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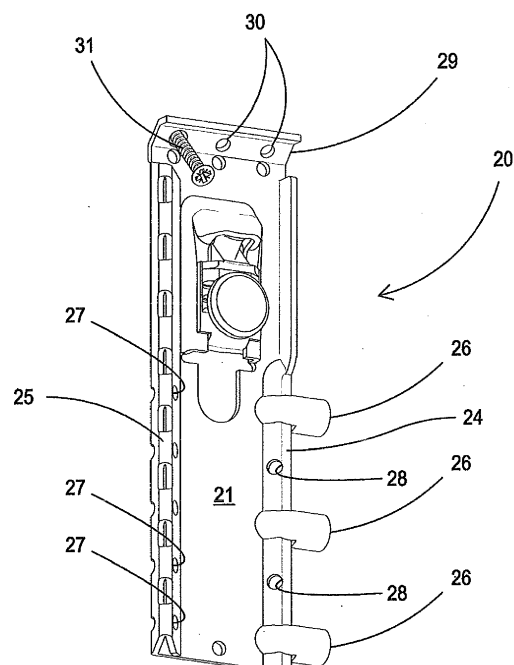
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(54) **HIDDEN HANGING BRACKET WITH PREASSEMBLED SCREWS FOR FIXING TO A WALL CUPBOARD**

(57) A hidden hanging bracket (20,120,220,320,420) with preassembled screws (31,131,231,331,431;131A,231A,-231B,331A,331B,431A,431B;) for fixing to a wall cupboard (M) with shoulders (S) and top (C), of the type consisting of a base (21,121,221,321,421) having a generally elongated rectangular configuration, the long sides of said base (21,121,221,321,421) being provided with respective edges (24,25;124,125;224,225;324,325;424,425) with respective holes (28,27;128,127;228,227;328,327;428,427) for the passage of self-threading screws (131A,231A,331A,431A;231B,331B,431B) for fixing the hanging bracket (20,120,220,320,420) to the shoulder (S) of the wall cupboard (M), the upper end of said base (21,121,221,321,421) also having a tilted flange (29,129,229,329,429) with holes (30,130,230,330,430) for the passage of self-threading screws (31,131,231,331,431) for fixing the hanging bracket (20,120,220,320,420) to the top (C) of the wall cupboard (M). According to the invention, a self-threading screw (31,131,231,331,431) is directly preassembled on at least one of said holes (30,130,230,330,430) of the flange (29,129,229,329,429), without the intervention of auxiliary assembly means.

Fig. 1



Description

[0001] The present invention relates to a hidden hanging bracket comprising one or more tilted screws for fixing to the top and possibly also to the shoulder of the wall cupboard.

[0002] Hidden hanging brackets are well-known to skilled persons in the field, structurally composed of a metallic base, having an elongated rectangular configuration, on which two regulation mechanisms of the position of the wall cupboard, respectively in height (vertical) and depth, are assembled.

[0003] Pins extend on a long side of the base, which are suitable for being inserted with interference inside corresponding holes of a shoulder of the wall cupboard, whereas holes are envisaged on the other long side, for the passage of self-threading screws suitable for being screwed into the shoulder of the wall cupboard, as an alternative to the above-mentioned pins.

[0004] Holes for the passage of self-threading screws can also be present between the above-mentioned pins.

[0005] A right hanging bracket and a left hanging bracket can therefore be fixed to the respective shoulders of the wall cupboard, either by means of the above pins (possibly combined with the screws arranged between them), or by means of the screws alone, as desired.

[0006] Hidden hanging brackets from the upper end of whose base a tilted flange extends, provided with holes for the passage of tilted self-threading screws for also fixing the hanging bracket to the top of the wall cupboard, are also known.

[0007] Hanging brackets of the type briefly described above are the object of patent applications PCT/EP/2011/001593 and PCT/EP/2012/001255 to which reference should be made for any further clarifications and which should be considered as being an integral part of the present invention.

[0008] Hanging brackets of the type described above are also known, with a base whose long sides are both provided either with pins for insertion with interference inside corresponding holes of the shoulders of the wall cupboard, or holes for the passage of self-threading screws for fixing the hanging bracket to the shoulder of the wall cupboard.

[0009] Holes between the pins for the passage of self-threading screws, can also be envisaged.

[0010] After fixing the hanging bracket to the respective shoulder, in order to fix it also to the top, the fitter must take one or more screws, direct them through the holes in the above tilted flange of the base and screw them into the top: this requires a certain skill, and in any case a certain amount of time that significantly affects the overall assembly time of a series of wall cupboards.

[0011] The fixing operation described above becomes even longer if holes between the pins are also used for fixing and screwing one or more self-threading screws into the shoulder of the wall cupboard.

[0012] An objective of the present invention is to provide

a hidden hanging bracket capable of overcoming the above drawback.

[0013] This objective is achieved by means of a hanging bracket having the characteristics specified in claim 1 and enclosed subclaims.

[0014] The structural and functional characteristics of the present invention and its advantages with respect to the known art will appear even more evident from the following description, referring to the enclosed drawings, which show five possible embodiments of a hanging bracket incorporating the innovative principles of the same invention.

[0015] In the drawings:

- figure 1 is a perspective view illustrating a hidden hanging bracket produced according to the present invention;
- figure 2 is a raised front view of the hanging bracket of figure 1;
- figure 3 is a raised side view according to the arrow F of figure 2;
- figure 4 is a sectional view taken according to the line A-A of figure 2;
- figure 5 is an enlarged detail of figure 4;
- figures 6, 6a and 6b illustrate the assembly modes of the hanging bracket of figures 1-5 to a wall cupboard;
- figures 7-11 are views similar to figures 1-5 illustrating a second possible embodiment of the invention;
- figure 12 is a plan view according to the arrow F1 of figure 8;
- figure 13 is a sectional view taken according to the line C-C of figure 8;
- figures 14, 14a, 14b, 14c and 14d illustrate the assembly modes of the hanging bracket of figures 7-13 to a wall cupboard;
- figures 15, 16 and 17 are perspective views respectively illustrating a further three possible embodiments of the invention.

[0016] With reference first of all to figures 1-6 of the drawings, which illustrate a first embodiment of the invention, a hidden hanging bracket is indicated as a whole with 20 and is structurally composed of a metallic base 21 having an elongated rectangular form.

[0017] Two mechanisms 22, 23 for respectively regulating the height and depth of the cupboard mounted on a wall, are assembled on said base 21.

[0018] Said mechanisms are not described in detail herein as they can be of any known type, as described, for example, in patent applications PCT/EP/2011/001593 and PCT/EP/2012/001255.

[0019] The hanging bracket 20 is destined for being fixed to the shoulder S and to the top C of a wall cupboard M, and possibly also to a lining 19.

[0020] For this purpose, the long sides of the base 21 have respective edges 24, 25 provided with fixing means of the hanging bracket to the respective shoulder of the

wall cupboard.

[0021] More specifically, said fixing means consist of pins 26, extending from the edge 24, and from holes 27 - for the passage of self-threading screws (not shown) - formed through the edge 25.

[0022] Holes 28 for the passage of self-threading screws (not shown) for additionally fixing the hanging bracket 20 to the shoulder S are also formed in the edge 24, between said pins 26.

[0023] A hidden hanging bracket 20 structured as described and illustrated above, is either right or left, i.e. it can be fixed to the right shoulder or to the left shoulder of the wall cupboard using either pins or screws.

[0024] In addition, a tilted flange 29 provided with holes 30 for the passage of tilted self-threading screws 31, extends from the upper end of the base 21 for fixing the hanging bracket 20 also to the top C of the wall cupboard M.

[0025] The hidden hanging bracket 20 described so far is well-known to skilled persons in the field of technical furniture accessories.

[0026] According to the present invention, at least one screw 31 (one or more screws 31) is pre-assembled directly in the respective hole 30, i.e. without the intervention of further elements applied to the flange 29, through which (additional elements) said screw 31 is screwed (according to the known art).

[0027] More specifically, as clearly illustrated in the detail of figure 5, one or more of said holes 30 comprise a bush 32 integrally formed from the flange 29 by means of drawing.

[0028] The tip of the screw 31 is screwed through said bush 32 (pointed), with interference, so that it is pre-assembled on the hanging bracket.

[0029] In this way, the fixing operation of the hanging bracket 20, also to the top C of the wall cupboard, is greatly facilitated ((figures 6, 6a, 6b).

[0030] Figures 7-14 of the drawings show a second possible embodiment of the invention in which the same and/or equivalent components to those illustrated in figures 1-6 are indicated with the same reference numbers increased by 100.

[0031] According to this further embodiment of the invention, one or more of the holes 128 also comprise a bush 132 for the passage of a screw 131, when the hanging bracket 120 is to be fixed to the shoulder S, not only by means of the pins 126, but also by means of one or more self-threading screws 131A (figures 14, 14a, 14b, 14c, 14d).

[0032] Figure 15 of the drawings illustrates a third possible embodiment of the invention in which the same and/or equivalent components to those illustrated in figures 1-6 are indicated with the same reference numbers increased by 200.

