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(54) **MODULAR SUPPORT BASE FOR SUPPORTING AN ITEM OF FURNITURE AND METHOD FOR THE REALISATION THEREOF**

MODULARER STÜTZFUSS ZUM TRAGEN EINES MÖBELSTÜCKS UND VERFAHREN ZU DESSEN REALISIERUNG

BASE DE SUPPORT MODULAIRE POUR SUPPORTER UN MEUBLE ET SON PROCÉDÉ DE RÉALISATION

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Description

TECHNICAL FIELD

[0001] The present invention relates to a modular support base for supporting an item of furniture and method for the realisation thereof.

[0002] In particular, the invention relates to a modular support base for column structures (in technical jargon also defined as a "column base"), more precisely furniture for the kitchen, e.g. a fridge.

PRIOR ART

[0003] Generally, to make home furnishings more aesthetically uniform, such as in the kitchen, it is usual to have household domestic appliances, e.g. the fridge, built into items of furniture made in the same style and material as the rest of the room.

[0004] The item of furniture into which the household appliance is built comprises a lower base adapted to support the household appliance and the underlying feet to keep the base raised off the floor. In this way and thanks to other technical/constructive expedients, such as the installation of ventilation grilles or front jigs, the operation of the household appliance is guaranteed without unwanted drawbacks due to the lack of air recirculation and therefore the overheating of the structure because of the heat produced by the motors and/or compressors.

[0005] For that purpose it is known to produce so-called column bases, mainly made of plastic material in the form of a quadrilateral with an empty centre or a solid quadrilateral with possible slits. These column bases, are normally made using moulding or extrusion techniques to obtain a single piece, and therefore a solid base, which is resistant and with few critical points for promoting resistance to loads.

[0006] However, the prior art presents a series of drawbacks that the present invention wishes to overcome.

[0007] A first drawback of such structure produced as a single piece is the difficulty to modulate its dimensions for adapting to individual needs which can change over time, such as the place in which it is to be positioned or in the case of replacing the household appliance that the item of furniture has to contain or for adapting to foreign markets where the dimensions of the items of furniture or fridges or the like are different and particular. In fact, in this case, it is necessary to purchase another mould (often expensive) for creating a base with different dimensions.

[0008] Another difficulty is due to the management and transport of the support base as a single piece, i.e. the difficulty encountered in transporting and installing the base at the furniture assembly location.

[0009] It is also known a base pad for supporting an appliance during assembly and shipping as described in documents: BE 759 994, WO99/14131, DE 87 11 284, DE 4342362.

SUMMARY

[0010] In this context, the technical task underpinning the present invention is to provide a modular support base of a column structure, prevalently of kitchen furniture such as a fridge, that can obviate the drawback of the prior art mentioned above.

[0011] In particular, the object of the present invention is the possibility to obtain a modular product according to different aspects and for each of the components that compose it, so that every user can obtain the most suitable product according to their needs.

[0012] Furthermore, another object to be obtained is the supply of a modular support base for supporting items of furniture that can be transported more conveniently so as to be able to assemble it directly *in situ*.

[0013] In general, the present invention is intended for a modular support base for supporting an item of furniture comprising:

- a. at least two longitudinal members arranged side by side at a predefined distance depending on a width of the item of furniture or a part of the furniture to be supported, each longitudinal member extending along a longitudinal direction between a front portion and a rear portion;
- b. at least one front cross member extending along a transverse direction with respect to said longitudinal direction between two of its own front ends and being interposed between two front portions of two longitudinal members facing each other so that each front end of the front cross member can be connected with a respective front portion of the longitudinal members;
- c. at least one rear cross member extending along a transverse direction with respect to said longitudinal direction between two of its own rear ends and being interposed between two rear portions of two longitudinal members facing each other so that each rear end of the rear cross member can be connected with a respective rear portion of the longitudinal members;
- d. a junction means for joining said cross members to said longitudinal members, wherein the junction means is interposed between each front end and the respective front portions and between each rear end and the respective rear portions.

[0014] The junction means is also configurable between a coupled condition, wherein the ends of the cross members are connected to the longitudinal members forming a modular support base as a single piece, and an uncoupled condition, wherein the cross members are deconstrained from the longitudinal members therefore the modular base is formed by a plurality of mutually deconstrained components.

[0015] Therefore, it is substantially possible to assemble the modular support base for supporting an item of

furniture as the main components (at least two longitudinal members and at least two cross members) according to this invention are separate but can be connected with the aid of an interposable fixing means.

[0016] In other words, the two longitudinal members and the two cross members are realised separately and therefore the base is not realised as a single piece. Advantageously, in this way, once the longitudinal members have been realised according to the depth requirements of the item of furniture, it is possible to cut the cross members to measure according to the width of the item of furniture before joining them to the longitudinal members.

[0017] According to one aspect of the invention, each portion of the longitudinal members has at least one lateral projection, in use, facing towards a respective end of a cross member (and towards the other longitudinal member) and each end of the cross members (front and rear) has at least one seat facing the respective portion of the longitudinal member for housing the aforesaid projection. Preferably, each seat is afforded inside the cross member itself according to the extension direction of the cross member. Even more preferably, each seat is defined by the empty space present inside the cross member. It is to be noted that the projection is preferably realised as a single piece with the related longitudinal member. Advantageously, the presence of a projection on a lateral surface of the longitudinal member and a corresponding seat on the respective end of the cross member allows an easy coupling point to be obtained between the components of the modular base in which the junction means can act for completing the connection.

[0018] Preferably, the junction means, in the coupled condition, comprises a mechanical locking system of each seat of the cross members on the respective projection of the longitudinal members.

[0019] Even more preferably, the mechanical locking system comprises at least one recess (preferably made by punching) at each end of the cross members directed towards the projection for the formation of the mechanical lock. In other words, the recess is afforded on the outer surface of the cross member and defines a narrowing of the internal section of the cross member and therefore of the seat in which the projection is inserted. In this way, the projection remains locked inside the respective seat.

[0020] Advantageously, the formation of a mechanical lock confers stability to the structure, not excluding the possibility to change the configuration of the junction means from the coupling condition to the uncoupling condition for the replacement of a component.

[0021] As an alternative to punching, the mechanical lock may be performed through other known techniques.

[0022] It is to be noted that the modular base has a resting surface of at least one base of the item of furniture and a surface facing the floor opposite the resting surface, wherein each longitudinal member has a plurality of housings at the surface facing the floor, which are pre-configured for the coupling of different types of bases for feet or feet in different positions. It is to be noted that

such housings are defined by holes and/or recesses distanced by predefined distances for a plurality of attachments which are different from each other.

[0023] For column structures, there is the possibility to install a front plinth for covering the space below the base and the installation of the feet takes place as a function of the width of such plinth, therefore it is advantageous for the surface of the longitudinal member for the coupling of the feet to have useful housings for such positioning and able to be associated with at least part of the bases for feet or the feet available on the market, which differ in shape and size.

[0024] According to a further aspect of the invention, the cross members (front and rear) distanced and connected to the longitudinal members form a quadrilateral shaped modular base.

[0025] In this way, the central space of the structure which is still free is useful for the recirculation of air in the event that a fridge is positioned, for example.

[0026] According to the invention, at least one longitudinal member comprises, along at least one of its lateral surfaces facing outwards and arranged according to a vertical plane, at least one coupling means in the form of pin elements for coupling with at least one appendage of the item of furniture.

[0027] The longitudinal members have, according to the invention, on their lateral surface, coupling means, in the form of pin elements, for being able to install protective panels that can also provide aesthetic continuity to the structure of the furniture.

[0028] Preferably, furthermore, the front portions of said plurality of longitudinal members have a square shape and a reduced thickness for forming a bas-relief with respect to the resting surface of the item of furniture adapted for the installation of a front jig, e.g. a ventilation grille for improving ventilation below the item of furniture when installed.

[0029] According to an aspect of the invention, the plurality of longitudinal members is produced with different materials with respect to the front cross members and the rear cross members. Preferably the former are made of plastic materials, while the cross members are made of metal materials, e.g. aluminium.

[0030] The possibility to assemble the various components of the modular base at a later date thanks to the junction means also allows the longitudinal members to be made of a different material from the cross members.

[0031] Longitudinal members and cross members perform different functions, therefore if they are made of different materials they can improve their operation and the related characteristics thereof complement each other.

[0032] For example, longitudinal members made of plastic can be made easily through a same mould or moulds.

[0033] Aluminium cross members, on the other hand, guarantee greater resistance and adaptability (an aluminium cross member can be easily cut if the dimensions of the base need to be reduced, for example).

