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(54) **Table with swinging extensions**

Tisch mit Schwingerweiterungen

Table avec des rallonges pivotantes

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Description

[0001] The invention relates to a table with swinging extensions as set forth in the preamble of claim 1. Such a table is known from US 4 827 850 A. A further table with folding extensions is disclosed in DE 381 614 C.

[0002] In glass furniture used for furnishing, and especially in tables, the light structure appropriate to the nature of the constructing material is often difficult to reconcile with multipurpose capacity due to the heaviness in form required by the technical solutions which provide such multipurpose capacity, such as a solution for lengthening a table.

Purpose of the invention

[0003] Given this set of circumstances, the primary purpose of this invention is to provide an innovative, functional system for lengthening tables made of glass.

[0004] Another purpose of the invention is to fulfil the preceding purpose by employing an adaptable system with light appearance that is required by the use of glass as the material for constructing the manufactured piece.

[0005] Yet another purpose of this invention is to fulfil the preceding purposes using a simple, effective system that operates reliably and is relatively inexpensive in relation to the results that are obtained by using it.

Summary of the invention

[0006] These and other purposes are fulfilled with the table with swinging extensions, especially made of glass, that is created according to this invention, which includes half planes (3) for extending the table that are hinged on a fulcrum (7) with levers (8) whose respective arms (9) are distally connected to the head (10) of telescopic shock absorbers (11) with idle foot (12) that are concealed in housings (2) which constitute the legs (2) of the table (1), such housings being sufficiently spacious to accommodate the relative angular travels which allow the half planes (3) to swing with a dampened motion from a parallel idle position beneath the plane (1) to an exposed position which is coplanar with that plane (1).

Brief description of the drawings

[0007] Additional characteristics and advantages of the model described by this invention will be more evident from the detailed description given below of a preferred but not exclusive form of construction which is illustrated as an example, but not limited to said example, by twelve tables of attached drawings, in which:

Figures 1 and 2 show two different enlargements of the same view in perspective of partial cross-sections of several kinematic mechanisms which equip the table with swinging extensions and are created according to this invention;

Figures 3 and 4 show two different enlargements of a same additional view in perspective of partial cross-sections of several kinematic mechanisms which equip the table with swinging extensions and are created according to this invention;

Figures 5, 6 and 7 show three views in perspective of certain details which are included in the table that extends by swinging and is created according to this invention;

Figures 8, 9, 10, 11 and 12 show five steps in the extending process of the table that extends by swinging and is created according to this invention.

Static description of the preferred embodiment

[0008] With reference to the figures described above, and in particular to figure 1, 1 indicates a rectangular glass plane that constitutes a dining table with four legs, each leg being indicated in its entirety by 2 and having a structure that resembles a housing shaped like a parallelepiped and is preferably constructed in metal.

[0009] At the top of the legs 2 and on the shorter sides of the plane 1, two half planes 3 that extend the table are hinged in opposing directions by means of hinges 4 which include sections 4A united by gluing with half planes 3 at two corners on the same side and sections 4B that are joined to the tops of the legs 2.

[0010] The sections 4A of the hinges 4, which are joined to the half planes 3, are equipped with through dowels 5 that are positioned off-center. These dowels, which are preferably able to project elastically in response to pressure exerted by springs that are not shown, and will engage holes 6 provided in an appropriate position in sections 4B of hinges 4, which are joined to the legs 2, to provide functions which will be described below.

[0011] The axes of pivoting 7 of the hinges 4 extend into the side-mounted housings 2, which comprise the legs 2, and said axes constitute at that point the fulcrums 4 of the respective levers 8 with arms 9 that are distally connected to the heads 10 of telescopic shock absorbers 11 with idle foot 12 that are concealed in the housings 2 which constitute the legs 2 of the table 1, said housings being spacious enough to allow the relative angular travels for the functions which will now be described.

Dynamic description of the preferred embodiment

[0012] Now that the static description of a constructed example of a preferred model created according to this invention is complete, the description will now change to that of a dynamic type; that is, a description of the operation of said model:

In the compact configuration illustrated in figure 8, the half planes 3 that extend the table are resting beneath the principal plane 1 and are held in position by the extension thrust of telescopic shock absorbers

11 on the kinematic mechanism consisting of levers 8 and hinges 4.

[0013] When the user exerts simple rotational traction on half planes 3, which counters the extension thrust of shock absorbers 11, the half planes 3 that extend the table rotate angularly below the plane 1 (see figure 9) until they travel beyond bottom dead center of the arms 9 on levers 8 (see figure 10). At this point, the extension thrust of shock absorbers 11 applied to the kinematic mechanism consisting of the levers 8 and hinges 4 automatically continues the rotation of half planes 3 (see figure 11), thus raising them to a coplanar position with respect to the plane 1 (see figure 12), in which position the half planes can be secured by latching the dowels 5 in sections 4A of the hinges 4 into the holes 6 provided in the sections 4B of those hinges 4.

[0014] After the dowels 5 have been disengaged from the holes 6, the user can apply traction, rotation and inverse travel to the half planes 3 in order to return them to the rest position under the main plane 1 when the table no longer requires extension. Repositioning beyond 90° in the relative angular travel is automatic.

Alternative configurations

[0015] It is evident alternative configurations that express the concept of innovation which underlies the constructed example described above and which is the subject of the claims specified below can be built with equivalent techniques and structures and can be applied to the model created according to this invention; that is, the shapes of the relative components can be varied in a way that is suited to the purpose of the invention. In particular:

the table and the half planes can have any shape; the half plane that extends the table can be installed on one side; or the half plane can equip furniture and complements that are different from the tables for which the invention was originally conceived;

[0016] The shock absorbers and hinges can be contrived in any way that is suitable for this purpose.

Advantages of the invention

[0017] As is evident from the detailed description that precedes the preferred examples of construction, the model created according to this invention offers the advantages provided by fulfilling its primary purposes:

it in fact furnishes a functional system for extending glass tables, whose light appearance is compatible with the appearance of the material used.

LEGEND OF NUMBERS

[0018]

- | | | |
|----|-----|---|
| 5 | 1) | plane of table |
| | 2) | legs |
| | 3) | half planes that swing to extend the table |
| | 4A) | sections of hinges that are joined to the half planes |
| | 4B) | sections of hinges that are joined to the legs |
| 10 | 5) | safety dowels |
| | 6) | holes that engage the safety dowels |
| | 7) | axes of pivoting of the hinges and levers |
| | 8) | levers |
| | 9) | arms on levers |
| 15 | 10) | head of telescopic shock absorbers |
| | 11) | telescopic shock absorbers |
| | 12) | foot of telescopic shock absorbers |

20 Claims

1. Table with swinging extensions, especially made of glass, including at least one half plane (3) that extends the table plane (1), a housing that constitutes at least one leg (2), and a lever (8) with fulcrum (7) on which the half plane (3) is hinged, **characterized in that** said table further comprises at least one telescopic shock absorber (11), an arm (9) of said one lever (8) being distally connected to the head (10) of said telescopic shock absorber (11) with idle foot (12), said idle foot (12) being connected to said housing, said shock absorber (11) being concealed inside the housing that constitutes at least one leg (2), wherein said housing is spacious enough to allow the relative angular travel which enables the half plane (3) to swing with a dampened motion from an idle position parallel to and beneath the plane (1) to an exposed position that is coplanar with that plane (1).
2. Table with swinging extensions according to claim 1, **characterized by** the fact that it includes:
 - a rectangular glass plane (1) constituting a dining table and combined with four legs (2) in the form of a housing shaped like a parallelepiped,
 - two half planes (3) that extend the table, located at the top of said legs (2) at the short sides of said plane (1), which pivot into opposing positions,
 - hinges (4) for pivoting said two half planes (3) that extend the table, whose axes of pivoting (7) extend inside the side-mounted housings constituting the legs (2), thus constituting at that point the fulcrums (7) of levers (8) with an arm (9) which is distally connected to the head (10) of said telescopic shock absorbers (11) with idle feet (12).