[0033] According to this third embodiment of the invention, the hidden hanging bracket 220 comprises a pair of screws 231 pre-assembled at the opposite ends of the flange 230 and screws 231A and 231B pre-assembled

on the edges 224 and 225 respectively of the base 221.

[0034] In this way, the fitter unscrews (removes) the screws 231B, and possibly also the screw 231A and the corresponding screw 231, if pins 226 are used for fixing the hanging bracket 220 to the shoulder S of the wall cupboard.

[0035] If, on the other hand, the screws 231B are used for fixing the hanging bracket 220 to the shoulder S, the screw 231A and possibly also the corresponding screw 231 will be unscrewed (removed).

[0036] Figure 16 of the drawings illustrates a fourth possible embodiment of the invention in which the same and/or equivalent components to those illustrated in figures 1-6 are indicated with the same reference numbers increased by 300.

[0037] The hidden hanging bracket illustrated in figure 16 comprises a pair of screws 331 pre-assembled at the opposite ends of the flange 330 and screws 331A and 331B pre-assembled on the edges 324 and 325 respectively of the base 321.

[0038] It is evident to skilled persons in the field that the hanging bracket 320 illustrated, is either right or left, using only fixing screws, and not pins on one side and screws on the opposite side, as in the embodiment described above.

[0039] In this way, the fitter eliminates the screw 331A, or the screw 331B, i.e. that which is not necessary, and possibly also the corresponding screw 331, on the flange 330.

[0040] Figure 17 of the drawings illustrates a fifth possible embodiment of the invention in which the same and/or equivalent components to those illustrated in figures 1-6 are indicated with the same reference numbers increased by 400.

[0041] The hidden hanging bracket illustrated in figure 17 comprises a pair of screws 431 pre-assembled at the opposite ends of the flange 430 and screws 431A and 431B pre-assembled on the edges 424 and 425 respectively of the base 421.

[0042] Also in this case, it is evident that the hanging bracket illustrated, is either right or left, using pins 426 and screws 431A and 431B for fixing it to the shoulder S on both sides 424 and 425.

[0043] In this way, the fitter eliminates the screw 431A, or the screw 431B, i.e. that which is not necessary, and possibly also the corresponding screw 431, on the flange 430.

[0044] The objective mentioned in the preamble of the description has therefore been achieved.

[0045] The protection scope of the invention is defined by the enclosed claims.

Claims

1. A hidden hanging bracket (20, 120, 220, 320, 420) with screws (31, 131, 231, 331, 431; 131A, 231A, 231B, 331A, 331B, 431A, 431B;) preassembled for being

- fixed to a wall cupboard (M) with shoulders (S) and top (C), of the type consisting of a base (21,121,221,321,421) having a generally elongated rectangular configuration, the long sides of said base (21,121,221,321,421) being provided with respective edges (24,25;124,125;224,225;324,325;424,425) with respective holes (28,27;128,127;228,227;328,327;428,427) for the passage of self-threading screws (131A,231A,331A,431A;231B,331B,431B) for fixing the hanging bracket (20,120,220,320,420) to the shoulder (S) of the wall cupboard (M), the upper end of said base (21,121,221,321,421) also having a tilted flange (29, 129, 229, 329, 429) with holes (30, 130,230,330,430) for the passage of self-threading screws (31,131,231,331,431) for fixing the hanging bracket (20,120,220,320,420) to the top (C) of the wall cupboard (M), **characterized in that** a self-threading screw (31,131,231,331,431) is directly preassembled on at least one of said holes (30, 130, 230, 330, 430) of the flange (29,129,229,329,429), without the intervention of auxiliary assembly means.
2. The hanging bracket according to claim 1, **characterized in that** said screw (31,131,231,331,431) is preassembled directed inside a bush (32,132,232,332,432) formed integrally from said hole (30,130,230,330,430).
3. The hanging bracket according to claim 1, **characterized in that** a self-threading screw (131A,231A,331A,431A; 231B,331B,431B) is preassembled on one or more of said holes (127,128,227,228,327,328,427,428).
4. The hanging bracket according to claim 3, **characterized in that** said self-threading screws (131A,231A,331A,431A;231B,331B,431B) are preassembled directed inside a bush (132,232,332,432) formed integrally from said edges (124,125,224,225,324,325,424,425).
5. The hanging bracket according to any of the previous claims, **characterized in that** pins (26,126,226,326,426) extending from the edges (124,125,224,225,324,325, 424,425) are envisaged between said holes (28, 128, 228, 328, 428) .
6. The hanging bracket according to any of the previous claims, **characterized in that** it comprises a base (21,121,221,321,421) with long sides comprising respective edges (24,25,124,125,224,225,324,325,424,425) with pins (26, 126, 226, 326, 426) and holes (28, 128, 228, 328, 428) between said pins (26, 126, 226, 326, 426) and with holes (27,127,227,327,427), a tilted flange (29,129,229,329, 429) with holes (30, 130,230,330,430) extending from the upper ends of said base (21,121,221,321,421).
7. The hanging bracket according to any of the previous claims, **characterized in that** it comprises a base (21,121,221,321,421) with long sides comprising respective edges (24,25,124,125,224,225,324,325,424,425) provided with respective holes (28,27,128,127,228,227, 328,327,428,427), a tilted flange (29,129,229,329,429) with holes (30,130,230,330,430) extending from the upper end of said base (21,121,221,321,421).
8. The hanging bracket according to any of the previous claims, **characterized in that** it comprises a base (21,121,221,321,421) with long sides comprising respective edges (24,25,124,125,224,225,324,325,424,425) with pins (26,126,226,326,426) between which holes (28,27, 128,127,228,227,328,327,428,427) are envisaged, a tilted flange (29,129,229,329,429) with holes (30,130,230, 330,430) extending from the upper ends of said base (21,121,221,321,421).

