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(54) Device for making an integrated handle in a portion of a movable panel of a furniture and movable panel comprising said device

(57) The present invention refers to a device (1; 110) for making an handle integrated in a portion (50) of a panel of a movable part of a furniture, such as a door panel, a drawer or similar, the device comprising a section bar (2) to be placed side by side with said portion (50) of panel at an edge of same or to be inserted into an opening provided in said portion (50), in order to complete said panel, and elastic means (9; 109) associated with said section bar (2) for elastically moving said section bar (2) between a resting position, in which said section bar is essentially coplanar with the external surface of said portion (50) of panel and an operating position, in which said section bar is internally recessed in order to allow access to a gripping area of said portion (50) of panel constituting said integrated handle.

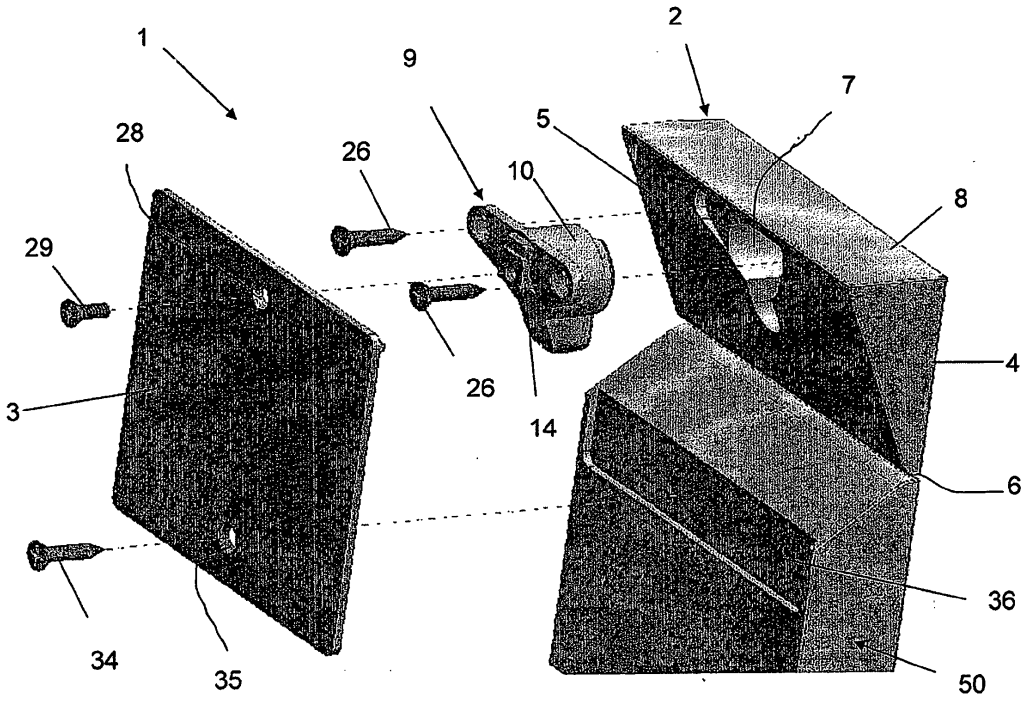

Fig. 1

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Description

Technical field

[0001] In its most general aspect, the present invention refers to the furniture sector.

[0002] In particular, the present invention refers to a device for making an handle integrated in a portion of a panel of a movable part of a furniture, like a door panel, a drawer and similar.

[0003] The present invention also refers to a panel of a movable part of a furniture provided with an integrated handle, made by means of said device.

[0004] The present invention also refers to a kit of components for said device.

Known art

[0005] As known, furniture like cupboards, drawers and similar comprise a supporting frame, in which one or more spaces are defined, which the user can use for storing various types of objects and at least one movable part, for instance a drawer, a door panel, etc., which may be operated by moving it in an opening and closing direction to and from a side of said frame.

[0006] It is also envisaged that the movable parts are provided with handles or knobs on an external panel in order to facilitate the opening and closing operations.

[0007] In its more classic form, the handle (or knob) is constituted by a distinct element protruding from the external surface of a panel of the movable part to which it is fixed in various ways, like fixing screws or adhesives.

[0008] The handle may be shaped in various ways according to taste and esthetics required and in any case it has to provide a gripping surface or portion, in order to fulfill the functional purpose of allowing or facilitating the opening of furniture by the user, in order to gain access to its inner space.

[0009] Although handles as above are essentially satisfactory from the functional point of view and sometimes also from an esthetic point of view, the furniture sector is increasingly looking for new esthetic solutions which allow to "hide" the handles while at the same time maintaining the above said functions, in order to offer a final product (furniture) with simple and essentially minimalist lines, due to absence of protruding portions, as knobs and/or handles.

[0010] Beside the esthetic requirements, such a solution may also be provided in order to comply with technical needs, such as, in a non limiting example, the need to reduce outer dimensions of furniture.

[0011] In the known art, solutions are already present, which try to fulfill the above needs and which essentially envisage an "integration" of the handle in a panel of the movable part to be applied (in the following also called the movable panel).

[0012] One known solution consists in providing a suitably shaped back slot on an edge portion of movable panel, wherein the slot is essentially formed in part of the thickness of the panel. In this way, the movable panel, seen from the outer front side, has a uniform surface and at the same time the user may access to the inner space of furniture by inserting fingers of one hand into the slot, which therefore acts like a "handle" facilitating the grip on the movable panel by the user, in order to open the piece of furniture.

[0013] However, such a solution requires that a certain distance is kept between the edges of adjacent panels where said slot is provided, in order to create a space enough for allowing the user to insert her or his fingers for reaching the gripping slot.

[0014] But in this way, a "discontinuity" is formed between adjacent panels, so that the slot may be at least partially "visible", which results in a negative impact on the esthetics of the final product.

[0015] Another known and more recent solution consists in integrating suitable known "push pull" ratchets into the movable panel, which functions in a way such that when one manually pushes the movable part against the side abutment, the movable part is alternatively held by the same ratchets in the closed position or is released by them separating this portion by a couple of millimeters from the side, through a spring mechanism.

[0016] There are various embodiments of push-pull systems, but they always have two primary components: one to be mounted on the movable part (for example a door panel or the front wall of a drawer) provided with a hooking element and the other to be mounted on the fixed portion (for example a side or horizontal wall of furniture) provided with a spring loaded hooking mechanism, which, by successive pushing of movable part against or towards the closing abutment, alternatively engages said hooking element, providing the retaining of said movable potion, or is freed from it, allowing its opening.

[0017] In particular, regarding the opening, the user usually operates the movable part in a its pushing area placed at or near said push pull systems; otherwise, the disengagement of movable part from spring loaded hooking mechanism on fixed portion may not be achieved.

[0018] Although push pull systems are able to comply with esthetic requirements of a final product (furniture) with simple lines and without any "discontinuity", they are quite sophisticated from a construction point of view and often may not be adapted to various types of furniture.

[0019] Moreover, the identification of the pushing area of movable part by user may turn out to be difficult, and often various trial and errors are required in order to identify the same or vice versa, the user may inadvertently activate the push pull system, in the opening direction, for example in case of accidental collision with the pushing area of the movable part.

[0020] The primary objective of the present invention is therefore to provide a device, for making an handle integrated in a panel of the movable part of a furniture, which may be easily manufactured while at the same time ensuring a pleasant esthetic effect, with simple and

"clean" lines in the final furniture product, in order to overcome the above said drawbacks of the known art.

Summary of the invention

[0021] This objective is achieved by a device for making an handle integrated in a portion of a panel of a movable part of a furniture, like a door panel, a drawer and similar, the device comprising a section bar to be put side to side with said panel portion at an edge of same, or to be inserted into an opening provided in said portion, as a completion of said panel, and elastic means associated to said section bar, for elastically moving said section bar from a resting position, where the section bar is essentially coplanar with the external surface of said panel portion to an operating position, where said section bar is internally recessed in order to allow access to a gripping area of said panel portion constituting said integrated handle.

