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(54) **A foldable high chair**

(57) A foldable high chair is equipped with a foldable support frame (10), a pair of driving arms (3), a foldable chair frame (4), a pair of second linking elements (15), a pair of third linking elements (16) and a pair of locking mechanisms (6). The foldable chair frame (4) is supported and associated with the foldable support frame (10) by the second and third linking elements (15, 16). When the locking mechanisms (6) is unlocked, the foldable chair frame (4) and the foldable support frame (10) can be converted into a folded configuration and overlapped with each other, so as can be hidden under a table for saving space in room.

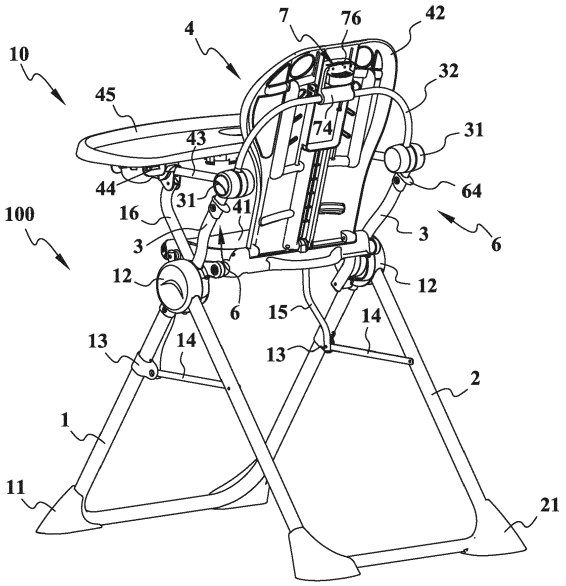

FIG. 1

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Description

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] The present invention relates a foldable high chair, especially to a foldable high chair having a foldable high chair which can be folded to overlap with a foldable support frame.

DESCRIPTION OF THE RELATED ART

[0002] High chairs are adopted to use beside a table for feeding babies, or let the babies to have enough high to see and eat the food on table with care givers or families.

[0003] In order to provide the baby to sit on enough high, the high chairs should higher than ordinary chairs, and thus cannot be hidden under the table for saving space in room.

SUMMARY OF THE INVENTION

[0004] In order to make a high chair possible to be hidden under the table for saving space in room, the present invention provides a foldable high chair equipped with a foldable support frame, a pair of driving arms, a foldable chair frame, a pair of second linking elements, a pair of third linking elements and a pair of locking mechanisms.

[0005] The foldable support frame may include at least a front rack, a rear rack, a pair of sliding elements and a pair of first linking elements. The front rack has two upper ends equipped with two joints pivotably connected with the rear rack, and a lower end mounted with two anti-skidding mounts for standing on ground. The rear rack has two upper ends pivoted to the front rack by the two joints, and a lower end mounted with two anti-skidding mounts for standing on ground. The sliding elements may either movably mounted or sleeved on the front rack, and the two first linking elements are pivoted between the sliding elements and the rear rack respectively.

[0006] The pair of driving arms is pivotally and lockably connected with the front rack by the two joints. The two joints each is composed with at least two halves capable of rotating relative to each other. Specifically, in one embodiment each of the driving arms is connected to one of the half, and the upper end of the front rack is connected to another half of the joint thereby permitting the rotation between the driving arms and the front rack.

[0007] The foldable chair frame may be equipped with a seat base rack, a back-rest rack and a pair of arm-rest struts. The back-rest rack is pivoted with the seat base rack, and the arm-rest struts3 being pivoted with the pair of driving arms by two pivotal mount.

[0008] The seat base rack has two sides eccentrically pivoted to the two joints respectively. Specifically, in one embodiment the two joints has one half connected to the lower end of the driving arms and formed with a side extension for pivoting with the seat base rack. By this connection, the seat base rack can be driven by the rotation of the driving arms.

[0009] The seat base rack may be formed with two front pivot portions on both sides for pivoting with the second linking elements, and two middle portions on both sides for pivoting with the third linking elements.

[0010] In one embodiment, the pair of third linking elements is pivoted between the arm-rest struts and the front rack, and the pair of second linking elements is pivoted between the seat base rack and the sliding elements. By this connection, the sliding elements can be driven by the rotation of the seat base rack and slide downward along the front rack thereby driving the rear rack via the pair of third linking elements to rotate to close to the front rack into a folded configuration.

[0011] The foldable high chair may further be equipped with a forth linking element which has two ends pivoted between the two pivotal mount, and a middle portion connected to a repositioning mechanism for adjusting the back-rest rack in multi-inclination angles.

[0012] The repositioning mechanism may be equipped with a sliding element pivoted to the middle portion of the forth linking elements, and the back-rest rack may be formed with a longitudinal channel for guiding the sliding element to move and be positioned in a selected position. Specifically, in one embodiment the longitudinal channel may be formed with a plurality of positioning portions, and the sliding element may be equipped with a retractable latch element for releasably engaging with one of the positioning portions thereby positioning the sliding element and keeping the back-rest rack in a selected inclination angle.

[0013] In one embodiment, the repositioning mechanism may be equipped with a button, a resilient element. The retractable latch element may be formed with a skewed slot for associating with the button through a pin; when the button is pressed against the resilient element, the pin pushing the skewed slot to cause the retractable latch element to retract and disengage from the positioning portions thereby adjusting the inclination angle of the back-rest rack.

[0014] The care-giver can unlock the locking mechanisms to permit the rotation of the driving arms. When the driving arms being pushed to rotate forward would drive the seat base rack to rotate and cause the folding of the whole foldable chair frame; in the meantime, the sliding elements shall be driven by the rotation of the seat base rack and slide downward along the front rack thereby driving the rear rack via the pair of third linking elements to rotate to close to the front rack into a folded configuration. When the above-described folding is completed, the foldable chair frame is overlapped with the foldable support frame. This would permit the foldable high chair to be hidden under the table with shorter and much compact size.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The accompanying drawings, which are included to provide a further understanding of the invention are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention. In the drawings:

FIG. 1 is a perspective view of the foldable high chair according to the present invention.
FIG. 2 is an exploded view of the foldable high chair shown in FIG. 1.
FIG. 3 is a side view of the foldable high chair shown in FIG.1
FIG. 4 is an exploded view of the back-rest rack of the foldable high chair shown in FIG.1.
FIG. 5 is a schematic elevated view showing an operation of the back-rest rack shown in FIG.4.
FIG. 6 is a schematic side view showing an inclination adjustment of the back-rest rack shown in FIG.4.
FIG. 7 is a schematic side view showing the folding of the foldable high chair shown in FIG.1.
FIG. 8 is a schematic side view showing a further folding of the foldable high chair shown in FIG.7.
FIG. 9 is a cross-sectional view showing the foldable high chair shown in FIG.8 being converted into a folded configuration.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] Referring to FIGS. 1 to 9, the foldable high chair according to the present invention may be equipped with a foldable support frame 10, a pair of driving arms 3, a foldable chair frame 4, a pair of second linking elements 15, a pair of third linking elements 16 and a pair of locking mechanisms 6.

