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(54) **Carriage**

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**CH-A- 282 672 GB-A- 1 405 931**  
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## Description

**[0001]** The present invention relates to a carriage, particularly for sliding doors.

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

**[0003]** Also known are door frames which involve the use of a single rail outside the wall.

**[0004]** Such solutions make it possible to reduce the encumbrances of the door within a room thanks to the possibility of making it slide into the casing. One can thus use the space around the door which would be otherwise occupied by doors of the type that are hinged laterally to a casement.

**[0005]** In the known art the casing embedded in the plasterboard or plaster wall usually comprises vertical uprights which define, together with lateral cross-members, a case for the containment of the panel or door. With the application of a net outside the containment case, the plaster can then be applied.

**[0006]** Above the case, along an axis which is longitudinal to the case and extends on the side opposite to the containment case, a rail protrudes which is hidden by a jamb or directly by the section of the wall.

**[0007]** Usually two carriages are associated within the rail, each one being a body that is basically parallelepiped in shape.

**[0008]** In a lower region and at right angles to the central body, in a central region, a rigid pin protrudes which has a head that is engaged with or fixed to a bracket, adjacent to the upper edge of the door or of a panel.

**[0009]** Pivoted transversely to the body, at the ends, are the pivots of two pairs of parallel wheels which can slide on the rail so as to enable the sliding thereof in and out of the casing of the door.

**[0010]** Such a solution is for example described in Italian patent no. 1,329,977 of October 21, 2001.

**[0011]** A problem that is encountered in the use of such conventional solutions consists in that often it happens that, because of installation errors or excessive tolerances in the assembly of the components that constitute the various existing sliding systems, the smoothness of sliding and the lifetime of the components are compromised.

**[0012]** In fact, sticking can occur in the sliding of the door which can even lead to the seizing thereof.

**[0013]** An improved mounting for a door hanger is that disclosed by document GB 1 405 931, comprising the features of the preamble of claim 1 and that has a door hanging bolt pivotally connected to the hanger. The aim of the present invention is therefore to resolve the above-mentioned technical problems, eliminating the drawbacks in the cited known art, by devising a carriage that makes it possible to permanently ensure an optimal sliding of the door leaf in suspension.

**[0014]** Within this aim, an object of the invention is to

provide a carriage that makes it possible to obtain an optimal and constant sliding of the door leaf or of the door even in if the sliding rail fixed to the casing is not optimally installed.

**[0015]** Another object is to provide a carriage that makes it possible to achieve an optimal and constant sliding of the door leaf or of the door even in the presence of excessive tolerances in the assembly of the components of the sliding door.

**[0016]** Another object is to provide a carriage that makes it possible to obtain the optimal smoothness of the sliding of the door even if it has been installed by people with no special training.

**[0017]** Another object is to provide a carriage that is structurally simple and can be provided with the normal plants and machines and is low-cost.

**[0018]** This aim and these and other objects which will become more evident hereinafter are achieved by a carriage, according with the present invention, that has the features set forth in claim 1.

**[0019]** Further characteristics and advantages of the invention will become more apparent from the detailed description of a specific, but not exclusive, embodiment, illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is a perspective view of a carriage according to the invention;

Figure 2 is an exploded view of the carriage according to the invention;

Figures 3, 4 and 5 are front views of the carriage in the conditions of the rail being transversely in axis and out of axis;

Figures 6, 7 and 8 are side views of the carriage with the rail partially sectional and in the conditions of the rail being longitudinally in axis and out of axis;

Figure 9 is a perspective view of the carriage associated with the rail which is partially sectional;

Figures 10, 11, 12 and 13 are perspective views of the carriage with the body in different shapes.

**[0020]** 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.

**[0021]** With reference to the figures, the reference numeral 1 generally designates a carriage that can be associated with a rail 2, usually shaped like an upside-down U and hidden by a jamb or directly by the section of the wall, connected to a door leaf or door 4 of the retractable or slideable type.

**[0022]** The carriage 1 is constituted by a body 3, made preferably of metal and substantially plate-like in shape so as to be able to be slideably associated between the wings 5a and 5b of the rail 2.

**[0023]** The body 3 has a front wall 6, a rear wall 7 and an upper wall 8, which are advantageously flat and, in a central region, a shim 9 protruding at right angles from

both lateral surfaces 10a and 10b.

**[0024]** At the shim 9 there is transversely a first cylindrical hole 11 which accommodates a complementarily shaped cylinder 12, which can oscillate freely therein and in turn has a second hole 13 which is provided at right angles to its longitudinal axis and is threaded internally.

**[0025]** A longitudinal slot 14 is provided on the upper wall 8 of the body 3, at the expansion 9, and affects the entire height of the body 3 and the first hole 11.

**[0026]** An anchoring means is present for the retracting slideable door or leaf 4 which is constituted by a bolt 15 the shank 16 of which is threaded complementarily to the second hole 13 and is thus associable with the cylinder 12 which is free to rotate with respect to the axis of the first hole 11.

**[0027]** The bolt 15 can thus oscillate on the plane of arrangement of the plate-like body 3.

**[0028]** Advantageously associated with the shank 16 are a nut 17 and a washer 18 which are necessary for coupling to a bracket 19 which is associable with the upper edge 20 of the retractable sliding door or leaf 4.

**[0029]** This last item can thus maintain its correct position during opening and closure despite inclinations to which the rail 2 might be subjected on the longitudinal plane, as shown in Figures 7 and 8.

**[0030]** Two U-shaped seats 23a and 23b are provided on the upper wall 8 of the body 3, so as to partially affect the height of the body 3 and proximate to the ends 21 and 22 of the body 3.

**[0031]** Third holes 24a and 24b are provided axially to the front wall 6 and the rear wall 7, at both wings of said seats 23a and 23b and so as to affect them, and accommodate respective complementarily shaped first pivots 25a and 25b.

**[0032]** The first pivots 25a and 25b are pivoted to two suitably transversely perforated sleeves 26a and 26b which penetrate into the seats 23a and 23b and can oscillate freely on a plane that is transverse to the body 3.

**[0033]** A pair of second pivots 27a and 27b protrude from the sleeves 26a and 26b axially or eccentrically, along the same axis, for the pivoting of two pairs of wheels 28a, 28b, 29a and 29b.

**[0034]** These two pairs of wheels 28a, 28b, 29a and 29b are arranged side by side but slightly spaced from the lateral surfaces 10a and 10b of the body 3 so as to affect substantially the interspace between the expansion 9 and the ends of the body 3 so that they can be associated slideably with the rail 2 and are free to oscillate with respect to the body 3, as shown in Figures 4 and 5.

**[0035]** In this manner the retractable sliding door or leaf 4 can maintain its correct position during opening and closure despite inclinations on the transverse plane to which the rail 2 can be subjected.

