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(54) BEAUTY SEATING DEVICE

(57) The present invention discloses a beauty seat, which includes a machine body and a seat frame. The seat frame is slidably matched with the machine body and the machine body has a linear drive assembly. The linear drive assembly is connected to and drives the seat frame to slide; the back frame assembly includes a connecting rod and a back frame, the back frame is rotationally connected to the seat frame, one end of the connecting rod is hinged to the back frame, and the other end is hinged to the body; the tripod assembly includes a connecting rod group and a tripod, the tripod is rotatably connected to the seat frame, and the tripod is connected to the seat frame through the connection rod group. The connecting rod group includes the first connecting rod, swing arm, and the second connecting rod in sequence. The swing arm is rotatably installed on the body, the two ends of the first connecting rod are hinged to the tripod and the swing arm respectively, the two ends of the second link are hinged to the seat frame and the swing arm respectively, the swing arm is hinged to the first connecting rod,the second connecting rod, and the body. One driving device can be used to drive the tripod and back frame to close or open at the same time, reducing production costs and simplifying the transmission mechanism.

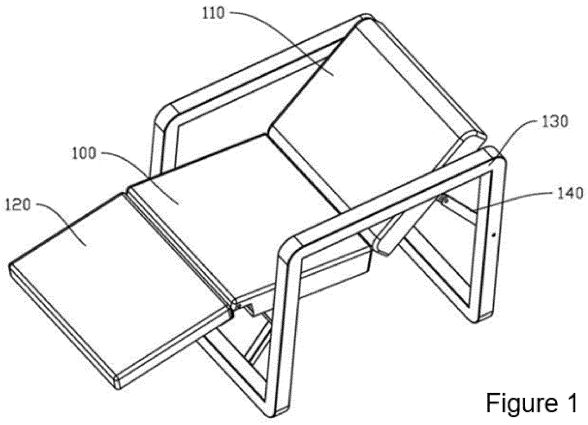

Figure 1

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Description

Technical field

[0001] This invention is related to the technical field of beauty auxiliary devices, and especially a beauty seat.

Background technology

[0002] Beauty beds represent one of the common furniture in beauty salons,Women's clubs,body massage clubs, and SPA, its unique structural design helps meet the requirements of various angles of the body during the beauty and beauty process, allowing the beautician to conduct corresponding operations. Beauty treatment usually refers to the user lying on a beauty bed to receive a series of beauty treatments, allowing people to feel comfortable and relaxed. Most existing beauty beds consist of three parts, which are a tripod, a seat frame and a back frame that are connected in sequence. When beauty work is carried out, it is usually necessary to adjust the angles of the tripod and the back frame to make the beauty work easier. Most of the existing electric adjustment structures are equipped with a driving mechanism on the back frame and a driving mechanism on the foot pads, and the two driving mechanisms work at the same time to adjust the posture of the beauty bed. This type of driving method is costly and is likely to cause damage, and the later maintenance is troublesome. Also, a linkage drive device can be used to drive the movement of the tripod and the back frame at the same time through, yet the structure is relatively complex and the installation and manufacturing costs are relatively high.

Contents of the invention

[0003] The invention aims to solve at least one of the technical problems existing in the prior art. For this purpose, this invention proposes a beauty seat that can use a driving device to drive the tripod and back frame to close or open at the same time, reducing production costs and simplifying the transmission mechanism.

[0004] A beauty seat according to the first embodiment of the present invention, including: a seat assembly, including a body and a seat frame, the seat frame is slidingly matched with the body, and the body has a linear drive assembly. The linear drive assembly is connected to and drives the seat frame to slide;

[0005] The back frame assembly includes a connecting rod and a back frame. The back frame is rotationally connected to the seat frame. One end of the connecting rod is hinged to the back frame, and the other end is hinged to the body;

[0006] The tripod assembly includes a connecting rod group and a tripod, and the tripod is rotationally connected to the seat frame. The tripod is connected to the seat frame through the connecting rod group drivingly, and the connecting rod group includes the first connecting rod,swing armconnected,and the second connecting rod in sequence. The swing arm is rotatably installed on the body, the two ends of the first connecting rod are hinged with the tripod and the swing arm respectively, both ends of the second connecting rod are hinged to the seat frame and the swing arm respectively, and the swing arm is hinged to the first connecting rod,the second connecting rod, and the body in sequence.