[0017] The foldable support frame 10 may have a front rack 1, a rear rack 2, a pair of sliding elements 13 and a pair of first linking elements 14.

[0018] The front rack 1 has two upper ends equipped with two joints 12 pivotably connected with the rear rack 2, and a lower end mounted with two anti-skidding mounts 11 for standing on ground.

[0019] The rear rack 2 has two upper ends pivoted to the front rack 1 by the two joints 12, and a lower end mounted with two anti-skidding mounts 21 for standing on ground.

[0020] The sliding elements 13 being movably mounted or sleeved on the front rack 1, and the two first linking elements 14 are pivoted between the sliding elements 13 and the rear rack 2 respectively.

[0021] The pair of driving arms 3 is pivotally and lockably connected with the front rack 1 by the two joints 12. The two joints 12 each is composed with at least two halves capable of rotating relative to each other. Specifically, in one embodiment each of the driving arms 3 is connected to one of the half, and the upper end of the front rack 1 is connected to another half of the joint 12 thereby permitting the rotation between the driving arms 3 and the front rack 1.

[0022] The foldable chair frame 4 may have a seat base rack 41, a back-rest rack 42 and a pair of arm-rest struts 43. The back-rest rack 42 is pivoted with the seat base rack 41, and the arm-rest struts 43 being pivoted with the pair of driving arms 3 by two pivotal mount 31.

[0023] The seat base rack 41 has two sides eccentrically pivoted to the two joints 12 respectively. Specifically, in one embodiment the two joints 12 has one half connected to the lower end of the driving arms 3 and formed with a side extension for pivoting with the seat base rack 41. By this connection, the seat base rack 41 can be driven by the rotation of the driving arms 3.

[0024] The seat base rack 41 may be formed with two front pivot portions 410 on both sides for pivoting with the second linking elements 15, and two middle portions 411 on both sides for pivoting with the third linking elements 16.

[0025] In this embodiment, the pair of third linking elements 16 is pivoted between the arm-rest struts 43 and the front rack 1, and the pair of second linking elements 15 is pivoted between the seat base rack 41 and the sliding elements 13. By this connection, the sliding elements 13 can be driven by the rotation of the seat base rack 41 and slide downward along the front rack 1 thereby driving the rear rack 2 via the pair of third linking elements 16 to rotate to close to the front rack 1 into a folded configuration 200, as shown in FIG. 9.

[0026] The pair of locking mechanisms 6 is operatively mounted between the front rack 1 and the driving arms 3. The locking mechanisms 6 have a locked position for preventing the driving arms 3 from rotation relative to the front rack 1. Specifically, in one embodiment the pair of locking mechanisms 6 may include two retractable latches 61, two associating elements 65 and two release actuators 64.

[0027] The two retractable latches 61 are mounted in the distal end of the driving arms 3 for releasably engaging with the front rack 1, the two release actuators 64 being operatively mounted on the driving arms 3. The two associating elements 65 are associating between the two retractable latches 61 and the two release actuators 64.

[0028] Referring to FIGS. 1 and 2, the release actuators 64 may be embodied as two hooked-sleeves slidably sleeved on the driving arms 3. When the release actuators 64 (hooked-sleeves) are pulled upward, shall pull the retractable latches 61 to retract from the engagement with the front rack 1 thereby permitting the rotation of the driving arms 3.

[0029] Preferably, the two ends of the front rack 1 each may be formed with an indent 63, and each of the retractable latch 61 may be biased by a resilient element 62 to retractably engage with the indents 63 respectively so as to lock the driving arms 3 in position as shown in FIGS.

1 and 3. By this connection, when the driving arms 3 are locked in position, the seat base rack 41 is prevented from rotation and the foldable chair frame 4 is then kept in a deployed configuration 100 for use.

[0030] Referring again to FIGS. 2, and 6, the foldable high chair according to the present invention may further equipped with a forth linking element 32 which has two ends pivoted between the two pivotal mount 31, and a middle portion connected to a repositioning mechanism 7 for adjusting the back-rest rack 42 in multi-inclination angles.

[0031] The repositioning mechanism 7 may be equipped with a sliding element 74 pivoted to the middle portion of the forth linking elements 32, and the back-rest rack 42 may be formed with a longitudinal channel 71 for guiding the sliding element 74 to move and be positioned in a selected position.

[0032] Referring to FIG. 4, specifically, in one embodiment the longitudinal channel 71 may be formed with a plurality of positioning portions 72, and the sliding element 74 may be equipped with a retractable latch element 77 for releasably engaging with one of the positioning portions 72 thereby positioning the sliding element 74 and keeping the back-rest rack 42 in a selected inclination angle.

[0033] The repositioning mechanism 7 may be equipped with a button 76, a resilient element 8. Referring to FIG. 5, the retractable latch element 77 may be formed with a skewed slot 79 for associating with the button 76 through a pin; when the button 76 is pressed against the resilient element 8, the pin pushing the skewed slot 79 to cause the retractable latch element 77 to retract and disengage from the positioning portions 72 thereby adjusting the inclination angle of the back-rest rack 42.

[0034] As best shown in FIGS. 2 and 3, the pair of arm-rest struts 43 may be equipped with a pair of sliding mounts 44 for pivoting with the pair of third linking elements 16. In one embodiment, each sliding mounts 44 may be formed with a socket or buckle for installing a tray 45 thereupon.

