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STUDY TABLE.

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The present invention belongs to the technical field of tableware, provides a study table, including a table top, a bracket arranged below the table top and connected thereto, and a footrest arranged at the end of the bracket and connected thereto, wherein the bracket and the footrest are provided in two groups and are symmetrically distributed below the table top; the table top includes a main board, side support plates symmetrically arranged on the left and right sides of the main board, the side support plates are movably hinged to the main board, and a notch is provided on the front side of the main board. The study table provided by the present invention can change the shape, area of the table top by rotating the side support plates to meet different usage requirements, making it more ergonomically designed, facilitating the maintenance of a good sitting posture for study. (Fig.1)

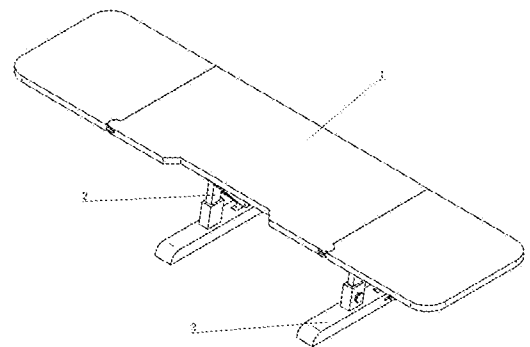


FIG. 1

STUDY TABLE**FIELD OF TECHNOLOGY**

[0001] The invention belongs to the technical field of tables, and in particular relates to a study table.

BACKGROUND

[0002] Currently, most study tables on the market are rectangular desktop panels with fixed shapes and fixed areas. In use, the desktop area is often insufficient and cannot provide enough space for users to study or work. Items often fall off the desktop, especially as the age of users increases, the demand for desktop area will also increase, and a small fixed desktop board cannot meet their needs. Moreover, for items in a farther area on the desktop, the user needs to turn sideways or stand up to pick them up, which is extremely inconvenient. At the same time, since the front side of the existing desktop panel close to the user is a flat surface, the desktop panel cannot provide good support for the user's elbow area, resulting in an irregular sitting posture for learning.

[0003] In addition, existing study tables usually use a fixed horizontal desktop panel, and users need to look down for a long time during study and work, which puts pressure on the user's cervical vertebrae, spine, etc., is not conducive to easy and comfortable study and work, and seriously affects physical health.

[0004] In view of the above phenomena, in summary, the main problems that need to be solved are:

[0005] (1) The table area is fixed and cannot meet the needs of users of different ages; especially when the user gets older and taller, the fixed table area cannot meet their needs;

[0006] (2) Existing study tables generally do not have an elbow support area and cannot provide good support for the elbows. Their comfort needs to be improved.

[0007] (3) The height of the table cannot be adjusted. As users grow older and taller, the original study table becomes shorter and can no longer meet their needs.

[0008] (4) The table top does not have an angle adjustment mechanism or components. When using it, the user's cervical spine and spine need to bend at a certain angle. If the sitting posture is not standard, it will cause certain pressure on the cervical spine and spine.

[0009] Therefore, it is necessary to design a study table that can maintain a good sitting posture and improve the comfort of use.

SUMMARY

[0010] In order to solve the above technical problems, the present invention proposes a study table, which can change the shape and area of the table top by rotating the side support plates to meet different usage requirements, making it more ergonomically designed, facilitating the maintenance of a good study sitting posture, and effectively preventing and correcting an irregular sitting posture.

[0011] The technical solution of the present invention is:

[0012] The present invention provides a study table, comprising a table top, a bracket arranged below the table top and connected thereto, and a footrest arranged at the end of the bracket and connected thereto, wherein the bracket and the footrest are both provided in two groups and symmetrically distributed below the table top;

[0013] The table top includes a main board body and side support boards symmetrically arranged on the left and right sides of the main board body. The side support boards are movably hinged to the main board body, and a notch is arranged on the front side of the main board body.

