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(71) Applicant: **Brunner S.r.l.**
39100 Bolzano (IT)

(72) Inventor: **Brunner, Roland**
39100 Bolzano (IT)

(74) Representative: **Ciceri, Fabio et al**
Perani & Partners
Piazza San Babila, 5
20122 Milano (IT)

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(54) **Folding camping table**

(57) The present invention concerns a folding camp table (1) comprising a table top (2) having a first side (2A) and a second side (2B) at the larger opposed surfaces, a frame (3) having two support elements (4,5) for supporting said table top (2), two sets of crossed legs (6,7) for supporting said two support elements (4,5), each set

of crossed legs (6,7) being composed of two legs (6A, 6B, 7A, 7B), first pivoting means (9) adapted to change said table (1) from a first configuration to a second configuration, said first pivoting means (9) being located near the crossing portion of said two legs (6A, 6B, 7A, 7B) of each set of legs (6,7).

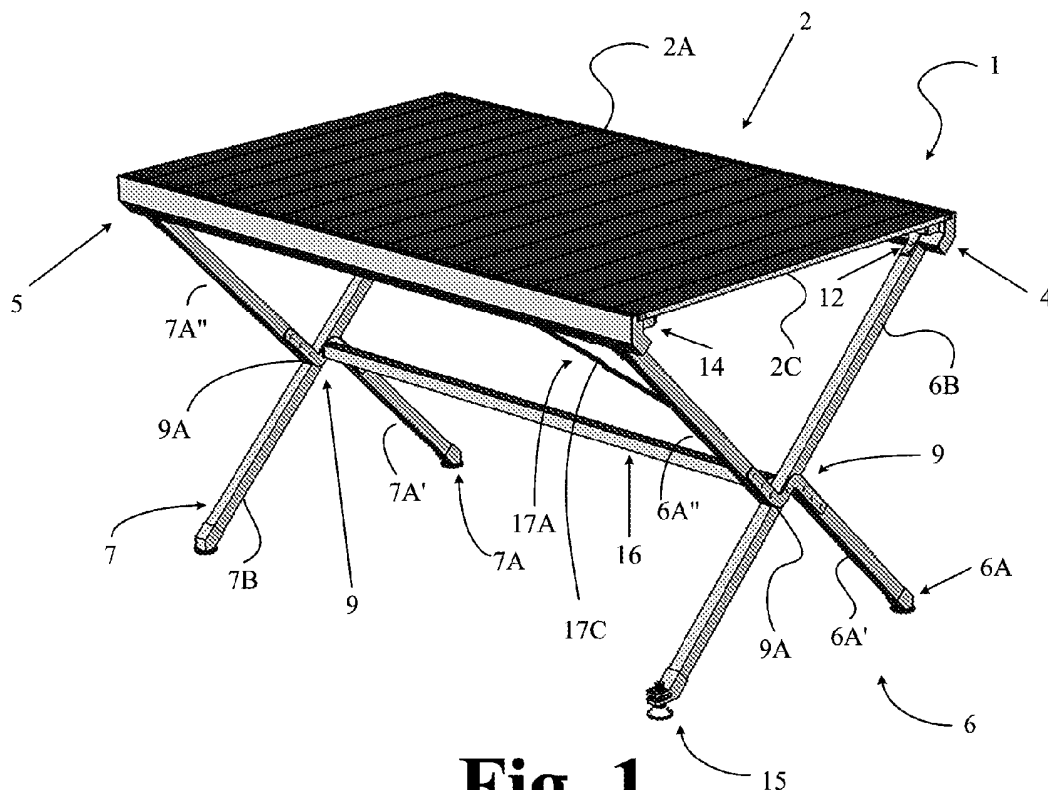


Fig. 1

Description

[0001] The present invention relates to a folding table, particularly but without limitation a camp table as defined in the preamble of claim 1.

[0002] Camp tables are known which have a table top and a frame with two pairs of X-shaped (crossed) legs adapted to support the table top.

[0003] Particularly, these tables are adapted to be folded, which means that they can be changed from an operating configuration to a rest configuration. For this purpose, such tables have pivoting means, at the crossing point of each pair of legs, that can allow the pairs of legs to be folded for size reduction and easier transportation and storage of the table when the latter is not being used. While these tables have undoubted advantages, such as light weight, compact size, etc., they still suffer from certain drawbacks, especially the one concerning stability during use.

[0004] In the light of the above prior art, the object of the present invention is to provide a folding table that can solve the above mentioned prior art drawback.

[0005] According to the present invention, this object is fulfilled by a folding table as defined in claim 1.

[0006] The present invention provides a folding table that can be used for outdoor activities, such as camping and picnicking but also for indoor activities.