Fig. 1

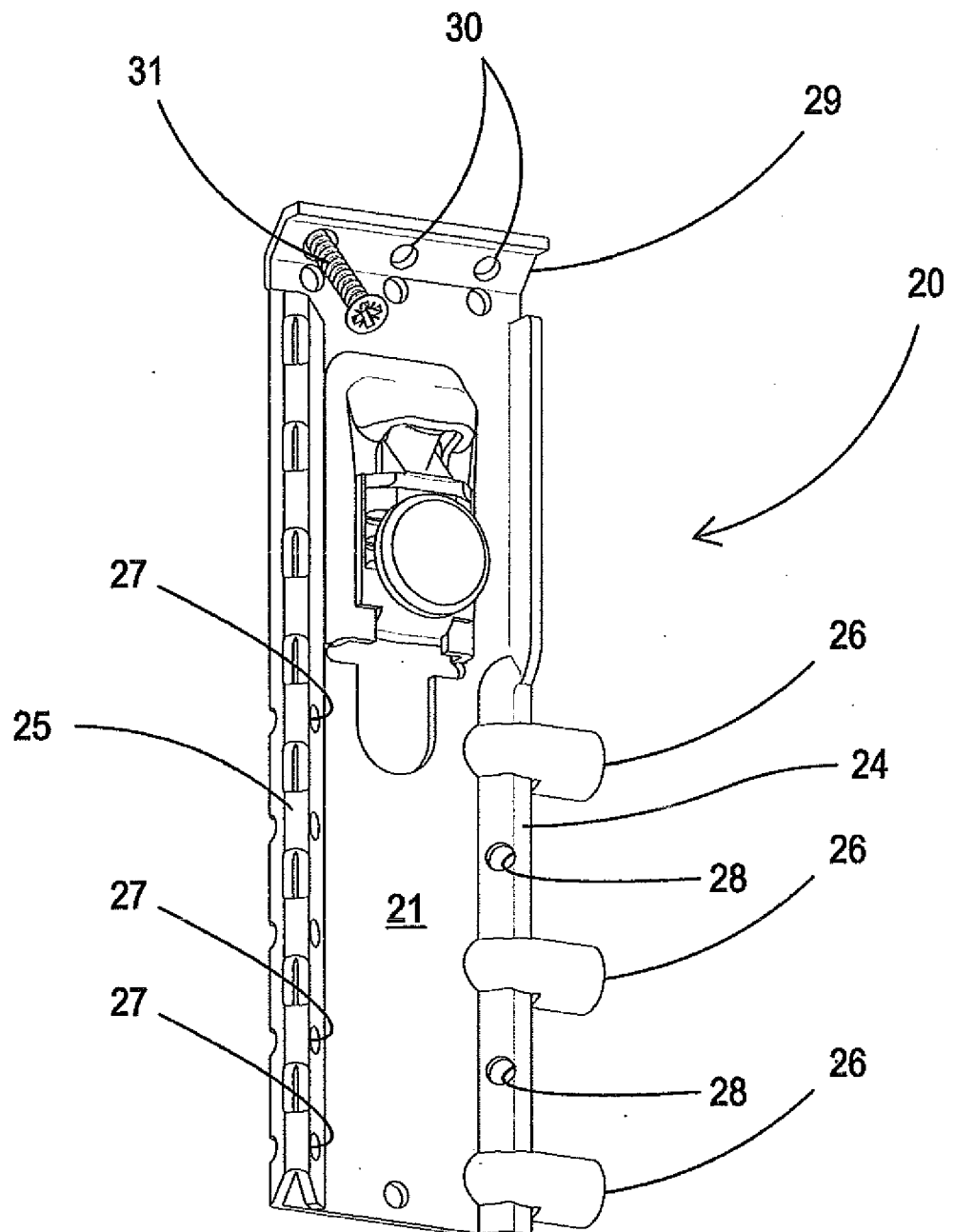
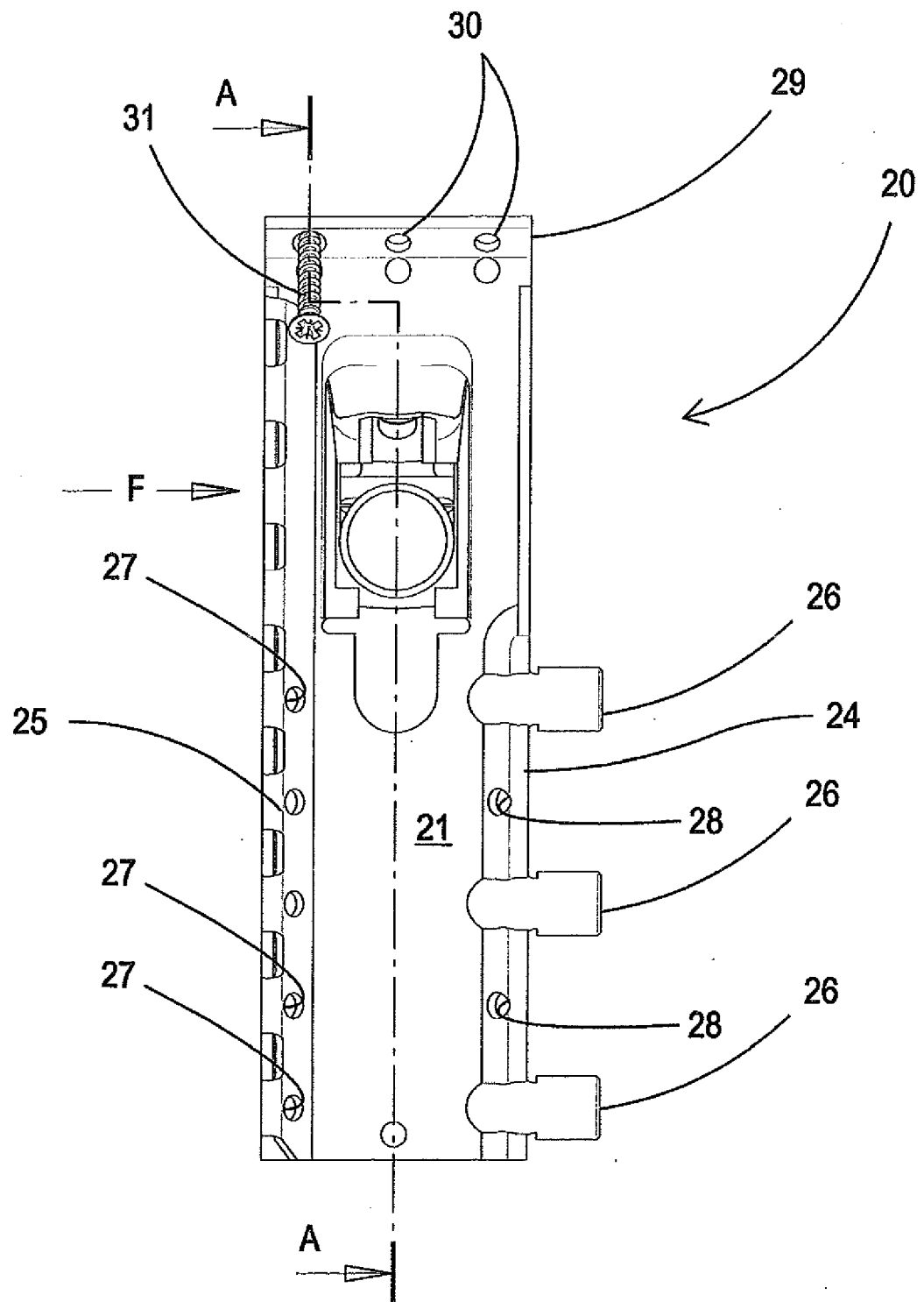