[0035] Referring to FIG7, the care-giver can unlock the locking mechanisms 6 to permit the rotation of the driving arms 3. As shown in FIG. 8, when the driving arms 3 have been pushed to rotate forward would drive the seat base rack 41 to rotate and this would cause the folding of the whole foldable chair frame 4; in the meantime, the sliding elements 13 shall be driven by the rotation of the seat base rack 41 to slide downward along the front rack 1 thereby driving the rear rack 2 via the pair of third linking elements 14 to rotate to close to the front rack 1 into a folded configuration 200. When the above-described folding is completed, the foldable chair frame 4 is overlapped with the foldable support frame 10 as shown in FIG. 9. This would permit the foldable high chair to be hidden under an ordinary table with more shorter and much compact size.

[0036] While particular embodiments of the invention have been described, those skilled in the art will recognize that many modifications are possible that will achieve the same goals by substantially the same system, device or method, and where those systems, devices or methods still fall within the true spirit and scope of the invention disclosed.

Claims

1. A foldable high chair, including:

   a foldable support frame (10), having a front rack (1), a rear rack (2), a pair of sliding elements (13) and a pair of first linking elements (14), the front rack (1) being equipped with two joints (12) pivotably connected with the rear rack (2), the sliding elements (13) being movably mounted on the front rack (1), and the first linking elements (14) being pivoted between the sliding elements (13) and the rear rack (2);
   a pair of driving arms (3), being pivotally and lockably connected with the front rack (1) by the two joints (12);
   a foldable chair frame (4), having a seat base rack (41), a back-rest rack (42) and a pair of arm-rest struts (43), the back-rest rack (42) being pivoted with the seat base rack (41), the arm-rest struts (43) being pivoted with the pair of driving arms (3) by two pivotal mount (31), and the seat base rack (41) having two sides eccentrically pivoted to the two joints (12) respectively;
   a pair of second linking elements (15), pivoted between the seat base rack (41) and the sliding elements (13);
   a pair of third linking elements (16), pivoted between the arm-rest struts (43) and the front rack (1); and
   a pair of locking mechanisms (6) operatively mounted between the front rack (1) and the driving arms (3), the locking mechanisms (6) having a locked position for preventing the driving arms (3) from rotation relative to the front rack (1).

2. The foldable high chair according to claim 1, wherein the seat base rack (41) being formed with two front pivot portions (410) on both sides for pivoting with the second linking elements (15), and two middle portions (411) on both sides for pivoting with the third linking elements (16).

3. The foldable high chair according to claim 1 further including a forth linking elements (32) having two ends pivoted between the two pivotal mount (31), and a middle portion connected to a repositioning mechanism (7) for adjusting the back-rest rack (42) in multi-inclination angles.

4. The foldable high chair according to claim 3, wherein

the repositioning mechanism (7) including a sliding element (74) pivoted to the middle portion of the forth linking elements (32), the back-rest rack (42) being formed with a longitudinal channel (71) for guiding the sliding element (74) to move and be positioned in a selected position.

5. The foldable high chair according to claim 4, wherein the longitudinal channel (71) being formed with a plurality of positioning portions (72), and the sliding element (74) being equipped with a retractable latch element (77) for releasably engaging with one of the positioning portions (72) thereby positioning the sliding element (74) and keeping the back-rest rack (42) in a selected inclination angle.

6. The foldable high chair according to claim 5, wherein the repositioning mechanism (7) further including a button (76), a resilient element (8), the retractable latch element (77) being formed with a skewed slot (79) for associating with the button (76) through a pin; when the button (76) is pressed against the resilient element (8), the pin pushing the skewed slot (79) to cause the retractable latch element (77) to retract and disengage from the positioning portions (72).

7. The foldable high chair according to claim 1, wherein the pair of locking mechanisms (6) including two retractable latches (61), two associating elements (65) and two release actuators (64), the two retractable latches (61) being mounted in a distal end of the driving arms (3) for releasably engaging with the front rack (1), the two release actuators (64) being operatively mounted on the driving arms (3), and the two associating elements (65) being associating between the two retractable latches (61) and the two release actuators (64).

8. The foldable high chair according to claim 7, wherein the front rack (1) has two ends each formed with an indent (63), and the each of the retractable latch (61) being biased by a resilient element (62) to retractably engage with the indents (63) respectively.

9. The foldable high chair according to claim 1, wherein the pair of arm-rest struts (43) including a pair of sliding mounts (44) for pivoting with the pair of third linking elements (16).

10. The foldable high chair according to claim 1, wherein the foldable chair frame (4) further including a tray (45) connected to the pair of sliding mounts (44).