[0014] Preferably, the side support plate comprises a table plate portion and an insert plate portion connected to each other, the table plate portion is adapted to the front and rear widths of the main body, and the insert plate portion is fan-shaped;

[0015] The main board body is provided with a fan -shaped receiving groove LU508257 matched with the plug-in board part, the plug-in board part is movably embedded in the receiving groove, and the hinge axis between the side support plate and the main board body coincides with the center of the plug-in board part.

[0016] Preferably, the table top portion and the plug plate portion are connected in an integrated structure.

[0017] Preferably, the bracket includes a main frame column and a sub-frame column whose top end is movably hinged to the main board body, the bottom end of the main frame column is movably connected to the tripod so as to be raised and lowered, and the sub-frame column is movably hinged to the tripod.

[0018] Preferably, the main frame column and the auxiliary frame column are arranged crosswise;

[0019] The auxiliary frame column is an inverted "Y"-shaped fork column provided with a guide groove, and the main frame column is movably inserted into the guide groove.

[0020] Preferably, the tripod includes a socket and a foot plate connected to each other, the socket is provided with a slot adapted to the main frame column, the bottom end of the main frame column is movably inserted in the slot, the foot plate is provided with a slide groove and a slider movably arranged in the slide groove, and the bottom end of the auxiliary frame column is movably hinged to the slider.

[0021] Preferably, the socket is further provided with a lifting and locking member which passes through the socket and extends into the slot.

[0022] Preferably, the foot plate is further provided with a side groove connected to the slide groove, and the slide block is provided with a sliding locking member movably embedded in the side groove.

[0023] Preferably, the socket is connected to the foot plate in an integrated structure.

[0024] Compared with common study tables on the market, the present invention solves the following technical problems, has the following advantages and achieves the following effects:

[0025] (1) The main board and side support boards are hinged, and the overall area of the table board can be increased by rotating the side support boards to meet different usage requirements. At the same time, the increased item placement area is within the user's reach, so that items can be taken without standing up or leaning sideways, which is convenient to use. In addition, the unfolded side support boards can increase the elbow support area, and together with the notch set on the front side of the main board, provide good support for the user's elbows, thereby preventing and correcting irregular sitting postures and improving comfort.

[0026] (2) The vertical height of the table is adjusted by using a liftable and movable bracket and footrest to meet the needs of different users, provide a comfortable and appropriate learning posture, and effectively protect the user's health; even if the user is older and taller, the study table can be adjusted according to the user's height and needs due to its liftable and adjustable features;

[0027] (3) The main frame column and the auxiliary frame column are cross-set, and the inclination angle of the table top can be changed through the auxiliary frame column, so that the front side of the table top can be tilted downward at an appropriate angle. The user's cervical spine and spine do not need to bend too much, which reduces the pressure on the cervical spine and spine caused by improper sitting posture during study and work, making it more ergonomically designed.

[0028] Since the study table of this application has the above characteristics, once it is promoted and applied, its economic benefits are significant. This is because, according to data from 2020, China has a total population of 1.412 billion, of which the total population aged 0-14 has reached 253 million, accounting for 18%, an increase of 18.46 million people compared to 2019. The huge group of children has laid the foundation for the study table and chair industry. According to statistics, the scale of young people aged 3-18 in China is huge.

[0029] The latest 2021 education statistics released by the Ministry of Education [U508257 March 2022 show that in 2021, the scale of students in kindergartens, primary schools and middle schools in China is nearly 250 million, including 48.0521 million kindergarten children, 108 million primary school students, 50.1844 million junior high school students, 26.0503 million ordinary high school students, and 13.1181 million secondary vocational school students. The demand for study tables for children or teenagers is huge.

[0030] The study table of this application solves the inconvenience of adjustment and the lack of structural design of traditional study tables. The reason why it is predicted to have huge economic benefits is that as early as 2019 , the market size of China's functional children's learning supplies industry reached 10.96 billion yuan, mainly the products are study tables and eye protection lamps, of which the market size of children's study tables accounted for 61.2% of the total size ; in 2020 , the sales of study tables reached 1.2 billion yuan; it is expected that the market size of study tables will exceed 20 billion yuan in 2024 , and the growth rate in 2025 is expected to be 10.07% . In terms of price, the price of high-end study tables is about 8,000 yuan /set, especially those that can be raised and lowered, are highly comfortable, and are helpful for correcting sitting posture. Products with these structures have become the biggest selling point of study tables, and the study table of this application just meets the above requirements.