[0034] The method for the realisation of a modular support base for supporting an item of furniture comprises the operating steps of:

- a. preparation of a plurality of longitudinal members extending along a longitudinal direction for a determined length depending on the depth of the item of furniture, each longitudinal member having a front portion and a rear portion;
- b. preparation of at least one front cross member having a determined length depending on the width of the item of furniture;
- c. preparation of at least one rear cross member having a determined length depending on the width of the item of furniture;
- d. interposition of at least one front cross member between the front portions of the longitudinal members along a transverse direction with respect to the longitudinal direction and connection of each front portion of the longitudinal members with the respective front ends of at least one front cross member through a junction means;
- e. interposition of at least one rear cross member between the rear portions of the longitudinal members along the transverse direction with respect to the longitudinal direction and connection of each rear portion of the longitudinal members with the respective rear ends of at least one rear cross member through a junction means;
- f. configuration of the junction means in the coupled condition for the formation of a modular base with a quadrilateral shape;
- g. positioning at least one base for a foot or at least one foot for each portion of the plurality of longitudinal members at a specific housing provided at each portion of the plurality of longitudinal members on the surface opposite the resting surface of at least one base of the item of furniture,

and further comprising a step of realizing at least one coupling means (9) positioned along the lateral surfaces of at least one longitudinal member (2), facing outwards and arranged according to a vertical plane for coupling with at least one appendage of the item of furniture, wherein said coupling means are pin elements.

[0035] It is to be noted that the cross member preparation steps comprise an initial sub-phase in which the cross members are cut to measure according to a pre-chosen width of the base.

[0036] According to the invention, the presence on the lateral surface of the longitudinal members of coupling means, in the form of pin elements, makes it possible to install protective panels that can also provide aesthetic continuity to the structure of the furniture.

[0037] According to one aspect of the invention, the junction means is configured in a coupling condition through a punching technique.

[0038] According to a further aspect of the invention,

the step of preparing a plurality of longitudinal members envisages the use of a plastic material and the step of preparing a front cross member and a rear cross member envisages the use of a different material from said plurality of longitudinal members, preferably a metal material.

[0039] The possibility to assemble the various components of the modular base at a later date thanks to the junction means also allows the longitudinal members to be made of a different material from the cross members. Longitudinal members and cross members perform different functions, therefore, if they are made of different materials they can improve their operation and related characteristics thereof complement each other, such as lightness, resistance and adaptability (an aluminium cross member can be easily cut if the dimensions of the base need to be reduced, for example).

BRIEF DESCRIPTION OF THE DRAWINGS

[0040] Further characteristics and advantages of the present invention will become more apparent from the approximate and thus non-limiting description of a preferred, but not exclusive, embodiment of a modular support base for supporting items of furniture, such as built-in kitchen furniture, as illustrated in the accompanying drawings, of which:

- Figure 1 illustrates a perspective view of the apparatus in question;
- Figure 2a illustrates a view from below of the construction details of the invention;
- Figure 2b illustrates the front section of the invention;
- Figure 3 illustrates a perspective view of the lower surface of the invention;
- Figure 4 illustrates a perspective view of a detail of the longitudinal members;
- Figures 5a and 5b illustrate a perspective, exploded view of the modular base, with a view of the upper surface and of the rear surface, respectively.

[0041] In the following description, the identical reference characters indicate identical or corresponding parts in the different views.

DETAILED DESCRIPTION

[0042] The present invention relates to a modular support base 1 for supporting items of furniture, specifically to a column base for supporting built-in items of furniture.

[0043] With reference to the figures cited, a modular support base 1 for supporting items of furniture according to the present invention is indicated in its entirety by reference number 1.

[0044] Figure 1 illustrates a possible aspect of the modular support base 1 for supporting an item of furniture, which comprises a plurality of longitudinal members 2,

at least one front cross member, at least one rear cross member 4 and a junction means 5.

[0045] The use of separate components allows the structure to be modulable according to requirements, while the introduction of a junction means 5 allows the formation of a single structure that can be used.

[0046] The longitudinal members 2 are made of plastic material, with moulding or extrusion techniques, for being able to provide for the presence of pin elements for the connection of possible appendages of the item of furniture and for being able to provide for housings 8 of various shapes and sizes for the association of bases for feet or support feet 12 in any position according to the front plinth that is to be installed.

[0047] For the support of the lateral flanks of the item of furniture, each longitudinal member 2 may comprise horizontal tabs 13 extending outside the base 1 itself so as to support at least part of the weight of the item of furniture placed above the base 1 (the rest of the weight is however supported by the pin elements). Such horizontal tabs 13 are removable for some applications in which the modular base 1 is used to define an intermediate bottom in a position which is more internal with respect to the item of furniture.

[0048] The cross members 3, 4, either front or rear, are a tubular profile with a prevalently square cross section, made of metal material for facilitating the variation of their length according to the variation of the width of the item of furniture to be supported. The cross members 3, 4, interposable and connectable to the two portions 2a, 2b of two different longitudinal members 2 with the function of spacers and supports, are generally made of aluminium as they can be easily shortened in length with cutting techniques free from any corrosion phenomena.

[0049] The modular base 1, made of different materials for longitudinal members 2 and cross members 3, 4, combines the characteristics of both materials used: lightness, resistance, ecology, modularity and adaptability to any application situation.

[0050] As previously mentioned, the most commonly used materials are aluminium for the cross members 3, 4 and plastic materials for the longitudinal members 2, however the use of other plastic, ferrous (subjected to suitable anti-corrosion treatments) and wood materials is not excluded, materials which are chosen based on the particular properties which the modular base 1 requires.

[0051] The longitudinal members 2 extend along a longitudinal direction L for a predetermined length and width between two portions 2a, 2b each, a front portion 2a and a rear portion 2b. The front portions 2a of the longitudinal members 2 have a square shape and a narrowing to form bas-reliefs, on which it is possible to install, for example as shown in Figure 4, a ventilation grille 11 useful for air recirculation for the correct operation of a fridge placed on the modular support base.

[0052] The lateral surface of a longitudinal member facing outwards, when the longitudinal member compos-

es the modular base 1 placed in use, and arranged according to a vertical plane, comprises at least one coupling means 9, in the form of pin elements, useful for the installation of covering and protective lateral panels.

[0053] Finally, as illustrated in figures 5a and 5b, the lateral surface of the portion of a longitudinal member, front 2a and rear 2b, facing inwards and arranged according to a further vertical plane, has a lateral projection 6a that can be connected with the ends 3a, 4a of the respective cross member 3, 4.

[0054] The cross members, front 3 and rear 4, extend between two ends 3a, 4a along a transverse direction T with respect to the longitudinal length L along which the longitudinal members 2 extend and for a length that is a function of the width of the item of furniture or of a portion of the item of furniture that the modular base 1 has to support. The ends 3a, 4a of the cross members 3, 4 have a seat 6b that faces the related portion of the longitudinal member, so that the seat 6b of the end 3a, 4a of the cross member and the lateral projection 6a provided on the longitudinal member are coupled with each other. Usually, two longitudinal members 2 are arranged on the same plane parallel to each other and at a predetermined distance, to form the opposite sides of a quadrilateral, and coinciding with the length of the cross members 3, 4. However, it is possible for the two longitudinal members 2 to be arranged with a mutual angle of inclination comprised between 0° and 90° based on the shape of the item of furniture to be obtained.

[0055] To complete the realisation of the modular support base 2 for supporting an item of furniture, a junction means 5 is required, that can be interposed between the ends 3a, 4a of the cross members 3, 4 and the respective portions 2a, 2b of the longitudinal members 2, which can be configured both in an uncoupled condition, in which the modular base 1 is composed of mutually deconstrained components, and a coupled condition, in which the modular base 1 is formed like a single part.

[0056] The junction means 5 comprises mechanical locking systems 7 such as a screw/bush or, in the case of using the punching technique, at least one recess for each seat 6b of the end 3a, 4a of the cross members 3, 4 directed towards the lateral projection 6a of the respective portion of the longitudinal member, until at least in contact with the latter for creating a friction point able to lock the mutual movement between the parts.

[0057] The components that describe the modular base 1 are positioned along the sides of a quadrilateral, leaving the centre of the structure free, e.g. for having good air recirculation below the item of furniture, in combination with the ventilation grille 11.

[0058] The modular support base 1 for supporting an item of furniture described above comprises a resting surface for at least one base of the item of furniture and a surface facing the floor opposite said resting surface, as illustrated in figure 2 and in figure 3. The surface facing the floor, at each portion of each longitudinal member, has a plurality of housings 8 of a circular and substantially

square shape. These housings 8 are preconfigured for the coupling of different types of bases for feet or feet 12 in different positions, which are able to keep the modular base 1 raised. The bases for feet or feet 12 must be arranged at a mutual distance as a function of the front plinth that can be installed to cover the bases for feet and the feet 12 themselves and the space subtended by the modular base 1. The bases for feet and the feet 12 currently on the market also have different sizes and shapes that can be installed on the surface facing the floor of the modular base 1 thanks to such housings 8 provided.