3. Table with swinging extensions according to claim 2, wherein the pivoting hinges (4) of said half planes (3) that extend the table include sections (4A) which are united by glue with two corners on the same side of said half planes (3), and sections (4B) which are joined to the apexes of said legs (2).
4. Table with swinging extensions according to claim 3, wherein said sections (4A) of the hinges (4), which are joined to the half planes (3), are equipped with through dowels (5) that are positioned off-center and which can project in an elastic manner and engage respective holes (6) provided in a suitable location in sections (4B) of said hinges (4), which are joined to the legs (2).

Patentansprüche

1. Tisch, insbesondere Glastisch mit ausklappbaren Erweiterungen, umfassend wenigstens eine die Tischplatte (1) um die Hälfte verlängernde Ebene (3), ein Gehäuse, das wenigstens ein Tischbein (2) bildet, und einen Hebel (8) mit einem Drehpunkt (7), an dem die verlängernde Ebene (3) angelenkt ist, **dadurch gekennzeichnet, dass** der Tisch außerdem wenigstens einen teleskopischen Schwingungsdämpfer (11) aufweist, wobei ein Arm (9) des Hebels (8) distal mit dem Kopf (10) des teleskopischen Schwingungsdämpfers (11) mit lose gelagerter Fuß (12) verbunden ist, welcher mit dem das Tischbein (2) bildenden Gehäuse verbunden ist, in dem der Schwingungsdämpfer untergebracht ist, wobei das Gehäuse so dimensioniert ist, dass entsprechende Winkelbewegungen möglich sind, um der verlängernden Ebene (3) Schwenkbewegungen mit abgedämpften Ausschlägen aus einer Ruhestellung parallel unterhalb der Tischplatte in eine ausgeklappte Stellung in derselben Ebene wie die Tischplatte (1) zu ermöglichen.
2. Tisch mit ausklappbaren Erweiterungen nach Anspruch 1, **dadurch gekennzeichnet, dass** dieser umfasst:
- eine rechteckige Glasplatte (1) zur Bildung eines Esstisches mit vier Beinen (2), die jeweils die Form eines parallelepipedischen Gehäuses haben,
 - zwei Halbebenen (3), die die Tischplatte (1) verlängern und an deren Schmalseiten am oberen Ende der Tischbeine (2) so angeordnet sind, dass sie entgegengesetzt zueinander schwenkbar sind,
 - Scharniergelenke (4) für die Schwenkbewegung der beiden die Tischplatte (1) verlängernden Halbebenen (3), deren Schwenkachsen (7) in die seitlich angebrachten, die Beine (2) bil-

denden Gehäuse hineinragen, wodurch sie dort die Drehpunkte (7) der Hebel (8) an einem Arm (9) bilden, der distal mit dem Kopf (10) der Schwingungsdämpfer (11) mit lose gelagerter Fuß (12) verbunden ist.

3. Tisch mit ausklappbaren Erweiterungen nach Anspruch 2, **dadurch gekennzeichnet, dass** die Scharniergelenke (4) der beiden die Tischplatte verlängernden Halbebenen (3) Abschnitte (4A), die mit zwei Ecken der Halbebenen (3) auf derselben Seite verklebt sind, sowie Abschnitte (4B) aufweisen, die an den oberen Enden der Beine (2) angebracht sind.
4. Tisch mit ausklappbaren Erweiterungen nach Anspruch 3, **dadurch gekennzeichnet, dass** die mit den Halbebenen (3) verbundenen Abschnitte (4A) der Scharniergelenke (4) durchgehende, exzentrische Bolzen (5) aufweisen, die elastisch in Bohrungen (6) eingreifen, welche in den Abschnitten (4B) der mit den Tischbeinen (2) verbundenen Scharniergelenke (4) vorgesehen sind.

Revendications

1. Table, particulièrement de verre, avec des rallonges pivotantes, comprenant au moins une demi-plaque (3) apte à prolonger le plan de la table (1), un carter formant au moins un pied de table (2), et un levier (8) avec un pivot (7) sur lequel ladite demi-plaque (3) est montée, **caractérisée par le fait que** la table comprend en outre un amortisseur télescopique (11) avec une tête (10) à laquelle est distalement relié un bras (9) dudit levier (8) et avec un pied fou (12) relié audit carter, ledit amortisseur (11) étant caché dans le carter formant ledit pied (2) dont l'intérieur est suffisamment spacieux pour faciliter un mouvement angulaire pour provoquer à la demi-plaque (3) une oscillation atténuée d'une position de repos parallèle et sous la table (1) dans une position de sortie coplanaire à la table (1).
2. Table selon la revendication 1, **caractérisée par le fait qu'elle comprend**:
- un plan de table rectangulaire de verre (1) pour constituer une table de salle à manger et munie de quatre pieds (2) sous forme de carter parallélépipédique,
 - deux demi-plaques (3) aptes à prolonger le plan de la table et positionnées sur les petits côtés dudit pan de table rectangulaire (1) sur l'extrémité supérieure des pieds (2), de sorte qu'elles sont aptes à pivoter dans des positions opposées,
 - des éléments d'articulation à charnière (4) pour le pivotement des deux demi-plaques (3) aptes

à prolonger le plan de la table, dont les axes d'articulation (7) pénètrent dans les carters formant les pieds (2) latéralement montés pour y constituer les pivots (7) des leviers (8) à un bras (9), lequel bras (9) étant distalement relié à la tête (10) des amortisseurs télécopiques (11) à pied fou (12). 5

3. Table selon la revendication 2, **caractérisée par le fait que** les charnières (4) des demi-plaques (3) aptes à prolonger le plan de la table présentent des sections (4A) collées à deux angles sur le même côté des demi-plaques (3) et des sections (4B) reliées aux sommets des pieds (2). 10

4. Table selon la revendications 3, caractérisée par le fait que lesdites sections (4A) des charnières (4) reliées aux demi-plaques (3) sont munies de boulons excentriques d'ancrage (5) aptes à pénétrer élastiquement dans des alésages (6) pratiqués dans les sections (4B) des charnières (4) reliées aux pieds (2). 15 20