Fig. 2



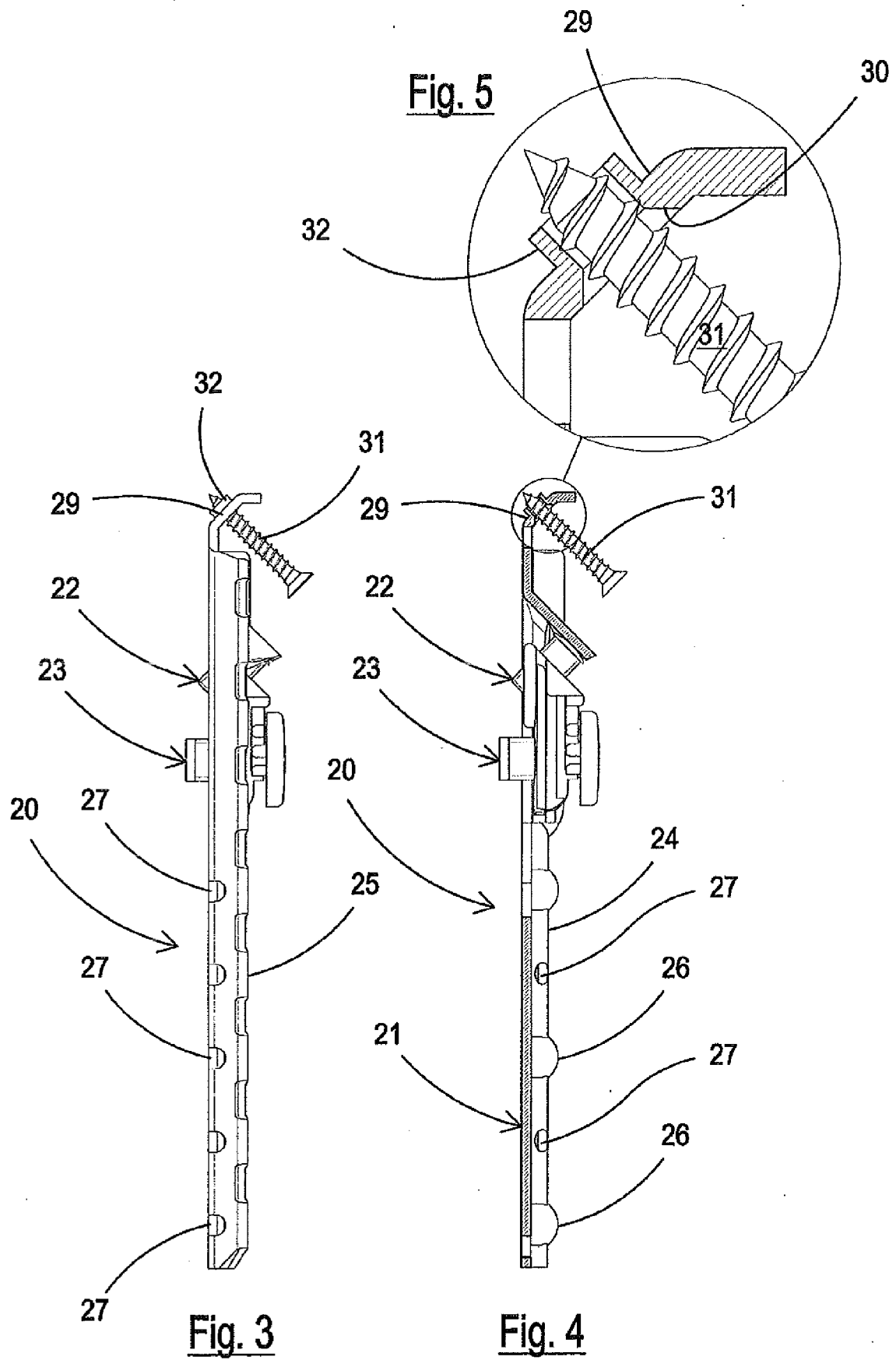


Fig. 6

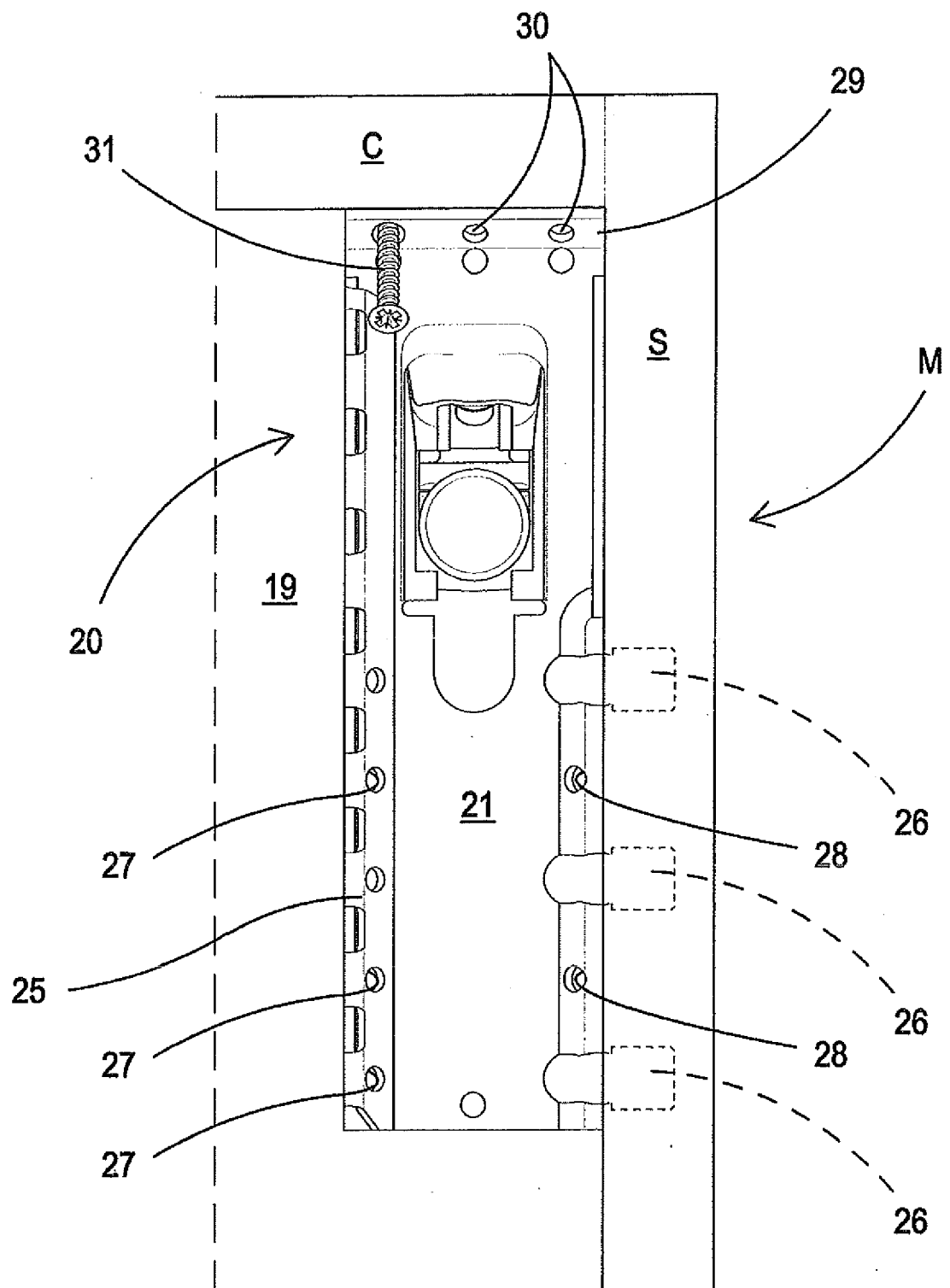


Fig. 6a

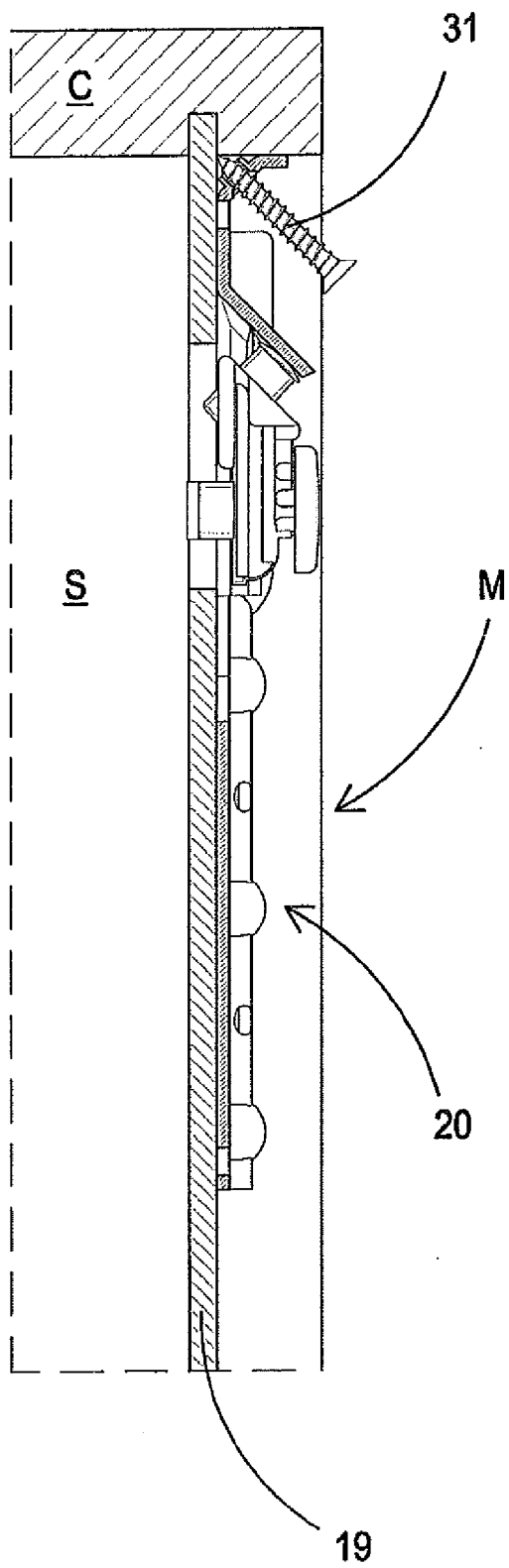