[0007] A beauty seat according to an embodiment of the present invention and there are at least the following beneficial effects: The linear drive component connects and drives the connecting rod group to open to drive the tripod, making the seat frame and back frame unfold; or the linear drive assembly drives the connecting rod group to close to drive the tripod, the seat frame and the back frame to be closed in the direction away from the first, becoming closed.A linear drive device is used to drive the seat frame to slide. When the seat frame slides, the connecting rod group and the back frame assembly drive the back frame and the tripod to expand or fold at the same time, adapting to different working postures of the beauty seat. The structure of the connecting rod group and the back frame assembly is simple, which can save installation and manufacturing costs. The beauty seat is not easily damaged, there is no need to set up two sets of power devices, and the back frame and the tripod can be synchronously linked. Linear drive devices are used, which can achieve stepless adjustment so that it is easy to adjust the posture of the beauty seat, enhancing the user experience.

[0008] According to some embodiments of the present invention, the bottom of the seat frame has a vertical arm, and the second connecting rod is hinged to the seat frame through the mentioned vertical arm. By setting the vertical arm, the swing range of the tripod can be increased, better adjusting the working posture of the beauty seat.

[0009] According to some embodiments of the present invention, the seat frame has a sliding seat, and the body has a A base that is adapted to the sliding seat, and the linear drive assembly drives the sliding seat to slide and fit with the base frame.The coordination between the sliding seat and the base allows the seat frame slide to be smoother, and the load bearing capacity of the seat frame can also be larger.

[0010] According to some embodiments of the present invention, the body has an accommodation space, and the linear drive assembly is connected to and drives the sliding seat to slide, which drives the connecting rod group to close and drives the seat frame and the back frame to move to direction of the connection between the the connecting rod and the body, being stored in the accommodation space. The setting of a storage space can better organize and store the spare parts of the beauty seat and reduce space occupation.

[0011] According to some embodiments of the invention, the first connecting rod and the swing arm are straight rods, the second connecting rod is an arc-shaped rod. The second connecting rod is set as an arc rod, which

can form an avoidance space, making the space inside the beauty seat more compact. It improves space utilization and increasing the swing range of the tripod.

[0012] According to some embodiments of the present invention, there are two groups of the connecting rod group, and the two groups of connecting rods are arranged symmetrically. The setting up two groups of connecting rods allows the connecting rods to run more smoothly. The two groups of connecting rods are also more stable when driving the tripod and can carry a larger load.

[0013] According to some embodiments of the present invention, the connecting rod group is on the bottom of the tripod and the seat frame,which looks more beautiful.

[0014] According to some embodiments of the present invention, there are two groups of the connecting rods, and the two groups of connecting rods are symmetrically arranged on both sides of the back frame.The connecting rods are set on both sides to balance the forces, ensuring smooth operation.

[0015] According to some embodiments of the present invention, the tripod has a first connecting plate on one side facing the seat frame. The seat frame has a second connecting plate on one side facing the foot frame. The first connecting plate is hinged to the second connecting plate, allowing the foot frame and the seat frame to be rotationally connected.The first connecting plate and the second connecting plate can disperse the force, enabling the stability of the connection between the first connecting plate and the second connecting plate so that it is not easy for it to become loose.

[0016] According to some embodiments of the present invention, the seat frame and the back frame are connected through a hinge. The connection between the seat frame and the back frame is more stable and the force is evenly distributed.

[0017] Additional aspects and advantages of the invention will be explained in part from the description that follows. Some parts will become apparent in the following description or learned by practice of the invention.

Description of the drawings

[0018] The following is the further description of the present invention combined with the accompanying drawings and examples, wherein:

Figure 1 is the schematic diagram of the beauty seat according to the embodiment of the present invention when it is unfolded;

Figure 2 is the bottom diagram of the beauty seat according to an embodiment of the present invention;

Figure 3 is Schematic Diagram I of the connecting rod group according to an embodiment of the present invention;

Figure 4 is Schematic Diagram II of the connecting rod group according to the embodiment of the present invention;

Figure 5 is the schematic diagram of the first connecting plate and the second connecting plate in the embodiment of the present invention.

[0019] Reference symbols: seat frame 100; back frame 110; tripod 120; body 130; connecting rod140; first connecting rod160; swing arm 170; second connecting rod 180; linear drive device190; hinge 200; sliding seat 210; base 220; vertical arm 230; first connecting plate 240; second connecting plate 250; cross bar 260.

Detailed implementation

[0020] The embodiments of the present invention are described in detail below, examples of which are shown in the attached drawings, in which the same or similar reference numbers represent the same or similar components or components with the same or similar functions.The embodiments described below by referring to the drawings are exemplary and are only used for explaining the present invention and cannot be understood as limitations of the present invention.

