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(54) **front post for in-wall frames of retractable sliding doors with centering element**

Vorderer Pfost für Wandeinbaurahmen zurückziehbarer Schiebetüren mit Zentrierelement

Montant avant rétractable destiné à être encastré dans des trames de portes coulissantes avec élément de centrage

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(73) Proprietor: **ECLISSE S.R.L.
31053 Pieve di Soligo TV (IT)**

(72) Inventor: **De Faveri, Luigi
31020 Refrontolo TV (IT)**

(74) Representative: **Modiano, Micaela Nadia et al
Modiano & Partners
Via Meravigli, 16
20123 Milano (IT)**

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Description

[0001] The present invention relates to a centering element, particularly for front posts for in-wall frames of retractable sliding doors.

[0002] Nowadays it is known to provide door frames which involve the use of a casing, positioned inside a wall, in which a door or a panel is slideably associated and which is also known as a "retractable door".

[0003] Such solution makes it possible to reduce the encumbrances of the door in a room thanks to the possibility of sliding it into the casing: thus one can use the space adjacent to the door, which would otherwise be occupied by doors of the type that are hinged laterally to a casement.

[0004] In the known art, the frame embedded in the wall is usually constituted by a framework which comprises a plurality of vertical profiled elements, a front post and a rear post, which are connected by horizontal cross-members which define a containment casing of the panel or of the door.

[0005] Protruding above the case, along an axis that is longitudinal with respect to the case proper and that extends from the side opposite to that of the containment case, is a rail which is hidden by a jamb.

[0006] Trolleys coupled to the upper edge of the door are slideably integrated in the rail in order to enable the sliding of the door into and out of the in-wall casing.

[0007] Usually associated with the end of the rail which is not associated with the vertical post locators is an additional post that acts as a terminal for the abutment of the front edge of the door.

[0008] Such conventional door frames thus use metallic profiles that can be mounted together and are sold for example in kit form for assembly.

[0009] At the front post, which is usually C-shaped in transverse cross-section, it is known to attach a covering, which is usually constituted by a wooden jamb, in order to render the door or window frame more aesthetically pleasing.

[0010] Thus it is known to use adhesive to bond a surface of the covering, which is usually rectangular in plan view, directly to the flat base of the front post.

[0011] Such solution suffers drawbacks, mainly the possibility that the two components might detach, not least because of the fact that the adhesive is coupling products made of different materials that react differently for example to the temperature and to the humidity present in the environment in which the in-wall frame for the sliding door is installed.

[0012] In a partial solution to such drawback, it is known to provide the front post adding, at the flat base thereof, a flap protruding therefrom which is to be accommodated in a complementarily shaped seat defined on the surface of the covering.

[0013] Such solution also suffers a drawback, which is due to the fact that more operations and processes are required, which increase the overall costs.

[0014] Furthermore the manufacturer of the posts necessarily must maintain stocks both of the version of the C-shaped post with the flat base and of the version of the C-shaped post with the base from which the flap protrudes, which will be used according to the choice made regarding the form that the covering is to take.

[0015] US 3 058 174 A discloses a pocket door frame assembly comprising jamb members formed of C-shaped cross section having several elongated openings in a channel thereof for fastening finish door jamb members.

[0016] The aim of the present invention is therefore to resolve the above mentioned technical problems, by eliminating the drawbacks in the cited known art and thus devising a front post that can be used in combination with coverings that may or may not have a recess or seat on a surface for their coupling to such post.

[0017] Within this aim, an object of the invention is to provide a front post in which the coupling to the covering occurs rapidly and with great ease irrespective of whether or not there is a recess or seat on a surface for their coupling to such post.

[0018] Another object is to provide a front post that is structurally simple, can be provided with conventional systems and machines, and is low cost.

[0019] In accordance with the invention, there is provided a front post for in-wall frames of retractable sliding doors as defined in the appended claims.

[0020] Further characteristics and advantages of the invention will become better apparent from the detailed description of a particular, but not exclusive, embodiment, illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is a perspective view of the fin, not yet associated with the front post;

Figure 2 shows the first step of coupling the fin to the front post;

Figure 3 shows the fin coupled to the front post;

Figure 4 shows, in a sectional view taken along a sectional plane that is transverse to the front post, the fin and a covering which are not coupled together; Figure 5 is a similar view to Figure 4 of the front post coupled to the fin;

Figures 6 and 7 are three-quarters side views of the fin;

Figure 8 is a three-quarters side view of the front post.

[0021] In the embodiments illustrated, individual characteristics shown in relation to specific examples may in reality be interchanged with other, different characteristics, existing in other embodiments.

[0022] Moreover, it should be noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject of a disclaimer.

[0023] With reference to the figures, the reference nu-

meral 1 generally designates a front post for in-wall frames of retractable sliding doors, which is substantially C-shaped so as to define a base 2, and a first pair of lateral wings 3a, 3b.

[0024] Each front post 1 has, proximate to a lower end 4 of the respective base 2 and preferably adjacent to the lateral wing 3a, at least one hole 5 for coupling, by way of temporary locking means constituted by a screw 6, to the end 7 of a linear cross-member 8.

[0025] The end 7 that arranges itself against the base 2 is, at least for part of its length, W-shaped, a seat 10 for the threaded shank of the screw 6 being provided at its vertex 9.

[0026] The seat 10 is obtained preferably by deforming multiple portions 11, which are defined so as to be adjacent to each other but not contiguous along the same axis, of the material that constitutes the cross-member 8, the portions 11 being V-shaped and being directed in the opposite direction from the direction of the vertex 9.

[0027] The seat 10 is arranged at a height that corresponds to the placement of the axis of the hole 5 once the edge 12 of the cross-member 8 has been rested against the base 2.

[0028] The coupling of the front post 1 with the cross-member 8 occurs by way of the screw 6.

[0029] The base 2 has an inclined surface 12 that is adapted to force, upon tightening the locking means 6, the cross-member 8 against one of the first pair of lateral wings 3a, 3b of the front post 1.

[0030] In the particular embodiment illustrated, the surface 12 is V-shaped so as to define a first inclined portion 12a, which is adjacent to the lateral wing 3a, and a second inclined portion 12b, which is adjacent to the lateral wing 3b, the vertex 13 being directed toward the front post 1.