**[0036]** In practice it has been found that the invention has fully achieved the intended aim and objects, a carriage having been obtained that is horizontally pivoted so as to constantly ensure a smooth sliding of the door leaf in suspension thanks to the ability of the body 3, and

thus of the door 4, to horizontally pivot in two directions with respect to the rail 2 so as to compensate for any non-optimal installation of the rail itself and even in the presence of excessive tolerances in the assembly of the components of the sliding door.

**[0037]** The carriage moreover has an optimal smoothness of sliding of the door even if it was not installed by people with special training.

**[0038]** Obviously the invention is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

**[0039]** Thus the shape of the body 3 can vary and assume, in transverse cross-section, a shape that is substantially elliptical or teardrop-shaped, as shown in Figure 10, so as to improve the oscillation of the two pairs of wheels 28a, 28b, 29a and 29b by increasing the angle of inclination that these can perform without interacting with the adjacent lateral surfaces 10a and 10b of the body 3.

**[0040]** In the same way the shape of the body 3 can vary and assume, in transverse cross-section, a shape that is substantially elliptical or teardrop-shaped with a diverging lower footing 30, as shown in Figure 11.

**[0041]** In the same way the shape of the body 3 can vary and assume, in transverse cross-section, a shape that is substantially elliptical or teardrop-shaped but with contiguous flat surfaces which form an octagon, as shown in Figure 12.

**[0042]** In the same way the shape of the central body 3 can vary and assume, in transverse cross-section, a shape that is substantially elliptical or teardrop-shaped but with contiguous arc-like surfaces which form an octagon, with a diverging lower footing (30) as shown in Figure 13.

**[0043]** Obviously the materials used as well as the dimensions constituting the individual components of the invention can be more pertinent to specific requirements.

**[0044]** The various means for effecting certain different functions shall not in any way coexist only in the illustrated embodiment, but may be present per se in many embodiments, even if they are not illustrated. The characteristics indicated as advantageous, convenient or similar may also be missing or be substituted by equivalent characteristics.

**[0045]** The disclosures in Italian Patent Application No. TV2011A000149 from which this application claims priority are incorporated herein by reference.

**[0046]** 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

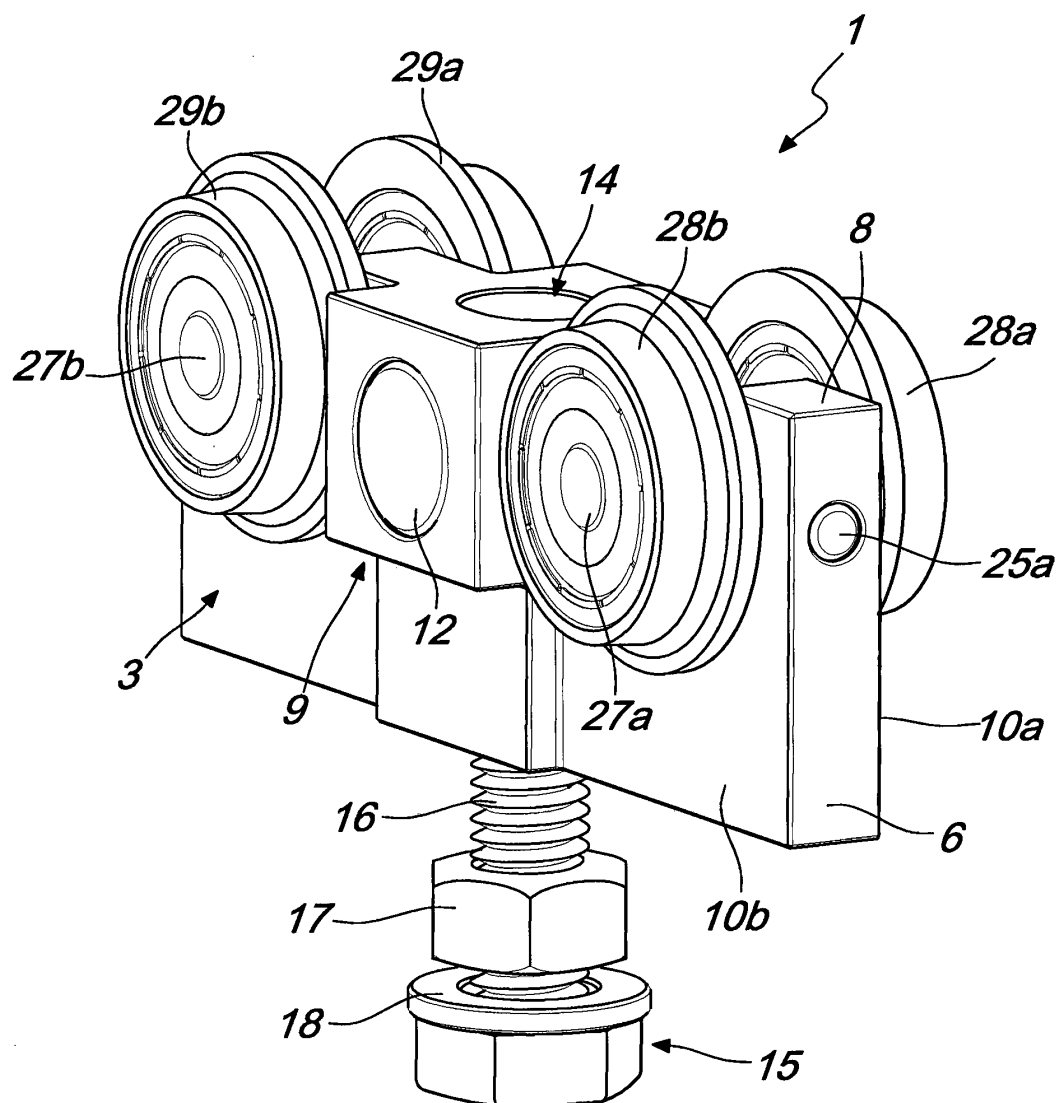
1. A carriage slidably associable with a rail (2) for supporting a sliding door or panel (4), comprising a body (3) to which an anchoring means (15) for anchoring a sliding door or panel (4) is pivoted (11, 12) transversely to said body (3), said anchoring means being able to oscillate on the plane of arrangement of said body (3) along which the body (3) is arranged lengthways, and wheel pivots (27a, 27b) of two pairs of transverse wheels (28a, 28b, 29a, 29b) which are slideably associable with said rail (2) and are each pivoted by way of said wheel pivots (27a, 27b) to a respective one of the ends (21, 22) of said body (3), **characterized in that** two U-shaped seats (23a, 23b) are provided on an upper wall (8) of the body (3) so as to partially extend over the height thereof, each said seat (23a, 23b) being proximate to a respective one of said ends (21, 22) of said body (3), holes (24a, 24b) being further provided axially to a front wall (6) and a rear wall (7) and along said plane of arrangement of said body (3), said holes (24a, 24b) extending through opposed wings of both