

Description

[0001] The present invention concerns an extendible table.

[0002] Here and in the rest of the description, by table any structure is meant with an upper support plane and a lower leg structure, be it a dining or an office table or a coffee table or support table in general. Here and in the rest of the description, by leg structure the assembly is meant of the legs or of the structures having the function of legs that support the plane.

[0003] Extendible tables are known to be made according to different techniques. In particular, extendible tables are known with one or, more typically, with two extensions, which in the resting position are housed in such a way so as to not protrude from the table plane, whereas in use they extend the plane itself.

[0004] In conventional devices of this type, special attention was given particularly to functionality often at the expense of the appearance; indeed, normally, manoeuvring devices were in any case located under the table plane in a not easily visible position.

[0005] Only in relatively recent times, for tables with glass planes, since the glass is a transparent and relatively delicate material, specific devices have been proposed, even aesthetically more pleasing; one example of such a device is described in IT 1318461. Such a device, even if perfectly suitable for the purpose, is however quite complex, even visually, and therefore leads to both a relatively high cost, and considerable aesthetic constraints.

[0006] Another device for tables in glass has been proposed by the same applicant, see EP 1803373 A1, which makes it possible to move an extension from a closed position to an open position with translating and rotation movements, without the extension being turned over. Even if the device has a pleasant look, it is however very visible, and it is such as to characterise the appearance of the table in quite a strong way.

[0007] It should be kept in mind that in products of this type it is suitable, if not indeed necessary, to leave the designer maximum freedom in defining the shapes: indeed, they are top level products, in which the style component introduced by the designer is of huge importance.

[0008] The problem forming the basis of the present invention is that of providing a simple device, which is simultaneously both easy and cost effective to make as well as having minimum visual impact, and that thus does not impose excessive constraints upon the designer.

[0009] Consequently, the present invention concerns, in its most general terms, a table according to claim 1. Preferred characteristics are shown in the dependent claims.

[0010] More in particular, the invention concerns an extendible table, with a table plane supported by a leg structure, comprising at least one extension, which is supported by the table through a supporting device, associated with the table plane and/or with the leg structure,

and it is mobile between a closed position in which it is in a horizontal position under the table plane and an open position in which it is adjacent to the table plane in a position which is substantially on the same plane as it, **characterised in that** the supporting device is such that, in its closed position, the extension has its first face facing downwards and a second face facing upwards and with a first edge facing outside of the table and a second edge facing the inside of the table, and such that, in its open position, the extension has its first face facing upwards and the second face facing downwards and with its first edge facing outside of the table and the second edge adjacent to the edge of the table plane.

[0011] The first edge of the extension is thus always facing the outside of the table, whether the extension is closed or open.

[0012] The supporting device comprises a stationary member fastened to the table plane, under it, and a mobile member fastened to the extension, on its second face, and in which the mobile member is slidable with respect to the stationary member along a movement axis (x) as well as rotatable with respect to the same stationary member around the same movement axis (x). The movement axis (x) is thus the same both for a translating movement and for a rotation movement of the extension.

[0013] The mobile member comprises a rod with a circular cross section and the stationary member comprises at least one cylindrical support engaged with such a rod, for guiding sliding and rotation movements of the mobile member with respect to the stationary member. This configuration is particularly thin, i.e. with a very limited bulk in the transverse direction, thus reducing the aesthetic impact on the table.

[0014] The mobile member comprises a plate fixed to the rod and projecting out from it radially, in which the mobile member can take up:

- a first angular position around the movement axis corresponding to the position of the extension with its first face downwards, in which the plate is in sliding and contact engagement in a first sliding seat of the stationary member, in which position the mobile member can slide along the movement axis (x) between a position of maximum insertion -corresponding to the closed extension position- and a position of maximum extraction, whereas the rotation of the mobile member around the movement axis (x) is prevented apart from in the sole axial position of maximum extraction; and
- a second angular position around the movement axis (x) corresponding to the position of the extension (15) with its first face (17) upwards, in which the plate is in a second sliding seat of the stationary member, in which position the mobile member is allowed to slide along the movement axis (x) between a position of partial insertion -corresponding to the position of open extension - and a position of maximum extraction, whereas the rotation of the mobile member

around the movement axis (x) is prevented apart from in the sole axial position of maximum extraction.

[0015] With the aforementioned structure, it is ensured that the mobile member has the possibility of movement that it needs for the correct actuation of the extension, whereas other movement possibilities which could only create problems are prevented.

