(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 856 909 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
08.04.2015 Bulletin 2015/15

(51) Int Cl.:
A47B 3/08 *(2006.01)*

(21) Application number: **13187432.3**

(22) Date of filing: **04.10.2013**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

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(54) **Table with leg pivotably mounted to table top**

(57) A table includes a board (10), a supporter (20), a pivot shaft (50) and a lock mechanism (40). The supporter (20) is disposed on the board (10). The pivot shaft (50) is disposed on the supporter (20), and the board (10) is rotatably disposed on the supporter (20) via the pivot shaft (50). The lock mechanism (40) is disposed between the board (10) and the supporter (20). The board (10) is switched between a first position and a second position. The lock mechanism (40) fixes the board (10) on the supporter (20) when the board (10) is switched to the first position, and the lock mechanism (40) sets the board (10) parallel to the supporter (20) when the board (10) is switched to the second position.

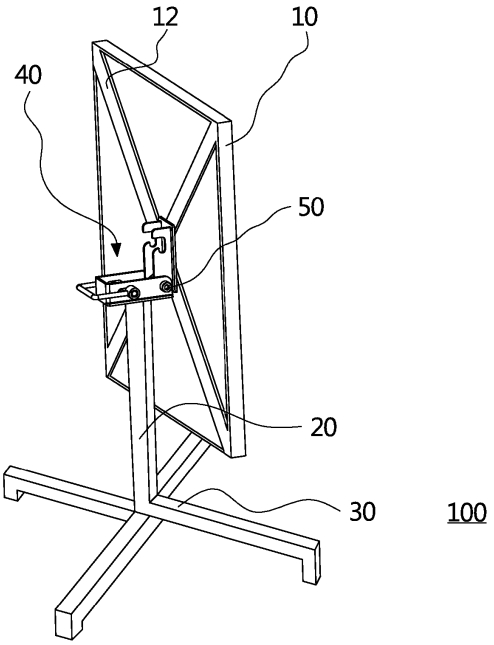

FIG.2

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Description

Background of the Invention

1. Field of the Invention

[0001] The present invention relates to a table, and more particularly, to a table with a rotatable board.

2. Description of the Prior Art

[0002] Table is a common appliance in daily life. Food and cutlery can be put on the table for dinner. A lot of tables are used in the banquet for a large number of visitors. After the banquet is finished, the tables occupy storage space because the boards of the tables are parallel, and the conventional table has drawbacks of huge volume and difficult collation.

Summary of the Invention

[0003] The present invention aims to provide a table with a rotatable board. The board of the table can be rotated to a parallel mode and a perpendicular mode according to user's demand. The board can be rotated to the perpendicular mode for storage, and a plurality of tables can be arranged tightly to economize the storage space.

[0004] According to the disclosed invention, the table includes a board, a supporter, a pivot shaft and a lock mechanism. The supporter is disposed on the board. The pivot shaft is disposed on the supporter, and the board is rotatably disposed on the supporter via the pivot shaft. The lock mechanism is disposed between the board and the supporter. The board is switched between a first position and a second position. The lock mechanism fixes the board on the supporter when the board is switched to the first position, and the lock mechanism sets the board parallel to the supporter when the board is switched to the second position.

[0005] According to an embodiment of the present invention, the lock mechanism includes a connecting component, an engaging component and a spring. The connecting component is disposed on the board. The connecting component includes an engaging slot and a pushing portion. The engaging slot is parallel to the pushing portion, and an opening of the engaging slot is adjacent to the pushing portion. The engaging component is movably disposed on the supporter. The spring contacts against the engaging component. When the board is switched to the first position, the pushing portion pushes the engaging component to move into the engaging slot via the opening, and the spring contacts against the engaging slot to fix the board relative to the supporter. When the engaging component balances a resilient force of the spring to move to a position corresponding to the opening, the board is rotatable to move the engaging component away from the engaging slot via the opening, and the board is switched from the first position to the second position.

