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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) Folding table

(57) A folding table includes a table top, an outer crossed leg connected to the table top, and an inner crossed leg rotatably connected to the outer crossed leg, wherein the outer crossed leg includes a first upper table leg (1), and a first lower table leg (2) connected to the first upper table leg via a first elastic pin (5); and the inner crossed leg includes a second upper table leg (3), and a second lower table leg (4) connected to the second upper table leg via a second elastic pin (6); the first elastic pin includes a protrusion located at an inner side of the outer crossed leg, the second elastic pin includes a protrusion located at an outer side of the inner crossed leg, and the protrusions of the first elastic pin and the second elastic pin are tightly pressed in the case that the outer and the inner crossed legs are overlapped.

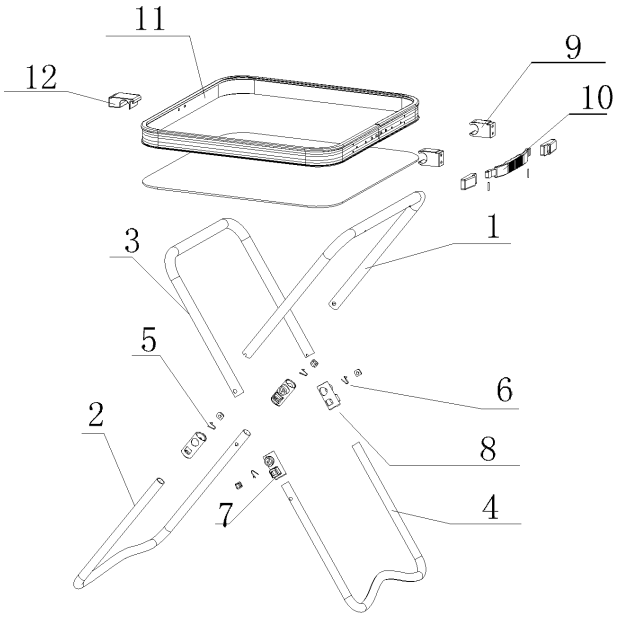

Fig. 4

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Description

FIELD OF THE INVENTION

[0001] The present application relates to the manufacturing field of folding table, and particularly to a folding table.

BACKGROUND OF THE INVENTION

[0002] Tables are common furniture in daily life. When the table is not used, the table may need to be put away for saving space, thus a folding table is provided.

[0003] A folding table in the prior art, as shown in Figs. 1 to 3, includes an inner crossed leg, and an outer crossed leg rotatably connected to the inner crossed leg. The inner crossed leg includes a first upper table leg 01, and a first lower table leg 02 capable of being retracted in the first upper table leg 01, the outer crossed leg includes a second upper table leg 03, and a second lower table leg 04 capable of being retracted in the second upper table leg 03. The retracting between the first upper table leg 01 and the first lower table leg 02 and the retracting between the second upper table leg 03 and the second lower table leg 04 both are achieved by elastic pins 05 which are provided at an inner side of the first upper table leg 01 and an outer side of the second upper table leg 03 respectively. When folding the table legs, the elastic pin 05 on the corresponding table leg has to be pressed by hand, and after the elastic pin 05 is retracted, the corresponding lower table leg is pressed into the corresponding upper leg, and the above process has to be repeated for four times to fold up the table, thus the folding process is complicated.

[0004] Therefore, a technical problem to be solved presently by those skilled in the art is to reduce the complexity of the folding process of the folding table.

SUMMARY OF THE INVENTION

[0005] In view of this, the present application provides a folding table, so as to solve the problem in the prior art that the folding process of the folding table is complicated.

[0006] In order to achieve the above object, the present application provides the following technical solutions.

[0007] A folding table includes a table top, an outer crossed leg connected to the table top, and an inner crossed leg rotatably connected to the outer crossed leg, wherein the outer crossed leg includes a first upper table leg, and a first lower table leg connected to the first upper table leg via a first elastic pin; and the inner crossed leg includes a second upper table leg, and a second lower table leg connected to the second upper table leg via a second elastic pin; the first elastic pin includes a protrusion located at an inner side of the outer crossed leg, the second elastic pin includes a protrusion located at an outer side of the inner crossed leg, and the protrusion of the first elastic pin and the protrusion of the second elastic pin are tightly pressed by the inner crossed leg and the outer crossed leg respectively in the case that the outer crossed leg and the inner crossed leg are overlapped.

