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(54) **Perfected hanging-bracket**

(57) A perfected hanging bracket (20) for the assembly of wall-cupboards comprises, in combination: a shaped base (21) on which a bracket (22) is assembled, whose position is adjustable, with the possibility of rotating and translating, said bracket (22) having a hook-shaped end (24) protruding from said base (21), two regulation mechanisms, the first (25) for adjusting the height and a second (26) for adjusting the depth, cooperating with said bracket (22), the first mechanism (25) for regulating the height comprises a lunette (28) guided to slide on the base (21), the lower end of said lunette (28) acting on the bracket (22) whereas the upper end cooperates with a regulation screw (29), the second mechanism (26) for regulating the depth, consists of a regulation screw (33) which acts on the end of the bracket (22) opposite to the hook (24). According to the invention, an undesired accidental rotation (screwing or unscrewing) of said screws (29) and (33) is prevented by completely pulling the bracket (22) against the base (21) by tightening the screw (33), said maneuver compelling the bracket (22) to acquire a horizontal position, the screw (29) cannot therefore be screwed by pushing the lunette (28) and consequently the bracket (22), which is blocked in a horizontal position by the tightening of the screw (33) and cannot be unscrewed as, thanks to a deformation (d) in its threading, it creates friction with the rotation which prevents this.

Fig. 2

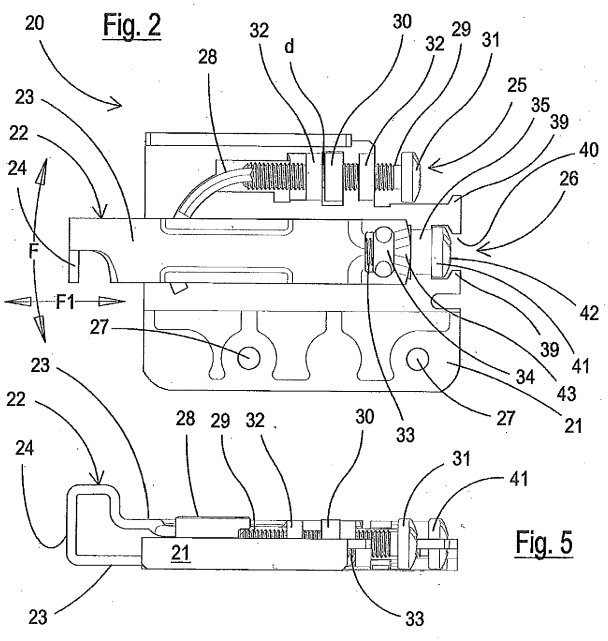

Fig. 5

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Description

[0001] The present invention relates to a perfected hanging bracket for the assembly of wall-cupboards, such as, for example, wall-units and base-units for kitchens and bathrooms, and other items of furniture which must be cantilever-assembled on a supporting wall.

[0002] Metal hanging-brackets structurally consisting of a shaped base having a substantially rectangular configuration, are known.

[0003] A bracket protruding from the base, with a hook-shaped end, is assembled on said base, in an adjustable position.

[0004] The base is designed for being fixed to a shoulder of the wall-cupboard by fixing means, such as screws and/or pressure- or expansion- pins, or other fixing means, whereas the hook is destined for being hooked to a support - a dowel, plate, shaped bar, or similar product - fixed to the wall.

[0005] Two regulation mechanisms cooperate with said bracket, suitable for regulating the height (vertical) and depth, respectively, of the bracket itself.

[0006] The wall-cupboard can be assembled to a wall in the desired position, also with respect to adjacent cupboards.

[0007] A hanging-bracket of this type is described and illustrated, for example, in international patent applications PCT/EP2009/005627 and PCT/EP2009/005628 to which reference should be made for clarifications and which should be considered as being an integral part of the present patent application.

[0008] Hanging-brackets of the type briefly described above, are fixed to the shoulder of the piece of furniture, either manually or using an automated assembly line equipped with a vibrating feeder, which serves for feeding the hanging-bracket in the correct position, to the automatic fixing unit of the same to the shoulder of the cupboard.

[0009] As is well-known to experts in the field, the vibration of the vibrating feeder tends to tighten or loosen (depending on the rotation direction, clockwise or anticlockwise, of the vibrating feeder) the regulation screws of the height and depth of the above-mentioned mechanisms with which the hanging-bracket is equipped.

[0010] This is a serious drawback, as said regulation screws of the height and depth of the hanging-bracket, translate and acquire a position which is different from that established by the manufacturer of the hanging-bracket for a correct use of the same, for both manual or automatic fixing of the same to the shoulder of the cupboard, and also for a simple, correct and rapid assembly of the cupboard to the support fixed to the wall.

