(11) Application No. AU 2005211844 B2

(19) AUSTRALIAN PATENT OFFICE

(54) Title

Adjustable cross-legged support seat

(51)[6] International Patent Classification(s)

A47C 1/00 (2006.01) 7/50

A47C 7/50 (2006.01) 20060101ALI2006040

A47C 7/62 (2006.01) 8BMEP **A47C**

A47C 1/00 7/62

20060101AFI2006040 20060101ALI2006040

8BMEP **A47C** 8BMEP

PCT/CA2005/000174

(21) Application No: 2005211844 (22) Application Date: 2005.02.11

(87) WIPO No: WO05/077224

(30) Priority Data

(31) Number	(32) Date	(33) Country
60/543,678	2004.02.12	US

(43) Publication Date : 2005.08.25

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(56) Related Art

US 3890004A

DE 19605779 A

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/077224 A1

(51) International Patent Classification[7]: A47C 1/00, 7/50, 7/62

(21) International Application Number: PCT/CA2005/000174

(22) International Filing Date: 11 February 2005 (11.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/543,678 12 February 2004 (12.02.2004) US

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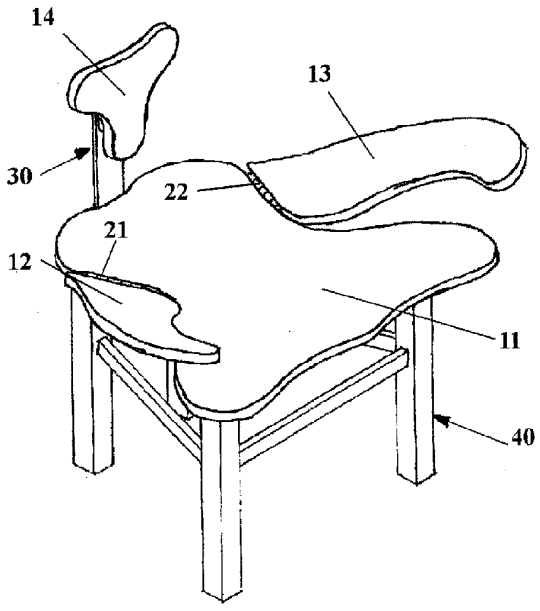
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: ADJUSTABLE CROSS-LEGGED SUPPORT SEAT



(57) Abstract: A seating apparatus for allowing a user to sit in either a cross-legged yoga position or in a conventional manner. The apparatus may also include a seat for supporting a user and two adjustable leg supports for supporting the user's left and right thighs at a desired angle when the user sits in a cross-legged position. The seat may also have an attached back support. In another embodiment the apparatus includes a seat having a surface area wide enough to allow a user to sit on the seat in a cross-legged position and having a tapered front to allow a user's legs to hang comfortably over the front of seat while the user sits in a conventional manner; and a base operatively connected to the seat for supporting the seat, the base for allowing use of the seating apparatus in a conventional chair-height environment.

WO 2005/077224 A1

ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(48) Date of publication of this corrected version:
27 October 2005

(15) Information about Correction:
see PCT Gazette No. 43/2005 of 27 October 2005, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

ADJUSTABLE CROSS-LEGGED SUPPORT SEAT

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 60/543,678, filed February 12, 2004, which is incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to a chair for supporting a user in a cross-legged yoga position. More particularly, the present invention includes a chair having leg supports which can be adjusted according to a user's comfort level while sitting in a cross-legged yoga position.

BACKGROUND OF THE INVENTION

Chairs are used by many people every day without much second thought. However, the effects of chair use are profound, both mentally and physically. Many physical and mental aliments, including depression, lower back pain and arthritis can be attributed to the regular use of chairs.

Meditation and yoga are becoming more and more common in North America and these practices have been proven to benefit those practicing them as well as those around them; such practices include sitting cross-legged which is more common globally than sitting in chairs for the simple economic reason that most people globally cannot afford to buy chairs. Unfortunately, conventional North American chairs do not take advantage of these practices. The present invention is intended to blend the skills and insight of eastern and western cultures by allowing conventional North American chairs to take advantage of these practices.