[0008] Preferably, in the above folding table, a first connector is sleevedly provided on the thicker one of the first upper table leg and the first lower table leg, and a second connector rotatably connected to the first connector is sleevedly provided on the thicker one of the second upper table leg and the second lower table leg, the first connector is provided with a hole cooperated with the protrusion of the first elastic pin, and the second connector is provided with a hole cooperated with the protrusion of the second elastic pin.

[0009] Preferably, in the above folding table, the first connector is provided with a rotator, and the second connector is provided with a hole cooperated with the rotator.

[0010] Preferably, in the above folding table, both the first connector and the second connector are made of plastic material.

[0011] Preferably, in the above folding table, each of the protrusion of the first elastic pin and the protrusion of the second elastic pin is provided with a button.

[0012] Preferably, in the above folding table, the first upper table leg is connected to the table top via a table leg fastener.

[0013] Preferably, in the above folding table, a handle is provided on a side of the table top.

[0014] Preferably, in the above folding table, a tabletop board binding strip for receiving the inner crossed leg and the outer crossed leg is provided on a periphery of the table top.

[0015] Preferably, in the above folding table, a fastening member for fixing the first lower table leg and the second upper table leg is provided on the table top.

[0016] As can be seen from the above technical solutions, in the folding table according to the present application, the elastic pin which controls the retraction of the inner crossed leg is located at the outer side of the inner crossed leg, and the elastic pin which controls the retraction of the outer crossed leg is located at the inner side of the outer crossed leg. When the inner crossed leg is rotated to be on the same plane as the outer crossed leg, the protrusion on the first elastic pin is pressed by the inner crossed leg, and the protrusion on the second elastic pin is pressed by the outer crossed leg; or when the inner crossed leg and the outer crossed leg are rotated to be on the same plane, the protrusion on the first elastic pin and the protrusion on the second elastic pin are located at the same height and at the corresponding positions, and the protrusions cooperate with each other to retract the elastic pins, and then by pressing the first lower table leg and the second lower table leg, the folding table can be folded up, thus there is no need to press the elastic pins by hand, which reduces the damage to the hands caused by manually pressing. In the present solution, the protrusions of the elastic pins for controlling the retractions of the inner and outer crossed legs are respectively provided at the outer side of the inner crossed leg and

the inner side of the outer crossed leg, such that when the inner crossed leg and the outer crossed leg are located on the same plane, the elastic pins are pressed by each other to retract the table legs, thereby effectively reducing the complexity of the folding process of the folding table

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] For more clearly illustrating embodiments of the present application or the technical solutions in the prior art, drawings referred to describe the embodiments or the prior art will be briefly described hereinafter. Apparently, the drawings in the following description are only several embodiments of the present application, and for the person skilled in the art, other drawings may be obtained based on these drawings without any creative efforts.

[0018] Figure 1 is a schematic front view showing the structure of a folding table according to an embodiment of the prior art;

[0019] Figure 2 is a schematic side view showing the structure of the folding table according to the embodiment of the prior art;

[0020] Figure 3 is a partially enlarged schematic view showing the structure of an elastic pin of the folding table according to the embodiment of the prior art;

[0021] Figure 4 is an exploded schematic view of a folding table according to an embodiment of the present application;

[0022] Figure 5 is a partial schematic view showing the structure of a connector according to the embodiment of the present application;

[0023] Figure 6 is a schematic view showing the structure of the folding table with an inner crossed leg being folded up according to the embodiment of the present application;

[0024] Figure 7 is a partial schematic view showing the structure of the connector of the folding table when the inner and outer crossed legs are rotated to be on the same plane according to the embodiment of the present application;

[0025] Figure 8 is a schematic view showing the structure of the folding table with the outer crossed leg being folded up according to the embodiment of the present application;

[0026] Figure 9 is a schematic view showing the structure of the folding table being folded up according to the embodiment of the present application; and

[0027] Figure 10 is a schematic view showing the structure of a fastening member of the folding table being folded up according to the embodiment of the present application.

DETAILED DESCRIPTION OF THE INVENTION

[0028] The present application provides a folding table, so as to solve the problem in the prior art that the folding process of the folding table is complicated.

[0029] The technical solutions in the embodiments of the present application will be described clearly and completely hereinafter in conjunction with the drawings in the embodiments of the present application. Apparently, the described embodiments are only a part of the embodiments of the present application, rather than all embodiments. Based on the embodiments in the present application, all of other embodiments, made by the person skilled in the art without any creative efforts, fall into the protection scope of the present application.