[0022] This objective is also achieved by a panel with an integrated handle of a movable part of a furniture like a door panel, a drawer and similar, comprising a first portion and a second portion placed side by side to the first portion at an edge of the same and elastic means, associated to said first portion and said second portion for elastically moving said second portion between a resting position, in which the second portion is essentially coplanar with the external surface of said first portion and an operating position, in which said second portion is internally recessed so that a gripping area of said first panel portion constituting said integrated handle is rendered accessible.

[0023] The present invention also refers to a kit for making an handle integrated in a panel as above, the kit comprising a supporting frame, elastic means, and fixing means for fixing said elastic means to said frame and to said second portion, so as to move elastically said second portion between a resting position, in which the second portion is essentially coplanar with the external surface of said first portion and an operating position, in which said second portion is internally recessed so that a gripping area of said first portion is rendered accessible, and fixing means for fixing said frame to said first portion.

[0024] Such a kit may be supplied for instance to a panel or furniture manufacturer for producing the panel with the device according to the invention.

[0025] Further characteristics and advantages of the present invention will become apparent from the following description of preferred exemplary embodiments, which are illustrative and non limiting with reference to appended drawings.

Brief description of drawings

[0026] In the appended figures:

- fig. 1 shows a perspective view with separate parts of a device according to a first embodiment of the invention, in the step preceding its mounting on a portion of a movable panel in order to obtain a handle integrated in the same;
- figs. 2 and 3 each show a view of a detail of the device of fig. 1;
- fig. 4 shows a view of a lateral section of the detail of fig. 3 along line A-A of fig. 3;
- fig. 5 shows a view with separated parts of the detail of fig. 3;
- fig. 6 shows a rear perspective view of a movable panel according to the invention with associated the device of fig. 1;
- figs. 7 and 8 each show a front perspective view of the movable panel according to the invention of fig. 6, in the resting position and the operating position, respectively;
- fig. 9 shows a lateral view of the movable panel according to the invention of fig. 6, in the resting position of fig. 7;
- fig. 10 shows a perspective view with separate parts of a device according to a second embodiment of the invention, in the step preceding mounting on a portion of a movable panel in order to obtain a handle integrated in the same;
- fig. 11 shows a view of a detail of the device of fig. 10;
- fig. 12 shows a sectional view of the detail of fig. 11, along line A-A of fig. 11;
- fig. 13 shows a view with separate parts of the detail of fig. 11;
- fig. 14 shows a rear view of a movable panel according to the invention, with associated the device according to fig. 10;
- fig. 15 shows a sectional view of the movable panel of fig. 14 along line A-A of fig. 14.

Detailed description

[0027] With reference to figs. 1-7, a device according to a first embodiment of the invention for providing the handle integrated in a portion of a panel of a movable part of furniture is generally shown in 1.

[0028] The device 1 comprises a section bar 2 associated with a rear frame 3, which has a generally plate-like shape, preferably made of metal.

[0029] The section bar 2 has a wedge-like shape with an essentially triangular cross section (right triangle) with

an external face (or side) 4 which is substantially planar and an inclined internal face 5, wherein both faces meet at a rounded corner 6, which is neither too thin nor pointed.

[0030] The section bar 2 is also provided with a plurality of recesses 7 (only one is shown in figures, for sake of simplification), which are essentially aligned along the longitudinal direction of the section bar 2 and are suitably separated from each other by a predefined distance.

[0031] In particular, the recesses 7 are open, in that they are formed on the internal inclined face 5 of the section bar 2 near the base 8 of wedge, i.e. on the opposite side with respect to rounded corner 6 joining the external face 4 and the internal face 5.

[0032] The recesses 7 house elastic means, generally indicated by 9, by means of which the section bar 2 is fixed to the supporting frame 3 whereas at the same time the section bar 2 is elastically movable to and from frame 3 in a cavity 33 which is formed between the internal face 5 of the section bar 2 and the frame 3.

[0033] In the present embodiment, the elastic means 9 comprise a plurality of hinges, the number of which corresponds to number of respective recesses 7. The number of hinges 9 and respective spacing is chosen according to the dimensions of the section bar 2 and in order to ensure a suitable alignment along the rotation axis of section bar 2 to and from the frame 3.

[0034] The section bar 2, as will become clear in the following, may advantageously provide a completion that forms the movable panel with the portion of panel on which it is applied.

[0035] With particular reference to figs. 3-5, each hinge 9 comprises a small block 10 in which a slot 11 for housing a helical spring 12 is formed, and an opening 13 extending along the thickness of block 10, which communicates with the slot 11.

[0036] The opening 13 provides a housing seat for an element 14 which is hinged to the block 10 by means of a pin 15 passing through opposed holes 16 of the block 10, which are transversely positioned on sides of the opening 13, and passing through a transversal through hole 17 of the element 14, which is coaxial with the holes 16 of block 10.

[0037] The element 14 has a longitudinal cavity 20 open toward the helical spring 12 and two mutually opposed teeth 21 positioned on each side of cavity 20, which extend longitudinally as an extension of the element 14. The teeth 21 have respective abutment surfaces 21a for abutting against a respective portion of internal surface of the block 10 that delimitates the internal slot 11. Moreover, the element 14 has a portion 14a protruding from the opening 13 of the block 10 which is positioned on opposed side of the cavity 20, the portion 14a having a hole 27 and a recess 30.

[0038] The helical spring 12 inserted in corresponding seat 11 passes, with an end portion, through the cavity 20 of the element 14 and is fixed to the latter by inserting one end of the spring 14 into a hole 22 of the element 14. The helical spring 12 is also kept in place in the seat 13 by a pin 23 inserted in the seat 11, from the opposite side of spring end 12 which is fixed to the element 14.

[0039] The spring 12 exerts a pulling force on the element 14 which causes a rotation of the element 14 along rotation axis of pins 15 and provides contact (and holding) of teeth 21 in abutment with respective abutment surfaces 21a against internal surface of the block 10 delimiting the slot 11.

[0040] The block 10 is also provided with opposed flaps 24, which are transversely positioned essentially on sides of the opening 13 containing the element 14, the flaps 24 being provided with respective holes 25 for receiving screws 26, which, in this embodiment, form the fixing means of the hinge 9 to the section bar 2.

[0041] Also the element 14 is provided with a threaded hole 27, which is coaxial with a corresponding hole 28 provided on the frame 3, wherein these holes are traversed by a screw 29, which, in this embodiment, forms the fixing means of the hinge 9 to the frame 3 by means of the element 14.

[0042] In order to facilitate the centering of the hinge 11 to the frame 3, the element 14 is advantageously provided with a superficial recess 30, which is engaged by a corresponding counter-protrusion 31 formed on the front side of the frame 3, i.e. on the side directed towards the hinge 9.

[0043] Because of the fixing with screw 29, the element 14 is integral with the frame 3 while at the same time the spring 12 holds the internal surface of the block 10 in abutment against the protrusions of the teeth 21. The block 10 instead is fixed with the section bar 2 by means of fixing screws 26 and is rotatably engaged with the element 14 by means of pin 15.

[0044] Therefore, in the use of the device according to the invention, as will be more clearly explained in the following, an external thrust (for example exerted by user) on the section bar 2 causes the section bar 2 to be moved together with the block 10 towards the frame 3, against the force exerted by the spring 12, and the block 10 is therefore released from abutment against the teeth 21 of the element 14. Such movement towards the frame 3 causes the block 10 and the section bar 2 to traverse through the recess 33 between the internal face 5 of the section bar 2 (directed towards the frame 3) and the frame 3 and ends at most with the abutment of the block 10 against the frame 3.

[0045] When the section bar 2 is released, the elastic force provided by the spring 12 returns the block 10 and the section bar 2 in the original position, which is reached when the internal surface of slot 11 of the block 10 abuts against the teeth 21 of the element 14.