said U-shaped seats (23a, 23b) and accommodating respective complementarily shaped pivots (25a, 25b) that are each pivoted to a respective one of two suitably transversely perforated sleeves (26a, 26b) which enter said seats (23a, 23b) so as to oscillate freely on a transverse plane that is transverse to said plane of arrangement of said body (3), said wheel pivots (27a, 27b) protruding from said sleeves (26a, 26b), axially or eccentrically and along the same axis, for the pivoting of said two pairs of wheels (28a, 28b, 29a, 29b), whereby said two pairs of wheels (28a, 28b, 29a, 29b) can freely oscillate with respect to the body (3) on said transverse plane.
2. The carriage according to claim 1, wherein said body (3) has a substantially plate-like shape, is slideably associable between the wings (5a, 5b) of said rail (2) and has said front wall (6), rear wall (7) and upper wall (8) which are advantageously flat and, in a central region, a shim (9) that protrudes at right angles from both lateral surfaces (10a, 10b) of said body (3), at said shim (9) a first cylindrical hole (11) being formed transversely which accommodates a complementarily shaped cylinder (12), which can oscillate freely therein and in turn has a second hole (13) which is provided at right angles to its longitudinal axis and is threaded internally.
3. The carriage according to claim 2, **characterized in that** a longitudinal slot (14) is provided in the upper wall (8) of said body (3), at said expansion (9), and affects the entire height of said body (3) and said first hole (11).
4. The carriage according to claim 3, **characterized in that** said anchoring means for said retractable sliding door or panel (4) is constituted by a bolt (15) the shank (16) of which is threaded complementarily to said second hole (13) of said cylinder (12) and enters said slot (14), said stem (16) being free to rotate with respect to the axis of said first hole (11).
5. The carriage according to claim 4, **characterized in that** a nut (17) and a washer (18) are associated with said shank (16) of said bolt (15), which oscillates on the plane of arrangement of said plate-like body (3), for mating with a bracket (19) which can be associated with the upper edge (20) of said retractable sliding door or panel (4) which maintains its correct position during opening and closure despite inclinations to which said rail (2) might be subjected on the longitudinal plane.
6. The carriage according to any of the claims 2-5, **characterized in that** said two pairs of wheels (28a, 28b, 29a, 29b) are arranged side by side but slightly spaced from said lateral surfaces (10a, 10b) of said body (3) so as to affect substantially the interspace between said shim (9) and the ends of said body (3) so that they can be associated slideably with said rail (2) and to be free to oscillate with respect to said body (3), said retractable sliding door or leaf (4) maintaining its correct position during opening and closure despite inclinations on the transverse plane to which said rail (2) can be subjected.
7. The carriage according to any of the claim 2-6, **characterized in that** the shape of said body (3), in a transverse cross-section thereof, is substantially elliptical or teardrop-shaped, according to arc-like surfaces or flat surfaces which are contiguous so as to form an octagon, with or without the presence of a diverging lower footing (30).
8. The carriage according to claim 1, **characterized in that** said anchoring means (15) oscillates on a plane that is substantially parallel to the plane of arrangement of said plate-like body (3), and **in that** said two pairs of wheels (28a, 28b, 29a, 29b), which are pivoted transversely to said body (3), oscillate with respect to an axis that is substantially longitudinal to said body (3).

