US 20080169737A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2008/0169737 A1

(43) Pub. Date: Jul. 17, 2008

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(54) **ADJUSTABLE PULL-OUT FRAME STRUCTURE**

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(21) Appl. No.: **11/623,742**

(22) Filed: **Jan. 16, 2007**

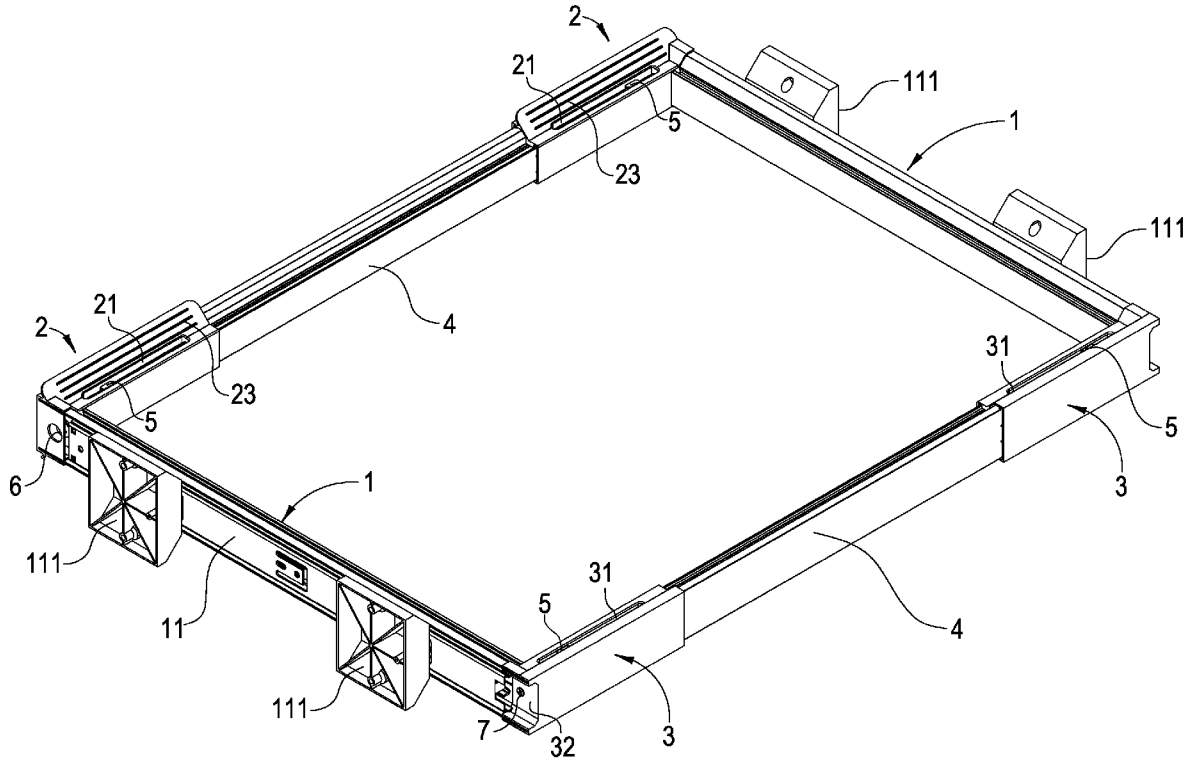
Publication Classification

(51) **Int. Cl.**
A47B 45/00 (2006.01)

(52) **U.S. Cl.** **312/205**

(57) **ABSTRACT**

An adjustable pull-out frame structure includes two sliding racks installed face-to-face to each other, each sliding rack having a sliding pull rod set placed behind the sliding rack, and two mounts installed on each one of the sliding pull rod sets, each sliding rack having each of its both ends connected to a joining rack respectively, and each joining rack having a retaining rail installed on an upper side thereon, then each joining rack having its one end placed in contact with a retractable rack, each one of the two retractable racks having a hole implemented on an upper side thereof, and the hole being installed with respect to the retaining rail on the joining rack, then a retaining block being inserted through the retaining rail and hooked up in the hole, finally, each joining rack on each side of one sliding rack being connected to each retractable rack through the insertion of a bolt, while each joining rack on the other sliding rack being locked to the sliding rack by a locking element, in this way the two sliding racks, joining racks and retractable racks being connected with each other to form the adjustable pull-out frame structure.



