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(54) **Perfected support for the wall assembly of a cantilever cupboard**

Perfektionierter Träger für die Wandanordnung eines freitragenden Schranks

Support perfectionné pour l'ensemble paroi d'une armoire en porte-à-faux

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Description

[0001] The present invention relates to a perfected support for the wall assembly of a cantilever piece of furniture, such as, for example, cupboards and bases for kitchens and bathrooms, cantilever furniture for bedrooms and living rooms, and the like.

[0002] As is well-known to experts in the field, supports commonly used for the wall assembly of cantilever furniture consist of plaques, more or less rectangular, but which can have numerous configurations, said plaques being fixed to the wall by fixing means, for example expansion dowels, chemical dowels, or similar fixing means which are considered as being totally equivalent.

[0003] These plaques have sections - generally raised edges or windows with respect to the wall to which they are fixed - to which the hook of the hanging bracket fixed to the piece of furniture is connected.

[0004] Supports and hanging brackets of this type are described for example in patent applications EP11767641.1 and PCT/EP2012/001234, of the same Applicant. Other supports are known from EP 2 580 991 A1, WO2012/143074 A1 or DE 201 03 728 U1.

[0005] These supports are subjected to severe combined stress in both directions, vertical and horizontal, due to the weight of the contents of the wall cupboard.

[0006] This stress is transmitted from the support to the fixing dowels to the wall, and said dowels are consequently subjected to both shear and tensile stress, with the consequent risk of the yielding and falling of the cupboard.

[0007] The general objective of the present invention is to solve the above-mentioned technical problem of the known art, by providing a support equipped with means capable of adequately resisting combined shear and tensile stress transmitted from the loaded cupboard to the fixing dowels to the wall.

[0008] This objective is achieved by a support having the characteristics specified in the enclosed claim 1 and sub-claims.

[0009] The structural and functional characteristics of the invention, and its advantages with respect to the known art, will appear more evident from the following description, referring to the enclosed drawings, which illustrate embodiment examples of the same invention.

[0010] In the drawings:

- figure 1 is an exploded perspective view, illustrating a first embodiment of a support according to the invention;
- figure 2 is a sectional view of the support of figure 1, assembled;
- figures 3 and 4 are views similar to figures 1 and 2, respectively, illustrating a second possible embodiment of a support according to the invention;
- figures 5 and 6 are two perspective views from the front and from behind, respectively, illustrating a third possible embodiment of a support according to the invention;
- figures 7 and 8 are two raised front and side views, respectively, of the support of figures 5 and 6;
- figures 9 and 10 are two perspective views, illustrating a fourth embodiment of a support according to the invention;
- figures 11 and 12 are two raised front and side views, respectively, of the fourth embodiment of the invention;
- figures 13 and 14 are two perspective views illustrating a fifth embodiment of a support according to the invention;
- figures 15 and 16 are two raised front and side views, respectively, of the fifth embodiment of the invention;
- figures 17 and 18 are two perspective views illustrating a sixth embodiment of a support according to the invention;
- figures 19 and 20 are two raised front and side views, respectively, of the sixth embodiment of the invention;
- figures 21 and 22 are two perspective views illustrating a seventh embodiment of a support according to the invention;
- figures 23 and 24 are two raised front and side views, respectively, of the seventh embodiment of the invention.

[0011] Figures 1 and 2 of the drawings illustrate a first embodiment of the invention in which the numerical reference 30 indicates as a whole a support to which a hanging bracket device R of a wall cupboard M is destined to be hooked.

[0012] Said support 30 is in the form of a metal plaque 31, having a substantially elongated rectangular form, and having a central section 32, raised or deep-drawn, for example where there is a window 33. A raised or deep-drawn section refers to a section which is suitably spaced from a wall P, or from the plane on which said plaque 31 lies.

[0013] A hook G of the hanging bracket R indicated above, is hooked to said window 33.

[0014] According to the invention, the support 30 is fixed to a wall P by the combination of fixing means, which comprises a dowel 34, and a pin 35, which are inserted in respective holes 36, 37 situated in the same wall P.

[0015] The dowel 34 and pin 35 are respectively positioned in correspondence with the upper and lower opposite ends of the plaque 31.

[0016] The dowel 34 is expanded by means of a screw 38 passing through a hole 39 of the plaque 31, whereas the pin 35 extends integrally from the plaque 31 itself.

[0017] It is evident how the combined action of the dowel 34 and the pin 35 effectively resists the forces applied to the plaque 31 in vertical and horizontal directions indicated by the arrows F1 and F2 respectively.

[0018] Figures 3 and 4 illustrate a second embodiment of the invention, substantially equivalent to the first: the only difference is that a bush 40, for example made of

plastic material, which receives the pin 35, is inserted in the hole 37 of the wall P.

[0019] Figures 5-8 illustrate a third embodiment of the invention, wherein a first and second pin 35A, 135A, upper and lower respectively, cooperating with only one dowel 34A with an expansion screw 38A, extend integrally in correspondence with the free ends of a plaque 31A.

[0020] In this embodiment, the single dowel 34A is positioned below the upper pin 35A where there is a hole 39A for the passage of the expansion screw 38A.

[0021] Figures 9-12 illustrate a fourth embodiment of the invention, where there are two pins 35B, 135B and two dowels 34B, 134B, with expansion screws 38B, 138B.

[0022] As can be clearly seen from the figures, a first pin 35B is positioned in correspondence with the upper end of the plaque 31B, whereas a second pin 135B is positioned slightly below the deep-drawing 32B comprising the window 33B.

[0023] A first dowel 34B, on the other hand, is positioned below the upper pin 35B, whereas a second dowel, 134B is positioned below the lower pin 135B.

[0024] In other words, the dowel 34B is positioned between the pin 35B and the deep-drawing 32B, whereas the dowel 134B is positioned between the pin 135B and the lower free end of the plaque 31B.

[0025] Figures 13-16 illustrate a fifth embodiment of the invention, comprising a support 30C consisting of a metal plaque 31C which, instead of having an elongated rectangular form such as that of the plaques 31, 31A and 31B, illustrated in figures 1-12, has a squared rectangular form, with stiffening ribs 41C.

[0026] Said plaque 31C is fixed to the wall by the combination of four dowels 34C with expansion screws 38C, and two pins 35C.

[0027] As can be clearly seen in the figures, the four dowels 34C are positioned in correspondence with the corners of the plaque 31C, whereas the pins 35C are positioned laterally (in correspondence with the vertical sides of the plaque 31C) in an intermediate position between the dowels 34C positioned at the corners. The plaque 31C also has raised windows 33C for the connection of the hook G of the hanging bracket device R.

[0028] Figures 17-20 illustrate a sixth embodiment of the invention comprising a support 30D consisting of a squared metal plaque 31D, with a central horizontal deep-drawn section 32D, provided with windows 33D for the connection of the hooks G of the hanging bracket device R of the cupboard M.

[0029] As can be clearly seen in the figures, the plaque 31D is fixed to the wall by the combination of two pins 35D and two dowels 34D with expansion screws 38D.

[0030] According to this embodiment of the invention, the pins 35D and the dowels 34D are arranged in diagonally opposite positions, in correspondence with the corners of the plaque 31D itself.

[0031] Figures 21-24 illustrate a seventh embodiment of the invention comprising a support 30E consisting of a metal plaque 31E having a substantially triangular form, which can be fixed to the wall by means of a pin 35E and three dowels 34E, 134E, 234E, with expansion screws 38E, 138E, 238E.

[0032] Close to the dowel 34E, there is a section 32E, deep-drawn or raised, with a window 33E for the connection of the hook G of the hanging bracket device R of the cupboard M.

[0033] As can be clearly seen from the figures, the pin 35E is positioned in correspondence with the bottom vertex of the triangle, the dowels 34E, 134E are positioned in correspondence with the upper vertexes of the triangle, whereas the dowel 234E is positioned below the deep-drawn section 32E, close to the vertical side of the triangle.

[0034] It is evident how, in all seven embodiments of the invention described above, with reference to the figures, the combined action of the dowels and pins is able to ensure considerable resistance to the shear and tensile stress transmitted by the loaded cupboard to the same dowels and pins.

[0035] The objective mentioned in the preamble of the description has therefore been achieved.

[0036] The protection scope of the present invention is defined by the enclosed claims.

Claims

1. A support (30;30A;30B;30C;30D;30E) for the wall (P) assembly of a cantilever cupboard (M) of the type comprising at least one fixing means and a plaque (31;31A;31B;31C;31D;31E) suitable for being fixed to said wall (P) by said fixing means (34;34A;34B,134B;34C;34D;34E,134E,234E), said plaque (31;31A;31B;31C;31D;31E) also having at least one raised section (32;32A;32B;32C;32D;32E) with respect to said wall (P) with at least one window (33;33A;33B;33C;33D;33E) for the connection of a hook (G) of a hanging bracket device (R) fixed to said cupboard (M), wherein said fixing means comprises a dowel to be inserted in a hole (36) of the wall (P) and expanded by a screw (38;38A;38B,138B;38C;38D;38E, 138E,238E) passing through a hole (39) of the plaque, **characterized in** comprising at least one pin (35;35A,135A;35B,135B;35C;35D;35E) extending integrally from said plaque (31;31A;31B;31C;31D;31E), wherein said pin is suitable for being introduced into a hole (37) of said wall (P) and cooperates with said at least one fixing means (34;34A;34B,134B;34C;34D;34E,134E,234E) for resisting to forces applied to the plaque in vertical and horizontal directions.