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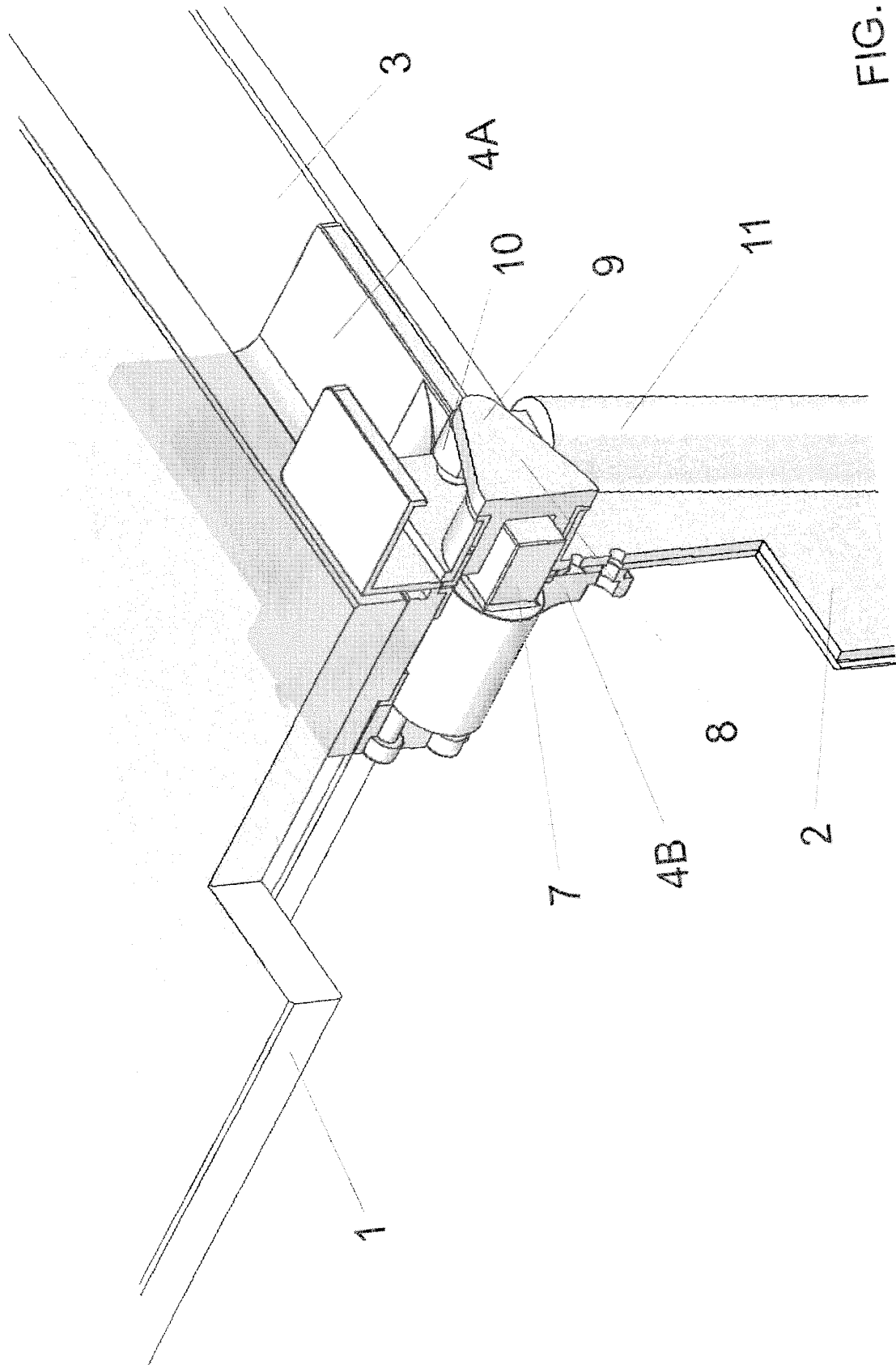