[0016] The first and/or the second sliding seat of the stationary member comprise respective adjustable friction means, positioned so as to be in sliding engagement with the plate near to the position of maximum insertion (in the case of the first seat) or near to the position of partial insertion (in the case of the second seat). Due to the type of actuation, not very mechanically reversible *per se*, it has been verified that it is sufficient to ensure minimum friction in the sliding seats so as to obtain a stability of positioning which is more than sufficient for normal use of the table.

[0017] In an embodiment that is preferred due to its simplicity and efficiency, preferably the friction means comprise a high friction foil and at least one screw for adjusting the contact, said screw being mounted either on the plate, so as to make its thickness variable, or in the seat, so as to vary its width.

[0018] Preferably, the second edge of the extension and the edge of the table plane have faces inclined by an angle (α) with respect to the vertical. This configuration allows the position with the extension open to be maintained with precision even with weights or unbalanced thrusts acting upon the extension itself.

[0019] Further characteristics and advantages of a table according to the invention shall become clearer from the following description of a preferred embodiment, with reference to the attached drawings. In such drawings:

- fig. 1 is a perspective view of a table according to the invention, with two extensions, both in their closed position;
- fig. 2 shows the table of fig. 1 with one of the extensions in its open position;
- figs. 3 and 4 show the table of figure 1 in two operative steps during the passing step of one of the extensions from the closed position to the open position;
- fig. 5 shows a section and enlarged view of a detail of the table of figure 2;
- fig. 6 shows a transparent view of the supporting device of one of the extensions, in a position corresponding to that with the extension closed;
- fig. 7 shows a transparent view of the supporting device of fig. 6, in a position corresponding to that with the extension open.

[0020] In the figures, a table according to the invention is wholly shown with reference numeral 10, which comprises a plane 11 supported by a leg structure, which comprises two legs 12; both the plane 11 and the legs 12 can be made from glass. The table 10 also comprises

two equal extensions, both indicated with reference numeral 15, carried by respective support devices 16, fixed under the plane 11. In the rest of the description, one of the two extensions 15 and the respective device 16 shall be described, with it being clear that what has been said for it applies also for the other extension and the other device.

[0021] The extension 15 has a flat structure, with a first face 17 opposite to a second face 18 and with a first edge 19 opposite to a second edge 20. In the closed position, see fig. 1, the extension 15 is below the plane 11, parallel to it, with the first face 17 facing downwards and with the first edge 19 facing outside of the table 10; in the open position, see fig. 2, the extension 15 is adjacent and on the same plane 11, with the first face 17 facing upwards, with the first edge 19 facing the outside of the table 10 and with the second edge 20 adjacent to the edge 21 of the plane 11, substantially in contact with it.

[0022] The device 16 comprises a stationary member 30 and a mobile member 50, inserted and guided in a mobile manner in the stationary member 30, as shall be described in the rest of the description. The stationary member 30 comprises an elongated box 31, fixed under the plane 11. The mobile member 50 comprises a rod 51 with a circular cross section, extending along a movement axis x, supported and guided in two cylindrical supports 32, fixed inside the box 31 of the stationary member 30, so that the rod 51 is slidable along the axis x and can rotate around it. The mobile member 50 also comprises a head 52, fixed to an end of the rod 51 protruding with respect to the box 31 of the stationary member 30; the second face 18 of the extension 15 is fixed to the head 52. The mobile member 50 also comprises a plate 53, fixed to the rod 51 and radially projecting from it at its end inside the stationary member 30.

[0023] The stationary member 30 also comprises a first seat 33 and a second seat 34 for the control of the sliding and of the rotation of the mobile member 50. The first seat 33 is defined by the box 31 and by a first strip 35, extending longitudinally in the box 31 parallel to the axis x. The second seat 34 is defined by the box 31, by a second strip 36, extending longitudinally in the box 31 parallel to the first strip 35, from an opposite side of the axis x, and by an end stop 37, mounted on the second strip 36. The box 31 of the stationary member 30 is then provided with a side window 38, adjacent to the first strip 35, for the plate 53 to pass during the rotation of the mobile member with respect to the axis x.