[0006] According to the embodiment of the present invention, the lock mechanism further includes a frame and a guide pillar. The frame is fixed on the supporter. The frame includes a constraint slot whereinside the engaging component is movably disposed. A movement of the engaging component is constrained by the constraint slot. The guide pillar is disposed on the frame and passes through the engaging component. The spring is sheathed on the guide pillar. Two ends of the spring respectively contact against the frame and the engaging component.

[0007] According to the embodiment of the present invention, the connecting component is combined with the frame when the board is switched to the first position.

[0008] According to the embodiment of the present invention, the pivot shaft passes through the frame and the connecting component.

[0009] According to the embodiment of the present invention, the lock mechanism further includes a pull bar connected to the engaging component. The board is rotatable when the engaging component moves to a position corresponding to the opening by the pull bar.

[0010] According to the embodiment of the present invention, the table further includes a plurality of feet connected to the supporter.

[0011] The present invention discloses the table with the rotatable board. The board can be rotated to the perpendicular mode when the table is stored. The tables can be arranged tightly to economize the storage space, so that a decided space can accommodate more tables.

[0012] These and other objectives of the present invention will no doubt become obvious to those of ordinary skill in the art after reading the following detailed description of the preferred embodiment that is illustrated in the various figures and drawings.

Brief Description of the Drawings

[0013]

FIG.1 is a diagram of a table that a board is at the parallel mode of the present invention.

FIG.2 is a diagram of the table that the board is at the perpendicular mode of the present invention.

FIG.3 is a diagram of a lock mechanism of the table when the board is at the perpendicular mode of the present invention.

FIG.4 is a diagram of the lock mechanism of the table when the board is switched between the parallel mode and the perpendicular mode of the present invention.

FIG.5 is a diagram of the lock mechanism of the table when the board is at the parallel mode of the present invention.

FIG.6 is a diagram of the table for releasing the lock mode by pulling the pull bar of the present invention.

Detailed Description

[0014] The present invention discloses a table which has a board capable of rotating via a pivot shaft to be a vertical mode. An embodiment of the table is illustrated as following.

[0015] Please refer to FIG.1 and FIG.2. The table 100 of the present invention includes a board 10, a supporter 20, four feet 30, a lock mechanism 40 and a pivot shaft 50. The board 10 can be a square and supported by the supporter 20. The pivot shaft 50 is connected to the board 10 and the supporter 20. The board 10 is rotatably combined with the supporter 20 via the pivot shaft 50. The supporter 20 is a bar. An end of the supporter 20 supports the board 10. The feet 30 stretch from the other end of the supporter 20 to contact the ground. The board 10 can switched between a first position and a second position via the pivot shaft 50. The board 10 shown in FIG.1 is located on the first position, which means the board 10 is parallel to the ground. The board 10 shown in FIG.2 is located on the second position, which means the board 10 is perpendicular to the ground. When the board 10 is switched at the first position to be parallel to the ground, the lock mechanism 40 fixes the board 10 on the supporter 20, and the board 10 keeps in parallel. Besides, a side of the feet 30 (two rear feet shown in FIG.1 and two right feet shown in FIG.2) is higher than the other side of the feet 30 (two front feet shown in FIG.1 and two left feet shown in FIG.2). When the board 10 rotates to be perpendicular to the ground, an angle between the board 10 and each of the feet 30 is equal to 45 degrees. Therefore, a plurality of tables 100 that the board 10 is perpendicular to the ground is easy to overlap (which means the low side of the feet 30 of the table 100 can be positioned under the higher side of the feet 30 of the other table 100) for storage of the tablets 100. Structure of the lock mechanism 40 is illustrated as follows.