FIG. 1

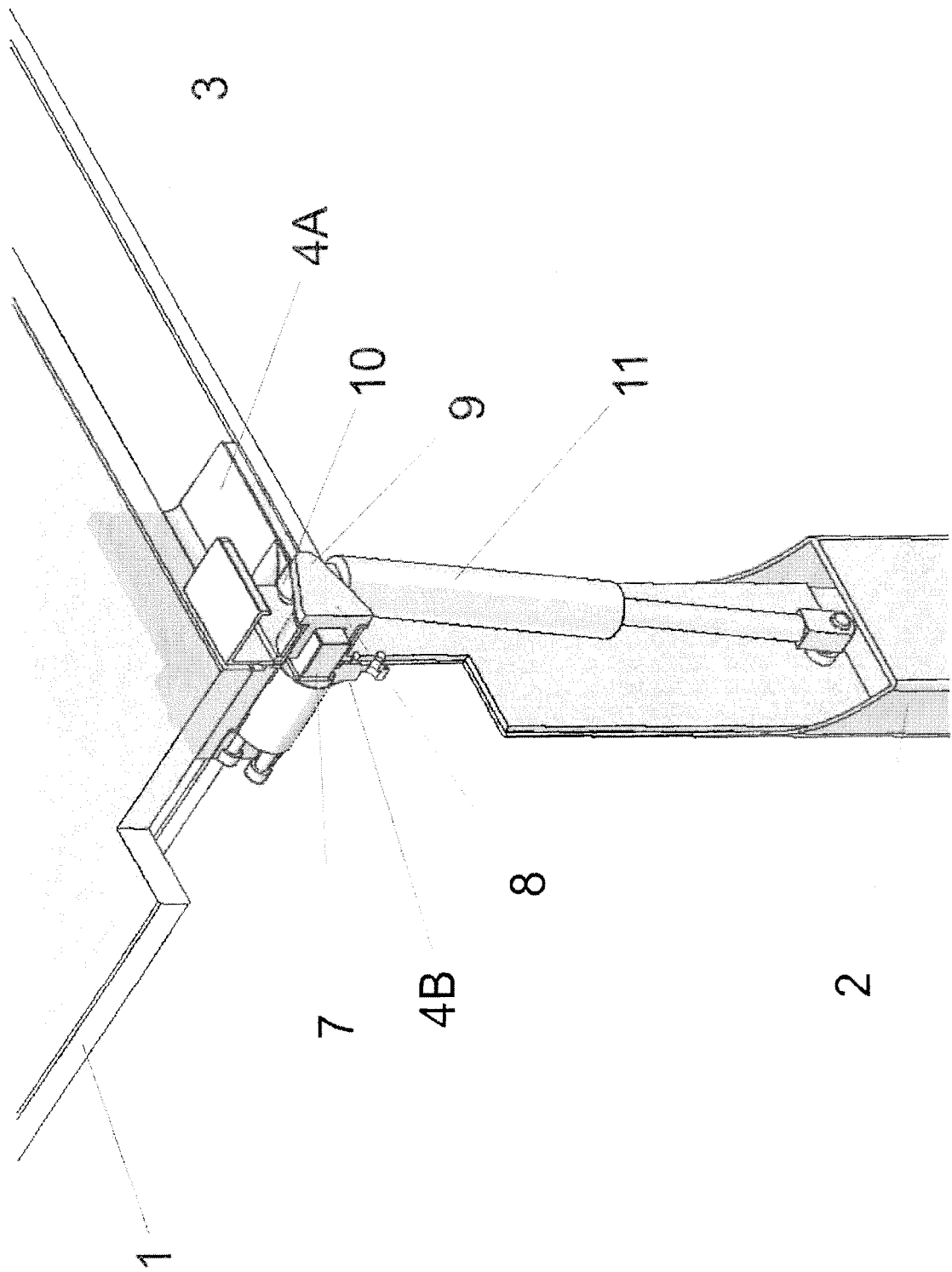


FIG. 2

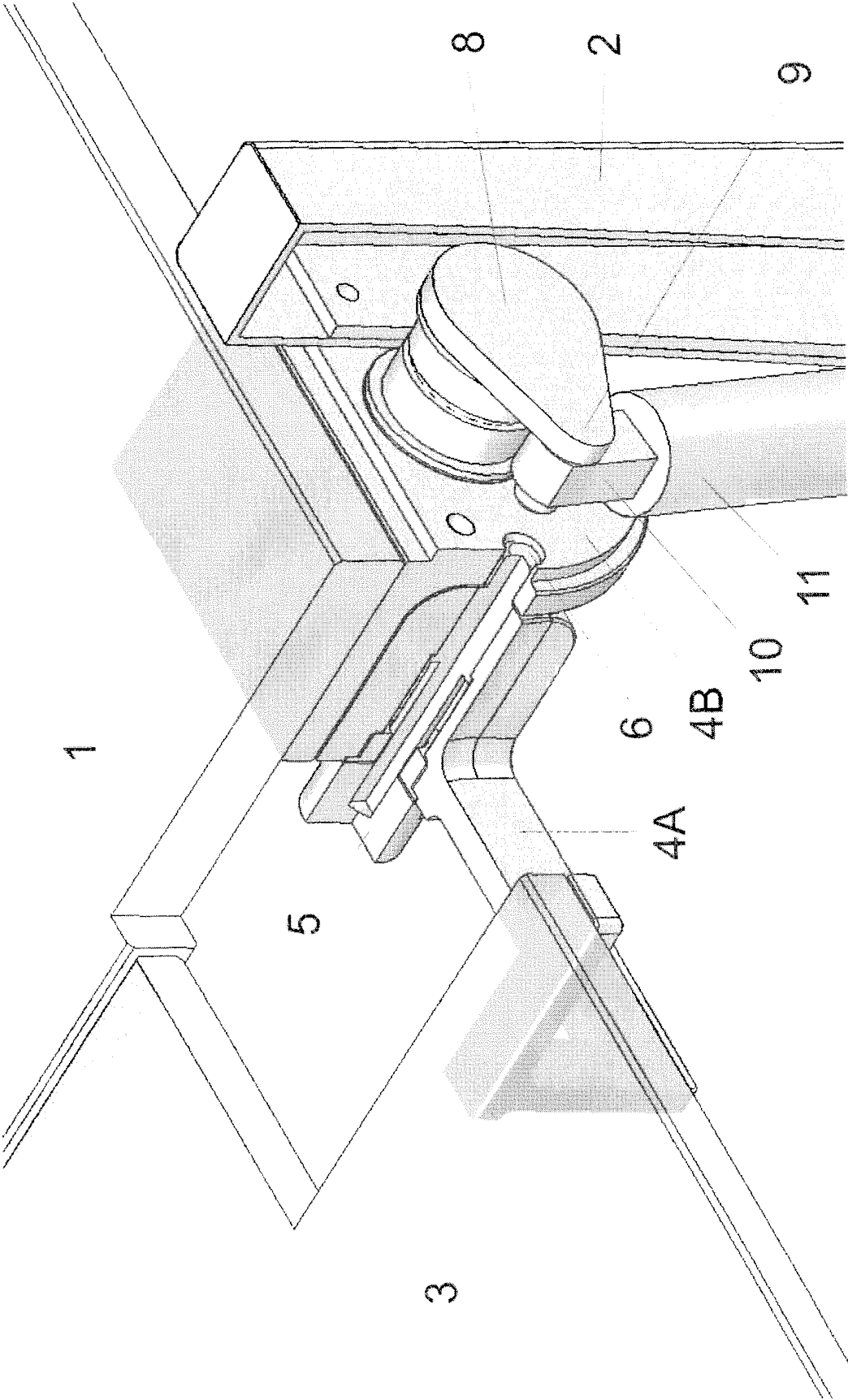


FIG. 3

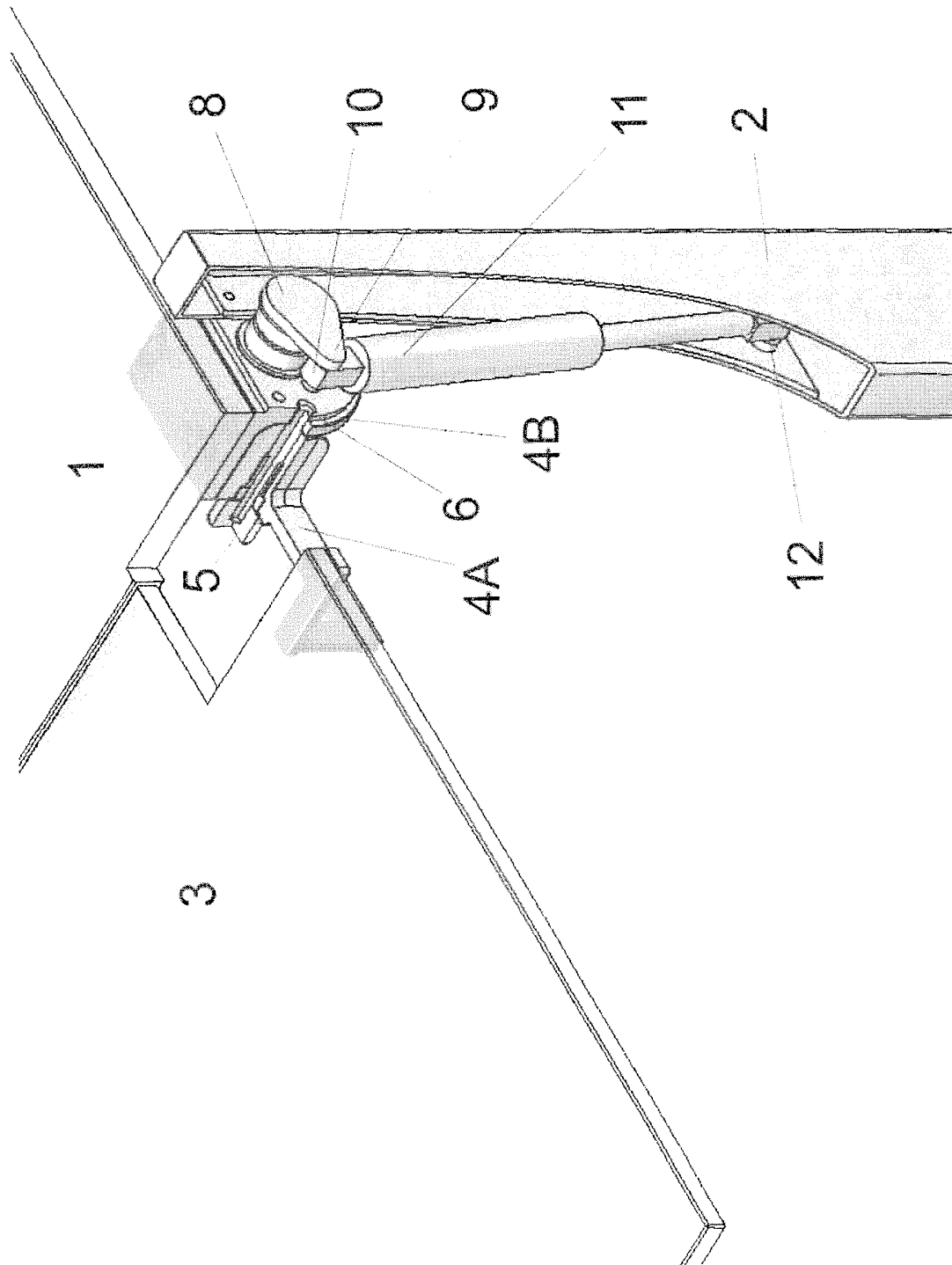