[0024] Thanks to the aforementioned first and second seat 33 and 34 and the plate 53, the rod 51 can slide longitudinally along the movement axis x and rotate with respect to it. More precisely, when the rod 51 is in its first angular position, shown in fig. 6 and corresponding to the closed position of the extension 15 (fig. 1), it can slide longitudinally along the axis x between a position of maximum insertion (figs. 1 and 6) and a position of maximum extraction (figs. 3 and 4), with the plate 53 sliding against the first strip 35 and against the inside of the box 31; no

rotation of the rod 51 is possible around the axis x apart from in the position of maximum extraction, where the plate 53 is not engaged with the first strip 35 but is, on the other hand, in front of the window 38. When, on the other hand, the rod 51 is in its second angular position, shown in fig. 7 and corresponding to the open position of the extension 15 (fig. 2), it can slide longitudinally along the axis x between the position of maximum extraction (figs. 3 and 4) and a position of partial insertion (figs. 2 and 7), with the plate 53 which slides against the second strip 36 and against the inside of the box 31, until it reaches the end stop 37; no rotation of the rod 51 is possible around the axis x apart from in the position of maximum extraction, where the plate 53 is not engaged with the second strip 36 but, on the other hand, in front of the window 38.

[0025] In order to better ensure the stability of the maximum and partial insertion positions (with respect to possible sliding along the movement axis x), adjustable friction means are provided at the positions reached by the plate 53 on the first strip 35 and on the second strip 36. More precisely, on the first strip 35 a first high friction foil 41 is mounted, whereas on the second strip 36 a second high friction foil 42 is mounted. A first screw 54 and a second screw 55 are provided on the plate 53, on opposite sides of it; by acting upon these, it is possible to adjust the functional thickness of the plate 53 and thus the interference with the foils 41 and 42.

[0026] When the rod 51 is in the position of partial insertion (figs. 2 and 7), the extension 15 has its second edge 20 substantially in contact with the edge 21 of the plane 11. As shown in detail in fig. 5, the second edge 20 of the extension 15 has a face inclined with respect to the vertical by an angle α , just like the edge 21 of the plane 11. Consequently, when the extension 15 is in its open position (figs. 2 and 5), a sort of hooking engagement is established between the extension 15 and the plane 11, which contributes to the stability of the extension 15, even with unbalanced loads on it.

Claims

1. Extendible table, having a table plane (11) supported by a leg structure (12), comprising at least one extension (15), which is supported by the table through a supporting device (16), associated with the table plane (11) and/or with the leg structure (12), and it is mobile between a closed position in which it is in a horizontal position under the table plane (11) and an open position in which it is adjacent to the table plane (11) in a position which is substantially on the same plane as it, wherein the supporting device (16) is such that the extension (15), in its closed position, has a first face (17) facing downwards and a second face (18) facing upwards and has a first edge (19) facing outside of the table and a second edge (20) facing the inside of the table (10), and such that the

extension (15), in the open position, has its first face (17) facing upwards and the second face (18) facing downwards and has its first edge (19) facing outside of the table (10) and its second edge (20) adjacent to the edge (21) of the table plane (11), wherein the supporting device (16) comprises a stationary member (30) fastened to the table plane (11), under it, and a mobile member (50) fastened to the extension (15), on its second face (18), and wherein the mobile member (50) is slidable with respect to the stationary member (30) along a movement axis (x) as well as rotatable with respect to the same stationary member (30) around the same movement axis (x), wherein the mobile member (50) comprises a rod (51) with a circular cross section and the stationary member (30) comprises at least one cylindrical support (32) engaged with such a rod (51), for guiding sliding and rotation movements of the mobile member (50) with respect to the stationary member (30),

characterised in that

the mobile member (50) comprises a plate (53) fixed to the rod (51) and projecting out from it radially, wherein the mobile member can take up:

- a first angular position around the movement axis (x) corresponding to the position of the extension (15) with its first face (17) facing downwards, wherein the plate is in sliding and contact engagement in a first sliding seat (33) of the stationary member (30), in which position the mobile member (50) is allowed to slide along the movement axis (x) between a position of maximum insertion -corresponding to the closed position of the extension (15) - and a position of maximum extraction, whereas the rotation of the mobile member is prevented (50) around the movement axis (x) apart from in the sole axial position of maximum extraction; and
- a second angular position around the movement axis (x) corresponding to the position of the extension (15) with its first face (17) upwards, wherein the plate is in a second sliding seat (34) of the stationary member (30), in which position the mobile member (50) is allowed to slide along the movement axis (x) between a position of partial insertion - corresponding to the open position of the extension (15) - and a position of maximum extraction, whereas the rotation of the mobile member (50) is prevented around the movement axis (x) apart from in the sole axial position of maximum extraction,

wherein at least one from the first and the second sliding seat (33; 34) of the stationary member (30) comprises respective adjustable friction means (35, 41, 54; 36, 42, 55), positioned so as to be in sliding engagement with the plate (53) near to the position of maximum and of partial insertion, respectively.