[0021] In the description of the present invention, it must be understood that the involved direction description like the directions or positional relationship of upper, lower, front, rear, left, right, etc. are based on the the drawings and are only for the convenience of describing the present invention and simplifying the description, instead of indicating or implying that the device or element referred to must have a specific orientation,or be constructed and operated in a specific direction. Therefore, it cannot be understood as a limitation on the invention.

[0022] In the description of the present invention, several means one or more, and multiple means two. The above, greater than,less than,, etc., must be understood to excluding the original number, and the above, the following,within, etc. must be understood to including the original number.If First and Second are described, they are only used for the purpose of distinguishing technical features and cannot be understood as indicating or implying relative importance or implicitly indicating the number of technical features or implicit indication of the sequence relationship of the indicated technical features.

[0023] In the description of the present invention, unless otherwise clearly limited, the words like setting, installation, connection must be understood in a broad sense, and those skilled in the art can reasonably determine the specific meaning of the above words in the present invention based on the specific content of the technical solution.

[0024] Referring to Figure 1 to Figure 4, the seat frame assembly includes the body 130 and the seat frame100,

the seat frame 100 matches with the body 130 in sliding, the body 130 also has a linear drive assembly, which connects to the seat frame 100 and and drives it to slide; the back frame assembly includes the connecting rod 140 and the back frame 110, the back frame 110 and the seat frame 100 are rotationally connected, one end of the connecting rod 140 is hinged with the back frame 110, and the other end is hinged with the body 130; the tripod assembly includes the connecting group and the tripod 120, the tripod 120 and the seat frame 100 are rotationally connected, the tripod120 is connected with the seat frame 100through the connecting rod group drivingly, the connecting rod group includes the first connecting rod 160,the swing arm 170,the second connecting rod 180, the swing arm 170 is rotationally installed on the body 130, the two ends of the first connecting rod 160 are respectively hinged with the tripod 120 and the swing arm 170, the two ends of the second connecting rod 180 are respectively hinged to the seat frame 100 and the swing arm 170, and the swing arm 170 is hinged with the first connecting rod160,the second connecting rod 180, and the body 130.

[0025] Referring to Figure 3 and Figure 4, in some embodiments, the body 130 has a cross bar 260, which is fixed on the body 130 and passes horizontally through the end of the swing arm 170. The swing arm 170 can only swing with the cross bar 260 as the center of the circle, and when the second connecting rod rotates in 180 degrees, the first connecting rod 160 can push the tripod 120 downward to swing at the limit of the crossbar 260, completing the lifting action, while the seat frame 100 and the back frame 110 are rigidly connected. When the seat frame 100 moves, the seat frame 100 can drive the back frame 110to rotate.

[0026] It is understood that linear drives 190 can adopt electric cylinder, pneumatic cylinder, or hydraulic cylinder.In some preferred embodiments, the linear drive device 190 also has a self-locking structure, which can adopt a ball screw module,a trapezoidal screw module, or a ratchet and pawl module, uses a self-locking structure, and can improve the safety of the present invention.

[0027] The linear drive assembly connects and drives the connecting rod group to open to drive the tripod 120,seat frame 100 and back frame 110 to unfold; or, the linear drive assembly drives the connecting rod group to close, and drives the tripod 120,seat frame 100and back frame 110 to be closed together in the direction away from the first, forming a closed state.A linear drive 190 is used to drive the seat 100which drives the seat 100 to slide. When seat 100 slides, the connecting rod group and the back frame 110 components drive the back frame 110and the tripod 120 to unfold or fold at the same time, adapting to different working postures of the beauty seat. The structure of the connecting rod group and back frame 110 components are simple, which can save installation and manufacturing costs and the beauty seat is not easy to damage this way. There is no need to set up two sets of power devices to make the back frame 110 and tripod 120 synchronously linked. The use of the linear drive device 190 can realize stepless adjustment and easily adjust the posture of the beauty seat, enhancing the user experience. It can be understood that the first direction is the lifting direction of the tripod 1250 and the back frame 110, and the sear frame 100 drives the tripod 120 and the back frame 110 to move when it slides, realizing the linkage effect.

[0028] It can be understood that beauty seats can be applied to beauty chairs, beauty beds, shampoo chairs or shampoo beds and other fields, and the present invention does not limit the scope of use of beauty seats. In some embodiments, there are soft cushions in the upper surface of the tripod 120,sitting frame 100,and back frame 110, which play a cushioning role, enhancing user satisfaction during use.

