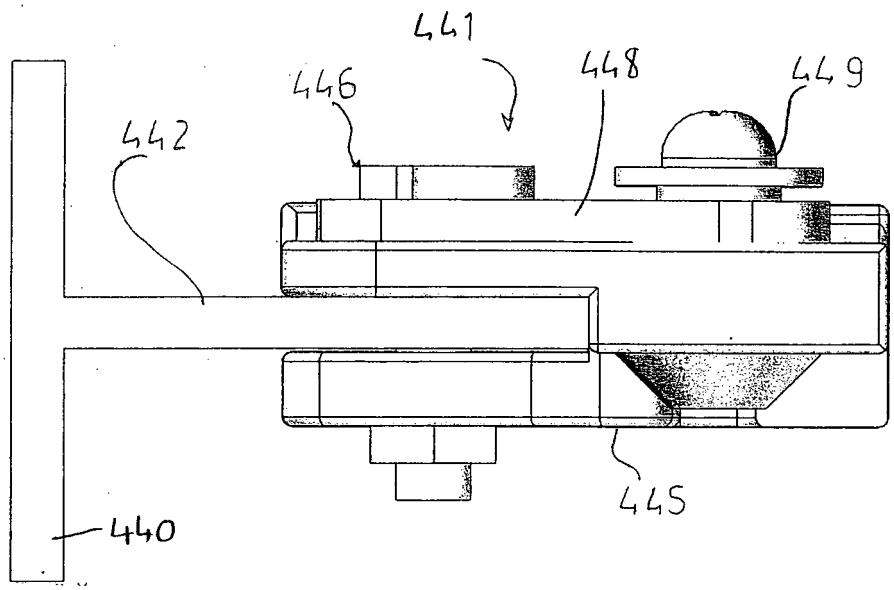



FIG. 37

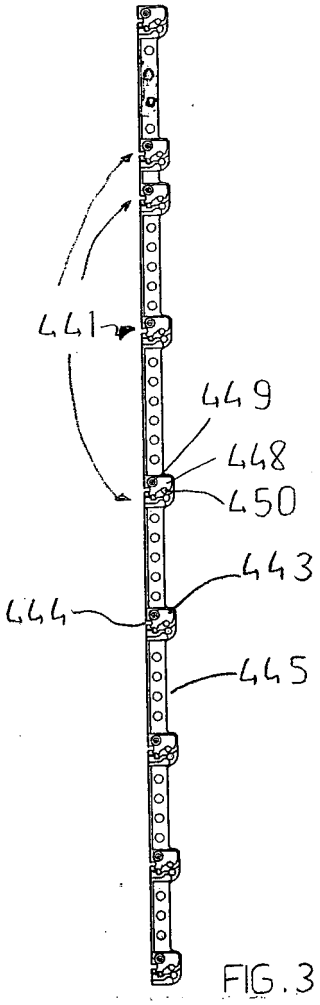



FIG. 35

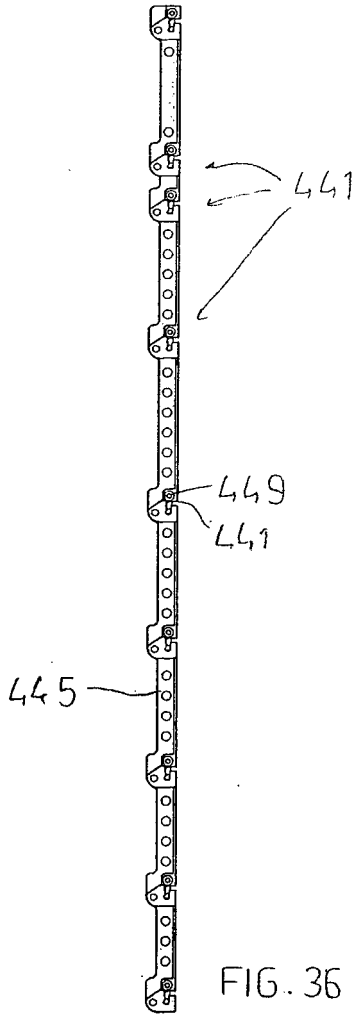



FIG. 36

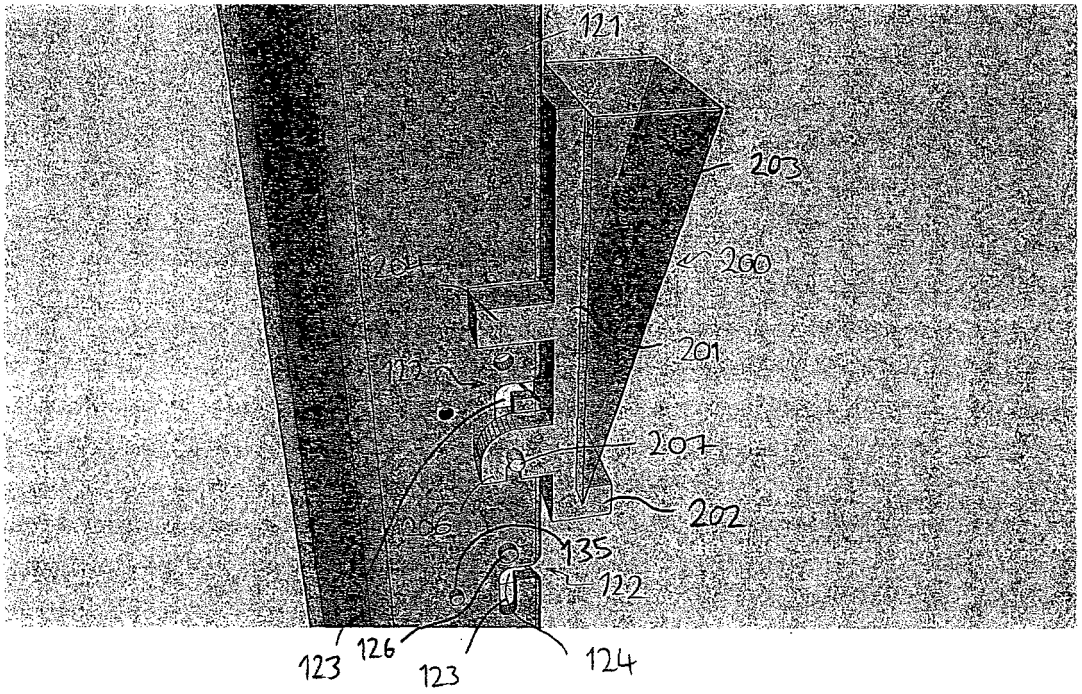