[0011] An objective of the present invention is to overcome the above drawback of the known art, by providing a hanging-bracket with regulation mechanisms of the height and depth, equipped with regulation screws whose position can in no way be accidentally modified by the vibrations of a vibrating feeder, or similar tool.

[0012] This objective is achieved by a hanging-bracket having the characteristics specified in claim 1 and enclosed sub-claims.

[0013] The structural and functional characteristics of the invention and its advantages with respect to the known art will appear clearly understandable from the following description referring to the enclosed drawings, which illustrate embodiment examples of the invention itself.

[0014] In the drawings:

- Figure 1 is a raised view taken according to the arrow A of figure 4;
- Figure 2 is a raised view taken according to the arrow B of figure 4;
- Figure 3 is a raised view taken according to the arrow C of figure 1;
- Figure 4 is a raised view taken according to the arrow D of figure 1;
- Figure 5 is a plan view taken according to the arrow E of figure 1;
- Figures 6 and 7 are two perspective views illustrating the hanging-bracket of figures 1-5;
- Figure 8 is a sectional view taken according to the line VIII-VIII of figure 1;
- Figures 9, 10 and 11 are enlarged sectional details illustrating processing phases of the hanging-bracket according to the invention; and
- Figures 12 and 13 are perspective views similar to figures 6 and 7, illustrating the same hanging-bracket equipped with different means for fixing it to the shoulder of the piece of furniture.

[0015] With particular reference to figures 1-8 of the drawings, a metal hanging-bracket produced according to the invention is indicated as a whole with 20 and is structurally composed of a shaped base or shell 21, having a substantially rectangular configuration, on which a bracket 22 is assembled in an adjustable position (with the possibility of rotation and translation).

[0016] As can be clearly seen from the drawings, said bracket 22 comprises two opposite sides or flanks 23, which envelop the base 21, protruding from the latter with a hook-shaped end 24.

[0017] Two regulation mechanisms cooperate with said bracket 22, a first 25 for regulating the height, a second 26 for regulating the depth.

[0018] The hanging-bracket thus structured is fixed to the shoulder of the cupboard, for example by means of self-threading screws (not shown) which pass through holes 27 of the base 21.

[0019] The hook 24, on the other hand, is suitable for being hooked to a support fixed to the wall, for example a dowel, a plate, a bar, or equivalent means.

[0020] More specifically, the first height (vertical) regulation mechanism 25 comprises a lunette 28 guided to slide on the base 21. The lower end of said lunette 28 acts on the bracket 22, whereas the upper end cooper-

ates with a regulation screw 29 which is screwed onto a nut 30 blocked on the base 21.

[0021] Said screw 29 has a head 31 with an imprint for an operating tool. The stem of the screw 29 is supported by means of arched supports 32 of the base 21.

[0022] The second mechanism for regulating the depth 26 consists of a regulation screw 33 acting on the end of the bracket 22 opposite the hook 24.

[0023] Said screw 33 is screwed onto a nut 34 blocked on the bracket 22. The stem of the screw 33 is supported by the bracket 22 and by an arched support 35 of the base 21, said support 35, together with end teeth 39 of the base 21 itself, defining a containment seat 40 for the head 41, with an imprint 42, of the screw 33.

[0024] From the above description with reference to Figures 1-7, and as is well-known to experts in the field, once the cupboard has been assembled to the wall, the rotation of the height-regulation screw 29 will cause an oscillation around the area 43 of the bracket 22 in the direction of the arrow F, whereas a rotation of the depth-regulation screw 33 will cause a translation of the same arm 22 in the direction of the arrow F1.

[0025] The functioning of the height and depth regulation mechanisms of the hanging-bracket in question is also illustrated and described in detail in the above-mentioned international patent applications PCT/EP2009/005627 and PCT/EP2009/005628.

[0026] According to the invention, an undesired accidental rotation (screwing or unscrewing) of the screws 29 and 33 - caused, for example, by a vibrating feeder - is prevented, by completely pulling the bracket 22 against the base (21) by tightening the screw 33: this maneuver compels the bracket 22 to acquire the horizontal position illustrated in figures 1 and 2 of the drawings. With the bracket 22 in an exactly horizontal position, the screw 29 cannot be screwed (as it is pushing the lunette 28 and consequently the bracket 22, which is blocked in a horizontal position by the tightening of the screw 33) and cannot be unscrewed (as, thanks to a deformation d in its threading which is engaged with the nut 30, it creates friction with the rotation which prevents the same).