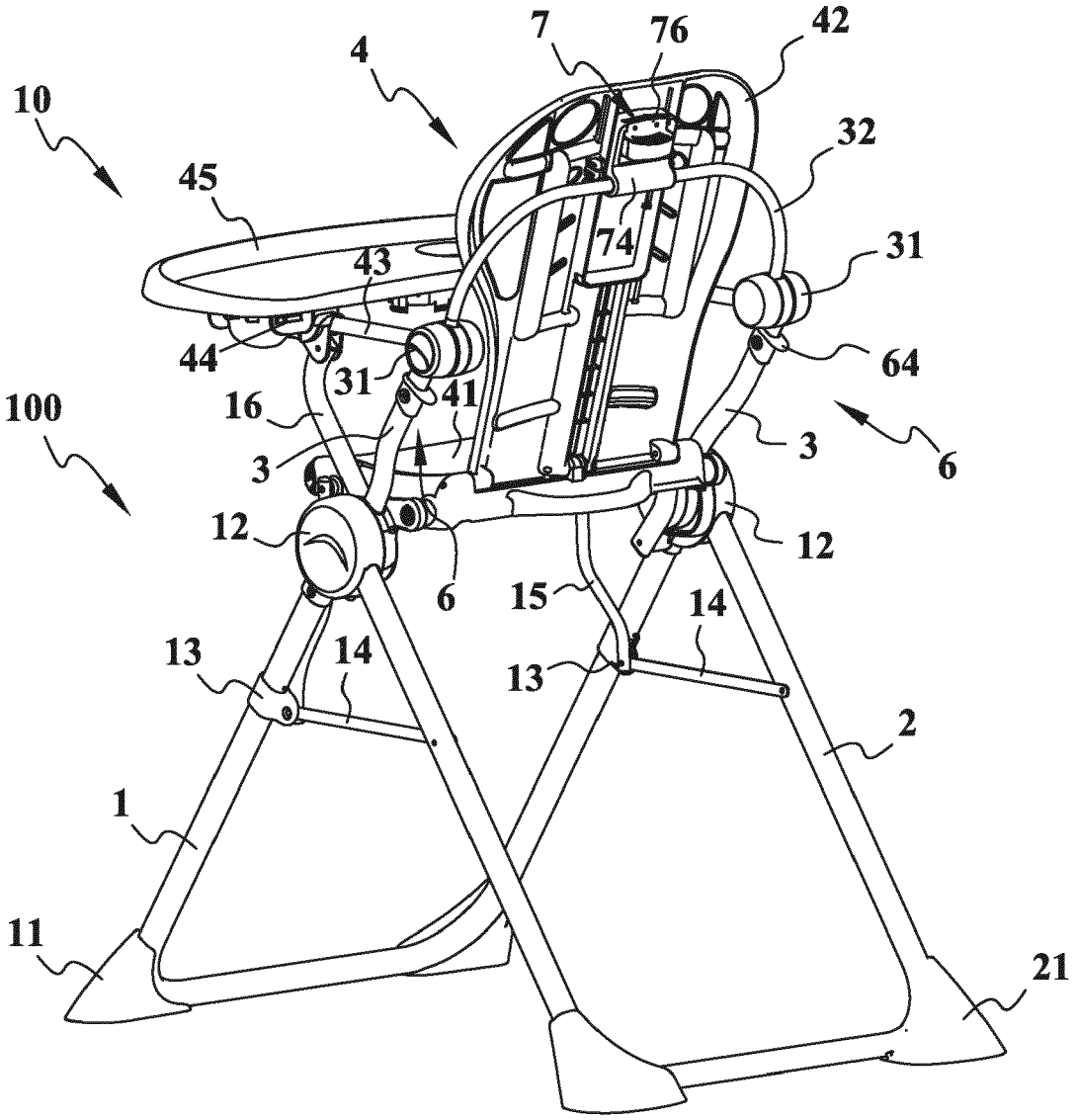
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FIG. 1

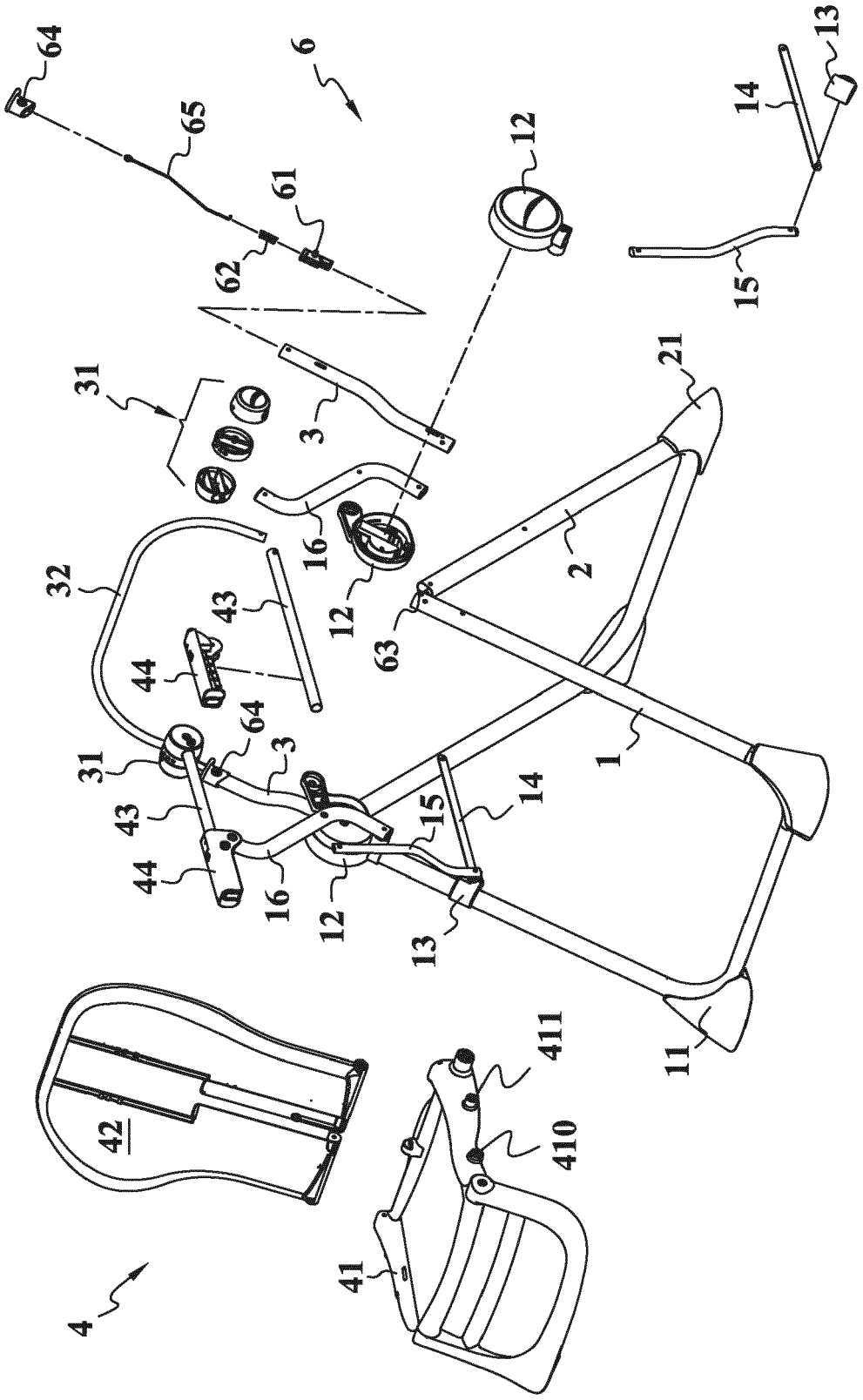
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FIG. 2