## Patentansprüche

1. Laufwagen, welcher mit einer Schiene (2) gleitend verbindbar ist, um eine Schiebetüre oder ein Paneel (4) zu tragen, umfassend einen Körper (3), an welchem ein Verankerungsmittel (15) zum Verankern einer Schiebetür oder eines Paneels (4) zum genannten Körper (3) quer schwenkbar gelagert ist (11, 12), welches Verankerungsmittel in der Ebene der

- Anordnung des Körpers (3), entlang welcher der Körper (3) längsweise angeordnet ist, schwingen kann, und Radachsen (27a, 27b) der beiden Paare von Querrädern (28a, 28b, 29a, 29b), die gleitend mit der Schiene (2) verbindbar sind und jeweils mittels der Radachsen (27a, 27b) an einem jeweiligen Ende (21, 22) des Körpers (23) schwenkbar gelagert sind, **dadurch gekennzeichnet, dass** zwei U-förmige Sitze (23a, 23b) auf einer oberen Wand (8) des Körpers (3) vorgesehen sind, um sich so teilweise über dessen Höhe zu erstrecken, wobei jeder Sitz (23a, 23b) nahe einem jeweiligen Ende (21, 22) des Körpers (3) angeordnet ist, ferner Löcher (24a, 24b) axial zu einer Vorderwand (6) und einer Rückwand (7) und entlang der Ebene der Anordnung des Körpers (3) angeordnet sind, welche Löcher (24a, 24b) sich durch gegenüberliegende Flügel von beiden U-förmigen Sitzen (23a, 23b) erstrecken und jeweils komplementär geformte Achsen (25a, 25b) aufnehmen, welche jede zu jeweils einer von zwei geeignet quer mit Löchern versehenen Manschetten (26a, 26b) schwenkbar gelagert sind, die in die Sitze (23a, 23b) eintreten, um so auf einer Querebene, die quer zur Ebene der Anordnung des Körpers (3) ist, frei zu schwingen, welche Radachsen (27a, 27b) aus den Manschetten (26a, 26b) axial oder exzentrisch und entlang der gleichen Achse hervortreten, zum Schwenken der beiden Radpaare (28a, 28b, 29a, 29b), wodurch die beiden Radpaare (28a, 28b, 29a, 29b) im Bezug auf den Körper (3) auf der Querebene frei schwingen können.
2. Laufwagen nach Anspruch 1, wobei der Körper (3) eine im Wesentlichen plattenartige Form besitzt, zwischen den Flügeln (5a, 5b) der Schiene (2) gleitbar verbindbar ist, und eine Vorderwand (6), eine Rückwand (7) und eine obere Wand (8) besitzt, welche vorteilhafterweise flach sind, und in einem zentralen Bereich ein Füllstück (9), welches in rechten Winkeln aus beiden Seitenflächen (10a, 10b) des Körpers (3) hervortritt, wobei in dem Füllstück (9) ein erstes zylindrisches Loch (11) quer ausgebildet ist, das einen komplementär geformten Zylinder (12) aufnimmt, welcher darin frei schwingen kann und seinerseits ein zweites Loch (13) aufweist, welches in rechten Winkeln zu seiner Längsachse vorgesehen ist und ein Innengewinde aufweist.
  3. Laufwagen nach Anspruch 2, **dadurch gekennzeichnet**, dass ein Langloch (14) in der oberen Wand (8) des Körpers (3) an dem Fortsatz (9) vorgesehen ist und die gesamte Höhe des Körpers (3) und des ersten Lochs (11) betrifft.
  4. Laufwagen nach Anspruch 3, **dadurch gekennzeichnet, dass** das Verankerungsmittel für die zurückziehbare Schiebetür oder das Paneel (4) durch eine Schraube (15) gebildet ist, deren Schaft (16) mit einem zum zweiten Loch (13) des Zylinders (12) komplementären Gewinde versehen ist und in das Loch (14) eintritt, welcher Schaft (16) frei ist, um sich im Bezug auf die Achse des ersten Lochs (11) zu drehen.
  5. Laufwagen nach Anspruch 4, **dadurch gekennzeichnet, dass** eine Mutter (17) und eine Beilagscheibe (18) mit dem Schaft (16) der Schraube (15) verbunden sind, welcher auf der Ebene der Anordnung des plattenartigen Körpers (3) schwingt, um mit einer Halterung (19) zusammenzuwirken, welche mit der oberen Kante (20) der zurückziehbaren Schiebetür oder des Paneels (14) verbunden werden kann, welche/welches ihre/seine korrekte Position während des Öffnens und des Schließens trotz der Neigungen, welchen die Schiene (2) auf der Längsebene unterliegen kann, aufrecht erhält.
  6. Laufwagen nach einem der Ansprüche 2 - 5, **dadurch gekennzeichnet, dass** zwei Radpaare (28a, 28b, 29a, 29b) Seite an Seite, aber geringfügig beabstandet von den Seitenflächen (10a, 10b) des Körpers (3) angeordnet sind, um so im Wesentlichen den Zwischenraum zwischen dem Füllstück (9) und den Enden des Körpers (3) zu beeinflussen, so dass sie gleitbar mit der Schiene (2) verbunden werden können und frei sind, um im Hinblick auf den Körper (3) zu schwingen, welche zurückziehbare Schiebetür oder welches Paneel (4) ihre/seine korrekte Position während des Öffnens und des Schließens trotz der Neigungen auf der Querebene, welchen die Schiene (2) unterworfen sein kann, aufrecht erhält.
  7. Laufwagen nach einem der Ansprüche 2 - 6, **dadurch gekennzeichnet, dass** die Form des Körpers (3) in einem Querschnitt hiervon im Wesentlichen ellipsoidisch oder tropfenförmig ist, mit bogenartigen Oberflächen oder den flachen Oberflächen, die angrenzen, übereinstimmt, um so ein Oktagon, mit oder ohne auseinanderstrebendem unterem Fundament auszubilden.
  8. Laufwagen nach Anspruch 1, **dadurch gekennzeichnet, dass** das Verankerungsmittel (15) auf einer Ebene schwingt, welche im Wesentlichen parallel zur Ebene der Anordnung des plattenartigen Körpers (3) ist, und dass die beiden Radpaare (28a, 28b, 29a, 29b), welche quer zum Körper (3) schwenkbar angeordnet sind, im Bezug auf eine Achse, die im Wesentlichen längs zum Körper (3) ist, schwingen.
- Revendications**
1. Chariot pouvant être associé, de manière coulissante, à un rail (2) pour supporter une porte coulissante