[0059] A method for the realisation of a modular support base 1 for supporting an item of furniture is also the subject matter of the present patent, comprising the operating steps of:

- a) preparation of a plurality of longitudinal members 2 extending along a longitudinal direction L for a determined length depending on the depth of the item of furniture, each longitudinal member 2 of said plurality of longitudinal members 2 having a front portion 2a and a rear portion 2b;
- b) preparation of at least one front cross member 3 having a determined length depending on the width of the item of furniture;
- c) preparation of at least one rear cross member 4 having a determined length depending on the width of the item of furniture;
- d) interposition of said at least one front cross member 3 between said front portions 2a of said longitudinal members 2 along a transverse direction T with respect to said longitudinal direction L and connection of each front portion 2a of said longitudinal members 2 with respective front ends 3a of said at least one front cross member 3 through a junction means 5;
- e) interposition of said at least one rear cross member 4 between said rear portions 2b of said longitudinal members 2 along said transverse direction T with respect to said longitudinal direction L and connection of each rear portion 2b of said longitudinal members 2 with respective rear ends 4a of said at least one rear cross member 4 through a junction means 5;
- f) configuration of said junction means 5 in the coupled condition for the formation of a modular base 1 with a quadrilateral shape.
- g) positioning at least one base for a foot or at least one foot 12 for each portion 2a, 2b of said plurality of longitudinal members 2 at a specific housing 8 provided at each portion 2a, 2b of said plurality of longitudinal members 2 on the surface opposite the resting surface of at least one base of the item of furniture.

[0060] For the completion of the item of furniture, thanks to the presence of at least one coupling means 9 in the form of pin elements on the outer side of the lon-

gitudinal member, the method described above comprises a further installation sub-step of at least one appendage of the item of furniture, e.g. for covering and protecting the built-in fridge.

- 5 **[0061]** The step of configuring said junction means 5 in the coupling condition, according to one aspect of the invention, may take place through the technique of punching the seat 6b of the cross members 3, 4 towards the projections of the longitudinal members 2.
- 10 **[0062]** Finally, the step of preparing a plurality of longitudinal members 2 envisages the use of a plastic material and the step of preparing a front cross member 3 and a rear cross member 4 envisages the use of a different material from said plurality of longitudinal members 2, preferably a metal material, for the combination of the different properties of the materials used.
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Claims

- 20 1. A modular support base (1) for supporting an item of furniture comprising:
 - at least two longitudinal members (2) arranged facing each other at a predefined distance depending on a width of the item of furniture or a part of the furniture to be supported; each longitudinal member of said plurality of longitudinal members extending along a longitudinal direction (L) between a front portion (2a) and a rear portion (2b);
 - at least one front cross member (3) extending along a transverse direction (T) with respect to said longitudinal direction (L) between two of its own front ends (3a); said front cross member (3) being interposed between two front portions (2a) of two longitudinal members (2) facing each other so that each front end (3a) of said front cross member (3) can be connected with a respective front portion (2a) of said longitudinal members (2);
 - at least one rear cross member (4) extending along a transverse direction (T) with respect to said longitudinal direction (L) between two of its own rear ends (4a); said rear cross member (4) being interposed between two rear portions (2b) of two longitudinal members (2) facing each other so that each rear end (4a) of said rear cross member (4) can be connected with a respective rear portion (2b) of said longitudinal members (2);
 - a junction means (5) for joining said cross members (3, 4) to said longitudinal members (2), wherein said junction means (5) is interposed between each front end (3a) of said front cross member (3) and said respective front portions (2a) of the longitudinal members (2); said junction means (5) being interposed between each
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rear end (4a) of said rear cross member (4) and said respective rear portions (2b) of the longitudinal members (2);

said junction means (5) being configurable between a coupled condition, wherein the ends (3a, 4a) of the cross members (3, 4) are connected to the longitudinal members (2) forming said modular support base (1), and an uncoupled condition, wherein the cross members (3, 4) are deconstrained from the longitudinal members (2) therefore the modular base (1) is formed by a plurality of mutually deconstrained components;

each longitudinal member (2) has a resting surface for supporting at least one base of the item of furniture and a surface facing the floor opposite said resting surface, wherein each longitudinal member (2) has at least one housing (8) at said surface facing the floor preconfigured for the coupling of at least one base for a foot or a foot (12);

characterised in that at least one longitudinal member (2) comprises, along at least one of its lateral surfaces facing outwards and arranged according to a vertical plane, at least one coupling means (9) for coupling with at least one appendage of the item of furniture, wherein said coupling means are pin elements.

2. The modular support base (1) according to claim 1, wherein

each portion (2a, 2b) of said plurality of longitudinal members (2) has at least one lateral projection (6a), in use, facing towards a respective end (3a, 4a) of a cross member (3, 4);
each front end (3a) of said front cross members (3) and each rear end (4a) of said rear cross members (4) has at least one seat (6b) facing the respective portion (2a, 2b) of the longitudinal member (2) for housing said projection (6a) of said longitudinal member (2).

3. The modular base (1) according to claim 2, wherein said junction means (5) comprises a mechanical locking system (7) for each seat (6b) of the cross members (3, 4) on the respective projection (6a) of the longitudinal members (2) in the coupled condition.
4. The modular base (1) according to claim, 3, wherein said mechanical locking system (7) comprises at least one recess at each end (3a, 4a) of the cross members (3, 4) directed towards the projection (6a) for the formation of the mechanical lock.
5. The modular base (1) according to any one of the

preceding claims, **characterised in that** each longitudinal member (2) has a plurality of housings (8) at said surface facing the floor; said housings (8) being preconfigured for the coupling of different types of bases for feet or feet (12) in different positions.

6. The modular base (1) according to any one of the preceding claims, wherein said cross members (3, 4) are distanced from each other during the coupled condition for forming said modular base (1) with a quadrilateral shape.
7. The modular base (1) according to any one of the preceding claims, wherein said front portions (2a) of said plurality of longitudinal members (2) have a bas-relief (10) adapted for the installation of a front jig (11) for improving the ventilation below the item of furniture when installed.
8. The modular base (1) according to any one of the preceding claims, wherein said plurality of longitudinal members (2) is produced with different materials with respect to said front cross members (3) and said rear cross members (4); said plurality of longitudinal members (2) preferably being made of plastic materials and said front cross members (3) and said rear cross members (4) preferably being made of metal materials.
9. The modular base (1) according to any one of the preceding claims, **characterised in that** it comprises at least one foot connected to a respective housing (8) of each longitudinal member (2), wherein said foot extends away from said surface facing the floor for a predefined height so as to distance at least the longitudinal members (2) and the cross members (3, 4) from the floor.
10. A method for realising a modular support base (1) for supporting an item of furniture, comprising the following operating steps:
 - a. preparation of a plurality of longitudinal members (2) extending along a longitudinal direction (L) for a determined length depending on the depth of the item of furniture, each longitudinal member (2) of said plurality of longitudinal members having a front portion (2a) and a rear portion (2b);
 - b. preparation of at least one front cross member (3) having a determined length depending on the width of the item of furniture;
 - c. preparation of at least one rear cross member (4) having a determined length depending on the width of the item of furniture;
 - d. interposition of said at least one front cross member (3) between said front portions (2a) of

said longitudinal members (2) along a transverse direction (T) with respect to said longitudinal direction (L) and connection of each front portion (2a) of said longitudinal members (2) with respective front ends (3a) of said at least one front cross member (3) through a junction means (5);

e. interposition of said at least one rear cross member (4) between said rear portions (2b) of said longitudinal members (2) along said transverse direction (T) with respect to said longitudinal direction (L) and connection of each rear portion (2b) of said longitudinal members (2) with respective rear ends (4a) of said at least one rear cross member (4) through a junction means (5);

f. configuration of said junction means (5) in the coupled condition for the formation of a modular base (1) with a quadrilateral shape;

g. providing at least one housing (8) for a base for a foot or for at least one foot (12) at said plurality of longitudinal members (2) on a surface which is opposite the resting surface of at least one base of the item of furniture;

characterised in that it comprises a step of realizing at least one coupling means (9) positioned along the lateral surfaces of at least one longitudinal member (2), facing outwards and arranged according to a vertical plane for coupling with at least one appendage of the item of furniture, wherein said coupling means are pin elements.

11. The method according to claim 10 **characterised in that** it comprises a step of positioning at least one base for a foot or at least one foot (12) on said plurality of longitudinal members (2) at said predefined housing (8).

12. The method according to any one of claims 10 to 11, wherein said junction means (5) is configured in a coupled condition through a punching technique performed at a seat (6b) of each cross member (3, 4) with respect to a projection (6a) of each portion (2a, 2b) of each longitudinal member (2) inserted internally into said seat (6b).

13. The method according to any one of claims 10 to 12, wherein the step of preparing a plurality of longitudinal members (2) envisages the use of a plastic material and the step of preparing a front cross member (3) and a rear cross member (4) envisages the use of a different material from said plurality of longitudinal members (2), preferably a metal material.