[0030] Reference is made to Figs. 1 to 10, wherein Figure 1 is a schematic front view showing the structure of a folding table according to an embodiment of the prior art; Figure 2 is a schematic side view showing the structure of the folding table according to the embodiment of the prior art; Figure 3 is a partially enlarged schematic view showing the structure of an elastic pin of the folding table according to the embodiment of the prior art; Figure 4 is an exploded schematic view of a folding table according to an embodiment of the present application; Figure 5 is a partial schematic view showing the structure of a connector according to the embodiment of the present application; Figure 6 is a schematic view showing the structure of the folding table with an inner crossed leg being folded up according to the embodiment of the present application; Figure 7 is a partial schematic view showing the structure of the connector of the folding table when the inner and outer crossed legs are rotated to be on the same plane according to the embodiment of the present application; Figure 8 is a schematic view showing the structure of the folding table with the outer crossed leg being folded up according to the embodiment of the present application; Figure 9 is a schematic view showing the structure of the folding table being folded up according to the embodiment of the present application; and Figure 10 is a schematic view showing the structure of a fastening member of the folding table being folded up according to the embodiment of the present application.

[0031] A folding table includes a table top, an outer crossed leg connected to the table top, and an inner crossed leg rotatably connected to the outer crossed leg. The outer crossed leg includes a first upper table leg 1, and a first lower table leg 2 connected to the first upper table leg 1 via a first elastic pin 5. The inner crossed leg includes a second upper table leg 3, and a second lower table leg 4 connected to the second upper table leg 3 via a second elastic pin 6. The first elastic pin 5 includes a protrusion located at an inner side of the outer crossed leg, the second elastic pin 6 includes a protrusion located at an outer side of the inner crossed leg, and the protrusion of the first elastic pin 5 and the protrusion of the second elastic pin 6 are tightly pressed respectively by the inner crossed leg and the outer crossed leg when the outer crossed leg and the inner crossed leg are overlapped.

[0032] In the folding table provided by the present solution, the protrusion of the first elastic pin 5 is arranged

at the inner side of the outer crossed leg, the protrusion of the second elastic pin 6 is arranged at the outer side of the inner crossed leg, and when the inner crossed leg is rotated to be on the same plane as the outer crossed leg, the protrusion on the first elastic pin 5 is pressed by the inner crossed leg or the protrusion on the second elastic pin 6, and the protrusion on the second elastic pin 6 is pressed by the outer crossed leg or the protrusion on the first elastic pin 5. And after the protrusions on the first elastic pin 5 and the second elastic pin 6 are pressed, the inner and outer crossed legs may be retracted. Thus, in the present solution, the folding table can be retracted without pressing the elastic pin by hand, thereby reducing the injury to hands during folding the folding table; furthermore, the elastic pins are pressed by the inner and outer crossed legs respectively to realize the folding process, such that the retracting process is simple and convenient. Preferably, when the inner crossed leg and the outer crossed leg are rotated to be on the same plane, the protrusion of the first elastic pin 5 and the protrusion of the second elastic pin 6 cooperate with each other to press the first elastic pin 5 and the second elastic pin 6, so as to fold the folding table.

[0033] For further optimizing the above technical solutions, in an embodiment of the present application, the thicker one of the first upper table leg 1 and the first lower table leg 2 is sleevedly provided with a first connector 7, and the thicker one of the second upper table leg 3 and the second lower table leg 4 is sleevedly provided with a second connector 8 rotatably connected to the first connector 7. Further, the first connector 7 is provided with a hole cooperated with the protrusion of the first elastic pin 5, and the second connector 8 is provided with a hole cooperated with the protrusion of the second elastic pin 6.

[0034] In a first solution, in the case that the first upper table leg 1 is thicker than the first lower table leg 2, the first connector 7 is mounted on the first upper table leg 1, such that the first lower table leg 2 is retracted into the first upper leg 1 when the outer crossed leg is folded up; and in the case that the second upper table leg 3 is thicker than the second lower table leg 4, the second connector 8 is mounted on the second upper table leg 3, such that the second lower table leg 4 is retracted into the second upper table leg 3 when the inner crossed leg is folded up.

[0035] In a second solution, in the case that the first upper table leg 1 is thinner than the first lower table leg 2, the first connector 7 is mounted on the first lower table leg 2, such that the first upper table leg 1 is retracted into the first lower table leg 2 when the outer crossed leg is folded up; and in the case that the second upper table leg 3 is thinner than the second lower table leg 4, the second connector 8 is mounted on the second lower table leg 4, such that the second upper table leg 3 is retracted into the second lower table leg 4 when the inner crossed leg is folded up.

[0036] Of course there may be other implementations which will not be illustrated herein.