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FIG. 38

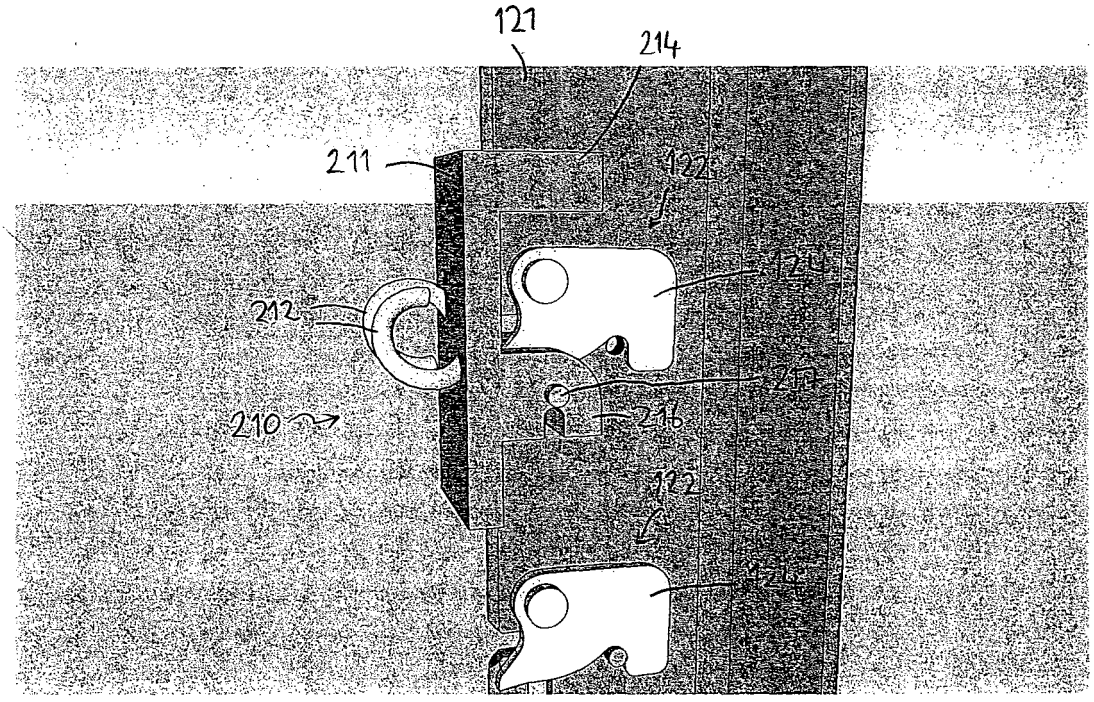

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FIG. 39

