(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 308 672 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
24.04.2019 Bulletin 2019/17

(51) Int Cl.:
A47B 5/00 *(2006.01)*

(21) Application number: **17195556.0**

(22) Date of filing: **09.10.2017**

(54) FURNITURE WITH PULL-OUT UNIT PROVIDED WITH A FOLDING LEG

MÖBEL MIT EINEM EIN KLAPPBARES BEIN AUFWEISENDEN AUSZIEHMECHANISMUS

MEUBLE AVEC UNE UNITE DE TIRAGE COMPRENANT UN PIED PLIABLE

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **13.10.2016 IT 201600103184**

(43) Date of publication of application:
18.04.2018 Bulletin 2018/16

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Description

[0001] The present patent application for industrial invention relates to a piece of furniture with pull-out unit provided with a folding leg.

[0002] It is known that pieces of furniture provided with ingenious solutions need to be used in small apartments in order to take the best advantage of the small dimensions of such apartments.

[0003] Pieces of furniture comprising a frame and a pull-out unit connected to the frame are known. When necessary, the pull-out unit permits to increase a surface of the piece of furniture.

[0004] EP1444922A2 discloses a foldable work surface that is connected to a furniture unit, capable of being folded and stored in a cavity of the furniture unit when not in use.

[0005] FR1435131 discloses a piece of furniture intended to serve both as a closet door and a bed support or any other piece of furniture which is obliged to be folded down and kept in a horizontal position for normal use, and which is then desired, after use, to be held in a in the cupboard.

[0006] The pull-out unit comprises a worktop and a pair of guides. Each guide comprises a first section, which is fixed to the frame, and a second section, which is slidingly mounted with respect to the first section, in such a way that said sections can go from a contracted position to an extended position, in order to act as support for the worktop.

[0007] The pull-out unit comprises a pair of legs, each of them being connected to the second section of one of the two guides.

[0008] The legs are hinged to the guides by means of suitable connection means, such as for example a fixing pin. The legs rotate around the fixing pin, from an operating position, wherein the legs rest on the ground, to an idle position, wherein the legs are lifted.

[0009] Normally, such legs are rotated by 90°. In particular, when the legs are in operating position, said legs are disposed in vertical position; when the legs are in idle position, said legs are disposed in horizontal position.

[0010] Advantageously, when the legs are in idle position, said legs are proximal to the worktop, in such a way to reduce the volume of said legs and permit the insertion of the pull-out unit inside the frame. Advantageously, the legs are disposed in contact with a lower side of the worktop and fixed to said lower side of the worktop by means of suitable fixing means.

[0011] In spite of the fact that said pieces of furniture of the prior art allow for extracting a worktop, when necessary, and at the same time they have a reduced volume, they are impaired by some drawbacks.

[0012] A first drawback consists in the fact that said legs are difficult to use. As a matter of fact, a user must position the legs correctly in idle position in order to insert the pull-out unit in the compartment of the frame.

[0013] In particular, the user must fasten the legs to the lower side of the worktop with the fixing means. Such a fixing operation is especially difficult because the user cannot see the lower side of the worktop. In view of the above, the user needs to make several attempts before fastening the leg to the lower side of the worktop.

[0014] A second drawback consists in the fact that the leg is lifted and lowered manually. In addition to extracting the pull-out unit from the compartment of the piece of furniture, a user also needs to move the leg to the operating position. These movements are cumbersome and tiring for the user, who may consequently decide not to use the pull-out unit.

[0015] The purpose of the present invention is to overcome the drawbacks of the prior art by providing a piece of furniture comprising a pull-out unit that is easy, comfortable and practical to use.

[0016] Another purpose of the present invention is to provide a piece of furniture comprising a pull-out unit that is comfortable to use and does not require any physical effort from the user.

[0017] A piece of furniture according to the present invention comprises a frame and a pull-out unit connected to the frame. The pull-out unit comprises a worktop and a guide comprising a first section, which is fixed to the frame, and a second section, which slides with respect to said first section, in such a way that the sections can be in a contracted position and in an extended position.

[0018] The pull-out unit comprises a leg, which is connected to the second section of the guide, and connection means, which are fixed to the leg and to the second section of the guide to revolvingly connect the leg with respect to the second section, so that the leg can be in an operating position and in an idle position.

[0019] The peculiarity of the furniture according to the invention consists in the fact that the leg has an "L"-shape and comprises a first bar having a longitudinal axis, and a second bar having a longitudinal axis.

[0020] The second bar comprises a first end suitable for being disposed in contact with the ground and the first bar comprises a free end, hinged by means of the connection means to the second section of the guide, in such manner to make a rotation of at least 250° between the operating position, wherein the second bar of the leg is perpendicular to the second section of the guide, and the idle position, wherein the second bar of the leg is above the worktop.

[0021] The advantages of the piece of furniture according to the present invention are evident. The provision of a leg that is suitable for being folded over the worktop eliminates the need to use fixing means under the worktop. In view of the above, a user can place the leg in idle position without having to bend down to fasten the leg to the worktop as in the prior art.

[0022] For the sake of clarity, the description of the piece of furniture according to the invention continues with reference to the attached drawings, which have a merely illustrative, not limiting value, wherein:

- Fig. 1 is an axonometric view of a piece of furniture according to the invention, wherein the pull-out unit is inside the compartment of the frame of said piece of furniture;
- Fig. 2 is an axonometric view of the piece of furniture of Fig. 1, wherein the pull-out unit is outside the frame of said piece of furniture;
- Fig. 3 is an axonometric view of the piece of furniture of Fig. 1, wherein guides of the pull-out unit are in extracted position;
- Fig. 4 is an axonometric view of the guides in extracted position and of the legs in operating position of the pull-out unit;
- Fig. 5 is an axonometric view of the guides and of the legs of the pull-out unit of the piece of furniture of Fig. 1;
- Fig. 6 is an axonometric view of an enlarged detail of the pull-out unit of Fig. 5;
- Fig. 7 is sectional view along the plane VII-VII of Fig. 5 of the pull-out unit of the furniture according to the invention;
- Fig. 8 is a partially cross-sectional view of the pull-out system of the piece of furniture according to the invention;
- Fig. 9 is an axonometric view of the pull-out unit of the piece of furniture according to the invention, wherein the legs are in an intermediate position between the idle position and the operating position;
- Fig. 10 is an axonometric view of the pull-out unit of Fig. 9, seen from a different angle;
- Fig. 11 is a sectional view with respect to a plane orthogonal to the axis of rotation of the lever; said view shows the guide, the leg and a locking device of the piece of furniture according to the invention;
- Fig. 12 is a view of the piece of furniture according to the invention, in the same configuration as Fig. 10, sectioned with a vertical plane passing through the longitudinal axis of the button.

[0023] With reference to Figs. 1 to 3, a piece of furniture according to the invention is disclosed, which is generally indicated with reference numeral (M).

[0024] The piece of furniture (M) comprises a frame (L) comprising a top (P), two sides (S), a bottom (N) and a compartment (V) defined by the top (P) in upper position, by the sides (S) in lateral position and by the bottom (N) in lower position. Advantageously, the piece of furniture (M) comprises a front lid (C) suitable for closing the compartment (V).

[0025] Additionally, the piece of furniture (M) comprises a pull-out unit (100) that is fixed to the frame (L) and is suitable for increasing the surface of the piece of furniture (M). The pull-out unit (100) comprises a worktop (1) suitable for acting as surface. Advantageously, as shown in Figs. 1, 2, 3 and 4, the worktop (1) comprises a plurality of extensions (10). Said extensions (10) can be in an operating position, wherein the extensions (10) are outside the compartment (V) of the frame (L) in coplanar position, in order to act as surface, and in an idle position, wherein the extensions (10) are overlapped one on top of the other.

[0026] With reference to Figs. 1, 3, 4 and 5, the pull-out unit (100) comprises two guides (2) in parallel position. Each guide (2) comprises a first section (20) fixed to the frame (L), and a second section (21) that slides with respect to said first section (20), so that the sections (20, 21) can be in a contracted position, as shown in Fig. 1, and in an extended position, as shown in Figs. 4 and 5. In particular, when the sections (20, 21) are in contracted position, said sections (20, 21) are disposed inside the compartment (V) of the frame (L). When the sections (20, 21) are in extended position, the second section (21) comes out of the compartment (V) of the frame (L).

[0027] With reference to Figs. 4 and 5, the second section (21) of each guide (2) comprises an internal surface (21a) directed towards the other guide (2), and an external surface (21b) opposed to the internal surface (21a).

[0028] Advantageously, the guides (2) comprise a plurality of intermediate sections (22), disposed between the first section (20) and the second section (21). The intermediate sections (22) are mounted with possibility of sliding mutually or with respect to the first section (20). Advantageously, the extension (10) in proximal position to the frame (L) is joined to one of the intermediate sections of each guide (2). Moreover, the extensions (10) in idle position are disposed above said intermediate section. In view of the above, when said section comes out of the compartment (V) of the frame (L), also the extensions in idle position come out of the compartment (V). According to a preferred embodiment, the extension (10) in proximal position to the frame (L) is joined to the third intermediate section of each guide (2).

[0029] With reference to Figs. 1 to 5, the pull-out unit (100) comprises two legs (3), which are disposed in parallel position and are connected to the second section (21) of the guide (2). Each leg (3) has an "L"-shape and comprises a first bar (30) having a longitudinal axis (X) and a second bar (31) having a longitudinal axis (Y), perpendicular to the longitudinal axis (X) of the first bar (30).

[0030] The second bar (31) is telescopic and comprises an external tubular body (31a), and an internal body (31b), which are advantageously provided with a square section. The internal body (31b) is mounted with possibility of telescopically sliding inside the external tubular body (31a), in such a way to be in an extracted position, as shown in Figs. 4 and 5, and in a retracted position.

[0031] Advantageously, the pull-out unit (100) comprises stop means (8), as shown in Figs. 3, 4 and 5, to stop the sliding of the internal body (31b) inside the external tubular body (31a) when the internal body (31b) reaches its extracted position, so that the leg (3) acts as a firm support for the worktop (1). Advantageously, the external tubular body (31a) comprises a hole in transverse position with respect to the longitudinal axis (Y) of the second bar (31) of the leg (3), and the internal body (31b) comprises a housing in transverse position with

respect to the longitudinal axis (Y) of the second bar (31) of the leg (3). The stop means (8) comprise a plug (80) mounted inside the housing of the internal body (31b). The stop means (8) also comprise an elastic member (not shown in the enclosed figures) that pushes the plug (80) outside the housing of the internal body (31b). The plug (80) is inserted in the transverse hole of the external tubular body (31a) when the housing of the internal body (31b) is aligned with the transverse hole of the external tubular body (31a), i.e. when the internal body (31b) is in extracted position.