[0007] The characteristics and advantages of the invention will appear from the following detailed description of one practical embodiment, which is illustrated without limitation in the annexed drawings, in which:

- Figure 1 shows a perspective view of the table of the present invention;
- Figure 2 shows a partial side view of a portion of the table of Figure 1;
- Figure 3 shows a lateral section of a portion of a support element for supporting the table of Figure 1;
- Figures 4 to 8 show the steps required for changing the table of Figure 1 from the first (operating) configuration to a third (minimum size) configuration (Figure 8) through a second (rest) configuration (Figure 7).

[0008] Referring to the accompanying figures, numeral 1 generally designates a folding table when it is in a first configuration, i.e. in a configuration that is typically suitable for proper operation thereof. Preferably, this table 1 is adapted for use in outdoor activities, such as camping, but it can be also used for indoor activities.

[0009] The table 1 comprises a table top 2 having a first side 2A and a second side 2B at the larger opposed surfaces. The first 2A and second 2B sides of the table top 2 are joined by a shoulder 2C.

[0010] The table top 2 preferably consists of a substantially rectangular surface, where the linear extension of the shoulder 2C is considerably smaller than the linear

extension of the first side 2A or the second side 2B.

[0011] For instance, the first side 2A is the side designed as an object supporting shelf.

[0012] The table 1 comprises a frame 3 having:

- two support elements 4, 5 for supporting the table top 2 and
- two sets of crossed legs 6, 7 for supporting said two support elements 4, 5 at a preset height from the floor surface, when the table is in its first configuration, i.e. the operating configuration (Figure 1).

[0013] The support elements 4, 5 are preferably arranged along one edge of the first side 2A or the second side 2B and preferably, if the table top 2 consists of a rectangular surface, along the edge with the larger linear dimension. Therefore, such support elements 4, 5 at least partially delimit the perimeter of the top plane 2.

[0014] Particularly, each set of crossed legs 6, 7 comprises two legs 6A, 6B and 7A, 7B respectively, preferably made of aluminum.

[0015] In one preferred embodiment, the crossing portion of the two legs 6A, 6B and/or 7A, 7B of each set of crossed legs 6, 7 comprises first pivoting means 9 which are adapted to change the table 1 from the first operating configuration (Figure 1) to a second rest configuration (Figure 7).

[0016] It will be immediately noted, as explained in greater detail with reference to Figures 4 to 8, that removal of the table top 2 is required to change from the first operating configuration, as shown in Figure 1, to the second rest configuration, as shown in Figure 7.

[0017] For instance, one of the two legs (the one referenced 6B or 7B) is formed of one piece, whereas the other leg (the one referenced 6A or 7A) is made up of two portions, which are joined together by the first pivoting means 9. Thus, for each leg 6A or 7A made up of two portions 6A', 6A" or 7A', 7A", the pivoting means 9 comprise:

- a pair of connecting rods 9A, 9B and corresponding joining means 9C for connecting together the two parts of the leg 6A or 7,
- a pivot pin 9D for allowing rotation of said leg 6A or 7A relative to the leg 6B or 7B respectively.

[0018] The pair of connecting rods 9A, 9B has a S shape, since the axes along which the two portions 6A', 6A" of the leg 6A (or the portions 7A', 7A" of the leg 7A) extend are parallel but not coincident.

[0019] Advantageously, also referring to Figure 3, each support element 4, 5 comprises:

- a first portion 4A, 5A that extends in a direction of extension Y-Y substantially perpendicular to the opposed larger surfaces of the first or second side 2A, 2B of the table top 2 and
- a second portion 4B, 5B that extends in a direction

of extension Z-Z which is inclined at an angle of inclination α to the direction of extension Y-Y of the first portion 4A, 5A.

[0020] According to a preferred embodiment, the angle of inclination α is an obtuse angle falling within a range from 130° to 140°, and is preferably 135°.

[0021] Particularly, the first portion 4A, 5A ends with a first side 10 which is adapted to support the table top 2, i.e. the side opposed to the one designed to support the objects required for camping, e.g. the side 2B.

[0022] It shall be noted that, also referring to Figure 2, the second portion 4B, 5B ends with a second side 11, which is adapted to abut against a leading end 6', 7' of each set of crossed legs 6, 7 when said table 1 is in the first configuration or operating configuration (Figure 1).

[0023] Preferably, the second side 11 extends in a direction of extension X-X substantially normal to the direction of extension Z-Z of the second portion 4B, 5B.

[0024] In a preferred embodiment, the second side 11 has a flat surface.

[0025] Preferably, the second portion 4B, 5B extends or projects from the first portion 4A, 5A.