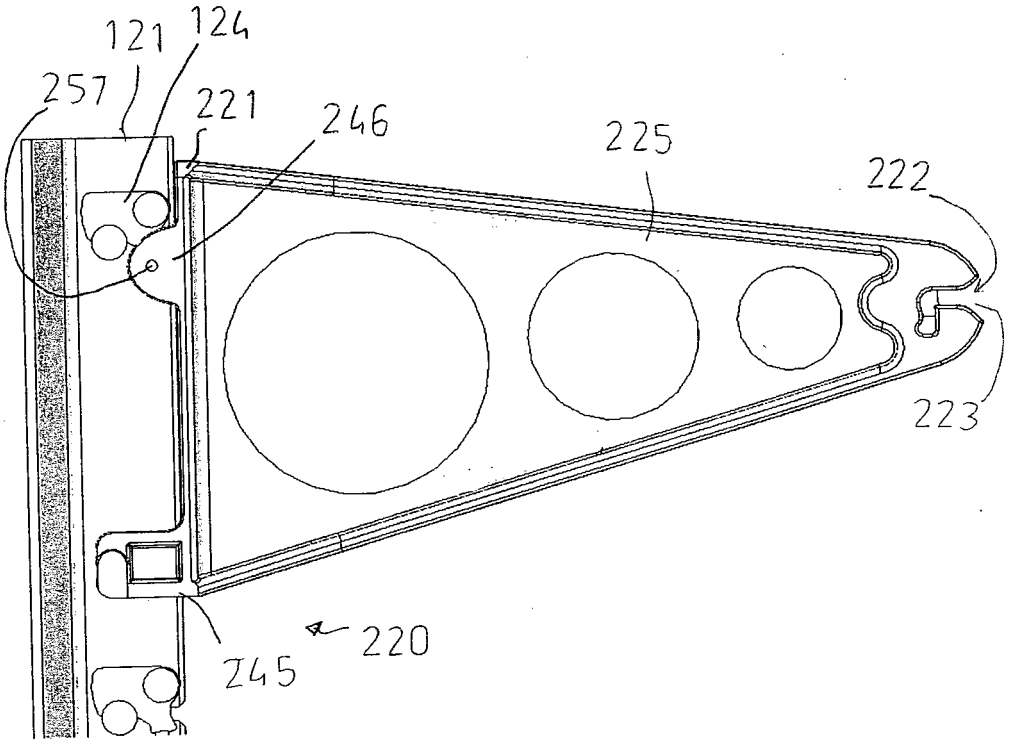

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FIG. 40

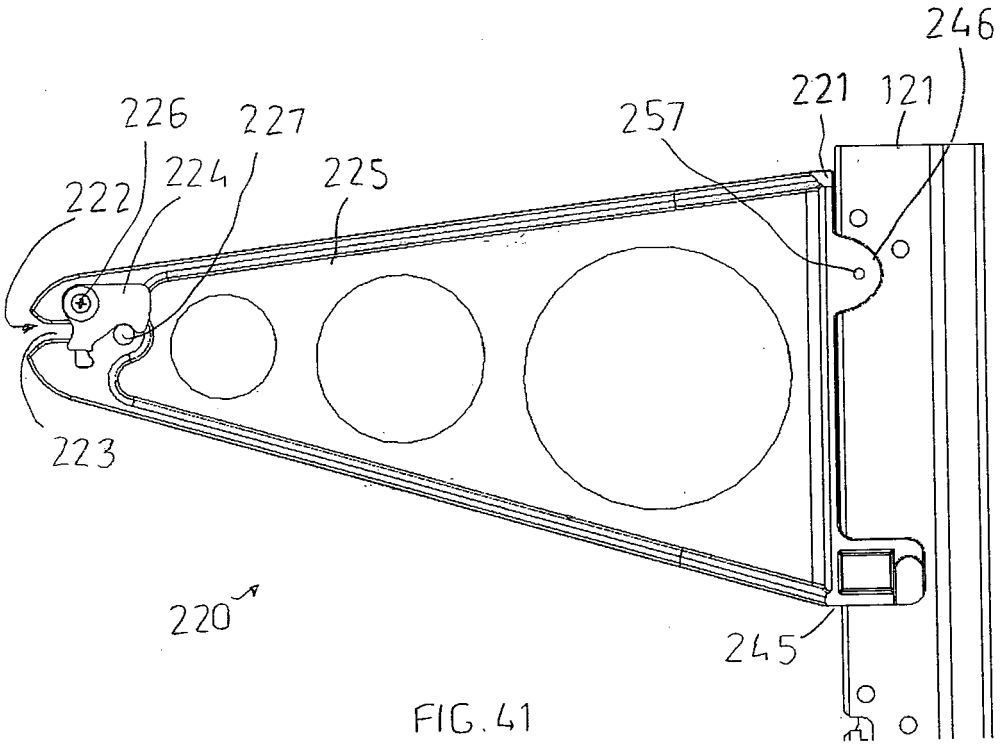

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FIG. 41