2. The support according to claim 1, **characterized in**

that said plaque (31) has an elongated rectangular form, and that said at least one fixing means (34) and said pin (35) are respectively positioned in correspondence with the upper and lower ends of said plaque (31).

3. The support according to claim 1, **characterized in that** said plaque (31A) has an elongated rectangular form, and that said pins (35A,135A) are respectively positioned in correspondence with the upper and lower ends of said plaque (31A), whereas said at least one fixing means (34A) is positioned below the upper pin (35A) where there is a hole (39A) for the passage of said fixing means (34A).

4. The support according to claim 1, **characterized in that** said plaque (31B) has an elongated rectangular form and comprises two pins (35B,135B) and two fixing means (34B,134B), wherein one first pin (35B) is positioned in correspondence with the upper end of the plaque (31B), whereas a second pin (135B) is positioned just below the raised section (32B) comprising the window (33B), and wherein a first fixing means (34B) is positioned below the upper pin (35B), whereas a second fixing means (134B) is positioned below the lower pin (135B).

5. The support according to claim 1, **characterized in that** said plaque is a squared rectangular plaque (31C), said plaque (31C) being fixed to the wall by the combination of four fixing means (34C) and two pins (35C), wherein the four fixing means (34C) are positioned in correspondence with the corners of the plaque (31C), whereas the pins (35C) are positioned laterally in correspondence with the vertical sides of the plaque (31C) in an intermediate position between the fixing means (34C) positioned at the corners, said plaque (31C) also having raised windows (33C) for the connection of the hook (G) of the hanging bracket device (R) of the cupboard (M).

6. The support according to claim 1, **characterized in that** said plaque is a squared plaque (31D), with a central horizontal section (32D), raised with respect to the wall (P), provided with windows (33D) for the connection of the hooks (G) of the hanging bracket device (R) of the cupboard (M), said plaque (31D) being fixed to the wall (P) by the combination of two pins (35D) and two fixing means (34D), wherein the pins (35D) and the fixing means (34D) are in diagonally opposite positions in correspondence with the corners of the plaque (31D) itself.

7. The support according to claim 1, **characterized in that** said plaque is a plaque (31E) having a substantially triangular form, which can be fixed to the wall by means of a pin (35E) and three fixing means (34E, 134E, 234E), wherein close to the fixing means (34E), there is a section (32E), raised with respect to the wall (P), with a window (33E) for the connection of the hook (G) of the hanging bracket device (R) of the cupboard (M), and wherein the pin (35E) is positioned in correspondence with the lower vertex of the triangle, whereas the fixing means (34E,134E) are positioned in correspondence with the upper vertexes of the triangle, and the fixing means (234E) is positioned below the raised section (32E) close to the vertical side of the triangle itself.

8. The support according to any of the previous claims, **characterized in that** said fixing means (34;34A;34B,134B;34C;34D;34E,134E,234E) further comprises expansion screws (38;38A;38B,138B;38C;38D;38E,-138E,238E).

Patentansprüche

1. Träger (30; 30A; 30B; 30C; 30D; 30E) für die an der Wand (P) erfolgende Montage eines Auslegerregals (M) des Typs, mit zumindest einem Fixiermittel und einer Platte (31; 31A; 31B; 31C; 31D; 31E), die zur Fixierung an der Wand (P) mittels des Fixiermittels (34; 34A; 34B, 134B; 34C; 34D; 34E, 134E, 234E) geeignet ist, wobei die Platte (31; 31A; 31B; 31C; 31D; 31E) auch zumindest einen erhöhten Abschnitt (32; 32A; 32B; 32C; 32D; 32E) in Bezug auf die Wand (P) mit zumindest einem Fenster (33; 33A; 33B; 33C; 33D; 33E) für die Verbindung eines Hakens (G) einer Hängehalterungsvorrichtung (R) aufweist, die an dem Regal (M) fixiert ist, wobei das Fixiermittel einen Dübel zum Einsetzen in ein Loch (36) der Wand (P) und zum Ausdehnen durch eine Schraube (38; 38A; 38B, 138B; 38C; 38D; 38E, 138E, 238E) umfasst, die durch ein Loch (39) der Platte verläuft, **dadurch gekennzeichnet, dass** zumindest ein Stift (35; 35A, 135A; 35B, 135B; 35C; 35D; 35E) vorgesehen ist, der sich einteilig von der Platte (31; 31A; 31B; 31C; 31D; 31E) erstreckt, wobei der Stift zur Einführung in ein Loch (37) der Wand (P) geeignet ist und mit dem zumindest einen Fixiermittel (34; 34A; 34B, 134B; 34C; 34D; 34E, 134E, 234E) zusammenwirkt, um Kräften zu widerstehen, die auf die Platte in vertikalen und horizontalen Richtungen ausgeübt werden.

2. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die Platte (31) eine längliche rechtwinklige Form aufweist, und dass das zumindest eine Fixiermittel (34) und der Stift (35) jeweils entsprechend dem oberen und unteren Ende der Platte (31) positioniert sind.

3. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die Platte (31A) eine längliche rechtwinklige Form aufweist, und dass die Stifte (35A, 135A)

jeweils entsprechend dem oberen und unteren Ende der Platte (31A) positioniert sind, wobei das zumindest eine Fixiermittel (34A) unterhalb des oberen Stiftes (35A) positioniert ist, wo ein Loch (39A) für den Durchgang des Fixiermittels (34A) vorhanden ist.

4. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die Platte (31B) eine längliche rechtwinklige Form aufweist und zwei Stifte (35B, 135B) sowie zwei Fixiermittel (34B, 134B) umfasst, wobei ein erster Stift (35B) entsprechend dem oberen Ende der Platte (31B) positioniert ist, während ein zweiter Stift (135B) gerade unterhalb des erhöhten Abschnitts (32B) positioniert ist, der das Fenster (33B) umfasst, und wobei ein erstes Fixiermittel (34B) unterhalb des oberen Stiftes (35B) positioniert ist, während ein zweites Fixiermittel (134B) unterhalb des unteren Stiftes (135B) positioniert ist.

5. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die Platte eine rechteckige Platte (31C) ist, wobei die Platte (31C) an der Wand durch die Kombination von vier Fixiermitteln (34C) und zwei Stiften (35C) fixiert ist, wobei die vier Fixiermittel (34C) entsprechend den Ecken der Platte (31C) positioniert sind, während die Stifte (35C) quer entsprechend den vertikalen Seiten der Platte (31C) in einer Zwischenposition zwischen dem Fixiermittel (34C), das an den Ecken positioniert ist, positioniert sind, wobei die Platte (31C) auch erhöhte Fenster (33C) für die Verbindung des Hakens (G) der Hängehalterungsvorrichtung (R) des Regals (M) aufweist.

6. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die Platte eine rechteckige Platte (31D) mit einem zentralen horizontalen Abschnitt (32D) ist, der in Bezug auf die Wand (P) erhöht und mit Fenstern (33D) für die Verbindung der Haken (G) der Hängehalterungsvorrichtung (R) des Regals (M) versehen ist, wobei die Platte (31D) an der Wand (P) durch die Kombination von zwei Stiften (35D) und zwei Fixiermitteln (34D) fixiert ist, wobei die Stifte (35D) und das Fixiermittel (34D) in diagonal gegenüberliegenden Positionen entsprechend den Ecken der Platte (31D) selbst angeordnet sind.

7. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die Platte eine Platte (31E) mit einer im Wesentlichen dreieckigen Form ist, die an der Wand mittels eines Stiftes (35E) und drei Fixiermitteln (34E, 134E, 234E) fixiert werden kann, wobei nahe dem Fixiermittel (34E) ein Abschnitt (32E) vorhanden ist, der in Bezug auf die Wand (P) erhöht ist und ein Fenster (33E) für die Verbindung des Hakens (G) der Hängehalterungsvorrichtung (R) des Regals (M) aufweist, und wobei der Stift (35E) entsprechend dem unteren Eckpunkt des Dreiecks positioniert ist, wobei das Fixiermittel (34E, 134E) entsprechend den oberen Eckpunkten des Dreiecks positioniert sind, und wobei das Fixiermittel (234E) unterhalb des erhöhten Abschnitts (32E) nahe der vertikalen Seite des Dreiecks selbst positioniert ist.

8. Träger nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das Fixiermittel (34; 34A; 34B, 134B; 34C; 34D; 34E, 134E, 234E) ferner Expansionsschrauben (38; 38A; 38B, 138B; 38C; 38D; 38E, 138E, 238E) umfasst.