[0029] Referring to the Figure 4, there is a vertical arm 230 in the seat frame 100, and the second connecting rod 180 passes through the vertical arm 230 with the seat frame 100.By setting the vertical arm 230, the swing range of the tripod 120 can be increased, better adjusting the work of the beauty seat posture. The connecting rod group is at the bottom of the tripod 120 and the seat 100, looking more beautiful. In some embodiments, by adjusting the length of the vertical arm 230, the swing amplitude of the tripod 120 can be changed. By increasing or decreasing the length of the vertical arm 230, the swing amplitude of the tripod 120 can be controlled, adapting to different models and sizes of beauty seats.

[0030] Referring to Figure 2 to Figure 4, the seat 100 has a slip seat 210, the body 130 has a base 220 that is compatible with the slip seat 210, and the linear drive component drives the slip seat 210 to slide to be matched with the base 220. The coordination between the sliding base 210and the base 220 allows the sitting frame 100 to be more stable when sliding, and the load bearing capacity of the seat frame 100 can be larger. Base 220 isiInstalled together with the body 130through two reinforcing ribs and can increase the load-bearing capacity of the base220. There is a certain inclination for the base 220, the angle between the bottom and the horizontal plane of the base 220 is 5°-15 °, and there is a certain inclination between the base 220, which is ergonomic and users can feel more comfortable when using this beauty seat.

[0031] The body 130 has an accommodation space, the linear drive assembly is connected to the sliding seat 210 and drives it to slide, driving the connecting rod group close. It drives the tripod 120,seat frame100 and the back frame 110 to move toward the connection area between the connecting rod 140 and the body 130, being stored in the accommodation space.The setting of a storage space realizes better organization and storage of the spare parts of the beauty seat, reducing space occupation.

[0032] Referring to Figure 2 to Figure 3, the first connecting rod 160 and the swing arm170are straight rods, the second connecting rod 180 is an arc-shaped rod.The

second connecting rod 180 is set as an arc rod, which can form an avoidance space and avoid the cross bar 260, allowing the space inside the beauty seat to be more compact. It improves space utilization, thereby increasing the swing amplitude and stroke range of the tripod 120. There are two groups of the connecting rod group, which are symmetrically arranged. The setting of two groups of connecting rods allows the connecting rods to run more smoothly, and the two sets of connecting rods can be more stable when driving the tripod 120 and can carry larger loads.

[0033] Referring to Figure 1 and Figure 2, there are two sets of the connecting rods, which are set symmetrically on both sides.The connecting rod 140 is set on both sides to balance the forces and ensure smooth operation. The seat frame 100 and back frame 110 are connected through the hinge 200. The connection between the seat frame100 and the back frame 110 is more stable and the force is evenly distributed.

[0034] Referring to Figure 5, the first connecting plate 240 is set on the side of tripod 120 facing the seat frame 100, and the second connecting plate 250 is set on the side of the seat 100 facing the tripod 120. The first connecting plate 240 is hinged with the second connecting plate 250 to realize the rotating connection between tripod 120 and the seat 100. The first connecting plate 240 and the second connecting plate 250 can disperse the force to guarantee the stability of the connection between the first connecting plate 240 and the second connecting plate 250 and it is not easy for it to get loose this way. There are multiple mounting holes in the first connecting plate 240 and the second connecting plate 250, which improves the stability of installation.

[0035] The above are the details of embodiments of the present invention with reference to the attached drawings, but the present invention is not limited to the above embodiments. Within the scope of knowledge possessed by those of ordinary skill in the technical field, a variety of changes can be made without breaking away from the spirit of the present invention.

Claims

1. A beauty seat, the characteristics of which include:

   The seat frame assembly includes a body and a seat frame. The seat frame is slidably matched with the body. The body also has a linear drive assembly, and the linear drive assembly connects and drives the seat frame to slide;
   The back frame assembly includes a connecting rod and a back frame, the back frame is rotationally connected to the seat frame, one end of the connecting rod is hinged to the back frame, and the other end is hinged to the body;
   The tripod assembly includes a connecting rod group and a tripod. The tripod is rotationally connected to the seat frame. The tripod is connected to the seat frame through the mentioned connecting rod group, the connecting rod group includes first connecting rod,swing arm,and second connecting rod in sequence, and the swing arm is rotatably installed on the body. The two ends of the first connecting rod are respectively hinged with the tripod and the swing arm, the two ends of the second connecting rod are respectively hinged with the seat frame and the swing arm, the swing arm. The mentioned swing arm is hinged to the first connecting rod, the second connecting rod and the body.