[0031] One or more seats 14a, 14b are provided on the base 2, in particular on the first inclined portion 12a, and are slot-shaped with their axis parallel to the longitudinal axis of the front post 1, and are adapted to enable the removable coupling of one or more flaps 15a, 15b.

[0032] The latter are T-shaped, so as to define a shank 16a, 16b and a head 17a, 17b which protrude on a same plane at right angles to the end 18 of a first tab 19 of an L-shaped fin 20.

[0033] The length and the width of each one of the heads 17a, 17b is substantially equal to the width and to the height of each one of the one or more seats 14a, 14b.

[0034] However, the height of each shank 16a, 16b is substantially equal to the thickness of the base 2.

[0035] Advantageously, a protrusion 21 protrudes from the end 18, in the space between the one or more flaps 15a, 15b and according to a plane that is perpendicular thereto, and is adapted to rest on the base 2 once the fin 20 has been coupled thereto.

[0036] Each fin 20 has a second tab 22 that can be coupled to a covering 23, preferably but not exclusively made of wood, on a surface 24 of which a recess or seat 25 is provided, which is adapted to firmly accommodate the second tab 22, and an undercut 26 of material that

is adapted to accommodate the first tab 19.

[0037] The one or more flaps 15a, 15b can be coupled, as illustrated in Figure 1, by way of an initial insertion thereof according to an axis that is perpendicular to the base 2, so as to position the one or more flaps 15a, 15b inside the one or more seats 14a, 14b; then follows, as illustrated in Figure 2, a subsequent sliding imposed on the one or more flaps 15a, 15b according to an axis that is longitudinal to the base 2, so as to bring the shanks 16a, 16b into abutment with an end of the one or more seats 14a, 14b and position part of the heads 17a, 17b beyond the, overlying, end of the one or more seats 14a, 14b and adjacent to the inner lateral surface 27 of the base 2.

[0038] Thus it has been found that the invention fully achieves the intended aim and objects, a front post being devised for in-wall frames of retractable sliding doors which can be used in combination with coverings that may or may not have a recess or seat on a surface for their coupling to such post; in fact if the recess is present it is sufficient to apply the fin 20 to the post; otherwise it is sufficient not to apply the fin 20 to the post.

[0039] The coupling to the covering occurs rapidly and with great ease irrespective of whether or not the latter has a recess or seat.

[0040] The invention is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0041] The materials used as well as the dimensions of the individual components of the invention may be more pertinent according to specific requirements.

[0042] The various means of achieving certain different functions certainly need not coexist only in the embodiment shown, but may be present in many embodiments, even if they are not shown. The characteristics indicated above as advantageous, convenient or the like, may also be missing or be substituted by equivalent characteristics.

[0043] The disclosures in Italian Utility Model Application No. TV2013U000058 from which this application claims priority are incorporated herein by reference.

[0044] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A front post (1) for in-wall frames of retractable sliding doors, which is substantially C-shaped so as to define a base (2) and a first pair of lateral wings (3a, 3b), one or more seats (14a, 14b) being provided on said base (2) in which there are removably coupled one or more flaps (15a, 15b) which protrude at right

angles from a first tab (19) of an L-shaped fin (20) whose second tab (22) can be coupled to a surface of a covering (23), said one or more flaps (15a, 15b) being removably coupled by way of an initial insertion according to an axis that is perpendicular to said base (2) and a subsequent sliding according to an axis that is longitudinal to said base (2), said one or more seats (14a, 14b) being provided on said base (2) and being slot-shaped with their axis parallel to the longitudinal axis of said front post (1), and being adapted to enable the removable coupling of said one or more flaps (15a, 15b), said one or more flaps (15a, 15b) being T-shaped, so as to define a shank (16a, 16b) and a head (17a, 17b) which protrude on a same plane at right angles to the end (18) of a first tab (19) of said L-shaped fin (20).

2. The front post according to claim 1, **characterized in that** the length and the width of each one of said heads (17a; 17b) is substantially equal to the width and to the height of each one of said one or more seats (14a, 14b).
3. The front post according to one or more of the preceding claims, **characterized in that** the height of each one of said shanks (16a, 16b) is substantially equal to the thickness of said base (2).
4. The front post according to one or more of the preceding claims, **characterized in that** a protrusion (21) protrudes from said end (18), in the space between said one or more flaps (15a, 15b) and according to a plane that is perpendicular thereto, and is adapted to rest on said base (2) once said fin (20) has been coupled thereto.
5. The front post according to one or more of the preceding claims, **characterized in that** said fin (20) has a second tab (22) that can be coupled to a covering (23), on a surface (24) of which a recess or seat (25) is provided, which is adapted to firmly accommodate said second tab (22), and an undercut (26) of material that is adapted to accommodate said first tab (19).
6. The front post according to one or more of the preceding claims, **characterized in that** said one or more flaps (15a, 15b) are removably coupled, by way of an initial insertion thereof according to an axis that is perpendicular to said base (2), so as to position said one or more flaps (15a, 15b) inside said one or more seats (14a, 14b).
7. The front post according to one or more of the preceding claims, **characterized in that** said one or more flaps (15a, 15b) are removably coupled by way of a subsequent sliding imposed on said one or more flaps (15a, 15b) according to an axis that is longitu-

dinal to said base (2), so as to bring said shanks (16a, 16b) into abutment with an end of said one or more seats (14a, 14b) and position part of said heads (17a, 17b) beyond the, overlying, end of said one or more seats (14a, 14b) and adjacent to the internal lateral surface (27) of said base (2).

8. The front post according to one or more of the preceding claims, **characterized in that** said base (2) is V-shaped so as to define a first inclined portion (12a), which is adjacent to said lateral wing (3a), and a second inclined portion (12b), which is adjacent to said lateral wing (3b), the vertex (13) being directed inwardly of said front post (1).
9. The front post according to claim 8, **characterized in that** it has, proximate to the lower end (4) of said base (2) and adjacent to said lateral wing (3a), at least one hole (5) for coupling, by temporary locking means constituted by a screw (6), to the end (7) of a linear cross-member (8).
10. The front post according to claim 9, **characterized in that** said end (7) that arranges itself against said base (2) is, at least for part of its length, W-shaped, a seat (10) for the threaded shank of said screw (6) being provided at its vertex (9).
11. The front post according to claim 10, **characterized in that** said seat (10) is obtained by deforming multiple portions (11), which are defined so as to be adjacent to each other but not contiguous along the same axis, of the material that constitutes said cross-member (8), said portions (11) being V-shaped and being directed in the opposite direction from the direction of said vertex (9).