[0046] The device according to the invention may be advantageously associated with a portion of a movable panel (for example a door panel), which is generally indicated with 50 in the figures, in order to provide an handle integrated in the same, for gripping by the user. The association may be provided at the edge (horizontal or ver-

tical) of the panel portion, as well as at an opening provided in said panel portion. Advantageously, the section bar 2 may advantageously be a complementary element, which, together with portion 50 of panel, forms the movable panel. In this case, the section bar 2 may be advantageously made of the same material as that of the portion 50 and may extend over the whole horizontal or vertical edge of the portion 50 of panel, or, alternatively, if a through opening is provided in the thickness of the portion 50 of panel, it may be shaped with a profile that is complementary to that of said opening, so as to be inserted in said opening and to "fill" it, thereby completing the panel.

[0047] More in particular, the hinges 9 are initially inserted in respective recesses 7 formed in the section bar 2 and then are fixed to the section bar 2 by respective fixing screws 26.

[0048] Thereafter, frame 3 is fixed to panel portion 50 on rear side of the same, by fixing screw 34 passing through a hole 35 formed in the frame 3 and aligned with a corresponding hole (not shown) formed on the rear side of panel portion 50.

[0049] At last, hinges 9 connected to section bar 2 are fixed to frame 3 by respective fixing screws 29, after having coupled the counter-protrusion 31 with recess 30 of element 14 of each hinge 9, all this ensuring that the external face 4 is essentially coplanar with the external surface of panel portion 50 wherein corner 6 is placed side by side to edge of panel portion 50.

[0050] If association of device 1 according to the invention takes place at edge of panel portion 50 (in particular, as shown in figs- 6-8 for a horizontal edge of portion 50), frame 3 has a length preferably equal to the length of edge, and frame 3 is fixed to rear side of portion 50, in order to obtain a portion protruding from edge which is essentially of the same size as section bar 2.

[0051] Moreover, as shown in particular in fig. 1, on rear side of portion of panel 50 there may be advantageously provided a shaped recess 36 along a portion of thickness, the recess 36 having dimensions which are essentially complementary to those of the non-protruding portion of frame 3, in order to receive such non-protruding portion 50 of panel, in a recessed way.

[0052] Alternatively, portion 50 of panel may have a through opening (not shown) which may be opened or closed depending on whether it is provided in an end or "central" area of panel portion. In this case, section bar 2 has a profile which is substantially complementary to that of the opening of portion of panel and the association of device 1 according to the invention takes place at such opening, in a way which is analogous to the case illustrated above with the frame 3 that "covers" on the rear the opening of portion of panel and with the section bar 2 that is inserted in said opening, so that the external face 4 is essentially coplanar with external surface of portion of panel 50, and corner 6 is adjacent to an edge of opening of panel portion 50.

[0053] In any case, the end result is a movable panel 60 according to the invention, constituted by portion 50 and device 1, in which portion 50 and section bar 2 are adjacent to each other, in a continuous way, in order to form the final movable panel, without protruding portions, and at the same time a handle integrated in the panel is formed. This ensures on one side a good esthetic quality of finished furniture, having simple and clean lines, and on the other side, ensures the gripping functionality required for opening the furniture by the user.

[0054] In particular, regarding the opening of a furniture provided with a panel 60 according to the invention, as said before, the user may push with one hand on section bar 2, causing the section bar 2 to be moved into recess 33, so that fingers may access a gripping area positioned at the edge of portion 50 (end edge or opening provided in the same), which is adjacent to corner 6 of section bar 2.

[0055] Such edge may be advantageously beveled along the thickness of portion 50 of panel, in order to form a groove 40 which eases the grip by the user.

[0056] User may then open movable panel 60 by acting on the gripping area of portion 50, wherein this action is facilitated by the optional groove 40, in order to access the internal space of furniture.

[0057] At this point, the user may release the section bar 2, so that the elastic force of spring 12 returns block 10 and section bar 2 in the original coplanar position with respect to external surface of portion 50, which is advantageously ensured by abutment of internal surface of slot 11 of block 10 against teeth 21 of element 14.

[0058] Now, with reference to figs. 10 to 15, a device according to a second embodiment of the invention for making a handle integrated in a portion of a panel of a movable part of a furniture is generally indicated with 101.

[0059] Elements of device 101 which are equivalent from a structural and/or functional point of view with corresponding elements of above said device 1 are indicated by same reference numbers, omitting the respective description in order to simplify the present description.

[0060] Device 101 according to this embodiment differs from the device 1 disclosed above essentially in some construction details of the hinge, which is now generally referred to as 109, whereas for the remaining part, it is structurally and functionally equivalent to hinge 9 disclosed above.

[0061] Hinge 109 comprises a block 110, which is provided on the inside with an open slot 111, which is the housing of a helical spring 12, of a first element 14 and second element 80.

[0062] The first element 14 is hinged to block 110 by means of a pin 15 passing through holes 16 opposed to block 110, which are transversely positioned on sides of slot 111, and a transverse through hole 17 of the element 14, which is coaxial with holes 16 of block 110.

[0063] The first element 14 has a longitudinal cavity 20, which is open towards the helical spring 12 and two opposed teeth 21, which are positioned on sides of cavity 20 and which longitudinally extend as an extension of

element 14.

[0064] Second element 80 is also hinged to block 110 by means of pins 81 which are integral with the same, and which engage corresponding recesses 82 provided in cavity 111 of block 110.

[0065] The second element 80 is provided with an internal cavity 83, which opens towards cavity 20 of first element 14, and a protruding tooth 84 facing towards teeth 21 of first element 14. It is also fixed to base 115 of block 110 by means of a headless screw 86 passing through a threaded through hole 87 of second element 80.

[0066] Helical spring 12 is inserted into cavity 20 of first element 14, to which it is fixed by inserting an end of spring 12 in a hole 22 of first element 14 and in cavity 83 of second element 80.

[0067] The spring 12 exerts a pulling force against element 14 causing the element 14 to rotate along rotation axis of pins 15 and causing teeth 21 to contact (and be held in abutment) with respective abutment surfaces 21a against tooth 84 of second element 80.

[0068] By turning the headless screw 86 in a clockwise or counterclockwise direction, for example by means of an Allen wrench, the second element 80 tilts in block 110, by rotating around axis of pin 81, thereby adjusting the inclination of first element 14. Since hinge 119 is fixed to section bar 2 by fixing screws 26 passing through flaps 25 of block 110 and to frame 3 by fixing screw 29 passing through hole 28 of frame 3 and hole 27 of first element 14, it is therefore possible to adjust inclination of section bar 2 for ensuring in particular coplanarity of section bar 2 and portion of panel 50 at mounting.

[0069] Such an adjustment may be advantageously also performed after mounting step, for example by introducing a hole 88 on frame 3 which is aligned with headless screw 86, for allowing access with the adjusting tool (for example an Allen wrench) to screw 86.

[0070] In this way, since after mounting, the first element 14 is fixed with frame 3, rotation of headless screw 86 in a clockwise or counterclockwise direction allows the second element 80 to tilt in block 110 and therefore adjust inclination of block 110 and section bar 2 fixed to same so as to ensure coplanarity of section bar 2 and portion of panel 50.

[0071] In addition to above mentioned advantages, the device according to the invention is also characterized by easy manufacturing and relatively low costs.

[0072] It is evident that the skilled in the art, in order to fulfill specific and contingent needs, may introduce, in addition to above said characteristics, various modifications and variants, which are all included in the protective scope of the invention, as defined by claims.

Claims

1. Device (1; 110) for making an handle integrated in a portion (50) of a panel of a movable part of a furniture, such as a door panel, a drawer or similar, the device comprising a section bar (2) to be placed side by side with said portion (50) of panel at an edge of same or to be inserted into an opening provided in said portion (50), in order to complete said panel, and elastic means (9; 109) associated with said section bar (2) for elastically moving said section bar (2) between a resting position, in which said section bar is essentially coplanar with the external surface of said portion (50) of panel and an operating position, in which said section bar is internally recessed in order to allow access to a gripping area of said portion (50) of panel constituting said integrated handle.

2. A device (1; 110) according to claim 1, also comprising a supporting frame (3) and a recess (33) provided between said section bar (2) and said frame (3), said elastic means (9; 109) being fixed to said frame (3) and to said section bar (2).