[0031] The development trend of study tables in the world is as follows: In 2021, the scale of global study tables is about 38.6 billion yuan (RMB), and it is expected to reach 46 billion yuan by 2028, with a compound annual growth rate (CAGR) of 2.5% during 2022 to 2028. In the next few years, according to the current market demand forecast, the demand for study tables will increase year by year, and the overall market size will be positive.

[0032] Therefore, once the study table of the present application is promoted in the market, it will produce huge economic benefits and its market prospects are good.

BRIEF DESCRIPTION OF THE DRAWINGS

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[0033] FIG. 1 is a schematic diagram of the structure of a study table in Embodiment 1 of the present invention;

[0034] FIG. 2 is a schematic diagram of a partial exploded structure of a study table in Embodiment 1 of the present invention;

[0035] FIG. 3 is a schematic diagram of the structure of the bracket and the tripod in the study table in Example 1 of the present invention;

[0036] FIG. 4 is a schematic diagram of the structure of a slider in a study table in Embodiment 1 of the present invention;

[0037] FIG. 5 is a schematic diagram of the structure of the study table in the unfolded state in Example 1 of the present invention;

[0038] FIG. 6 is a schematic diagram of the structure of the study table in the tilted state in Embodiment 1 of the present invention.

[0039] Figure numerals: 1, table top; 11, main board; 111, notch; 12, side support plate; 121, table top part; 122, plug-in plate part; 2, bracket; 21, main frame column; 22, auxiliary frame column; 221, guide groove; 3, footrest; 31, socket; 311, lifting locking piece; 32, footboard; 321, slide groove; 322, slider; 323, side groove; 324, sliding locking piece.

DESCRIPTION OF THE EMBODIMENTS

[0040] In order to enable those skilled in the art to better understand the present invention, the present invention is further described in conjunction with specific implementation methods.

[0041] Embodiment 1:

[0042] As shown in Figures 1 to 6, the present invention provides a study table, including a table top 1, a bracket 2 arranged below the table top 1 and connected thereto, and a tripod 3 arranged at the bottom end of the bracket 2 and connected thereto; wherein, the bracket 2 and the tripod 3 are each provided with two groups and are symmetrically distributed on the left and right sides below the table top 1.

[0043] As shown in Figures 1 and 5, the table top 1 includes a main board body 11 and side support plates 12 symmetrically arranged on the left and right sides of the main board body 11. The side support plates 12 are movably hinged to the main board body 11 to change the shape and area of the table top 1 by rotating the side support plates 12 to meet different usage requirements.

[0044] As shown in FIG. 2, a notch 111 is provided on the front side of the main body 11. The notch 111 can fit the front area of the upper body of the human body. The elbows are well supported on both sides of the notch 111 to ensure that the user is in an ergonomic learning sitting posture. The side support plate 12 includes a table plate portion 121 and a plug plate portion 122 connected to each other. The table plate portion 121 is adapted to the front and rear widths of the main body 11. The plug plate portion 122 is a fan-shaped plate. The main body 11 is provided with a fan-shaped receiving groove adapted to the plug plate portion 122. The plug plate portion 122 is movably embedded in the receiving groove. The side support plate 12 is movably hinged to the main body 11 and the hinge axis is located at the center of the plug plate portion 122. Specifically refer to FIG. 5, in the unfolded state, the newly added article placement area of the plug plate portion 122 is located in the user's reachable area. The user can complete the taking of articles without turning sideways or standing up, thereby improving the convenience and comfort of use.