Fig. 6b

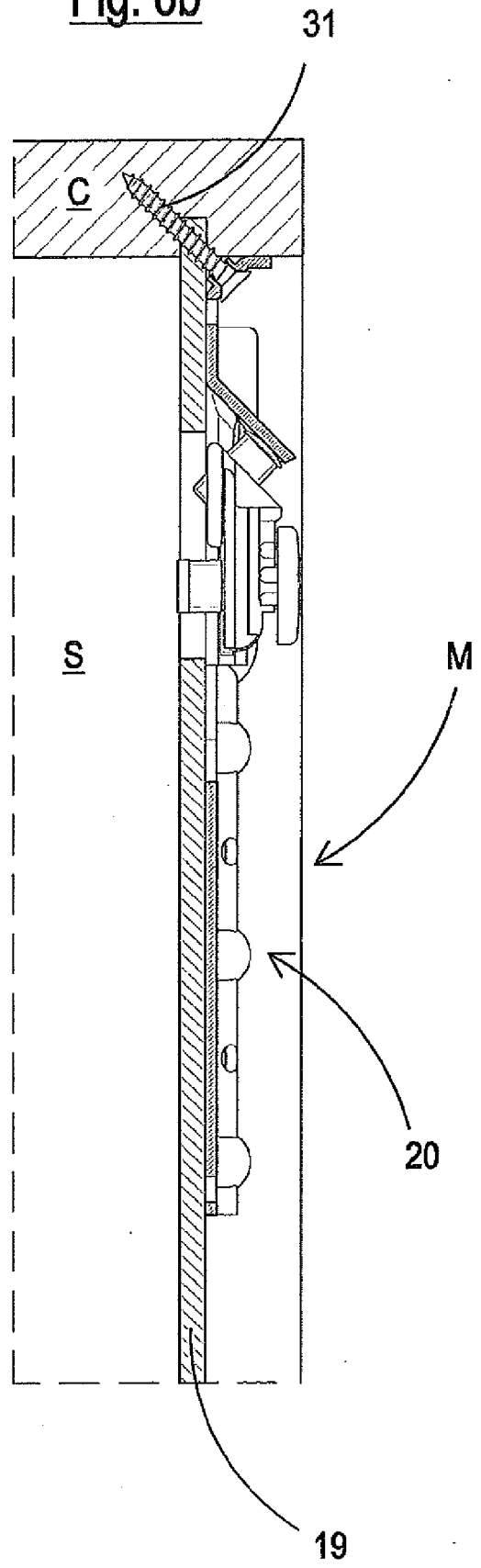


Fig. 7

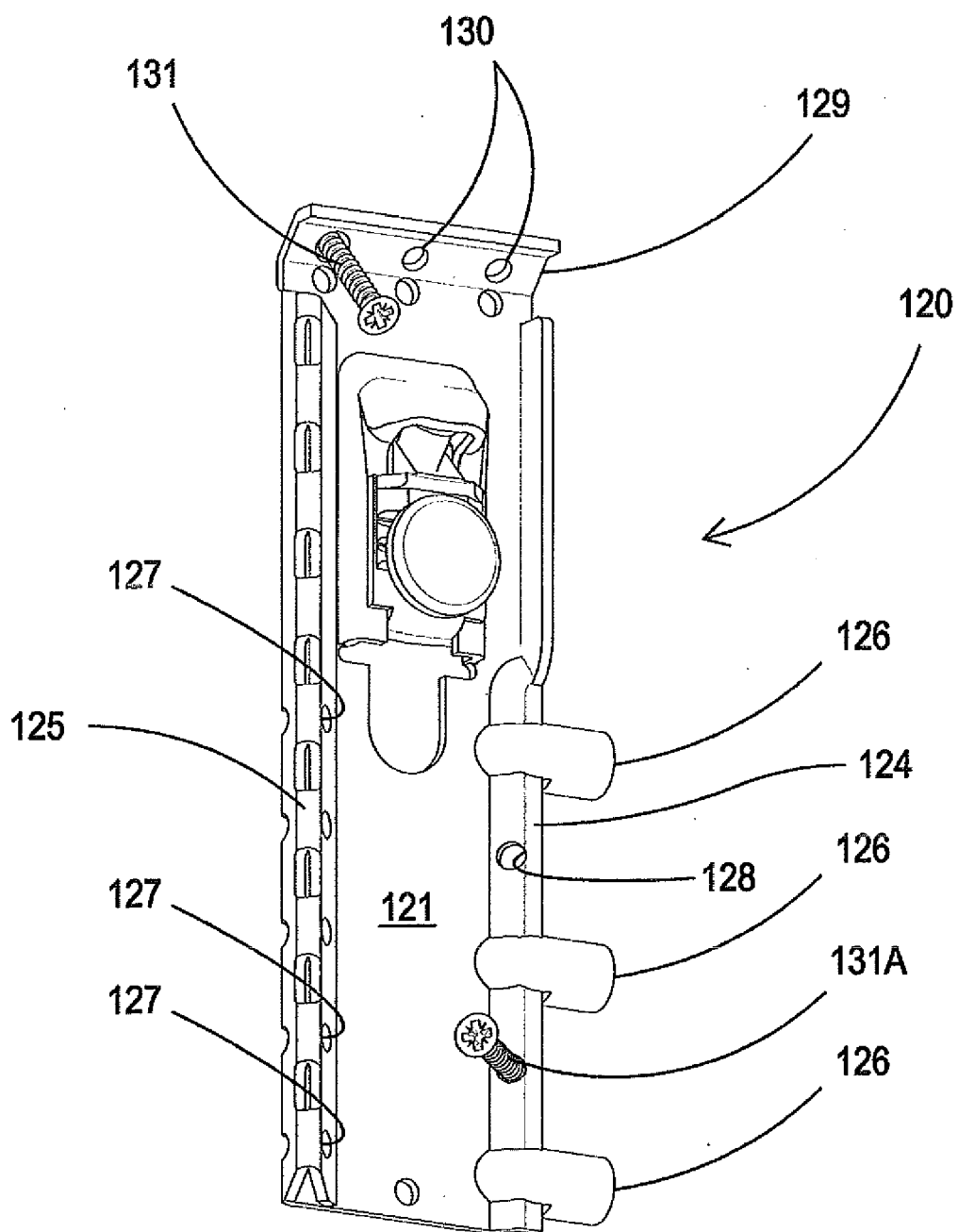
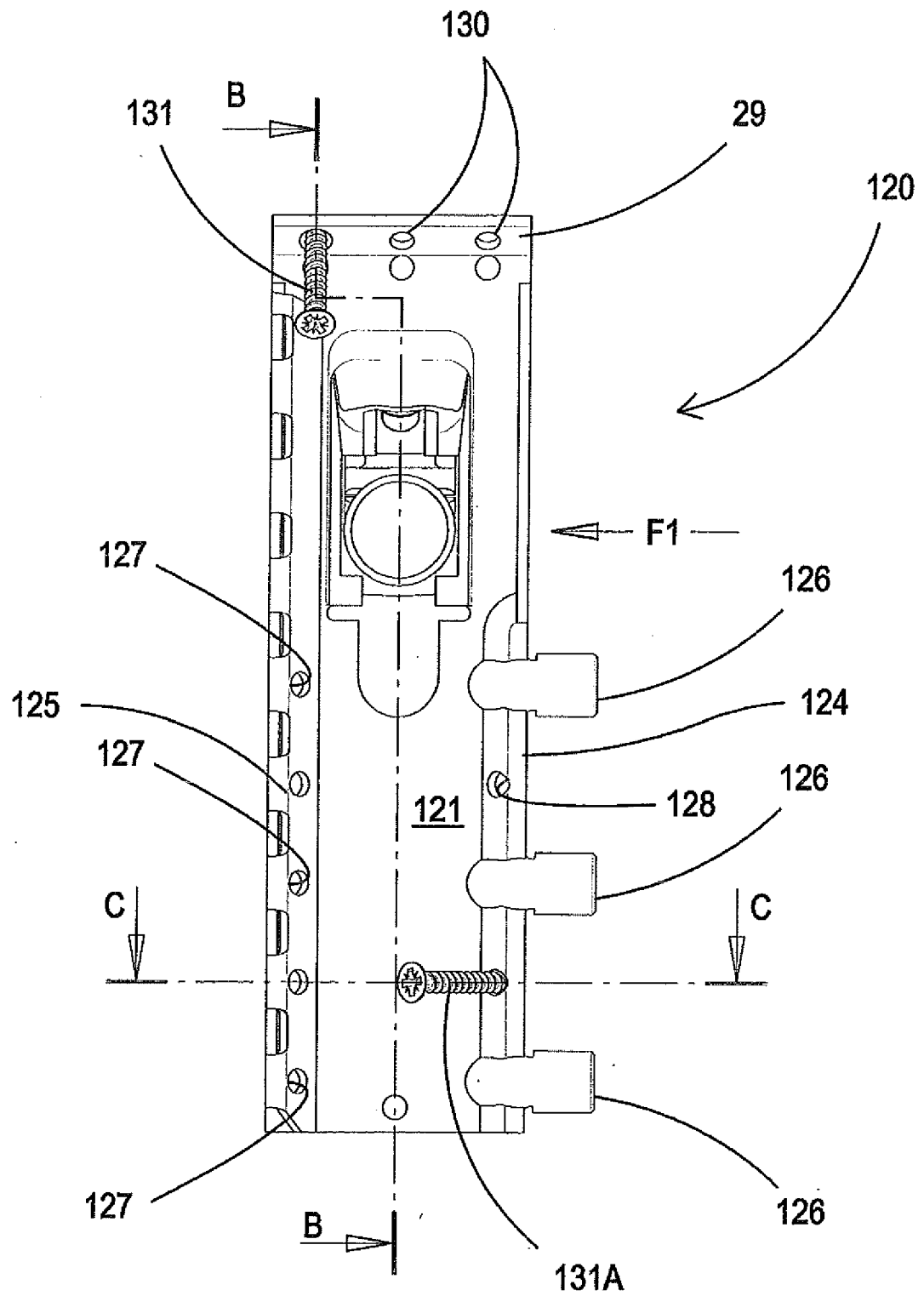