3. A device (1; 110) according to claim 2, wherein said section bar (2) has an essentially wedge-like shape, with an essentially planar external face (4) and an inclined internal face (5), said recess (33) being formed between said internal face (5) and said frame (3).

4. A device (1; 110) according to claim 2 or 3, wherein said elastic means comprise a plurality of hinges (9), each hinge (9) comprising a block (10), a first element (14) housed in a cavity of said block (10), to which it is hinged, and having mutually opposed teeth (21) and a helical spring (12) housed in said block (10), said helical spring (12) exerting a pulling force against said first element (14) in order to keep said teeth (21) in abutment against an internal surface of said block (10).

5. A device (1; 110) according to claim 2 or 3, wherein said elastic means comprise a plurality of hinges (109), each hinge (109) comprising a block (10), a first element (14) and a second element (80) housed in a cavity (111) of said block (110) to which they are hinged, said second element (80) also being adjustably fixed to base (115) of said block (110), and a helical spring (12) housed in said block (10), said helical spring (12) exerting a pulling force against said first element (14), in order to keep teeth (21) of said first element (14) in abutment against a tooth (84) of said second element (80).

6. A device (1; 110) according to claim 4 or 5, wherein said first element (14) is fixed to said frame (3) by means of fixing means (29) and said block (10; 110) is fixed to said section bar (2) at a respective recess (7) provided on the internal face (5) of said section bar (2).

7. A device (1; 110) according to any one of claims 4 to 6, wherein said first element (14) has a recess (30) forming a coupling with a corresponding counter-protrusion (31) formed on frame (3).

8. Panel (60) with an integrated handle of a movable part of a furniture, like a door panel, a drawer or similar, comprising a first portion (50) and a second portion (2) placed side by side with first portion (50) at a its edges and elastic means (9; 109) associated with said first portion (50) and said second portion (2) for elastically moving said second portion (2) between a resting position, in which the second portion (2) is essentially coplanar with the external surface of said first portion (50) and an operating position, in which said second portion (2) is internally recessed in order to allow access to a gripping area of said first portion (50) of panel constituting said integrated handle.

9. A panel (60) according to claim 8, also comprising a supporting frame (3) fixed to said first portion (50) on its internal side, preferably with a partial recessed position, and to said elastic means (9; 109), and a recess (33) provided between said second portion (2) and frame (3) for allowing an elastic movement of said second portion (2) between said resting position and said operating position.

10. A panel (60) according to claim 9, wherein said second portion (2) has an essentially wedge-like shape with an external essentially planar face (4) and an inclined internal face (5), said recess (33) being formed between said internal face (5) and said frame (3).

11. A panel (60) according to claim 9 or 10, wherein said elastic means comprise hinges (9; 109) as defined in preceding claims 4 to 7.

12. A panel according to any of the preceding claims 8 to 11, wherein said second portion (2) is placed side by side along the whole horizontal or vertical edge of said first portion (50), to complete said panel, said first portion (50) and said second portion (2) being essentially made with the same material.

13. A panel according to any of the preceding claims 8 to 11, wherein said first portion (50) has an opening and said second portion (2) is shaped with a profile which is essentially complementary to the profile of said opening of first portion, in order to be inserted into said opening and completing said panel, said first portion (50) and said second portion (2) being preferably made with the same material.

14. A panel according to any of the preceding claims 8 to 13, wherein said first portion (50) has an internal groove which is provided in the thickness at said gripping area.

15. Kit for making an handle integrated in a panel of a movable part of a furniture, the panel having a first portion (50) and a second portion (2), complementary to the first, which is placed side by side with said first portion (50) along its edge, or which is inserted into an opening provided in said first portion (50), the kit comprising a supporting frame (3), elastic means (9; 109), preferably a plurality of hinges according to preceding claims 4 to 7, and fixing means (26, 29) for fixing said elastic means to said frame (3) and to said second portion (2), in order to elastically move said second portion (2) between a resting position, in which the second portion (2) is essentially coplanar with the external surface of said first portion (50) and an operating position, in which said second portion (2) is internally recessed in order to allow access to a gripping area of said first portion (50) and fixing means (34) for fixing said frame (3) and said first portion (50).

