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(54) Improved support structure

(57) Improved support structure comprising at least two structural elements apt to define supporting surfaces, wherein one supporting surface (2) is nearly horizontal and a second one (3) is nearly vertical, the improved support structure being **characterized in that**, by means of at least a jointing means (4), the vertical element (3) is inserted at least at one end of a side of the surface of the nearly horizontal element (2) to form an angle between 45° and 135°; the surface of the vertical element (3) is contained in the horizontal element (2).

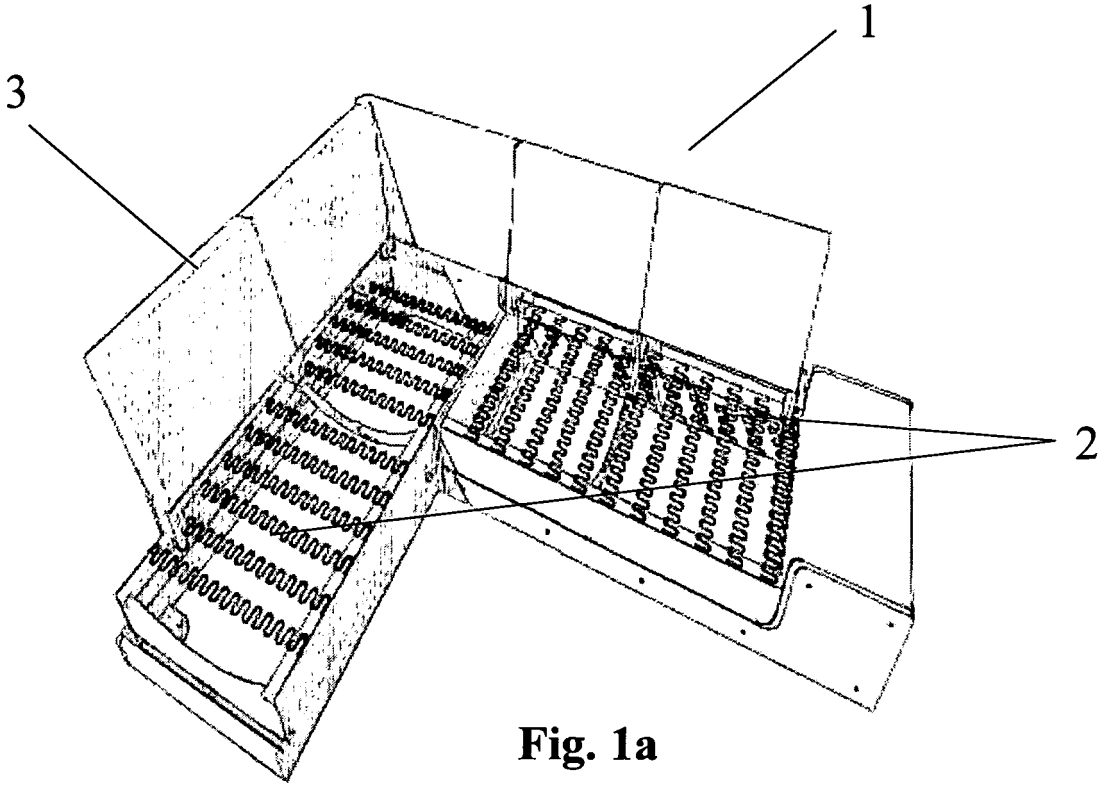

Fig. 1a

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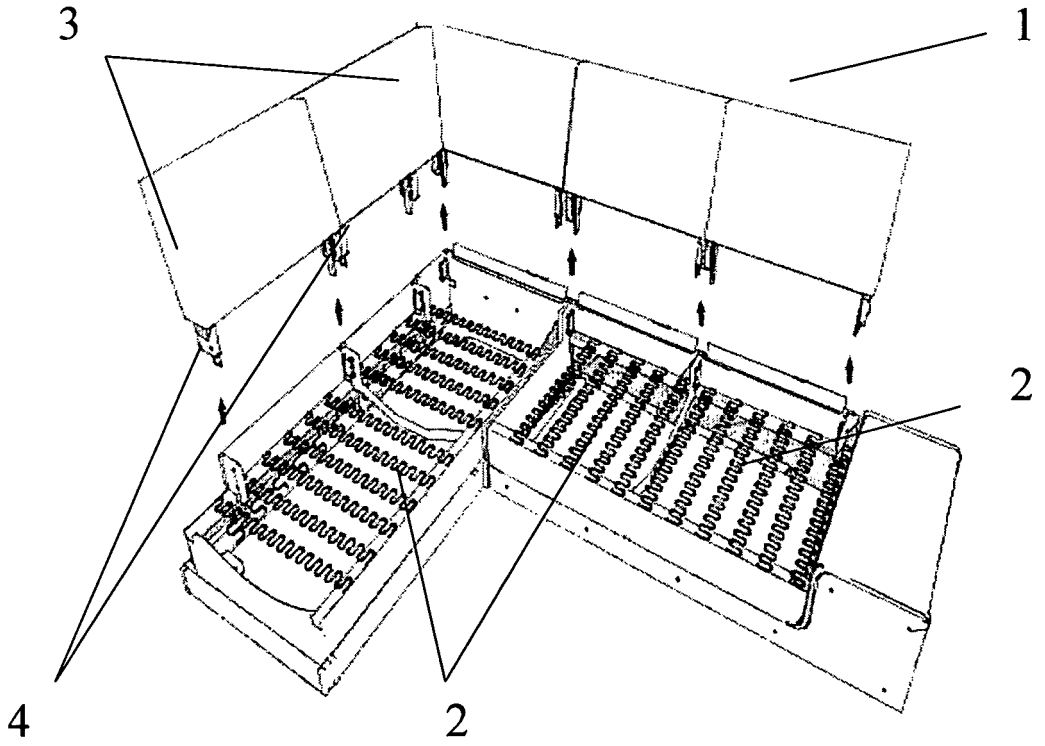

Fig. 1.b

Description

[0001] The present invention relates to an improved support structure for pieces of furniture, as for example sofas, armchairs and the like.

[0002] In particular, the support structures are widely used in many fields of the industrial mechanics, the applications in the furniture field being differentiated by the configuration in order to better follow the design shapes, by the material used and finally by the jointing features of its components. Moreover, sofas, beds and armchairs use different modular structures of components, which are then assembled by means of jointing means as for example bolts, clamps and the like and outer coating.

[0003] In the state of the art, different embodiments of similar products are known, which are mainly constituted by jointed systems made up of a plurality of rods, which are fixed or rotating on a jointing means as for example a hinge in order to provide a structure, which is fixed or movable and close to the lines of design defined by the designer.

[0004] These solutions have however some drawbacks in that: first of all they cannot be assembled manually, moreover they can hardly be disassembled in independent modules to be used, and finally when in the stocking step, they are little compact so that they need logistic costs in terms of space used and longer logistic times than other simpler and more compact structures.