FIG. 4

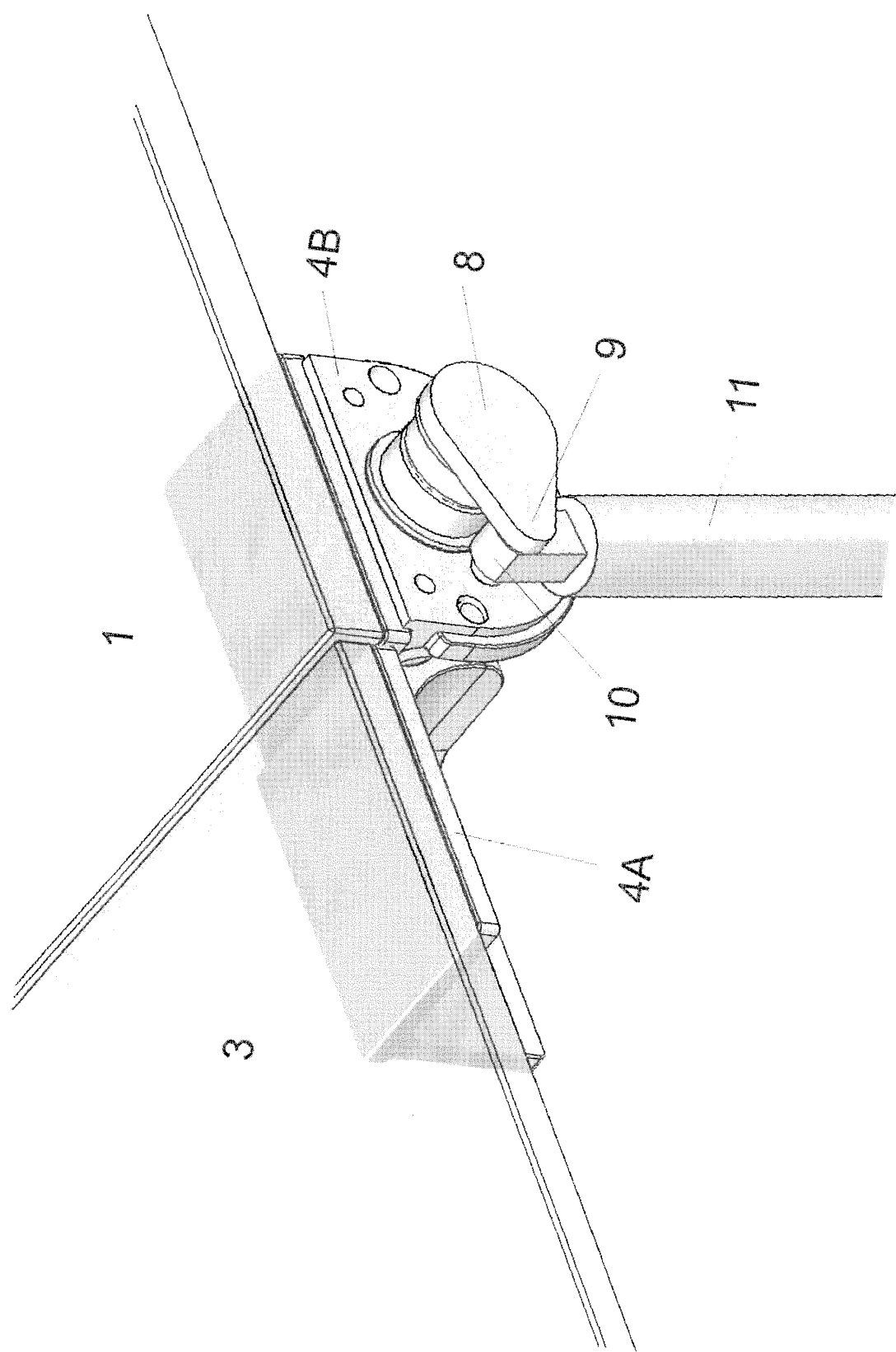


FIG. 5

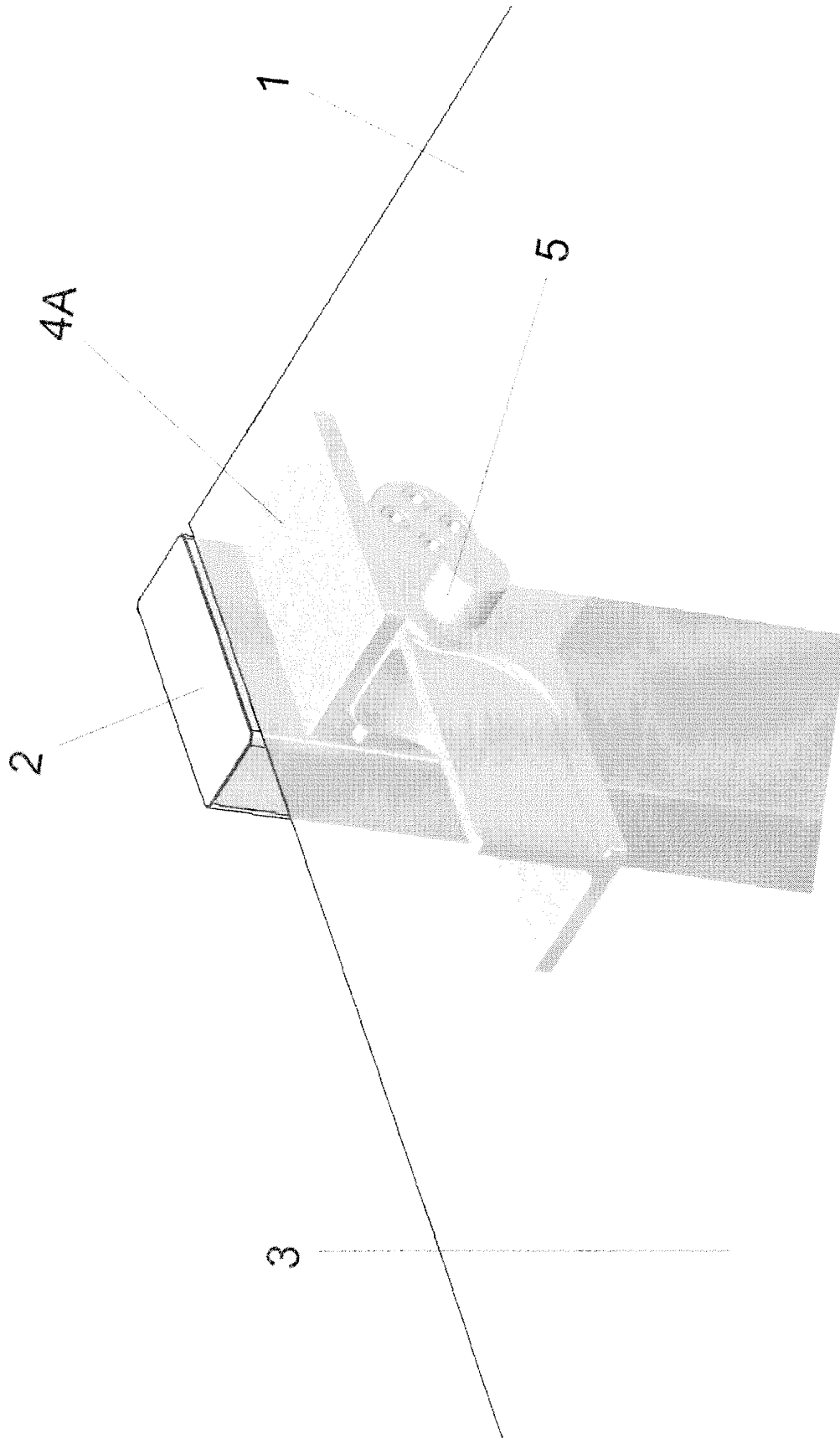


FIG. 6