[0037] In the present solution, the rotation between the inner crossed leg and the outer crossed leg is realized by the first connector 7 and the second connector 8, and a hole corresponding to the protrusion of the elastic pin is provided on each of the first connector 7 and the second connector 8, such that when the inner crossed leg and the outer crossed leg are rotated to be on the same plane, the first connector 7 may press the protrusion of the second elastic pin 6, and the second connector 8 may press the protrusion of the first elastic pin 5, so as to retract the elastic pins and fold up the folding table. Preferably, when the inner crossed leg and the outer crossed leg are rotated to be on the same plane, the protrusion of the first elastic pin 5 and the protrusion of the second elastic pin 6 are located at the same height and the same position, and the two protrusions cooperate with each other to retract the elastic pins and fold up the folding table. In the present solution, the first connector 7 and the second connector 8 are provided, which reduces the damage to the inner and outer crossed legs during the rotating process, and further when parts are damaged, it only needs to replace the connector, which reduces the replacement cost and the labor intensity for replacing device.

[0038] For further optimizing the above technical solutions, in an embodiment of the present application, a rotator is provided on the first connector 7, and a hole cooperated with the rotator is provided on the second connector 8. The rotator on the first connector 7 cooperates with the hole on the second connector 8 so as to realize the connection and rotation between the inner crossed leg and the outer crossed leg. Due to the above connection manner, the rotation between the inner crossed leg and the outer crossed leg is smooth, which facilitates the using of the folding table. Of course, the first connector 7 may also be provided on the inner crossed leg, and the second connector 8 may be provided on the outer crossed leg. The present solution may also be implemented by many other installation ways, which are not limited to the present solution.

[0039] To further optimize the above technical solutions, in an embodiment of the present application, both of the first connector 7 and the second connector 8 are made of plastic material. The plastic material is a common material, and the production of the plastic part is relatively easy and has a low cost, and the plastic part has a certain strength. Of course, the connector may also be made of other materials which are not limited to the present solution.

[0040] To further optimize the above technical solutions, in an embodiment of the present application, each of the protrusion of the first elastic pin 5 and the protrusion of the second elastic pin 6 is provided with a button. When the inner crossed leg and the outer crossed leg are rotated to be on the same plane, each button provided on the protrusion of the first elastic pin 5 and the protrusion on the second elastic pin 6 may be respectively pressed by the corresponding table leg, and the protrusions are pressed by the buttons so as to retract the elastic pins and fold up the folding table. Due to the provided buttons,

the contact area is increased which ensures the reliability of the retracting of the table legs.

[0041] To further optimize the above technical solutions, in an embodiment of the present application, the first upper table leg 1 is connected to the table top via a table leg fastener 9. Of course, the first upper table leg 1 may also be connected to the table top by other methods which are not limited to the present solution.

[0042] To further optimize the above technical solutions, in an embodiment of the present application, a handle 10 is provided on a side of the table top to facilitate carrying the table.

[0043] To further optimize the above technical solution, in an embodiment of the present application, a tabletop board binding strip 11 for receiving the inner and outer crossed legs is provided on the periphery of the table top. When the folding table is folded up, by rotating the table legs to an angle parallel to the table top, the table legs are received in an area surrounded by the tabletop board binding strip 11, thereby avoiding the damage to the table legs during the transporting process.

[0044] To further optimize the above technical solutions, in an embodiment of the present application, a fastening member 12 for fixing the first lower table leg 2 and the second upper table leg 3 is provided on the table top. When using the folding table, the second upper table leg is stuck in the fastening member 12 to realize the standing of the table; and when the table legs are folded up, the first lower table leg is stuck in the fastening member 12 to prevent the table legs from rotating out of the tabletop board binding strip during the transportation process, thereby avoiding the damage to the table legs. Of course, the present solution may also adopt other devices capable of realizing the above function, which are not limited to the present solution.

[0045] Based on the above description of the disclosed embodiments, the person skilled in the art is capable of carrying out or using the present application. It is obvious for the person skilled in the art to make many modifications to these embodiments. The general principle defined herein may be applied to other embodiments without departing from the spirit or scope of the present application. Therefore, the present application is not limited to the embodiments illustrated herein, but should be defined by the broadest scope consistent with the principle and novel features disclosed herein.