There are many inventions pertaining to aiding one to sit in a cross-legged position. However, most of these devices are comprised of a cushion or wooden platform that is placed at floor level or just slightly above, such as U.S. Pat. No. 5,374,109, U.S. Pat. No. 5,876,098, U.S. Pat. No. 5,490,717, U.S. Pat. No. 4,673,216, U.S. Pat. No. 5,029,350, U.S. Pat. No. 5,134,740, U.S. Pat. No. 3,890,004, French Patent 2769813 and Japanese patent 7204059A2. While the devices taught by these patents are useful for meditation while sitting on the floor they are not a practical tool in an environment designed around chairs.

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A further cross legged sitting device is taught in U. S. Pat. No. 5,605, 379 which discloses a chair with its height and its seat adapted to the contour of a user's body such contour resulting from the user's legs. However, this chair cannot be adjusted to improve the comfort level of different users.

Accordingly, in view of the above-mentioned in the art, it is desirable to provide a chair for allowing a user to sit in a cross-legged yoga position in any environment such as an office, home, school and restaurant and which will accommodate the user sitting in either a cross-legged position or a conventional seated position, and which adjusts to overcome the shortcomings of the prior art.

Reference to any prior art in the specification is not, and should not be taken as, an acknowledgment or any form of suggestion that this prior art forms part of the common general knowledge in Australia or any other jurisdiction or that this prior art could reasonably be expected to be ascertained, understood and regarded as relevant by a person skilled in the art.

SUMMARY OF THE INVENTION

The present invention provides a seating device for supporting a user sitting in a cross-legged yoga position comprising:

(a) a seat having a surface area wide enough to allow the user to sit on the seat in the cross-legged yoga position;

(b) a base operatively connected to the seat for supporting the seat;

(c) two adjustable leg supports, the two adjustable leg supports connected on opposite sides of the seat, each leg support for supporting one of the user's legs when the user sits on the seat in the cross-legged yoga position, the each adjustable leg support capable of adjustment to any one of a plurality of support positions as the each adjustable leg support arcs inward towards the center of the seat about a hinge connected between the adjustable leg support and the seat; and

(d) two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in the plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism,

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and where a second end of the each adjusting mechanism is directly connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism in a second location which is on an outer edge of the adjustable leg support which is distal from the hinge, the first location of the connection of the first end of the each adjusting mechanism and the second location of the connection of the second end of the each adjusting mechanism for ensuring weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

According to a further aspect, the present invention provides a seating device for supporting a user sitting in either one of a cross-legged yoga position or a conventional chair seating position comprising:

(a) a seat having a surface area wide enough to allow the user to sit on the seat in the cross-legged yoga position, the seat further having contours in the front of the seat to allow a user to sit on the seat in a conventional chair seating position;

(b) a base operatively connected to the seat for supporting the seat;

(c) two adjustable leg supports, each leg support connected on either side of the seat, the each leg support for supporting one of the user's legs when the user sits in the cross-legged yoga position on the seat, the each adjustable leg support capable of adjustment to any one of a plurality of positions arcing inward about a hinge connected between the adjustable leg support and the seat; and

(d) two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in the plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism, and where a second end of the each adjusting mechanism is directly connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism in a second location which is on an outer edge of the adjustable leg support which is distal from the hinge, the first location of the connection of the first end of the each adjusting mechanism and the second location of the connection of the second end of the each adjusting mechanism are for ensuring

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weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

In one embodiment, the present invention includes a seat which accommodates a user sitting in a cross-legged meditation or yogic meditation or exercise posture or which is equally capable of supporting the user sitting in a conventional manner.

In another embodiment, the present invention employs a highly effective method of adjusting the leg support members, allowing a user to select the desired angle of thigh support when sitting in a cross-legged position.

The present invention may also include a fully adjustable or fixed back support connected to the rear of the seat for providing back support to the user.

The present invention combines the functionality of conventional chairs' heights which is suitable for use in a plurality of environments typically found in North America with an effective adjustable support system to allow a user to sit in a cross-legged position to experience the benefits of sitting in a meditation or yogic meditation or exercise posture.