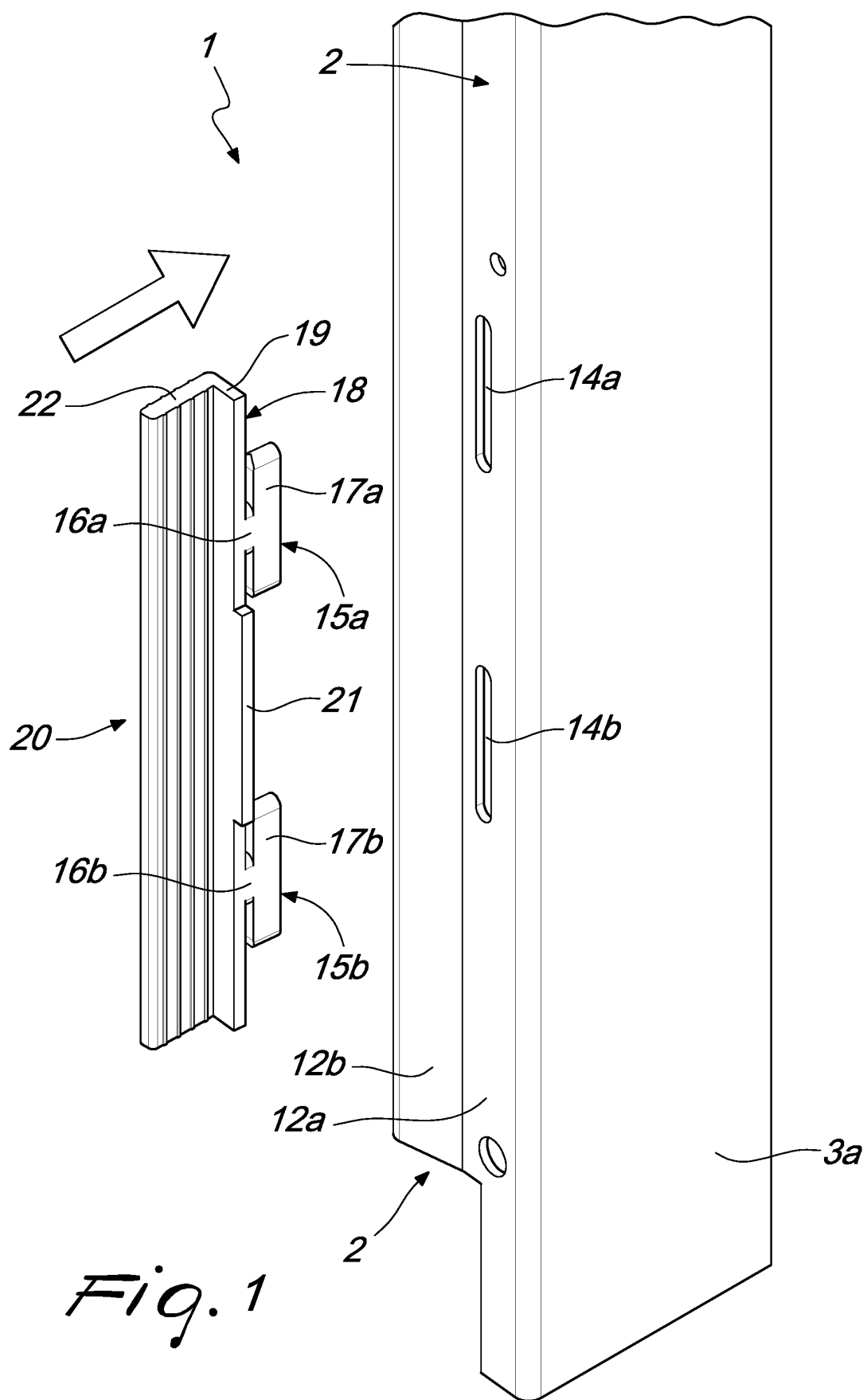
Patentansprüche

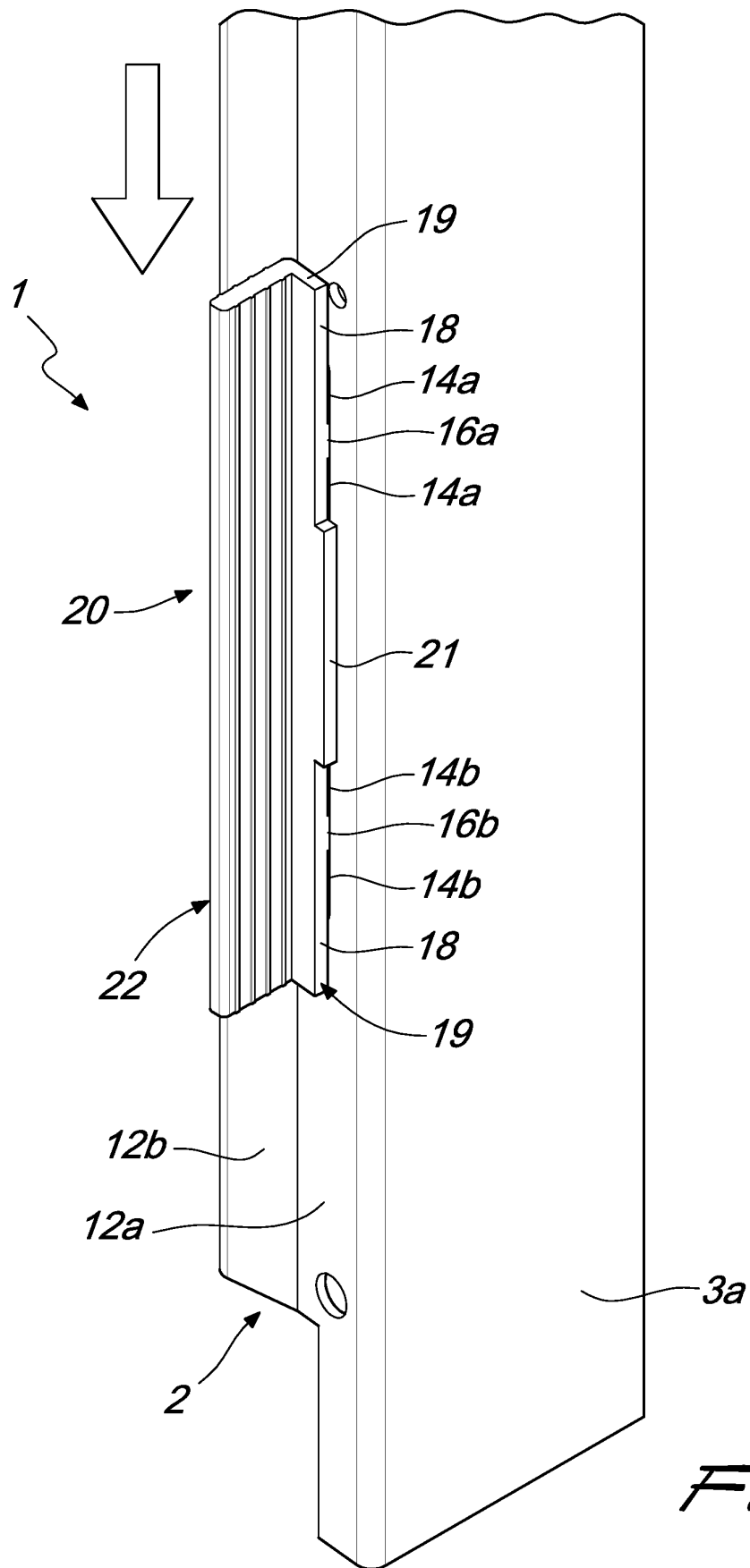
1. Vorderer Pfosten (1) für Wandeinbaurahmen für zurückziehbare Schiebetüren, welcher im wesentlichen C-förmig ist, um so eine Basis (2) und ein erstes Paar von seitlichen Flügeln (3a, 3b) zu definieren, wobei in der genannten Basis (2) eine oder mehrere Aufnahmen (14a, 14b) vorgesehen sind, mit welchen ein oder mehrere Vorsprünge (15a, 15b) trennbar gekoppelt sind, die in rechten Winkeln aus einem ersten Steg (19) einer L-förmigen Finne (20) hervortreten, deren zweiter Steg (22) an eine Oberfläche einer Abdeckung (23) gekoppelt werden kann, wobei der eine oder die mehreren Vorsprünge (15a, 15b) mittels eines ersten Einschiebens entlang einer Achse, die zur genannten Basis (2) senkrecht verläuft, und ein darauf folgendes Gleiten entlang einer Achse, die zur genannten Basis (2) längs verläuft, trennbar gekoppelt wird/werden, wobei die eine oder die mehreren Aufnahmen (14a, 14b) in der genannten