Patentansprüche

1. Modulare Stützbasis (1) zum Stützen eines Möbelstücks, umfassend:

- mindestens zwei Längsträger (2), die in einem vordefinierten Abstand abhängig von einer Breite des Möbelstücks oder eines Teils des Möbels, das abgestützt werden soll, einander zugewandt angeordnet sind; wobei sich ein jeder Längsträger der Vielzahl von Längsträgern entlang einer Längsrichtung (L) zwischen einem vorderen Abschnitt (2a) und einem hinteren Abschnitt (2b) erstreckt;

- mindestens einen vorderen Querträger (3), der sich entlang einer Querrichtung (T) in Bezug auf die Längsrichtung (L) zwischen zwei seiner eigenen vorderen Enden (3a) erstreckt; wobei der vordere Querträger (3) zwischen zwei vorderen Abschnitten (2a) von zwei Längsträgern (2) angeordnet ist, die einander zugewandt sind, so dass ein jedes vordere Ende (3a) des vorderen Querträgers (2) mit einem jeweiligen vorderen Abschnitt (2a) der Längsträger (2) verbunden werden kann;

- mindestens einen hinteren Querträger (4), der sich entlang einer Querrichtung (T) in Bezug auf die Längsrichtung (L) zwischen zwei seiner eigenen hinteren Enden (4a) erstreckt; wobei der hintere Querträger (4) zwischen zwei hinteren Abschnitten (2b) von zwei Längsträgern (2) angeordnet ist, die einander zugewandt sind, so dass ein jedes hintere Ende (4a) des hinteren Querträgers (4) mit einem jeweiligen hinteren Abschnitt (2b) der Längsträger (2) verbunden werden kann;

- Zusammenfüegungsmittel (5) zum Zusammenfüegen der Querträger (3, 4) mit den Längsträgern (2), wobei die Zusammenfüegungsmittel (5) zwischen einem jeden vorderen Ende (3a) des vorderen Querträgers (3) und den jeweiligen vorderen Abschnitten (2a) der Längsträger (2) angeordnet sind; wobei die Zusammenfüegungsmittel (5) zwischen einem jeden hinteren Ende (4a) des hinteren Querträgers (4) und den jeweiligen hinteren Abschnitten (2b) der Längsträger (2) angeordnet sind;

wobei die Zusammenfüegungsmittel (5) zwischen einem gekoppelten Zustand, in dem die Enden (3a, 4a) der Querträger (3, 4) mit den Längsträgern (2), die die modulare Stützbasis (1) bilden, verbunden sind und einem entkoppelten Zustand auslegbar sind, in dem die Querträger (3, 4) von den Längsträgern (2) gelöst sind, so dass die modulare Basis (1) durch eine Vielzahl von gegenseitig gelösten Komponenten gebildet ist;

ein jeder Längsträger (2) eine Auflageoberflä-

- che zum Abstützen mindestens einer Basis des Möbelstücks und eine Oberfläche aufweist, die dem der Auflageoberfläche gegenüberliegende Boden zugewandt ist, wobei ein jeder Längsträger (2) an der dem Boden zugewandten Oberfläche mindestens ein Gehäuse (8) aufweist, das für die Ankopplung mindestens einer Basis für einen Fuß oder eines Fußes (12) vorausgelegt ist;
- dadurch gekennzeichnet, dass** mindestens ein Längsträger (2) entlang mindestens einer seiner nach außen weisenden und gemäß einer vertikalen Ebene angeordneten Seitenoberflächen mindestens ein Kopplungsmittel (9) zur Kopplung mit mindestens einem Fortsatz des Möbelstücks umfasst, wobei die Kopplungsmittel Stiftelemente sind.
2. Modulare Stützbasis (1) nach Anspruch 1, wobei ein jeder Abschnitt (2a, 2b) der Vielzahl von Längsträgern (2) im Gebrauch mindestens einen seitlichen Vorsprung (6a) aufweist, der einem jeweiligen Ende (3a, 4a) eines Querträgers (3, 4) zugewandt ist; ein jedes vordere Ende (3a) der vorderen Querträger (3) und ein jedes hintere Ende (4a) der hinteren Querträger (4) mindestens einen Sitz (6b) aufweist, der dem jeweiligen Abschnitt (2a, 2b) des Längsträgers (2) zugewandt ist, um den Vorsprung (6a) des Längsträgers (2) aufzunehmen.
 3. Modulare Basis (1) nach Anspruch 2, wobei die Zusammenfüegungsmittel (5) ein mechanisches Verriegelungssystem (7) für einen jeden Sitz (6b) der Querträger (3, 4) an dem jeweiligen Vorsprung (6a) der Längsträger (2) in dem gekoppelten Zustand umfasst.
 4. Modulare Basis (1) nach Anspruch 3, wobei das mechanische Verriegelungssystem (7) mindestens eine Aussparung an einem jeden Ende (3a, 4a) der Querträger (3, 4) umfasst, die in Richtung des Vorsprungs (6a) zur Bildung der mechanischen Verriegelung gerichtet ist.
 5. Modulare Basis (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** ein jeder Längsträger (2) eine Vielzahl von Gehäusen (8) an der dem Boden zugewandten Oberfläche aufweist; wobei die Gehäuse (8) für die Ankopplung verschiedener Arten von Basen für Füße oder Füße (12) in verschiedenen Positionen vorausgelegt sind.
 6. Modulare Basis (1) nach einem der vorhergehenden Ansprüche, wobei die Querträger (3, 4) während des gekoppelten Zustands voneinander beabstandet sind, um die modulare Basis (1) mit einer viereckigen Form zu bilden.
 7. Modulare Basis (1) nach einem der vorhergehenden Ansprüche, wobei die vorderen Abschnitte (2a) der Vielzahl von Längsträgern (2) ein Flachrelief (10) aufweisen, das für die Installation einer vorderen Schablone (11) zum Verbessern der Belüftung unter dem Möbelstück angepasst ist, wenn sie installiert ist.
 8. Modulare Basis (1) nach einem der vorhergehenden Ansprüche, wobei die Vielzahl von Längsträgern (2) mit unterschiedlichen Materialien in Bezug auf die vorderen Querträger (3) und die hinteren Querträger (4) gefertigt ist; wobei die Vielzahl von Längsträgern (2) vorzugsweise aus Kunststoffmaterialien hergestellt ist und die vorderen Querträger (3) und die hinteren Querträger (4) vorzugsweise aus Metallmaterialien hergestellt sind.
 9. Modulare Basis (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** sie mindestens einen Fuß umfasst, der mit einem jeweiligen Gehäuse (8) eines jeden Längsträgers (2) verbunden ist, wobei sich der Fuß für eine vordefinierte Höhe von der dem Boden zugewandten Oberfläche wegführend erstreckt, um mindestens die Längsträger (2) und die Querträger (3, 4) vom Boden zu entfernen.
 10. Verfahren zur Realisierung einer modularen Stützbasis (1) zum Stützen eines Möbelstücks, umfassend die folgenden Arbeitsschritte:
 - a. Vorbereiten einer Vielzahl von Längsträgern (2), die sich entlang einer Längsrichtung (L) für eine bestimmte Länge abhängig von der Tiefe des Möbelstücks erstrecken, wobei ein jeder Längsträger (2) der Vielzahl von Längsträgern einen vorderen Abschnitt (2a) und einen hinteren Abschnitt (2b) aufweist;
 - b. Vorbereiten mindestens eines vorderen Querträgers (3) mit einer bestimmten Länge abhängig von der Breite des Möbelstücks;
 - c. Vorbereiten mindestens eines hinteren Querträgers (4) mit einer bestimmten Länge abhängig von der Breite des Möbelstücks;
 - d. Einfügen des mindestens einen vorderen Querträgers (3) zwischen den vorderen Abschnitten (2a) der Längsträger (2) entlang einer Querrichtung (T) in Bezug auf die Längsrichtung (L) und Verbinden eines jeden vorderen Abschnitts (2a) der Längsträger (2) mit jeweiligen vorderen Enden (3a) des mindestens einen vorderen Querträgers (3) durch Zusammenfüegungsmittel (5);
 - e. Einfügen des mindestens einen hinteren Querträgers (4) zwischen den hinteren Abschnitten (2b) der Längsträger (2) entlang der Querrichtung (T) in Bezug auf die Längsrichtung

(L) und Verbinden eines jeden hinteren Abschnitts (2b) der Längsträger (2) mit jeweiligen hinteren Enden (4a) des mindestens einen hinteren Querträgers (4) durch Zusammenfüegungsmittel (5) ;

f. Auslegen der Zusammenfüegungsmittel (5) im gekoppelten Zustand zur Bildung einer modularen Basis (1) mit einer viereckigen Form ;

g. Bereitstellen mindestens eines Gehäuses (8) für eine Basis für einen Fuß oder für mindestens einen Fuß (12) an der Vielzahl von Längsträgern (2) auf einer Oberfläche, die der Auflageoberfläche mindestens einer Basis des Möbelstücks gegenüberliegt ;

dadurch gekennzeichnet, dass es einen Schritt zum Realisieren von mindestens eines Kopplungsmittels (9) umfasst, die entlang der Seitenoberflächen mindestens eines Längsträgers (2) positioniert sind, nach außen weisen und gemäß einer vertikalen Ebene zur Kopplung mit mindestens einem Fortsatz des Möbelstücks angeordnet ist, wobei die Kopplungsmittel Stiftelemente sind.