[0005] The present invention solves the prefixed objects in that it is an improved support structure for pieces of furniture, as for example sofas and the like, having the features described in claim 1. Said structure is in particular apt to define supporting planes, as for example seat, back rest or armrest planes by means of modules which can be assembled by means of manually insertable joints. In addition to functional advantages, there are other economic advantages, since the invention comprises many modules, whose stocking is optimized in parallelepiped form, in particular the back rest plane can be received in the containing compartment of the seat plane; moreover, manually assembling and disassembling the structure, without using bolts and the like, do not need skilled personnel. These and other advantages will be highlighted in the following description of the invention, specifically referring to the drawings 1/1 and 2/2, which represent a not limiting and preferred embodiment example of the present invention, in which:

Fig. 1, in "a" and "b", represents the perspective view of the support structure in closing position, i.e. when the structural element of the back rest plane is constrained to the seat plane one, and in opening position, i.e. when the back rest plane is not introduced in the seat plane;

Fig. 2 shows assembling subsystems, as for example the back rest structural element contained in the seat one, as it will be described in the following;

Fig. 3 represents a side view of the manually insertable jointing means of the back rest to the seat plane.

[0006] Referring to figs. 1 and 2, 1 generally indicates the improved support structure according to the present invention. Said support structure comprises at least two structural elements apt to define supporting surfaces, one supporting surface 2 being nearly horizontal, and a second surface 3 being nearly vertical. As it is shown in fig. 1b, the vertical element 3, called back rest, by means of at least a jointing means 4 is inserted at least at an end of a side of the surface of the nearly horizontal element 2 to form an angle between 45° and 135°.

[0007] According to a preferred embodiment of the present invention, as it is shown in fig. 2, the surface of the vertical element 3 is contained in the horizontal element 2.

[0008] Moreover, said jointing means 4 of the horizontal means 2 to the vertical one 3 is of fixed type by manual insertion to allow the complex structure to be rapidly and simply assembled even by unskilled users and without using bolts, clamps and the like. In particular, the nearly horizontal element 2 functions as a seat surface while the nearly vertical element 3 functions as a back rest surface apt to realize, for example a sofa.