[0032] The second bar (31) of each leg (3) comprises a first end, which is suitable for being in contact with the ground, and a second end, which is connected to the first bar (30) of the leg (3). The pull-out unit (100) comprises a transverse bar (35) connected to the first end of the second bar (31) of each leg (3) in order to join the two legs (3). In view of the above, the two legs (3) and the transverse bar (35) form a "U", as shown in Figs. 1 to 5. The transverse bar (35) is suitable for being disposed in horizontal position in contact with the ground. In particular, the transverse bar (35) comprises two adjustable feet, which are suitable for being in contact with the ground.

[0033] With reference to Fig. 6, the first bar (30) of each guide (3) comprises an internal surface (30a) directed towards the internal surface (30a) of the first bar (30) of the other leg (3), and an external surface (30b) opposed to the internal surface (30a).

[0034] The external surface (30b) of the first bar (30) of each leg (3) is suitable for being disposed in adjacent position to the internal surface (21a) of the second section (21) of the guide (2).

[0035] With reference to Figs. 6, 7, 9 and 11, the first bar (30) of each leg (3) comprises a free end that is connected to the second section (21) of the guide (2), a peg (32) that protrudes transversally from the internal surface (30a) of the first bar (30), and a hole (33), as shown in Fig. 7, in transverse position with respect to the longitudinal axis (X) of the first bar (30).

[0036] With reference to Figs. 1 to 6, the pull-out unit (100) comprises connection means (7) connected to the leg (3) and to the second section (21) of the guide (2) to revolvingly connect the leg (3) with respect to the second section (21), so that the leg (3) make a rotation of at least 250°, more precisely 270°, rotating between an operating position, as shown in Figs. 3, 4 and 5, wherein the second bar (31) of the leg (3) is perpendicular to the second section (21) of the guide (2), and an idle position, as shown in Figs. 1 and 2, wherein the second bar (31) of the leg (3) is horizontal and parallel to the worktop (1) and the first bar (30) is vertical and perpendicular to the extensions (10) of the worktop (1).

[0037] Advantageously, the length of the first bar (30) is slightly higher than the height of the extensions (10) of the worktop (1) in idle position, so that when the legs (3) are in idle position, the second bar (31) of the leg (3) is disposed in horizontal position above the worktop (1), when the extensions (10) are in idle position, i.e. overlapped one on top of the other. It must be noted that the pull-out unit (G) comprises mechanical stops that block the second bar (31) of the leg (3) in horizontal position, without said second bar (31) being in contact with the extensions (10) of the worktop (1), thus allowing for disposing the legs (3) in idle position even if the guides (2) are still in extracted position.

[0038] The legs (3) go from the operating position to the idle position, and vice versa, when the guides (2) are in extended position, the extensions (10) of the worktop (1) are in idle position and the second bar (31) of the legs (3) is in retracted position.

[0039] The pull-out unit (G) comprises a crossbar (70) with length equal to the distance between the two guides (2), in such a way that said crossbar (70) is connected to both guides (2) and to both legs (3). It must be noted that the crossbar (70) is fixed and the legs (3) rotate around said crossbar (70).

[0040] Because of the provision of the legs (3) suitable for being folded over the worktop (1), the legs (3) can be easily and rapidly moved from the operating position to the idle position and vice versa, without requiring a great physical effort and without causing any problem.

[0041] The pull-out unit (100) also comprises two locking devices (4) to lock the leg (3) in operating position. Both locking devices (4) are connected to the crossbar (70) in such a way to move simultaneously. Each locking device (4) is connected to one of the two legs (3).

[0042] With reference to Figs. 6, 7, 9 and 11, each locking device (4) comprises a lever (40) that is hinged to the leg (3) in such a way to rotate with respect to the crossbar (70) along an axis that coincides with the axis of rotation of the leg (3).

[0043] The lever (40) comprises a housing (40a) that is opened laterally and is defined by a curvilinear edge. The housing (40a) is intended to receive the peg (32) of the first bar (30) of the leg (3) during the rotation of the leg (3).

[0044] The lever (40) comprises an opening (40b) in coaxial position to the hole (33) of the first bar (30) of the leg (3) when the leg (3) is in operating position.

[0045] With reference to Figs. 7, 8 and 10, each locking device (4) comprises a cam-tappet assembly (50,51) comprising a cam (50) joined to the second section (21) of the guide (2). In particular, the cam (50) is disposed on the internal surface (21a) of each second section (21), in such a way to be directed towards the first bar (30) of the leg (3).

[0046] The cam-tappet assembly (50,51) comprises a tappet comprising a button (51) disposed inside the hole (33) of the first bar (30) of the leg (3), and a retention element (52) connected to the button (51) to push the button (51) towards the cam (50).

[0047] The button (51) comprises a striker (51a) suitable for being disposed in the opening (40b) of the lever (40), and a head (51b) that cooperates with the cam (50) to push said striker (51a) in the opening (40b) of the lever

(40).

[0048] With reference to Fig. 6, the pull-out unit (100) also comprises a shelf (M1) fixed above the second section (21) of one of the two guides (2). The shelf (M1) is configured in such a way to stop the legs (3) in operating position and prevent an additional rotation of the legs (3) above the guides (2).

[0049] With reference to Figs. 6, 9 and 10, the pull-out unit (100) advantageously comprises dampening means (6) comprising a linear actuator (60) for each leg (3), connected to the second section (21) of the guide (2) and to the lever (40). The linear actuator (60) is a jack comprising a cylinder (61) that is provided with a free end hinged to the second bar (21) of the guide (2) in a first hinging point (P1), and a stem (62) that slides in the cylinder (61) and comprises a free end hinged to the lever (40) of the locking device (4) in a second hinging point (P2).

[0050] The operating principle of the linear actuator (60) is such that, after drawing a straight line passing through the first hinging point (P1) and through the axis of rotation of the lever (40), three positions can be configured:

- a neutral position, wherein the second hinging point (P2) of the linear actuator (60) lies on said straight line; in such a position, the jack does not push the lever (40) into rotation;
- an upper position, wherein the second hinging point (P2) of the linear actuator (60) is disposed above said straight line; in such a position, the jack pushes the leg (3) towards its operating position, stopping against the shelf (M1);
- a lower position, wherein the second hinging point (P2) of the linear actuator (60) is disposed under said straight line; in such a position, the jack pushes the leg (3) towards its idle position.

[0051] In particular, when the legs (3) are in operating position, the linear actuator (60) pushes the first bar (30) of the leg (3) upwards, stopping against the shelf (M1), in such a way to additionally lock the legs (3) in operating position, as shown in Fig. 4. During the rotation of the leg (3) from the operating position to the idle position, the second hinging point (P2) rotates, being disposed under the first hinging point (P1), in such a way that the linear actuator (60) pushes the first bar (30) of the leg (3) downwards, favoring the rotation of the leg (3) towards the idle position, as shown in Fig. 11.

[0052] During the rotation of the leg (3) from the idle position to the operating position, the second hinging point (P2) rotates, being disposed above the first hinging point (P1) in the last portion of rotation, in such a way that the linear actuator (60) pushes the first bar (30) of the leg (3) upwards, preventing it from rotating by gravity towards the idle position.

[0053] In order to increase the surface of the piece of furniture (M), a force must be applied on the guides (2) towards the exterior of the compartment (V) of the piece of furniture (M), in such a way that said guides (2) go from the contracted position to the extended position, as shown in Fig. 2. In particular, the crossbar (70) can be pulled towards the exterior of the compartment (V) of the piece of furniture (M), in such a way to permit the simultaneous extension of both guides (2).

[0054] The legs (3) are folded over from the idle position to the operating position. It is simply necessary to rotate the legs (3) manually for a first portion of said rotation, because the dampening means (6) accompany the leg in the last portion of rotation.

[0055] In fact, after a rotation of approximately 180°, the first bar (30) of the legs (3) is disposed in vertical position under the guides (2), whereas the second bar (31) of the leg (3) is disposed in horizontal position, protruding from the guide (2). The internal body (31b) of the second bar (31) of the legs (3) slides inside the external tubular body (31a), so that the plug (80) is inserted in the transverse hole of the external tubular body (31a), disposing the leg (31) in extracted position.

[0056] While continuing the rotation towards the operating position, the peg (32) of the first bar (30) intercepts the lever (40) and is disposed inside the housing (40a) of the lever (40). The opening (40b) of the lever (4) is aligned with the transverse hole (33) of the first bar (30) of the leg (3). The leg (3) drives the lever (40) into rotation.

[0057] In the last portion of rotation, the head (51b) of the button (51) cooperates with the cam (50), in such a way to push the striker (51a) in the opening (40b) of the lever (4) and to fix the lever (40) to the leg (3), so that, after reaching its operating position, the leg (3) does not make a rotation in opposite direction, rotating towards the idle position.

[0058] The linear actuator (60) is driven into rotation by the lever (40). When the second hinging point (P2) is disposed above the first hinging point (P1), the linear actuator (60) accompanies and locks the legs (3) in operating position.

[0059] The shelf (M1) stops the rotation of the legs (3), when the leg (3) has made a rotation of 270° from the idle position to the operating position. The legs (3) are in contact with the ground.

[0060] The extensions (10) of the worktop (1) are disposed in operating position, above the guides (2).

[0061] In order to replace the pull-out unit (100) inside the compartment (V) of the frame (L), the extensions must be disposed in idle position.

[0062] The legs (3) are folded over from the operating position to the idle position. It is simply necessary to gently push the legs (3) in order to rotate said legs (3) by approximately 90° from the operating position to the idle position because the dampening means (6) accompany the legs (3) in said portion of rotation. It must be noted that such a push can be given manually or using one of the two feet, so that the user can make such an operation while standing straight.

[0063] By moving the legs (3) into rotation towards the idle position, also the lever (40) rotates. The linear actu-

ator (60) is driven into rotation by the lever (40). After a first short rotation in which the leg (3) must be moved manually, the second hinging point (P2) is disposed under the first hinging point (P1). Consequently, the linear actuator (60) accompanies the legs (3) towards the idle position. In particular, the linear actuator (60) accompanies the legs (3) until when the first bar (30) is disposed in vertical position under the guides (2) and the second bar (31) is disposed in horizontal position.

[0064] The head (51b) of the button (51) slides on the cam (50). When the button is no longer pushed by the cam (50) in the opening (40b) of the lever (40), the retention element (52) pushes the striker (51a) inside the transverse hole (33) of the first bar (30) of the lever (3).