[0045] It should be noted that a stop block (not shown in the figure) is provided at the hinged connection between the side support plate 12 and the main board body 11 to limit the rotation of the side support plate 12 and prevent it from rotating at too large an angle and causing the plug plate portion 122 to separate from the main board body 11. That is, after the side support plate 12 is rotated to a certain angle (less than 90 degrees referring to FIG. 1 and FIG. 5, it can be seen that the central angle of the fan-shaped plug plate portion 122 is less than 90 degrees), the stop block blocks the side support plate 12 to prevent it from further rotation.

[0046] Optionally, in some embodiments, the table portion 121 and the inserting plate portion 122 are connected in an integrated structure.

[0047] As shown in FIG. 2 and FIG. 3, the bracket 2 includes a main frame column 21 and a sub-frame column 22, the top of which is movably hinged to the lower end surface of the main body 11 of the table board 1. The main frame column 21 and the sub-frame column 22 are cross-arranged, and the sub-frame column 22 is an inverted "Y"-shaped fork column provided with a guide groove 221. The main frame column 21 is movably connected to the foot frame 3 at the bottom end so as to be able to rise and fall to adjust the vertical height of the table board 1. The sub-frame column 22 is movably hinged to the foot frame 3 to adjust the inclination angle of the table board 1, so that the table board 1 is tilted at a certain angle to provide an ergonomic learning sitting posture.

[0048] As shown in FIG. 3, the tripod 3 includes a socket 31 and a foot plate 32 connected to each other. The socket 31 is provided with a slot adapted to the main frame column 21, and a lifting and locking member 311 that passes through the socket 31 and is connected to the slot. The bottom end of the main frame column 21 is movably inserted in the slot, and the lifting and locking member 311 can press the main frame column 21 to achieve locking and fixing; the foot plate 32 is provided with a slide groove 321 arranged along the front and rear side directions, and a slider 322 adapted to the slide groove 321. The slider 322 can be slid forward and backward in the slide groove 321, and it is movably hinged to the bottom end of the auxiliary frame column 22.

[0049] Combined with FIG. 3 and FIG. 4, the foot plate 32 is further provided with a side groove 323 connected to the slide groove 321, and the slider 322 is provided with a sliding locking member 324 movably embedded in the side groove 323 and extending outward, and the slider 322 can be locked and fixed by pressing the sliding locking member 324 against the side wall of the foot plate 32.

[0050] Optionally, in some embodiments, the socket 31 and the foot plate 32 are connected in an integrated structure.

[0051] It should be noted that the schematic diagram of the specific state in which the front side of the table top 1 is tilted downward can be referred to as shown in Figure 6. At this time, compared with the horizontal state of the table top 1, the slider 322 moves a corresponding distance toward the rear direction along the slide groove 321, and the bottom end of the sub-frame column 22 follows the slider 322 to move a corresponding distance toward the rear direction.

[0052] Optionally, in some embodiments, the sliders 322 in the slide grooves 321 of the left and right foot plates 32 are connected by a connecting rod (not shown in the figure) to ensure that the moving distances of the sliders 322 on the left and right sides along the front and rear directions are the same, thereby avoiding the generation of torque between the sub-frame column 22 and the main board body 11, which affects the normal use of the study table.

[0053] To sum up, the study table provided by the present invention can change the shape and area of the table top by rotating the side support plates to meet different usage requirements, making it more ergonomically designed, facilitating the maintenance of a good learning sitting posture, effectively preventing and correcting an irregular sitting posture, ensuring the health of the user, and improving the comfort of use.

[0054] The above are only preferred embodiments of the present invention, and are not intended to limit the patent scope of the present invention. All equivalent changes and modifications made within the scope of the present invention should still fall within the scope of the present invention.

CLAIMS

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1. A study table, characterized in that it comprises a table top (1), a bracket (2) arranged below the table top (1) and connected thereto, and a footrest (3) arranged at the end of the bracket (2) and connected thereto, wherein the bracket (2) and the footrest (3) are provided in two groups and are symmetrically distributed below the table top (1);

the table top (1) comprises a main board body (11), and side support boards (12) symmetrically arranged on the left and right sides of the main board body (11); the side support boards (12) are movably hinged to the main board body (11); and a notch (111) is arranged on the front side of the main board body (11).