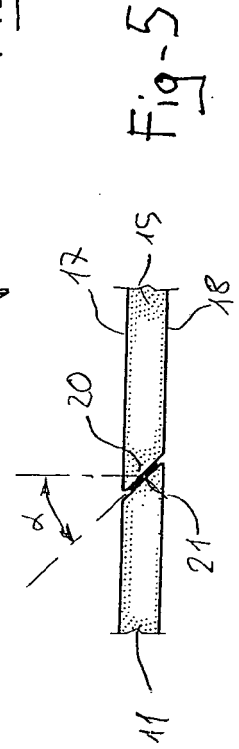
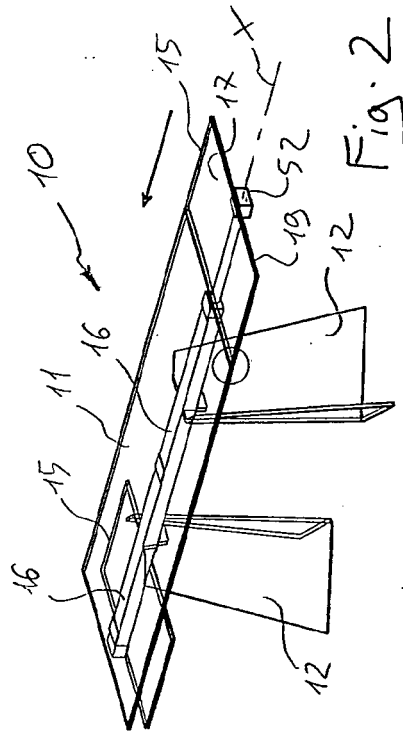
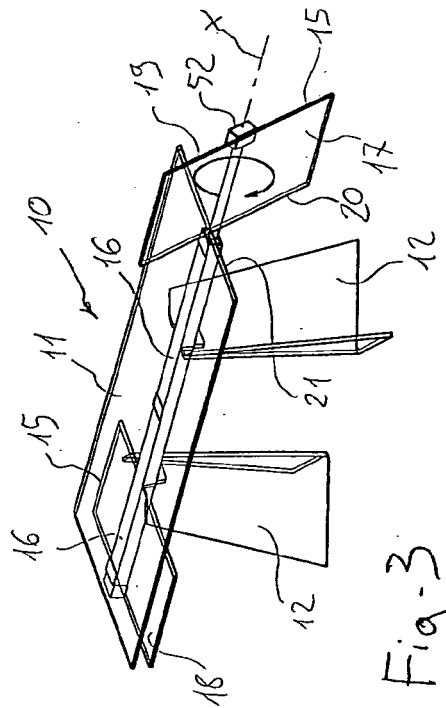
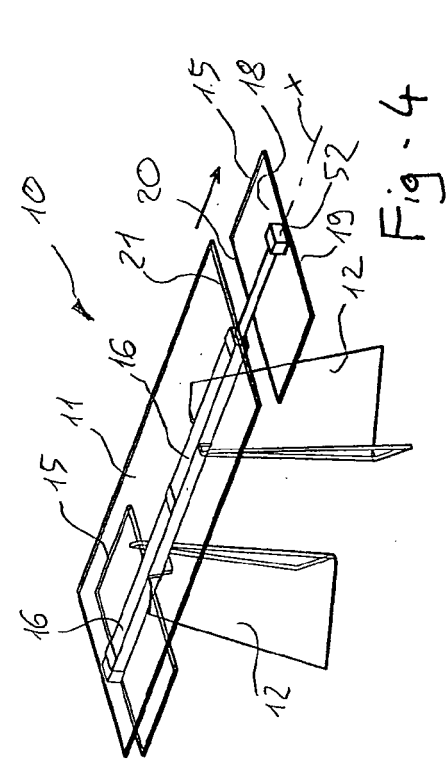
2. Table according to claim 1, wherein the first sliding seat (33) of the stationary member (30) comprises first adjustable friction means (35, 41, 54), positioned so as to be in sliding engagement with the plate (53) near to the position of maximum insertion. 5
3. Table according to claim 2, wherein the friction means comprise a high friction foil (41) and at least one screw (54) for adjusting the contact, said screw (54) being either mounted on the plate (53), so as to make its thickness variable, or in the first seat, so as to vary its width. 10
4. Table according to claim 1, wherein the second sliding seat (34) of the stationary member (30) comprises second adjustable friction means (36, 42, 55), positioned so as to be in sliding engagement with the plate (53) near to the position of partial insertion. 15
5. Table according to claim 4, wherein the friction means comprise a high friction foil (42) and at least one contact adjustment screw (55), said screw (55) being mounted either on the plate (53), so as to make its thickness variable, or in the second seat, so as to vary its width. 20
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6. Table according to any one of the previous claims, wherein the second edge (19) of the extension (15) and the edge (21) of the table plane (11) have a face inclined by an angle (α) with respect to the vertical. 30
7. Table according to any one of the previous claims, wherein the table plane (11) and/or the extension (15) are made from glass. 35