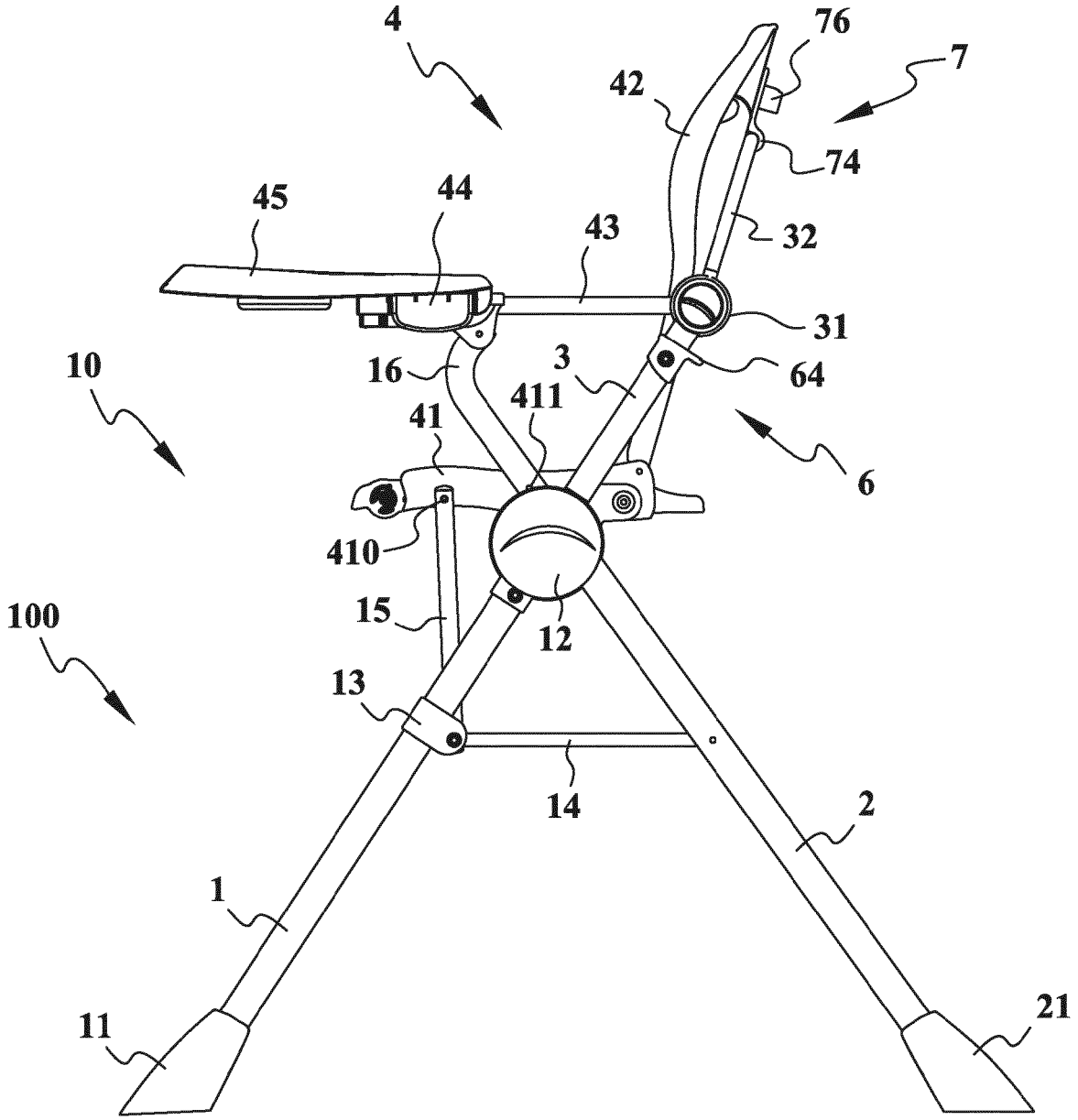
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FIG. 3