Revendications

1. Support (30 ; 30A ; 30B ; 30C ; 30D ; 30E) pour le montage mural (P) d'un placard suspendu (M) du type comprenant au moins un moyen de fixation et une plaque (31 ; 31A ; 31B ; 31C ; 31D ; 31E) appropriée pour être fixée audit mur (P) à l'aide dudit moyen de fixation (34 ; 34A ; 34B, 134B ; 34C ; 34D ; 34E, 134E, 234E), ladite plaque (31 ; 31A ; 31B ; 31C ; 31D ; 31E) comportant en outre au moins une section surélevée (32 ; 32A ; 32B ; 32C ; 32D ; 32E) par rapport audit mur (P) dotée d'au moins une fenêtre (33 ; 33A ; 33B ; 33C ; 33D ; 33E) pour la connexion d'un crochet (G) d'un dispositif de support de suspension (R) fixé audit placard (M), dans lequel ledit moyen de fixation comprend une goupille destinée à être insérée dans un trou (36) du mur (P) et dilatée par une vis (38 ; 38A ; 38B, 138B ; 38C ; 38D ; 38E, 138E, 238E) qui passe dans un trou (39) de la plaque, **caractérisé en ce qu'**il comprend au moins un axe (35 ; 35A, 135A ; 35B, 135B ; 35C ; 35D ; 35E) s'étendant d'un seul tenant depuis ladite plaque (31 ; 31A ; 31B ; 31C ; 31D ; 31E), dans lequel ledit axe est approprié pour être introduit dans un trou (37) dudit mur (P) et coopère avec ledit au moins un moyen de fixation (34 ; 34A ; 34B, 134B ; 34C ; 34D ; 34E, 134E, 234E) pour résister aux efforts appliqués à la plaque dans les directions verticale et horizontale.

2. Support selon la revendication 1, **caractérisé en ce que** ladite plaque (31) a une forme rectangulaire allongée, et **en ce que** ledit au moins un moyen de fixation (34) et ledit axe (35) sont positionnés respectivement en correspondance avec les extrémités supérieure et inférieure de ladite plaque (31).

3. Support selon la revendication 1, **caractérisé en ce que** ladite plaque (31A) a une forme rectangulaire allongée, et **en ce que** lesdits axes (35A, 135A) sont positionnés respectivement en correspondance avec les extrémités supérieure et inférieure de ladite plaque (31A), tandis que ledit au moins un moyen de fixation (34A) est positionné sous l'axe supérieur (35A), à l'endroit où se trouve un trou (39A) pour le

passage dudit moyen de fixation (34A).

4. Support selon la revendication 1, **caractérisé en ce que** ladite plaque (31B) a une forme rectangulaire allongée et comprend deux axes (35B, 135B) et deux moyens de fixation (34B, 134B), dans lequel un premier axe (35B) est positionné en correspondance avec l'extrémité supérieure de la plaque (31B), tandis qu'un deuxième axe (135B) est positionné juste en dessous de la section surélevée (32B) qui comprend la fenêtre (33B), et dans lequel un premier moyen de fixation (34B) est positionné sous l'axe supérieur (35B), tandis qu'un deuxième moyen de fixation (134B) est positionné sous l'axe inférieur (135B).

5. Support selon la revendication 1, **caractérisé en ce que** ladite plaque est une plaque rectangulaire équerrée (31C), ladite plaque (31C) étant fixée au mur par la combinaison de quatre moyens de fixation (34C) et de deux axes (35C), dans lequel les quatre moyens de fixation (34C) sont positionnés en correspondance avec les coins de la plaque (31C), tandis que les axes (35C) sont positionnés latéralement en correspondance avec les côtés verticaux de la plaque (31C) en une position intermédiaire entre les moyens de fixation (34C) positionnés dans les coins, ladite plaque (31C) comportant en outre des fenêtres surélevées (33C) pour la connexion du crochet (G) du dispositif de support de suspension (R) du placard (M).

6. Support selon la revendication 1, **caractérisé en ce que** ladite plaque est une plaque carrée (31D) comportant une section centrale horizontale (32D) surélevée par rapport au mur (P), pourvue de fenêtres (33D) pour la connexion des crochets (G) du dispositif de support de suspension (R) du placard (M), ladite plaque (31D) étant fixée au mur (P) par la combinaison de deux axes (35D) et de deux moyens de fixation (34D), dans lequel les axes (35D) et les moyens de fixation (34D) sont dans des positions diagonalement opposées en correspondance avec les coins de la plaque (31D) elle-même.

7. Support selon la revendication 1, **caractérisé en ce que** ladite plaque est une plaque (31E) de forme substantiellement triangulaire, qui peut être fixée au mur à l'aide d'un axe (35E) et de trois moyens de fixation (34E, 134E, 234E), dans lequel, à proximité des moyens de fixation (34E), se trouve une section (32E), surélevée par rapport au mur (P), comportant une fenêtre (33E) pour la connexion du crochet (G) du dispositif de support de suspension (R) du placard (M), et dans lequel l'axe (35E) est positionné en correspondance avec le sommet inférieur du triangle, tandis que les moyens de fixation (34E, 134E) sont positionnés en correspondance avec les sommets supérieurs du triangle, et le moyen de fixation (234E) est positionné sous la section surélevée (32E), près du côté vertical du triangle lui-même.

8. Support selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit moyen de fixation (34 ; 34A ; 34B, 134B ; 34C ; 34D ; 34E, 134E, 234E) comprend en outre des vis d'expansion (38 ; 38A ; 38B, 138B ; 38C ; 38D ; 38E, 138E, 238E).