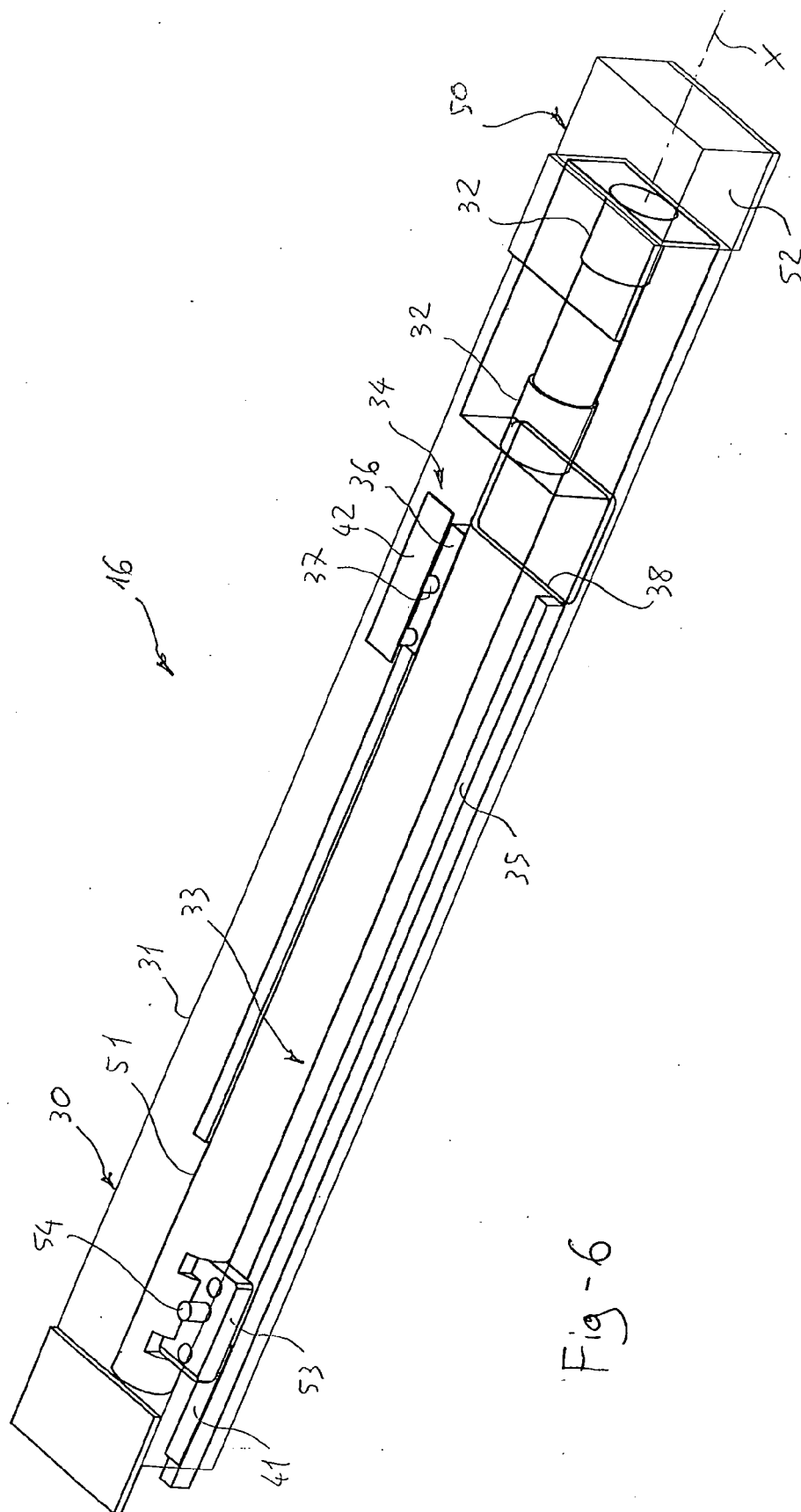
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