2. A beauty seat according to Claim 1 with the characteristics that the bottom of the seat has a vertical arm, the second connecting rod is hinged to the seat frame through the vertical arm.

3. A beauty seat according to Claim 1 with the characteristics that the seat frame has a sliding seat, the mentioned body has a base that matches the sliding seat, and the linear drive assembly drives the sliding seat to slide and fit with the base.

4. A beauty seat according to Claim 3 with the characteristics that the body has an accommodation space, and the mentioned straight line drives to assembly to connect and drive the sliding seat to slide, which drives the connecting rod group to close, driving the seat frame and the back frame to move toward the connection rod between the connecting rod and the body, and be stored in the accommodation space.

5. A beauty seat according to Claim 1 with the characteristics that the first connecting rod and the swing arm are straight rods, and the second connecting rod is an arc rod.

6. A beauty seat according to Claim 1 with the characteristics that there are two groups of the connecting rod group, and the connecting rod groups are arranged symmetrically.

7. A beauty seat according to Claim 6 with the characteristics that the connecting rod group is arranged on the tripod and the bottom of the seat frame.

8. A beauty seat according to Claim 1 with the characteristics that there are two groups of the connecting rod groups, and the connecting rods of the two groups are symmetrically arranged on both sides of the back frame.

9. A beauty seat according to Claim 1 with the characteristics that the foot frame faces one side of the seat frame and has a first connection plate, and there

is a second connection plate on one side of the seat frame facing the tripod. The first connection plate is hinged to the second connection plate, enabling the tripod and the seat frame to be rotated and connected.

10. A beauty seat according to Claim 1 with the characteristics that the seat frame and the back frame are connected by hinges.