[0009] Finally, when the whole structure is in stocking condition, said horizontal element 2 receives at least a vertical element 3 thereinto to form a parallelepiped.

[0010] A not limiting example of such structure is shown in figs. 1 and 2, and is characterized by a horizontal element 2 apt to receive two vertical elements 3 with four manually insertable fixed jointing means 4.

[0011] Obviously, the above-described embodiments are described only by way of example and do not limit the present invention.

[0012] The advantages of the inventive structure are clear: easy assembling of the complex structure; modularity of the structure to provide various elements depending on the assemblage of at least two or more modules in which the back rest or seat plane constitutes a module; the structure is very user friendly and finally it can be easily produced and stocked in warehouses or containers for transportations aims.

Claims

1. Improved support structure comprising at least two structural elements apt to define supporting surfaces, wherein one supporting surface (2) is nearly horizontal and a second one (3) is nearly vertical, the improved support structure being **characterized in that:**

   - by means of at least a jointing means (4), the vertical element (3) is inserted at least at one end of a side of the surface of the nearly horizontal element (2) to form an angle between 45° and 135°.

- the surface of the vertical element (3) is contained in the horizontal element (2).

2. Support structure according to claim 1, **characterized in that** said jointing means (4) between the horizontal (2) and the vertical (3) elements is of fixed type by manual insertion.

3. Support structure according to claim 1 or 2, **characterized in that** the nearly horizontal element (2) functions as a seat surface.

4. Support structure according to claim 1, 2 or 3 **characterized in that** the nearly vertical element (3) functions as a back rest surface.

5. Support structure according to any one of the preceding claims **characterized in that**, in a particular embodiment, said horizontal element (2) receives two vertical elements (3) with four fixed jointing means (4).

6. Support structure according to any one of the preceding claims, **characterized in that**, when in stocking closing position, said horizontal element (2) receives at least a vertical element (3) thereinto to form a parallelepiped.