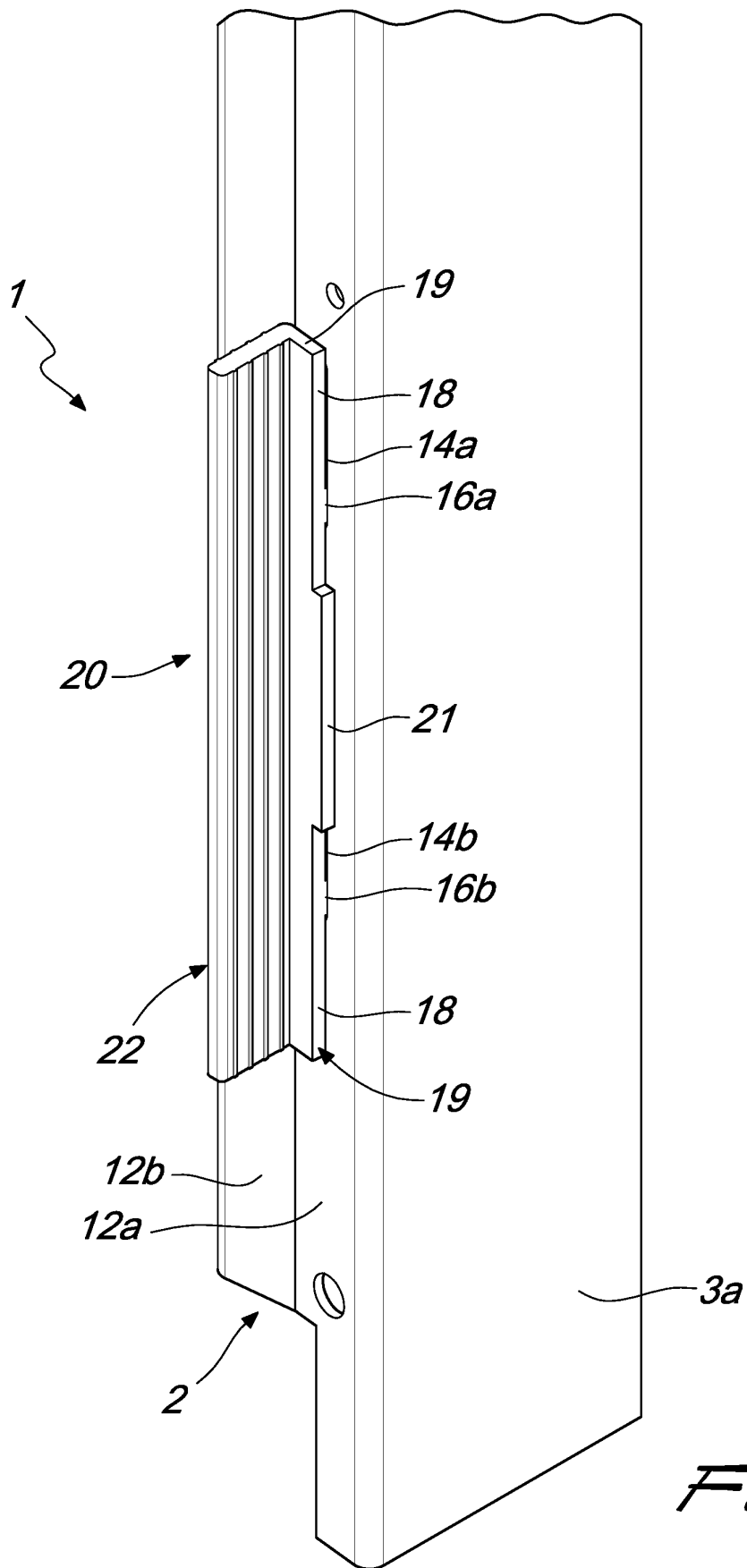
- Basis (2) vorgesehen und in Form eines Schlitzes ausgebildet ist/sind, deren Achsen parallel zur Längsachse des genannten vorderen Pfostens (1) verlaufen, und welche geeignet ist/sind, um das trennbare Koppeln mit dem einen oder den mehreren Vorsprüngen (15a, 15b) zu ermöglichen, wobei der eine oder die mehreren Vorsprünge (15a, 15b) T-förmig sind, um so einen Schaft (16a, 16b) und einen Kopf (17a, 17b) zu definieren, die auf einer selben Ebene in rechten Winkeln zum Ende (18) eines ersten Stegs (19) der genannten L-förmigen Finne (20) hervortreten.
2. Vorderer Pfosten nach Anspruch 1, **dadurch gekennzeichnet, dass** die Länge und die Breite von jedem der genannten Köpfe (17a, 17b) im wesentlichen gleich der Länge und der Breite von jeder der genannten einen oder mehreren Aufnahmen (14a, 14b) sind.
 3. Vorderer Pfosten nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die Höhe der genannten Schäfte (16a, 16b) im wesentlichen gleich der Dicke der genannten Basis (2) ist.
 4. Vorderer Pfosten nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** ein Überstand (21) aus dem genannten Ende (18) in den Raum zwischen dem genannten einen oder den genannten mehreren Vorsprüngen (15a, 15b) hervortritt und in einer Ebene, die dazu senkrecht ist, und geeignet ist, um auf der genannten Basis (2) zu ruhen, nachdem die genannte Finne (20) daran gekoppelt ist.
 5. Vorderer Pfosten nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die genannte Finne (20) einen zweiten Steg (22) aufweist, welcher an eine Abdeckung (23) gekoppelt werden kann, wobei an einer Oberfläche (24) derselben eine Ausnehmung oder eine Aufnahme (25) vorgesehen ist, welche geeignet ist, um den genannten zweiten Steg (22) fest aufzunehmen, und eine Hinterschneidung (26) von Material, welche geeignet ist, um den genannten ersten Steg (19) aufzunehmen.
 6. Vorderer Pfosten nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der genannte eine oder die genannten mehreren Vorsprünge (15a, 15b) mittels eines ersten Einschiebens hievon entlang einer Achse, welche senkrecht zur genannten Basis (2) verläuft, trennbar gekoppelt sind, um so den einen oder die mehreren Vorsprünge (15a, 15b) im Inneren der genannten einen oder mehreren Aufnahmen (14a, 14b) anzuordnen.