Fig. 1

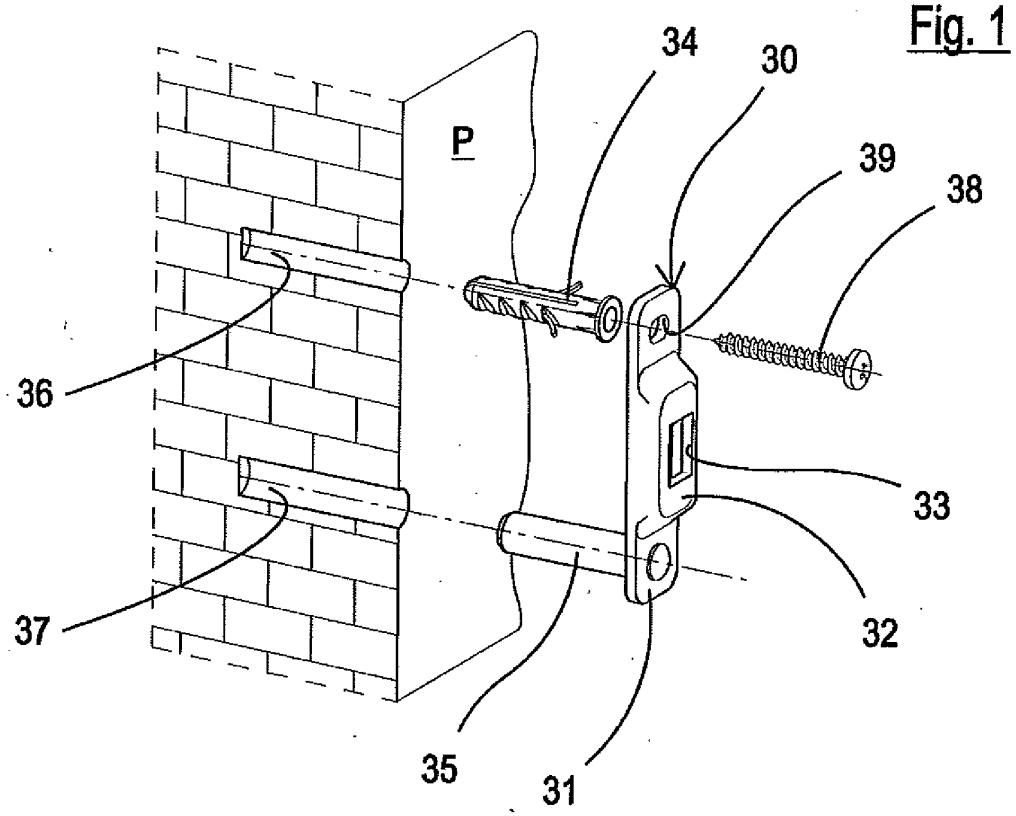


Fig. 2

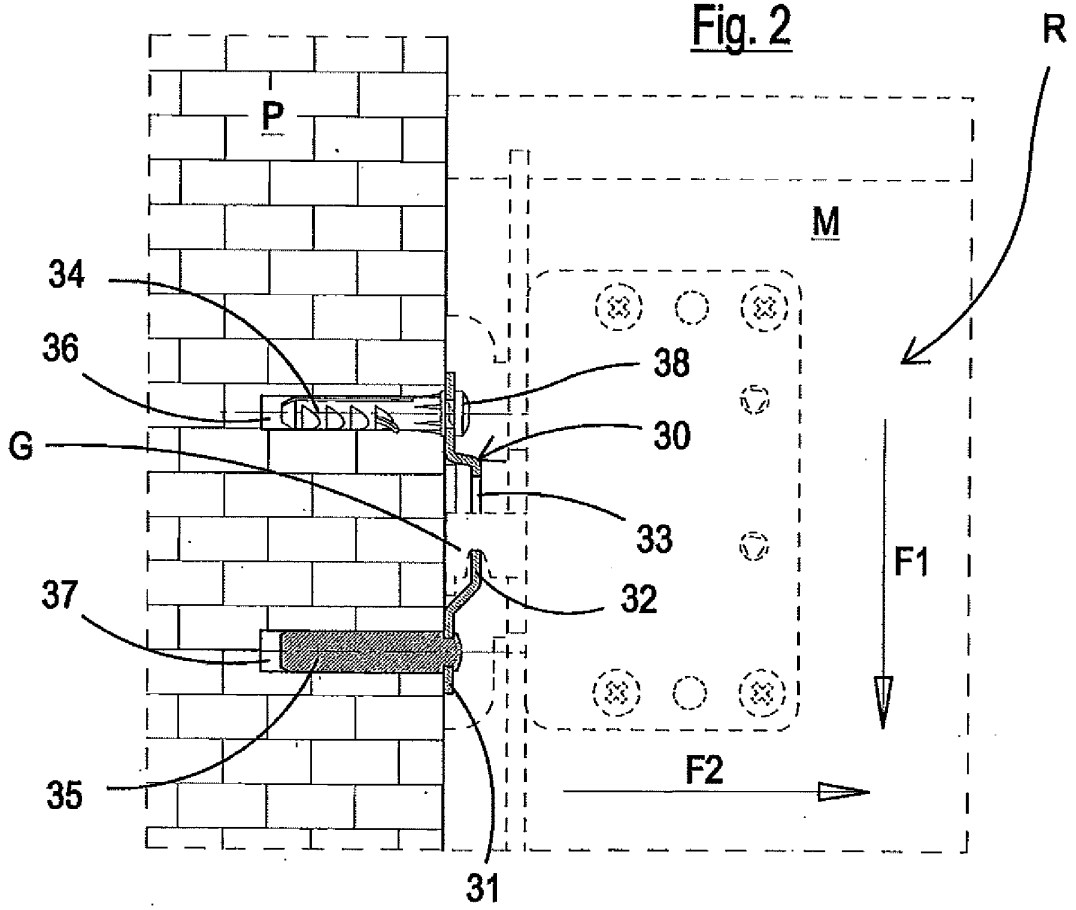
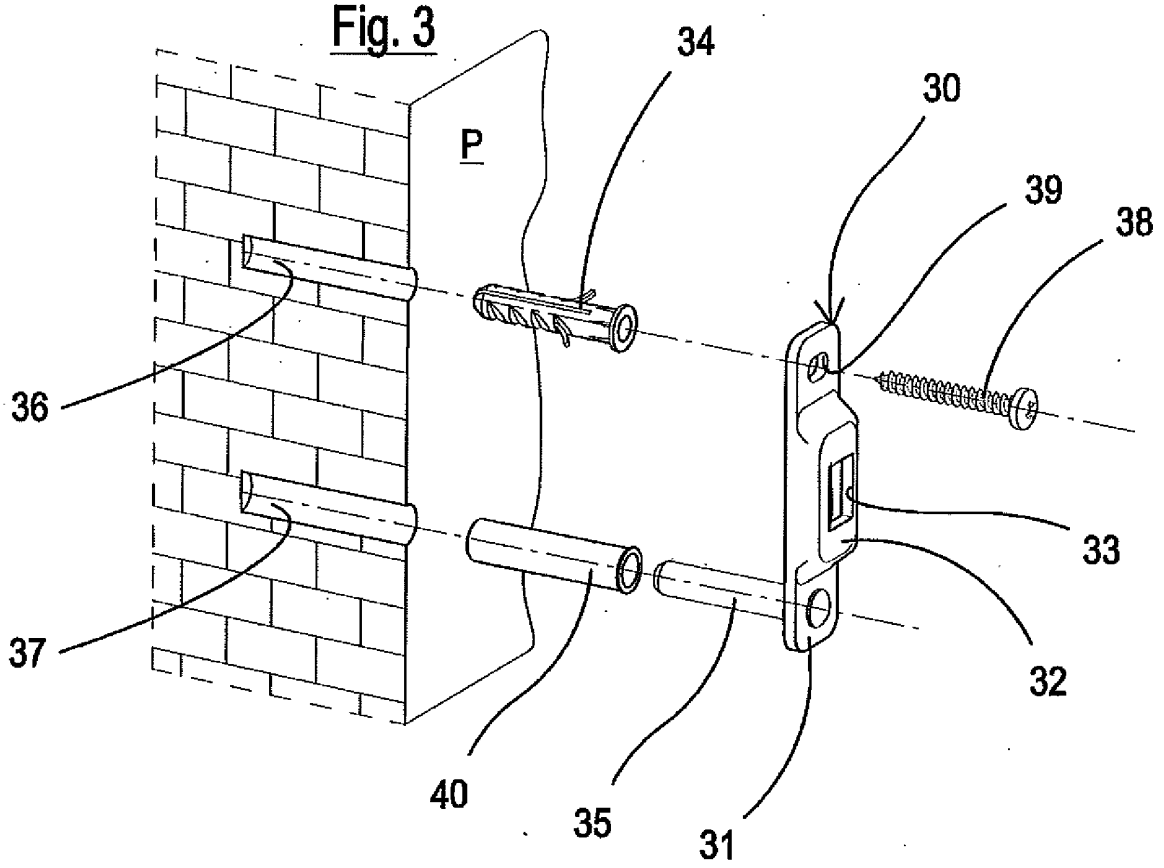


Fig. 3



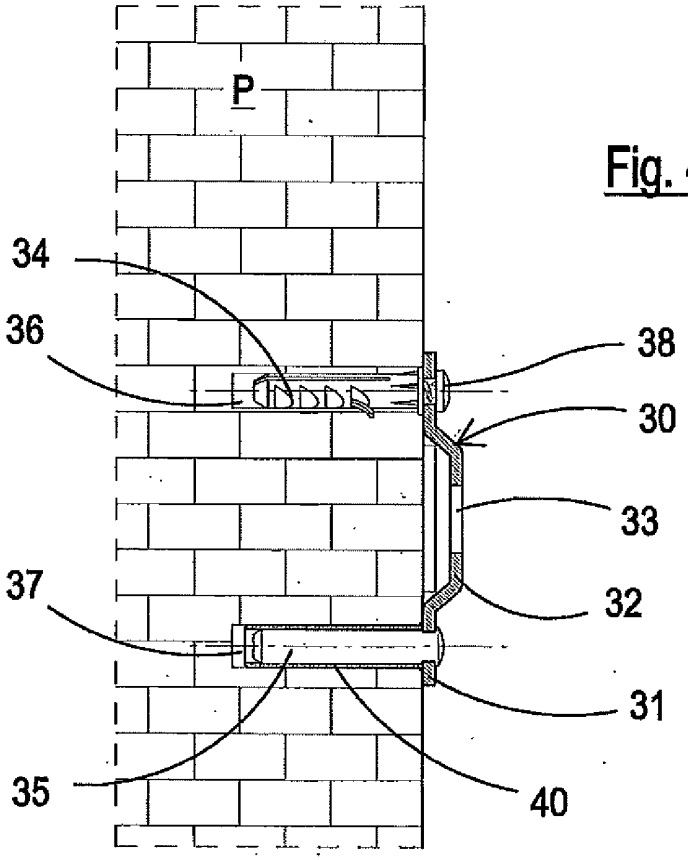


Fig. 4

Fig. 5

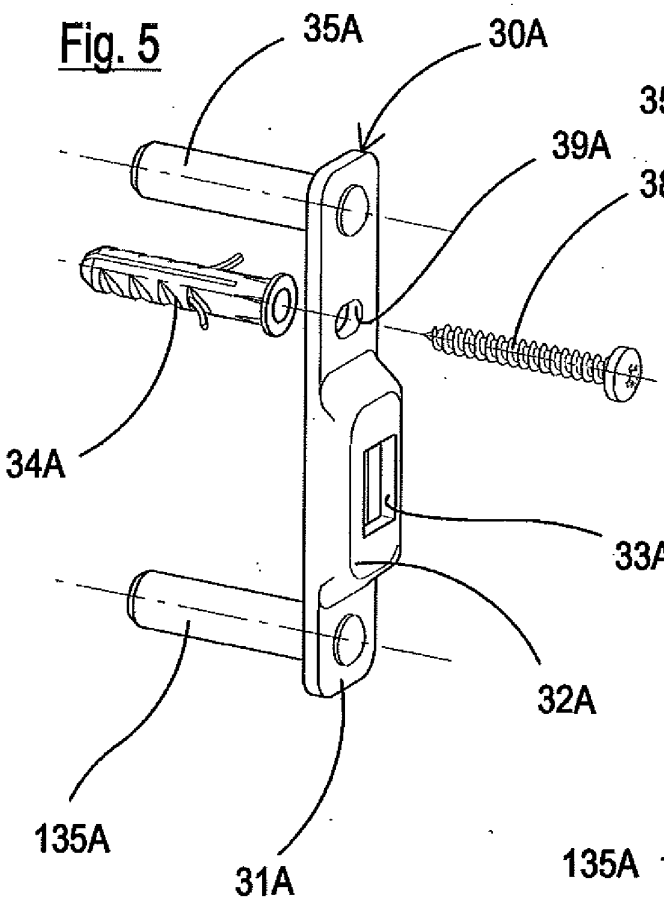


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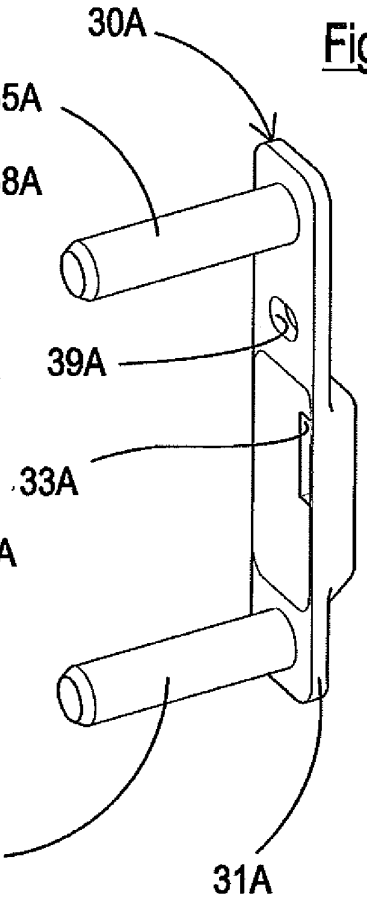