Fig. 8



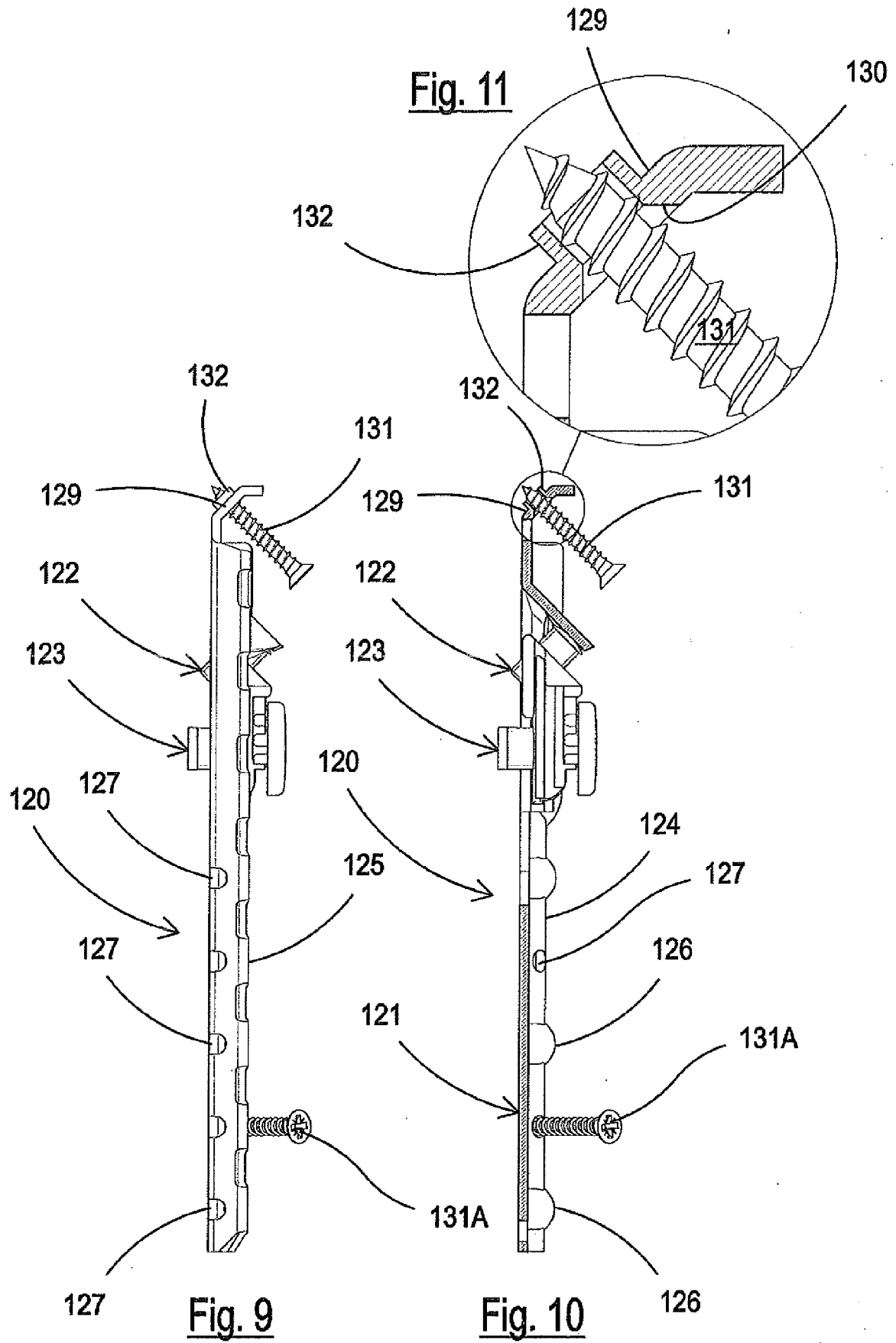


Fig. 12

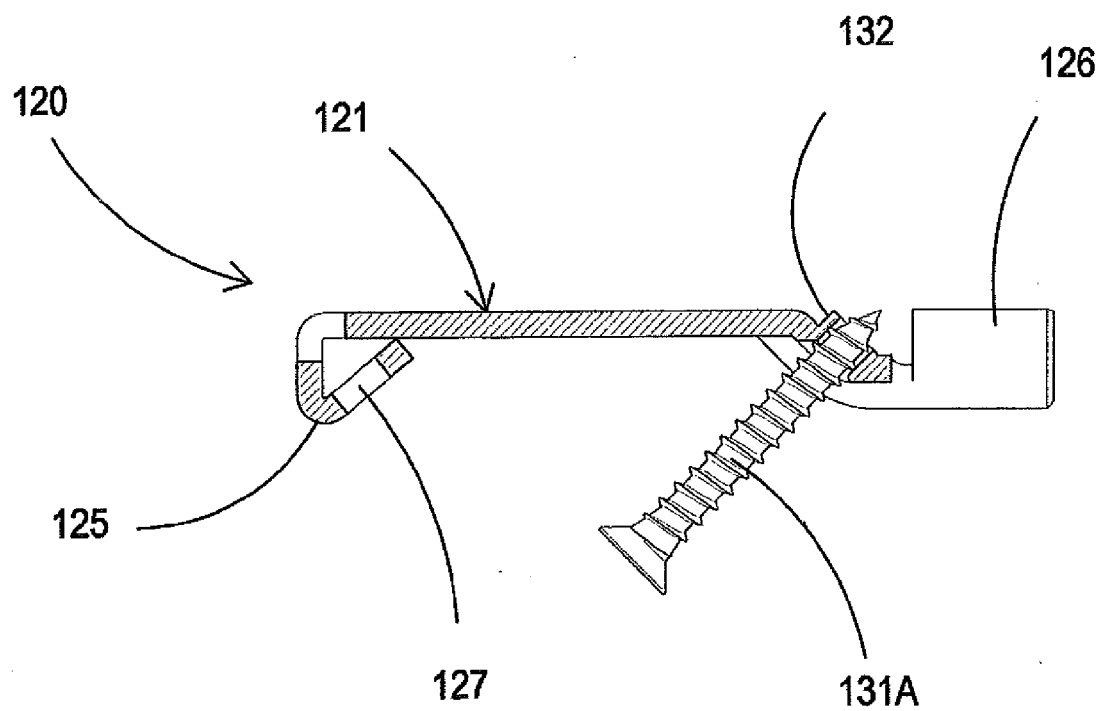
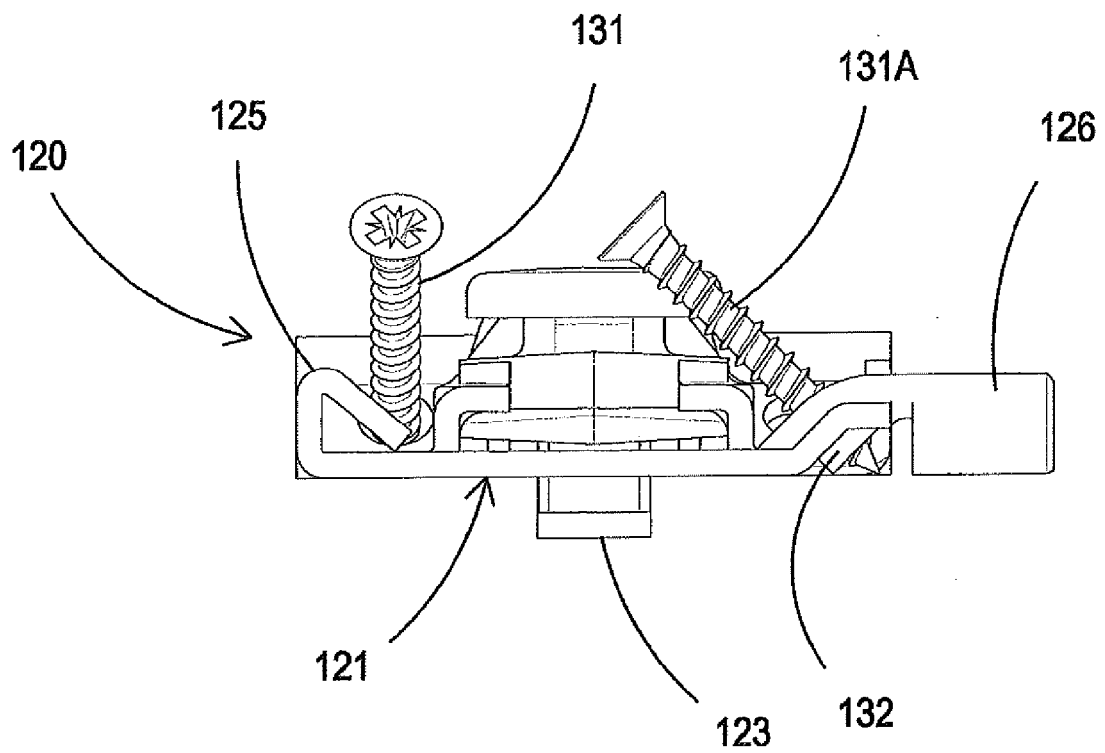