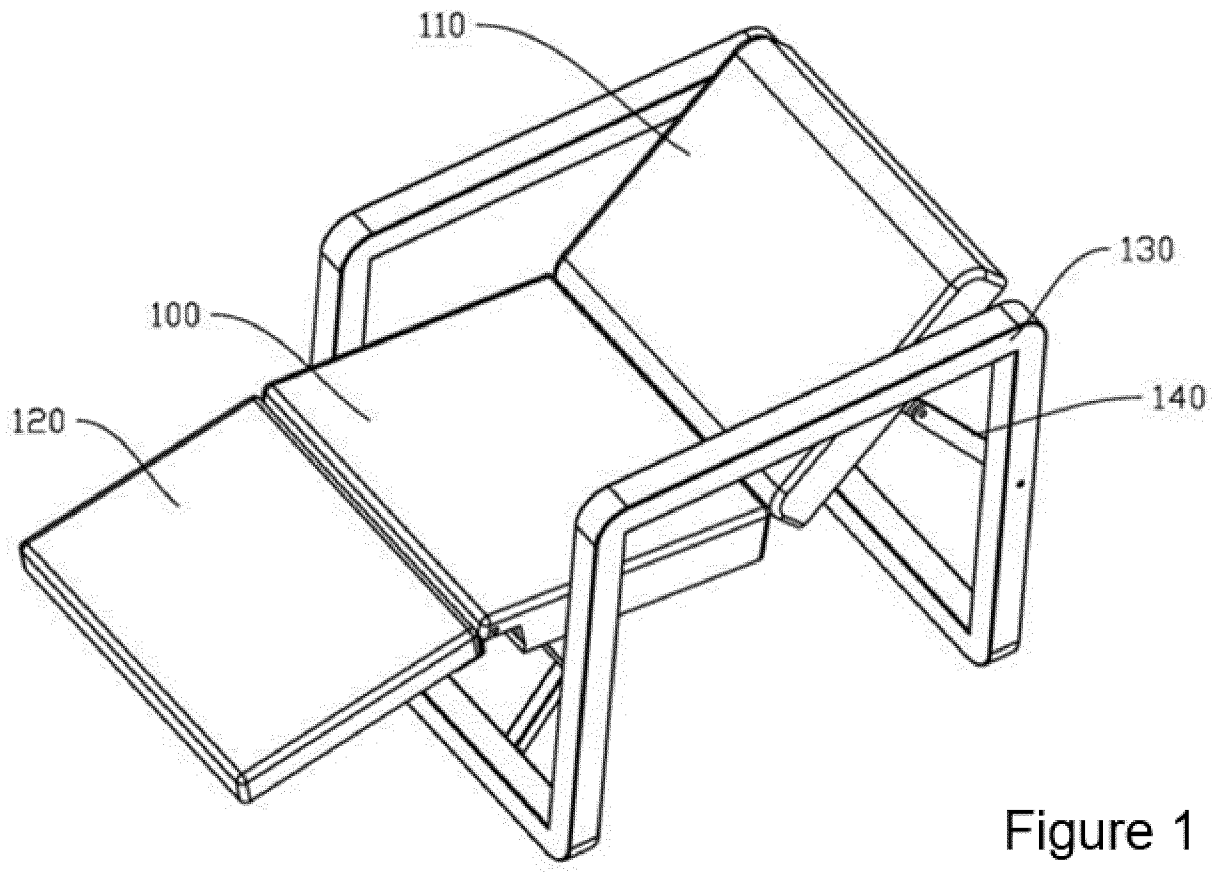

Figure 1

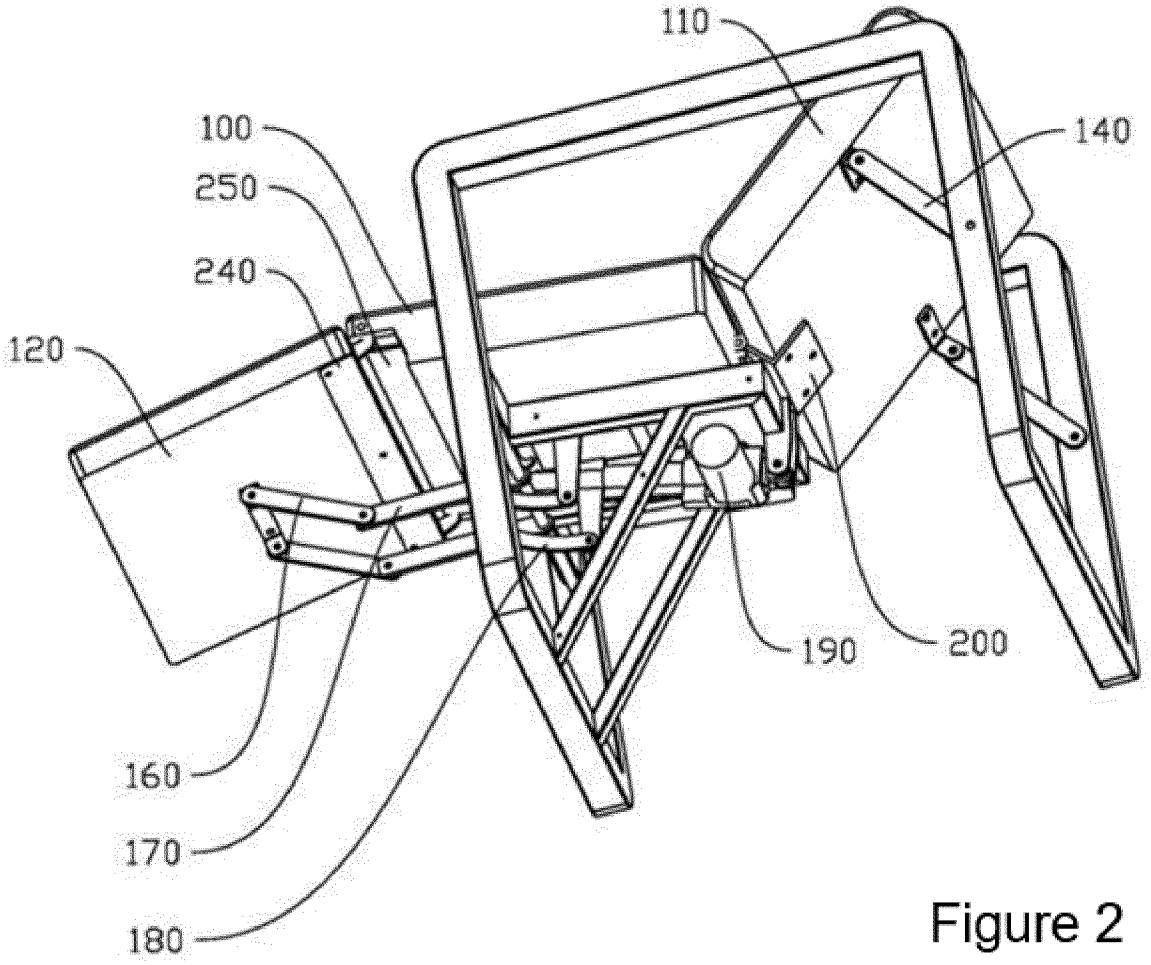

Figure 2

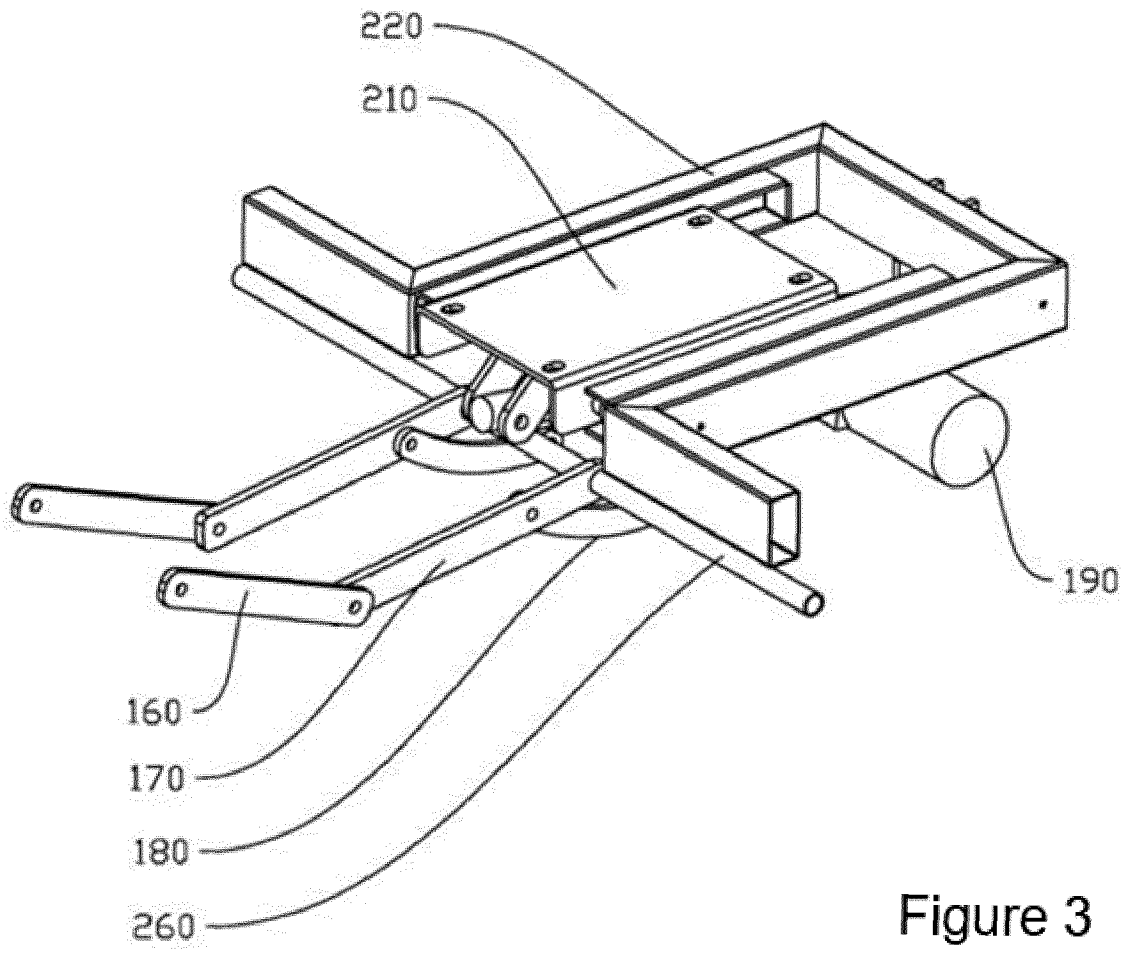

Figure 3

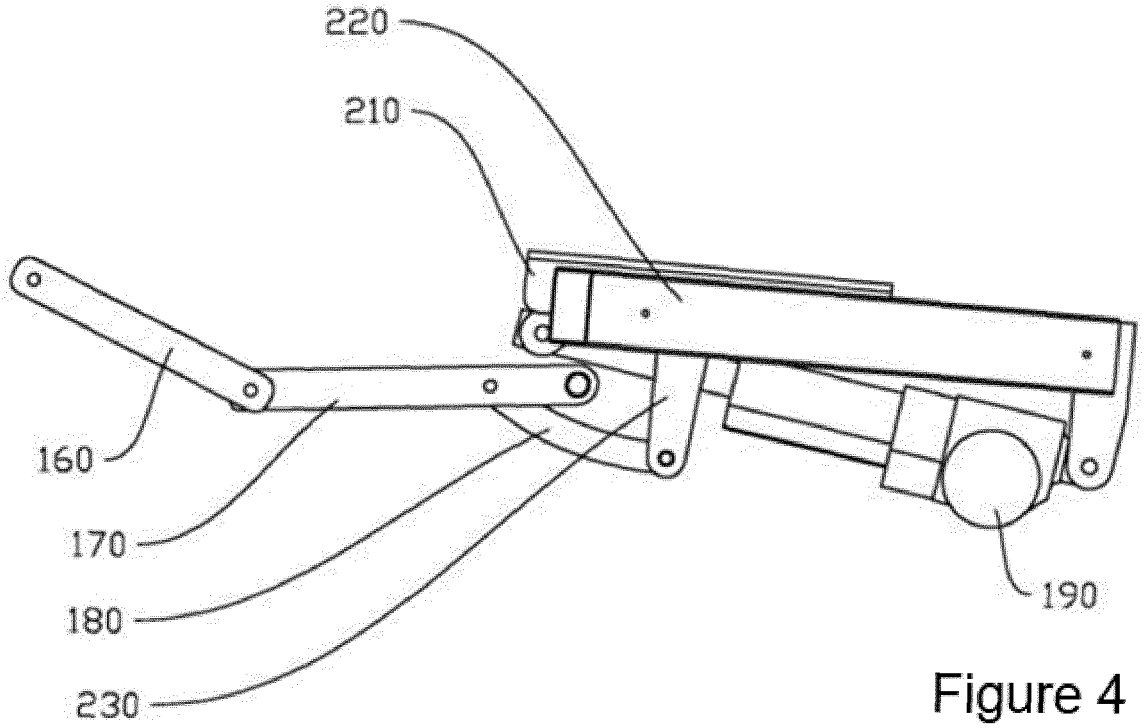

Figure 4

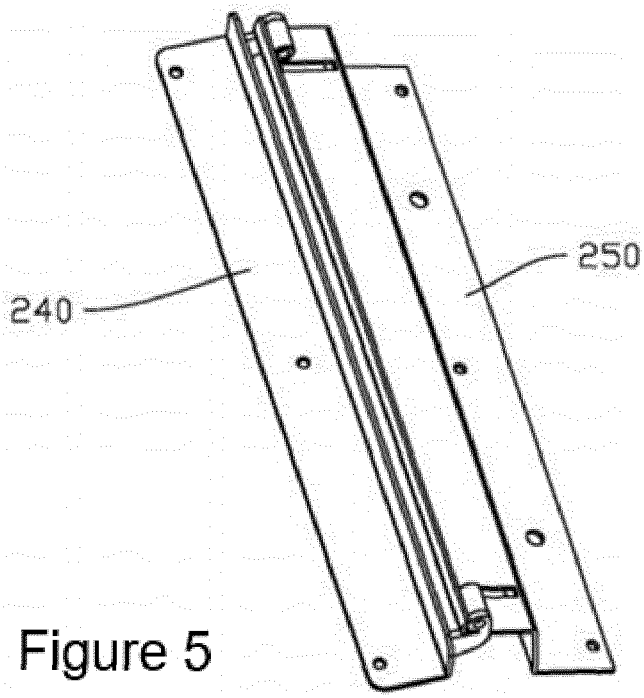

Figure 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/120081

A. CLASSIFICATION OF SUBJECT MATTER

A47C 1/00(2006.01)i; A47C7/00(2006.01)i; A47C7/40(2006.01)i; A47C7/46(2006.01)i; A47C7/58(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A47C, A61H, A61G, A45D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS, CNTXT, VEN, CNKI, ENTXTC, WPABSC: 座, 椅, 坐具, 折叠, 展开, 平展, 架, 联动, 连杆, 摆臂, 靠背, 背靠, 背架, 踏板, 腿, 脚, 滑动, 驱动, 电机, chair, seat, fold, frame, bracket, linkage, rod, bar, arm, back, backrest, pedal, leg, foot, slide, driving, motor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	CN 111759693 A (SHANGHAI RONGTAI HEALTH TECHNOLOGY CORP., LTD.) 13 October 2020 (2020-10-13) description, paragraphs 0057-0074, and figures 1-5	1-10
Y	CN 210727006 U (JIANGMEN JIANKAI BEAUTY EQUIPMENT CO., LTD.) 12 June 2020 (2020-06-12) description, paragraphs 0022-0032, and figures 1-6	1-10
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Y	CN 102218992 A (SHANGHAI YANFENG JOHNSON CONTROLS SEATING CO., LTD.) 19 October 2011 (2011-10-19) description, paragraphs 0042-0055, and figures 1-16	1-10

☑ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 December 2023	**20 December 2023**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Form PCT/ISA/210 (second sheet) (July 2022)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/120081

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