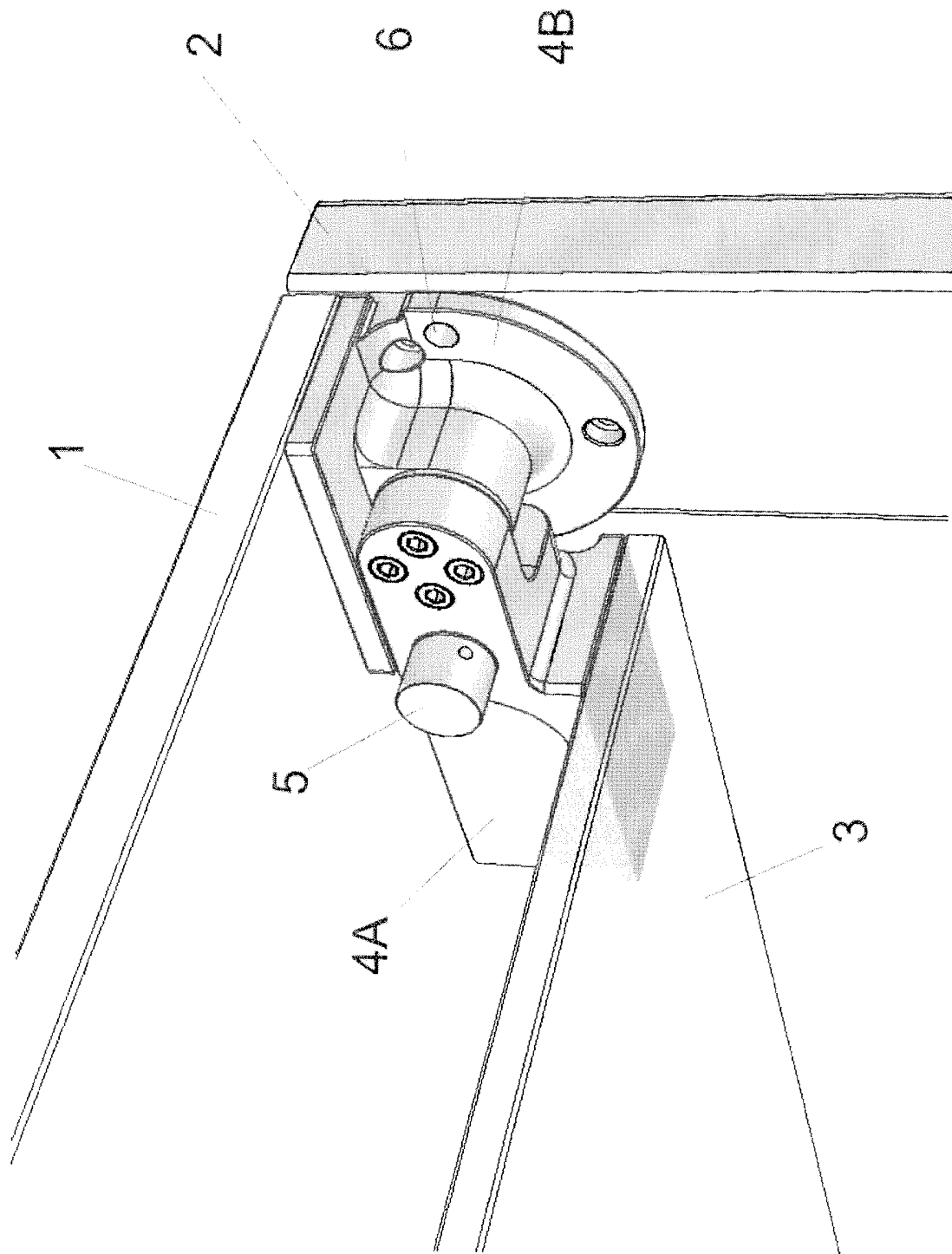


FIG. 7

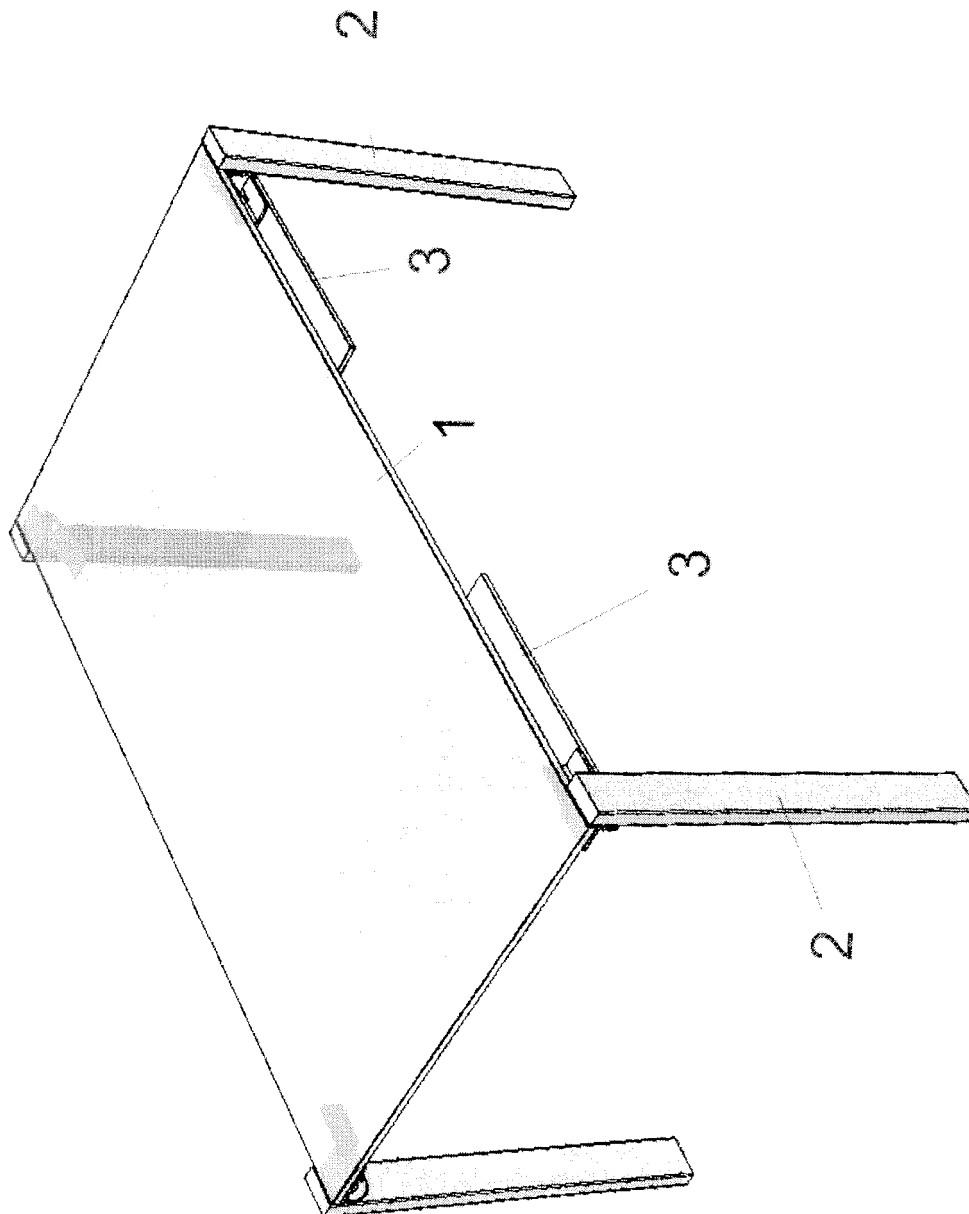


FIG. 8

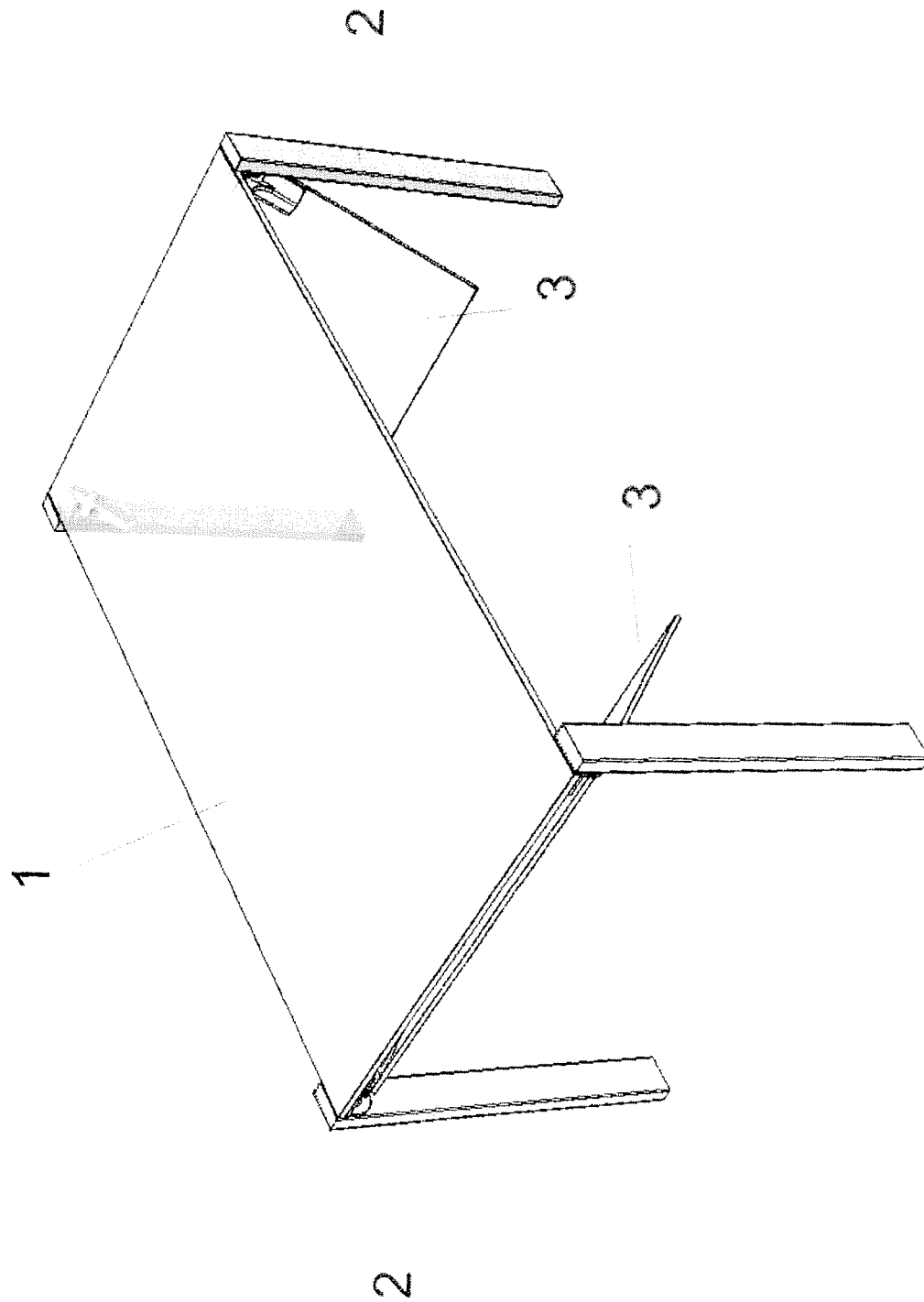