[0065] After a rotation of 90° towards the idle position, the peg (32) of the first bar (30) comes out of the housing (40a) of the lever (40), in such a way that the lever (40) is uncoupled from the leg (3).

[0066] By pushing the plug (80) backwards, the internal body (31b) of the second bar (31) of the legs (3) slides inside the external tubular body (31a) so that the leg (30) goes to the retracted position.

[0067] The leg (3) is moved manually to its idle position. Such a manual movement is very comfortable for the user because in view of the fact that, because of the action of the linear actuator (60), the leg (3) is brought from the linear actuator (60) to such a height that the user does not need to bend down or make a great physical effort to take the leg (3) and move it to its idle position. The guides (2) can be brought to the retracted position, as shown in Fig.1.

Claims

1. Piece of furniture (M) comprising:

- a frame (L);
- a pull-out unit (100) fixed to said frame (L); said pull-out unit (100) comprising:

  - a worktop (1);
  - a guide (2) comprising a first section (20) fixed to the frame (L), and a second section (21) that slides with respect to said first section (20), so that said sections (20, 21) can be in a contracted position and in an extended position;
  - a leg (3) fixed to the second section (21) of said guide (2);
  - connection means (7) fixed to said leg (3) to revolvingly connect said leg (3) with respect to said second section (21), so that said leg (3) can be in an operating position and in an idle position;

piece of furniture (M) **characterized in that** said leg (3) has an "L"-shape and comprises a first bar (30) having a longitudinal axis (X), and a second bar (31) having a longitudinal axis (Y); said second bar (31) comprising a first end intended to be disposed in contact with the ground and said first bar (30) comprising a free end hinged with the connection means (7) to the second section (21) of the guide (2) in such manner to make a rotation of at least 250°, rotating between the operating position, wherein the second bar (31) of the leg (3) is perpendicular to the second section (21) of the guide (2), and the idle position, wherein the second bar (31) of the leg (3) is above the worktop (1).

2. The piece of furniture (M) of claim 1, wherein said first bar (30) of the leg (3) comprises:

- a peg (32) protruding from said first bar (30),
- a hole (33) in transverse position with respect to the longitudinal axis (X) of the first bar (30);

said pull-out unit (100) comprising a locking device (4) to lock said leg (3) in operating position; said locking device (4) comprising:

- a lever (40) hinged to said leg (3) with the connection means (7) and according to an axis coinciding with the axis of rotation of the leg; said lever (40) comprising a housing (40a) intended to receive the peg (32) of the first bar (30) of the leg (3) during the rotation of the leg (3), and an opening (40b) in coaxial position to the hole (33) of the first bar (30) of the leg (3) when the leg (3) is in operating position;
- a cam-tappet assembly (50,51) comprising a cam (50) joined to the second section (21) of the guide (2), a tappet comprising a button (51) disposed inside the hole (33) of the first bar (30) of the leg (3), and a retention element (52) connected to the button (51) to push the button (51) towards the cam (50); said button (51) comprising a striker (51a) intended to be disposed in the opening (40b) of the lever (40), and a head (51b) that cooperates with the cam (50) to push said striker (51a) in the opening (40b) of the lever (40).

3. The piece of furniture (M) of claim 2, wherein said pull-out unit (100) comprises dampening means (6) comprising a linear actuator (60) connected to the second section (21) of the guide (2) and to the lever (40); said linear actuator (60) comprising a cylinder (61) provided with a free end hinged to the second bar (21) of the guide (2) in a first hinging point (P1), and a stem (62) that slides in the cylinder (61) and comprises a free end hinged to the lever (40) of the locking device (4) in a second hinging point (P2).

4. The piece of furniture (M) of any one of the preceding

claims, wherein said pull-out unit (100) comprises:

- two parallel guides (2); said second section (21) of each guide (2) comprising an internal surface (21a) facing the other guide (2), and an external surface (21b) opposed to said internal surface (21a); said cam (50) being disposed on said internal surface (21a) of each second section (21);
- two parallel legs (3); said first bar (30) of each leg (3) being intended to be disposed in adjacent position to said internal surface (21a) of the second section (21) of one of said guides (2) when said leg (3) is in operating position.

5. The piece of furniture (M) of claim 4, wherein said pull-out unit (100) comprises two locking devices (4); each locking device (4) being connected to one of the two legs (3).

6. The piece of furniture (M) of claim 5, comprising a crossbar (70) with length equal to the distance between the two guides (2) so that said crossbar (70) is connected to both guides (2), to both legs (3) and to both locking devices (4).

7. The piece of furniture (M) of any one of claims 4 to 6, wherein said pull-out unit (100) comprises a transverse bar (35) connected to the first end of the second bar (31) of each leg (3).

8. The piece of furniture (M) of any one of the preceding claims, wherein the second bar (31) of the leg (3) is telescopic and comprises an external tubular body (31a) and an internal body (31b) mounted with possibility of telescopically sliding inside said external tubular body (31a); said pull-out unit (100) comprising stop means (8) connected to said external tubular body (31a) and to said internal body (31b) to stop the sliding of said internal body (31b) inside said external tubular body (31a).

Patentansprüche

1. Möbel (M) umfassend:

- einen Rahmen (L);
- einen Auszug (100), der an dem Rahmen (L) befestigt ist; wobei der Auszug (100) Folgendes umfasst:
- eine Arbeitsplatte (1);
- eine Führung (2), umfassend einen ersten Abschnitt (20), der an dem Rahmen (L) befestigt ist, und einen zweiten Abschnitt (21), der in Bezug auf den ersten Abschnitt (20) verschiebbar ist, derart, dass die Abschnitte (20, 21) sich in einer eingefahrenen Stellung und in einer ausgefahrenen Stellung befinden können;
- ein Bein (3), das an dem zweiten Abschnitt (21) der Führung (2) befestigt ist;
- Verbindungsmittel (7), die an dem Bein (3) befestigt sind, um das Bein (3) kreisend in Bezug auf den zweiten Abschnitt (21) zu verbinden, derart, dass das Bein (3) sich in einer Arbeitsstellung und in einer Ruhestellung befinden kann;

wobei das Möbel (M) **dadurch gekennzeichnet ist, dass** das Bein (3) L-förmig ist und eine erste Stange (30) mit einer Längsachse (X) und eine zweite Stange (31) mit einer Längsachse (Y) umfasst; wobei die zweite Stange (31) einen ersten Endabschnitt umfasst, der dazu bestimmt ist, in Kontakt mit dem Boden angeordnet zu werden, und wobei die erste Stange (30) einen freien Endabschnitt umfasst, der mittels der Verbindungsmittel (7) an dem zweiten Abschnitt (21) der Führung (2) angelenkt ist, um eine Drehung von mindestens 250° auszuführen, wobei er sich zwischen der Arbeitsstellung, in der die zweite Stange (31) des Beins (3) senkrecht zum zweiten Abschnitt (21) der Führung (2) steht, und der Ruhestellung, in der die zweite Stange (31) des Beins (3) sich oberhalb der Arbeitsplatte (1) befindet.

2. Möbel (M) nach Anspruch 1, wobei die erste Stange (30) des Beins (3) Folgendes umfasst:

- einen Zapfen (32), der aus der ersten Stange (30) auskragt,
- eine Bohrung (33), die quer zur Längsachse (X) der ersten Stange (30) verläuft:

wobei der Auszug (100) eine Sperrvorrichtung (4) umfasst, um das Bein (3) in der Arbeitsstellung zu sperren; wobei die Sperrvorrichtung (4) Folgendes umfasst:

- einen Hebel (40), der an dem Bein (3) mittels der Verbindungsmittel (7) entlang einer mit der Rotationsachse des Beins zusammenfallenden Achse angelenkt ist; wobei der Hebel (40) einen Sitz (40a) umfasst, der geeignet ist, den Zapfen (32) der ersten Stange (30) des Beins (3) während der Drehung des Beins (3) aufzunehmen, und eine Öffnung (40b), die koaxial zu der Bohrung (33) der ersten Stange (30) des Beins (3) verläuft, wenn das Bein (3) sich in der Arbeitsstellung befindet;
- eine Nocken-Stößel-Baugruppe (50,51), umfassend eine Nocke (50), die fest mit dem zweiten Abschnitt (21) der Führung (2) verbunden ist, einen Stößel, umfassend eine Taste (51), die im Inneren der Bohrung (33) der ersten Stange (30) des Beins (3) angeordnet ist, und ein Rückhalteelement (52), das mit der Taste (51)

verbunden ist, um die Taste (51) zur Nocke (50) hin zu drücken; wobei die Taste (51) einen Schlagbolzen (51a) umfasst, der dazu geeignet ist, sich in der Öffnung (40b) des Hebels (40) anzuordnen, und einen Kopf (51b), der mit der Nocke (50) zusammenwirkt, um den Schlagbolzen (51a) in die Öffnung (40b) des Hebels (40) zu drücken.

3. Möbel (M) nach Anspruch 2, wobei der Auszug (100) Dämpfungsmittel (6) umfasst, umfassend ein Linearstellglied (60), das mit dem zweiten Abschnitt (21) der Führung (2) und dem Hebel (40) verbunden ist; wobei das Linearstellglied (60) einen Zylinder (61) umfasst, umfassend einen an der zweiten Stange (21) der Führung (2) in einem ersten Gelenkpunkt (P1) angeschlagenen, freien Endabschnitt, und einen Schaft (62), der in dem Zylinder (61) gleitet und einen an dem Hebel (40) der Sperrvorrichtung (4) in einem zweiten Gelenkpunkt (P2) angeschlagenen freien Endabschnitt umfasst.

4. Möbel (M) nach einem der vorstehenden Ansprüche, wobei der Auszug (100) Folgendes umfasst:

- zwei zueinander parallele Führungen (2); wobei der zweite Abschnitt (21) einer jeden Führung (2) jeweils eine Innenfläche (21a) umfasst, die der anderen Führung (2) zugewandt ist, und eine Außenfläche (21b), die der Innenfläche (21a) gegenüberliegt; wobei die Nocke (50) auf der Innenfläche (21a) eines jeden zweiten Abschnitts (21) angeordnet ist;
- zwei zueinander parallele Beine (3); wobei die erste Stange (30) eines jeden Beins (3) dazu bestimmt ist, sich an der Innenfläche (21a) des zweiten Abschnitts (21) einer der Führungen (2) angrenzend anzuordnen, wenn das Bein (3) sich in der Arbeitsstellung befindet.

5. Möbel (M) nach Anspruch 4, wobei der Auszug (100) zwei Sperrvorrichtungen (4) umfasst; wobei jede Sperrvorrichtung (4) mit einem der beiden Beine (3) verbunden ist.