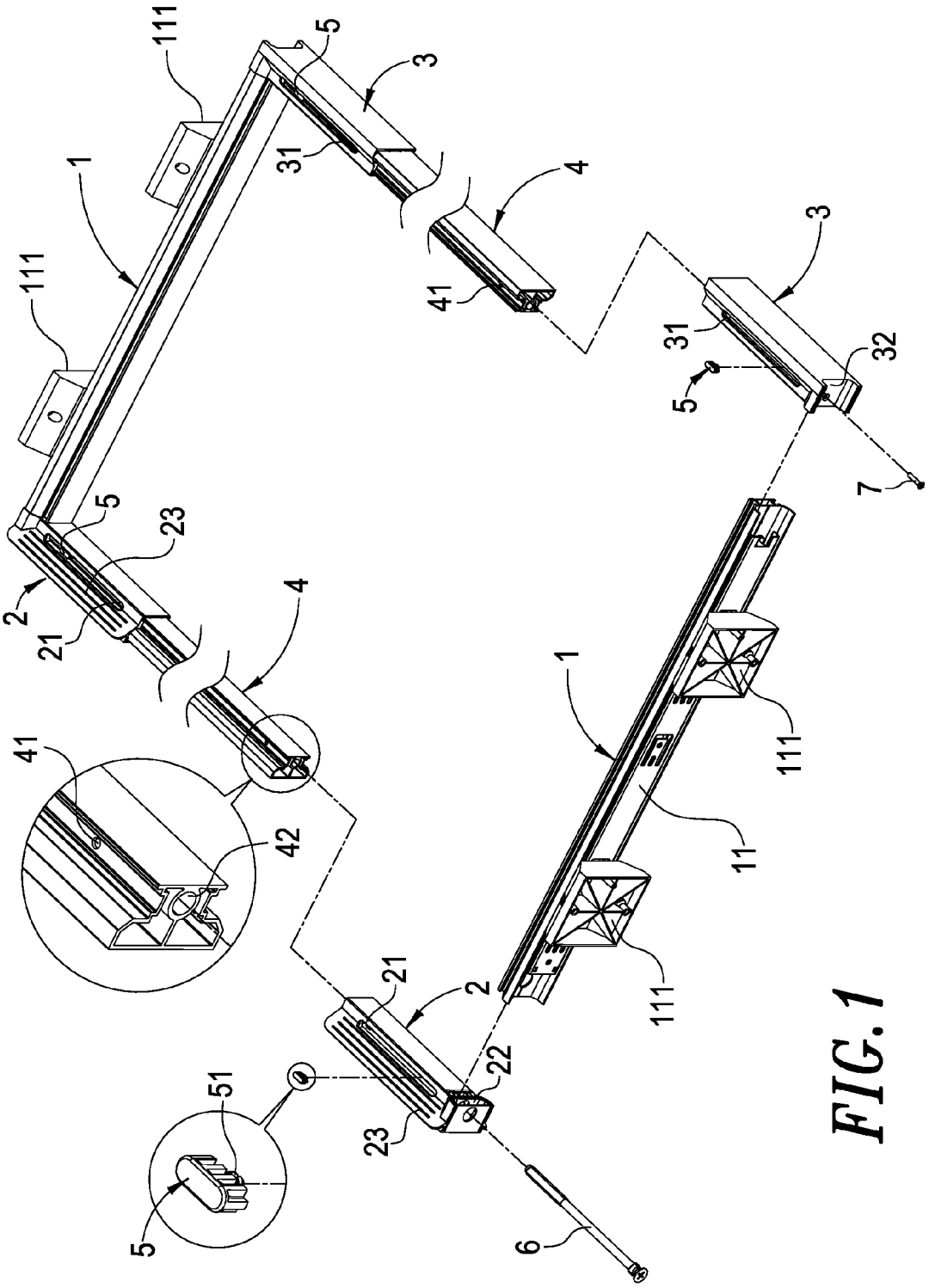

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FIG. 1

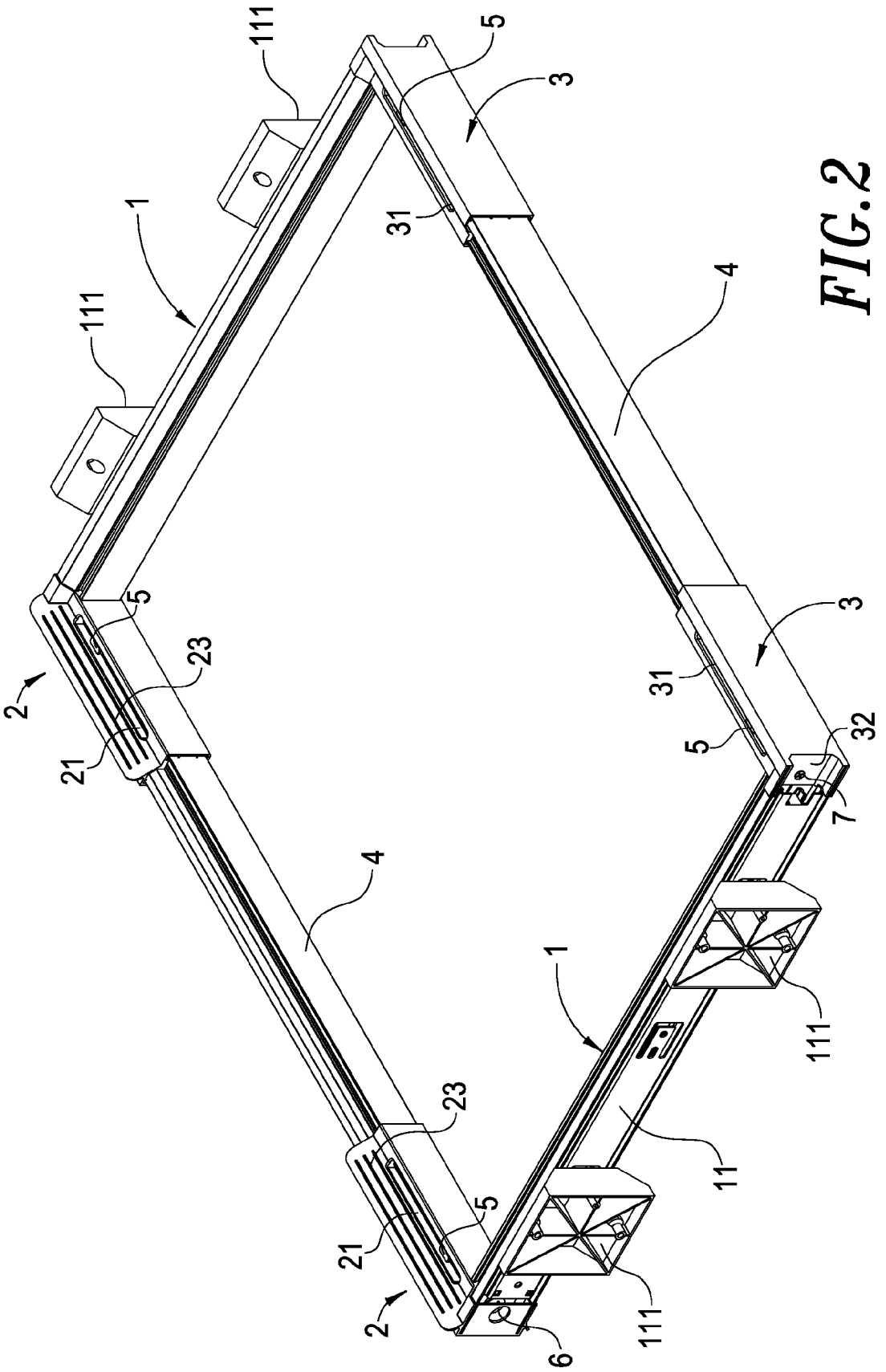

FIG.2

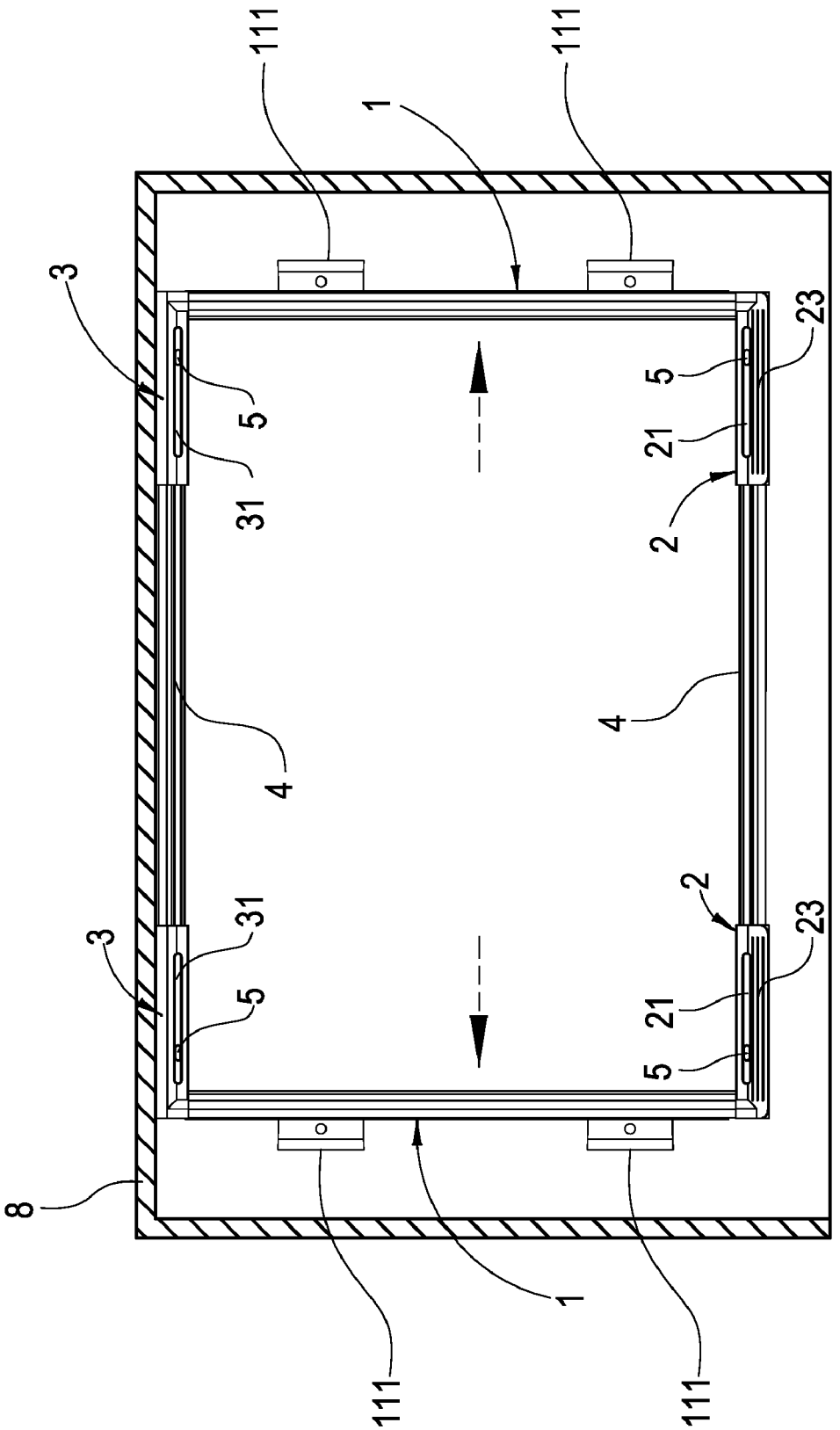

FIG. 3A

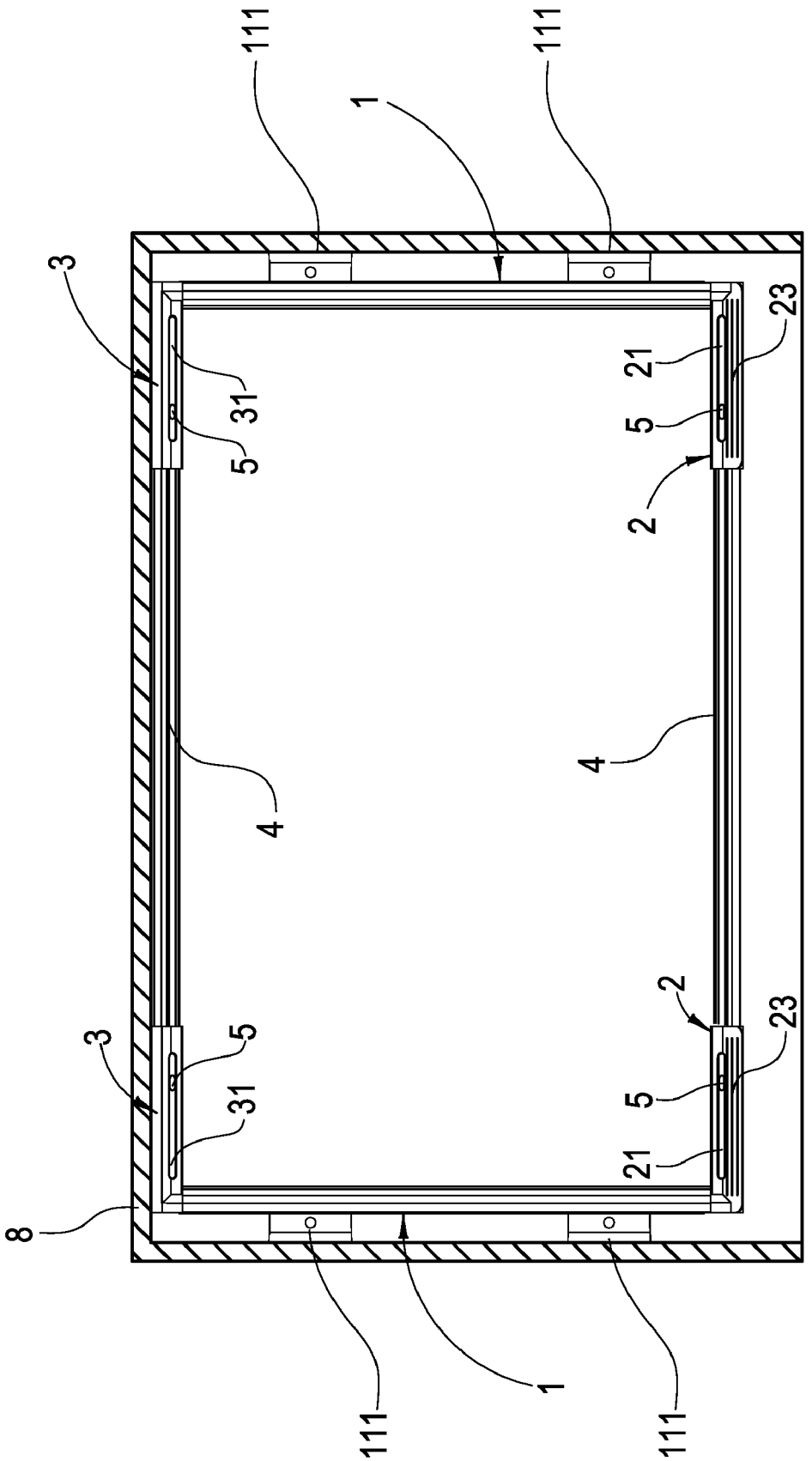

FIG.3B

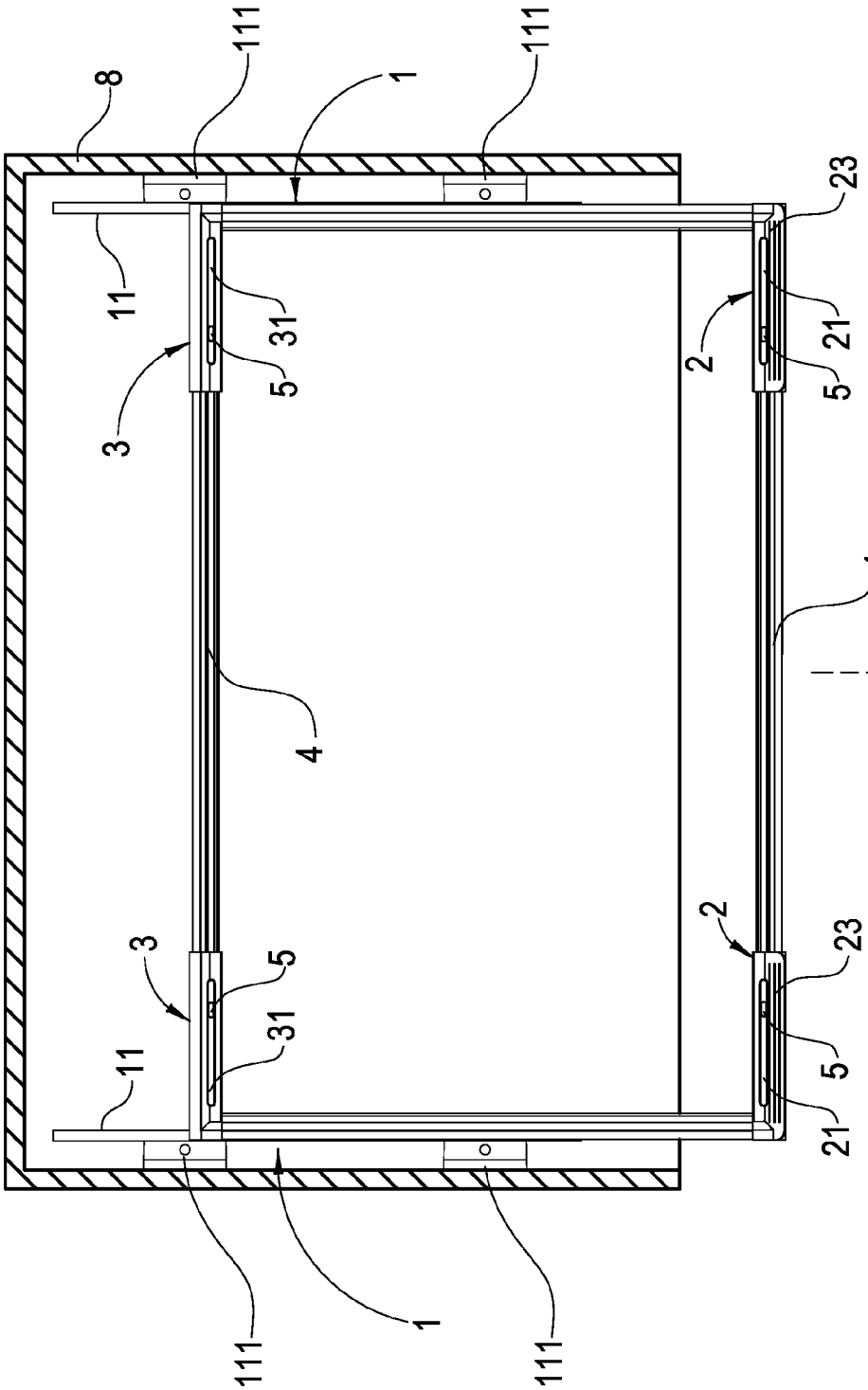

FIG.3C

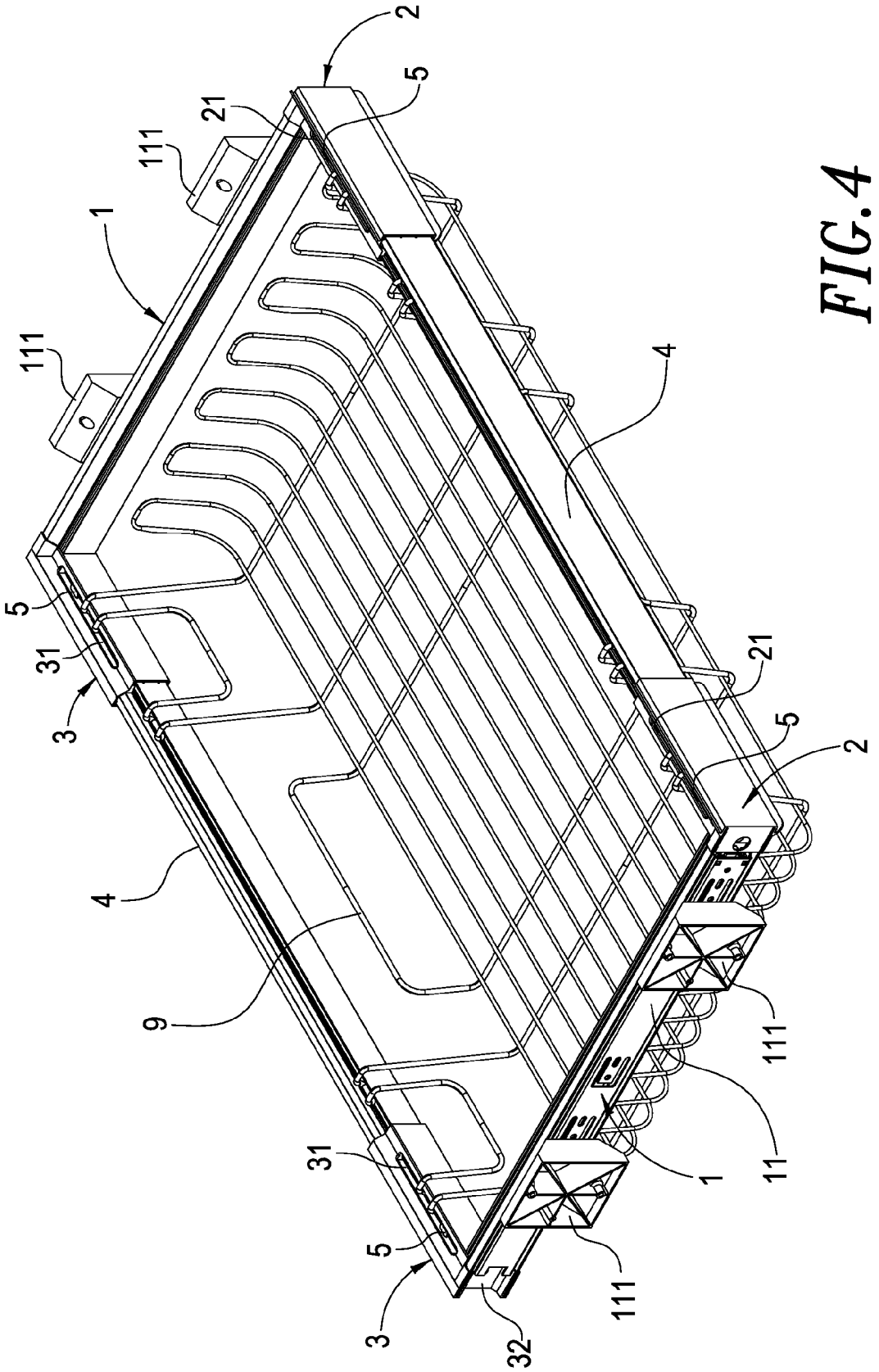

FIG. 4

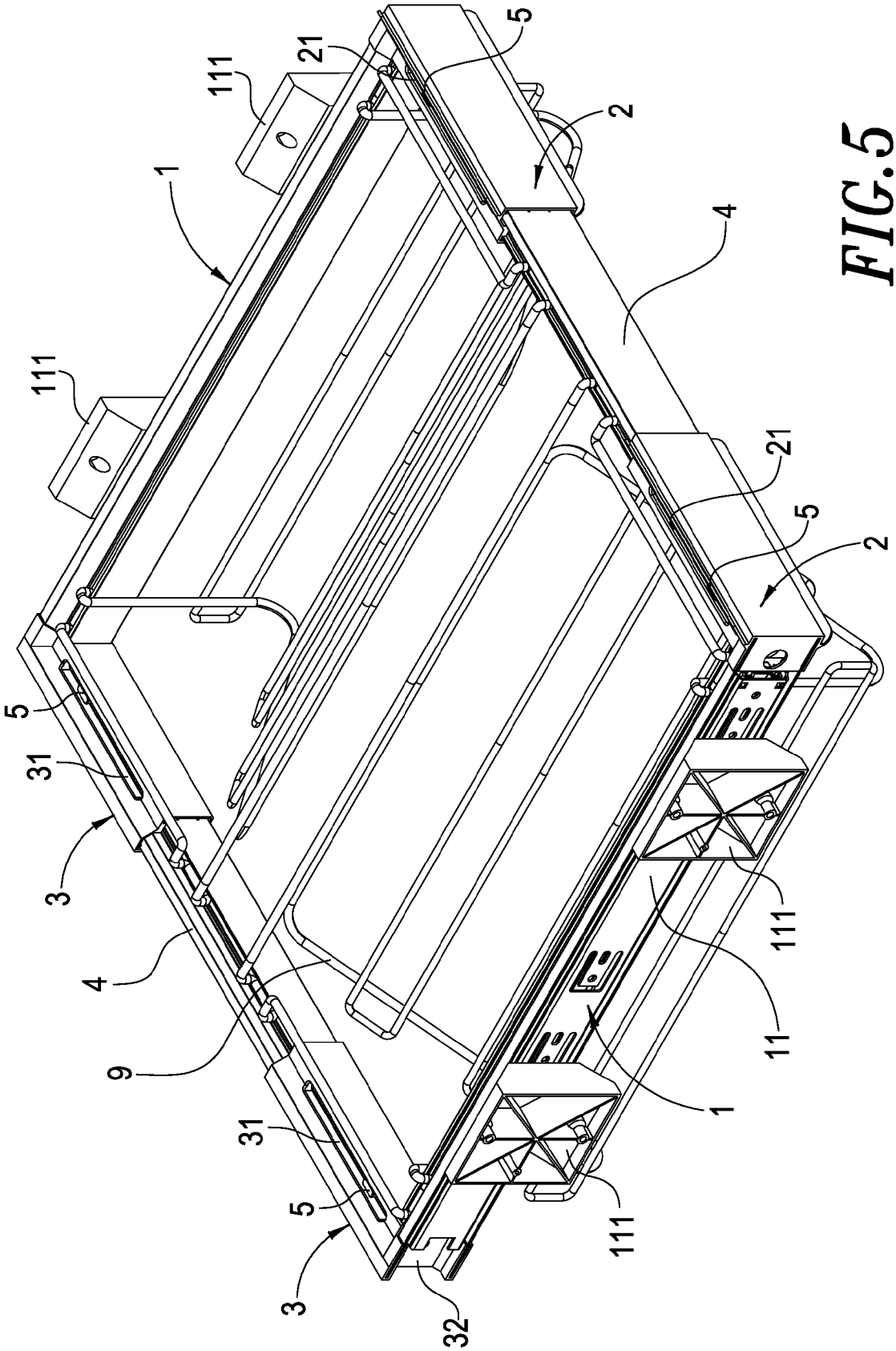

FIG.5

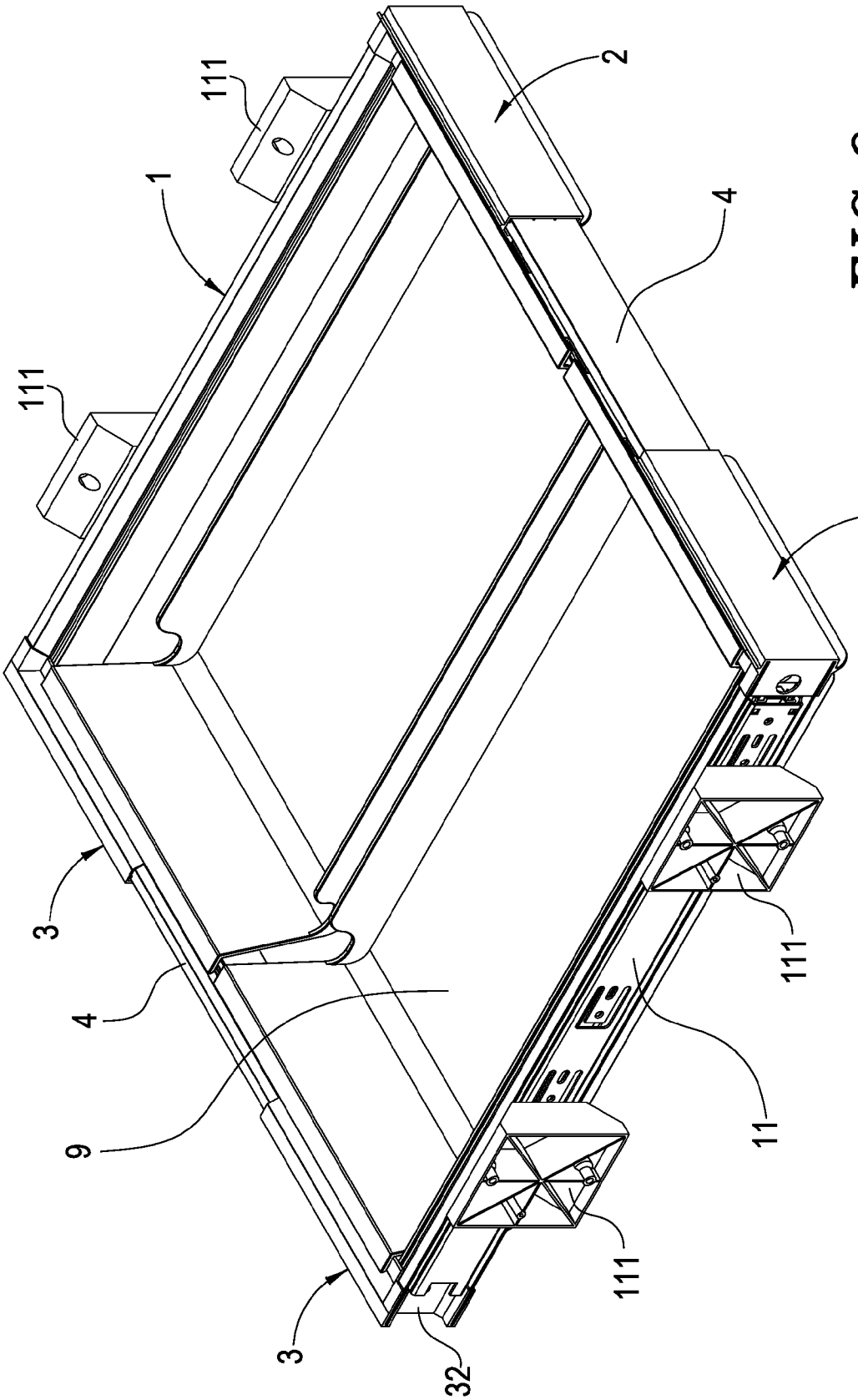

FIG.6

ADJUSTABLE PULL-OUT FRAME STRUCTURE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an adjustable pull-out frame structure, and more particularly, to an adjustable pull-out frame structure which is applied fixedly inside a closet or locker, to which a frame of the adjustable pull-out frame structure is adjustable according to a size of the cabinet body, thereby making it universally available for any cabinet body.

[0003] 2. Description of the Prior Art

[0004] It is common for every household or company to have a closet, a locker or other kinds of cabinet for placing clothes or other stuff inside it. Therefore, people purchase custom-made cabinets or factory-designed