Fig. 13

Fig. 14

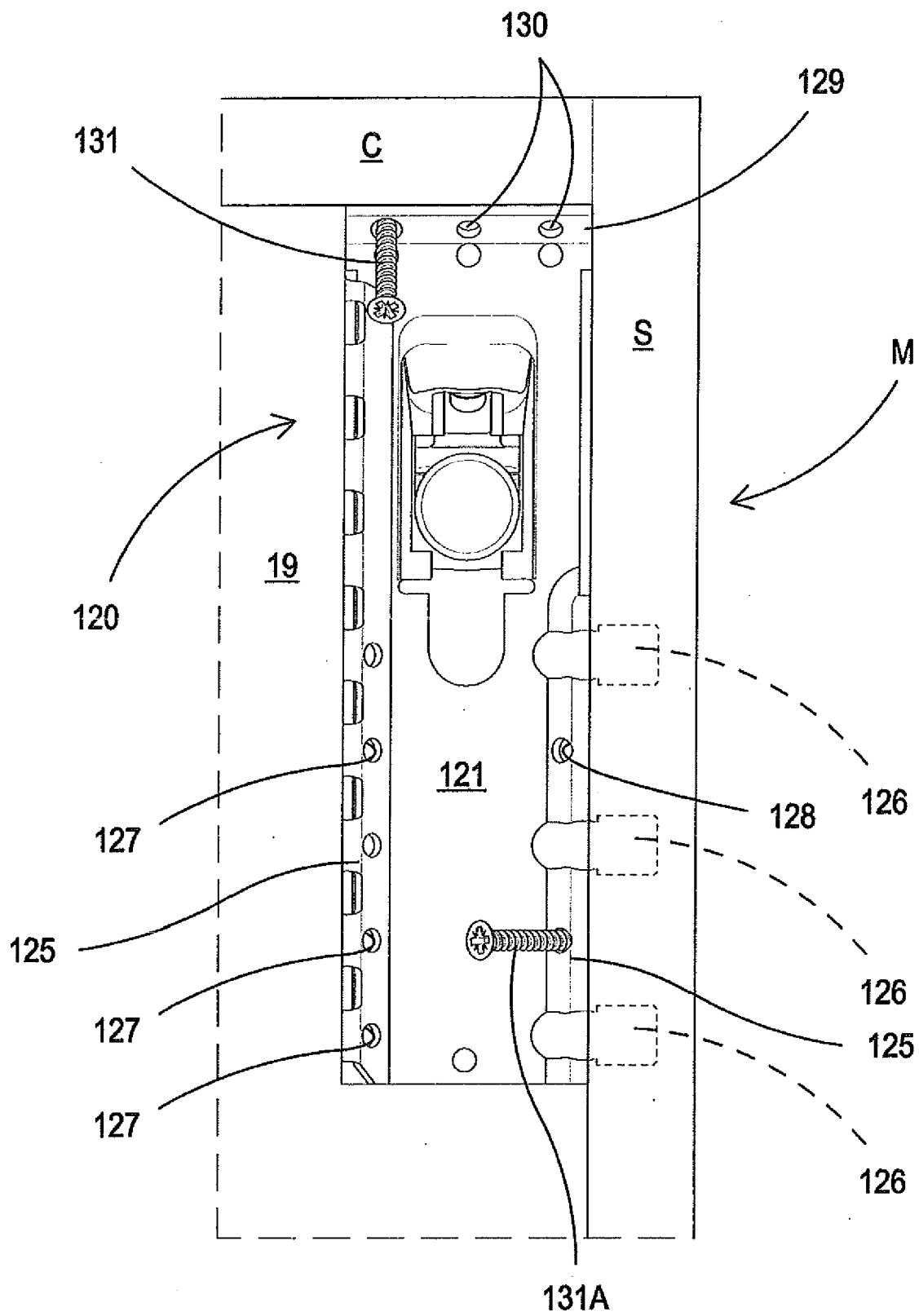


Fig. 14a

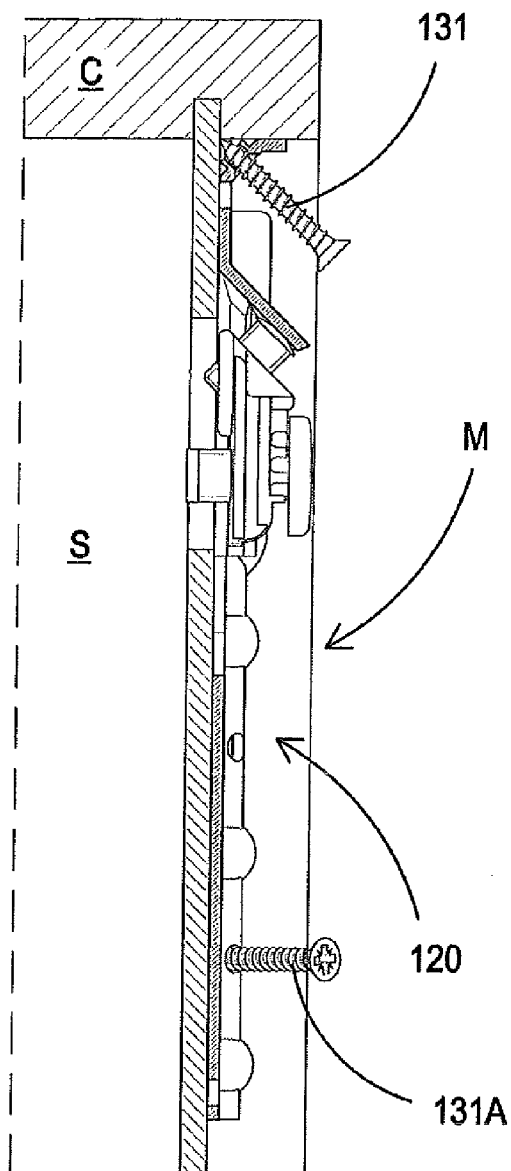


Fig. 14b

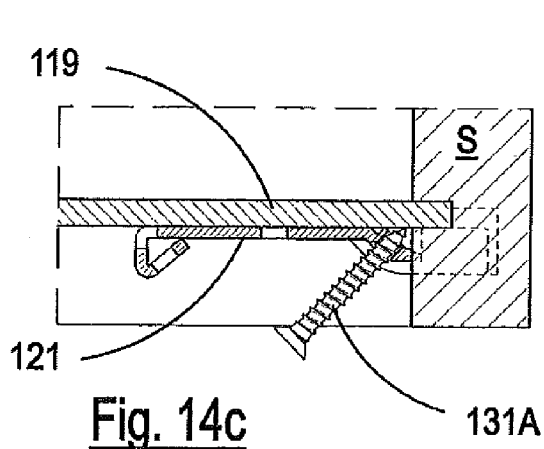
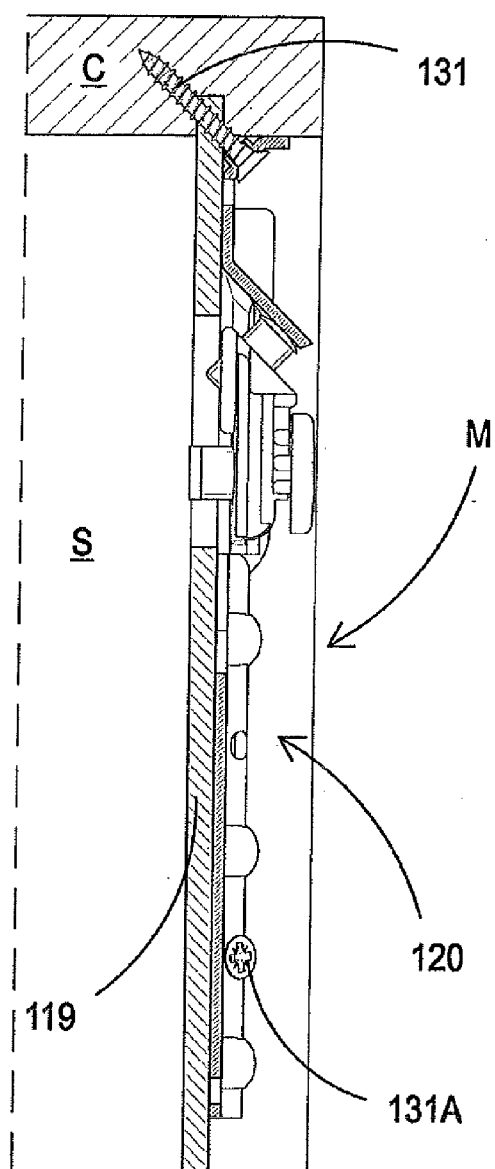