[0016] Please refer to FIG.3. The lock mechanism 40 of the present invention includes a connecting component 42, a frame 44, a guide pillar 45, an engaging component 46, a pull bar 47 and a spring 48. The connecting component 42 is fixed on a rib 12 of a back of the board 10 via a fitting base 14. The connecting component 42 is a board and perpendicularly disposed on the fitting base 14. The connecting component 42 includes a pushing portion 422. An engaging slot 424 is formed on the connecting component 42. The engaging slot 424 is an elongate hole and has an opening 426. The pushing portion 422 is adjacent to the opening 426. The frame 44 is fixed on an end of the supporter 20, and a constraint slot 442 is formed on a lateral side of the frame 44. The constraint slot 442 is an elongate hole. The engaging component 46 is a bar passing through the constraint slot 442. The engaging component 46 can move inside the constraint slot 442. The guide pillar 45 stretches into the frame 44 from an inner wall of the frame 44. A hole is formed on the engaging component 46 for passing through the guide pillar 45. The compressive spring 48 is disposed on the guide pillar 45. Two ends of the compressive spring 48 respectively contact against the inner wall of the frame 44 and the engaging component 46. The compressive spring 48 provides a resilient force to the engaging component 46, to contact the engaging component 46 against the edge of the constraint slot 442. The pull bar 47 is a U-shaped structure combined with the end of the engaging component 46. The pull bar 47 can be pulled to drive the engaging component 46 to balance the resilient force of the compressive spring 48 for moving the engaging component 46.

[0017] As shown in FIG.3, the board 10 is perpendicular to the ground, and the board 10 is switched to the second position. When the board 10 is switched from the second position to the first position, as shown in FIG.4, the connecting component 42 rotates around the pivot shaft 50 and moves from the perpendicular mode to the parallel mode. During rotation of the connecting component 42, the pushing portion 422 of the connecting component 42 presses the engaging component 46 to balance the resilient force of the compressive spring 48, the engaging component 46 moves relative to the connecting component 42 to the opening 426 and into the engaging slot 424 via the opening 426. Meanwhile, the resilient force of the compressive spring 48 pushes the engaging component 46 to contact against the edge of the engaging slot 424, and the board 10 can be fixed on the supporter 20, as shown in FIG.5.

[0018] As shown in FIG.6, an engagement of the engaging component 46 relative to the engaging slot 424 is released to switch the board 10 from the first position to the second position. The pull bar 47 is pulled to drive the engaging component 46 to balance the resilient force of the compressive spring 48 and move along the engaging slot 424 to a position corresponding to the opening 426. Then, the board 10 is rotated to separate the engaging component 46 from the engaging slot 424 to release the engagement of the engaging component 46 relative to the engaging slot 424. Therefore, the board 10 can be switched from the first position to the second position, which means the board 10 is rotated from the parallel mode to the perpendicular mode.

[0019] The table 100 of the present invention utilizes the lock mechanism 40 to switch the board 10 between the parallel mode and the perpendicular mode. As the board 10 is at the parallel mode, objects, such as food and cutlery, can be put on the table 100. As the board 10 is at the perpendicular mode, the tables can be arranged tightly for decreasing storage volume, so that a decided space can accommodate more tables.

[0020] In the present invention, the board of the table is not limited to the above-mentioned square type, the other types, such as the annular type and the polygon type, are allowable to be applied to the table of the present invention. Further, number of the feet is not limited to the above-mentioned four feet, and the table with any amount of the feet is suitable for the present invention.

[0021] Those skilled in the art will readily observe that

numerous modifications and alterations of the device and method may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and bounds of the appended claims.

Claims

1. A table comprising:

a board;
a supporter disposed on the board for supporting;
a pivot shaft disposed on the supporter, the board being rotatably disposed on the supporter via the pivot shaft; and
a lock mechanism disposed between the board and the supporter, wherein the board is switched between a first position and a second position, the lock mechanism fixes the board on the supporter when the board is switched to the first position, and the lock mechanism sets the board parallel to the supporter when the board is switched to the second position.