11. Verfahren nach Anspruch 10, dadurch gekennzeichnet, dass es einen Schritt zum Positionieren mindestens einer Basis für einen Fuß oder mindestens eines Fußes (12) auf der Vielzahl von Längsträgern (2) an dem vordefinierten Gehäuse (8) umfasst.

12. Verfahren nach einem der Ansprüche 10 bis 11, wobei die Zusammenfüegungsmittel (5) in einem gekoppelten Zustand durch eine Stanztechnik ausgelegt sind, die an einem Sitz (6b) eines jeden Querträgers (3, 4) in Bezug auf einen Vorsprung (6a) eines jeden Abschnitts (2a, 2b) eines jeden Längsträgers (2) durchgeführt wird, der innen in den Sitz (6b) eingeführt ist.

13. Verfahren nach einem der Ansprüche 10 bis 12, wobei der Schritt zum Vorbereiten einer Vielzahl von Längsträgern (2) die Verwendung eines Kunststoffmaterials vorsieht und der Schritt zum Vorbereiten eines vorderen Querträgers (3) und eines hinteren Querträgers (4) die Verwendung eines Materials verschieden von der Vielzahl von Längsträgern (2), vorzugsweise eines Metallmaterials, vorsieht.

Revendications

1. Base de support modulaire (1) pour supporter un meuble, comprenant :

- au moins deux éléments longitudinaux (2) disposés face à face à une distance prédéfinie en fonction d'une largeur du meuble ou d'une partie

du meuble à supporter ; chaque élément longitudinal de ladite pluralité d'éléments longitudinaux s'étendant le long d'une direction longitudinale (L) entre une portion avant (2a) et une portion arrière (2b) ;

- au moins un élément transversal avant (3) s'étendant le long d'une direction transversale (T) par rapport à ladite direction longitudinale (L) entre deux de ses propres extrémités avant (3a) ; ledit élément transversal avant (3) étant interposé entre deux portions avant (2a) de deux éléments longitudinaux (2) face à face de sorte que chaque extrémité avant (3a) dudit élément transversal avant (2) puisse être reliée à une portion avant (2a) respective desdits éléments longitudinaux (2) ;

- au moins un élément transversal arrière (4) s'étendant le long d'une direction transversale (T) par rapport à ladite direction longitudinale (L) entre deux de ses propres extrémités arrière (4a) ; ledit élément transversal arrière (4) étant interposé entre deux portions arrière (2b) de deux éléments longitudinaux (2) face à face de sorte que chaque extrémité arrière (4a) dudit élément transversal arrière (4) puisse être reliée à une portion arrière (2b) respective desdits éléments longitudinaux (2) ;

- des moyens de jonction (5) pour joindre lesdits éléments transversaux (3, 4) auxdits éléments longitudinaux (2), dans lequel lesdits moyens de jonction (5) sont interposés entre chaque extrémité avant (3a) dudit élément transversal avant (3) et lesdites portions avant (2a) respectives des éléments longitudinaux (2) ; lesdits moyens de jonction (5) étant interposés entre chaque extrémité arrière (4a) dudit élément transversal arrière (4) et lesdites portions arrière (2b) respectives des éléments longitudinaux (2) ;

lesdits moyens de jonction (5) pouvant être configurés entre un état couplé, dans lequel les extrémités (3a, 4a) des éléments transversaux (3, 4) sont connectées aux éléments longitudinaux (2) formant ladite base de support modulaire (1), et un état découplé, dans lequel les éléments transversaux (3, 4) sont détachés des éléments longitudinaux (2), par conséquent, la base modulaire (1) est formée par une pluralité de composants mutuellement libérés ;

chaque élément longitudinal (2) a une surface de repos pour supporter au moins une base du meuble et une surface faisant face au sol opposée à ladite surface de repos, dans lequel chaque élément longitudinal (2) a au moins un logement (8) au niveau de ladite surface faisant face au sol préconfiguré pour le couplage d'au moins une base pour un pied ou un pied (12) ; **caractérisé en ce qu'**au moins un élément longitudinal (2) comprend, le long d'au moins une

- de ses surfaces latérales tournées vers l'extérieur et disposées selon un plan vertical, au moins un moyen de couplage (9) pour le couplage avec au moins un appendice du meuble, dans lequel lesdits moyens de couplage sont des éléments de broche.
2. Base de support modulaire (1) selon la revendication 1, dans laquelle
- chaque portion (2a, 2b) de ladite pluralité d'éléments longitudinaux (2) a au moins une saillie latérale (6a), en utilisation, tournée vers une extrémité (3a, 4a) respective d'un élément transversal (3, 4) ;
- chaque extrémité avant (3a) desdits éléments transversaux avant (3) et chaque extrémité arrière (4a) desdits éléments transversaux arrière (4) a au moins un siège (6b) faisant face à la portion (2a, 2b) respective de l'élément longitudinal (2) pour loger ladite saillie (6a) dudit élément longitudinal (2).
3. Base modulaire (1) selon la revendication 2, dans laquelle lesdits moyens de jonction (5) comprennent un système de verrouillage mécanique (7) pour chaque siège (6b) des éléments transversaux (3, 4) sur la saillie (6a) respective des éléments longitudinaux (2) dans l'état couplé.
4. Base modulaire (1) selon la revendication 3, dans laquelle ledit système de verrouillage mécanique (7) comprend au moins un évidement à chaque extrémité (3a, 4a) des éléments transversaux (3, 4) dirigé vers la saillie (6a) pour la formation du verrouillage mécanique.
5. Base modulaire (1) selon l'une quelconque des revendications précédentes, **caractérisée en ce que** chaque élément longitudinal (2) a une pluralité de logements (8) au niveau de ladite surface faisant face au sol ; lesdits logements (8) étant préconfigurés pour le couplage de différents types de bases pour pieds ou pieds (12) dans différentes positions.
6. Base modulaire (1) selon l'une quelconque des revendications précédentes, dans laquelle lesdits éléments transversaux (3, 4) sont espacés l'un de l'autre pendant l'état couplé pour former ladite base modulaire (1) avec une forme de quadrilatère.
7. Base modulaire (1) selon l'une quelconque des revendications précédentes, dans laquelle lesdites portions avant (2a) de ladite pluralité d'éléments longitudinaux (2) ont un bas-relief (10) adapté pour l'installation d'un gabarit avant (11) pour améliorer la ventilation sous le meuble lorsqu'il est installé.
8. Base modulaire (1) selon l'une quelconque des revendications précédentes, dans laquelle ladite pluralité d'éléments longitudinaux (2) est produite avec des matériaux différents par rapport auxdits éléments transversaux avant (3) et auxdits éléments transversaux arrière (4) ; ladite pluralité d'éléments longitudinaux (2) étant de préférence en matériaux plastiques et lesdits éléments transversaux avant (3) et lesdits éléments transversaux arrière (4) étant de préférence en matériaux métalliques.
9. Base modulaire (1) selon l'une quelconque des revendications précédentes, **caractérisée en ce qu'elle** comprend au moins un pied relié à un logement (8) respectif de chaque élément longitudinal (2), dans laquelle ledit pied s'étend à partir de ladite surface faisant face au sol sur une hauteur prédéfinie de manière à éloigner au moins les éléments longitudinaux (2) et les éléments transversaux (3, 4) du sol.
10. Procédé de réalisation d'une base de support modulaire (1) pour supporter un meuble, comprenant les étapes de fonctionnement suivantes :
- a. préparer une pluralité d'éléments longitudinaux (2) s'étendant le long d'une direction longitudinale (L) sur une longueur déterminée en fonction de la profondeur du meuble, chaque élément longitudinal (2) de ladite pluralité d'éléments longitudinaux ayant une portion avant (2a) et une portion arrière (2b) ;
- b. préparer au moins un élément transversal avant (3) ayant une longueur déterminée en fonction de la largeur du meuble ;
- c. préparer au moins un élément transversal arrière (4) ayant une longueur déterminée en fonction de la largeur du meuble ;
- d. interposer ledit au moins un élément transversal avant (3) entre lesdites portions avant (2a) desdits éléments longitudinaux (2) le long d'une direction transversale (T) par rapport à ladite direction longitudinale (L) et connecter chaque portion avant (2a) desdits éléments longitudinaux (2) aux extrémités avant (3a) respectives dudit au moins un élément transversal avant (3) par l'intermédiaire de moyens de jonction (5) ;
- e. interposer ledit au moins un élément transversal arrière (4) entre lesdites portions arrière (2b) desdits éléments longitudinaux (2) le long d'une direction transversale (T) par rapport à ladite direction longitudinale (L) et connecter chaque portion arrière (2b) desdits éléments longitudinaux (2) aux extrémités arrière (4a) respectives dudit au moins un élément transversal arrière (4) par l'intermédiaire de moyens de jonction (5) ;

f. configurer lesdits moyens de jonction (5) dans l'état couplé pour la formation d'une base modulaire (1) de forme quadrilatérale ;
 g. fournir au moins un logement (8) pour une base pour un pied ou pour au moins un pied (12) au niveau de ladite pluralité d'éléments longitudinaux (2) sur une surface qui est opposée à la surface de repos d'au moins une base du meuble ;

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caractérisé en ce qu'il comprend une étape de réaliser au moins un moyens de couplage (9) positionné le long des surfaces latérales d'au moins un élément longitudinal (2), tourné vers l'extérieur et agencé selon un plan vertical pour le couplage avec au moins un appendice du meuble, dans lequel lesdits moyens de couplage sont des éléments de broche.