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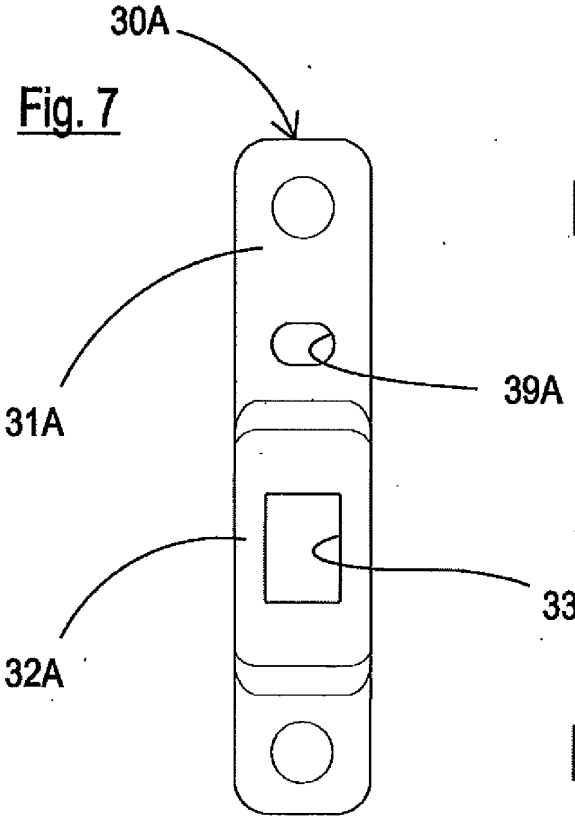


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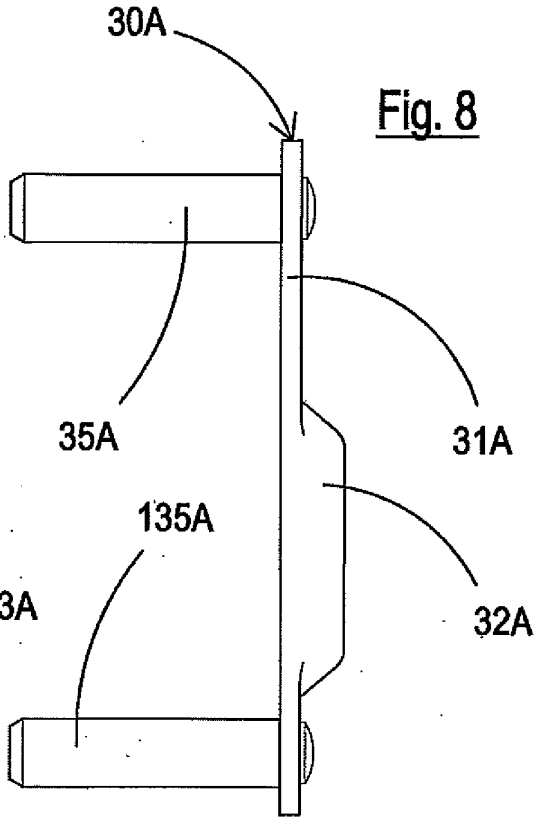


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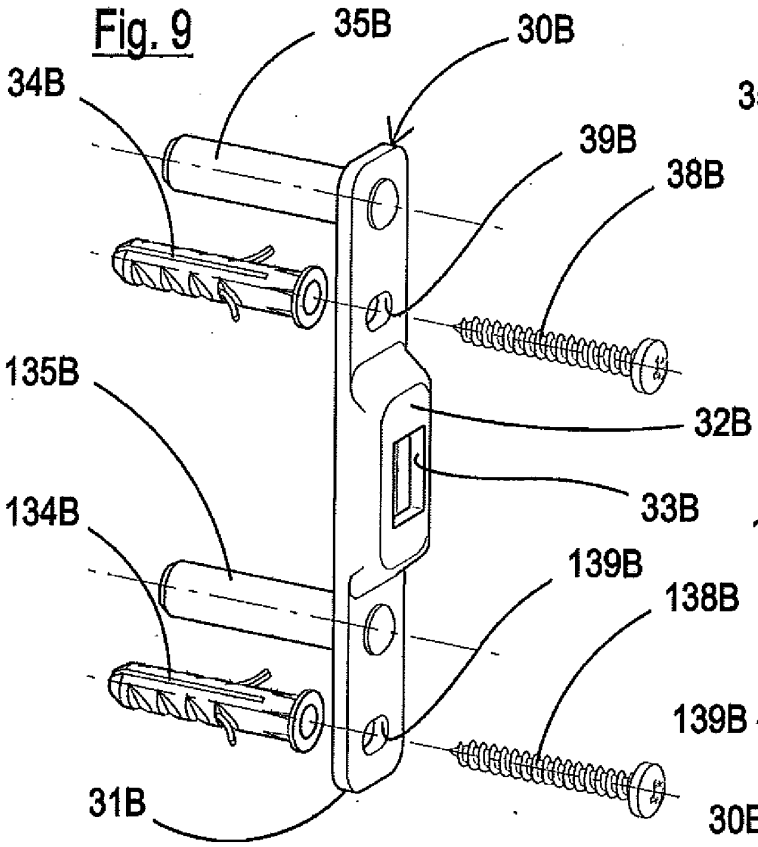


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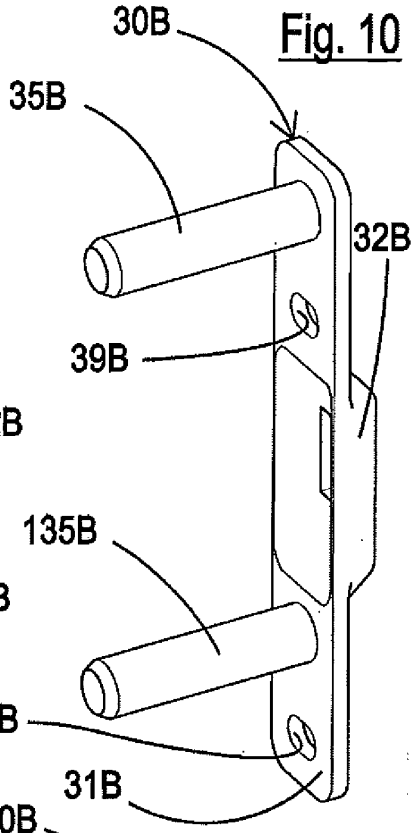


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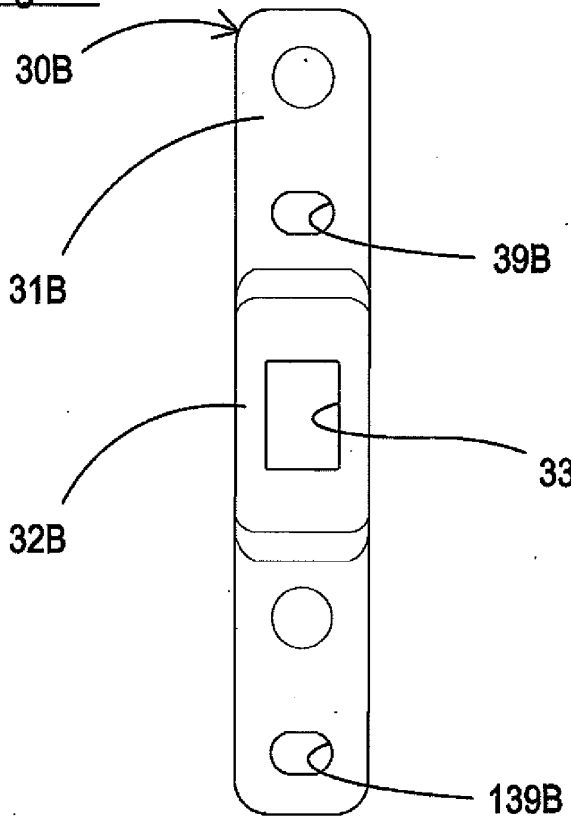