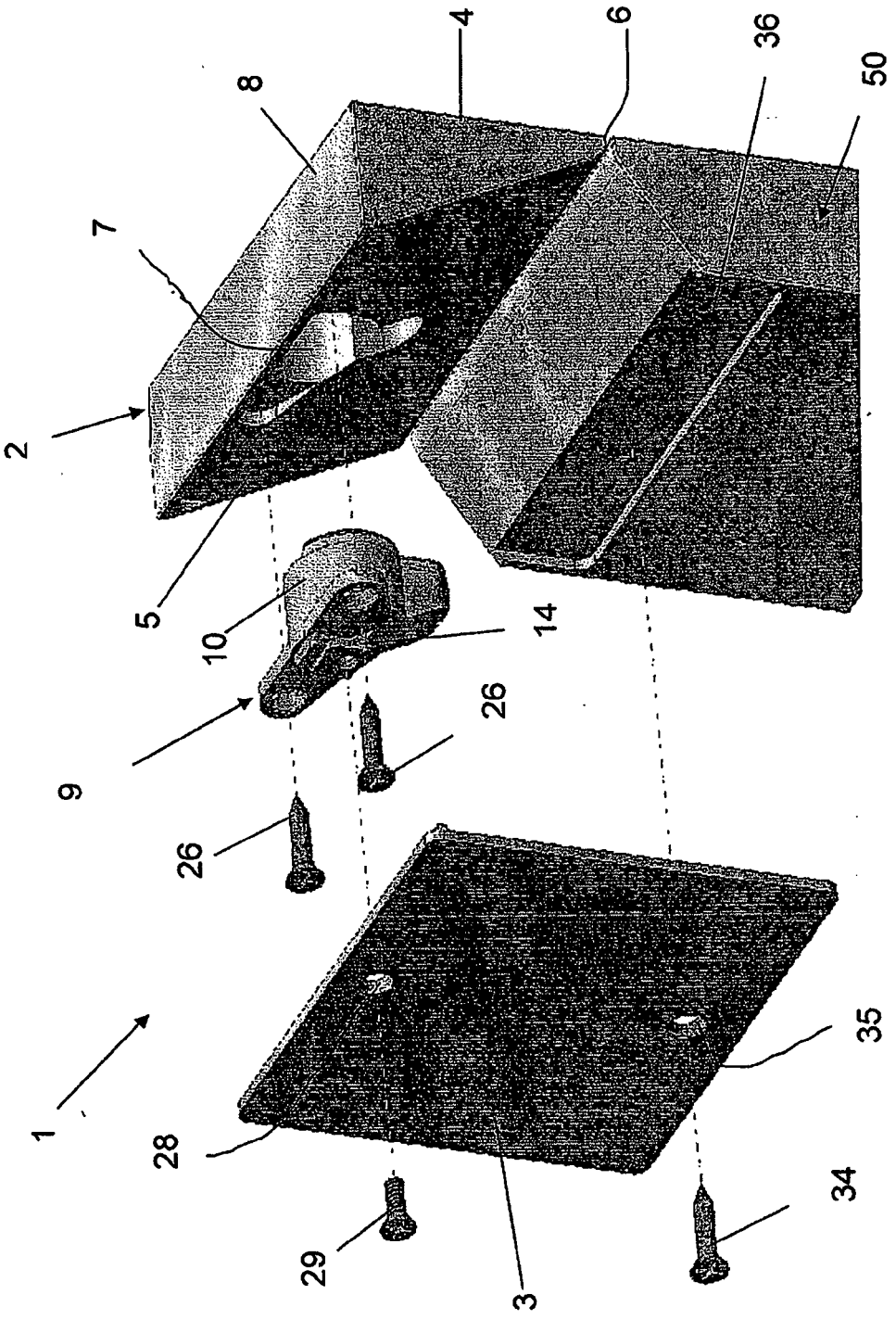


Fig. 1

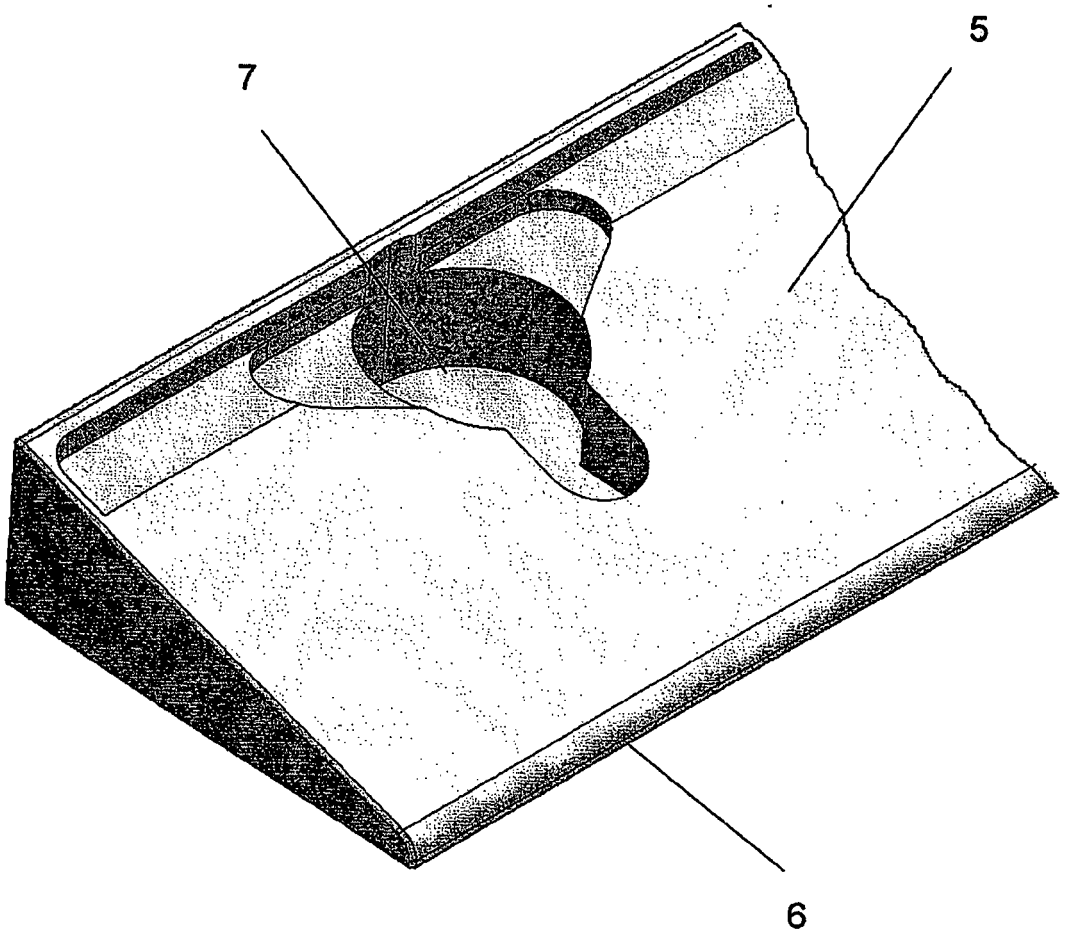


Fig. 2

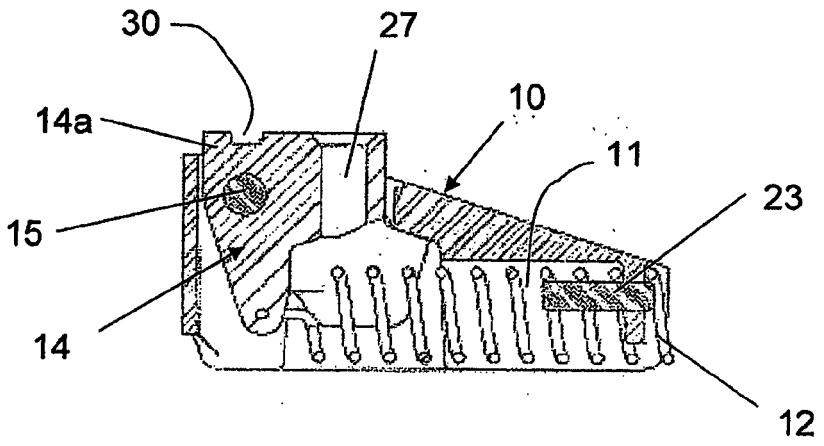
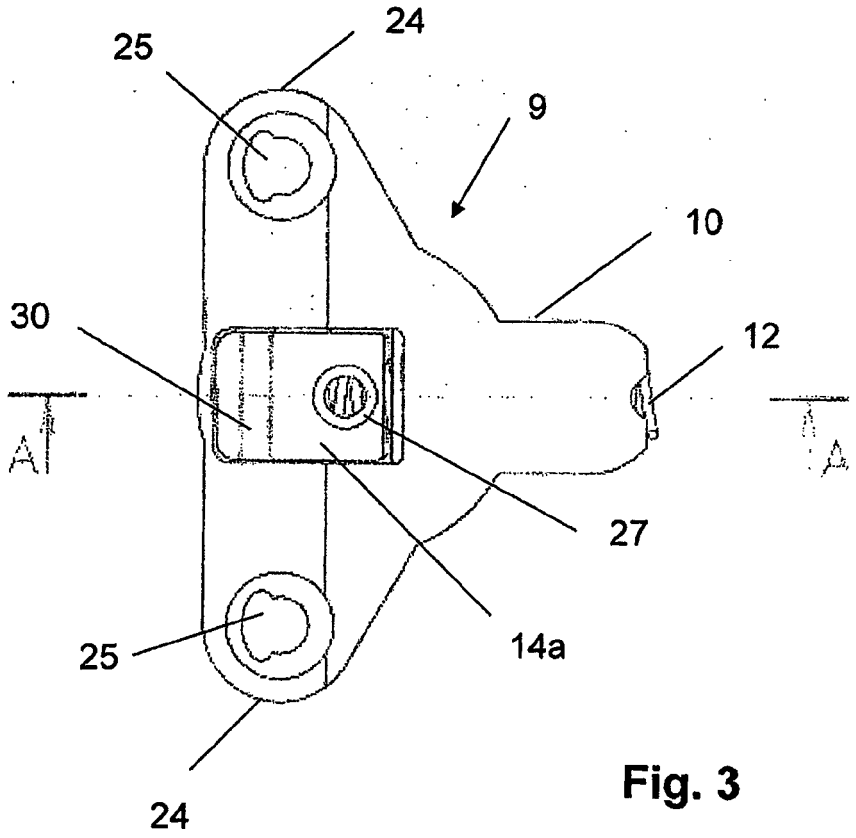