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11. Procédé selon la revendication 10, **caractérisé en ce qu'il** comprend une étape de positionner au moins une base pour un pied ou au moins un pied (12) sur ladite pluralité d'éléments longitudinaux (2) au niveau dudit logement (8) prédéfini. 20
12. Procédé selon l'une quelconque des revendications 10 à 11, dans lequel lesdits moyens de jonction (5) sont configurés dans un état couplé par une technique de poinçonnage effectuée au niveau d'un siège (6b) de chaque élément transversal (3, 4) par rapport à une saillie (6a) de chaque portion (2a, 2b) de chaque élément longitudinal (2) insérée à l'intérieur dudit siège (6b). 25 30
13. Procédé selon l'une quelconque des revendications 10 à 12, dans lequel l'étape de préparer une pluralité d'éléments longitudinaux (2) envisage l'utilisation d'un matériau plastique et l'étape de préparer un élément transversal avant (3) et un élément transversal arrière (4) envisage l'utilisation d'un matériau différent de ladite pluralité d'éléments longitudinaux (2), de préférence un matériau métallique. 35 40

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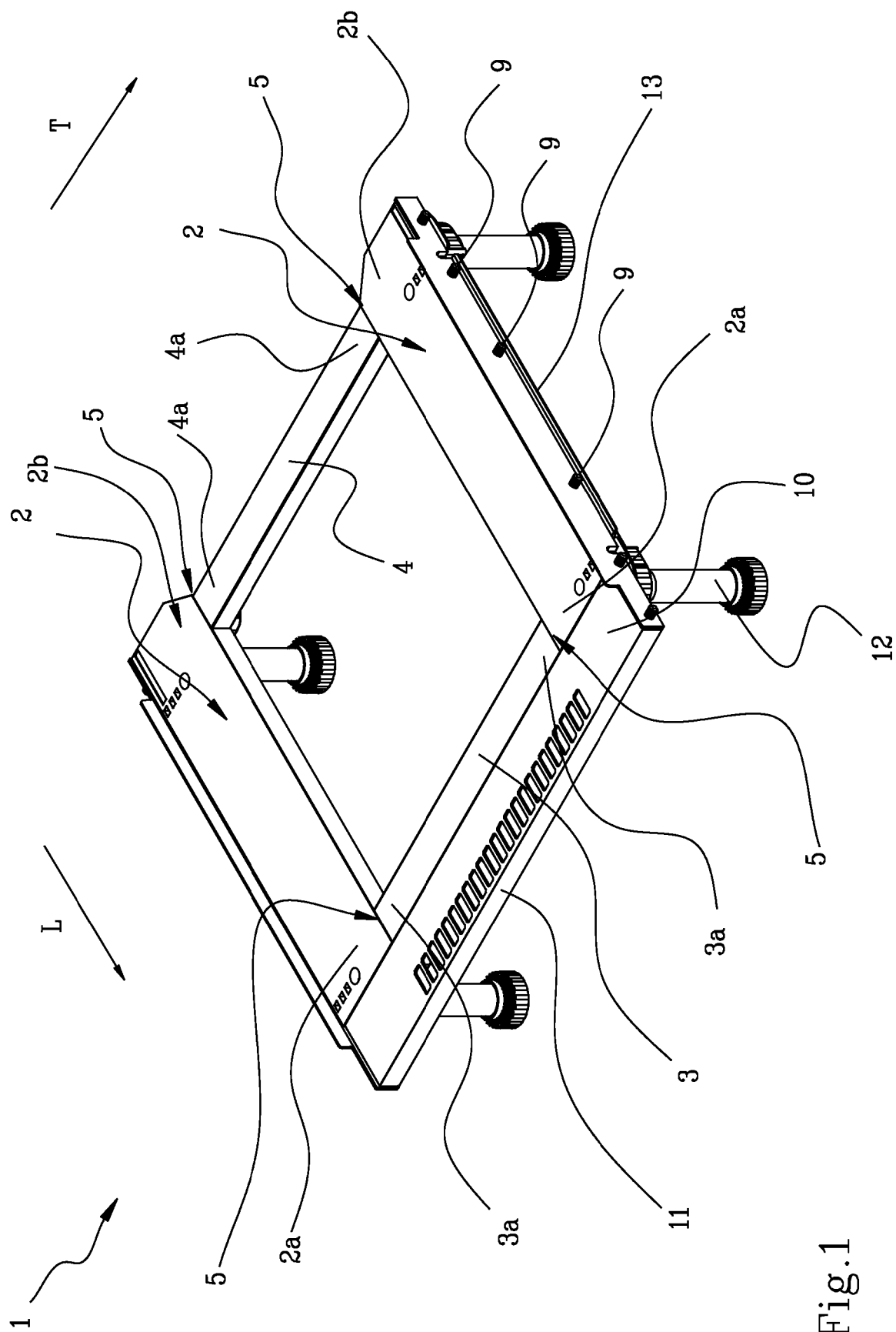