Other aspects and features of the present invention will become apparent to those ordinarily skilled in the art upon review of the following description of specific embodiments of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be described in more detail below with reference to the accompanying drawings which are provided by way of example only, in which:

FIG. 1 is a perspective view of a chair in accordance with an embodiment of the present invention.

FIG. 2 is a perspective view of a chair having raised adjustable leg supports in accordance with an embodiment of the present invention.

FIG. 3 is a side view of an adjustable support system in accordance with an embodiment of the present invention.

FIG. 4 is a side view of an adjustable support system in accordance with an embodiment of the present invention.

FIG. 5 is a top view of a seat and leg supports in accordance with an embodiment of the present invention.

FIG. 6 is a front view of a back support in accordance with an embodiment of the present invention.

FIG. 7 is a side view of a back support in accordance with an embodiment of the present invention.

FIG. 8 is a perspective view of a chair in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

As shown in Figures 1, 2 and 8, the present invention generally includes a seat 11, adjustable leg supports 12 and 13 and a conventional chair base 40 connected to and supporting the seat 11. Leg supports 12 and 13 are hingedly connected to seat 11 and thus to conventional chair base 40. In operation, a user sits cross-legged on seat 11 and adjusts the leg supports 12 and 13 up or down as required to change the angle at which the user's legs will be supported to maximize the user's comfort level. The leg supports 12 and 13 are adjusted by pivoting the leg supports about hinges 21 and 22, which are connected to the seat 11. The leg supports 12 and 13 may then be held in place using any mechanism 25 which is adjustable in length. The seat 11 is also designed to allow a user to sit in a conventional fashion if desired.

As shown in Figures 3, 4 and 5, the leg supports 12 and 13 are each connected to the seat 11 by an adjustable arm 25 to allow the leg supports 12 and 13 to be adjusted by the user. The adjustable arm 25 includes an arm slider 26 and a receptacle 27. An arm slider 26 and receptacle 27 are hingedly mounted between the seat 11 and each of the leg supports 12 and 13, respectively. Alternatively, the arm slider 26 and receptacle 27 may be hingedly mounted on a bracket 23 which is attached to the seat 11 and each of the leg supports 12 and 13. The bracket 23 is adapted to ensure a strong connection between the seat 11 and each of the leg supports 12 and 13 to increase the support for the legs supports 12 and 13 and to allow the leg supports 12 and 13 to be raised higher. The bracket 23 also allows the adjustable arm 25 to adjust smoothly through the full range of motion allowing for abroad range of angles for the leg supports 12 and 13, in particular when near-flat or at low relative angles to the seat.

In one embodiment, the receptacle 27 includes an elastic spring 24 which compresses and extends depending upon the weight placed upon the leg support 12 or 13. In operation, when a user sits cross-legged on seat 11, the leg supports 12 and 13 are loaded from the weight of the user's legs, which then apply downward pressure on the adjustable arm 25. As a result, the arm slider 26 slides into the receptacle 27 and compresses the elastic spring 24. When the user gets off the seat 11, the arm slider 26 slides out of receptacle 27 by the restoration force of elastic spring 24. Therefore, the user leg supports 12 and 13 allow the user to adjust the angle of the leg supports 12 and 13 independently of each other anywhere between 0 and about 50 degrees relative to the plane of the seat 11. The arm slider 26 and the receptacle 27 also maybe

operated by an air pressure system, an oil pressure system, a hydraulic system or any other appropriate mechanism known to those skilled in the art.

Alternatively, the adjustable arm 25 may also include a locking device (not shown) for allowing a user to lock the leg supports 12 and 13 in a stable position based upon the desired angle of thigh support when sitting in a cross-legged position. To adjust the leg supports 12 and 13, a user unlocks the locking device and lifts the leg supports 12 and 13 to desired angle. A user then locks the locking device to secure the adjustable arm 25 to prevent movement to the leg supports 12 and 13.