[0027] Said deformation d in the threading of the screw 29 can be clearly seen in the enlargement of figure 11.

[0028] As can be clearly seen in figures 9 and 10, the deformation d is obtained by means of a punch 36 and a counter-punch 37 between which the hanging-bracket 20 is positioned.

[0029] Figures 12, 13 show a hanging-bracket completely identical to that illustrated in figures 1-11, with the exception of the fixing means to the shoulder of the cupboard; pressure pins 38 (so-called doubels) are in fact envisaged instead of holes 27 for screws.

[0030] The objective indicated in the preamble of the description, has therefore been achieved.

[0031] The protection scope of the invention is defined by the following claims.

Claims

1. A perfected hanging bracket (20) for the assembly of wall-cupboards of the type comprising, in combination:

   a shaped base (21) on which a bracket (22) is assembled, whose position is adjustable, with the possibility of rotating and translating, said bracket (22) having a hook-shaped end (24) protruding from said base (21), two regulation mechanisms, the first (25) for adjusting the height and a second (26) for adjusting the depth, cooperating with said bracket (22), the first mechanism (25) for regulating the height comprises a lunette (28) guided to slide on the base (21), the lower end of said lunette (28) acting on the bracket (22) whereas the upper end cooperates with a regulation screw (29), the second mechanism (26) for regulating the depth, consists of a regulation screw (33) which acts on the end of the bracket (22) opposite to the hook (24), **characterized in that** an undesired accidental rotation (screwing or unscrewing) of said screws (29) and (33) is prevented by completely pulling the bracket (22) against the base (21) by tightening the screw (33), said manoeuvre compelling the bracket (22) to acquire a horizontal position, the screw (29) cannot therefore be screwed by pushing the lunette (28) and consequently the bracket (22), which is blocked in a horizontal position by the tightening of the screw (33) and cannot be unscrewed as, thanks to a deformation (d) in its threading, it creates friction with the rotation which prevents it.

2. The hanging bracket according to claim 1, **characterized in that** said regulation screw (29) is screwed onto a nut (30) blocked on the base (21).

3. The hanging bracket according to claim 1, **characterized in that** said regulation screw (33) is screwed onto a nut (34) blocked on the bracket (22).

4. The hanging bracket according to claim 1, **characterized in that** said bracket (22) comprises two opposite sides (23), which enclose the base (21) and protrude from the latter by means of said hook-shaped end (24).

5. The hanging bracket according to claim 1, **characterized in that** the screw stem (29) is supported by means of arched supports (32) of the base (21).

6. The hanging bracket according to claim 1, **characterized in that** the screw stem (33) is supported by the bracket (22) and by an arched support (35) of the base (21), and said support (35), together with

terminal teeth (39) of the same base (21), defines a containment seat (40) for a head (41) of said screw (33).

7. The hanging bracket according to claim 1, **characterized in that** said base (21) has holes (27) for the passage of fixing screws of the hanging bracket to the shoulder of the piece of furniture.

8. The hanging bracket according to claim 1, **characterized in that** said base (21) has pins (38) for fixing the hanging bracket to the shoulder of the piece of furniture.

9. The hanging bracket according to claim 1, **characterized in that** said base (21) has a substantially rectangular configuration.