 7. Vorderer Pfosten nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der genannte eine oder die genannten mehreren Vorsprünge (15a, 15b) trennbar gekoppelt sind mittels eines darauf folgenden Gleitens, das den genannten einen oder mehreren Vorsprüngen (15a, 15b) entlang einer Achse, die zur genannten Basis (2) längs verläuft, auferlegt wird, um so die beiden genannten Schäfte (16a, 16b) mit einem Ende der genannten einen oder mehreren Aufnahmen (14a, 14b) in Anschlag zu bringen, und einen Teil der genannten Köpfe (17a, 17b) über das Ende der genannten einen oder mehreren Aufnahmen (14a, 14b) hinaus, überstehend, und benachbart zu der inneren Seitenfläche (27) der genannten Basis (2) anzuordnen.
 8. Vorderer Pfosten nach einem oder mehreren der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die genannte Basis (2) V-förmig ist, um so einen ersten schrägen Abschnitt (12a), welcher zum genannten seitlichen Flügel (3a) benachbart ist, und einen zweiten schrägen Abschnitt (12b), welcher zum genannten seitlichen Flügel (3b) benachbart ist, zu definieren, wobei der Scheitel (13) in das Innere des genannten vorderen Pfostens (1) gerichtet ist.
 9. Vorderer Pfosten nach Anspruch 8, **dadurch gekennzeichnet, dass** dieser in der Nähe des unteren Endes (4) der genannten Basis (2) und benachbart zum genannten seitlichen Flügel (3a) mindestens ein Loch (5) zum Koppeln durch temporäre Sperrmittel, die von einer Schraube (6) gebildet werden, an das Ende (7) einer linearen Querstrebe (8) aufweist.
 10. Vorderer Pfosten nach Anspruch 9, **dadurch gekennzeichnet, dass** das genannte Ende (7), welches sich gegen die Basis (2) anordnet, in mindestens einem Teil seiner Länge W-förmig ist, wobei eine Aufnahme (10) für einen Gewindenschaft der genannten Schraube (6) an seinem Scheitel (9) vorgesehen ist.
 11. Vorderer Pfosten nach Anspruch 10, **dadurch gekennzeichnet, dass** die genannte Aufnahme (10) durch Verformen mehrerer Abschnitte (11) erhalten wird, welche so definiert sind, dass sie zueinander benachbart, aber nicht zusammenhängend entlang der selben Achse, aus dem Material sind, welches die genannte Querstrebe (8) bildet, wobei die genannten Abschnitte (11) V-förmig sind und in die entgegengesetzte Richtung des genannten Scheitels (9) gerichtet sind.