- ou un panneau coulissant (4), comprenant un corps (3) par rapport auquel un moyen d'ancrage (15) pour ancrer une porte ou panneau coulissant(e) (4) est pivoté (11, 12) transversalement par rapport audit corps (3), ledit moyen d'ancrage pouvant osciller sur le plan d'agencement dudit corps (3) le long duquel le corps (3) est agencé dans le sens de la longueur, et des pivots de roue (27a, 27b) de deux paires de roues transversales (28a, 28b, 29a, 29b) qui peuvent être associées de manière coulissante audit rail (2) et sont chacune pivotées au moyen desdits pivots de roue (27a, 27b) à une extrémité respective des extrémités (21, 22) dudit corps (3), **caractérisé en ce que** deux sièges en forme de U (23a, 23b) sont prévus sur une paroi supérieure (8) du corps (3) afin de s'étendre partiellement sur sa hauteur, chacun desdits sièges (23a, 23b) étant à proximité d'une extrémité respective desdites extrémités (21, 22) dudit corps (3), des trous (24a, 24b) étant en outre prévus axialement sur une paroi avant (6) et une paroi arrière (7) et le long dudit plan d'agencement dudit corps (3), lesdits trous (24a, 24b) s'étendant à travers des ailes opposées de deux desdits sièges en forme de U (23a, 23b) et logeant des pivots (25a, 25b) respectifs formés de manière complémentaire qui sont chacun pivotés par rapport à un manchon respectif de deux manchons (26a, 26b) perforés transversalement de manière appropriée qui pénètrent dans lesdits sièges (23a, 23b) afin d'osciller librement sur un plan transversal qui est transversal par rapport audit plan d'agencement dudit corps (3), lesdits pivots de roue (27a, 27b) faisant saillie à partir desdits manchons (26a, 26b), axialement ou excentriquement et le long du même axe, pour le pivotement desdites deux paires de roues (28a, 28b, 29a, 29b), moyennant quoi lesdites deux paires de roues (28a, 28b, 29a, 29b) peuvent librement osciller par rapport au corps (3) sur ledit plan transversal.
2. Chariot selon la revendication 1, dans lequel ledit corps (3) a une forme sensiblement en forme de plaque, peut être associé de manière coulissante entre les ailes (5a, 5b) dudit rail (2) et a lesdites paroi avant (6), paroi arrière (7) et paroi supérieure (8) qui sont avantageusement plates et, dans une région centrale, une cale (9) qui fait saillie en angle droit à partir des deux surfaces latérales (10a, 10b) dudit corps (3), au niveau de ladite cale (9) un premier trou cylindrique (11) est formé de manière transversale, loge un cylindre (12) de forme complémentaire, qui peut osciller librement à l'intérieur de ce dernier et a, à son tour, un second trou (13) qui est prévu en angle droit par rapport à son axe longitudinal et est fileté intérieurement.
3. Chariot selon la revendication 2, **caractérisé en ce qu'une** fente longitudinale (14) est prévue dans la paroi supérieure (8) dudit corps (3), au niveau de ladite expansion (9), et affecte toute la hauteur dudit corps (3) et dudit premier trou (11).
4. Chariot selon la revendication 3, **caractérisé en ce que** ledit moyen d'ancrage pour ladite porte ou panneau coulissant(e) rétractable (4) est constitué par un boulon (15), dont la tige (16) est filetée de manière complémentaire par rapport audit second trou (13) dudit cylindre (12) et pénètre dans ladite fente (14), ladite tige (16) étant libre de tourner par rapport à l'axe dudit premier trou (11).
5. Chariot selon la revendication 4, **caractérisé en ce qu'un** écrou (17) et une rondelle (18) sont associés avec ladite tige (16) dudit boulon (15), qui oscille sur le plan d'agencement dudit corps en forme de plaque (3), pour se coupler avec un support (19) qui peut être associé au bord supérieur (20) de ladite porte ou panneau coulissant(e) rétractable (4) qui conserve sa position correcte pendant l'ouverture et la fermeture malgré les inclinaisons auxquelles ledit rail (2) peut être soumis sur le plan longitudinal.
6. Chariot selon l'une quelconque des revendications 2 à 5, **caractérisé en ce que** lesdites deux paires de roues (28a, 28b, 29a, 29b) sont agencées côte à côte mais légèrement espacées desdites surfaces latérales (10a, 10b) dudit corps (3) afin d'affecter sensiblement l'espace intermédiaire entre ladite cale (9) et les extrémités dudit corps (3) de sorte qu'elles peuvent être associées de manière coulissante audit rail (2) et être libres d'osciller par rapport audit corps (3), ladite porte ou vantail coulissant(e) rétractable (4) conservant sa position correcte pendant l'ouverture et la fermeture malgré les inclinaisons sur le plan transversal auxquelles ledit rail (2) peut être soumis.
7. Chariot selon l'une quelconque des revendications 2 à 6, **caractérisé en ce que** la forme dudit corps (3), dans sa section transversale, est sensiblement elliptique ou en forme de larme, selon des surfaces en forme d'arc ou des surfaces plates qui sont contiguës afin de former un octogone, avec ou sans la présence d'un pied inférieur divergent (30).
8. Chariot selon la revendication 1, **caractérisé en ce que** ledit moyen d'ancrage (15) oscille sur un plan qui est sensiblement parallèle au plan d'agencement dudit corps en forme de plaque (3) et **en ce que** lesdites deux paires de roues (28a, 28b, 29a, 29b), qui sont pivotées de manière transversale par rapport audit corps (3), oscillent par rapport à un axe qui est sensiblement longitudinal par rapport audit corps (3).