Fig. 4



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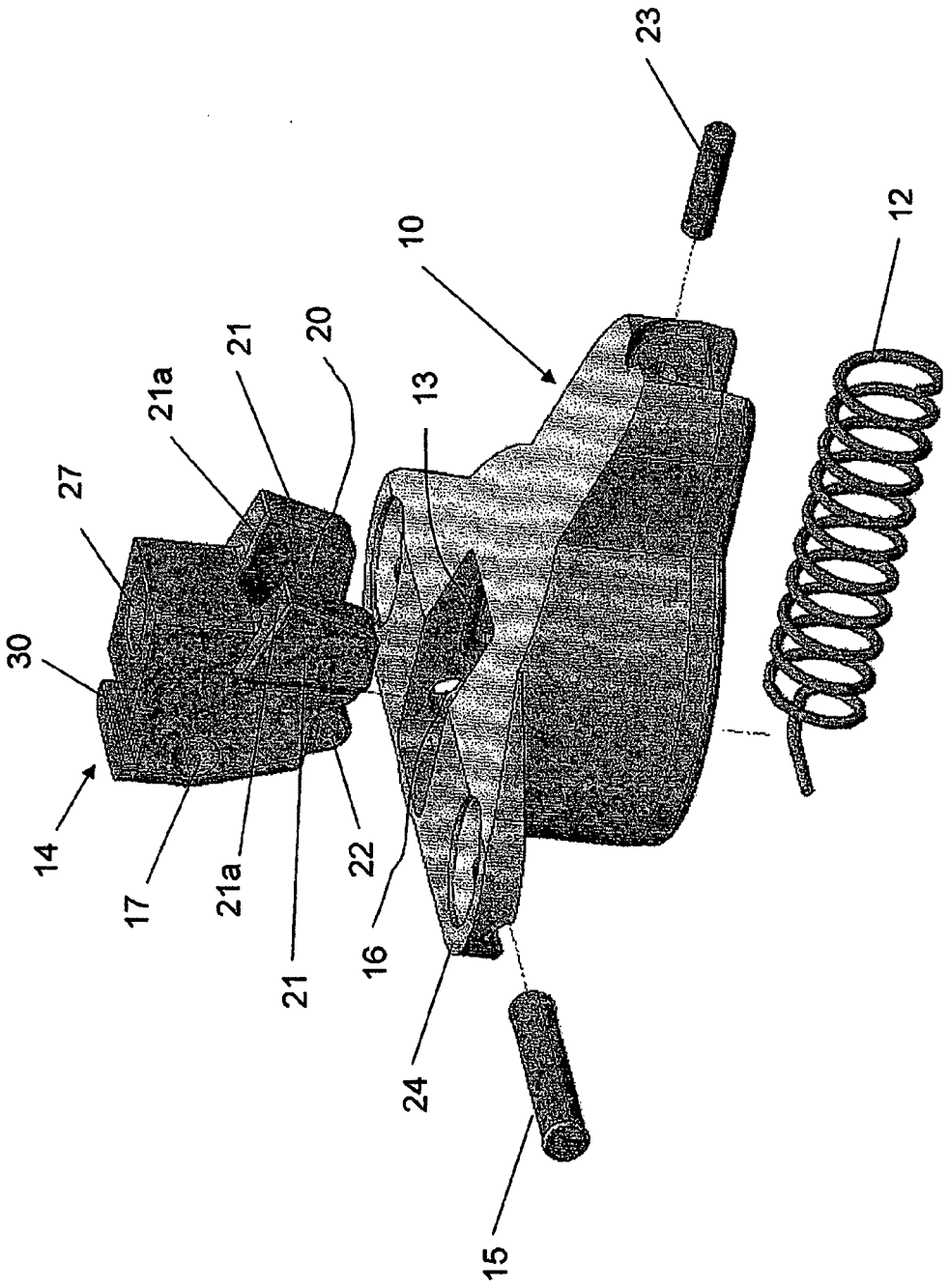

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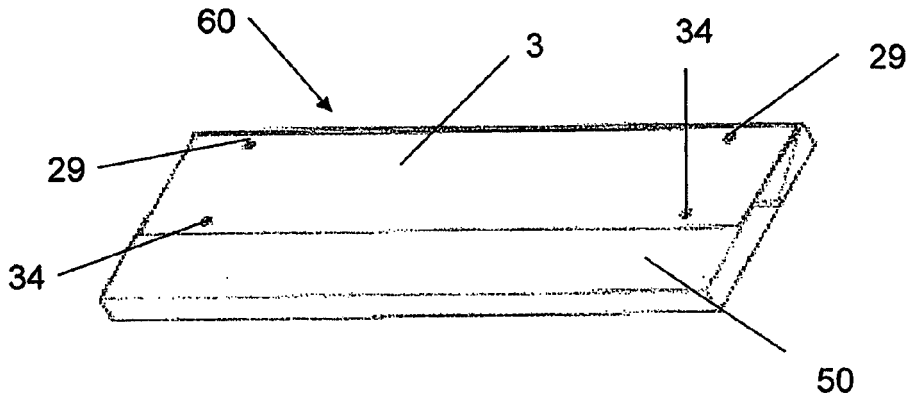

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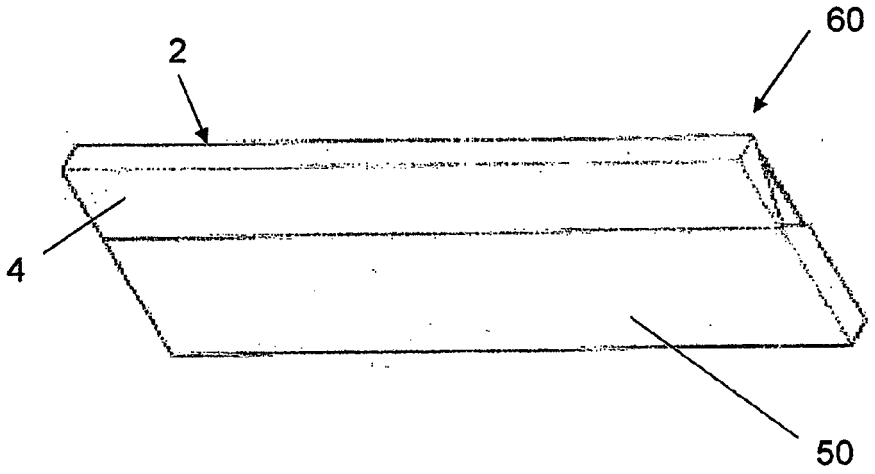

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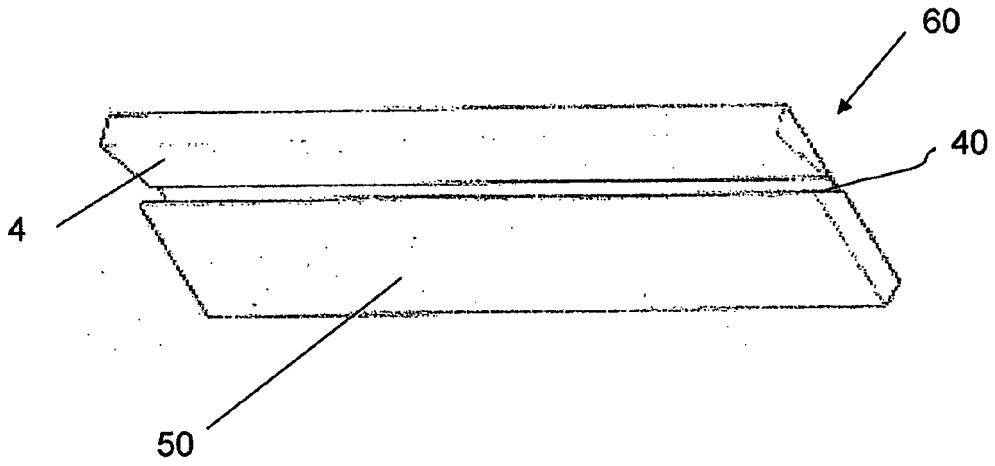

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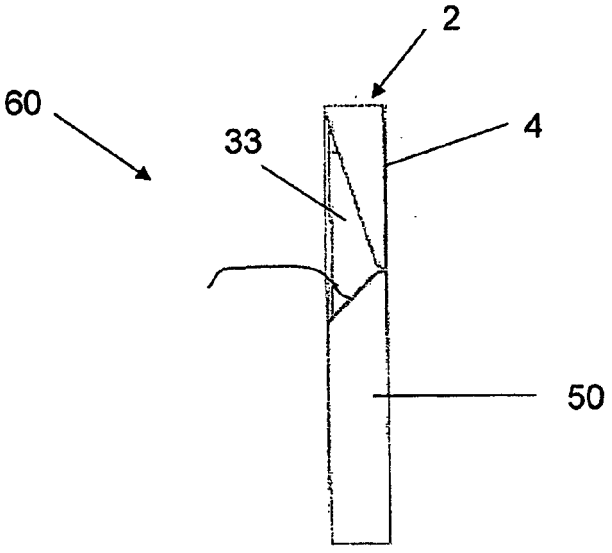