cabinets. No matter these cabinets are custom-made or factory-designed, they are manufactured according to personal preference or factory requirement. Though these finished cabinets show beautiful appearances, it is hard to change the sizes of the compartments or the partitions of the cabinets. People will have these cabinets re-designed and modified, or have to use the compartments of the cabinets as before. Besides, sometimes it is not convenient for people to get their clothes from closets or dishes/plates from cupboards if those closets or cupboards are full with clothes or dishes/plates respectively. For example, when a person wants to take out his/her clothes, it is often that he/she will find the clothes tangled with other clothes, making it inconvenient to use.

[0005] Therefore, the above-mentioned conventional implementations for cabinet body present several shortcomings to be overcome.

[0006] In view of the above-described deficiencies of conventional cabinet body, after years of constant effort in research, the inventor of this invention has consequently developed and proposed an adjustable pull-out frame structure in the present invention.

SUMMARY OF THE INVENTION

[0007] The present invention is to provide an adjustable pull-out frame structure, whose length/size is adjusted by using a retractable rack to fit in a length/size of the frame of the cabinet body to be applicable in any cabinet body.

[0008] Another, the present invention is to provide an adjustable pull-out frame structure, which provides a sliding rack having a sliding pull rod set which can slide in or out of the cabinet body. When the frame is installed inside the cabinet body, it can be pulled out by a user, besides, a number of anti-slip strips are arranged on a joining rack, and therefore it is convenient for users to get their clothes or stuff.

[0009] The present invention discloses an adjustable pull-out frame structure, which comprises sliding racks, joining racks, retractable racks, retaining blocks, a bolt and a locking element; wherein two sliding racks are installed face-to-face to each other, each sliding rack having a sliding pull rod set placed behind the sliding rack, and two mounts being installed on each one of the sliding pull rod sets, each