In one embodiment of the present invention as illustrated in Figures 6 to 8, the chair may include a lower back support 30. The back support 30 is connected to the seat 11. The top of the back support 30 consists of a back rest 14 for supporting a user's back. The back rest 14 is hingedly connected to the back support 30 to allow adjustment to increase the user's comfort level. The back support 30 also may have a shape for aligning the pelvic bone with the rest of the user's spinal column for maximizing the postural benefits of sitting in the chair.

In any of the above embodiments, set 11 may have a particulars shape to ensure that it supports both cross-legged and conventional seating. In one embodiment shown in Figures 1, 2 and 8, seat 11 tapers inward from the user's hips to accommodate the leg supports 12 and 13 and then curves outward to accommodate a user's feet while sitting in a cross-legged position. Further, the front of seat 11 defines tapered recesses which are meant to allow room for a user's legs when sitting in a conventional manner on the chair.

In any of the above embodiments, the surface of the seat 11, leg supports 12 and 13 and the lower back support 30 may be optionally padded with foam or other padding material, and then covered with suitable upholstery (not shown).

In any of the above embodiments, chair base 40 is any chair base of a suitable height for work environments typically found in North America, such as an office chair base or wooden chair base. For example, as illustrated in Figure 8, office chair base 50 is a type typically found on office chairs. More specifically, the office chair base 50 includes a stem (not shown) and a floor base 51. The floor base 51 may include wheels 52 for providing mobility. The stem may be height adjustable to ensure that the chair can be adjusted to a height suitable for the user's environment.

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The embodiments of the present invention described above are intended to be examples only. Alterations, modifications and variations may be effect to the particular embodiments by those of skill in the art without departing from the scope of the invention.

As used herein, except where the context requires otherwise the term 'comprise' and variations of the term, such as 'comprising', 'comprises' and 'comprised', are not intended to exclude other additives, components, integers or steps.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A seating device for supporting a user sitting in a cross-legged yoga position comprising:

(a) a seat having a surface area wide enough to allow the user to sit on the seat in the cross-legged yoga position;

(b) a base operatively connected to the seat for supporting the seat;

(c) two adjustable leg supports, the two adjustable leg supports connected on opposite sides of the seat, each leg support for supporting one of the user's legs when the user sits on the seat in the cross-legged yoga position, the each adjustable leg support capable of adjustment to any one of a plurality of support positions as the each adjustable leg support arcs inward towards the center of the seat about a hinge connected between the adjustable leg support and the seat; and

(d) two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in the plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism, and where a second end of the each adjusting mechanism is directly connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism in a second location which is on an outer edge of the adjustable leg support which is distal from the hinge, the first location of the connection of the first end of the each adjusting mechanism and the second location of the connection of the second end of the each adjusting mechanism for ensuring weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

2. The device as in claim 1 wherein the base is a regular chair base with a plurality of legs.

3. The device as in claim 1 wherein the base has a stem for adjusting the height of the seat and a floor base having wheels for providing mobility.

4. The device as in claim 1 wherein the each adjusting mechanism consists of an arm slider and receptacle.

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5. The device as in claim 4 wherein the receptacle includes an elastic spring system for reciprocating the slider.

6. The device as in claim 4 wherein the receptacle includes an air pressure system for reciprocating the slider.

7. The device as in claim 4 wherein the receptacle includes an oil pressure system for reciprocating the slider.

8. The device as in claim 4 wherein the receptacle includes a hydraulic pressure system for reciprocating the slider.

9. The device as in claim 1 wherein the each adjusting mechanism includes a locking device for fixing the leg support on the same side as the each adjusting mechanism into one of the plurality of support positions.

10. A seating device for supporting a user sitting in either one of a cross-legged yoga position or a conventional chair seating position comprising:

(a) a seat having a surface area wide enough to allow the user to sit on the seat in the cross-legged yoga position, the seat further having contours in the front of the seat to allow a user to sit on the seat in a conventional chair seating position;

(b) a base operatively connected to the seat for supporting the seat;

(c) two adjustable leg supports, each leg support connected on either side of the seat, the each leg support for supporting one of the user's legs when the user sits in the cross-legged yoga position on the seat, the each adjustable leg support capable of adjustment to any one of a plurality of positions arcing inward about a hinge connected between the adjustable leg support and the seat; and

(d) two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in the plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism,

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and where a second end of the each adjusting mechanism is directly connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism in a second location which is on an outer edge of the adjustable leg support which is distal from the hinge, the first location of the connection of the first end of the each adjusting mechanism and the second location of the connection of the second end of the each adjusting mechanism are for ensuring weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

11. The device as in claim 10 for supporting a user sitting in the cross-legged yoga position, wherein the seat has a front portion and a rear portion, and wherein the device further comprises a back support hingedly connected to the rear portion of the seat.