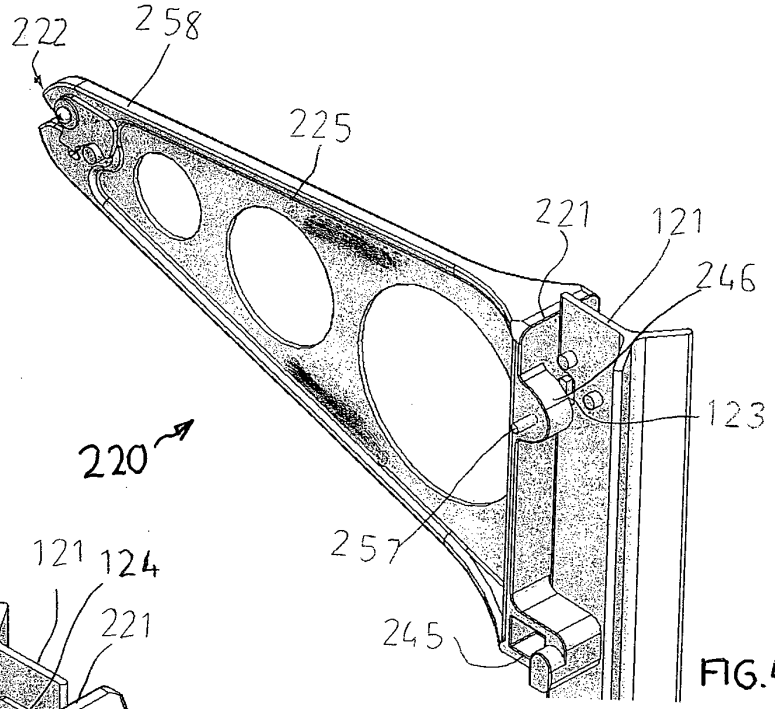



FIG.42

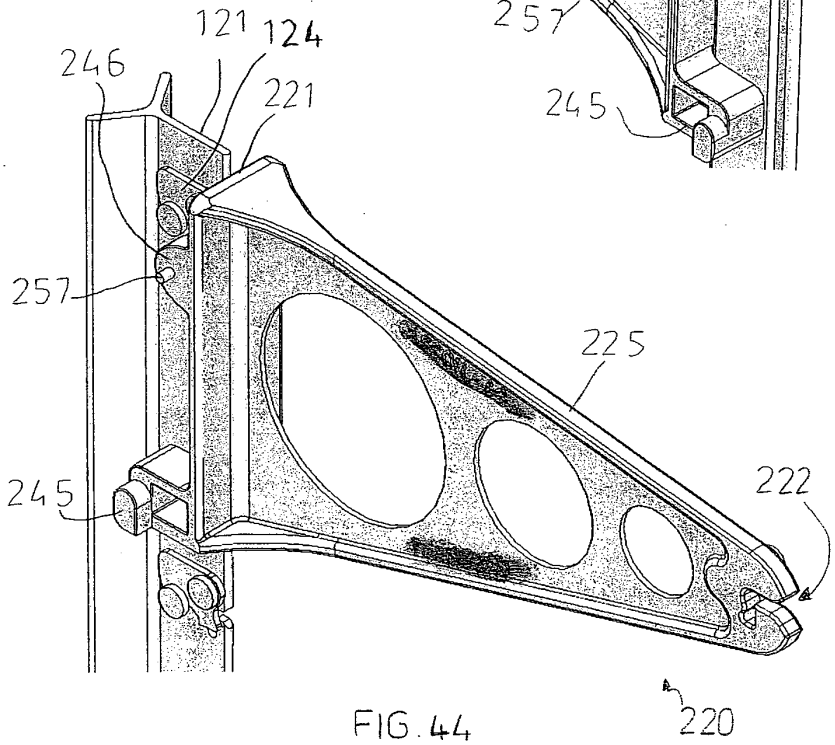



FIG.44

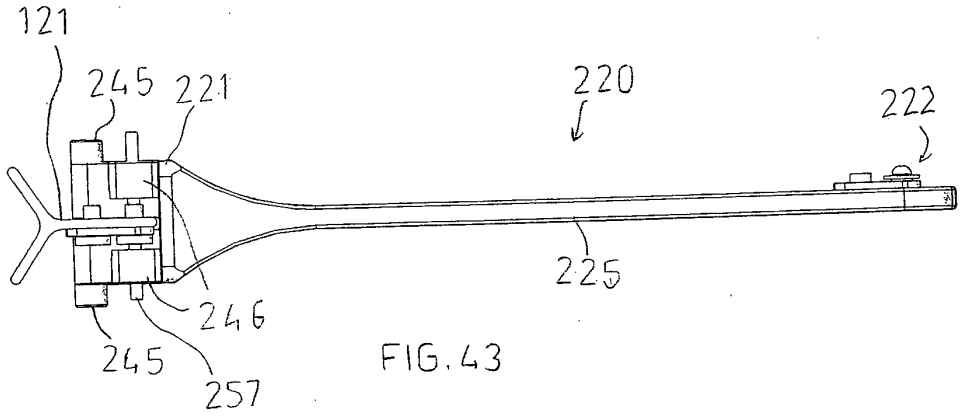



FIG.43