2. The table of claim 1, wherein the lock mechanism comprises:

a connecting component disposed on the board, the connecting component comprising an engaging slot and a pushing portion, the engaging slot being parallel to the pushing portion, an opening of the engaging slot being adjacent to the pushing portion;
an engaging component movably disposed on the supporter; and
a spring contacting against the engaging component, wherein when the board is switched to the first position, the pushing portion pushes the engaging component to move into the engaging slot via the opening, and the spring contacts against the engaging slot to fix the board relative to the supporter; when the engaging component balances a resilient force of the spring to move to a position corresponding to the opening, the board is rotatable to move the engaging component away from the engaging slot via the opening, and the board is switched from the first position to the second position.

3. The table of claim 2, wherein the lock mechanism further comprises:

a frame fixed on the supporter, the frame comprising a constraint slot whereinside the engaging component is movably disposed, a movement of the engaging component being constrained by the constraint slot; and
a guide pillar disposed on the frame and passing through the engaging component, the spring being sheathed on the guide pillar, two ends of the spring respectively contacting against the frame and the engaging component.

4. The table of claim 3, wherein the connecting component is combined with the frame when the board is switched to the first position.

5. The table of claim 3, wherein the pivot shaft passes through the frame and the connecting component.

6. The table of claim 3, wherein the lock mechanism further comprises:

a pull bar connected to the engaging component, the board being rotatable when the engaging component moves to a position corresponding to the opening by pulling the pull bar.

7. The table of claim 1, wherein the lock mechanism comprises:

a frame fixed on the supporter, the frame comprising a constraint slot whereinside the engaging component is movably disposed, a movement of the engaging component being constrained by the constraint slot; and
a guide pillar disposed on the frame and passing through the engaging component, the spring being sheathed on the guide pillar, two ends of the spring respectively contacting against the frame and the engaging component.

8. The table of claim 1, further comprising:

a plurality of feet connected to the supporter.

9. The table of claim 1, wherein the board is parallel to a ground when the board is switched to the first position.

10. The table of claim 1, wherein the board is perpendicular to a ground when the board is switched to the second position.