Fig.1

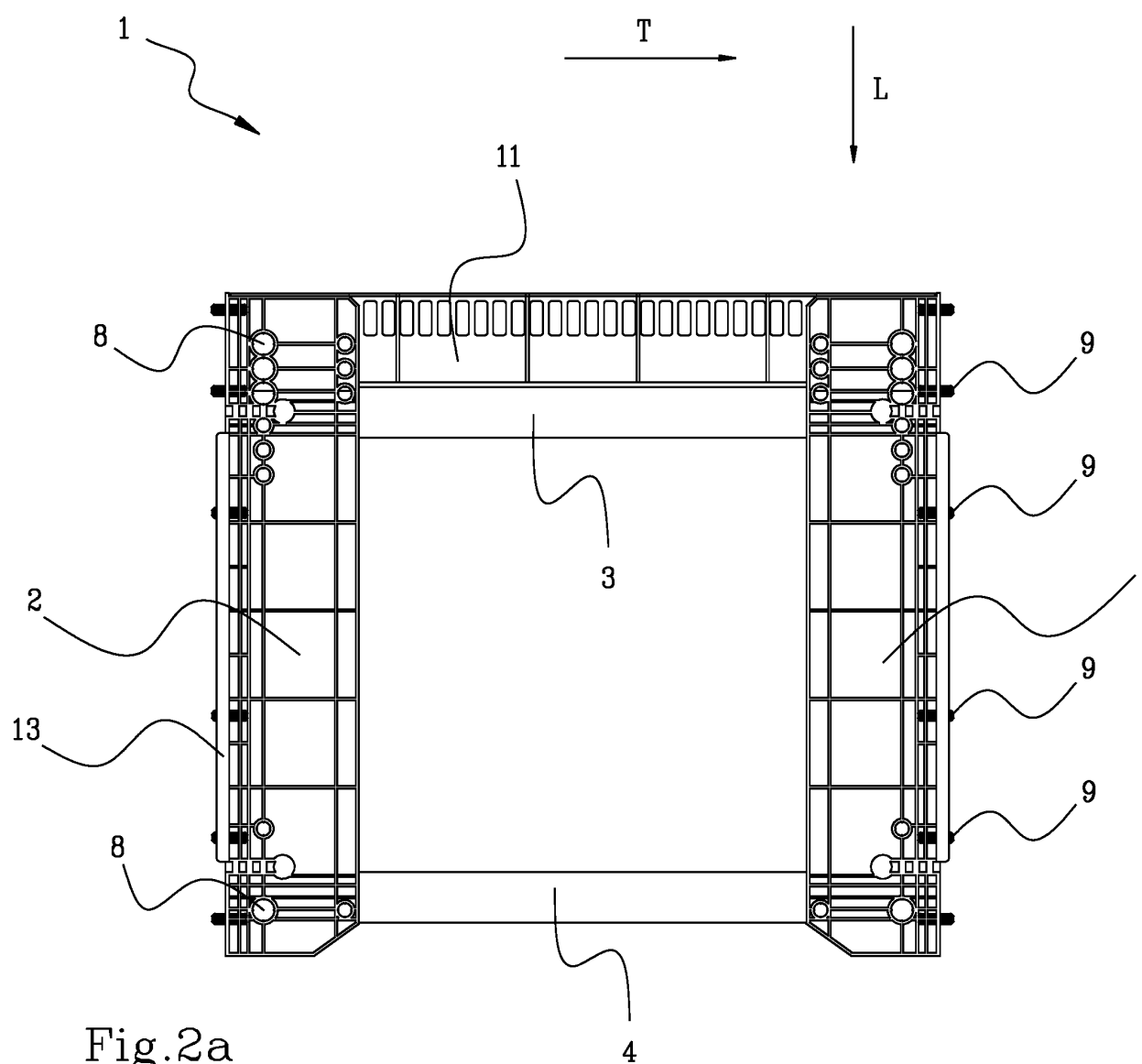


Fig.2a

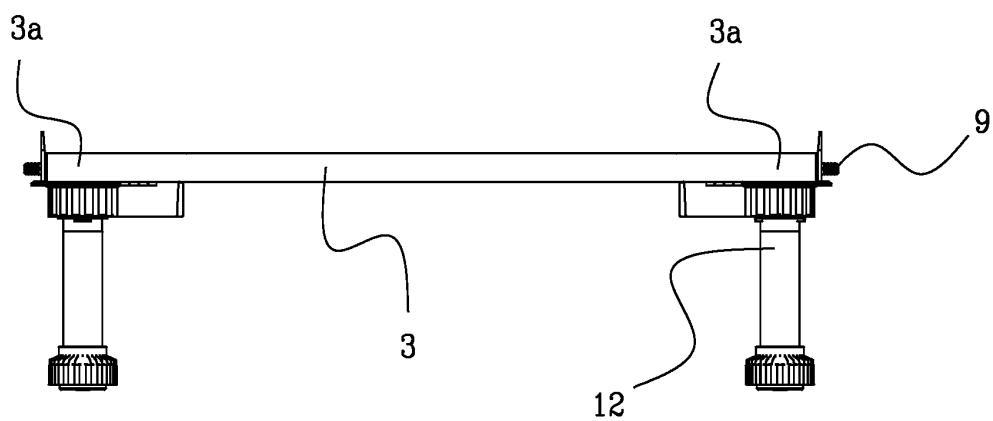


Fig.2b

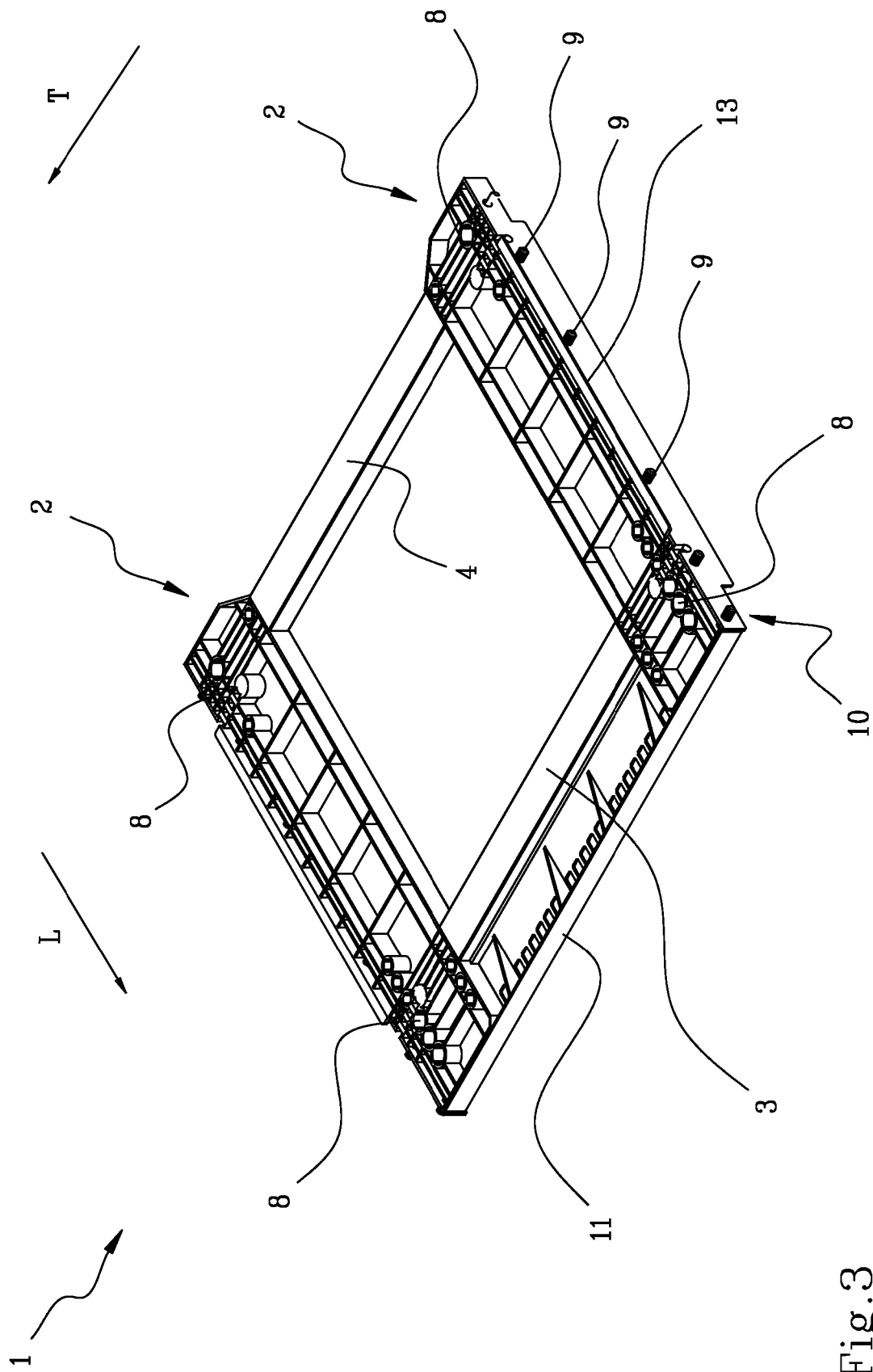


Fig.3

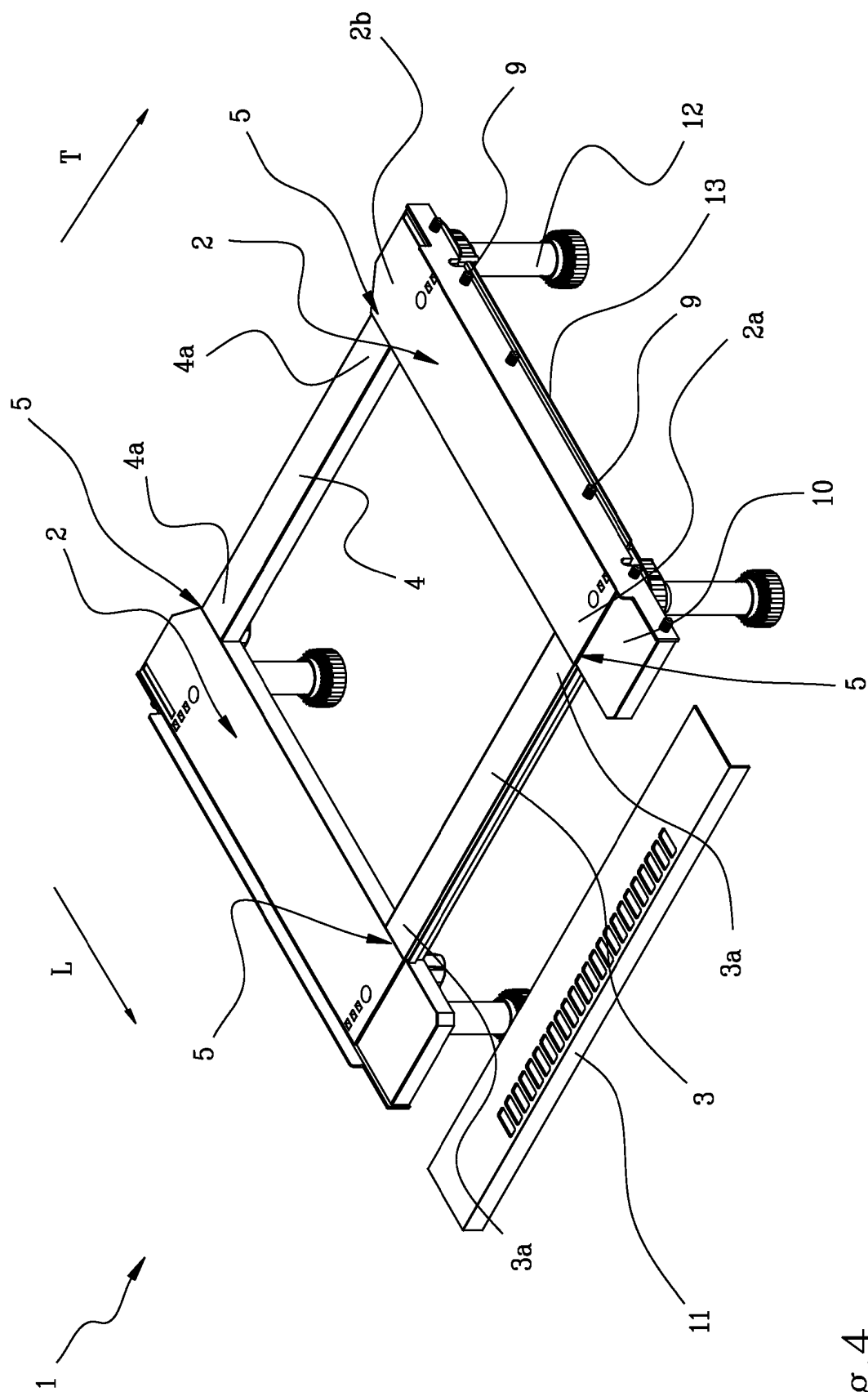