*Fig. 1*

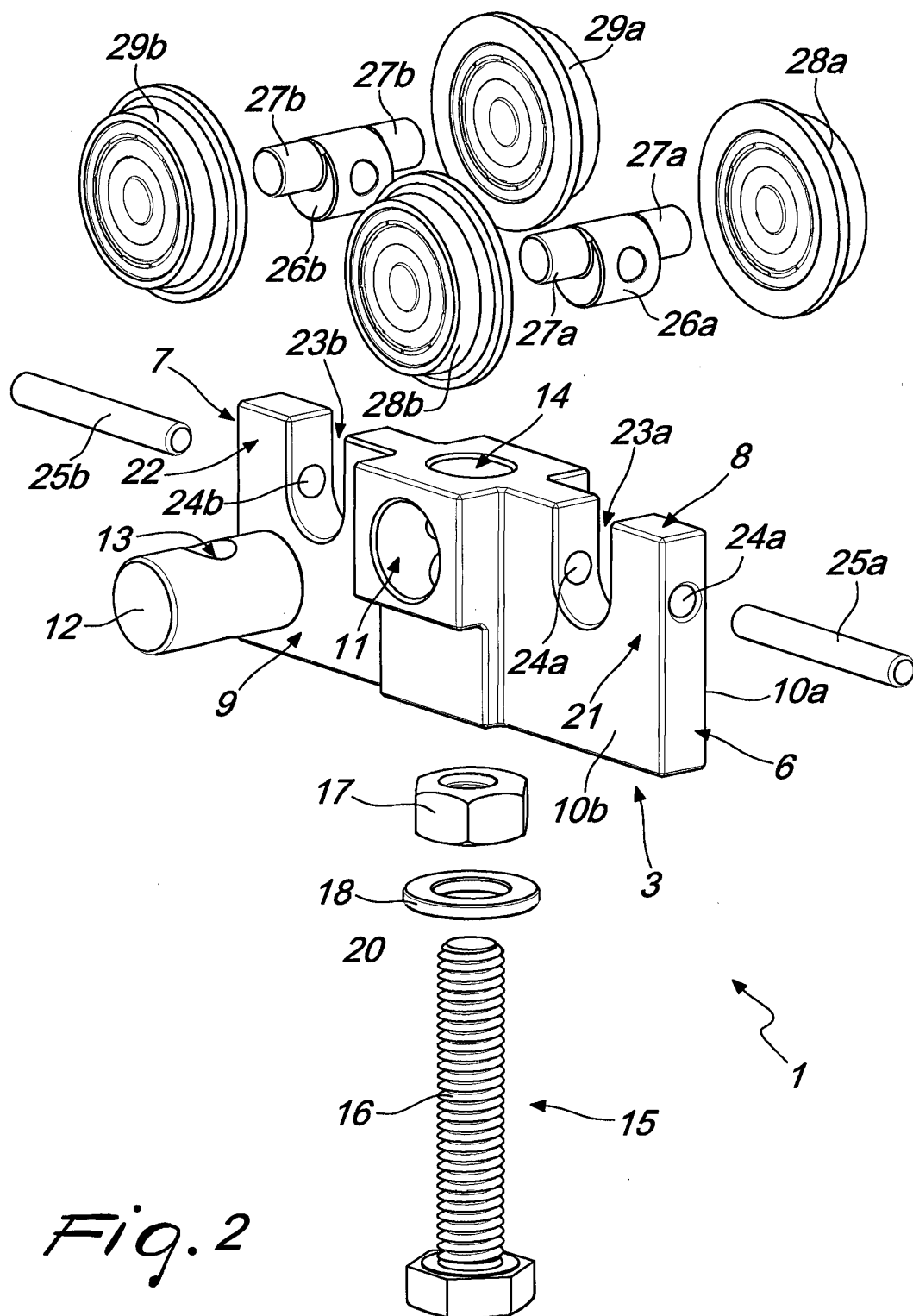


Fig. 2



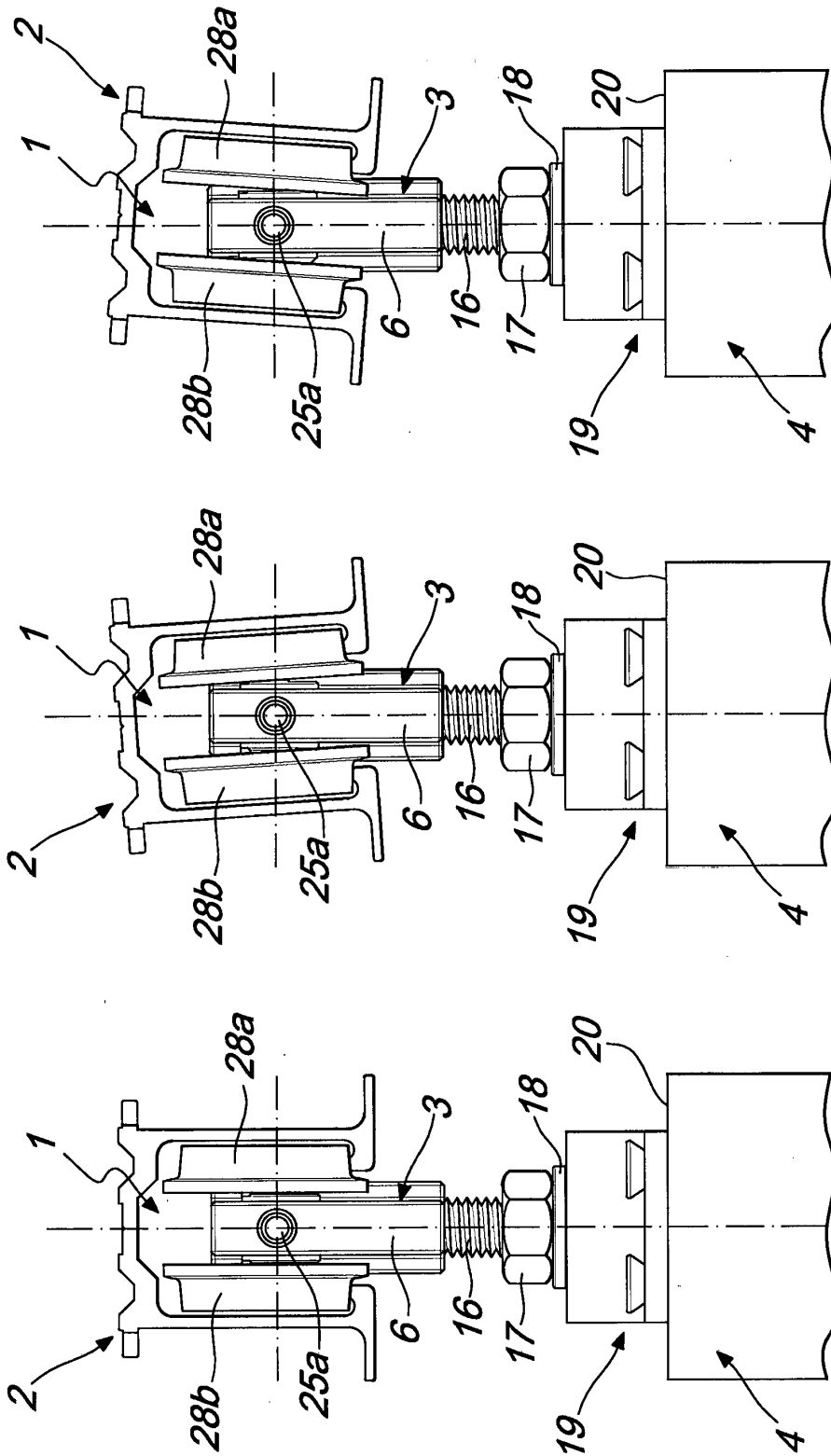
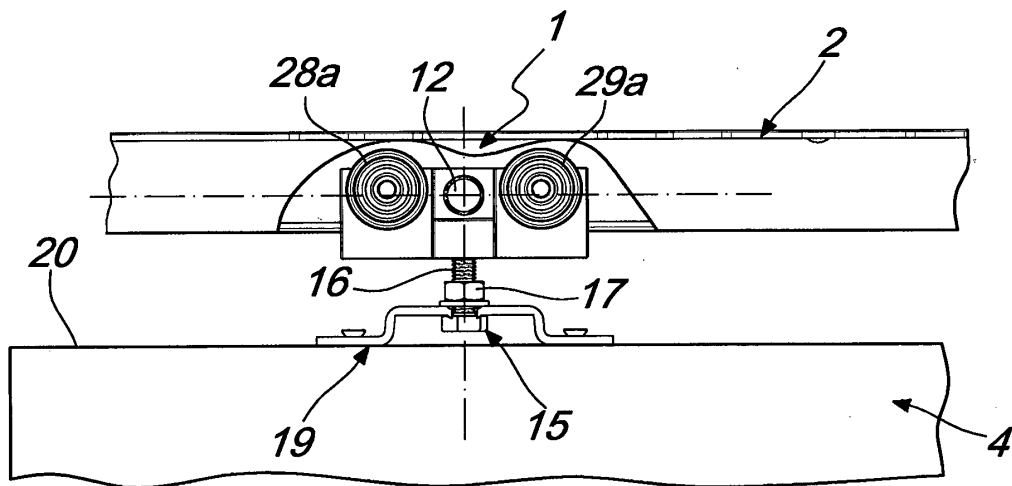