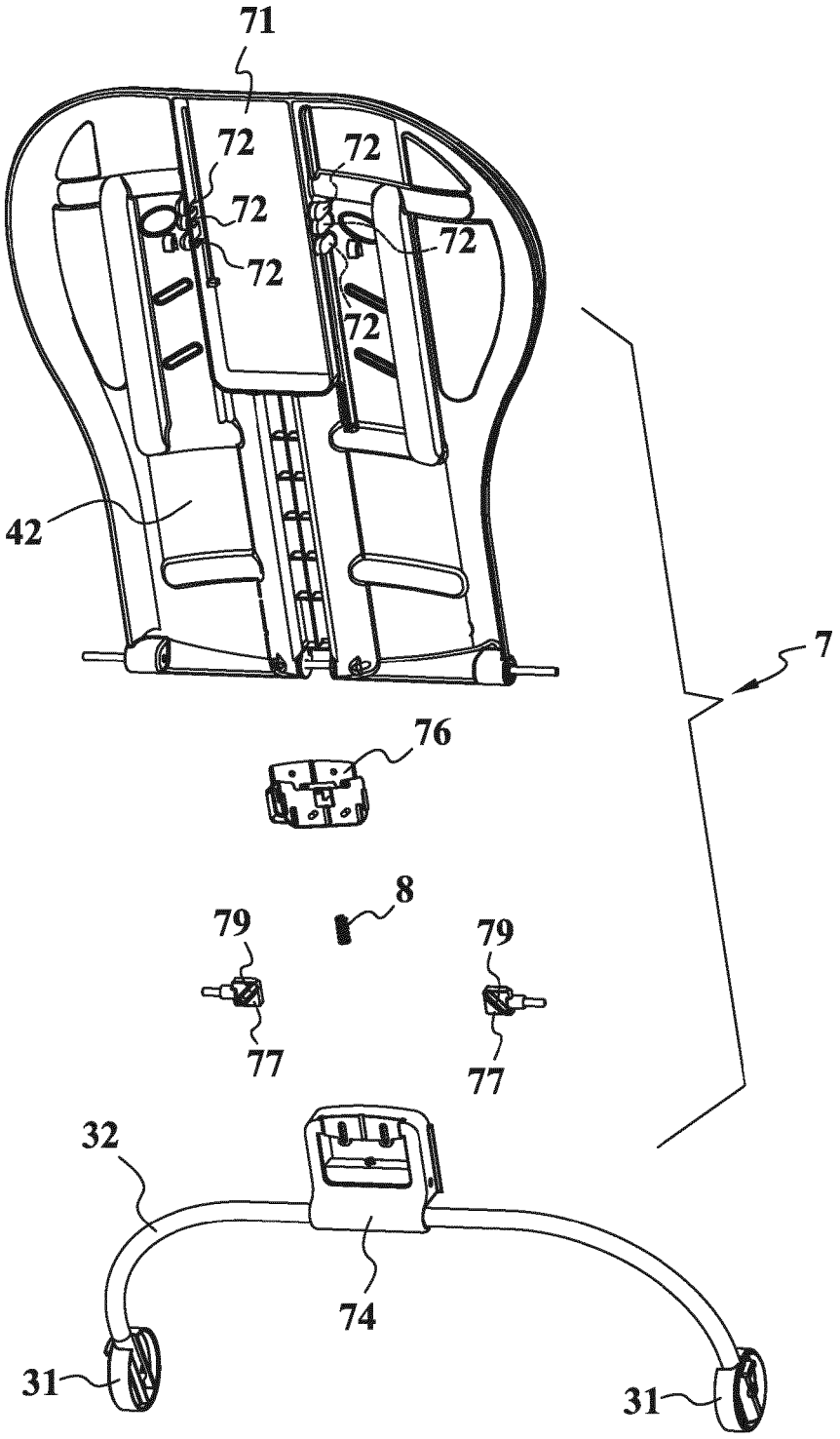

FIG. 4

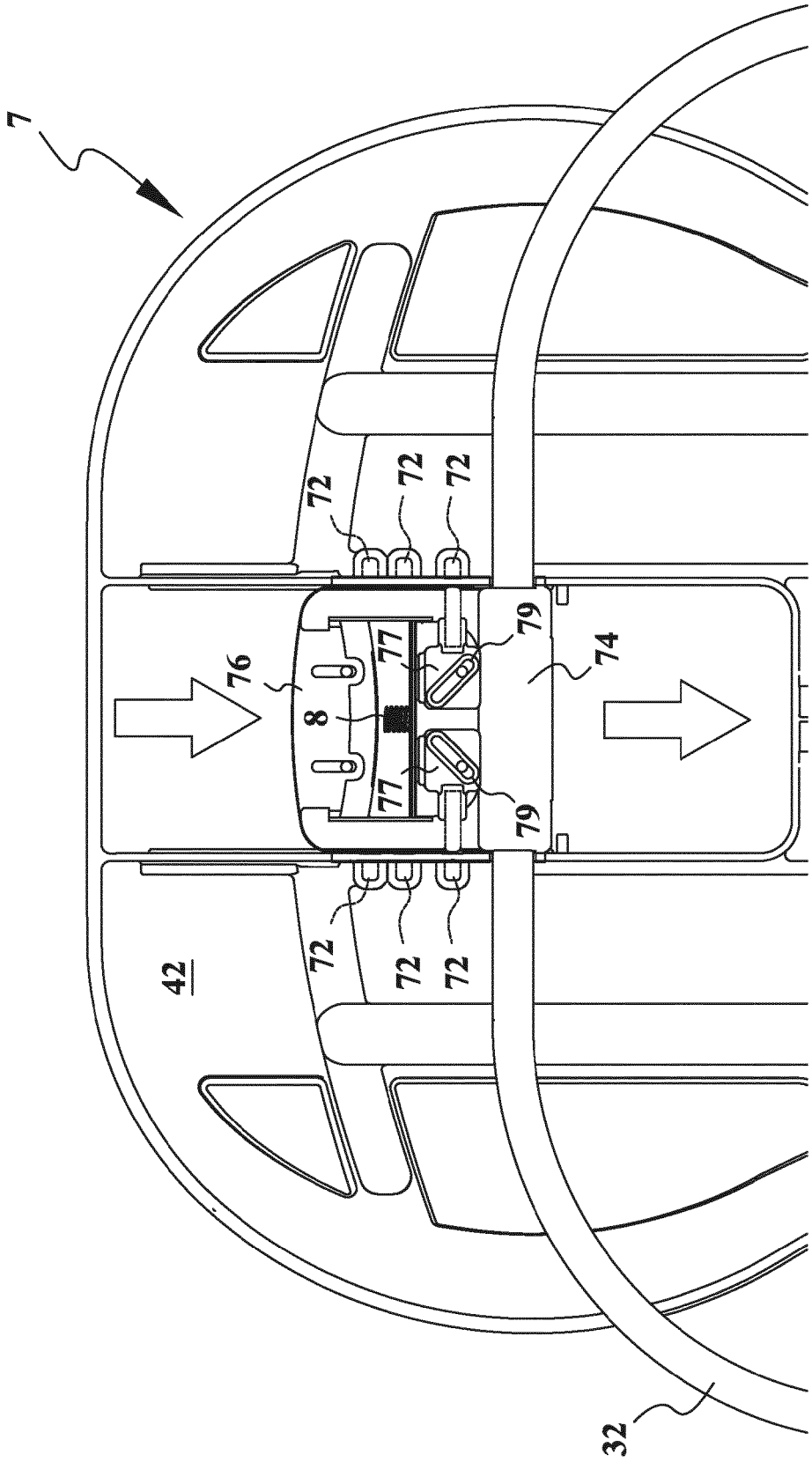

FIG. 5