2. The study table according to claim 1, characterized in that the side support plate (12) comprises a table plate portion (121) and an insert plate portion (122) connected to each other, the table plate portion (121) is adapted to the front and rear widths of the main body (11), and the insert plate portion (122) is fan-shaped;

the main board body (11) is provided with a fan-shaped receiving groove adapted to the plugging plate portion (122); the plugging plate portion (122) is movably embedded in the receiving groove; and the hinge axis between the side support plate (12) and the main board body (11) coincides with the center of the plugging plate portion (122).

3. The study table according to claim 2, characterized in that the tabletop portion (121) and the plug-in portion (122) are connected in an integrated structure.

4. The study table according to claim 1, characterized in that the bracket (2) includes a main frame column (21) and a sub-frame column (22) whose top end is movably hinged to the main board body (11), the bottom end of the main frame column (21) is movably connected to the tripod (3) so as to be liftable, and the sub-frame column (22) is movably hinged to the tripod (3).

5. The study table according to claim 4, characterized in that the main frame column (21) and the auxiliary frame column (22) are arranged crosswise;

the auxiliary frame column (22) is an inverted "Y"-shaped fork column provided with a guide groove (221), and the main frame column (21) is movably arranged in the guide groove (221).

6. The study table according to claim 4, characterized in that the foot frame (3) includes a socket (31) and a foot plate (32) connected to each other, the socket (31) is provided with a slot adapted to the main frame column (21), the bottom end of the main frame column (21) is movably inserted into the slot, the foot plate (32) is provided with a slide groove (321) and a slider (322) movably arranged in the slide groove (321), and the bottom end of the auxiliary frame column (22) is movably hinged to the slider (322).

7. The study table according to claim 6, characterized in that the socket (31) is also provided with a lifting locking member (311) penetrating the socket (31) and extending into the slot.

8. The study table according to claim 6, characterized in that the foot plate (32) is further provided with a side groove (323) connected to the slide groove (321), and the slide block (322) is provided with a sliding locking member (324) movably embedded in the side groove (323).

9. The study table according to claim 6, characterized in that the socket (31) and the foot plate (32) are connected in an integrated structure.

REVENDEICATIONS

1. Table d'étude caractérisée en ce qu'elle comprend un plateau (1), un support (2) disposé sous le plateau (1) et relié à celui-ci, et un repose-pied (3) disposé à l'extrémité du support (2) et relié à celui-ci, le support (2) et le repose-pieds (3) étant disposés en deux groupes et étant répartis symétriquement sous le plateau (1) ;

le plateau (1) comprend un corps de plateau principal (11) et des panneaux de support latéraux (12) disposés symétriquement sur les côtés gauche et droit du corps de plateau principal (11) ; les panneaux de support latéraux (12) sont articulés de manière mobile sur le corps de plateau principal (11) ; et une encoche (111) est disposée sur le côté avant du corps de plateau principal (11).

2. Table d'étude selon la revendication 1, caractérisée en ce que la plaque de support latérale (12) comprend une partie de plaque de table (121) et une partie de plaque d'insertion (122) reliées l'une à l'autre, la partie de plaque de table (121) est adaptée aux largeurs avant et arrière du corps principal (11), et la partie de plaque d'insertion (122) est en forme d'éventail ;

le corps de panneau principal (11) est pourvu d'une rainure de réception en forme d'éventail adaptée à la partie de plaque d'enfichage (122) ; la partie de plaque d'enfichage (122) est encastrée de manière mobile dans la rainure de réception ; et l'axe d'articulation entre la plaque de support latérale (12) et le corps de panneau principal (11) coïncide avec le centre de la partie de plaque d'enfichage (122).

3. Table d'étude selon la revendication 2, caractérisée en ce que la partie de plateau (121) et la partie d'enfichage (122) sont reliées dans une structure intégrée.