12. The device as in claim 11 wherein the back support includes an adjustable back rest for supporting a user's back.

13. The device as in claim 10 further comprising a bracket attached to the underside and outside edge of the seat for supporting the end of the each adjusting mechanism which is connected to the seat.

14. A seat for operative connection to a support base, the seat for supporting a user sitting in a cross-legged yoga position comprising:

(a) a surface area wide enough to allow the user to sit in the cross-legged yoga position; and

(b) adjustable leg supports connected to the seat, each adjustable leg support for moving into any one of a plurality of positions pivoting inward towards the center of the seat about its pivot connection point to the seat; and

(c) two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in the plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism, and where a second end of the each adjusting mechanism is directly connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism in a second location which is on an outer edge of the adjustable leg support which is distal from the pivot

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connection point, the first location of the connection of the first end of the each adjusting mechanism and the second location of the connection of the second end of the each adjusting mechanism are for ensuring weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

15. A method for allowing a user to sit in a cross-legged yoga position comprising the steps of:

(a) providing the user with a seating device including a seat having a surface area wide enough to allow a user to sit on the seat in the cross-legged yoga position;

(b) providing adjustable leg supports each connected to either side of the seat for providing support for each of the user's legs while the user sits in the cross-legged yoga position on the seat, each of the leg adjustable supports arcing inward about a hinge connected between each of the adjustable leg supports and the seat; and

(c) providing two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in a plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism, and where a second end of the each adjusting mechanism is directly connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism in a second location which is on an outer edge of the adjustable leg support which is distal from the hinge, the first location of the connection of the first end of the adjusting mechanism and the second location of the connection of the second end of the adjusting mechanism are for ensuring weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

16. A seating device for supporting a user sitting in a cross-legged yoga position comprising:

(a) a seat having a surface area wide enough to allow the user to sit on the seat in the cross-legged yoga position;

(b) a base operatively connected to the seat for supporting the seat;

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(c) two adjustable leg supports, the two adjustable leg supports connected on opposite sides of the seat, the each leg support for supporting one of the user's legs when the user sits on the seat in the cross-legged yoga position, the each adjustable leg support capable of adjustment to any one of a plurality of support positions as the each adjustable leg support arcs inward towards the centre of the seat about a hinge connected between the adjustable leg support and the seat; and

(d) two adjusting mechanisms, each adjusting mechanism for supporting one adjustable leg support in the plurality of adjustable leg support positions, where a first end of the each adjusting mechanism is connected to an underside and outside edge of the seat in a first location proximate to the adjustable leg support which is on the same side of the seat as the each adjusting mechanism, and where a second end of the each adjusting mechanism is directly pivotally connected to an underside of the adjustable leg support on the same side of the seat as the each adjusting mechanism on an outer edge of the adjustable leg support which is distal from the hinge, the first location of the connection of the first end of the each adjusting mechanism and the second location of the connection of the second end of the each adjusting mechanism are for ensuring weight-bearing support for the adjustable leg support and for maximizing the range of motion of the adjustable leg support.