[0026] In other words, the leading end 6', 7' of each leg 6A, 6B and 7A, 7B abuts against the second side 11 to create a form fit, as the leading end 6', 7' also ends by a flat surface.

[0027] If the second portion 4B, 5B is inclined at an angle α of 135°, then the side 11 is inclined at an angle β of 45°. This ensures that the release of forces causes no torque between the ends 6', 7' of the legs 6A, 6B and 7A, 7B and the support elements 4, 5 when the table 1 is loaded. Furthermore, also preferably, the first portion 4A, 5A and the second portion 4B, 5B of each support element 6, 7 are formed of one piece.

[0028] In other words, the support element consists of a hollow tubular member, preferably formed by extrusion of aluminum.

[0029] The table 1 may comprise second pivoting means 12 for changing the table from the second configuration (Figure 7) to a third configuration (Figure 8) in which the legs 6A, 6B and 7A, 7B of each set of crossed legs 6, 7 extend substantially parallel to the larger opposed surfaces of the first 2A and second 2B sides of the table top 2. Particularly, the second pivoting means 12 include a pair of L-shaped connecting rods 12A, 12b and a pivot pin 12C for each leg 6A, 6B, 7A and/or 7B of said set of crossed legs 6, 7.

[0030] Preferably, for each leg 6A, 6B, 7A and/or 7B the long side of the L shape is coupled by said pivot pin 12C to the second portion 4B, 5B of the support element to pivot about the axis of said pin 12C and the short side of the L shape is coupled by retaining means 12D to the corresponding leg.

[0031] It shall be noted that the short side of the L shape is located proximate to the leading end 6', 7' of each leg 6A, 7A, 6B and/or 7B.

[0032] The retaining means 12D consist of bolts or riv-

ets or similar elements.

[0033] Still referring to Figure 3, it shall be noted that the first side 11 of the first portion comprises a seat 13 which is configured to support the table top 2.

[0034] In the embodiment as shown in Figure 2, the seat 13 comprises:

- a bottom 13A, e.g. having a flat surface and
- a shoulder 13B, preferably orthogonal to such bottom 13A, for firm support of the side 2B of the top 2 (if the side 2A of the table top 2 is the one designed to support the objects).

[0035] In order to secure the table top 2 to the seat 13 connection/disconnection means 14 (Figure 2) are provided, which can hold the table top 2 when the table 1 is being used, and can allow removal of the table top 2 when the table 1 changes to the second or rest configuration (Figure 7).

[0036] For this purpose, the connection/disconnection means 14 consist, for instance, of a pin that engages at one end the support element 4, 5 (preferably the first portion 4A, 5A of the support element) and at the other end the table top 2 (preferably the shoulder 2C of the table top).

[0037] The pin of the connection/disconnection means 14 is designed to be controlled, for instance, by a button 14B pressed by the user; such button 14B is operably connected to the pin through an elastic member, such as a spring (not shown).

[0038] In other words, when the elastic member exerts its action on the pin, the connection/disconnection means 14 hold the table top 2 in the seat 13 whereas, as the user presses the button 14B, the elastic load of the elastic elements is overcome, the table top 2 is released from any restraint and may be removed from the seat.

[0039] In a preferred embodiment, the table top 2 consists of a shutter that is preferably of the folding type (Figure 6).

[0040] Particularly, the pin of the connection/disconnection means 14 preferably acts upon a shutter element that is the one at one leading end of the shutter.

[0041] It shall be noted that the shutter comprises a plurality of independent elements, preferably having identical shapes and sizes, and joined together by a fine cord that ensures retention thereof.

[0042] It shall be noted that in the first operating configuration of the table 1, the plurality of elements that form the shutter are formed in such a manner as to leave no gap between elements, and create a perfectly smooth table top 2.

[0043] Preferably, the shutter is made of aluminum.

[0044] A table 1 may comprise a height adjustment device 15 located at least at one trailing end of a leg 6A, 6B, 7A, 7B, said trailing end being opposite to the leading end 6', 7'.

[0045] Such height adjustment device 15 allows compensation for any flatness imperfection in the floor sur-

face, to prevent any undesirable leaning of the table 1 when the latter is in the first configuration (Figure 1) and is under dynamic load.

[0046] The table 1 may include a cross member 16 extending between the two crossing areas of the pairs of legs 6, 7. Such cross member 16 imparts better stability to the table 1.

[0047] The table 1 may comprise a pair of articulated elements 17A, 17B, each extending between the leading end 6', 7' of each leg 6A, 6B, 7A, 7B and the first portion 4A, 5A of the support element 4 or 5 respectively.