4. Table d'étude selon la revendication 1, caractérisée en ce que le support (2) comprend une colonne de cadre principal (21) et une colonne de sous-cadre (22) dont l'extrémité supérieure est articulée de manière mobile sur le corps de la planche principale (11), l'extrémité inférieure de la colonne de cadre principal (21) est reliée de

manière mobile au trépied (3) de manière à pouvoir être soulevée, et la colonne de ^{LU508257} sous-cadre (22) est articulée de manière mobile sur le trépied (3).

5. Table d'étude selon la revendication 4, caractérisée en ce que la colonne de cadre principal (21) et la colonne de cadre auxiliaire (22) sont disposées en croix ; la colonne de cadre auxiliaire (22) est une colonne à fourche en forme de "Y" inversé munie d'une rainure de guidage (221), et la colonne de cadre principal (21) est disposée de manière mobile dans la rainure de guidage (221).

6. Table d'étude selon la revendication 4, caractérisée en ce que le cadre de pied (3) comprend une douille (31) et une plaque de pied (32) reliées l'une à l'autre, la douille (31) est pourvue d'une fente adaptée à la colonne de cadre principal (21), l'extrémité inférieure de la colonne de cadre principal (21) est insérée de manière mobile dans la fente, la plaque de pied (32) est pourvue d'une rainure de coulissement (321) et d'un curseur (322) disposé de manière mobile dans la rainure de coulissement (321), et l'extrémité inférieure de la colonne de cadre auxiliaire (22) est articulée de manière mobile sur le curseur (322).

7. Table d'étude selon la revendication 6, caractérisée en ce que la douille (31) est également pourvue d'un élément de verrouillage de levage (311) pénétrant dans la douille (31) et s'étendant dans la fente.

8. Table d'étude selon la revendication 6, caractérisée en ce que la plaque de pied (32) est en outre pourvue d'une rainure latérale (323) reliée à la rainure de coulissement (321), et le bloc coulissant (322) est pourvu d'un élément de verrouillage coulissant (324) encastré de manière mobile dans la rainure latérale (323).

9. Table d'étude selon la revendication 6, caractérisée en ce que la douille (31) et la plaque de pied (32) sont reliées dans une structure intégrée.