Revendications

1. Montant avant (1) pour cadres à galandage de portes coulissantes rétractables, qui est sensiblement en forme de C afin de définir une base (2) et une première paire d'ailes latérales (3a, 3b), un ou plusieurs sièges (14a, 14b) étant prévus sur ladite base (2) dans laquelle on couple, de manière amovible, un ou plusieurs volets (15a, 15b) qui font saillie en angle droit à partir d'une première languette (19) d'une ailette en forme de L (20), dont la seconde languette (22) peut être couplée à une surface d'un recouvrement (23), lesdits un ou plusieurs volets (15a, 15b) étant couplés, de manière amovible, au moyen d'une insertion initiale selon un axe qui est perpendiculaire à ladite base (2) et d'un coulisement consécutif selon un axe qui est longitudinal par rapport à ladite base (2), lesdits un ou plusieurs sièges (14a, 14b) étant prévus sur ladite base (2) et étant en forme de fente avec leur axe parallèle à l'axe longitudinal dudit montant avant (1) et étant adaptés pour permettre le couplage amovible desdits un ou plusieurs volets (15a, 15b), lesdits un ou plusieurs volets (15a, 15b) étant en forme de T, afin de définir une tige (16a, 16b) et une tête (17a, 17b) qui font saillie sur un même plan en angle droit par rapport à l'extrémité (18) d'une première languette (19) de ladite ailette en forme de L (20).
2. Montant avant selon la revendication 1, **caractérisé en ce que** la longueur et la largeur de chacune desdites têtes (17a, 17b) sont sensiblement égales à la largeur et à la hauteur de chacun desdits un ou plusieurs sièges (14a, 14b).
3. Montant avant selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** la hauteur de chacune desdites tiges (16a, 16b) est sensiblement égale à l'épaisseur de ladite base (2).
4. Montant avant selon une ou plusieurs des revendications précédentes, **caractérisé en ce qu'une** saillie (21) fait saillie de ladite extrémité (18), dans l'espace entre lesdits un ou plusieurs volets (15a, 15b) et selon un plan qui est perpendiculaire à ce dernier, et est adaptée pour s'appuyer sur ladite base (2) une fois que ladite ailette (20) a été couplée à cette dernière.
5. Montant avant selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite ailette (20) a une seconde languette (22) qui peut être couplée à un recouvrement (23), sur une surface (24) duquel est prévu un évidement ou siège (25) qui est adapté pour loger fermement ladite seconde languette (22), et un dégagement (26) de matériau qui est adapté pour loger ladite première languette (19).
6. Montant avant selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** lesdits un ou plusieurs volets (15a, 15b) sont couplés, de manière amovible, au moyen de leur insertion initiale selon un axe qui est perpendiculaire à ladite base (2), afin de positionner lesdits un ou plusieurs volets (15a, 15b) à l'intérieur desdits un ou plusieurs sièges (14a, 14b).
7. Montant avant selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** lesdits un ou plusieurs volets (15a, 15b) sont couplés de manière amovible au moyen d'un coulisement consécutif imposé sur lesdits un ou plusieurs volets (15a, 15b) selon un axe qui est longitudinal par rapport à ladite base (2), afin d'amener lesdites tiges (16a, 16b) en butée avec une extrémité desdits un ou plusieurs sièges (14a, 14b) et positionner une partie desdites têtes (17a, 17b) au-delà de l'extrémité superposée desdits un ou plusieurs sièges (14a, 14b) et adjacente à la surface latérale interne (27) de ladite base (2).
8. Montant avant selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite base (2) est en forme de V afin de définir une première partie inclinée (12a), qui est adjacente à ladite aile latérale (3a) et une seconde partie inclinée (12b), qui est adjacente à ladite aile latérale (3b), le sommet (13) étant dirigé vers l'intérieur dudit montant avant (1).
9. Montant avant selon la revendication 8, **caractérisé en ce qu'il a**, à proximité de l'extrémité inférieure (4) de ladite base (2) et de manière adjacente à ladite aile latérale (3a), au moins un trou (5) pour se coupler, par des moyens de verrouillage temporaires constitués par une vis (6), à l'extrémité (7) d'une traverse linéaire (8).
10. Montant avant selon la revendication 9, **caractérisé en ce que** ladite extrémité (7) qui s'agence d'elle-même contre ladite base (2) est, au moins sur une partie de sa longueur, en forme de W, un siège (10) pour la tige filetée de ladite vis (6) étant prévu au niveau de son sommet (9).
11. Montant avant selon la revendication 10, **caractérisé en ce que** ledit siège (10) est obtenu en déformant plusieurs parties (11), qui sont définies afin d'être adjacentes entre elles, mais pas contiguës le long du même axe, du matériau qui constitue ladite traverse (8), lesdites parties (11) étant en forme de V et étant dirigées dans la direction opposée à la direction dudit sommet (9).