Fig. 3

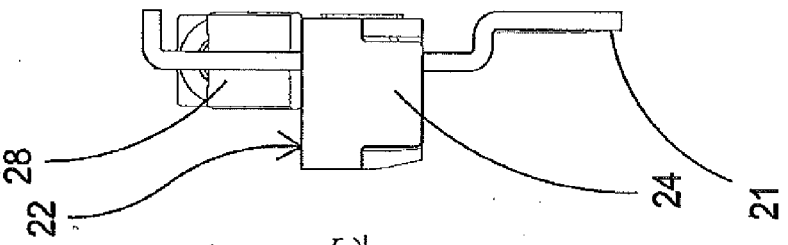


Fig. 1

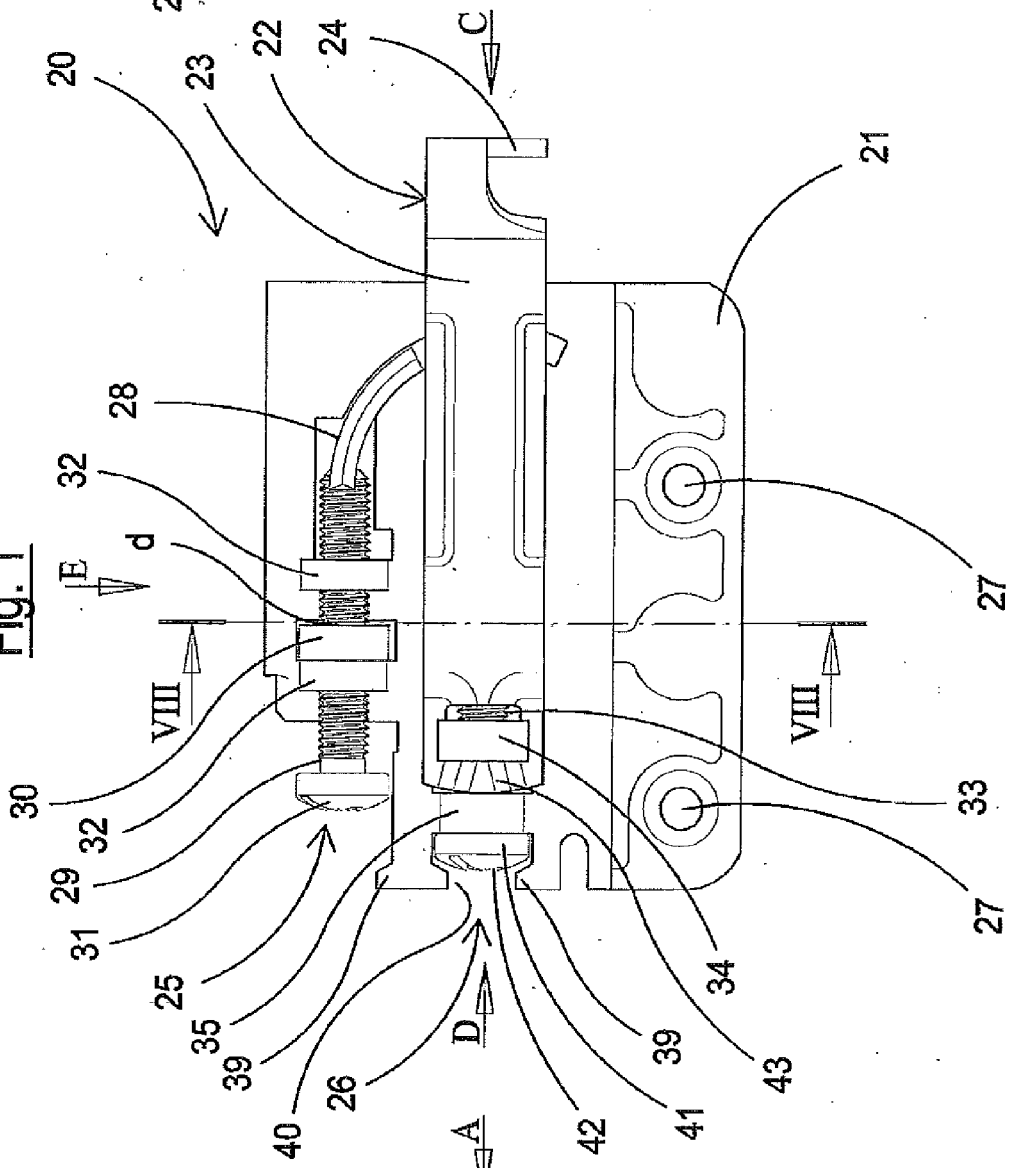


Fig. 4

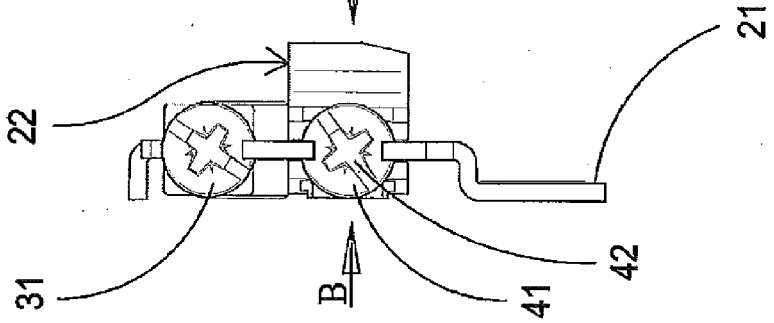


Fig. 2

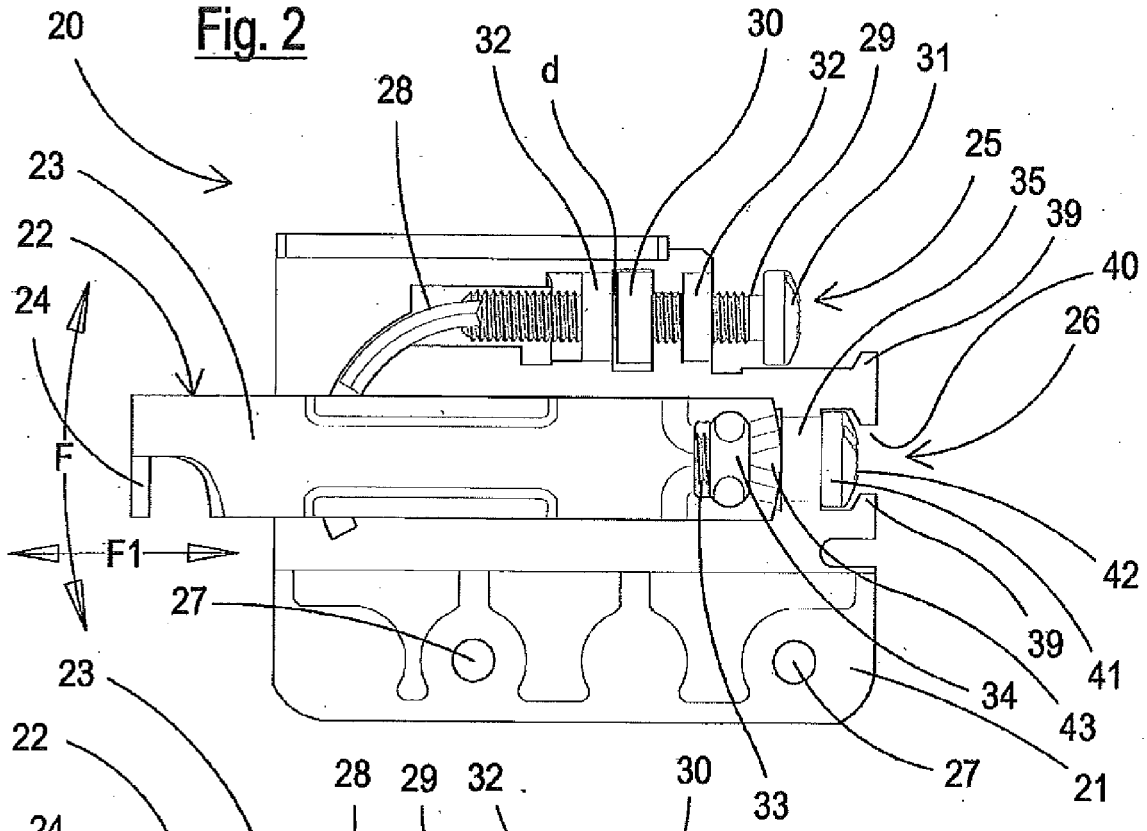


Fig. 5

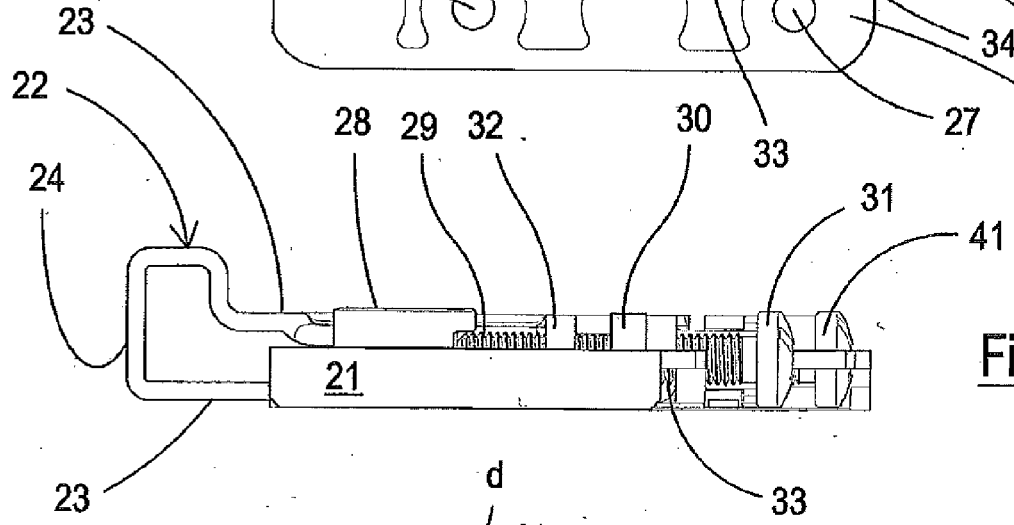


Fig. 8

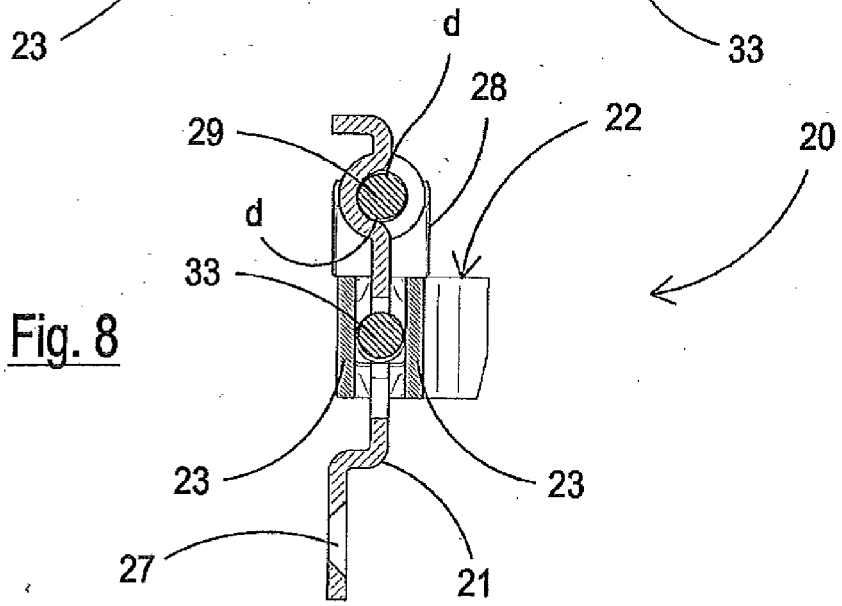