Fig. 14c

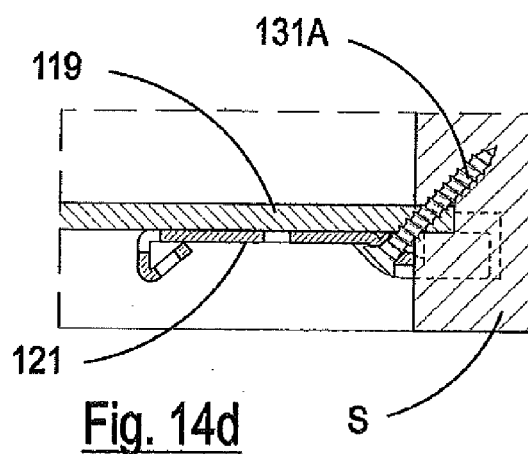


Fig. 14d

Fig. 15

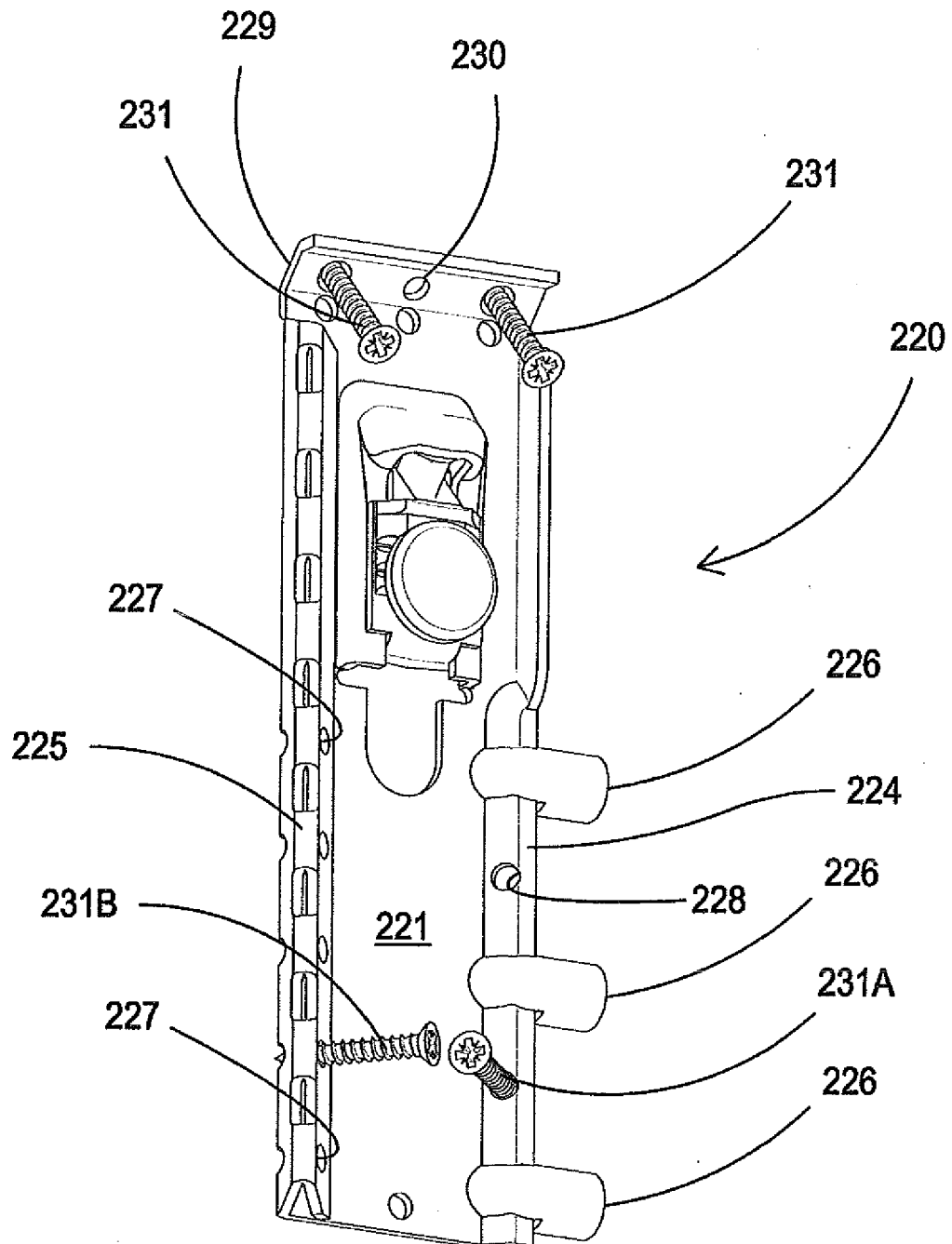


Fig. 16

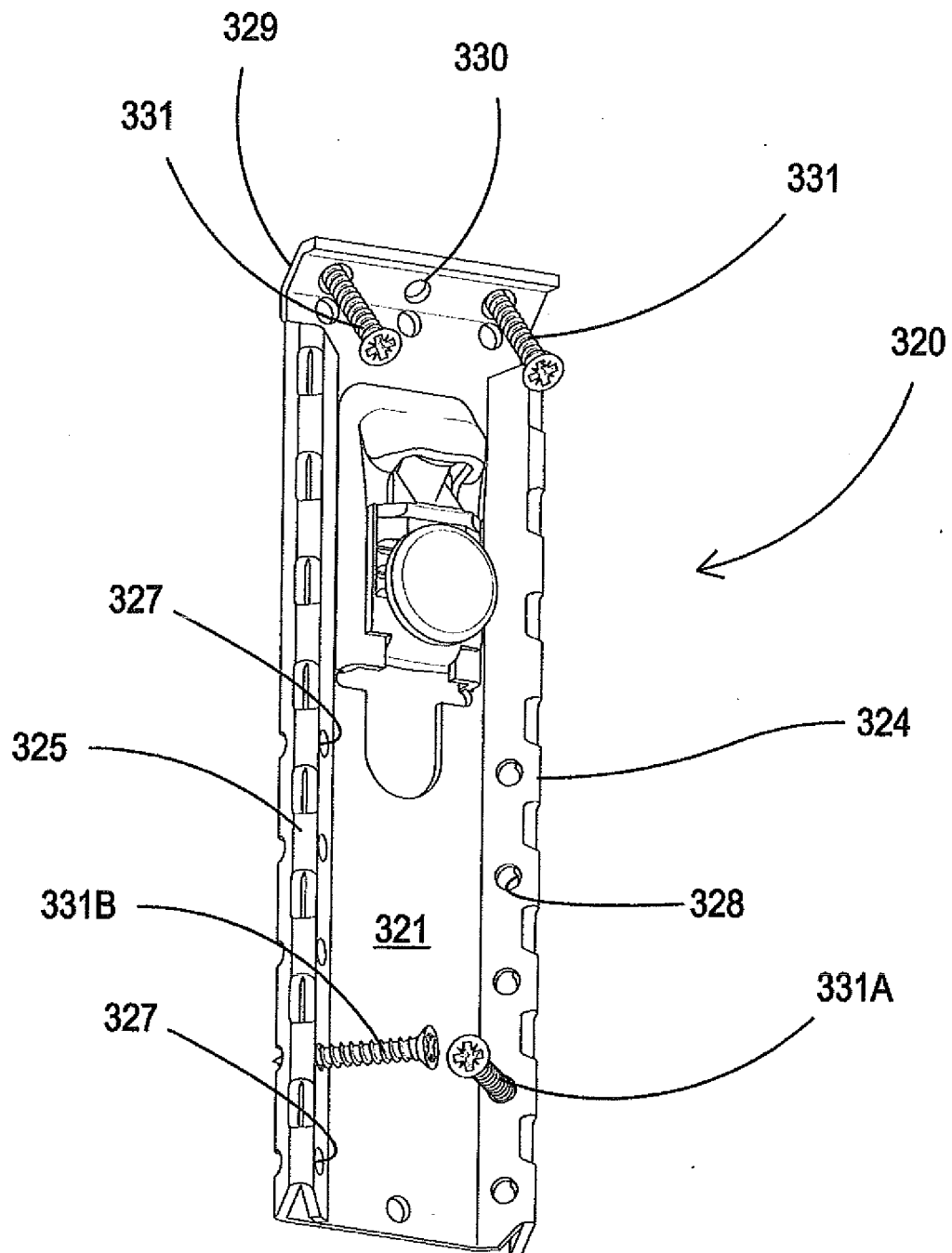
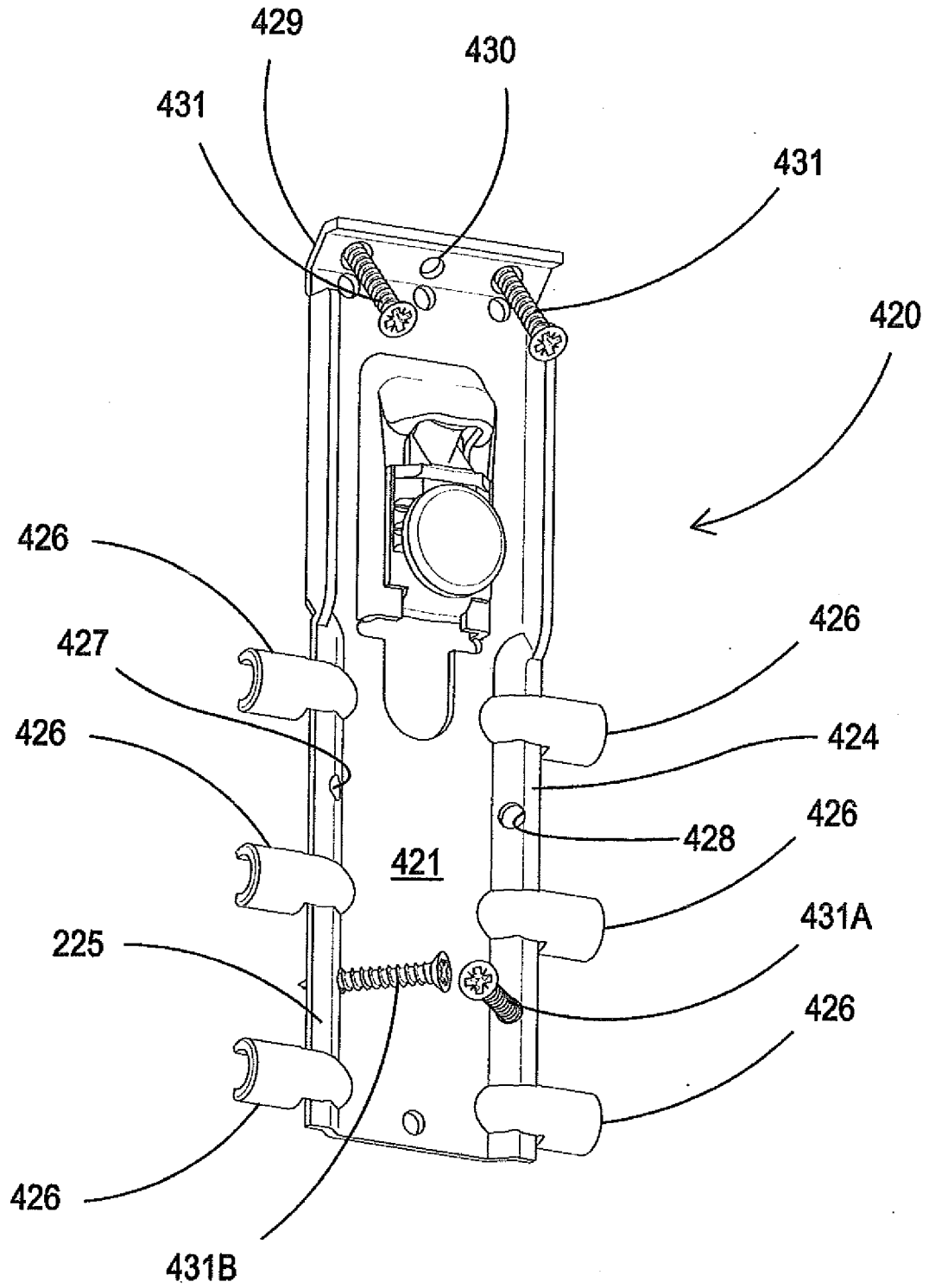


Fig. 17





EUROPEAN SEARCH REPORT

Application Number
EP 16 15 1235

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 May 2016	Examiner Vehrer, Zsolt
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EPO FORM 1503 03/82 (P04C01)

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