Claims

1. A folding table, comprising a table top, an outer crossed leg connected to the table top, and an inner crossed leg rotatably connected to the outer crossed leg, wherein the outer crossed leg comprises a first upper table leg (1), and a first lower table leg (2) connected to the first upper table leg (1) via a first elastic pin (5); and the inner crossed leg comprises a second upper table leg (3), and a second lower table leg (4) connected to the second upper table leg (3) via a second elastic pin (6), **characterized in that**, the first elastic pin (5) comprises a protrusion located at an inner side of the outer crossed leg, the second elastic pin (6) comprises a protrusion located at an outer side of the inner crossed leg, and the protrusion of the first elastic pin (5) and the protrusion of the second elastic pin (6) are tightly pressed by the inner crossed leg and the outer crossed leg respectively in the case that the outer crossed leg and the inner crossed leg are overlapped.

2. The folding table according to claim 1, wherein a first connector (7) is sleevedly provided on the thicker one of the first upper table leg (1) and the first lower table leg (2), and a second connector (8) rotatably connected to the first connector (7) is sleevedly provided on the thicker one of the second upper table leg (3) and the second lower table leg (4), the first connector (7) is provided with a hole cooperated with the protrusion of the first elastic pin (5), and the second connector (8) is provided with a hole cooperated with the protrusion of the second elastic pin (6).

3. The folding table according to claim 2, wherein the first connector (7) is provided with a rotator, and the second connector (8) is provided with a hole cooperated with the rotator.

4. The folding table according to claim 2, wherein both the first connector (7) and the second connector (8) are made of plastic material.

5. The folding table according to claim 1, wherein each of the protrusion of the first elastic pin (5) and the protrusion of the second elastic pin (6) is provided with a button.

6. The folding table according to claim 1, wherein the first upper table leg (1) is connected to the table top via a table leg fastener (9).

7. The folding table according to claim 1, wherein a handle (10) is provided on a side of the table top.

8. The folding table according to claim 1, wherein a tabletop board binding strip (11) for receiving the inner crossed leg and the outer crossed leg is provided on a periphery of the table top.

9. The folding table according to claim 1, wherein a fastening member (12) for fixing the first lower table leg (2) and the second upper table leg (3) is provided on the table top.

Amended claims in accordance with Rule 137(2) EPC.

1. A folding table, comprising a table top, a retractable outer crossed leg connected to the table top, and a retractable inner crossed leg rotatably connected to the outer crossed leg, wherein the retractable outer crossed leg comprises a first upper table leg (1) and a first lower table leg (2) which are retractably connected via a first elastic pin (5); and the retractable inner crossed leg comprises a second upper table leg (3) and a second lower table leg (4) which are retractably connected via a second elastic pin (6), **characterized in that**, the first elastic pin (5) comprises a protrusion located at an inner side of the retractable outer crossed leg, the second elastic pin (6) comprises a protrusion located at an outer side of the retractable inner crossed leg; and
a first connector (7) is sleevedly provided on the thicker one of the first upper table leg (1) and the first lower table leg (2), and a second connector (8) rotatably connected to the first connector (7) is sleevedly provided on the thicker one of the second upper table leg (3) and the second lower table leg (4), the first connector (7) is provided with a hole cooperated with the protrusion of the first elastic pin (5), and the second connector (8) is provided with a hole cooperated with the protrusion of the second elastic pin (6); and
in the case that the retractable outer crossed leg and the retractable inner crossed leg are rotated to be overlapped, the first connector (7) and the second connector (8), respectively, press the protrusion of the second elastic pin (6) and the protrusion of the first elastic pin (5) to retract the first elastic pin (5) and the second elastic pin (6), so as to retract the retractable outer crossed leg and the retractable inner crossed leg and fold up the folding table.

2. The folding table according to claim 1, wherein the first connector (7) is provided with a rotator, and the second connector (8) is provided with a hole cooperated with the rotator.

3. The folding table according to claim 1, wherein both the first connector (7) and the second connector (8) are made of plastic material.

4. The folding table according to claim 1, wherein each of the protrusion of the first elastic pin (5) and the protrusion of the second elastic pin (6) is provided with a button.

5. The folding table according to claim 1, wherein the first upper table leg (1) is connected to the table top via a table leg fastener (9).

6. The folding table according to claim 1, wherein a handle (10) is provided on a side of the table top.

7. The folding table according to claim 1, wherein a tabletop board binding strip (11) for receiving the inner crossed leg and the outer crossed leg is provided on a periphery of the table top.

8. The folding table according to claim 1, wherein a fastening member (12) for fixing the first lower table leg (2) and the second upper table leg (3) is provided on the table top.