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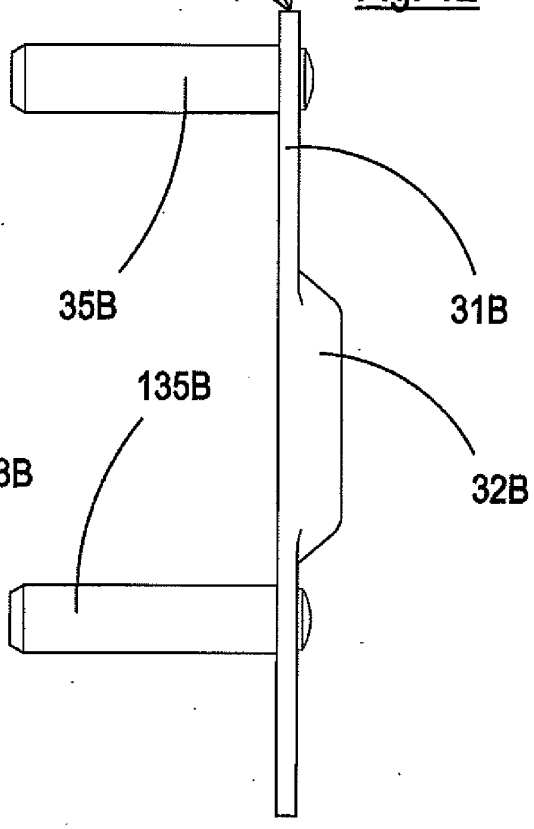


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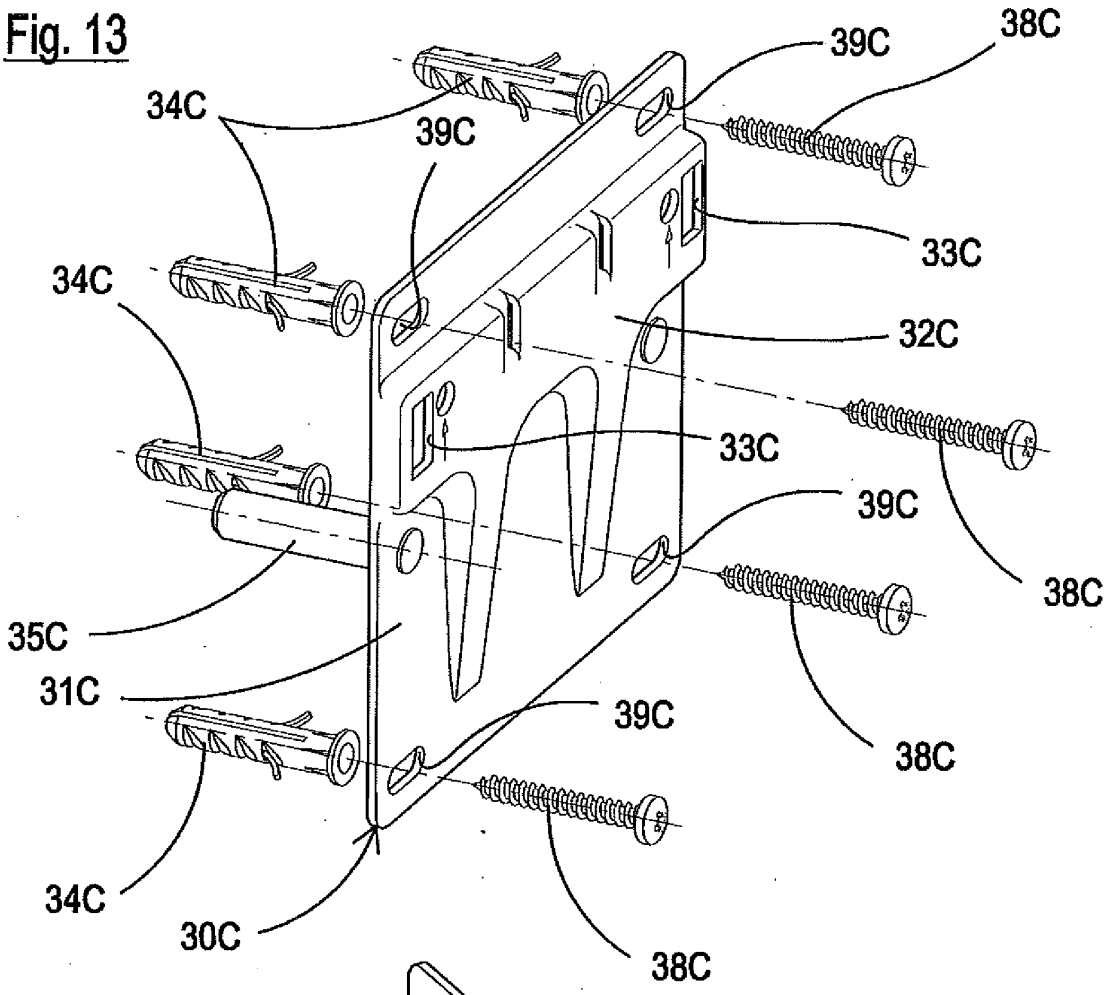