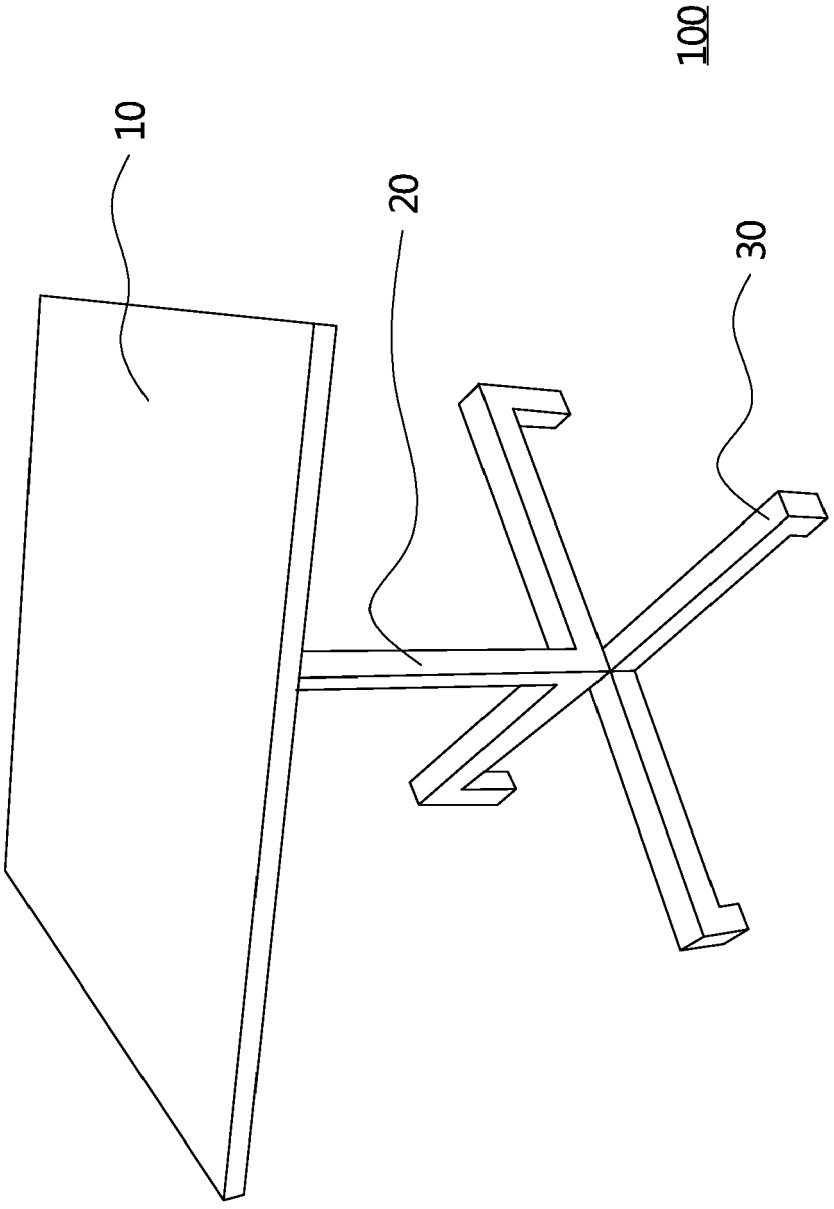

FIG.1

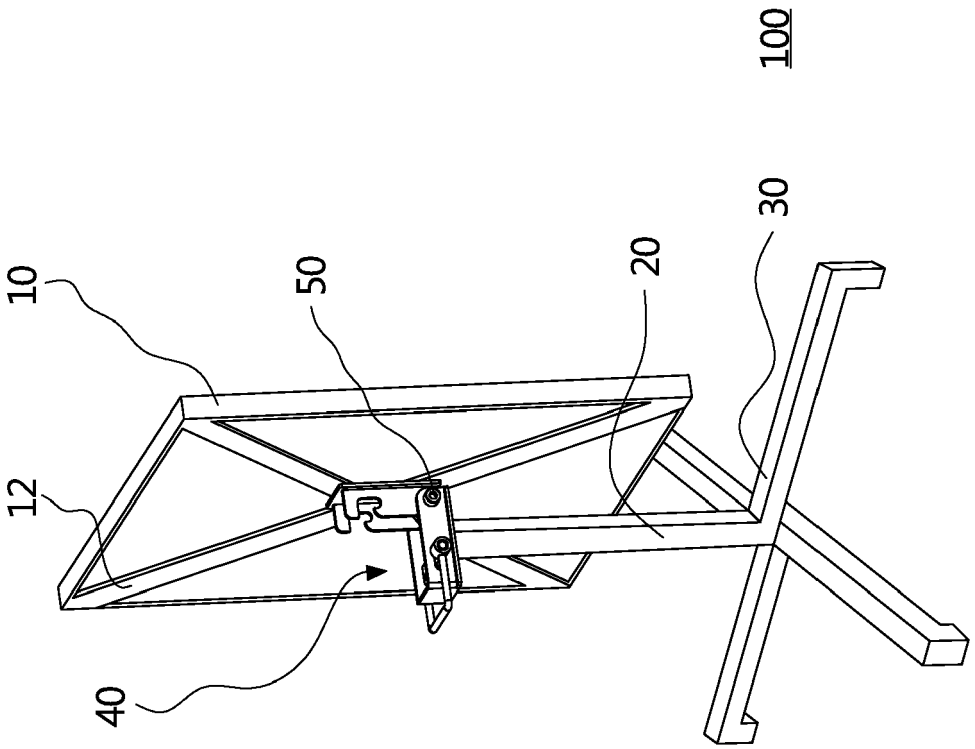

FIG.2

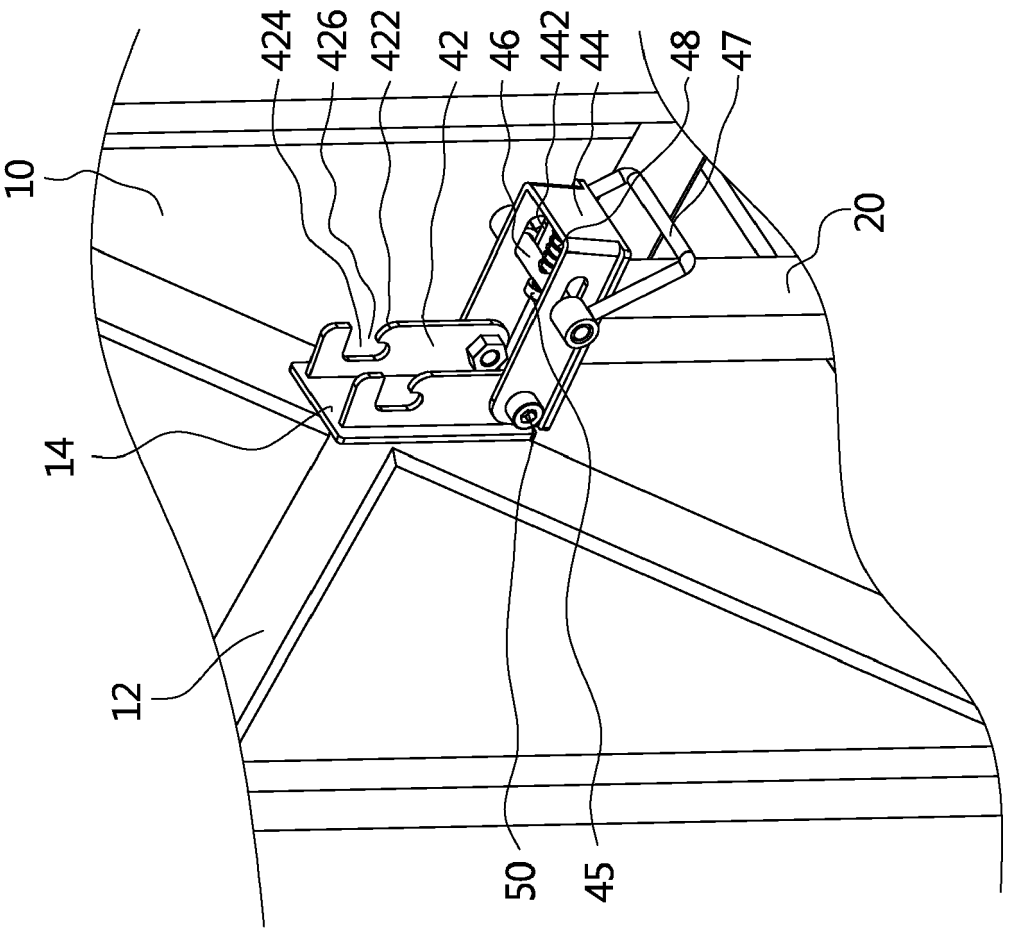

FIG.3

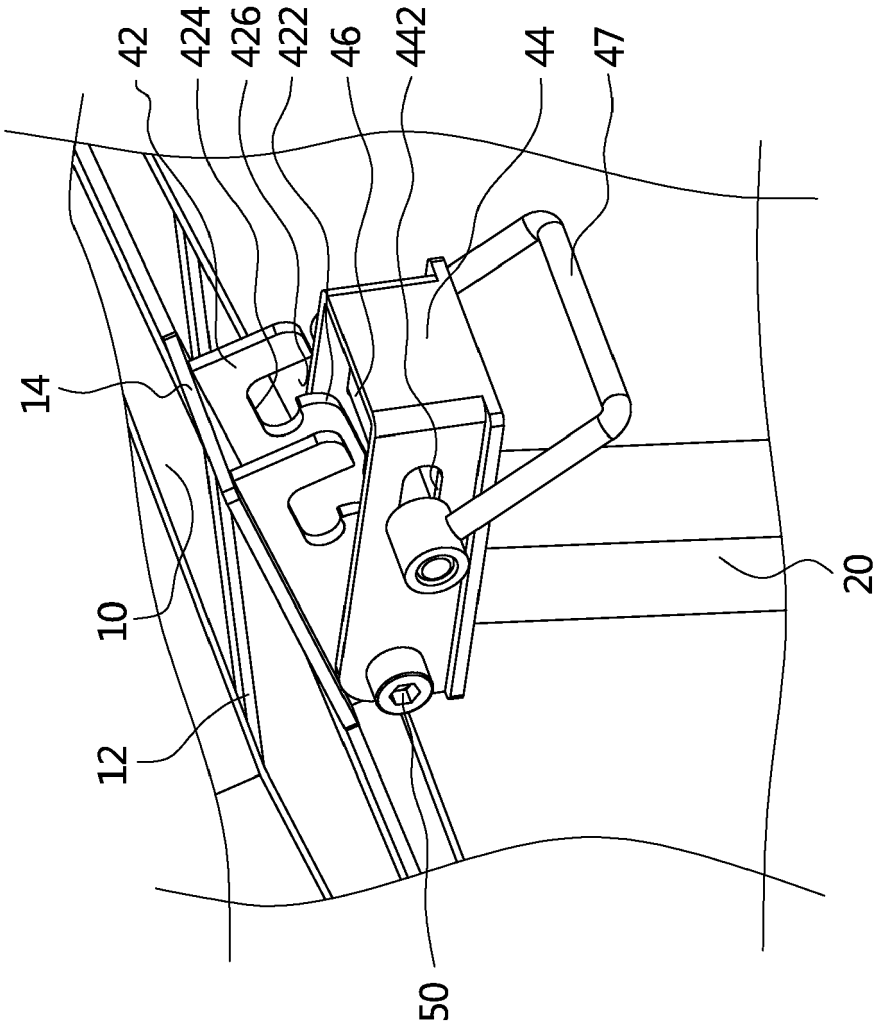