sliding rack having each of its both ends connected to a joining rack respectively, and each joining rack having a retaining rail installed on an upper side thereon, then each joining rack having its one end placed in contact with a retractable rack, each one of the two retractable racks having a hole implemented on an upper side thereof, and the hole being installed with respect to the retaining rail on the joining rack, and a guiding hole being installed in the middle of each retractable rack, then a retaining block being inserted through the retaining rail and hooked up in the hole, finally, each joining rack on each side of one sliding rack being connected to each retractable rack through the insertion of a bolt, while each joining rack on the other sliding rack being locked to the sliding rack by a locking element, in this way the two sliding racks, joining racks and retractable racks being connected with each other to form the adjustable pull-out frame structure. The adjustable pull-out frame structure can have its length/size adjusted by using a retractable rack to fit in a length/size of the frame of the cabinet body to be applicable in any cabinet body.

[0010] These features and advantages of the present invention will be fully understood and appreciated from the following detailed description of the accompanying Drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. **1** illustrates a top perspective view of an adjustable pull-out frame structure disclosed in the present invention;

[0012] FIG. **2** illustrates a combinatorial view of the adjustable pull-out frame structure;

[0013] FIGS. **3**A, **3**B and **3**C illustrate the operations of the adjustable pull-out frame structure disclosed in the present invention;

[0014] FIG. **4** shows a view illustrating another embodiment of the adjustable pull-out frame structure;

[0015] FIG. **5** shows a view illustrating yet another embodiment of the adjustable pull-out frame structure; and

[0016] FIG. **6** shows a view illustrating still another embodiment of the adjustable pull-out frame structure.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0017] Please refer from FIG. **1** to FIG. **6** for the adjustable pull-out frame structure disclosed in the present invention, which mainly comprises two sliding racks **1**, a first joining rack **2**, a second joining rack **3**, two retractable racks **4**, at least one retaining block **5**, at least one bolt **6** and at least one locking element **7**.

[0018] The sliding racks **1** are installed face-to-face to each other, each sliding rack **1** having a sliding pull rod set **11** placed behind the sliding rack **1**, and two mounts **111** installed on each one of the sliding pull rod sets **11**. One of the sliding racks **1** is fixed to a cabinet body by the mounts **111**.

[0019] The first joining rack **2** has a retaining rail **21** installed on an upper side thereon, and a socket **22** formed on a side of the first joining rack **2**. The socket **22** of the first joining rack **2** is placed to be in contact with one end of the sliding rack **1**, while the other end of the first joining rack **2** is placed in contact with a retractable rack **4**. The first joining rack **2** can have a plurality of anti-slip strips **23** placed thereon for a user to pull out the frame by means of anti-slip strips **23**.