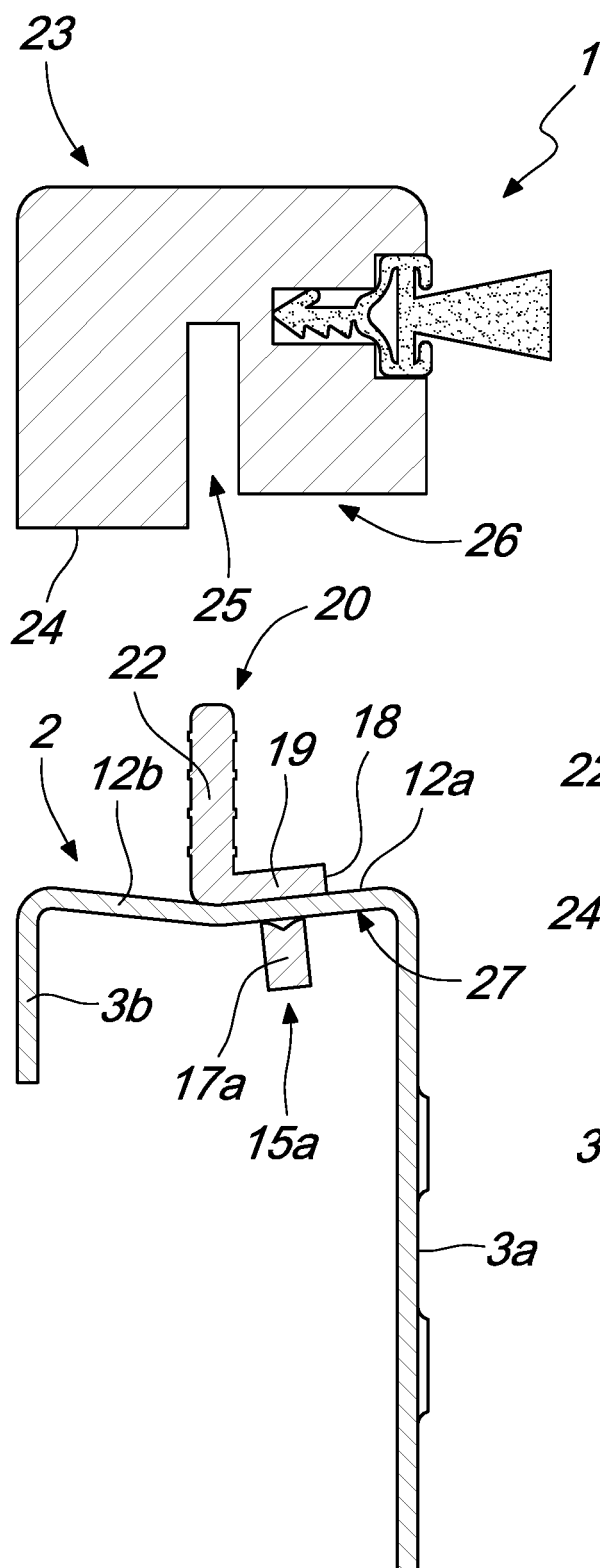


Fig. 4

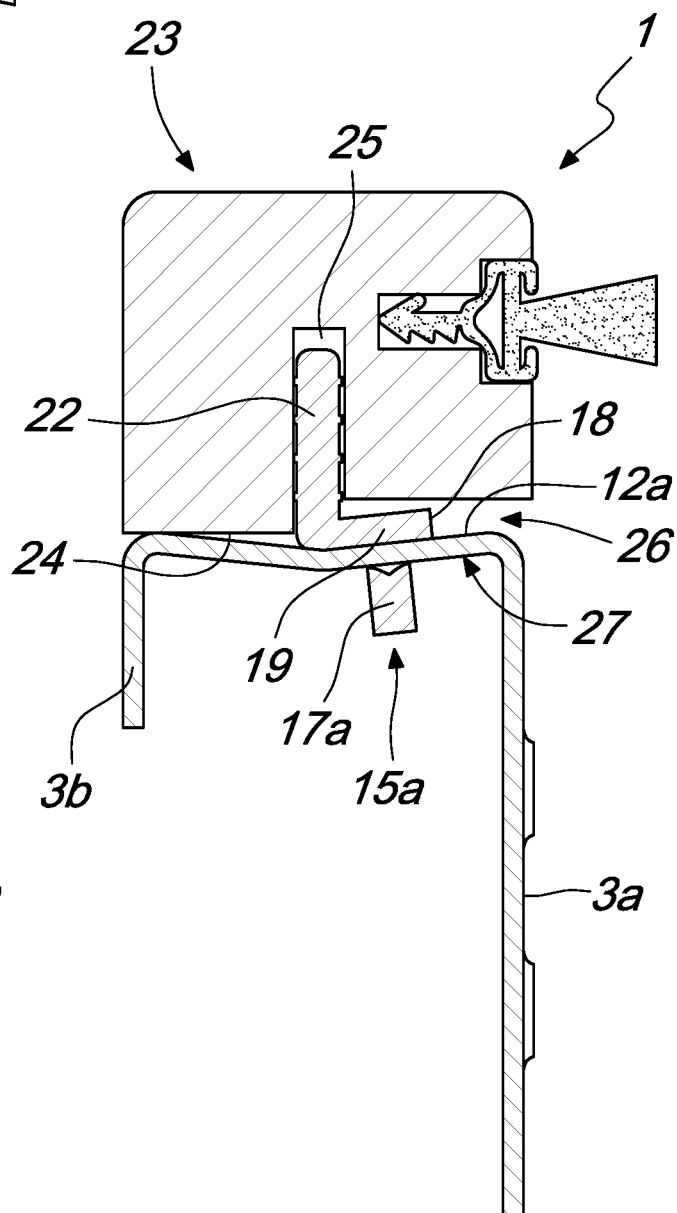
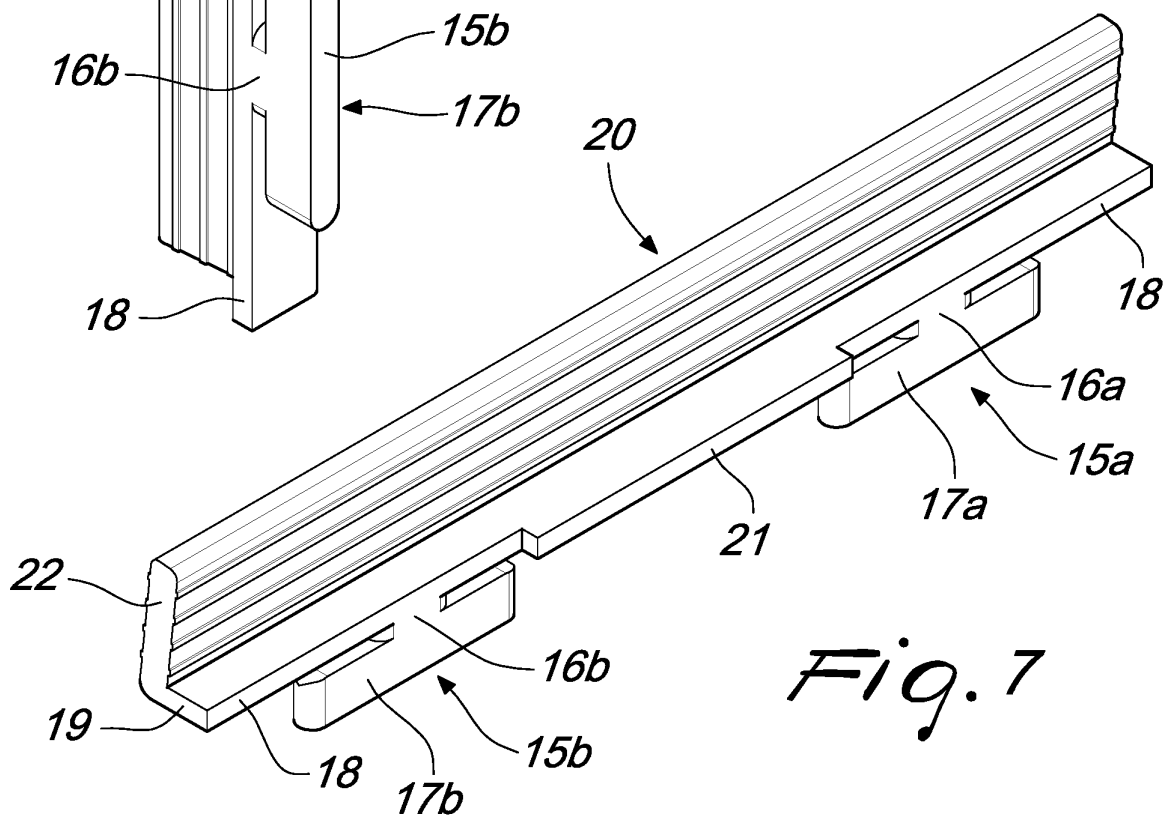
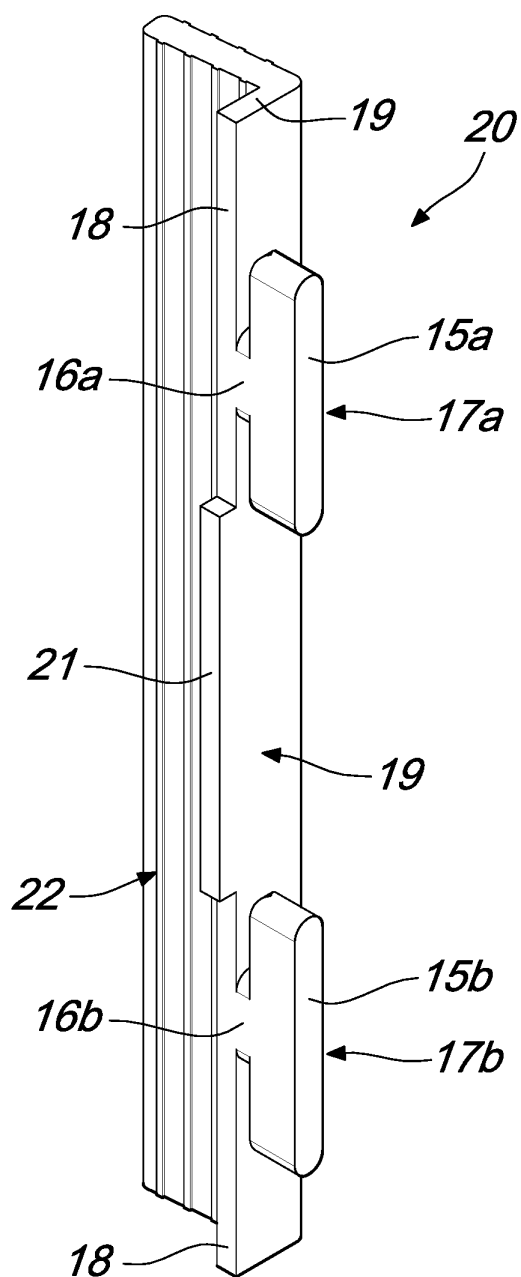