FIG. 9

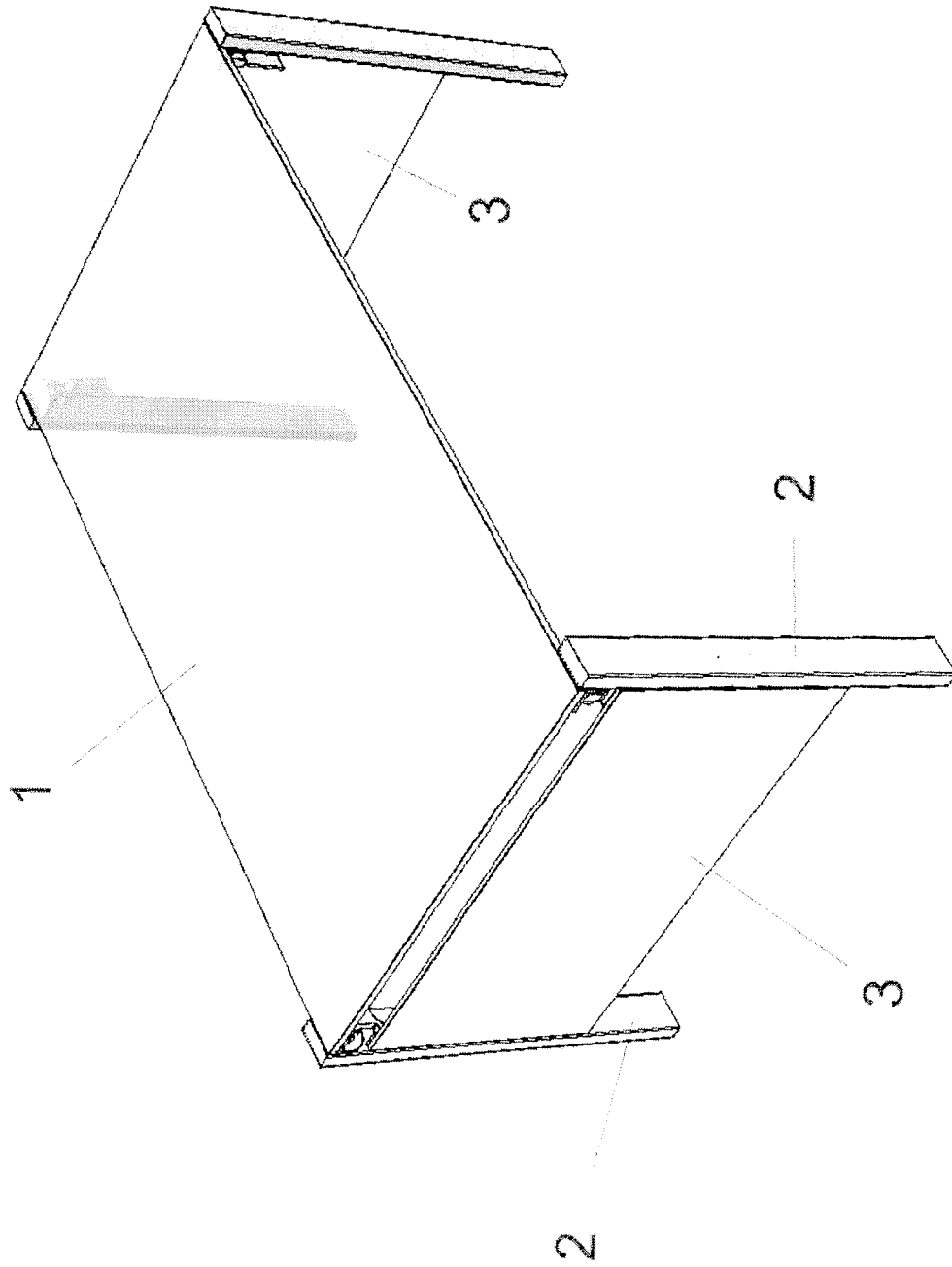


FIG. 10

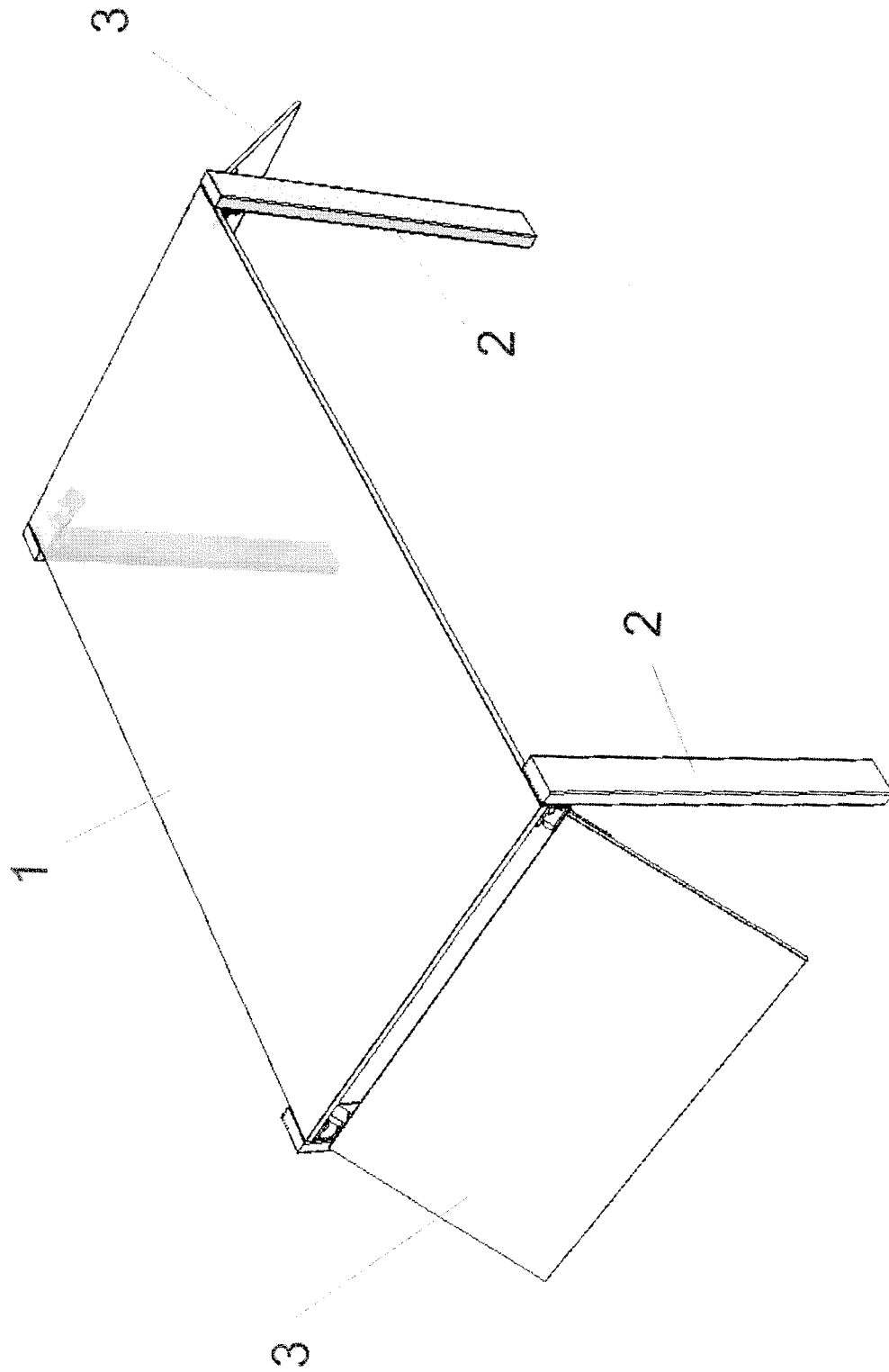


FIG. 11