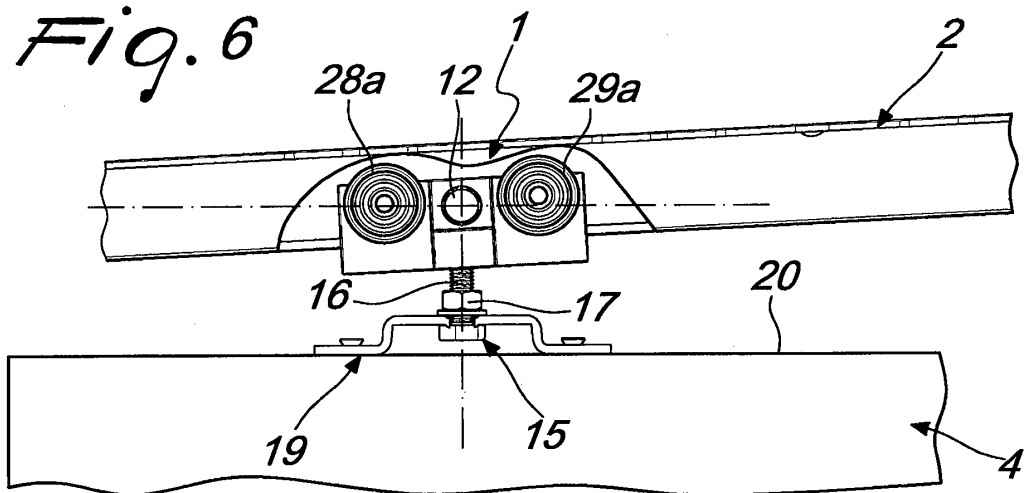
Fig. 5

Fig. 4

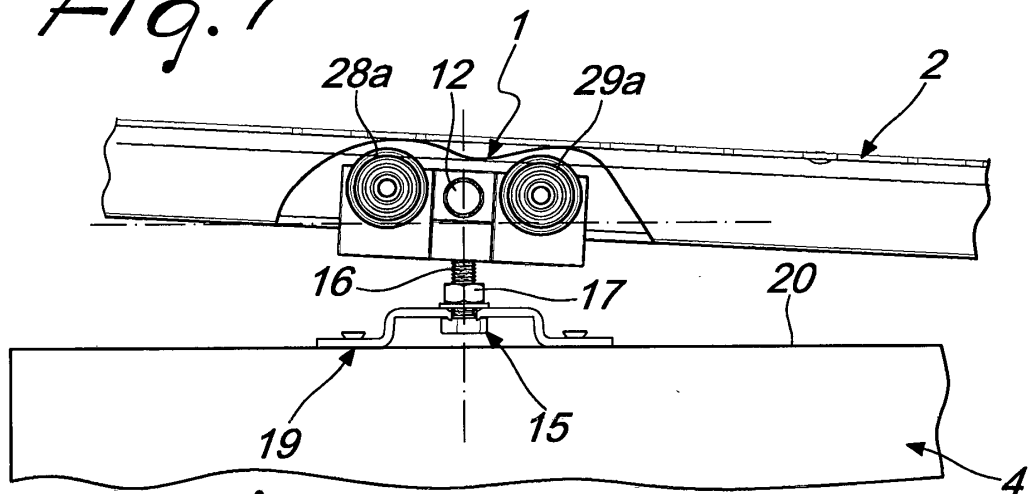
Fig. 3



*Fig. 6*



*Fig. 7*



*Fig. 8*

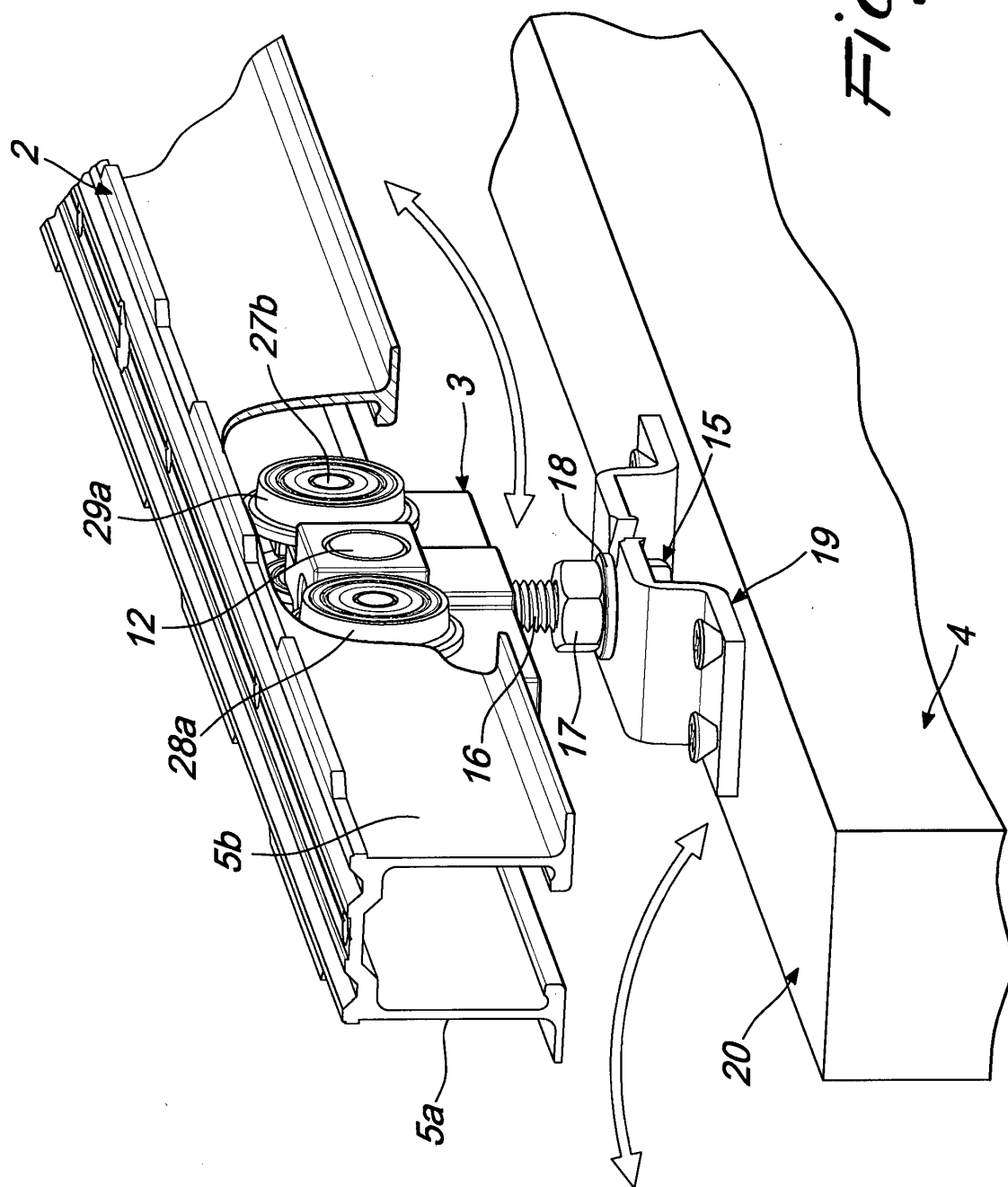


Fig. 9

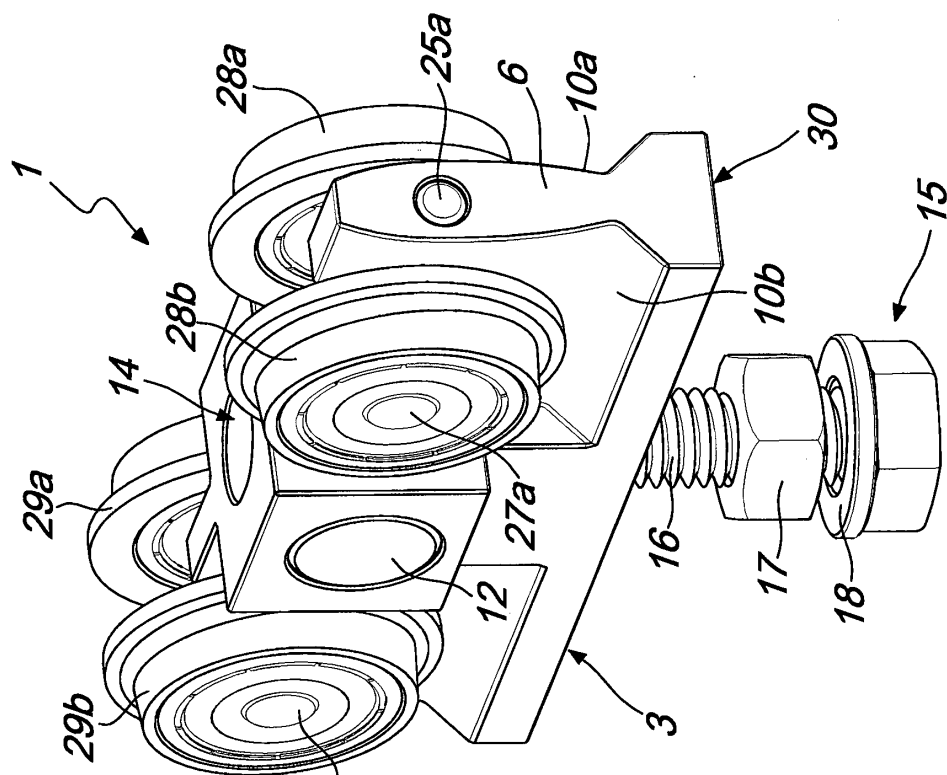