[0048] Preferably, the pair of articulated elements 17A, 17B are located at the apices of a diagonal of the table top 2. Each articulated element 17A, 17B comprises a pivot pin 17C.

[0049] Such articulated elements 17A, 17B assist the change from the second configuration to the third configuration of the table 1 and increase the stability of the table, when the latter is in the first configuration.

[0050] Referring now to Figures 4 to 8, it shall be noted that the change of the table 1 from the first configuration to the second configuration requires first removal of the table top 2 and then removal of the cross member 16.

[0051] For this purpose, the connection/disconnection means 14 shall be operated to release the pin from engagement with the support element 4, 5, and lift the cross member 16 in a removal direction substantially perpendicular to the floor surface.

[0052] Once the table top 2 has been released from the frame 3, the elements of the table top 2 may be packed together; therefore, the shutter will be folded as shown in Figure 5.

[0053] Then, the table top 2 so folded may be removed and placed outside the frame 3, e.g. on the floor surface (Figure 6).

[0054] Now, as the two support elements 4, 5 are moved towards each other, the leg 6A or 7A will pivot about the axis of the pivot pin 9D relative to the leg 6B or 7B respectively (Figure 7), to reach the second configuration of the table 1.

[0055] Finally, as each pair of legs 6, 7 is further moved towards the support elements 4, 5, it will rotate about the axis of the pivot pin 12C to reach the third configuration in which said pairs of legs 6, 7 extend substantially parallel to the first and/or the second side 2A, 2B.

[0056] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to the arrangements as described hereinbefore to meet specific needs, without departure from the scope of the invention, as defined in the following claims.

Claims

1. A folding camp table (1) comprising:

- a table top (2) having a first side (2A) and a second side (2B) at the larger opposed surfaces,

- a frame (3) having:

- two support elements (4,5) for supporting said table top (2)
- two sets of crossed legs (6, 7) for supporting said two support elements (4, 5) at a preset height, when said table (1) is in a first configuration, each set of crossed legs (6, 7) being composed of two legs (6A, 6B, 7A, 7B),
- first pivoting means (9) adapted to move said table (1) from said first configuration to a second configuration, said first pivoting means (9) being located near the crossing portion of said two legs (6A, 6B, 7A, 7B) of each set of legs (6, 7);

characterized in that, when said table (1) is in said first configuration, each support element (4, 5) comprises a first portion (4A, 5A) that extends in a direction of extension (Y-Y) substantially perpendicular to the surfaces of said first (2A) or second side (2B) and a second portion (4B, 5B), that extends in a transverse direction of extension (Z-Z), with an angle of inclination (α) to the direction of extension (Y-Y) of said first portion (4A, 5A), said first portion (4A, 5A) ending by a first side (10) adapted to support said table top (2) and said second portion (4B, 5B) ending by a second side (11) adapted to abut against a corresponding leading end (6', 7') of each leg of said set of crossed legs, said second side (11) extending in a direction of extension (X-X) substantially normal to the direction of extension (Z-Z) of said second portion (4B, 5B).

2. A folding camp table as claimed in claim 1, wherein said angle of inclination (α) is an obtuse angle falling within a range from 130° to 140°, and is preferably 135°.
3. A folding camp table as claimed in claim 1 or 2, wherein said first side (10) of said first portion (4A, 5A) comprises a seat (13) which is configured to support said table top (2) and said second side (11) of said second portion (4B, 5B) has a flat surface.
4. A folding camp table as claimed in claim 1 or 3, wherein said second portion (4B, 5B) extends from said first portion (4A, 5A), and said first portion (4A, 5A) and said second portion (4B, 5B) of each support element are formed of one piece.
5. A folding camp table as claimed in any preceding claim, comprising second pivoting means (12) adapted to move said table (1) from said second configuration to a third configuration in which said two legs (6A, 6B, 7A, 7B) of each set of legs (6, 7) extend substantially parallel to the opposed larger surfaces of said table top (2).
6. A folding camp table as claimed in claim 4, wherein

said second pivoting means (12) comprise, for each leg (6A, 6B, 7A, 7B) of each set of legs (6, 7):

- a pair of L-shaped connecting rods (12A, 12B) and 5
- a pivot pin (12C),

wherein the long side of the L is coupled by said pivot pin (12C) to the second portion (4B, 5B) of said support element (4, 5) to pivot about the axis of said pivot pin and the short side of the L is coupled by retaining means (12D) to the leading end (6', 7') of the corresponding leg (6A, 6B, 7A, 7B) . 10