Fig.4

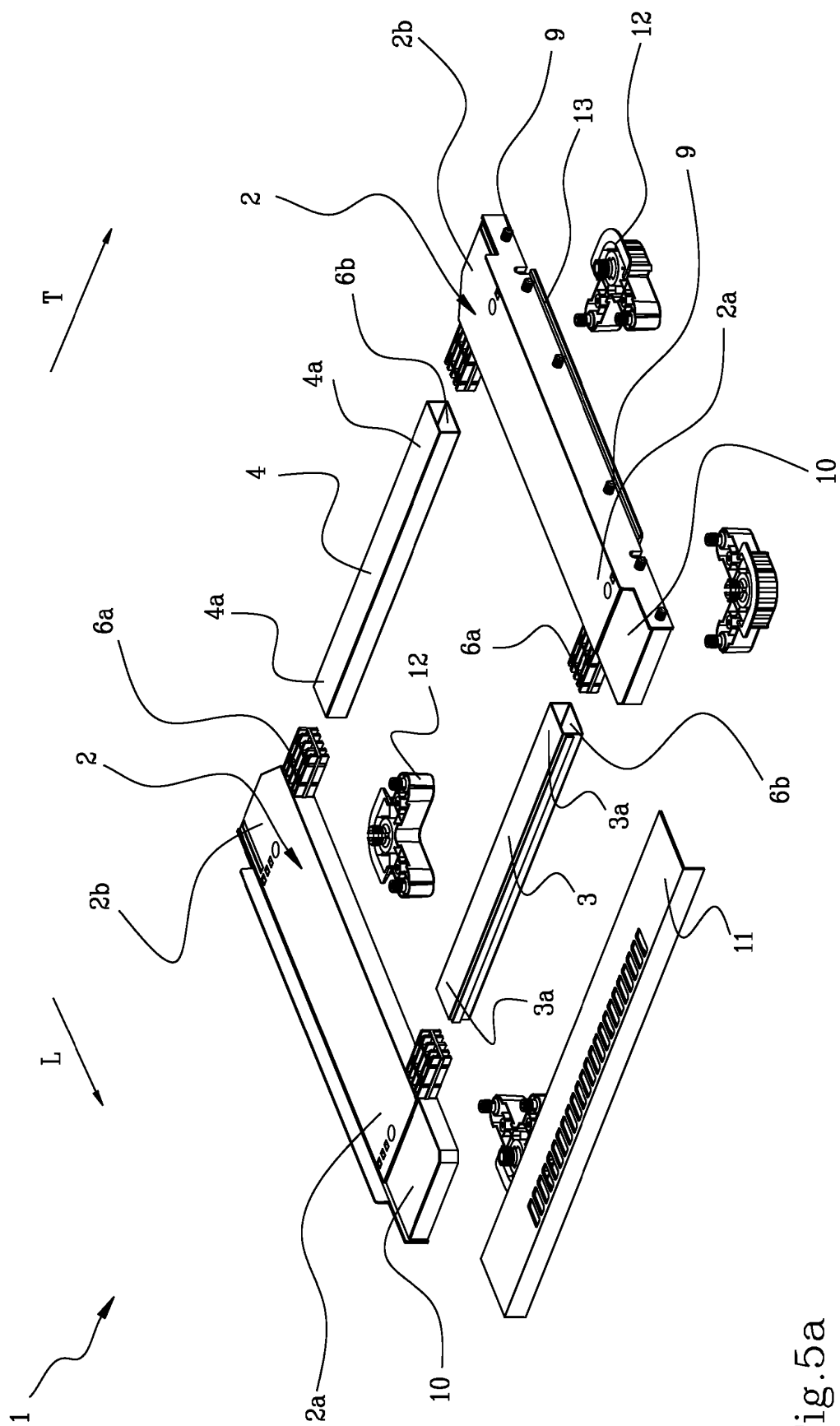


Fig. 5a

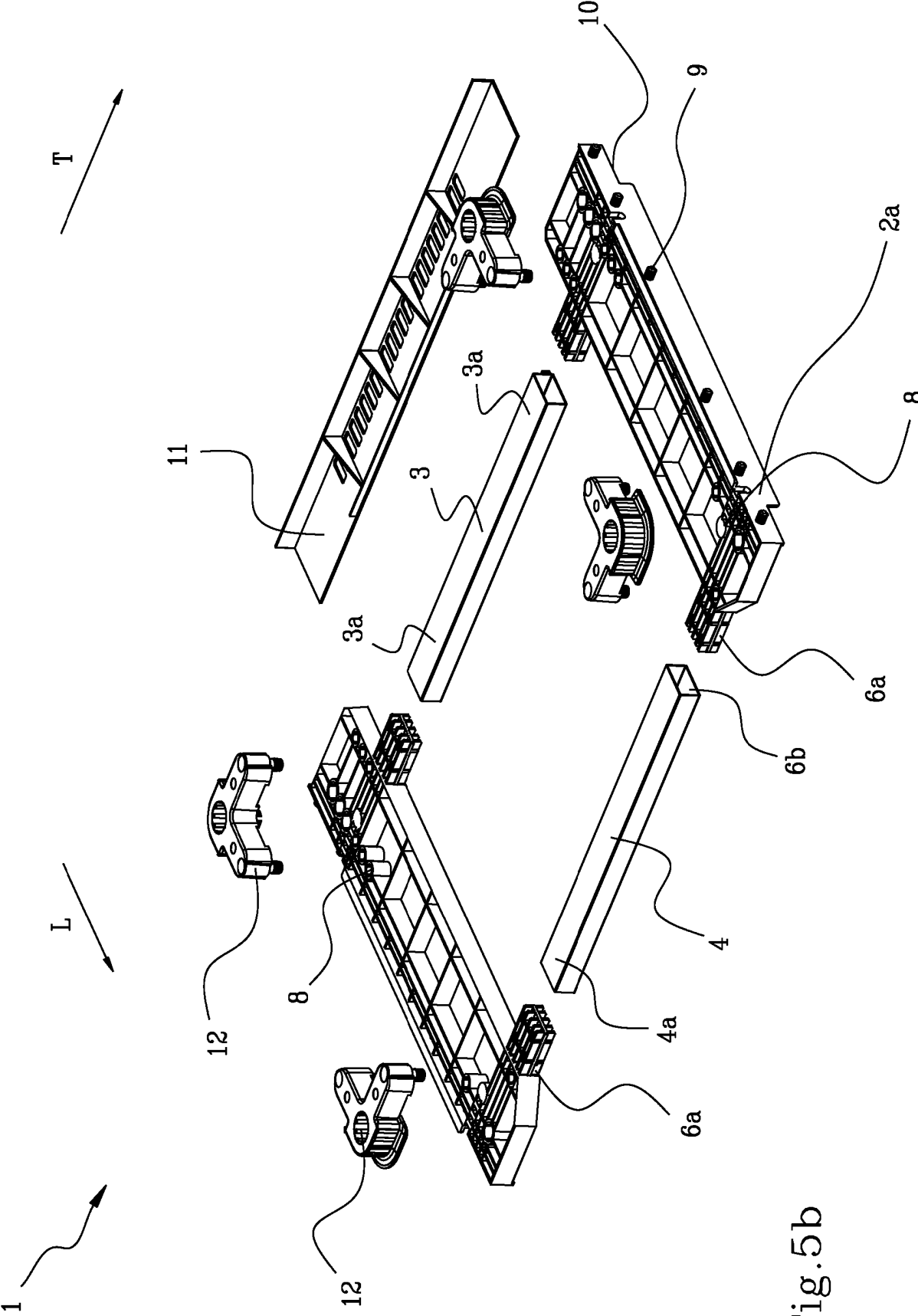


Fig. 5b

REFERENCES CITED IN THE DESCRIPTION

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