Fig. 11

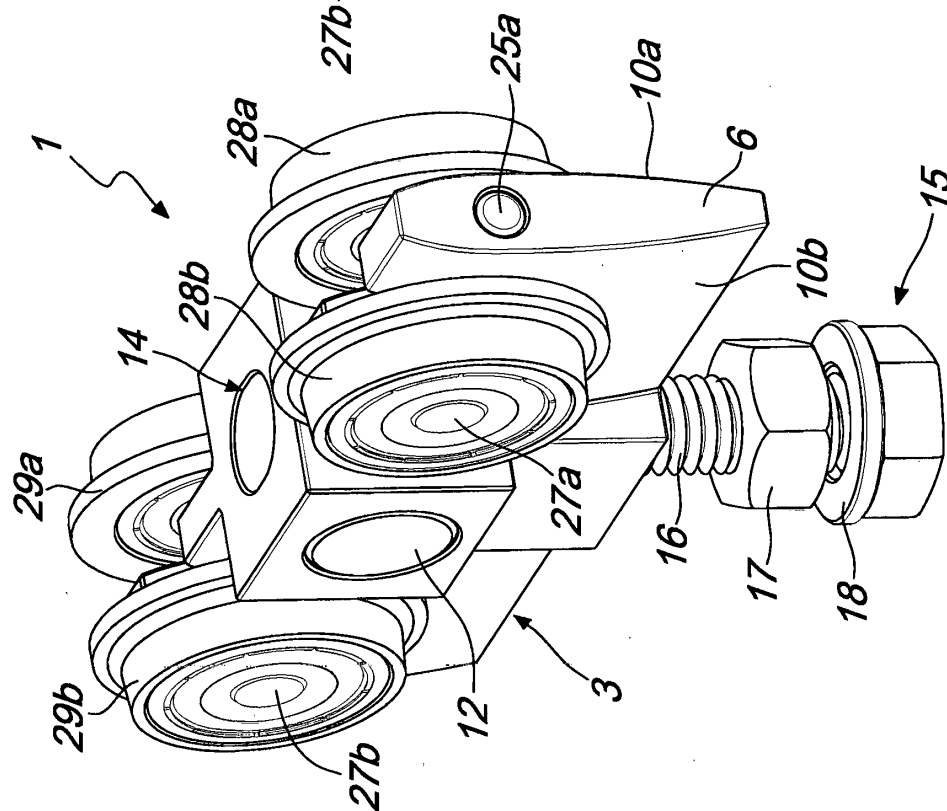
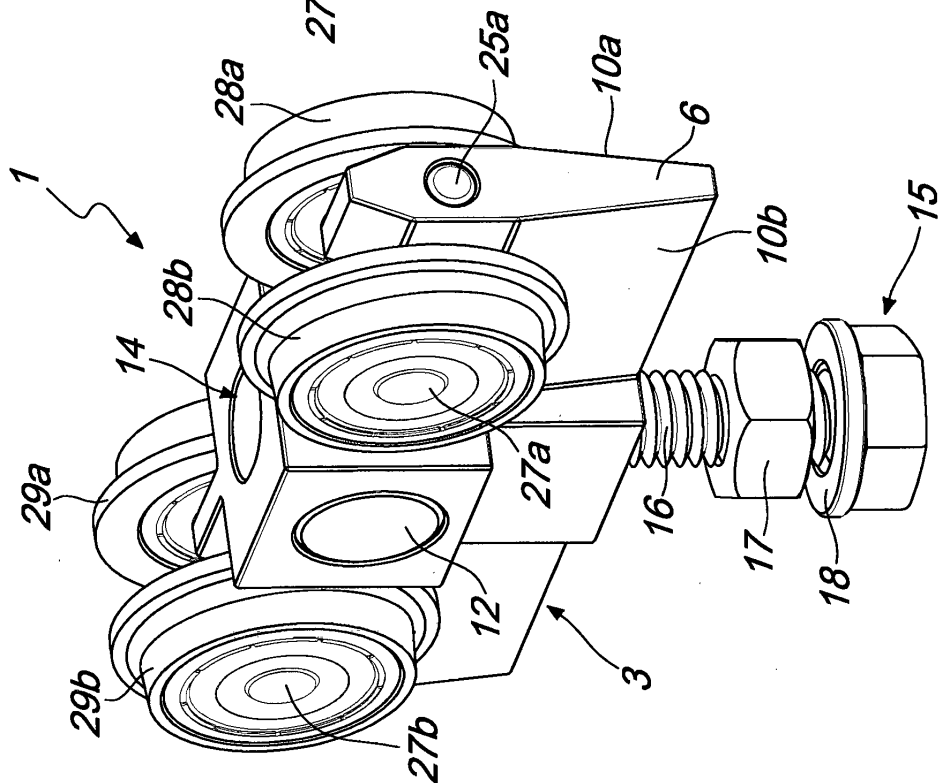
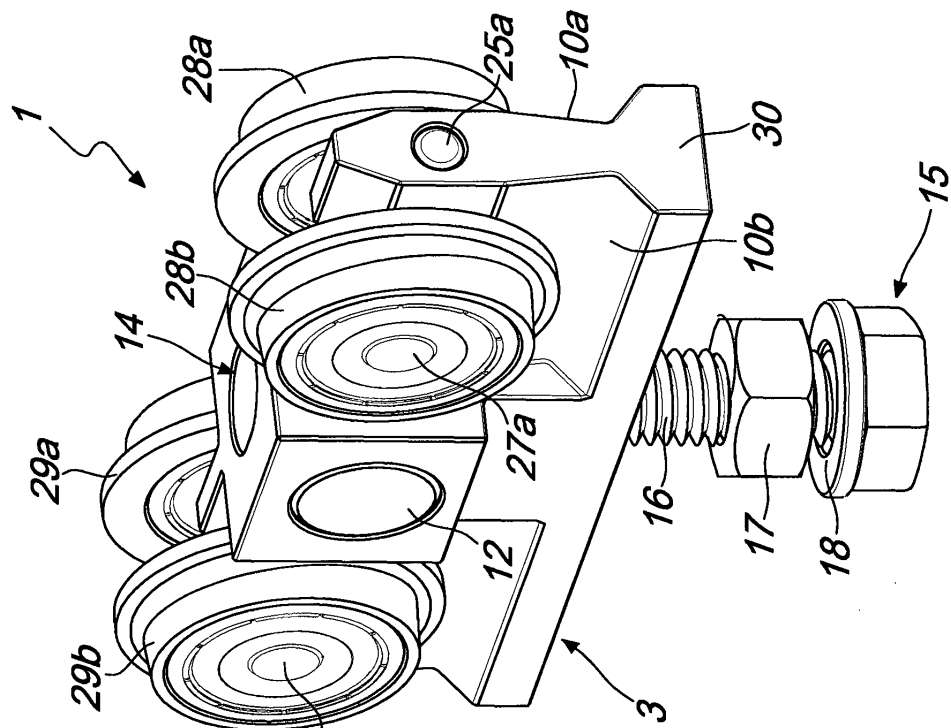


Fig. 10



**REFERENCES CITED IN THE DESCRIPTION**

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