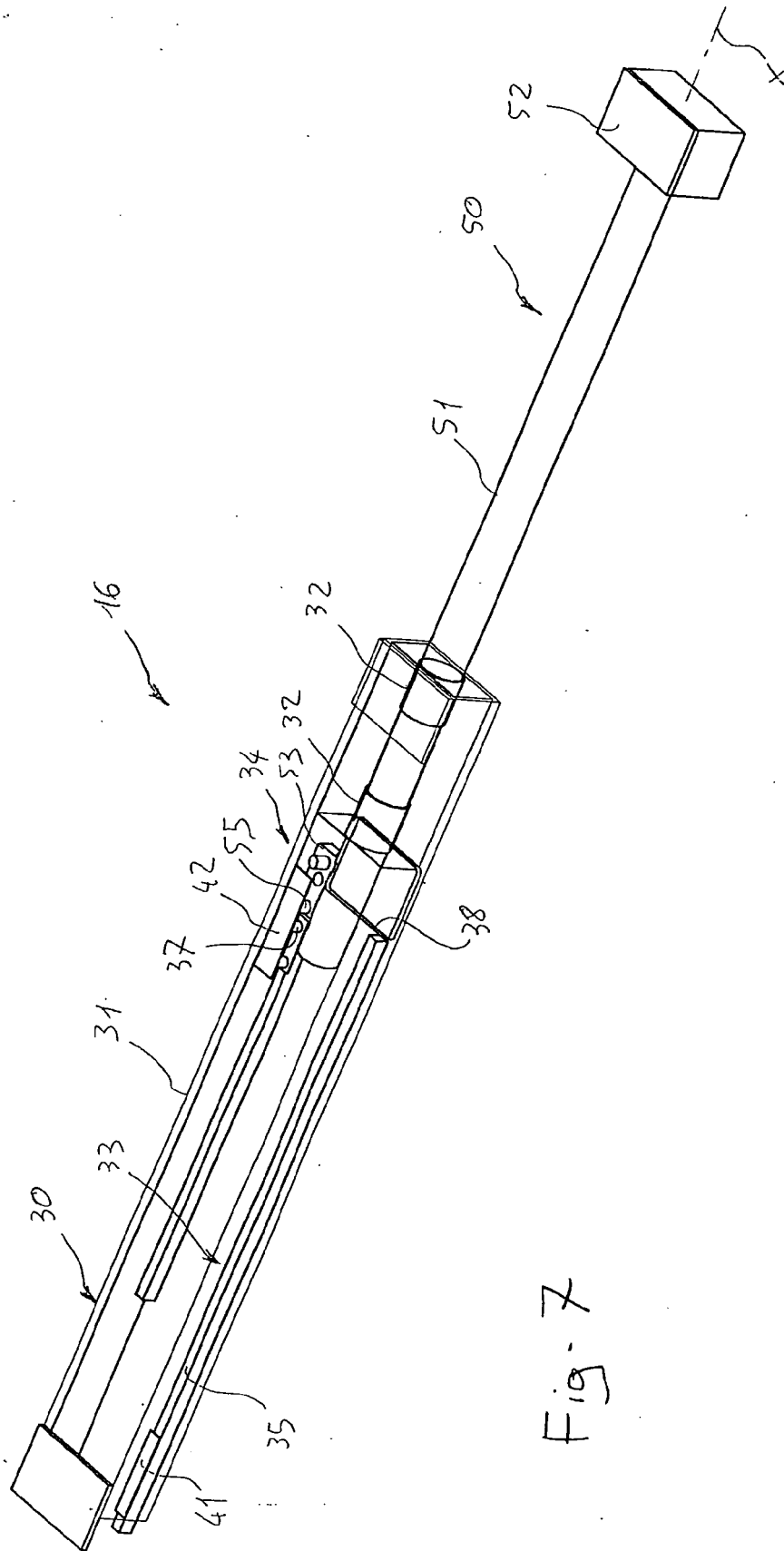
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT 1318461 [0005]
- EP 1803373 A1 [0006]