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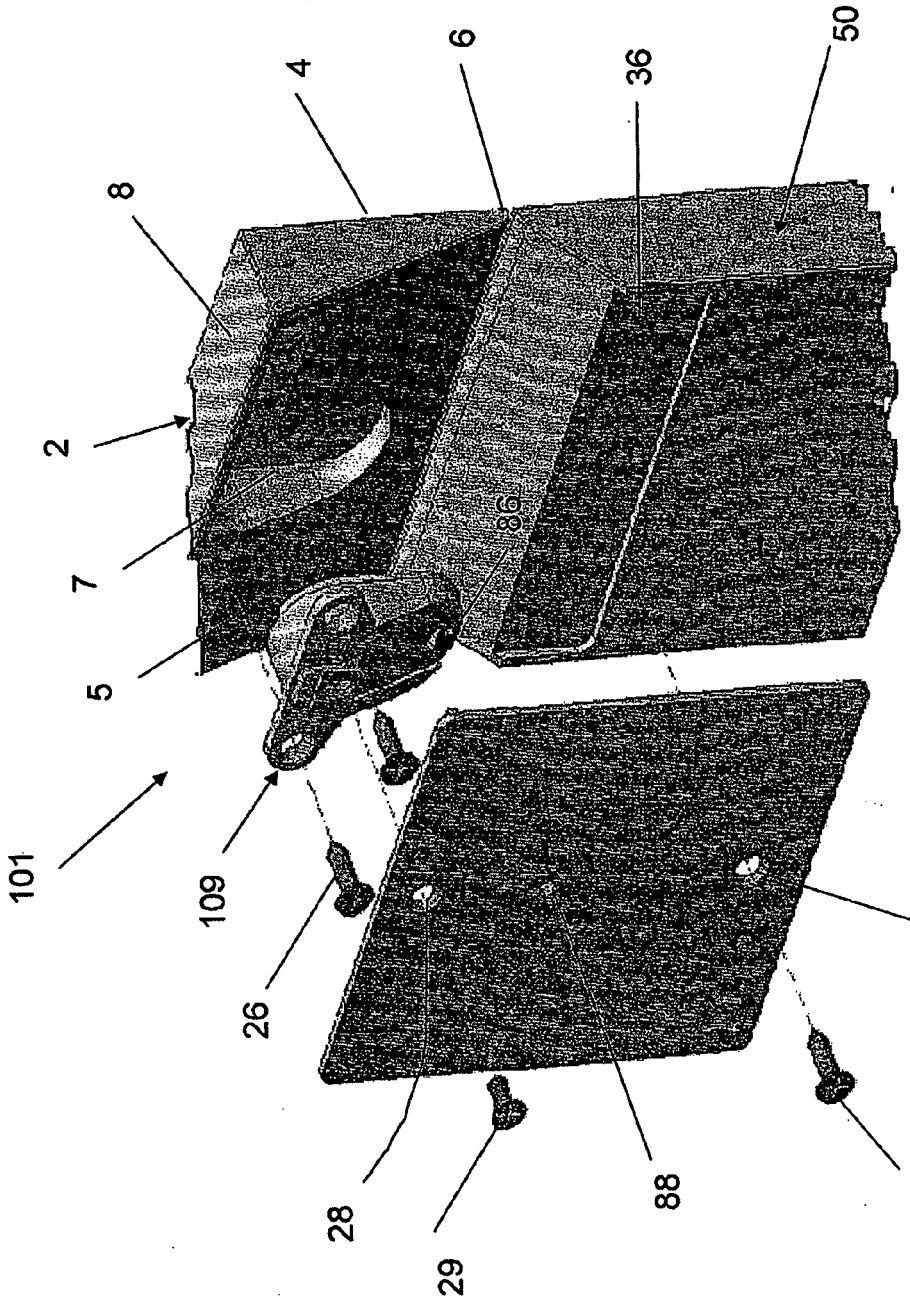

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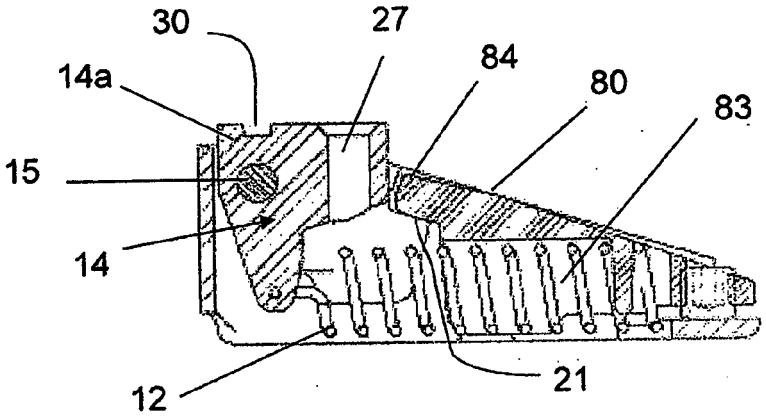