[0020] The second joining rack **3** has a retaining rail **31** installed on an upper side thereon, and a socket **32** formed on a side thereon. The socket **32** of the second joining rack **3** is placed to be in contact with one end of sliding rack **1**, while the other end of the second joining rack **3** is placed in contact with a retractable rack **4**.

[0021] Each retractable rack **4** has a hole **41** implemented on an upper side thereof, and each hole **41** is installed with respect to the retaining rail **21** of the first joining rack **2** and the retaining rail **31** of the second joining rack **3** respectively, and a guiding hole **42** is installed in the middle of each retractable rack **4**. Each retractable rack has its two ends connected to the sockets **22**, **32** of the first and the second joining rack **2**,**3** respectively. The guiding hole **42** is for the insertion of a bolt **6**.

[0022] The retaining block **5** has a buckling element **51** extending from the bottom thereof. Each retaining block **5** is inserted into the retaining rail **21** of the first joining rack **2** or the retaining rail **31** of the second joining rack **3** respectively and is held inside the hole **41** of the retractable rack **4** to control an extension length of the retractable rack **4**.

[0023] A front end of the bolt **6** is formed slightly of an elliptic shape. The bolt **6** is inserted through the first joining rack **2** and has a front end of the bolt **6** going through the guiding hole **42** of the retractable rack **4**. The front end of the bolt **6** is formed slightly of an elliptic shape and other flange-like shapes, thereby fitting the bolt **6** closely with the guiding hole **41** of the retractable rack **4**;

[0024] The locking element **7** locks two sliding racks **1** with the second joining rack **3**. The locking element can be a screw or other fastening elements;

[0025] The adjustable pull-out frame structure disclosed in the present invention can be used in any type of cabinet bodies **8** for household or company use. Please refer to FIGS. **3**A, **3**B and **3**C, since the frame structure can have its length adjusted by using a retractable rack to fit in a length the frame of the cabinet body, it is applicable in any cabinet body **8**. Besides, the present invention provides a sliding rack **1** having a sliding pull rod set **11** which can slide in or out of the cabinet body; it is convenient for users to get their clothes or stuff. Furthermore, the frame structure contains a hollow portion in the middle for accommodating bodies **9** of different capabilities to hook up with the frame (as shown in FIG. **4** to FIG. **6**). Therefore the present invention can provide multiple functions in one frame structure to facilitate the use of the cabinet body.

[0026] The present invention discloses an adjustable pull-out frame structure which, while comparing with conventional techniques, is advantageous in:

[0027] 1. The present invention provides an adjustable pull-out frame structure, whose length/size is adjusted by using a retractable rack to fit in a length/size of the frame of the cabinet body to be applicable in any cabinet body.

[0028] 2. The present invention provides an adjustable pull-out frame structure, which provides a sliding rack having a sliding pull rod set which can slide in or out of the cabinet body. When the frame is installed inside the cabinet body, it can be pulled out by a user, besides, a number of anti-slip strips are arranged on a joining rack, and therefore it is convenient for users to get their clothes or stuff.

[0029] 3. The present invention provides an adjustable pull-out frame structure, which contains a hollow portion in the middle for accommodating bodies of different capabilities to hook up with the frame.

[0030] 4. The present invention provides an adjustable pull-out frame structure which has advantages such as simple structure and easy usability.

[0031] Many changes and modifications in the above described embodiment of the invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and is intended to be limited only by the scope of the appended claims.

What is claimed is:

1. An adjustable pull-out frame structure comprises:

two sliding racks installed face-to-face to each other, each sliding rack having a sliding pull rod set placed behind said sliding rack, and two mounts installed on each one of said sliding pull rod sets; one of said sliding racks being fixed to a cabinet body by said two mounts;

a first joining rack having a retaining rail installed on an upper side thereon, and a socket formed on a side thereon; said socket of said first joining rack being placed to be in contact with one end of said sliding rack, while the other end of said first joining rack being placed in contact with a retractable rack;

a second joining rack having a retaining rail installed on an upper side thereon, and a socket formed on a side thereon; said socket of said second joining rack being placed to be in contact with one end of said sliding rack, while the other end of said second joining rack being placed in contact with a retractable rack;

two retractable racks, each retractable rack having a hole implemented on an upper side thereof, and each hole being installed with respect to each one of retaining rails on said first and second joining rack respectively, and a guiding hole being installed in the middle of each retractable rack, each retractable rack having two ends connected to said socket of said first joining rack and said socket of said second joining rack respectively;

at least one retaining block having a buckling element extending from the bottom thereof; each retaining block being inserted into said retaining rail of said first joining rack or said retaining rail of said second joining rack respectively and being held inside said hole of said retractable rack;

at least one bolt inserted through said first joining rack and having a front end of said bolt going through said guiding hole of said retractable rack;

at least one locking element locking two sliding racks with said second joining rack;

in this way said two sliding racks, joining racks and retractable racks being connected with each other to form said adjustable pull-out frame structure.

2. The adjustable pull-out frame structure of claim **1**, wherein said first joining rack has a plurality of anti-slip strips placed thereon for a user to pull out said frame by means of said plurality of anti-slip strips.

3. The adjustable pull-out frame structure of claim **1**, wherein said retaining block controls an extension length of said retractable rack.

4. The adjustable pull-out frame structure of claim **1**, wherein said front end of said bolt is formed slightly of an elliptic shape and other flange-like shapes, thereby fitting said bolt closely with said guiding hole of said retractable rack.

5. The adjustable pull-out frame structure of claim **1**, wherein said locking element is a screw or other fastening elements.

6. The adjustable pull-out frame structure of claim **1**, wherein said frame structure contains a hollow portion in the middle for accommodating bodies of different capabilities to hook up with said frame.

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