Fig. 6

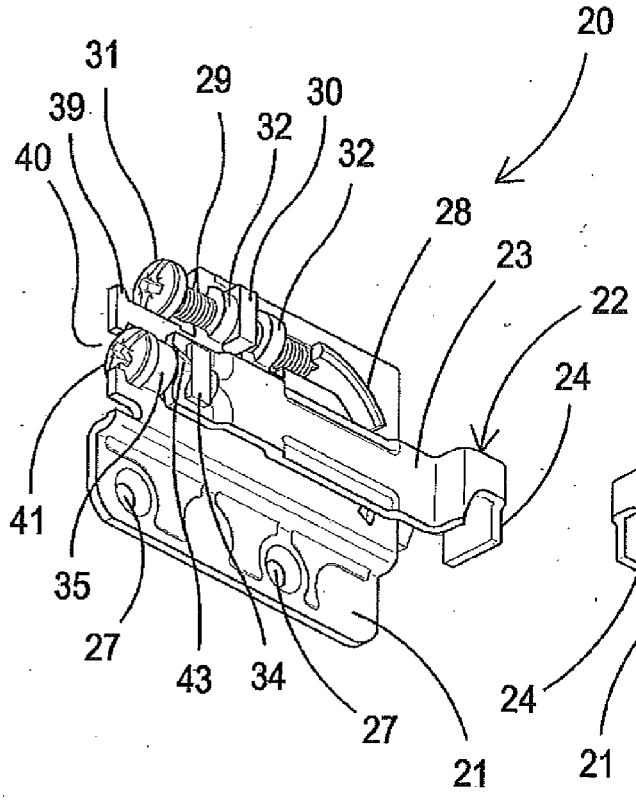


Fig. 7

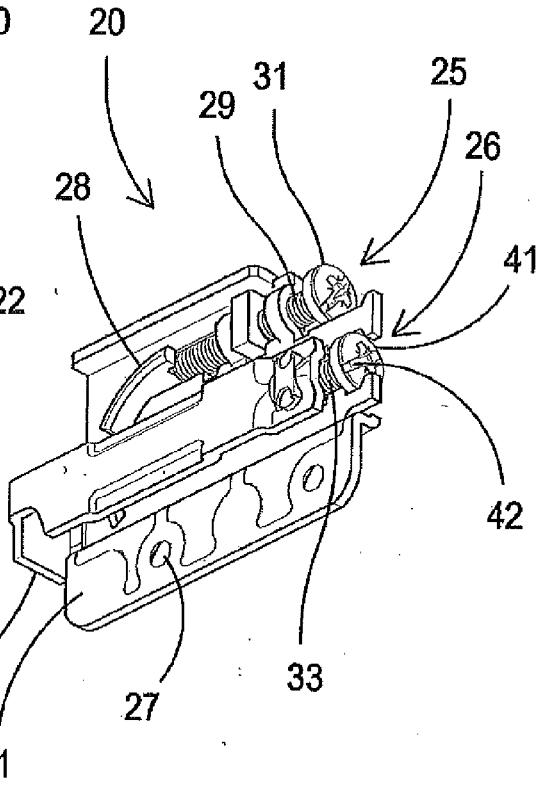


Fig. 12

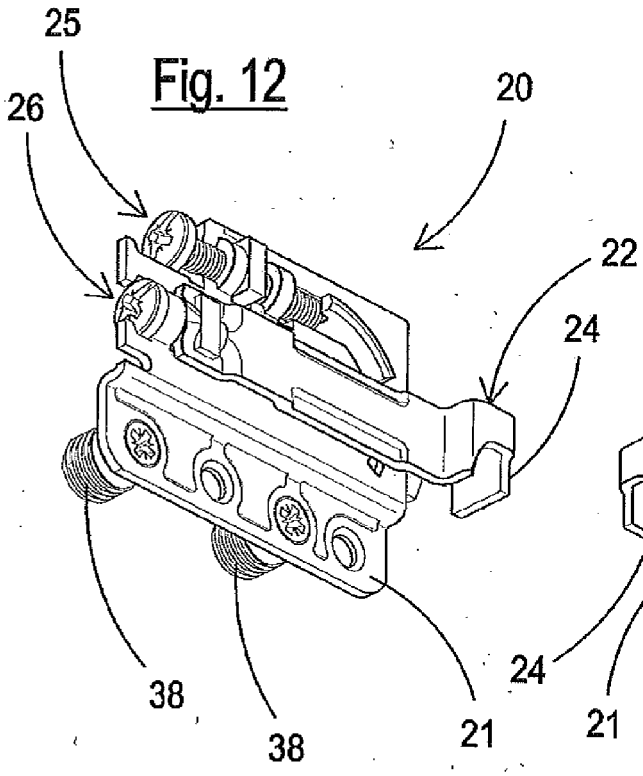


Fig. 13

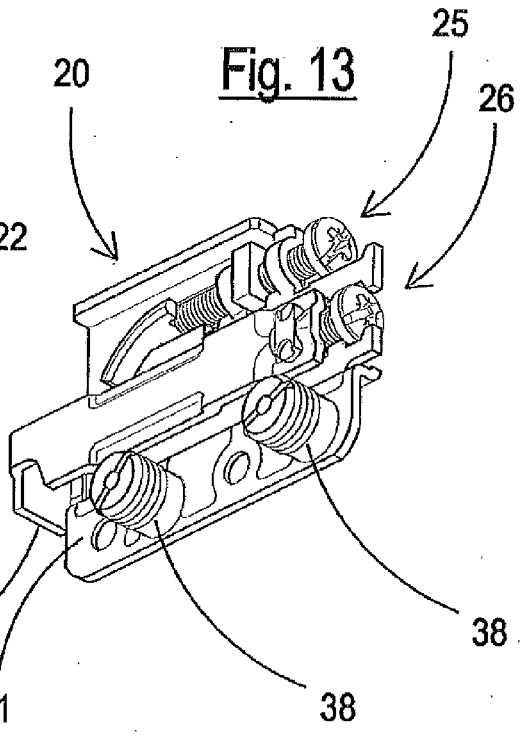


Fig. 9

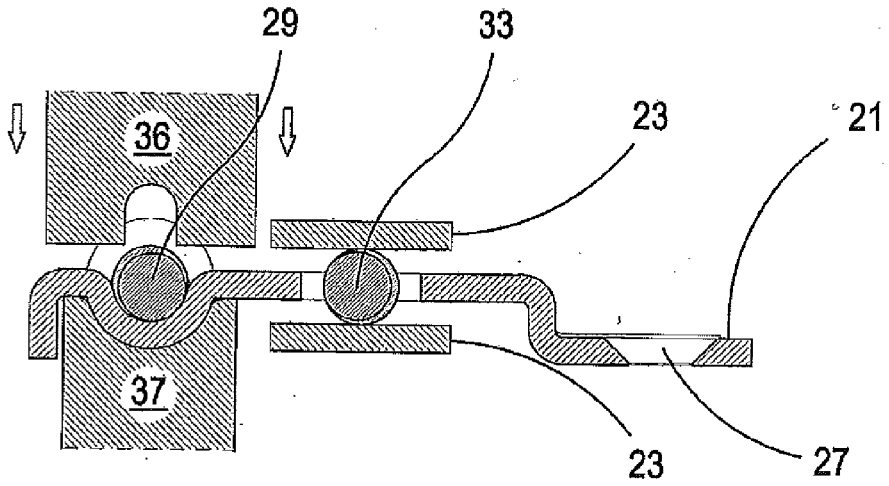


Fig. 10