Fig. 12

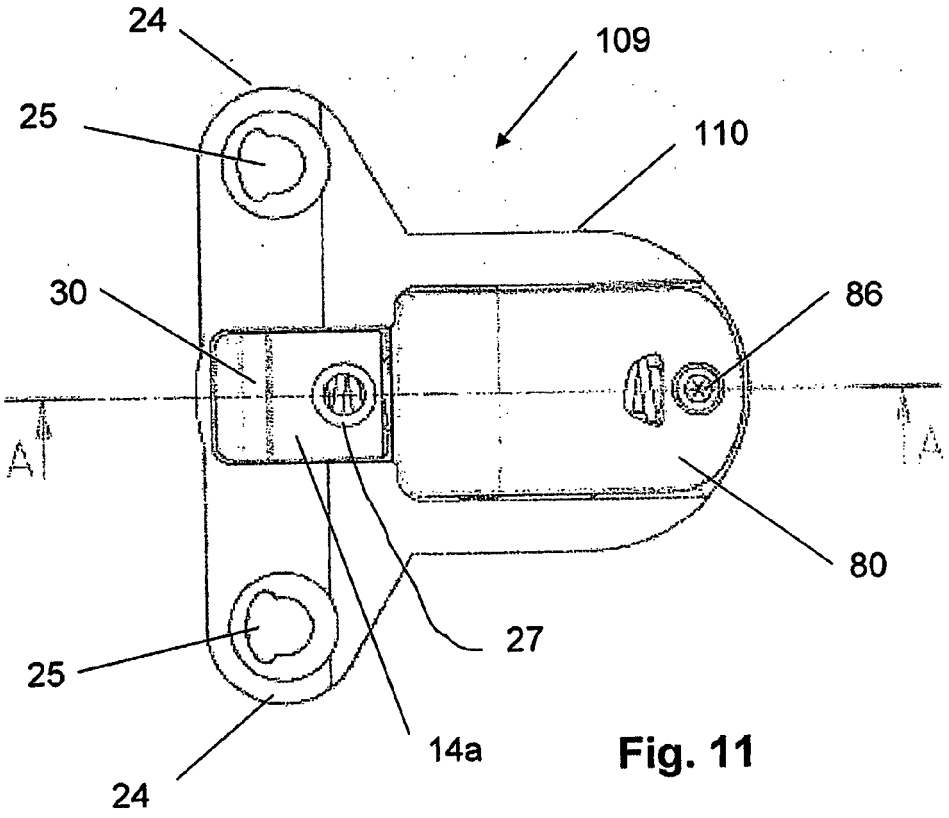

Fig. 11

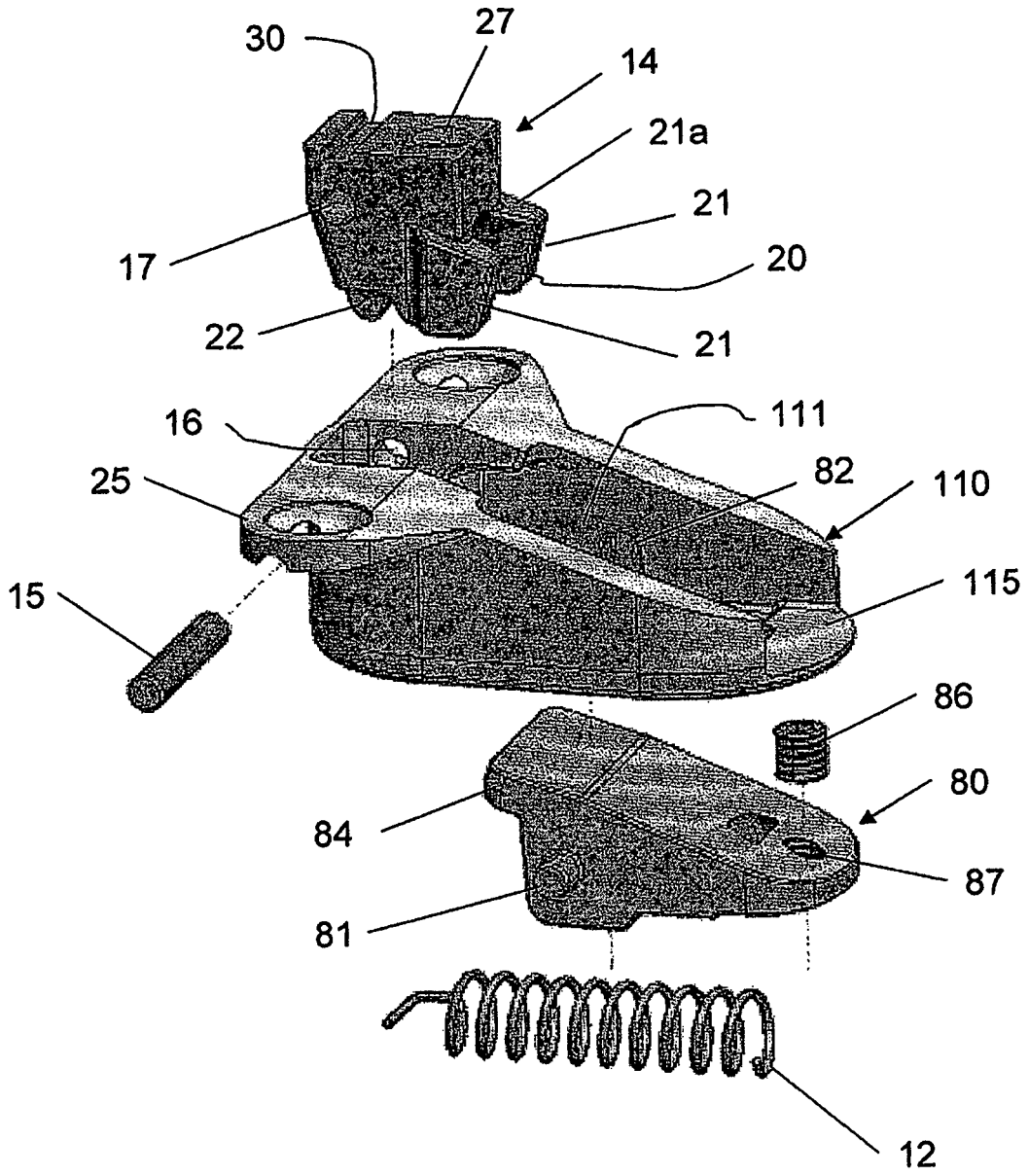

Fig. 13

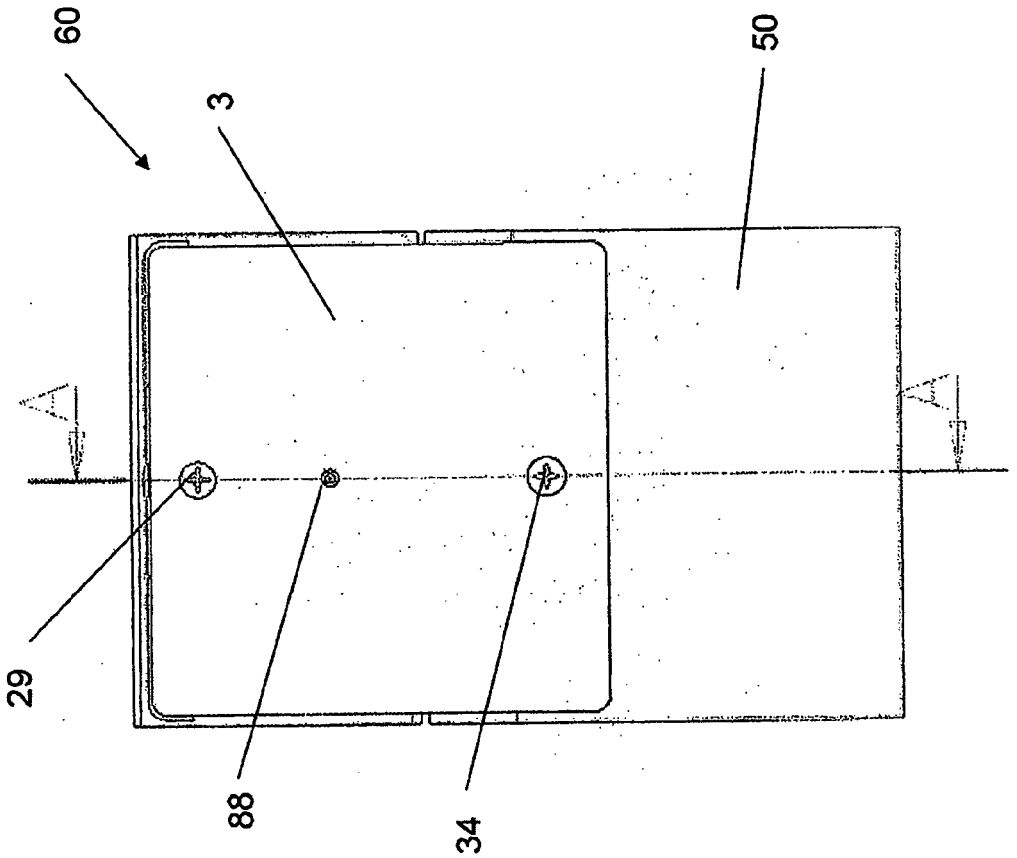

Fig. 14

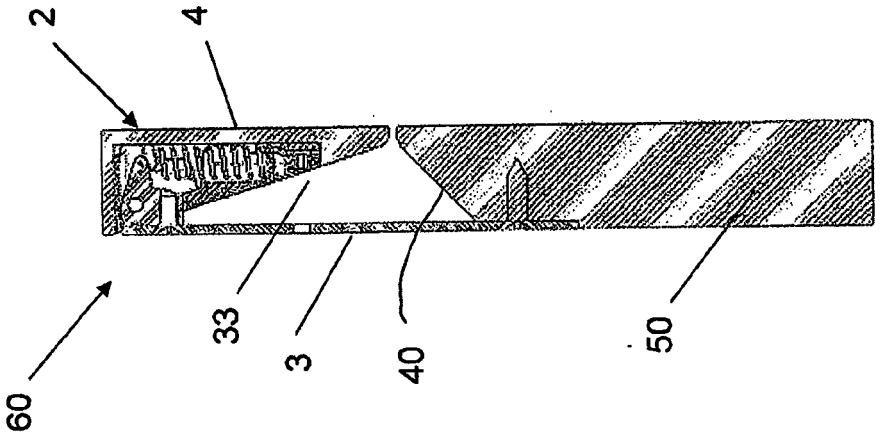

Fig. 15

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EUROPEAN SEARCH REPORT

Application Number
EP 11 42 5100

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 203 15 860 U1 (ELESA SPA [IT]) 24 December 2003 (2003-12-24) * the whole document * -----	1-7	INV. A47B95/02
X	FR 2 409 458 A1 (DIETRICH & CIE DE [FR]) 15 June 1979 (1979-06-15) * the whole document * -----	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

A47B
E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	29 July 2011	Kohler, Pierre

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