6. Möbel (M) nach Anspruch 5, umfassend einen Querträger (70), dessen Länge gleich dem Abstand zwischen den beiden Führungen (2) ist, derart, dass der Querträger (70) mit beiden Führungen (2), beiden Beinen (3) und beiden Sperrvorrichtungen (4) verbunden ist.

7. Möbel (M) nach einem der Ansprüche 4 bis 6, wobei der Auszug (100) eine querlaufende Stange (35) umfasst, die mit dem ersten Endabschnitt der zweiten Stange (31) eines jeden Beins (3) verbunden ist.

8. Möbel (M) nach einem der vorstehenden Ansprüche, wobei die zweite Stange (31) des Beins (3) teleskopisch ist und einen äußeren rohrförmigen Körper (31a) und einen inneren Körper (31b) umfasst, der teleskopisch verschiebbar in dem äußeren rohrförmigen Körper (31a) gelagert ist; wobei der Auszug (100) Anschlagmittel (8) umfasst, die mit dem äußeren rohrförmigen Körper (31a) und dem inneren Körper (31b) verbunden sind, um das Verschieben des inneren Körpers (31b) in dem äußeren rohrförmigen Körper (31a) zu sperren.

Revendications

1. Meuble (M) comprenant:

- un châssis (L) ;
- un groupe extractible (100) connecté au dit châssis (L) ; ledit groupe extractible comprenant :
- un plan de travail (1) ;
- une coulisse (2) comprenant un premier profilé (20), fixé au châssis (L), et un second profilé (21) coulissant par rapport au dit premier profilé (20), de manière que lesdits profilés (20, 21) assument une assiette contractée et une assiette allongée ;
- une jambe (3), connectée au dit second profilé (21) de ladite coulisse (2) ;
- des moyens de connexion (7) connectés à ladite jambe (3) pour relier ladite jambe (3) en rotation par rapport au dit second profilé (21), de manière que ladite jambe (3) puisse assumer une assiette opérationnelle et une assiette de repos ;

meuble (M) **caractérisé en ce que** ladite jambe (3) a une forme en « L » et comprend une première barre (30) ayant un axe longitudinal (X), et une seconde barre (31), ayant un axe longitudinal (Y) ; ladite seconde barre (31) comprenant une première extrémité destinée à être disposée en contact avec le sol et ladite première barre (30) comprenant une extrémité libre, pivotée moyennant des moyens de connexion (7) au second profilé (21) de la coulisse (2), de manière à accomplir une rotation d'au moins 250°, en pivotant entre l'assiette opérationnelle, où la seconde barre (31) de la jambe (3) est perpendiculaire au second profilé (21) de la coulisse (2), et l'assiette de repos, où ladite seconde barre (31) de la jambe (3) se trouve au-dessus du plan de travail (1).

2. Meuble (M) selon la revendication 1, où ladite première barre (30) de la jambe (3) comprend :

- un pieu (32) qui fait saillie de ladite première barre (30),
- un orifice (33), transversal par rapport à l'axe

longitudinal (X) de la première barre (30) ;

ledit groupe extractible (100) comprenant un dispositif de blocage (4) pour bloquer ladite jambe (3) en assiette opérationnelle ; dit dispositif de blocage (4) comprenant :

- un levier (40) qui est pivoté sur ladite jambe (3) moyennant des moyens de connexion (7) et selon un axe coïncidant avec l'axe de rotation de la jambe ; ledit levier (40) comprenant un emplacement (40a), apte à loger le pieu (32) de la première barre (30) de la jambe (3) pendant la rotation de la jambe (3), et une ouverture (40b) qui est coaxiale à l'orifice (33) de la première barre (30) de la jambe (3) lorsque la jambe (3) est en assiette opérationnelle ;
- un groupe came-poussoirs (50,51) comprenant une came (50), solidaire au second profilé (21) de la coulisse (2), des poussoirs comprenant un bouton-poussoir (51) disposé à l'intérieur de l'orifice (33) de la première barre (30) de la jambe (3), et un dispositif de retenue (52), connecté au bouton-poussoir (51) pour pousser le bouton-poussoir (51) vers la came (50) ; ledit bouton-poussoir (51) comprenant un percuteur (51a), apte à se disposer dans l'ouverture (40b) du levier (40), et une tête (51b) qui coopère avec la came (50) pour pousser ledit percuteur (51a) dans l'ouverture (40b) du levier (40).

3. Meuble (M) selon la revendication 2, où ledit groupe extractible (100) comprend des moyens amortisseurs (6) comprenant un actionneur linéaire (60), branché au dit second profilé (21) de la coulisse (2) et au levier (40) ; ledit actionneur linéaire (60) comprenant un vérin (61), ayant une extrémité libre pivotée sur la seconde barre (21) de la coulisse (2) sur un premier point de pivotement (P1), et une tige (62), coulissante dans le vérin (61) et qui comprend une extrémité libre pivotée sur le levier (40) du dispositif de blocage (4) sur un second point de pivotement (P2).

4. Meuble (M) selon l'une quelconque des revendications précédentes, où ledit groupe extractible (100) comprend :

- deux coulisses (2) parallèles entre elles ; ledit second profilé (21) de chaque coulisse (2) comprenant une surface interne (21a) orientée vers l'autre coulisse (2), et une surface externe (21b), opposée à ladite surface interne (21a) ; ladite came (50) étant disposée sur ladite surface interne (21a) de chaque second profilé (21) ;
- deux jambes (3) parallèles entre elles ; ladite première barre (30) de chaque jambe (3) étant destinée à se disposer de manière juxtaposée à ladite surface interne (21a) du second profilé (21) de l'une des dites coulisses (2), lorsque ladite jambe (3) est en assiette opérationnelle.

5. Meuble (M) selon la revendication 4, où ledit groupe extractible (100) comprend deux dispositifs de blocage (4) ; chaque dispositif de blocage (4) étant relié à l'une des deux jambes (3).

6. Meuble (M) selon la revendication 5, comprenant une traverse (70), dont la longueur est égale à la distance entre les deux coulisses (2), de façon que ladite traverse (70) soit reliée aux deux coulisses (2), aux deux jambes (3) et aux deux dispositifs de blocage (4).

7. Meuble (M) selon l'une quelconque des revendications de 4 à 6, où ledit groupe extractible (100) comprend une barre transversale (35), reliée à la première extrémité de la seconde barre (31) de chaque jambe (3).

8. Meuble (M) selon l'une quelconque des revendications précédentes, où la seconde barre (31) de la jambe (3) est télescopique et comprend un corps tubulaire externe (31a) et un corps interne (31b), monté coulissant de manière télescopique dans ledit corps tubulaire externe (31a) ; ledit groupe extractible (100) comprenant des moyens de butée (8), reliés au dit corps tubulaire externe (31a) et au dit corps interne (31b) pour bloquer le coulissement du dit corps interne (31b) dans ledit corps tubulaire externe (31a).