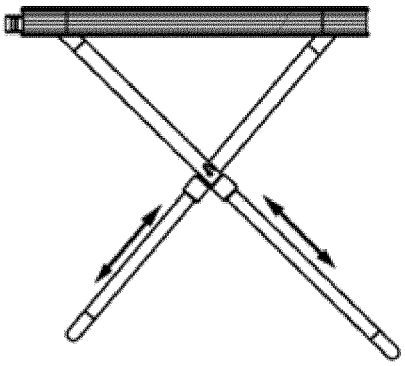

Fig. 1

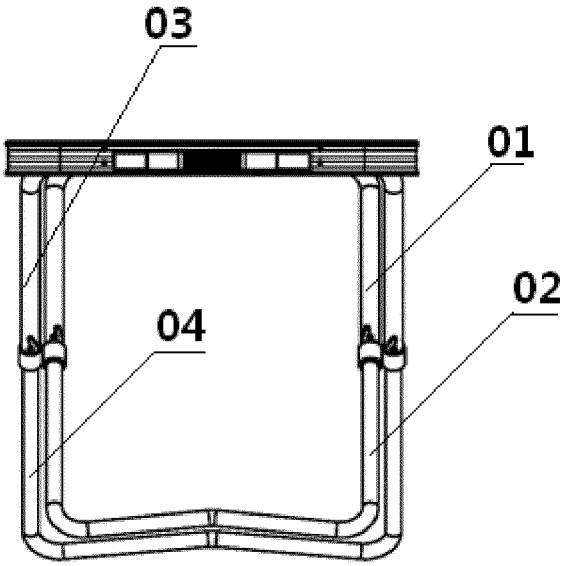

Fig. 2

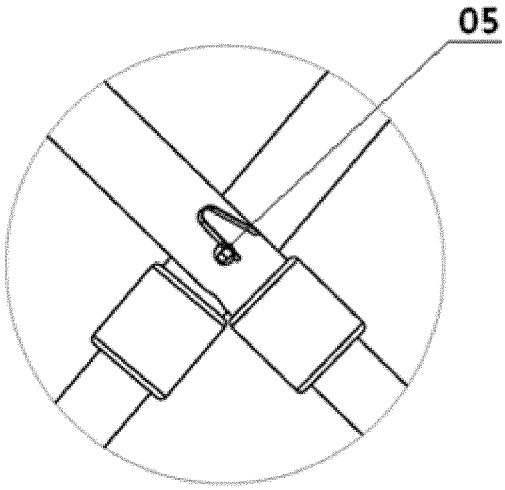

Fig. 3

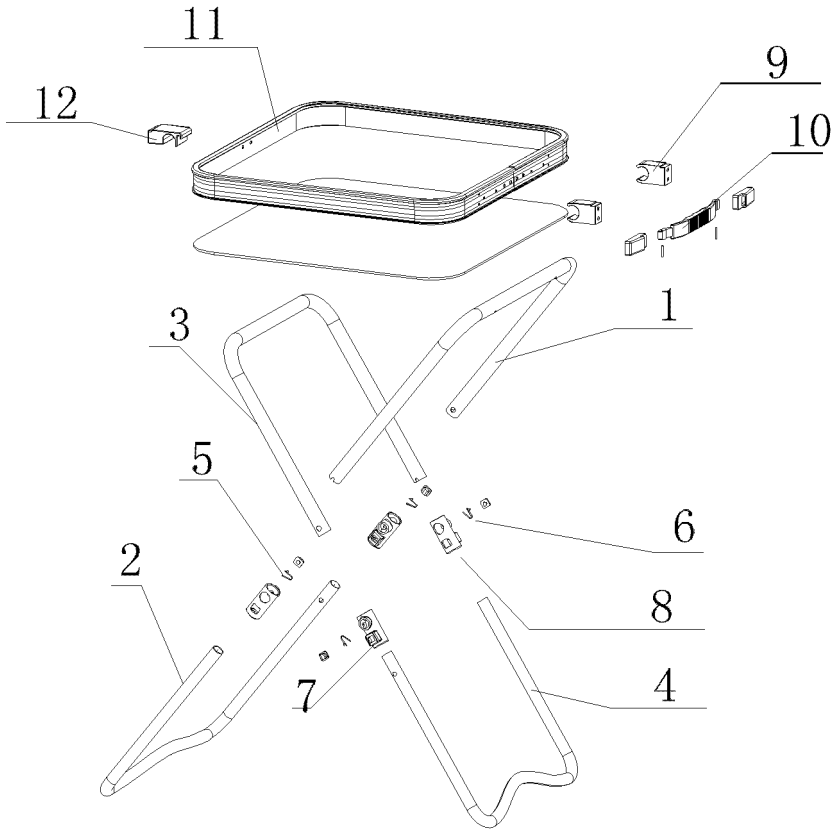

Fig. 4

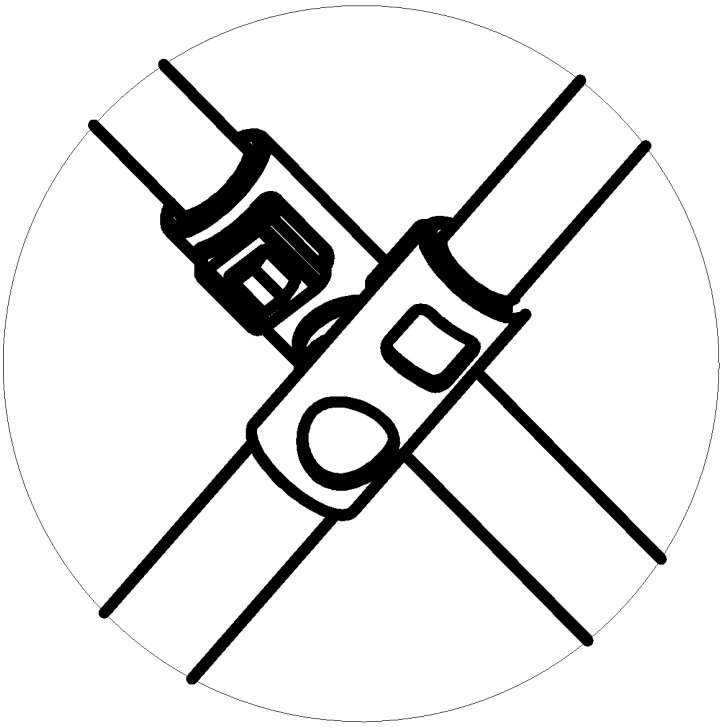

Fig. 5

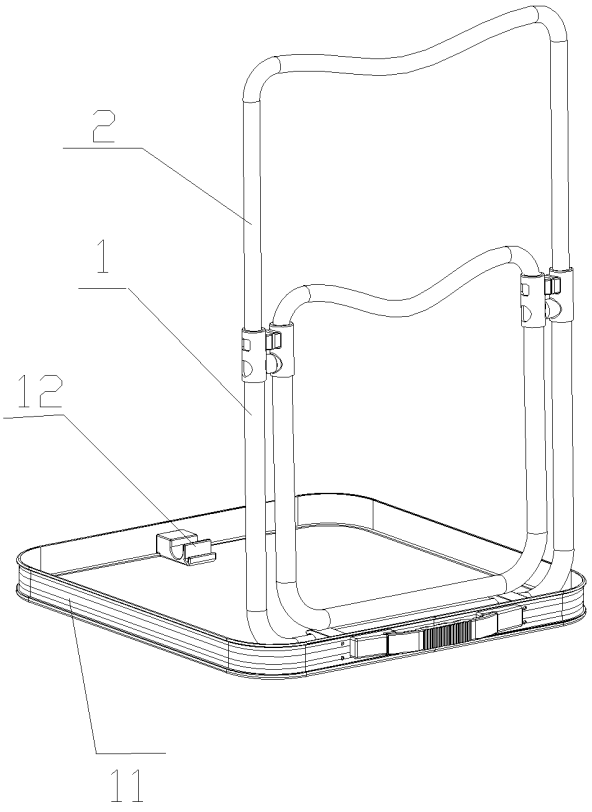

Fig. 6

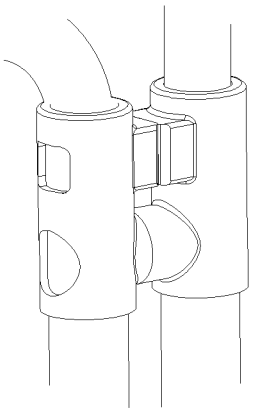

Fig. 7

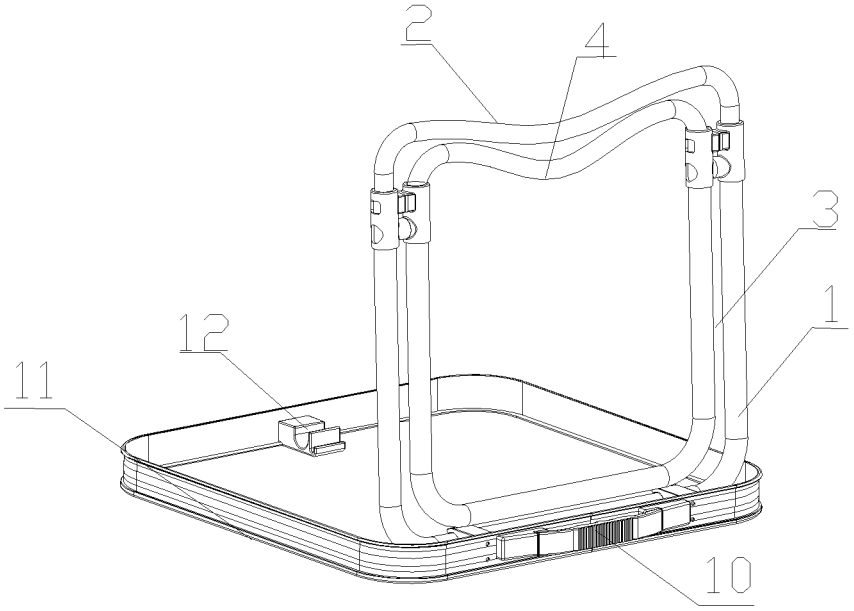

Fig. 8

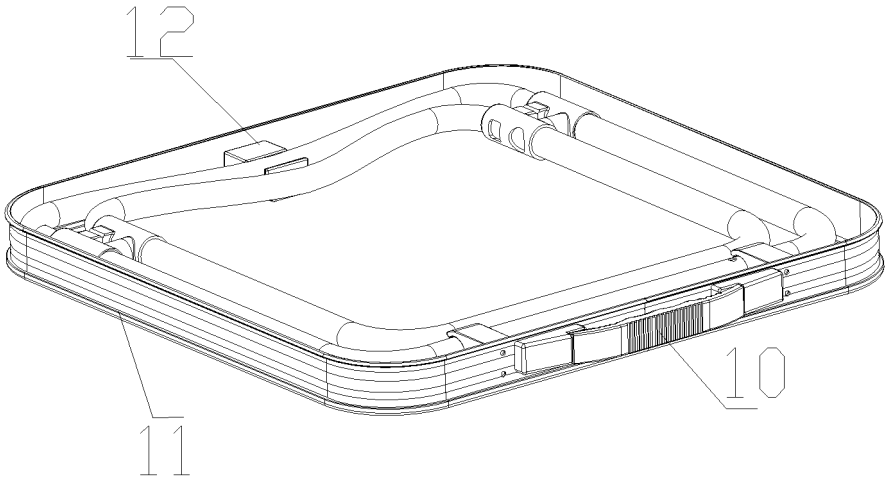

Fig. 9

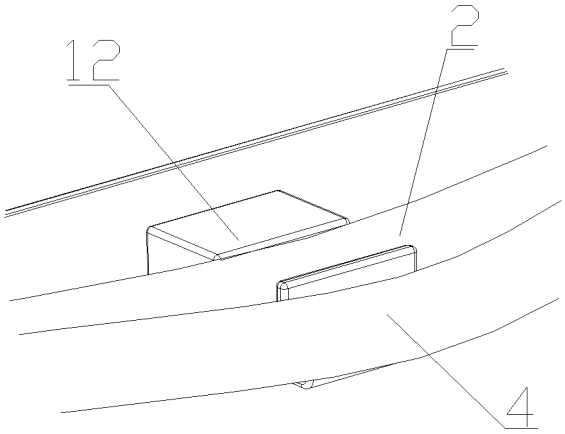

Fig. 10

Europäisches Patentamt
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EUROPEAN SEARCH REPORT

Application Number
EP 13 16 5520

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 8 286 926 B1 (VAN DYNE TRACE EUGENE [US]) 16 October 2012 (2012-10-16) * column 7, line 66 - column 24, line 56; figures 1-16 *	1-9	INV. A47B3/02
Y	FR 2 967 710 A1 (NICOLAS HUBERT [FR]; NICOLAS CHARLES LOUIS [FR]) 25 May 2012 (2012-05-25) * page 2, line 46 - page 3, line 88; figures 1-21 *	1-9	
A	GB 602 511 A (ANDREW MUIR) 27 May 1948 (1948-05-27) * the whole document *	1-9	
A	US 3 168 061 A (BEDOL MARSHALL T) 2 February 1965 (1965-02-02) * the whole document *	1-9	
A	US 2005/126451 A1 (WINTER DAVID C [US] ET AL) 16 June 2005 (2005-06-16) * paragraph [0056] - paragraph [0111]; figures 1-28 *	1-9	TECHNICAL FIELDS SEARCHED (IPC) A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	13 June 2013	Klintebäck, Daniel

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 16 5520

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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