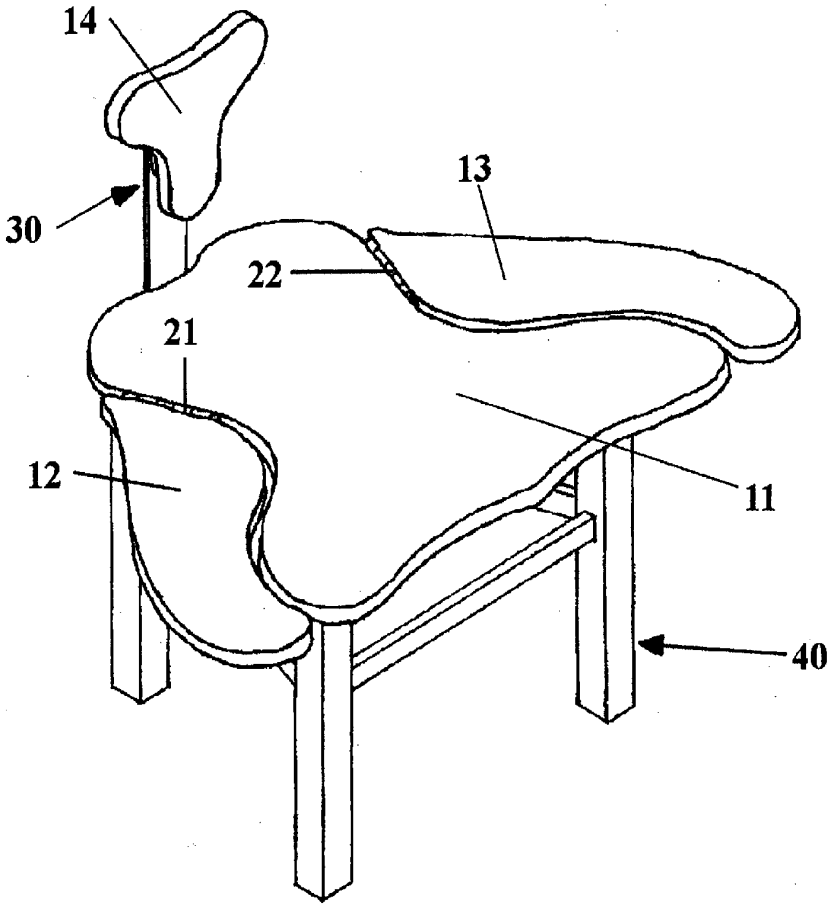

FIG. 1

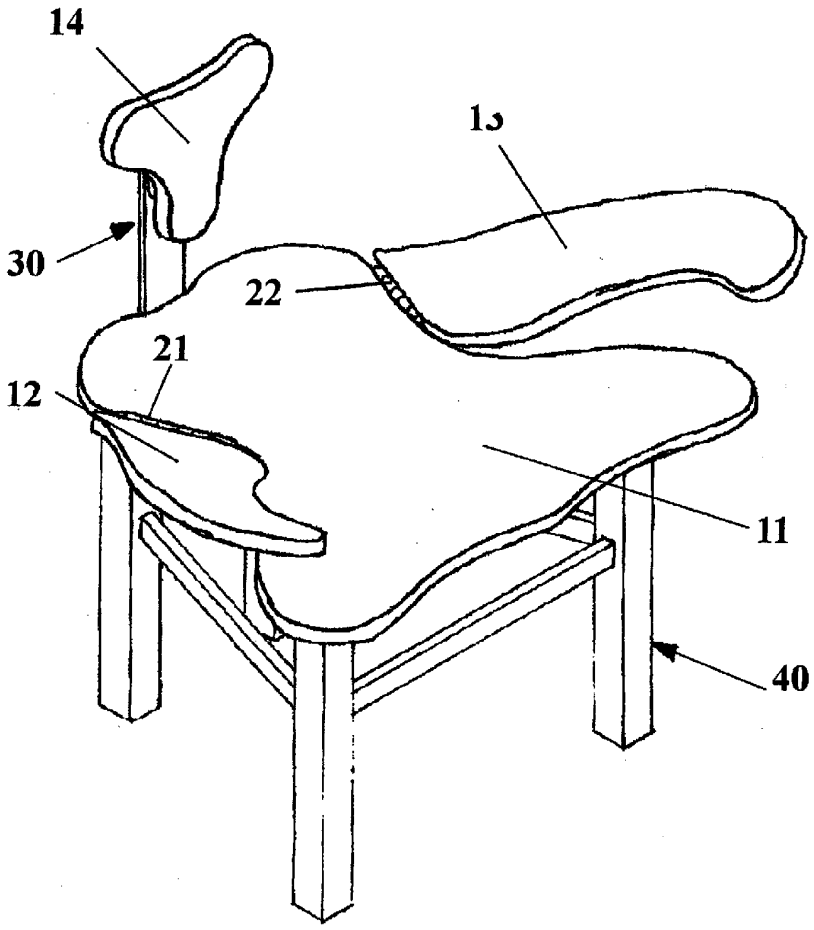

FIG. 2

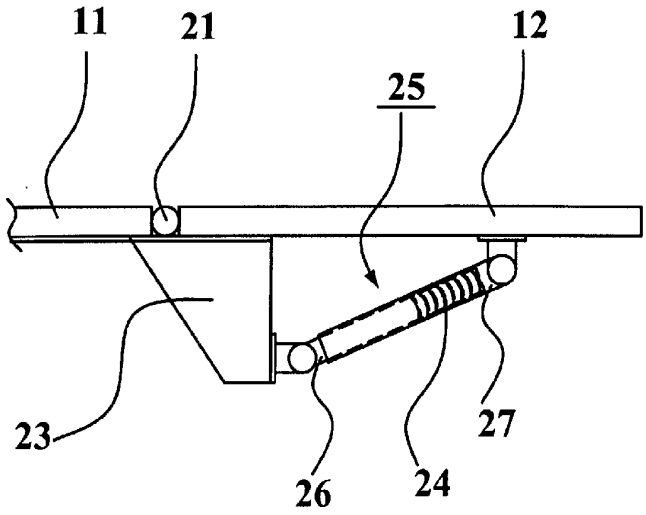