7. A folding camp table as claimed in claim 1, wherein said table top (2) comprises a collapsible shutter. 15
8. A folding camp table as claimed in claim 1, comprising a height adjustment device (15) located at least at one trailing end of a leg (6A, 6B, 7A, 7B), said trailing end being opposite to the leading end. 20
9. A folding camp table as claimed in claim 1, comprising a crossbar (16) extending between said crossing areas of said two sets of crossed legs (6, 7). 25
10. A folding camp table as claimed in claim 1, comprising a pair of articulated elements (17A, 17B), each extending between the leading end (6', 7') of each leg (6A, 6B, 7A, 7B) and the first portion (4A, 5A) of each support element (4, 5). 30

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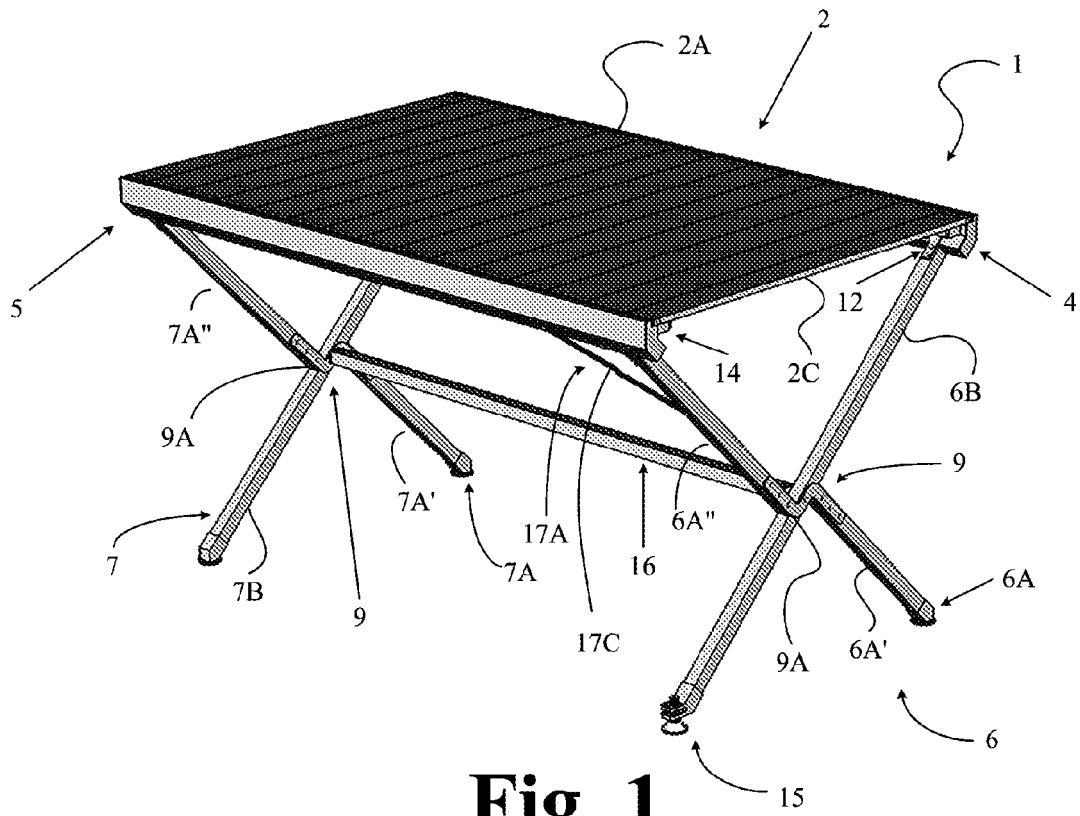