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Fig. 14

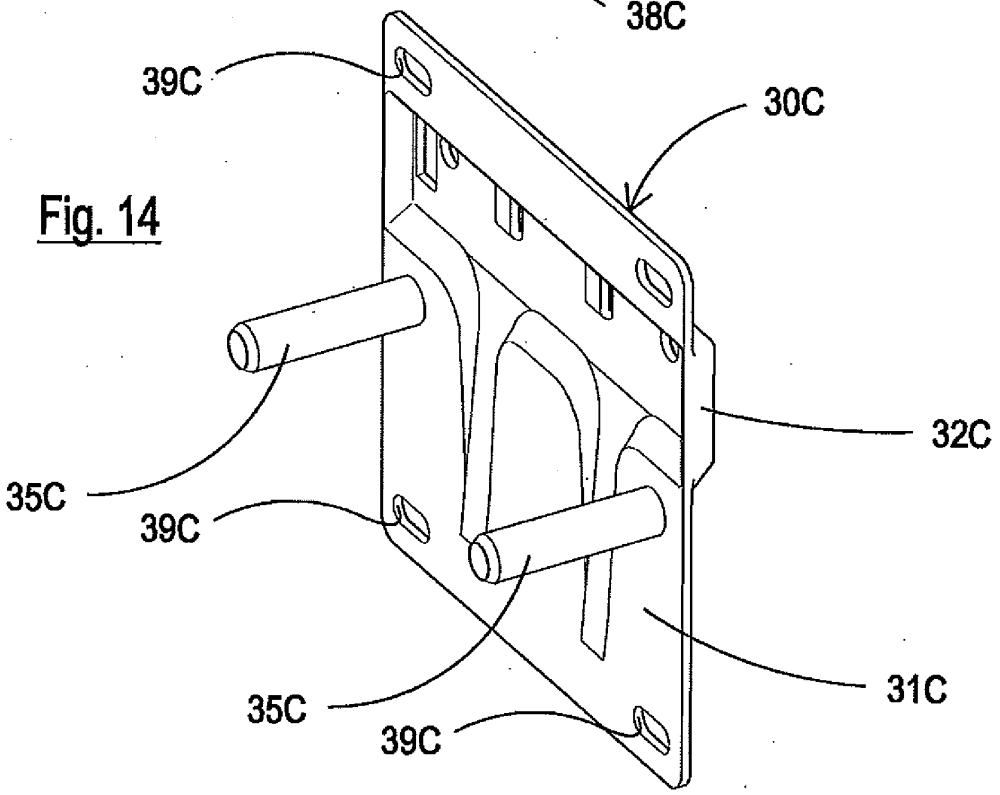

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Fig. 15

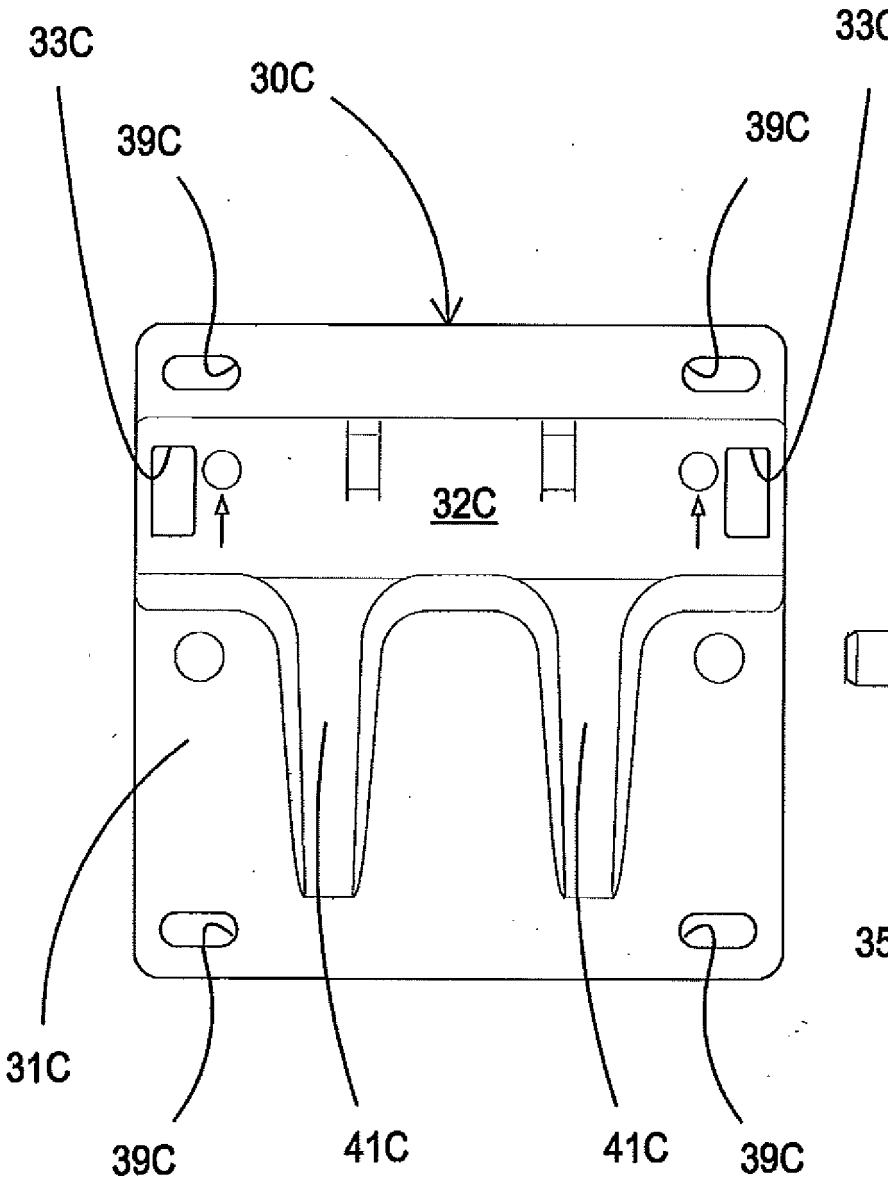


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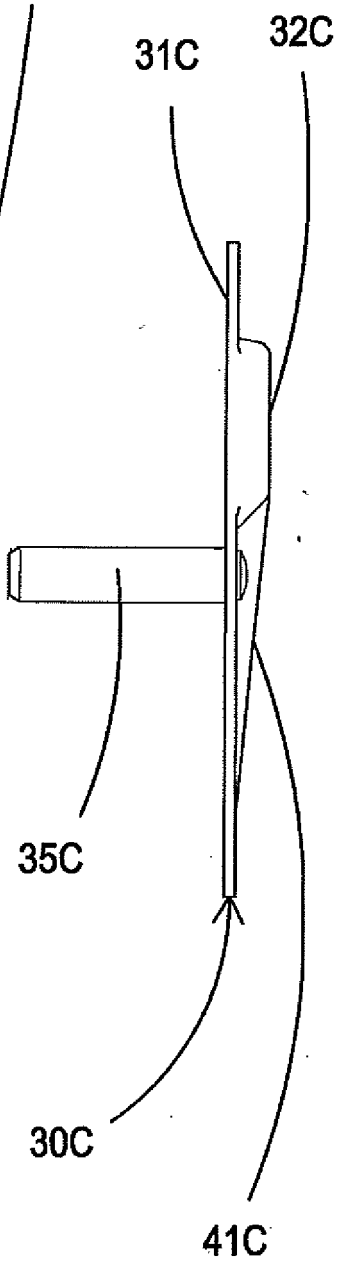


Fig. 17

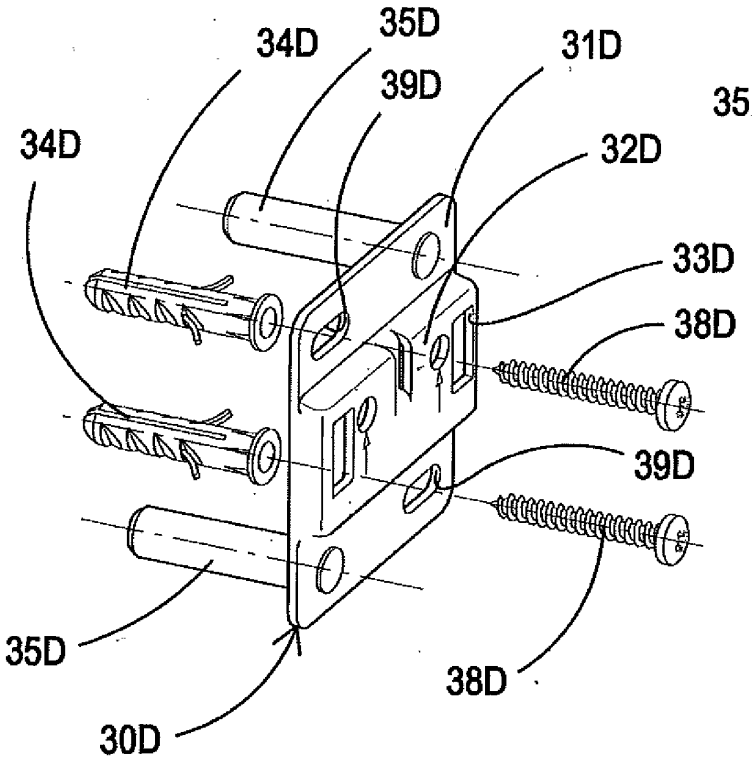


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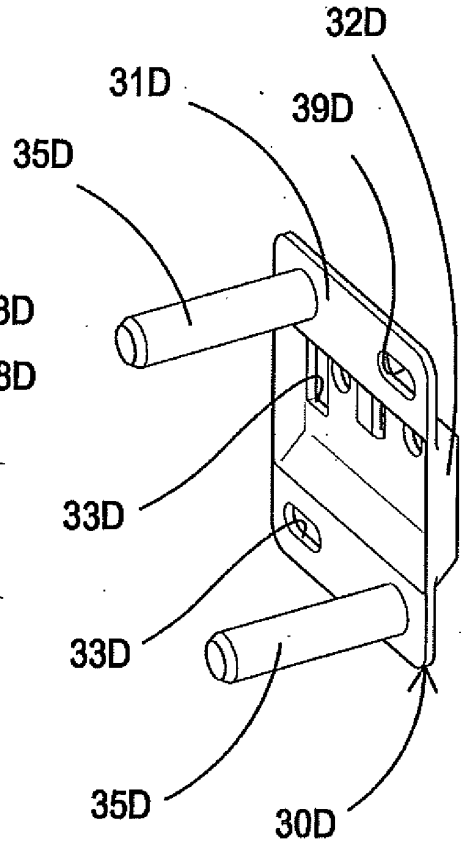
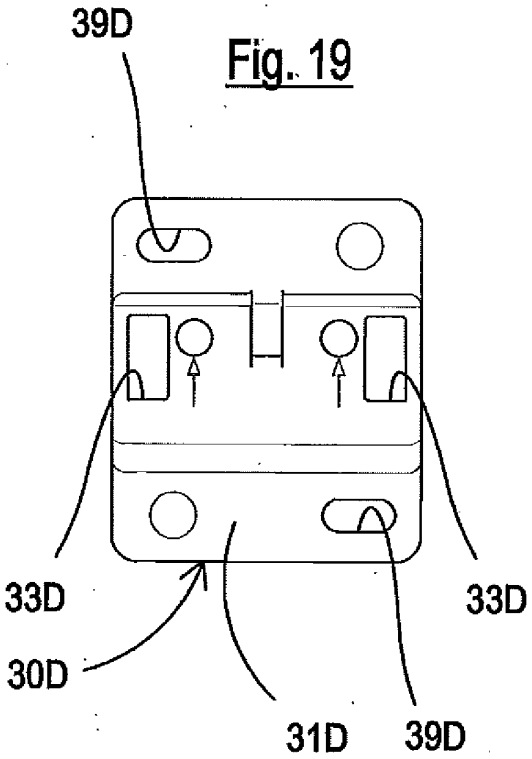