FIG. 3

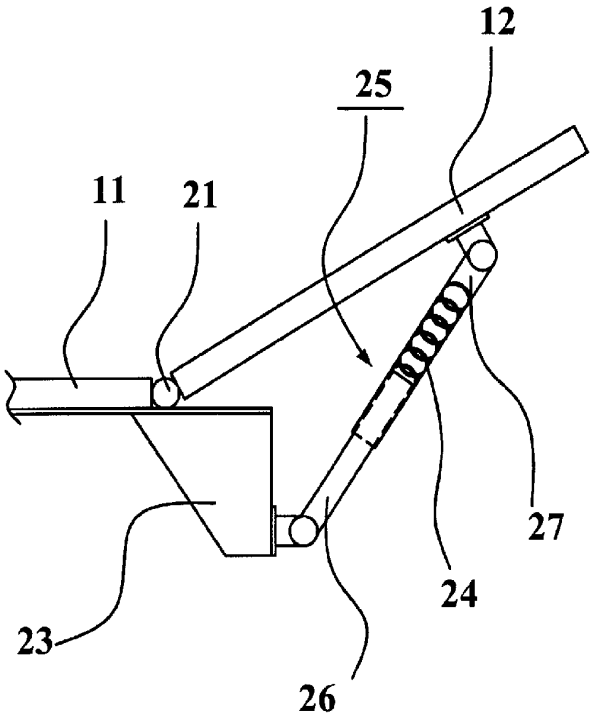

FIG. 4

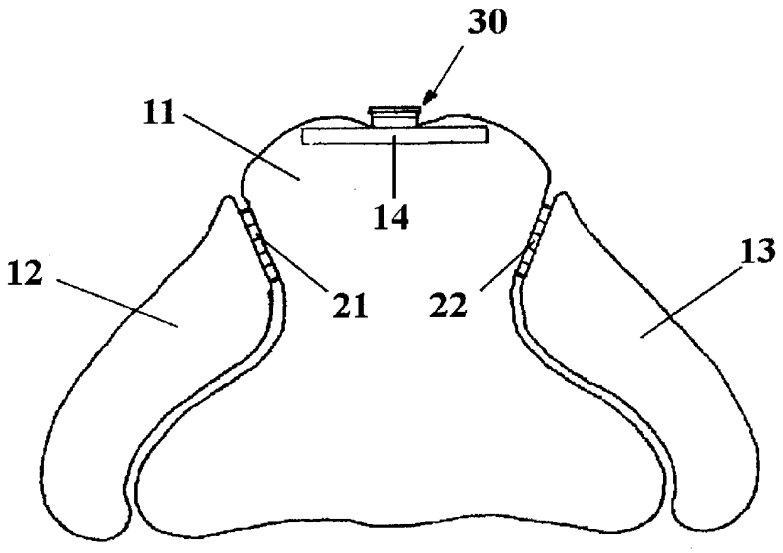

FIG. 5