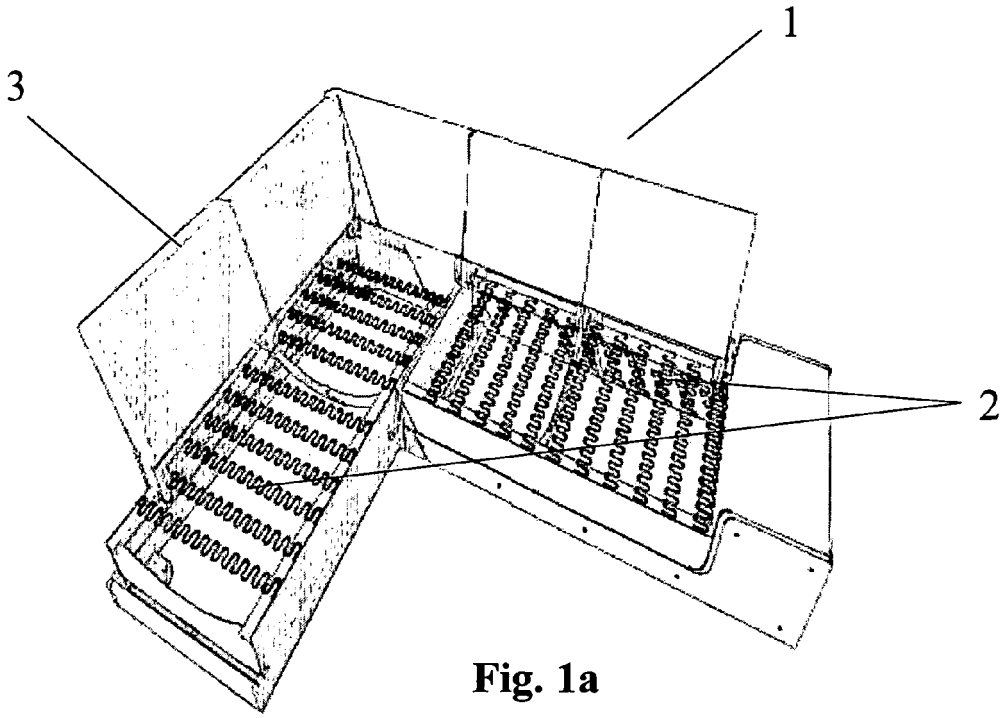

Fig. 1a

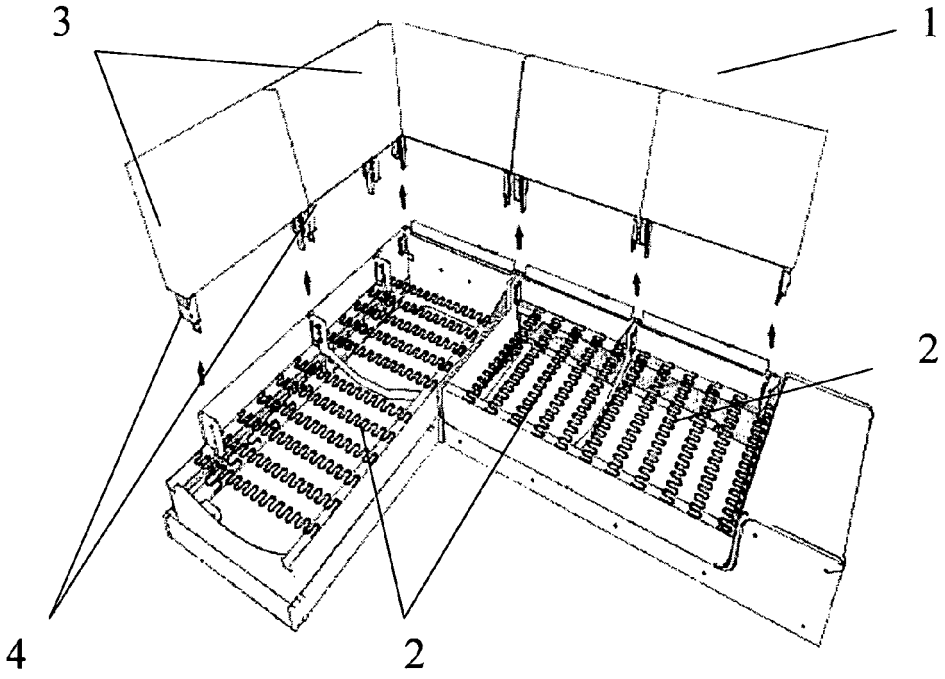

Fig. 1.b

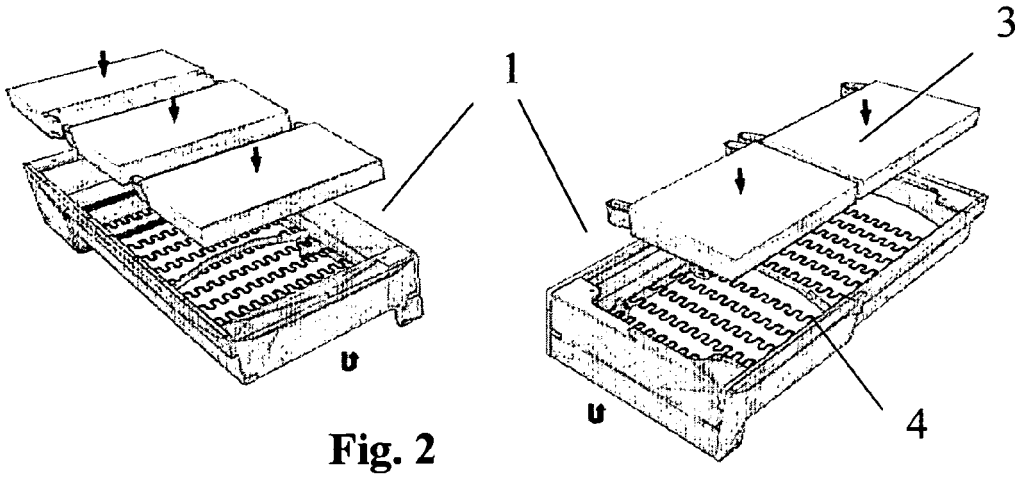

Fig. 2

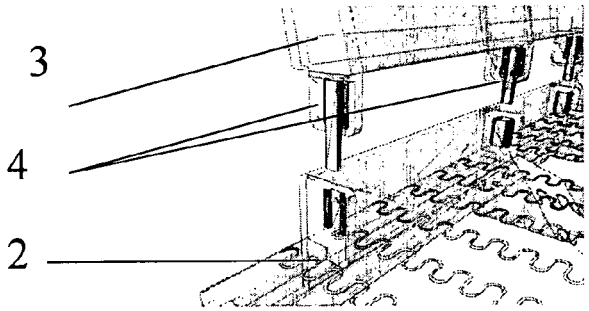

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 09 42 5387

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

A47C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	4 March 2010	Cardan, Cosmin

CATEGORY OF CITED DOCUMENTS

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