Fig. 19



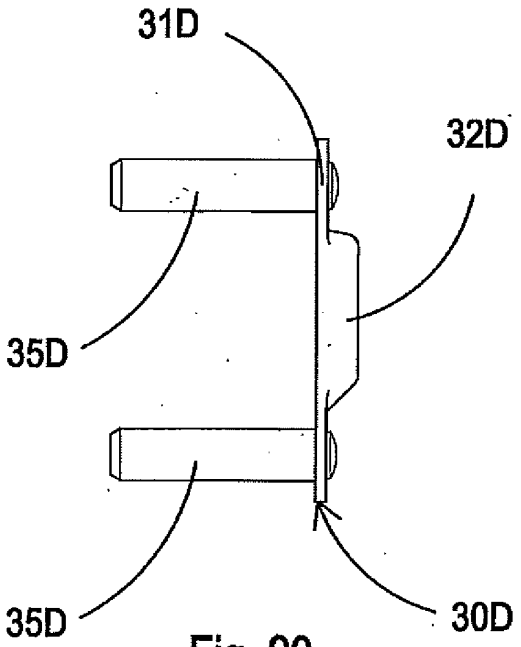


Fig. 20

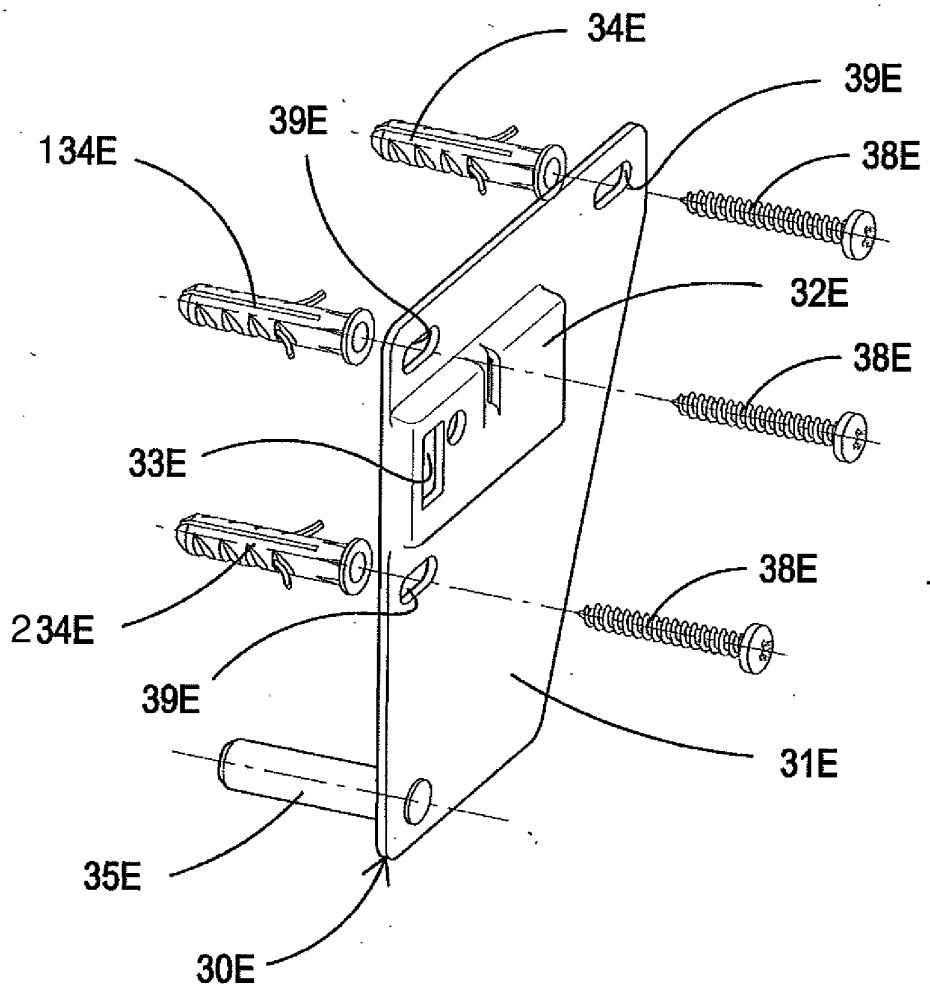

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Fig. 21

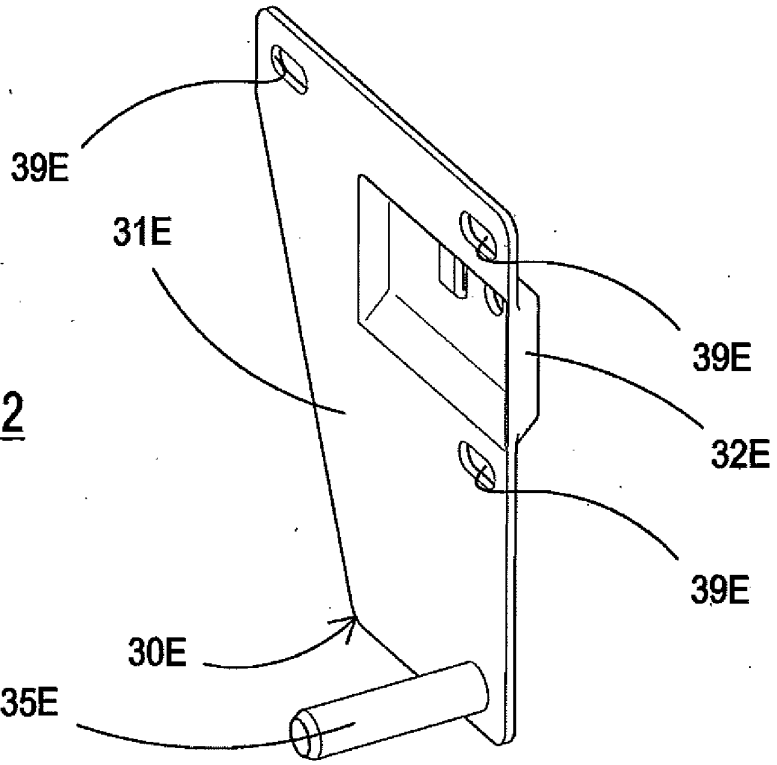

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Fig. 22

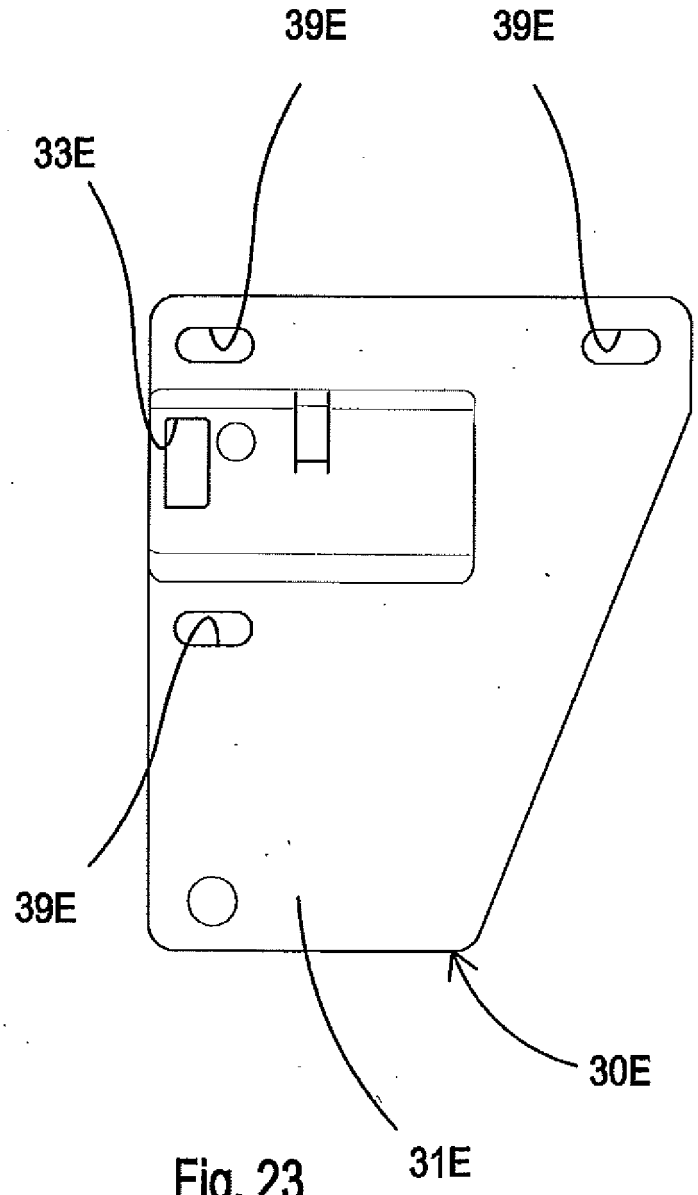


Fig. 23

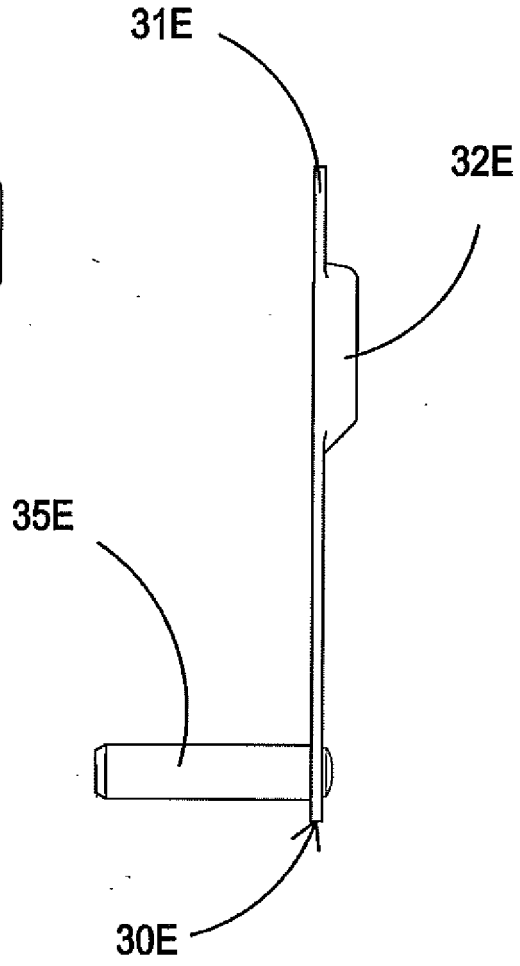


Fig. 24

REFERENCES CITED IN THE DESCRIPTION

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