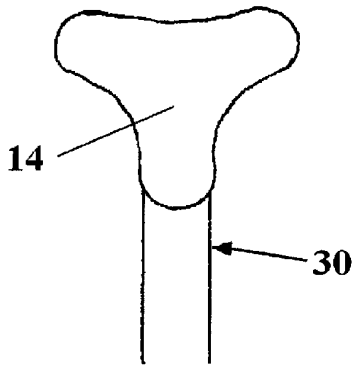

FIG. 6

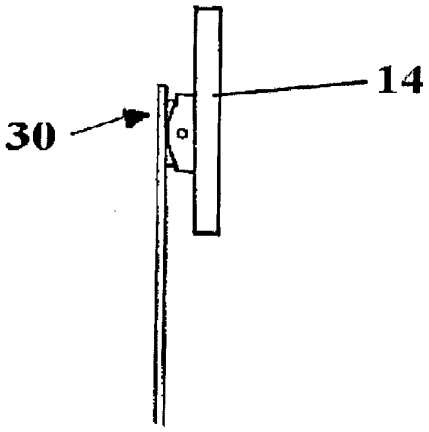

FIG. 7

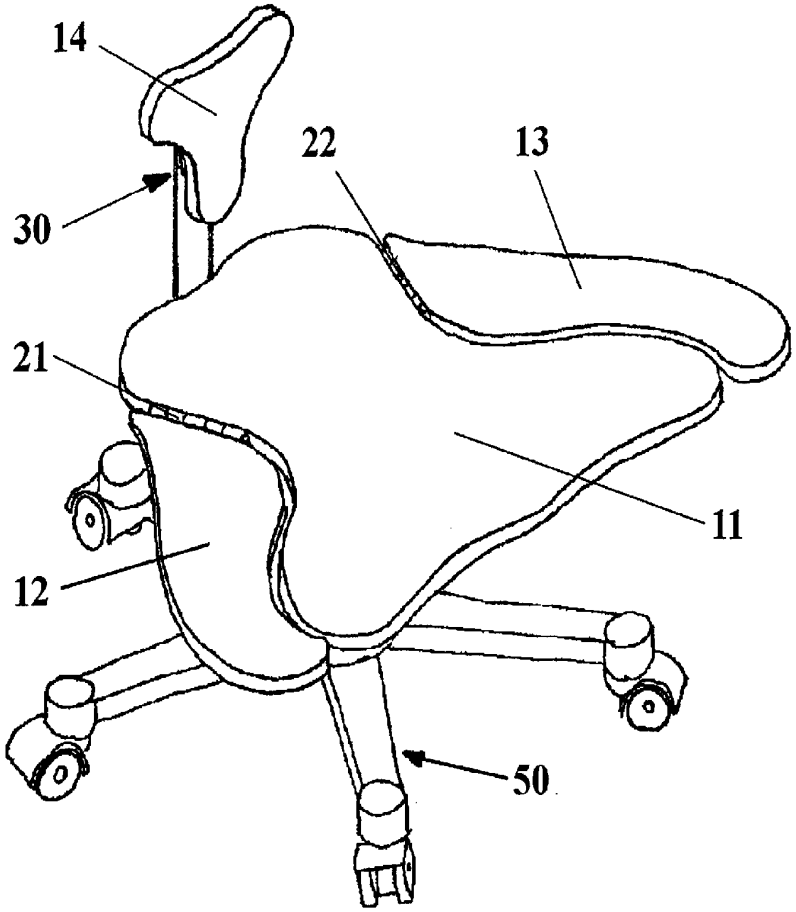

FIG. 8