FIG.4

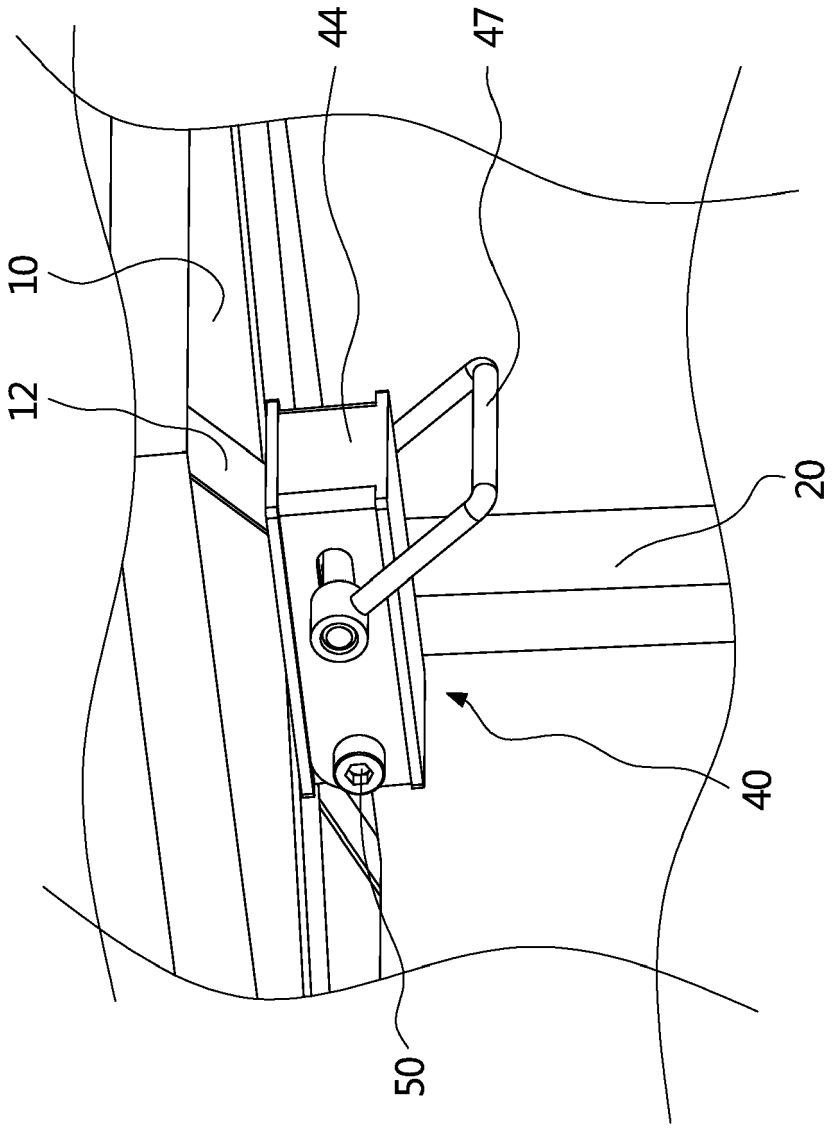

FIG.5

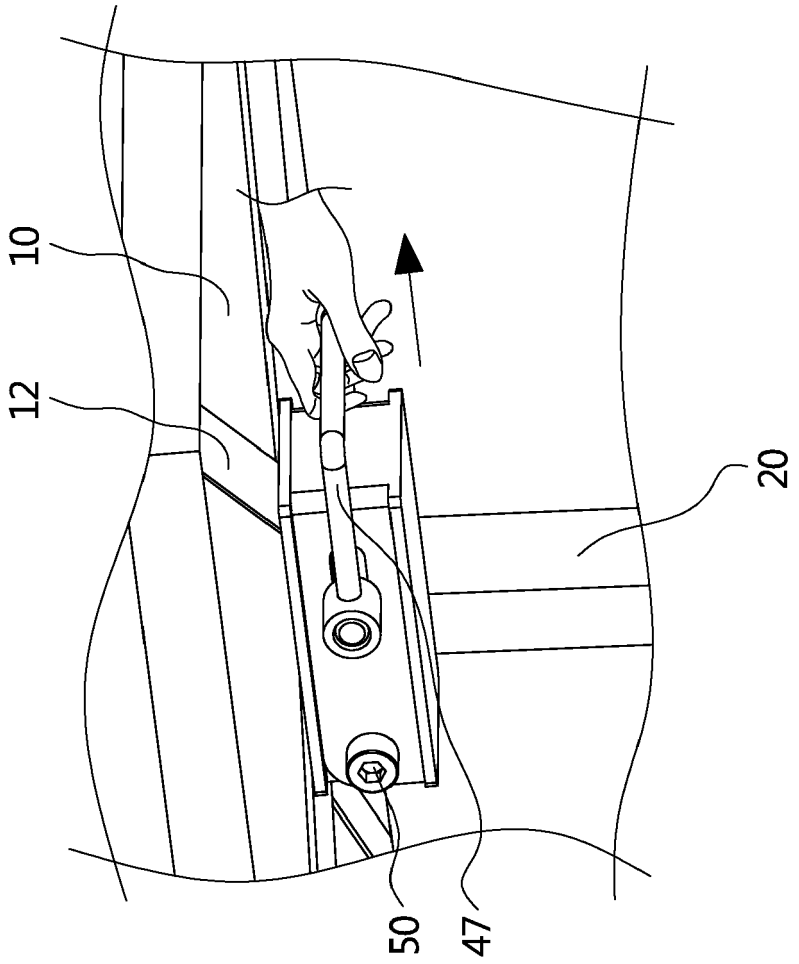

FIG.6

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EUROPEAN SEARCH REPORT

Application Number
EP 13 18 7432

DOCUMENTS CONSIDERED TO BE RELEVANT

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	12 February 2014	Linden, Stefan

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 18 7432

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12-02-2014

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