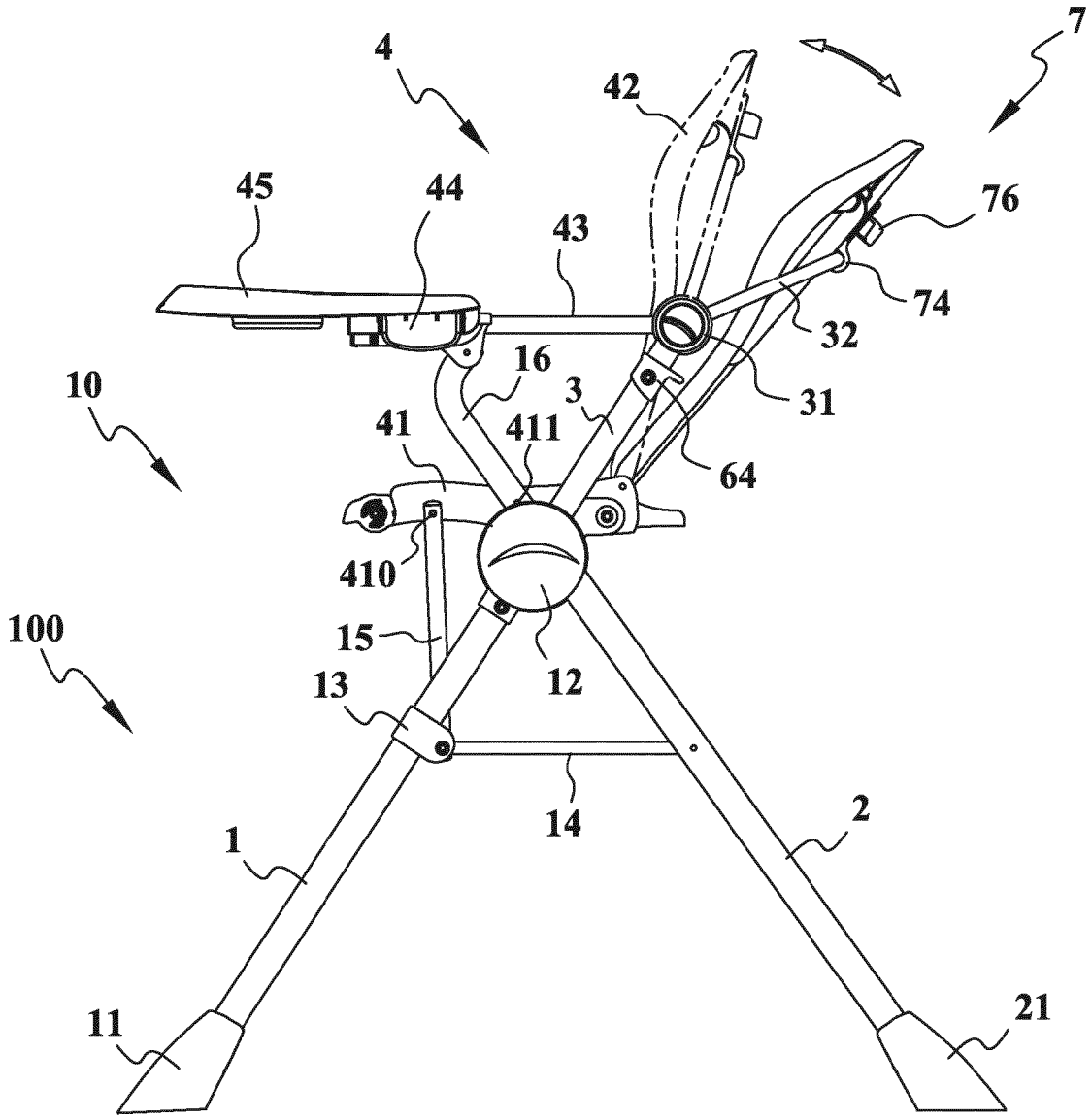
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FIG. 6