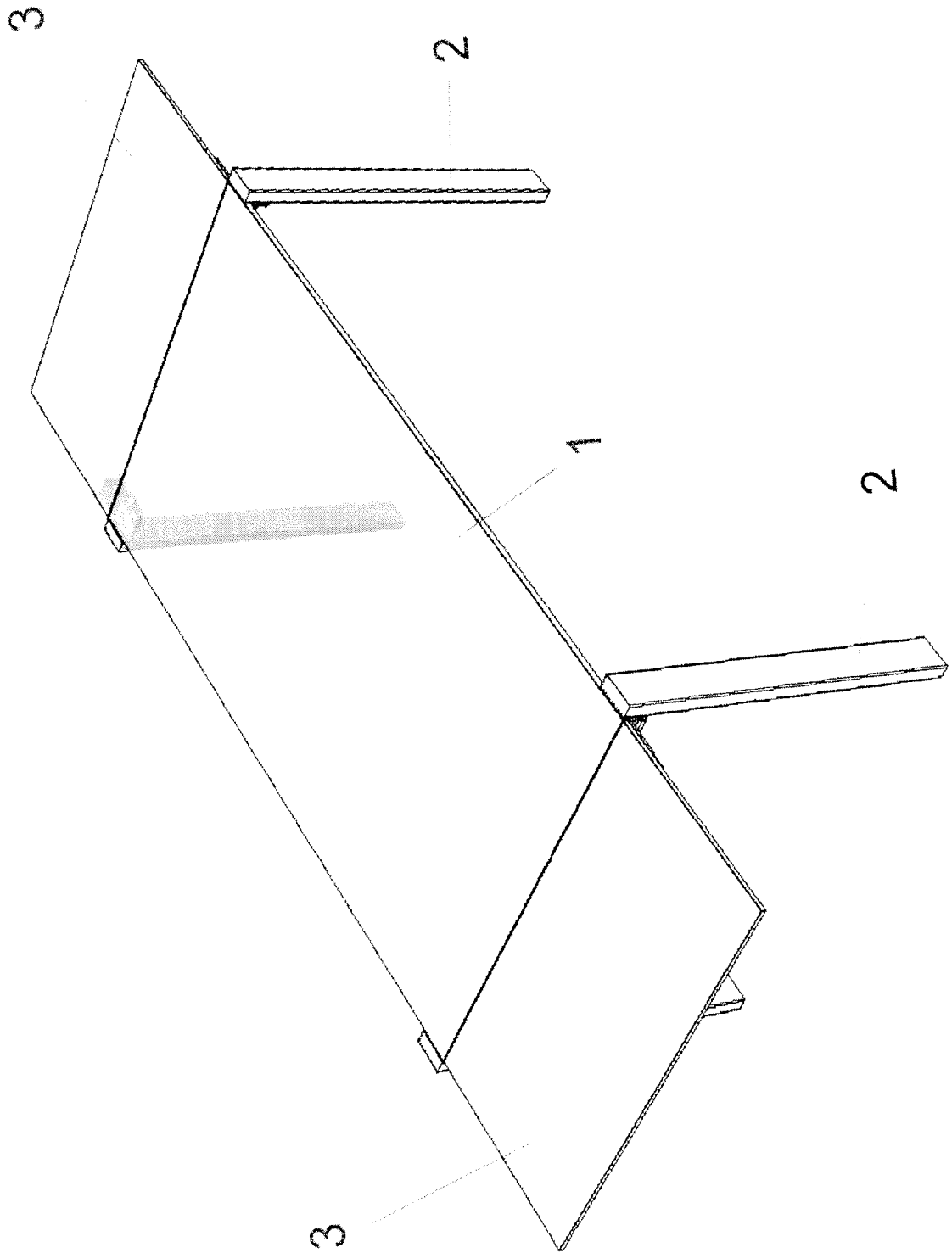


FIG. 12

REFERENCES CITED IN THE DESCRIPTION

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