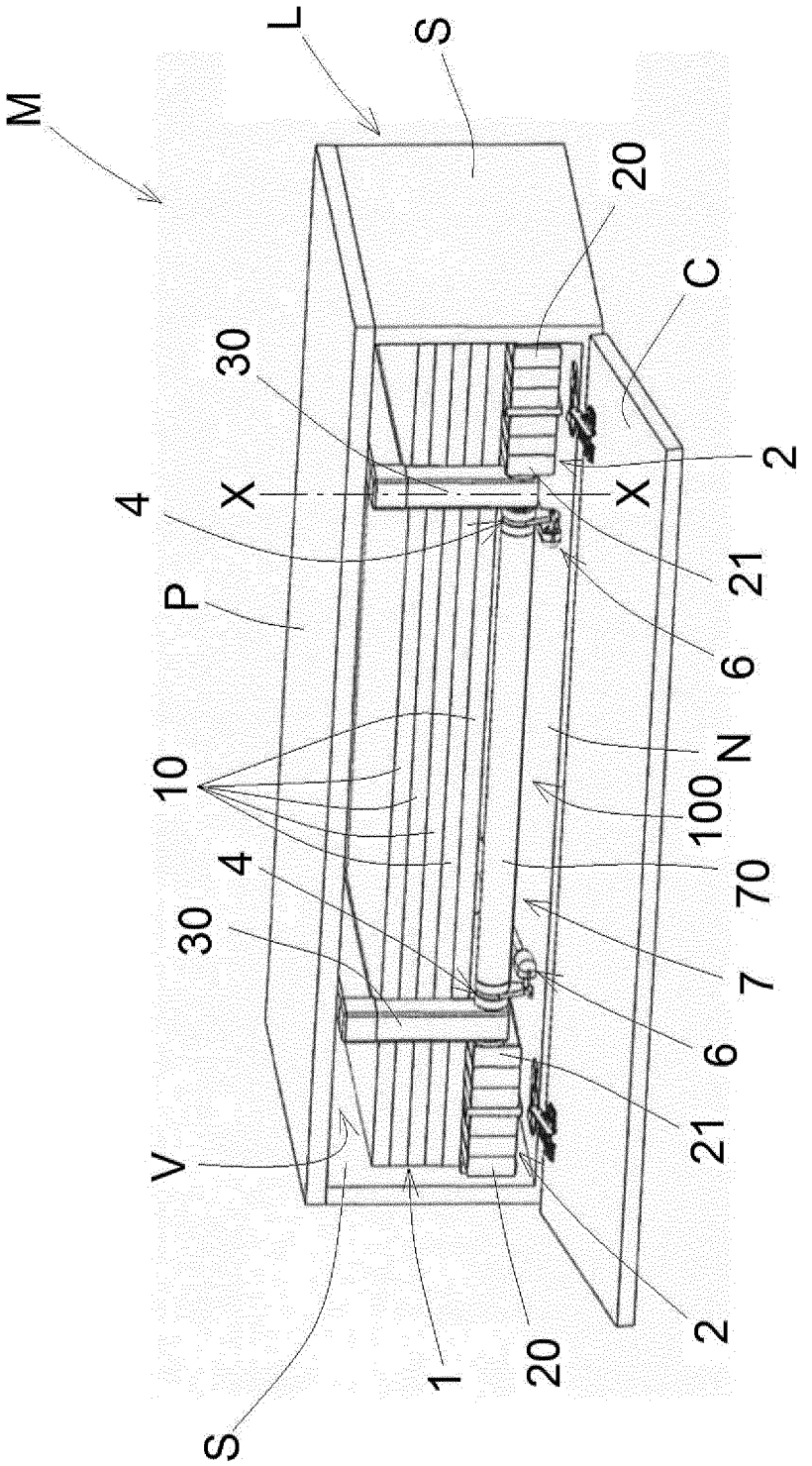


FIG. 1

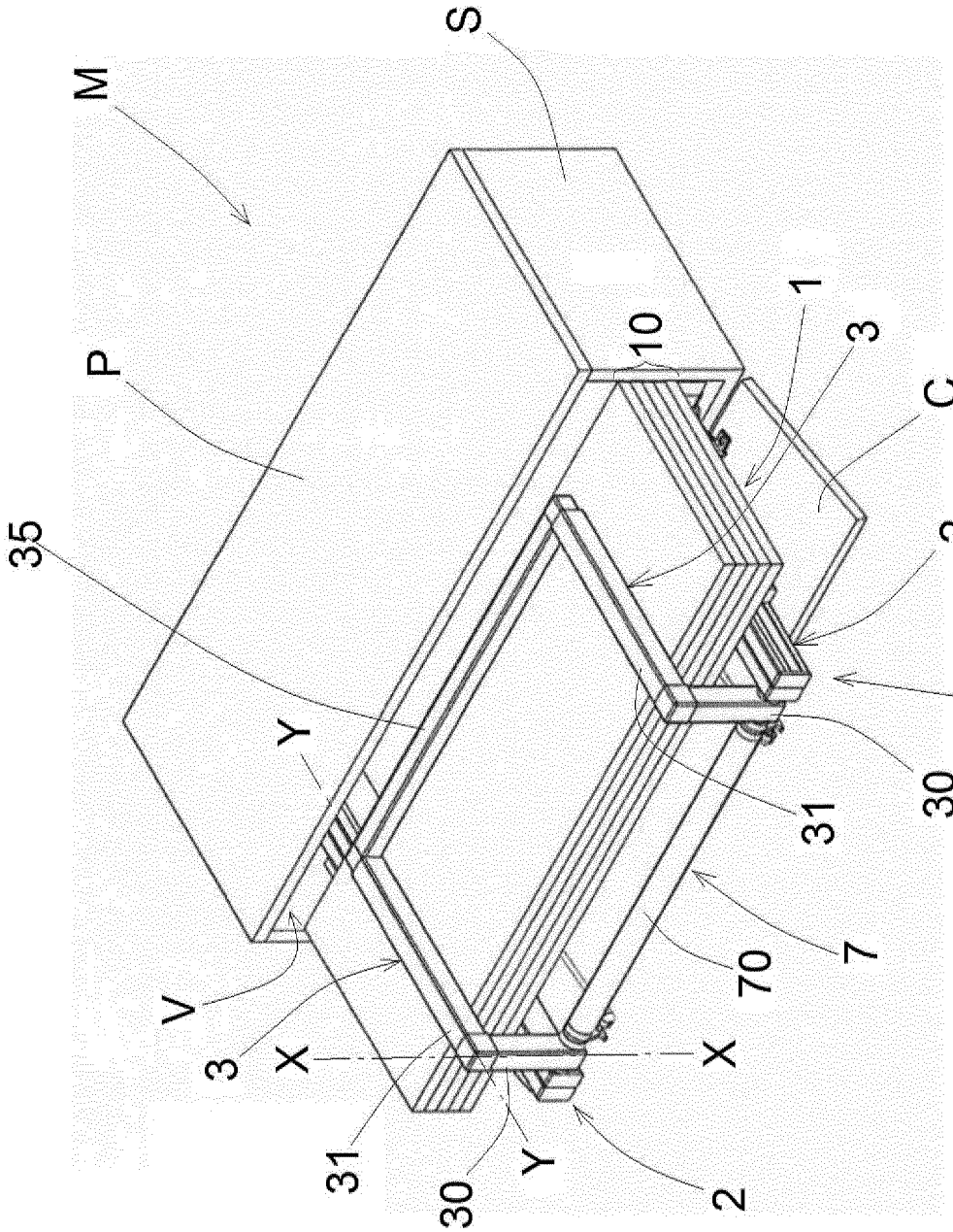


FIG. 2

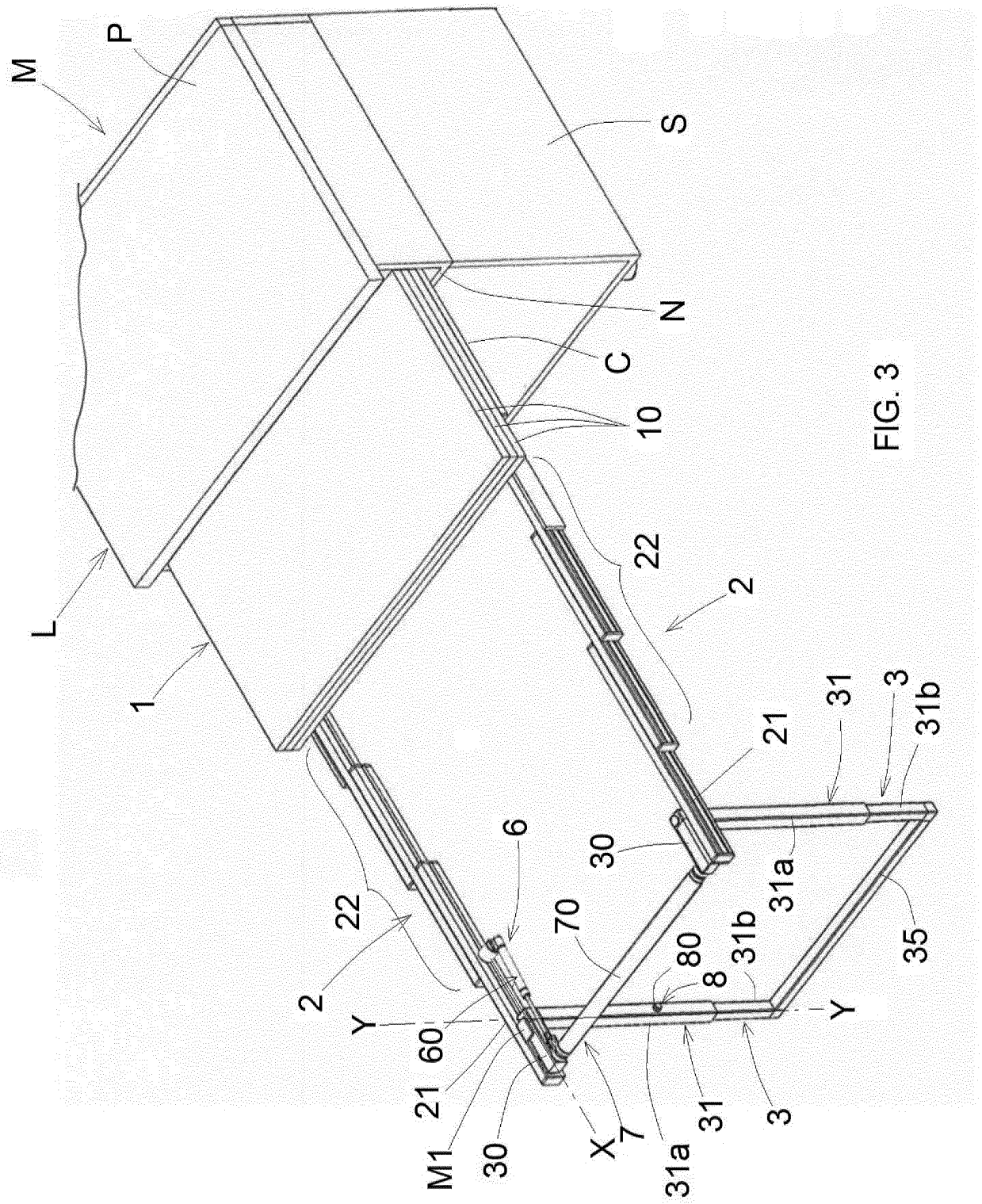

M
P
S
N
C
10
22
2
L
1
31
3
31b
21
6
30
31a
70
80
8
31b
35
22
2
Y
60
21
M1
30
X
7
31a
31
3
Y

FIG. 3

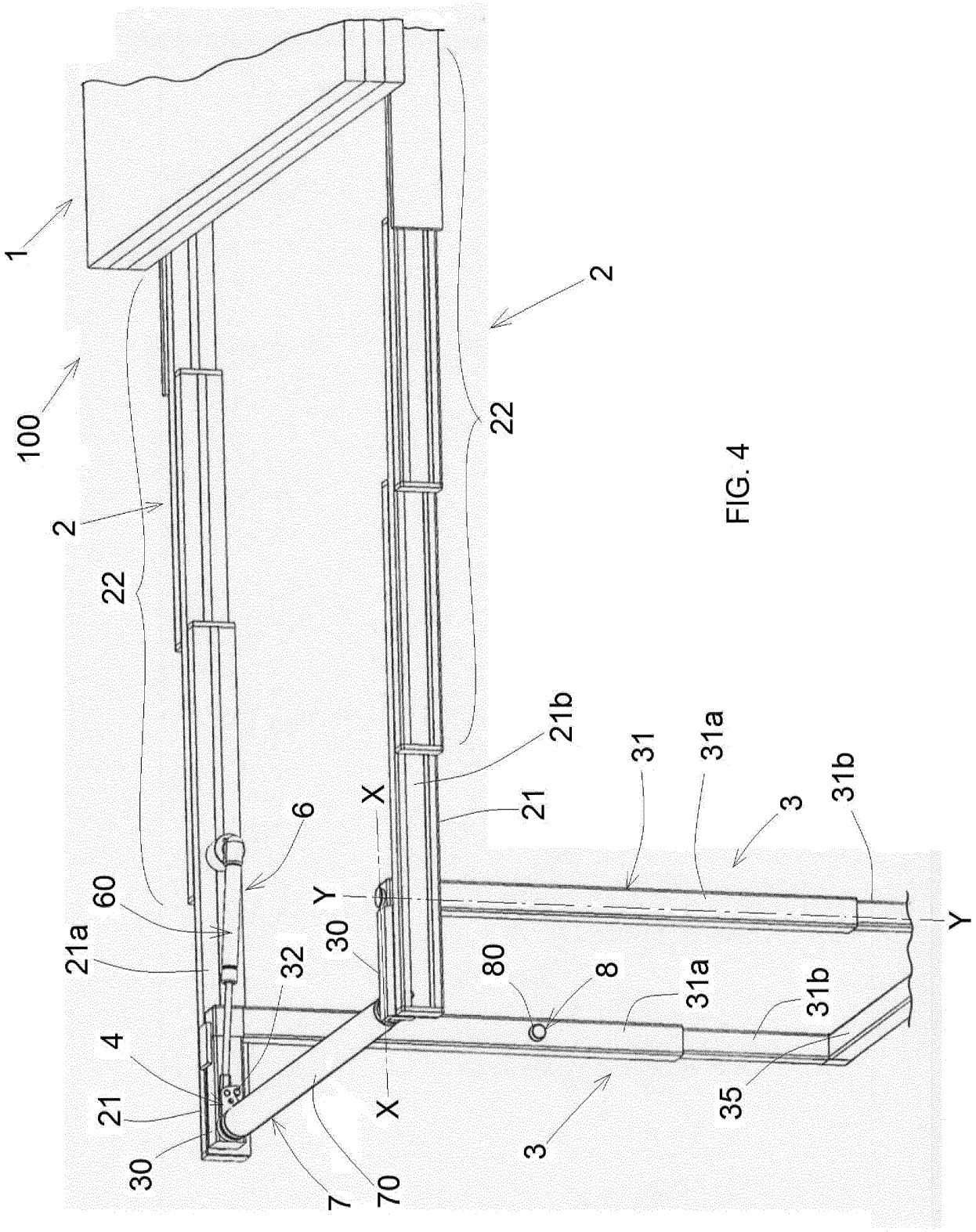

1
100
2
22
2
22
21b
31
31a
3
31b
X
21
6
Y
60
21a
30
32
80
8
31a
31b
4
21
30
7
70
X
3
35
Y