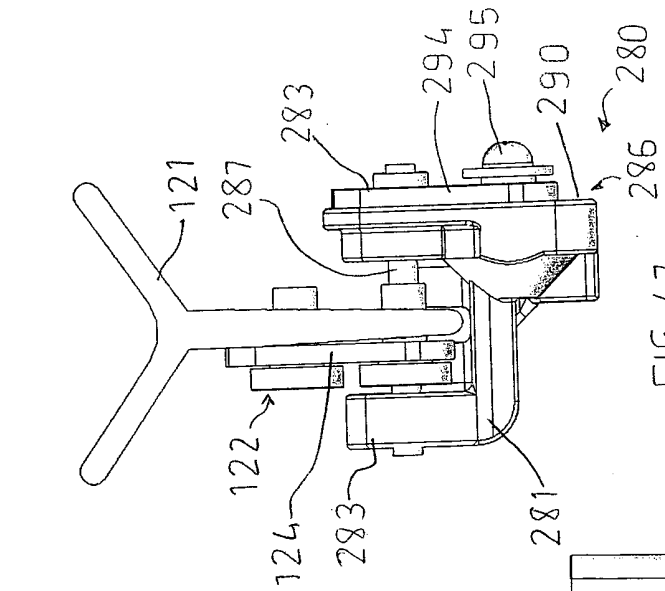



FIG. 47

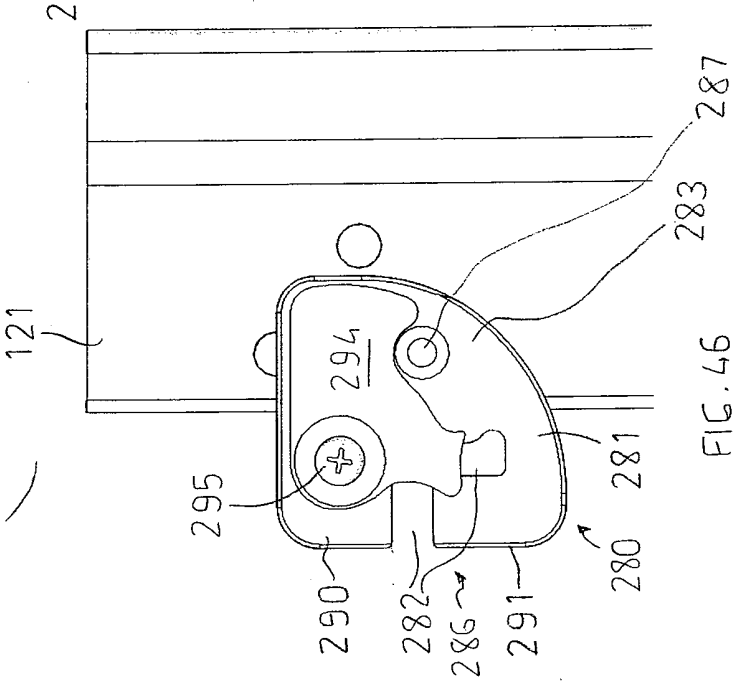



FIG. 46

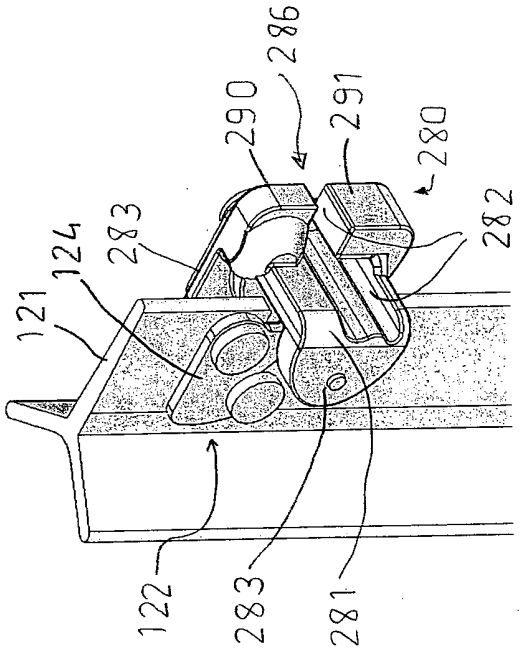



FIG. 45

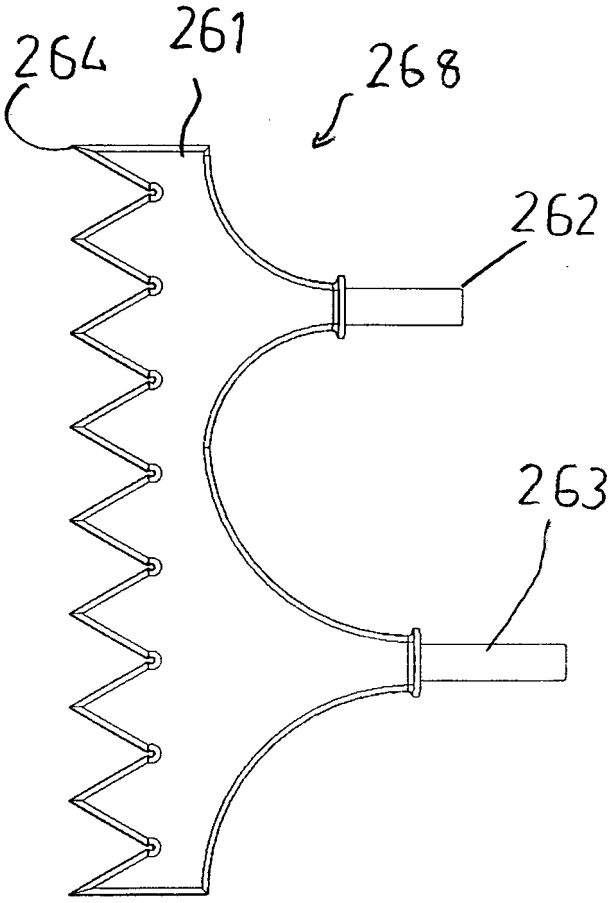



FIG. 48

## REFERENCES CITED IN THE DESCRIPTION

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### Patent documents cited in the description


- GB 652789 A **[0005]**