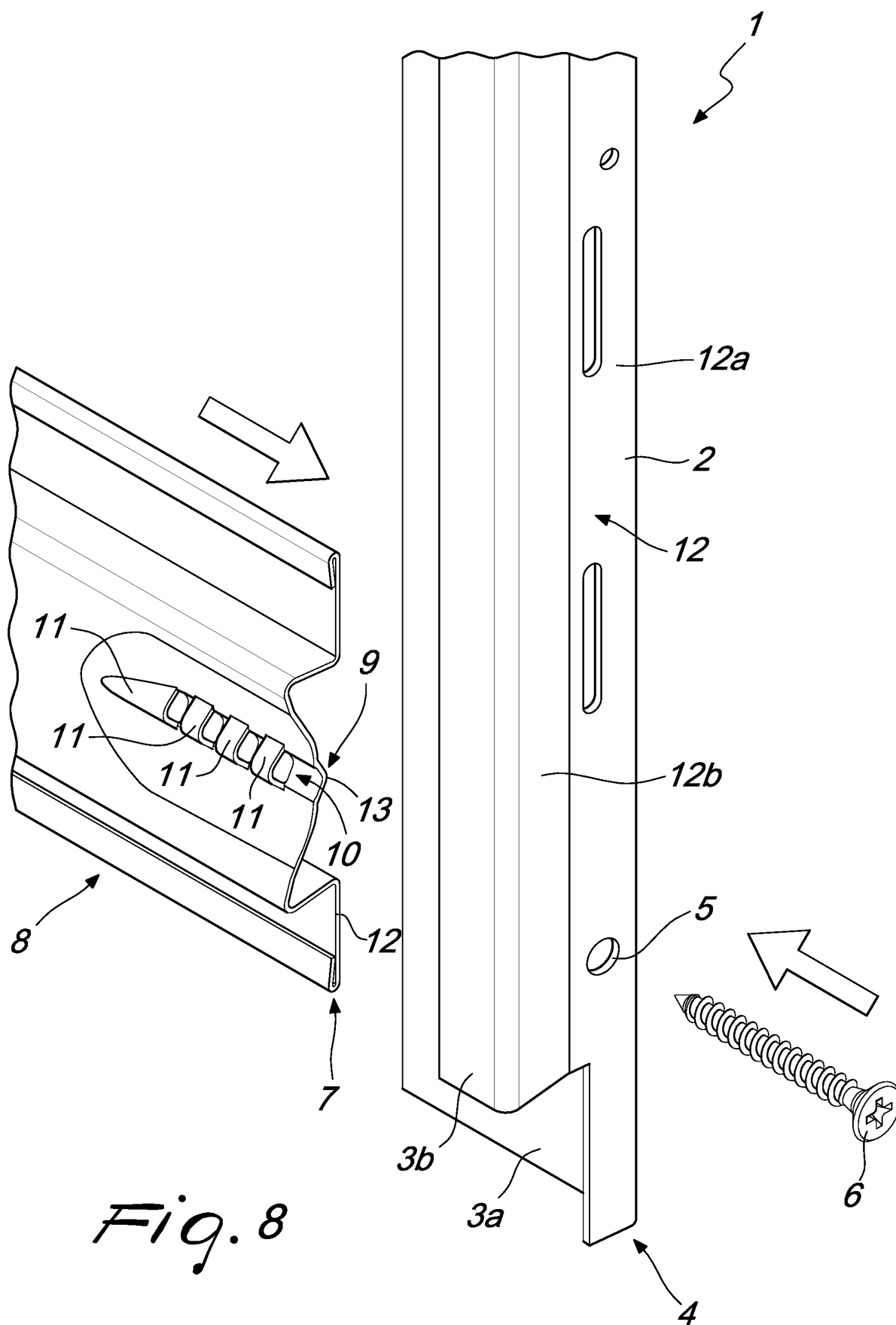


Fig. 5





REFERENCES CITED IN THE DESCRIPTION

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