FIG. 4

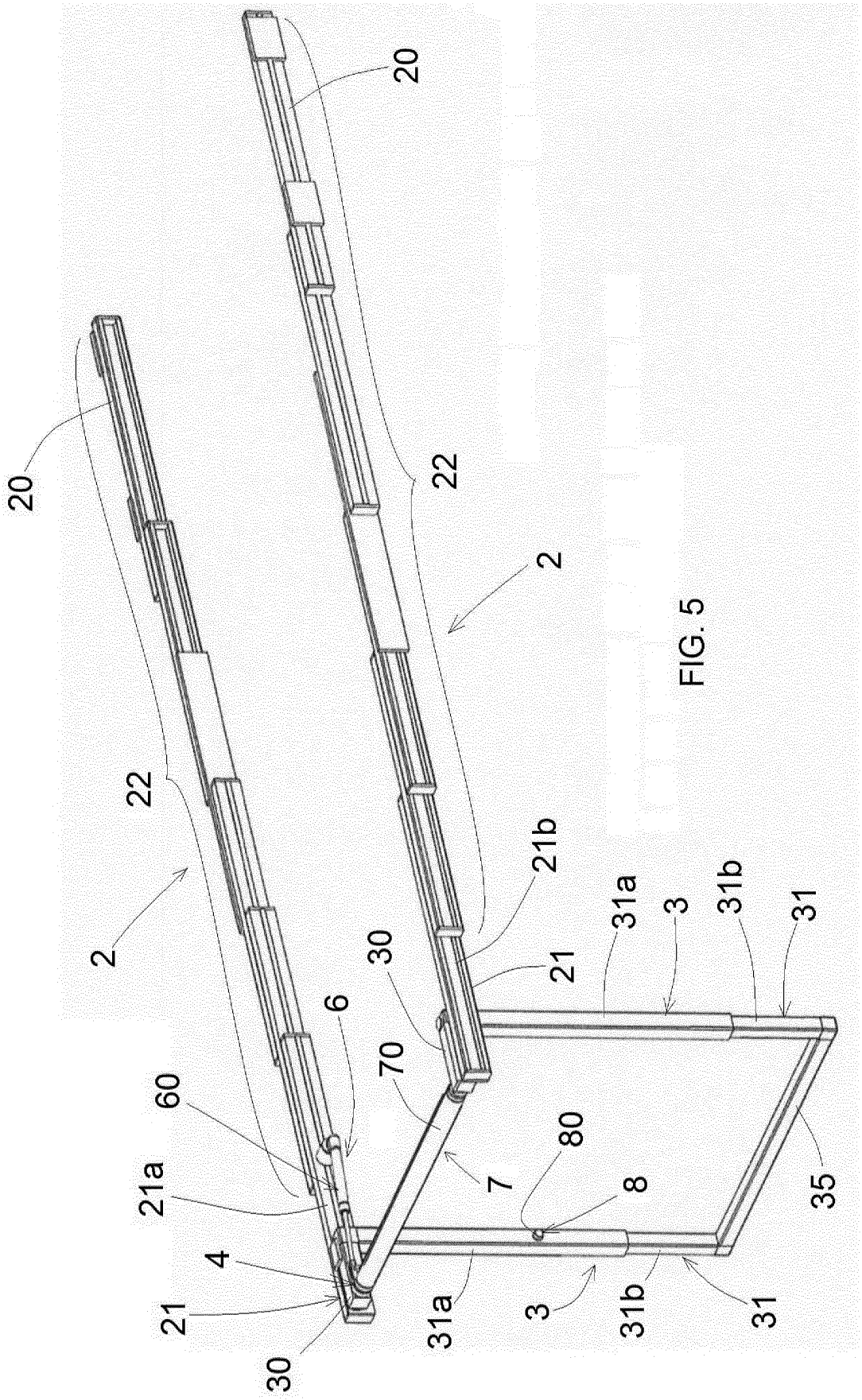


FIG. 5

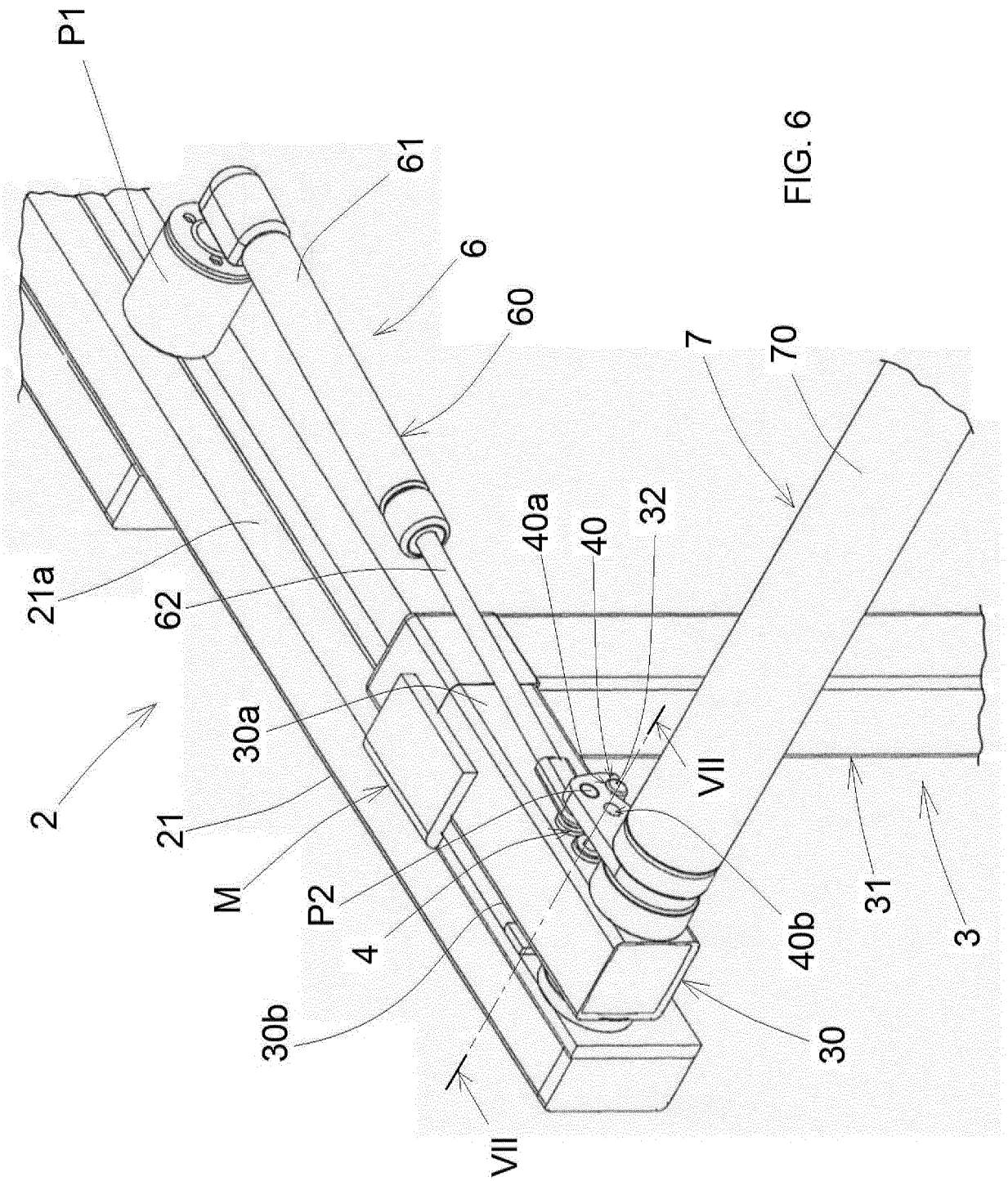


FIG. 6

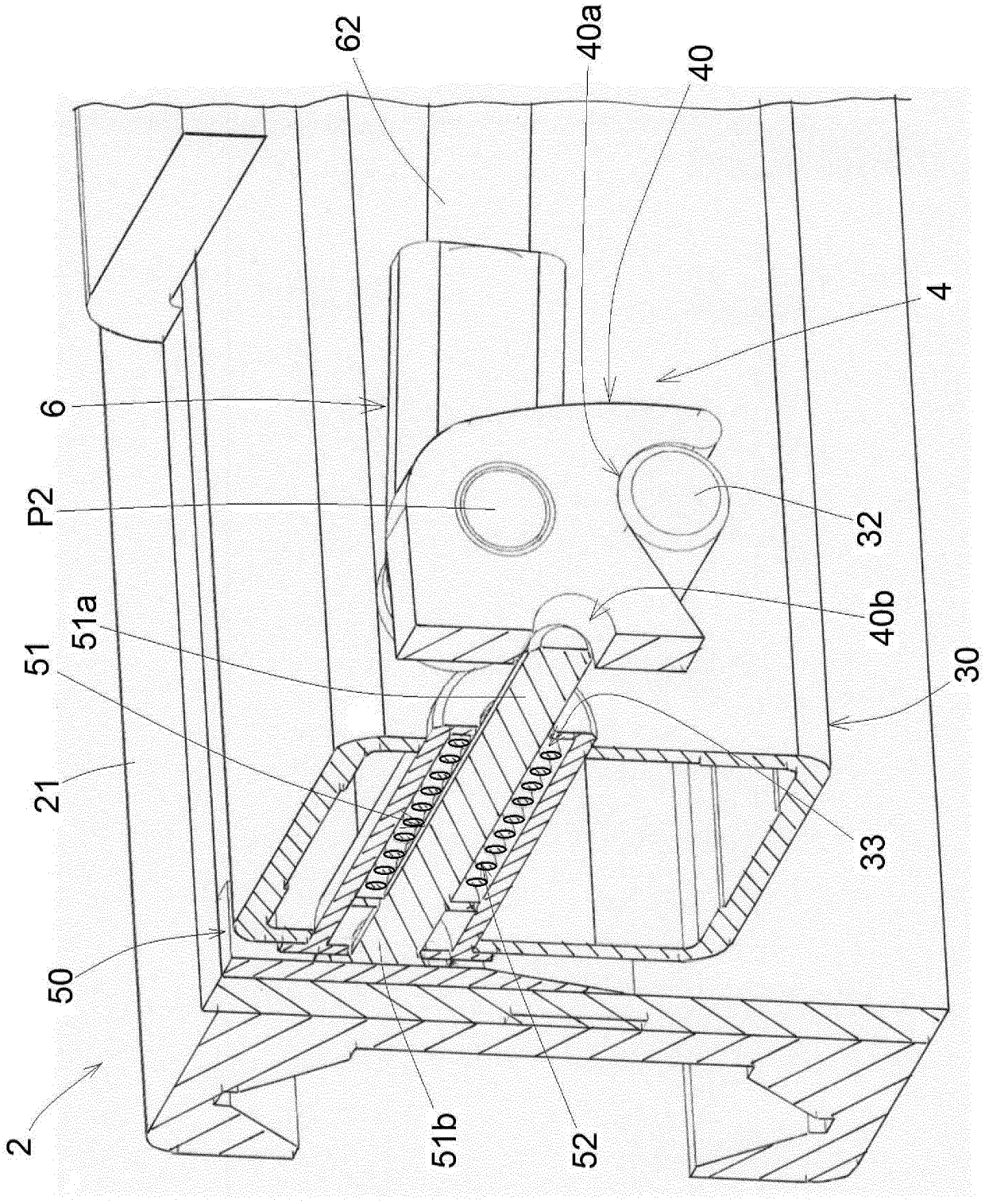