Fig. 1

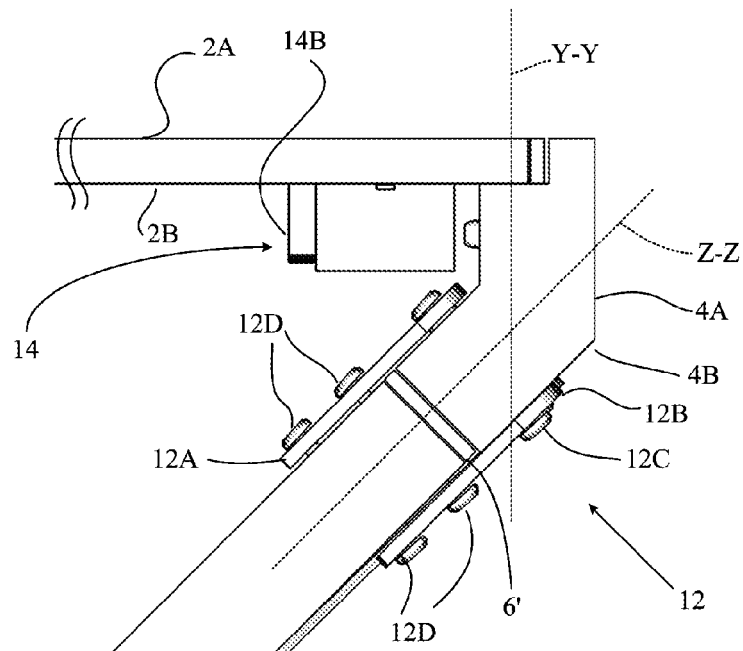


Fig. 2

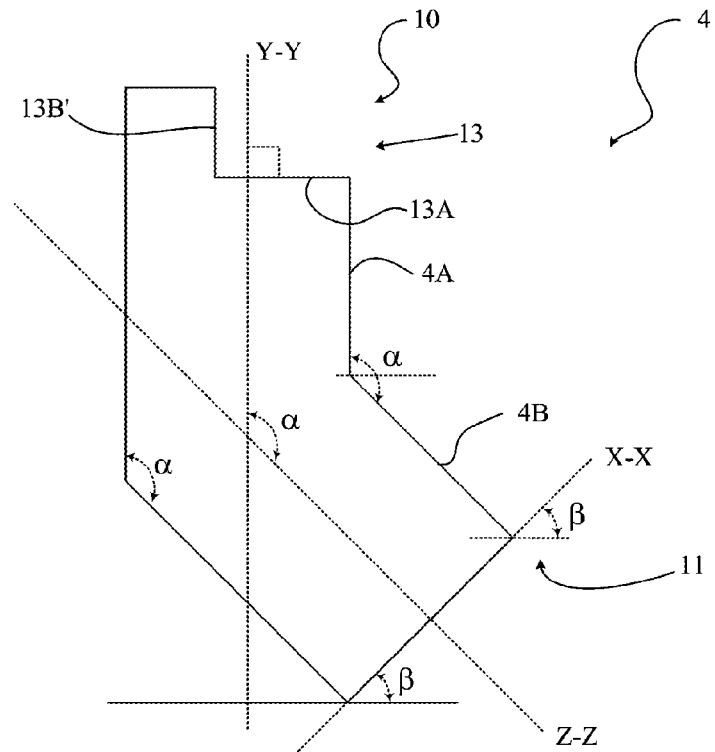


Fig. 3

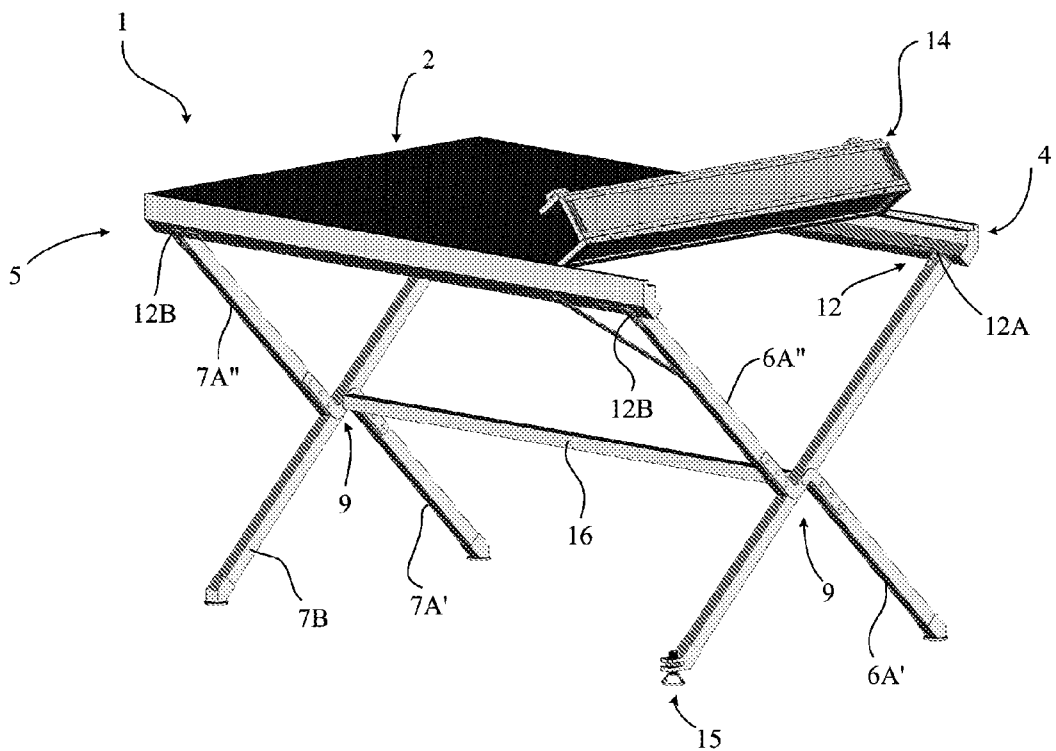


Fig. 4

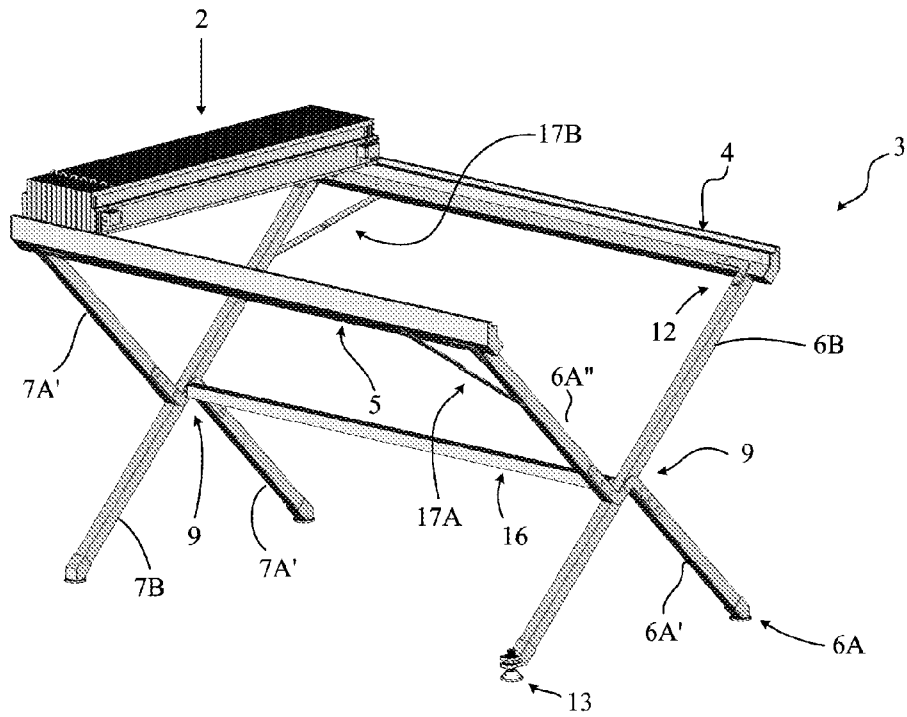


Fig. 5

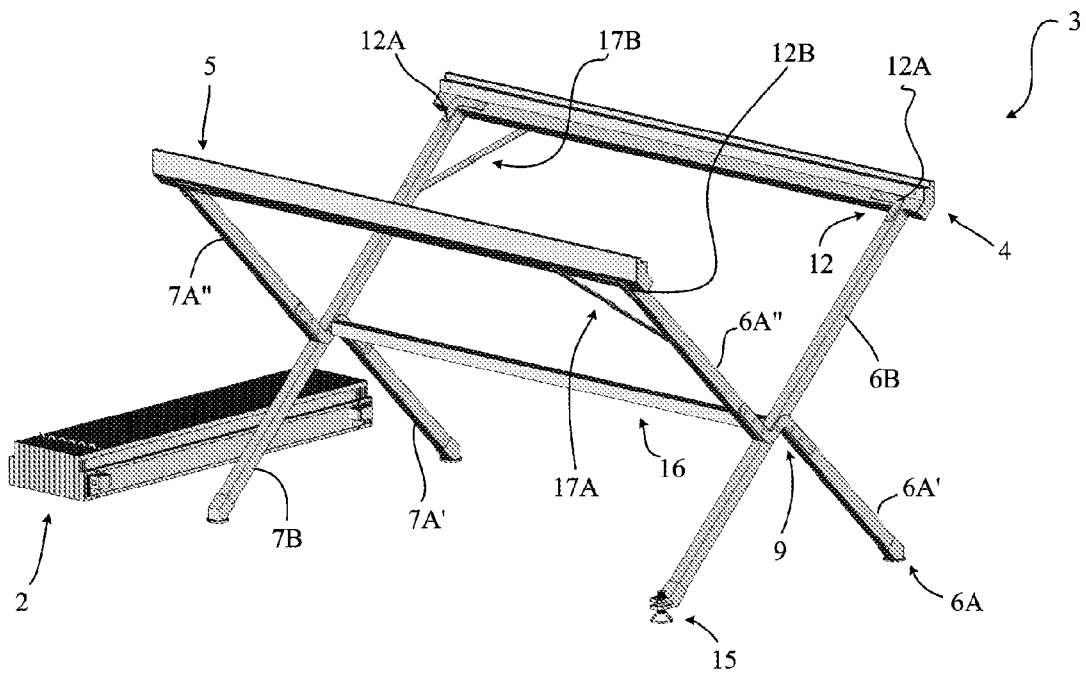


Fig. 6

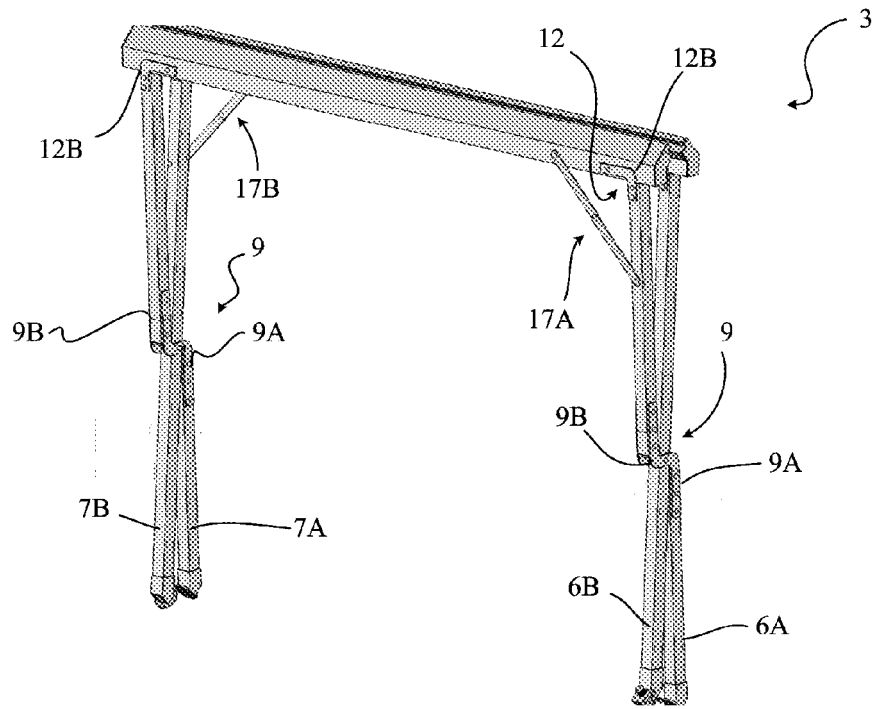


Fig. 7

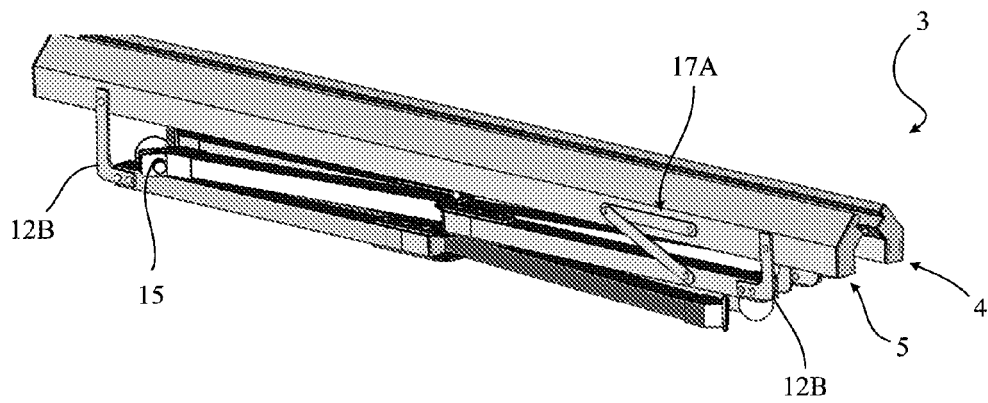


Fig. 8



EUROPEAN SEARCH REPORT

Application Number
EP 11 17 0428

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 1 608 924 A (BROWN NEWTON N) 30 November 1926 (1926-11-30) * page 1, line 25 - page 2; figures 1-6 * -----	1-10	INV. A47B3/02 A47B37/04
A	US 4 210 085 A (MCLRAVY ROBERT C II [US] ET AL) 1 July 1980 (1980-07-01) * column 2, line 67 - column 4, line 18; figures 1-12 * -----	1-10	
A	US 1 833 177 A (RICE ALBERT H) 24 November 1931 (1931-11-24) * page 1, line 60 - page 2, line 94; figures 1-6 * -----	1-10	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 November 2011	Examiner Klintebäck, Daniel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention 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 11 17 0428

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28-11-2011

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 1608924	A	30-11-1926	NONE	

US 4210085	A	01-07-1980	NONE	

US 1833177	A	24-11-1931	NONE	

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