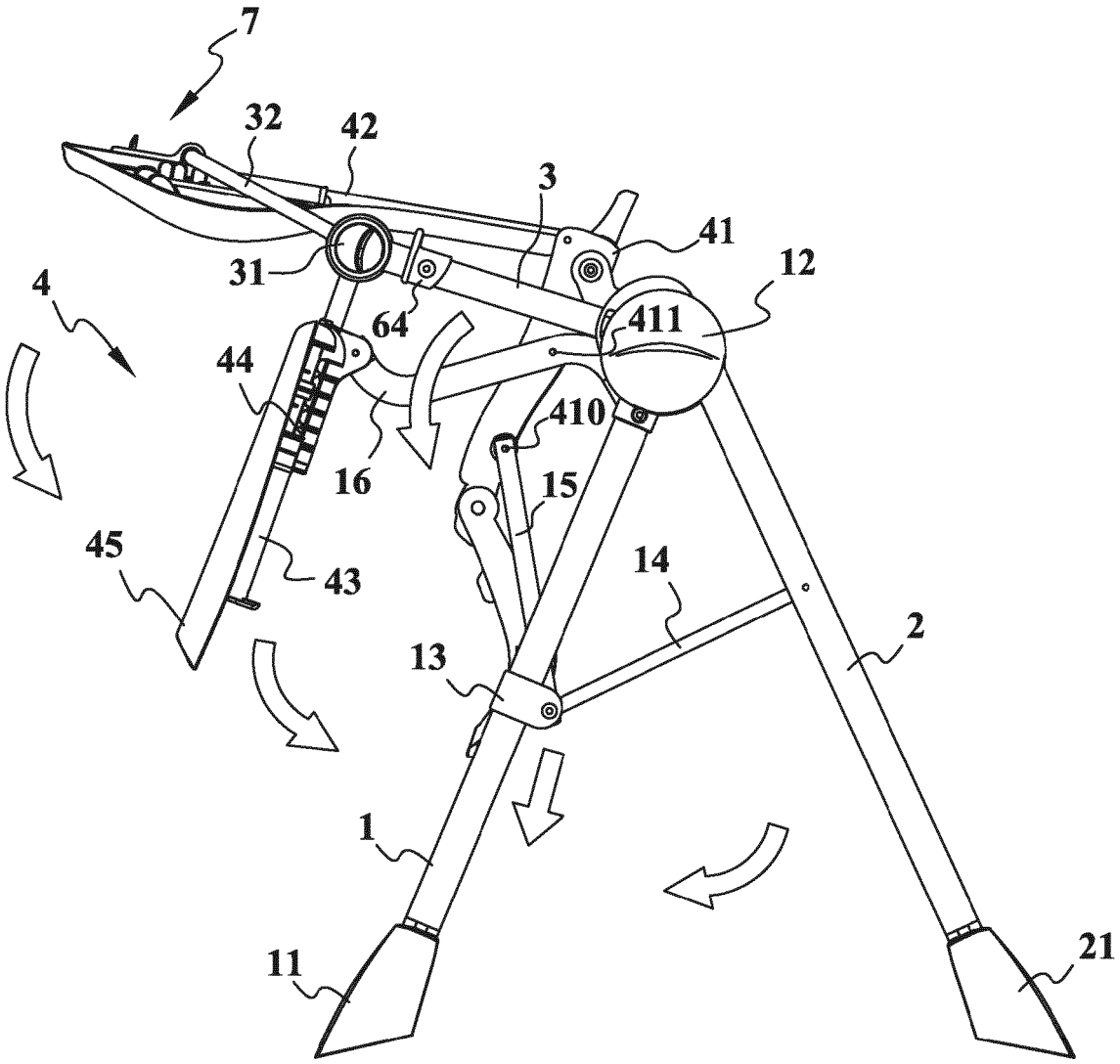

FIG. 7

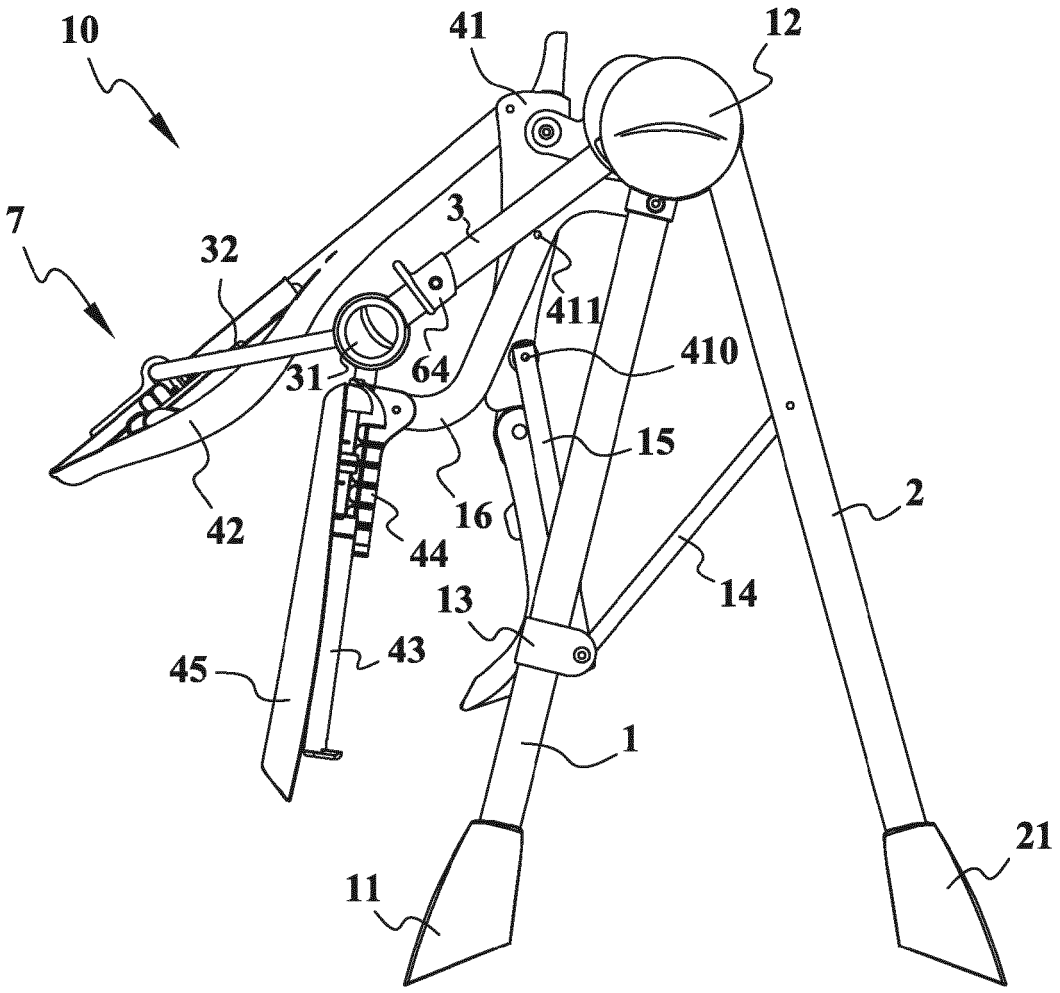

FIG. 8

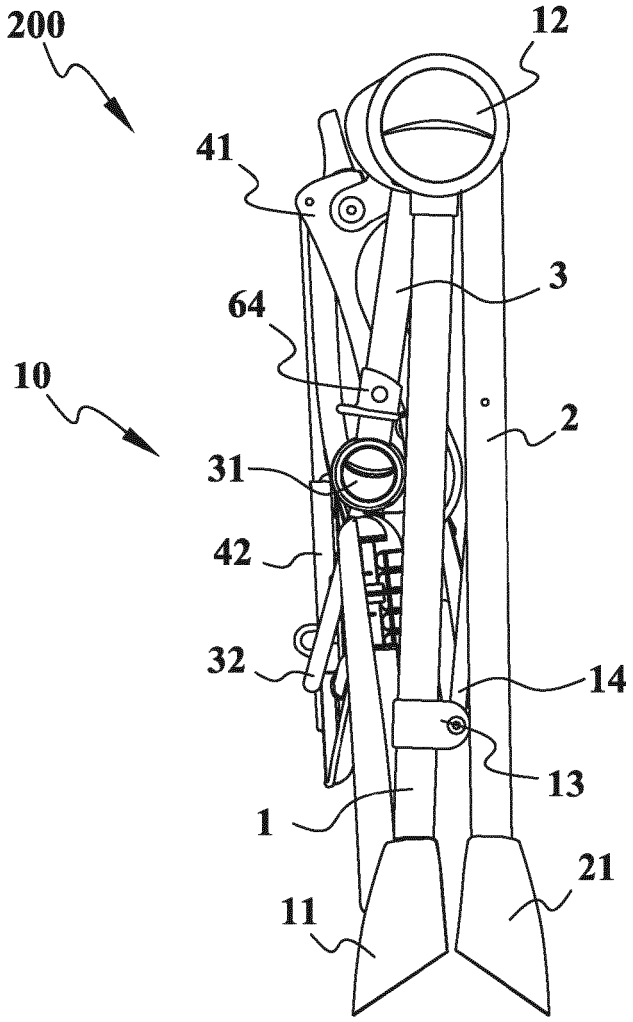

FIG. 9

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EUROPEAN SEARCH REPORT

Application Number
EP 14 17 8334

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	CN 202 843 028 U (ZHONGSHAN LERADO DAILY ARTICLE) 3 April 2013 (2013-04-03) * figures *	1-10	INV. A47D1/02
A	GB 2 428 566 A (ANGELS LANDING INC) 7 February 2007 (2007-02-07) * figures *	1-10	
A	CN 202 161 038 U (GOODBABY CHILD PRODUCTS CO LTD) 14 March 2012 (2012-03-14) * figures *	1-10	

TECHNICAL FIELDS SEARCHED (IPC)

A47D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	21 October 2014	Kis, Pál

CATEGORY OF CITED DOCUMENTS

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21-10-2014

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