FIG. 7

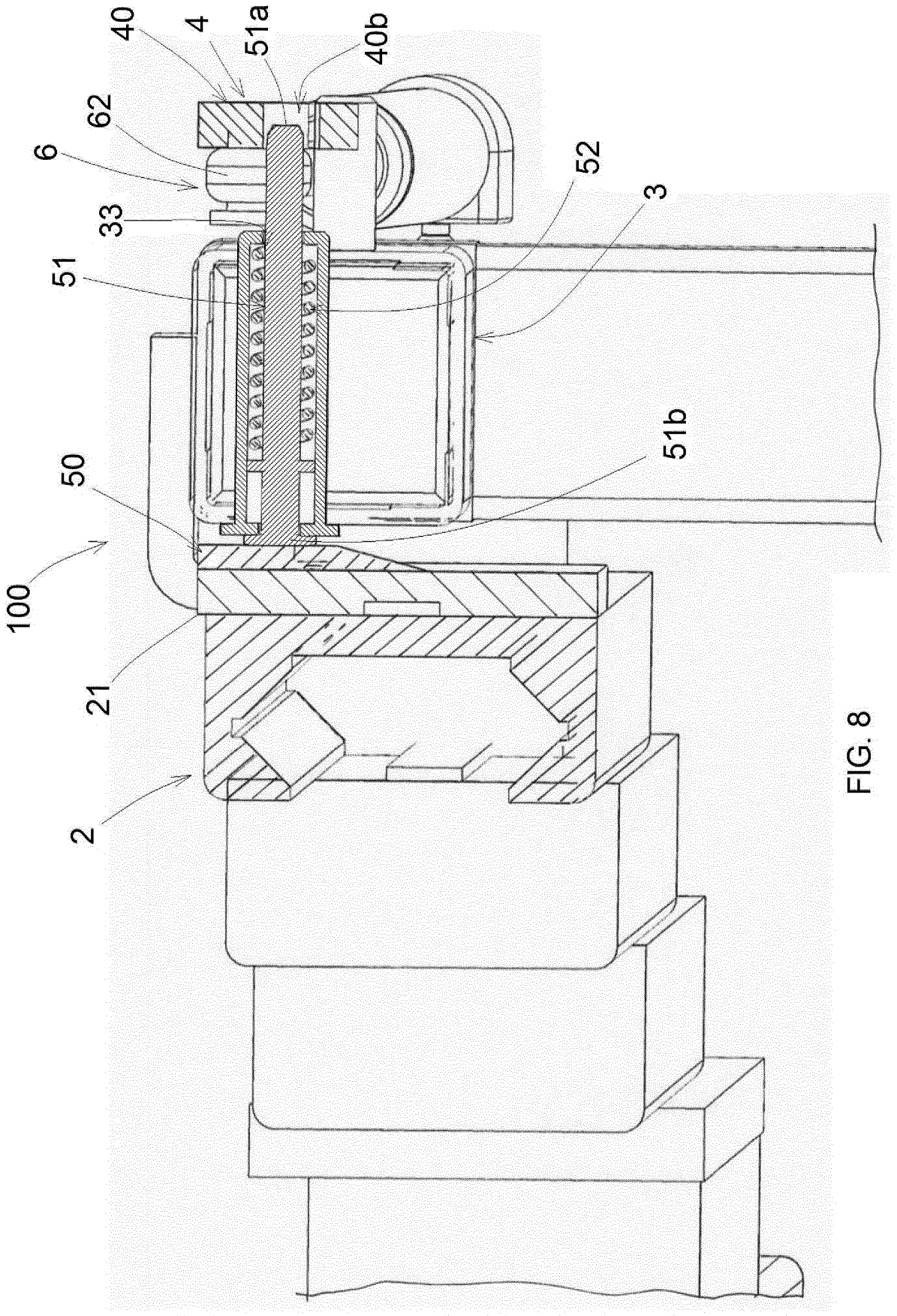


FIG. 8

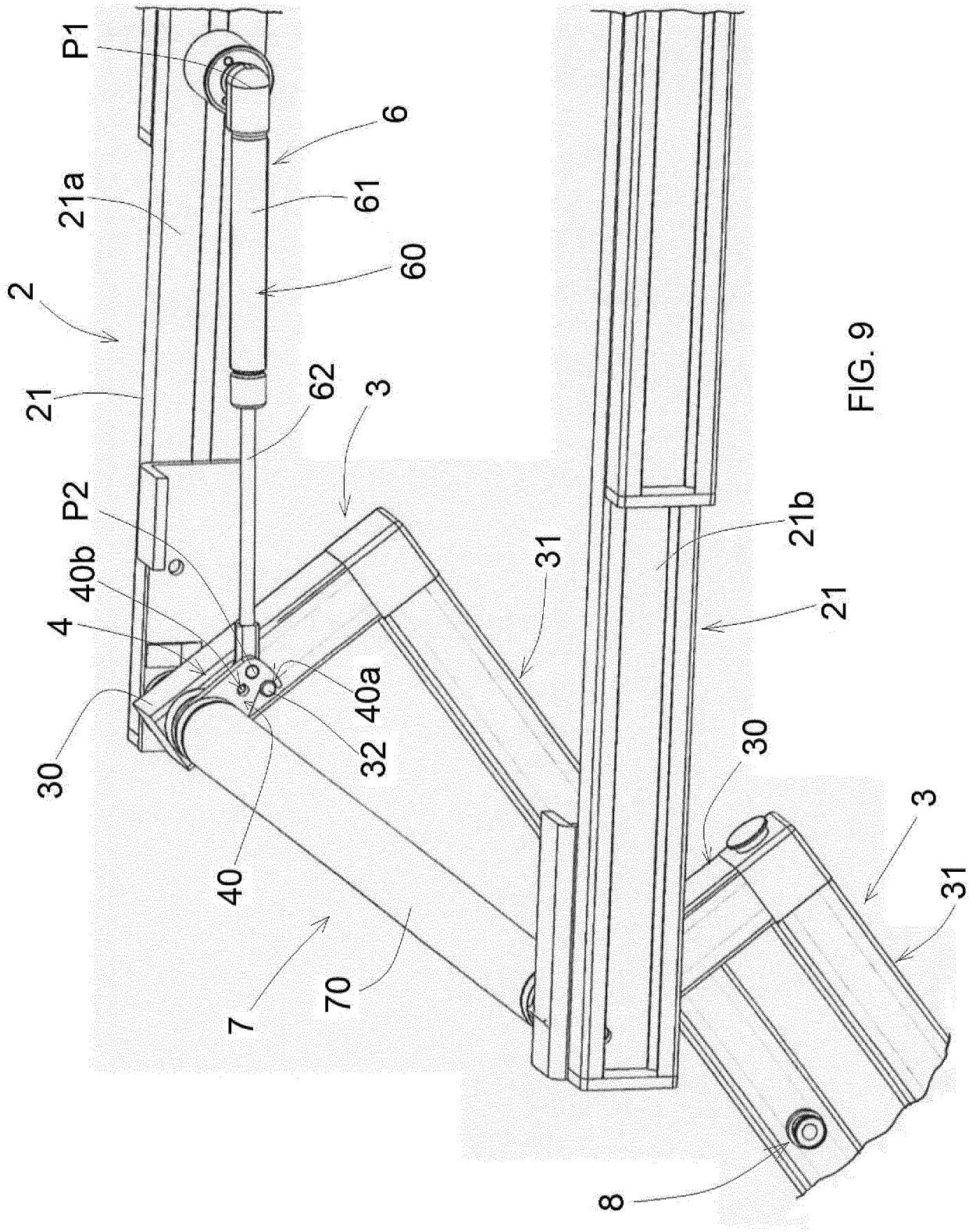
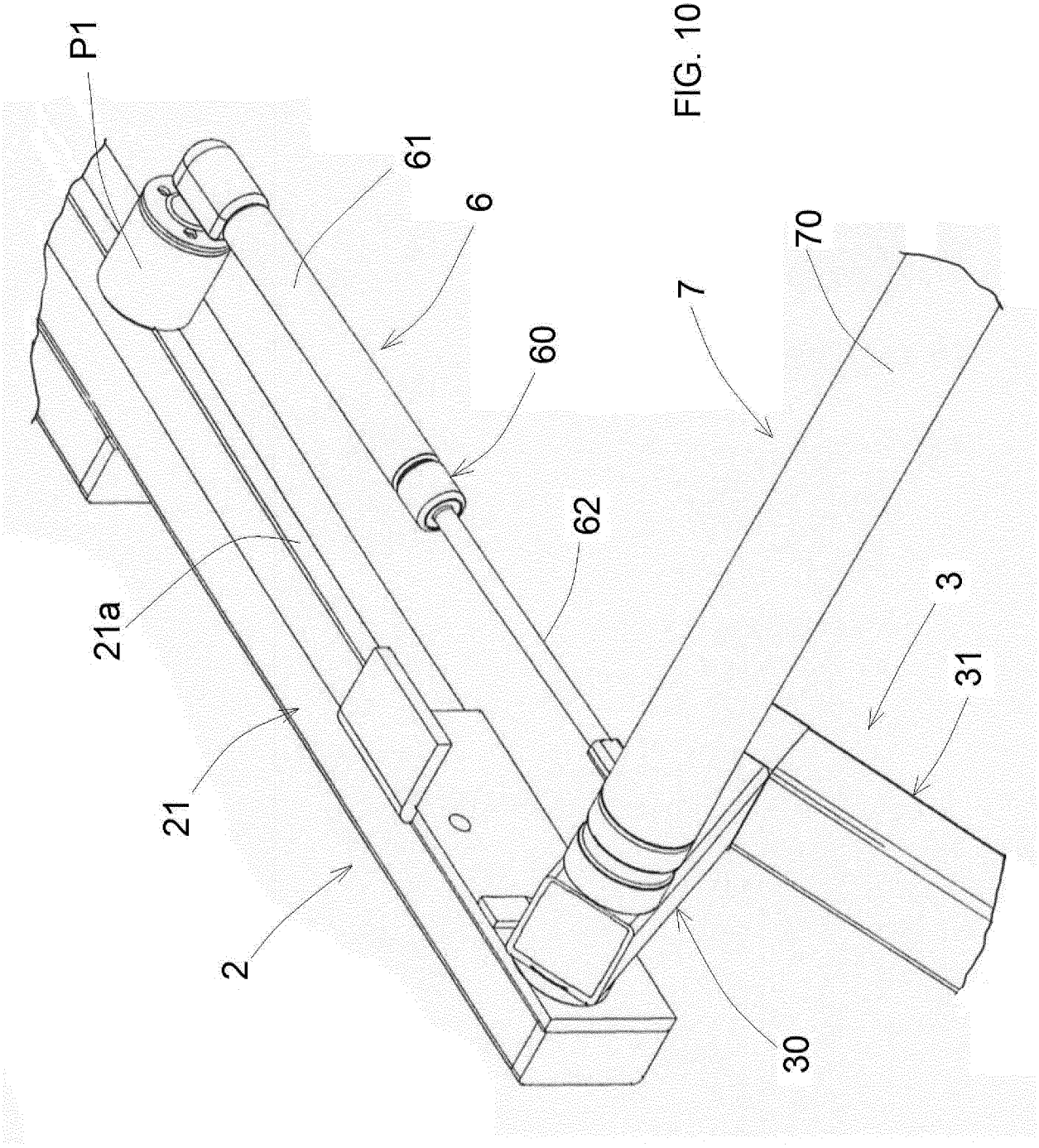