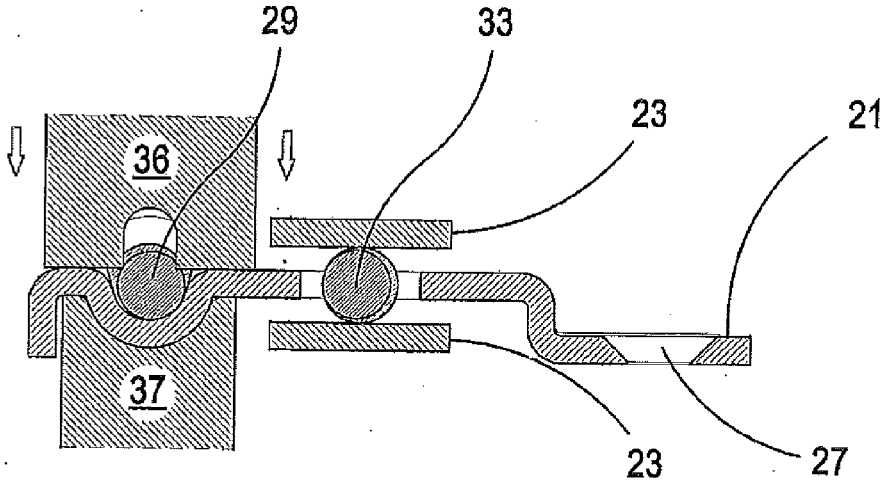
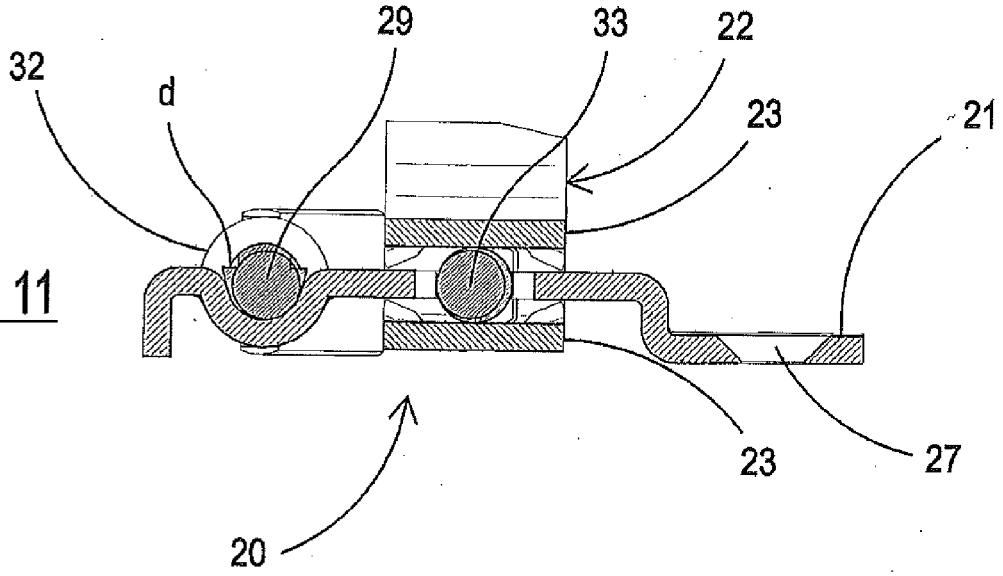


Fig. 11



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EUROPEAN SEARCH REPORT

Application Number
EP 14 18 3329

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2010/012503 A1 (LEONARDO SRL [IT]; CATTANEO CARLO [IT]) 4 February 2010 (2010-02-04) * figures 1-8b *	1-9	INV. A47B95/00
A	DE 91 02 703 U1 (PAUL HETTICH GMBH & CO) 23 May 1991 (1991-05-23) * page 2, paragraph 1; figures 1,2 * * page 4, paragraph 6 - page 5, paragraph 1 *	1-9	
A	WO 2010/121687 A1 (LEONARDO SRL [IT]; CATTANEO CARLO [IT]) 28 October 2010 (2010-10-28) * abstract; figures 1-35 *	1-9	
			TECHNICAL FIELDS SEARCHED (IPC) A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	22 January 2015	Vehrer, Zsolt

CATEGORY OF CITED DOCUMENTS

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- EP 2009005628 W **[0007] [0025]**