FIG. 9

FIG. 10



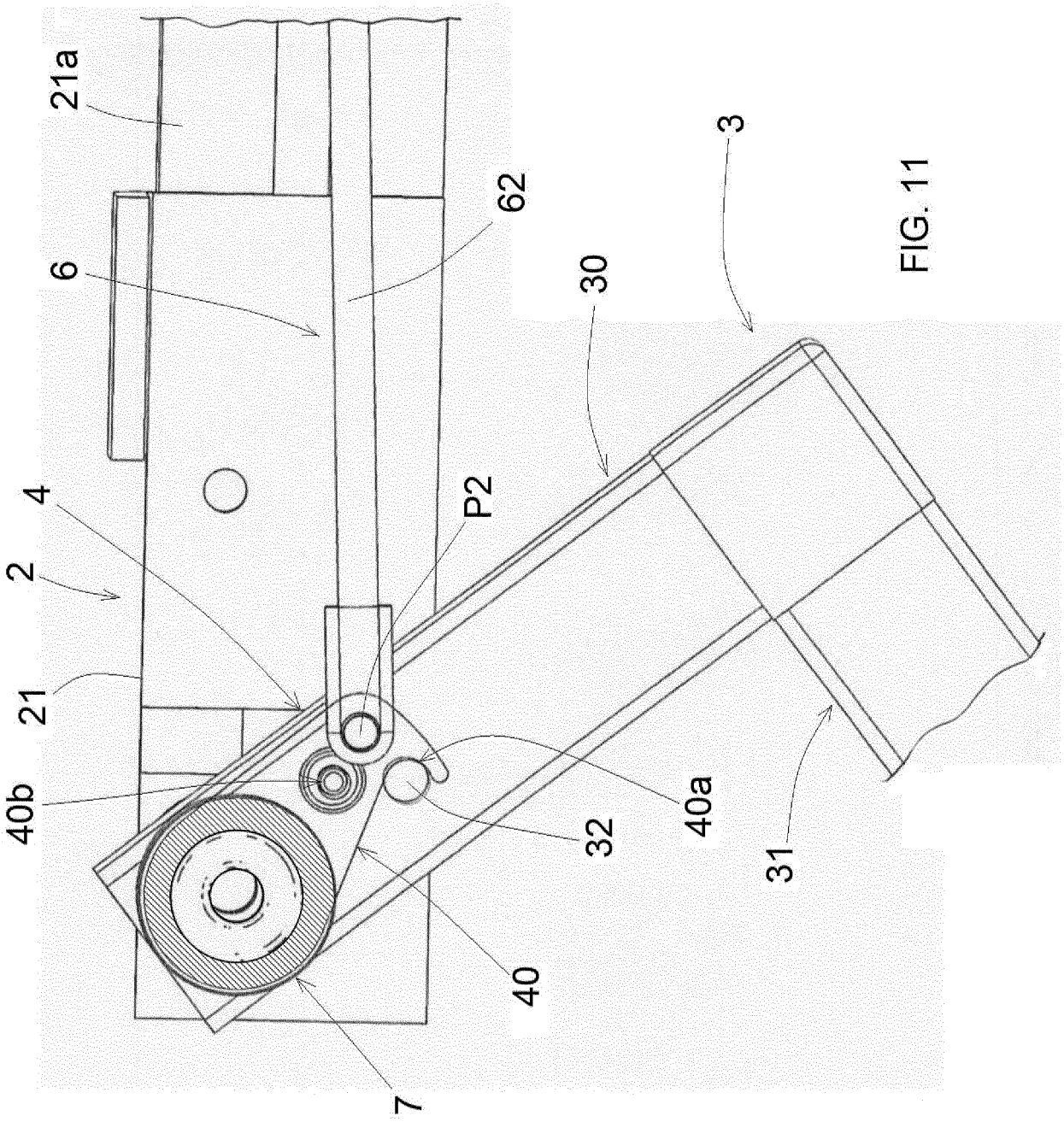


FIG. 11

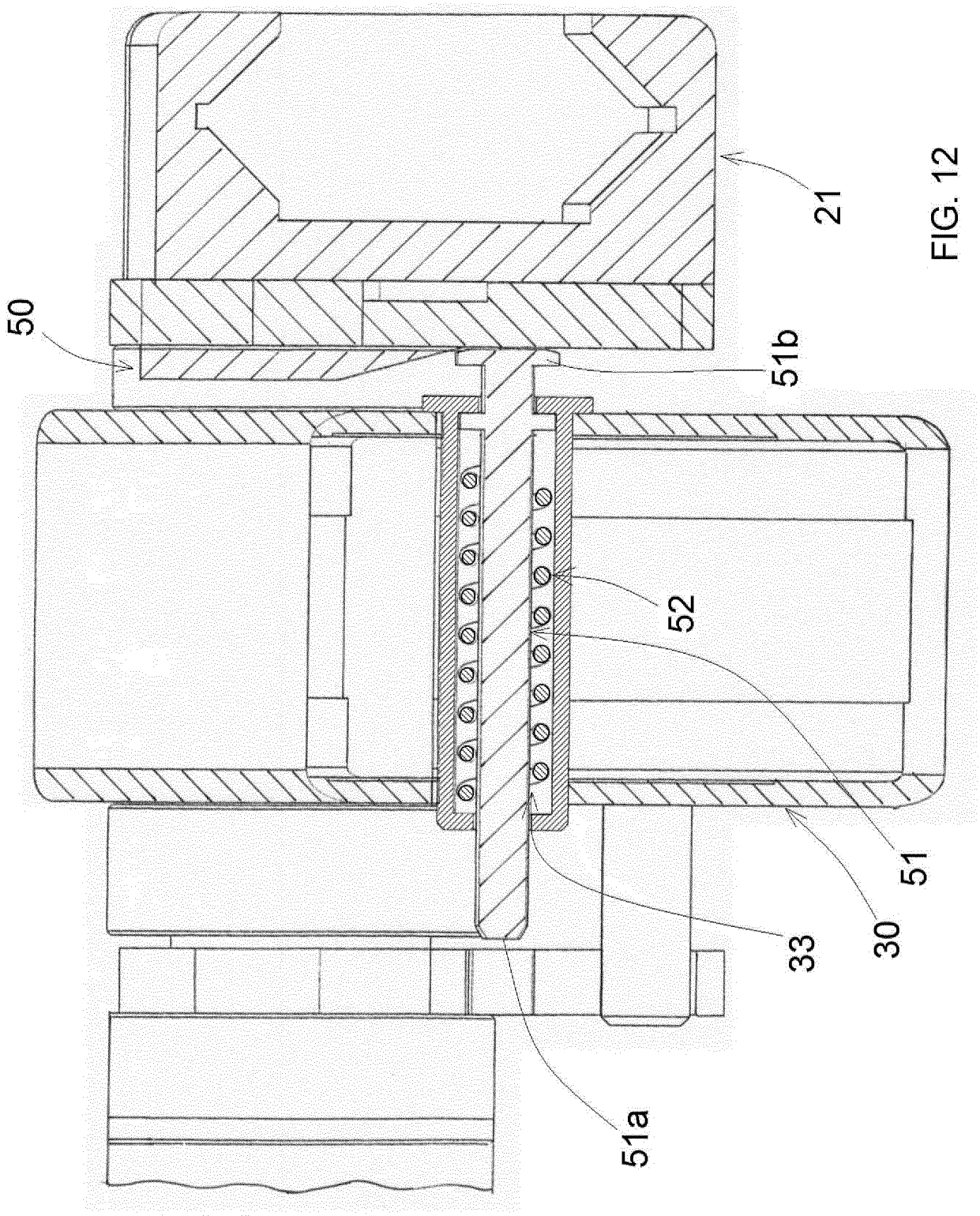


FIG. 12

REFERENCES CITED IN THE DESCRIPTION

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- FR 1435131 **[0005]**