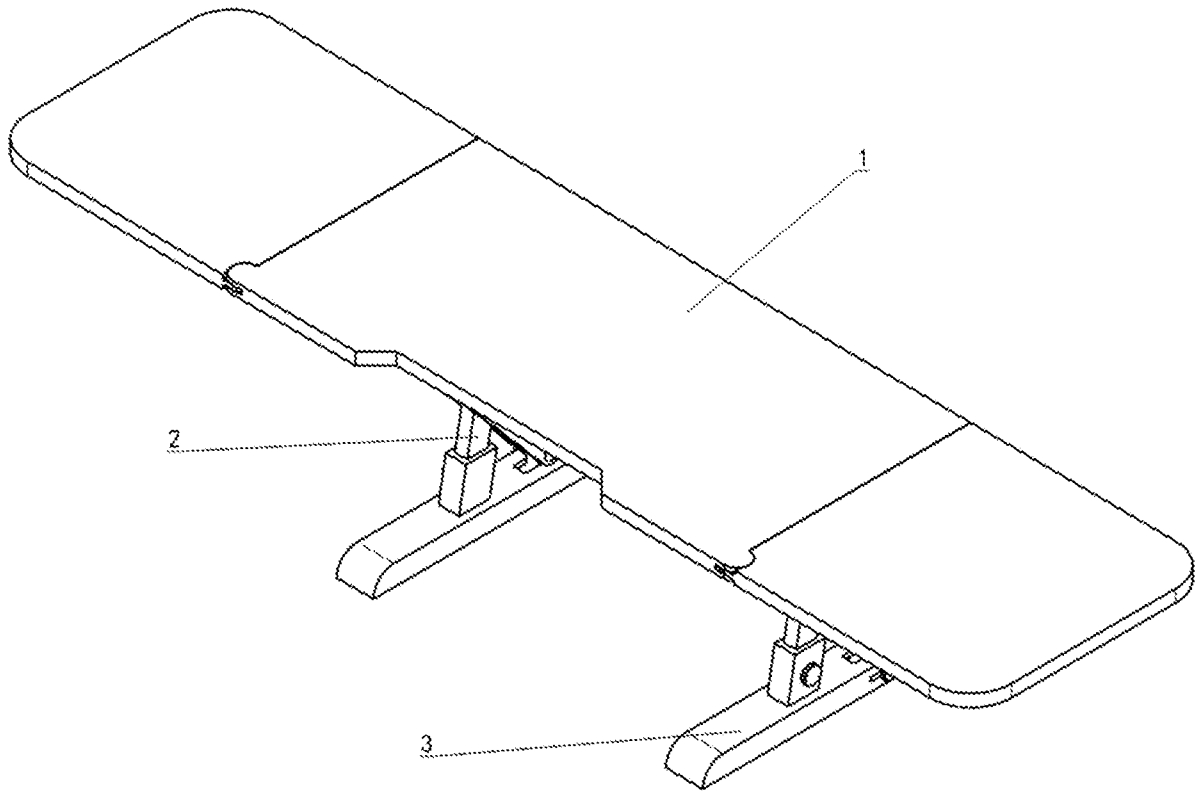


FIG. 1

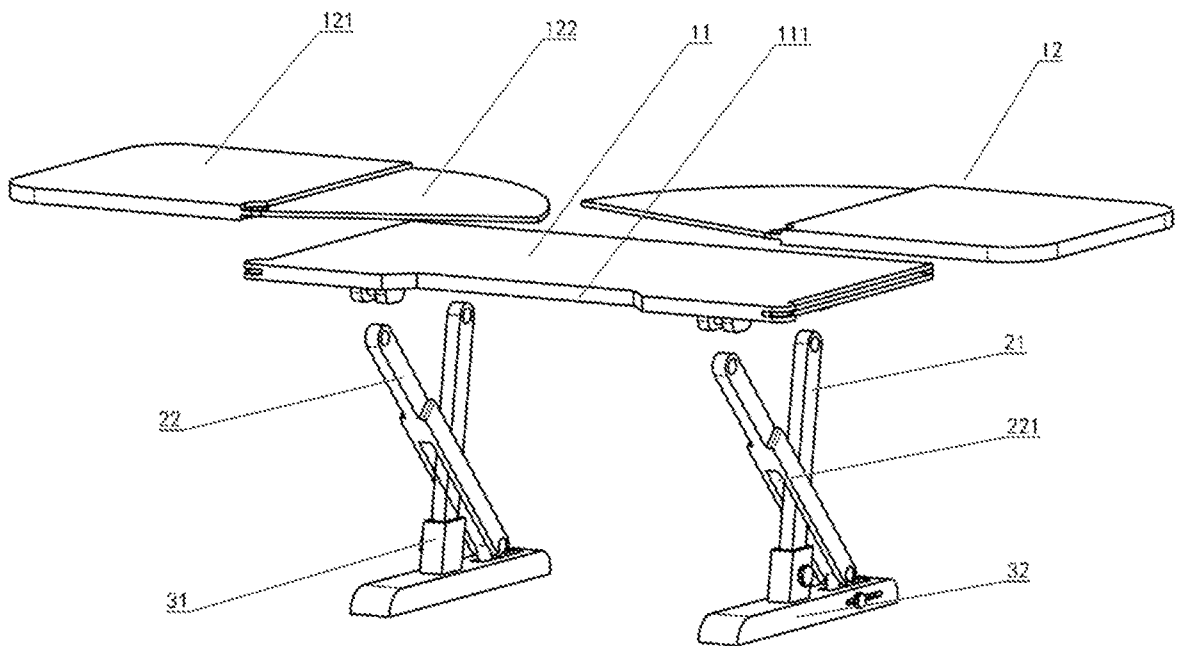


FIG. 2

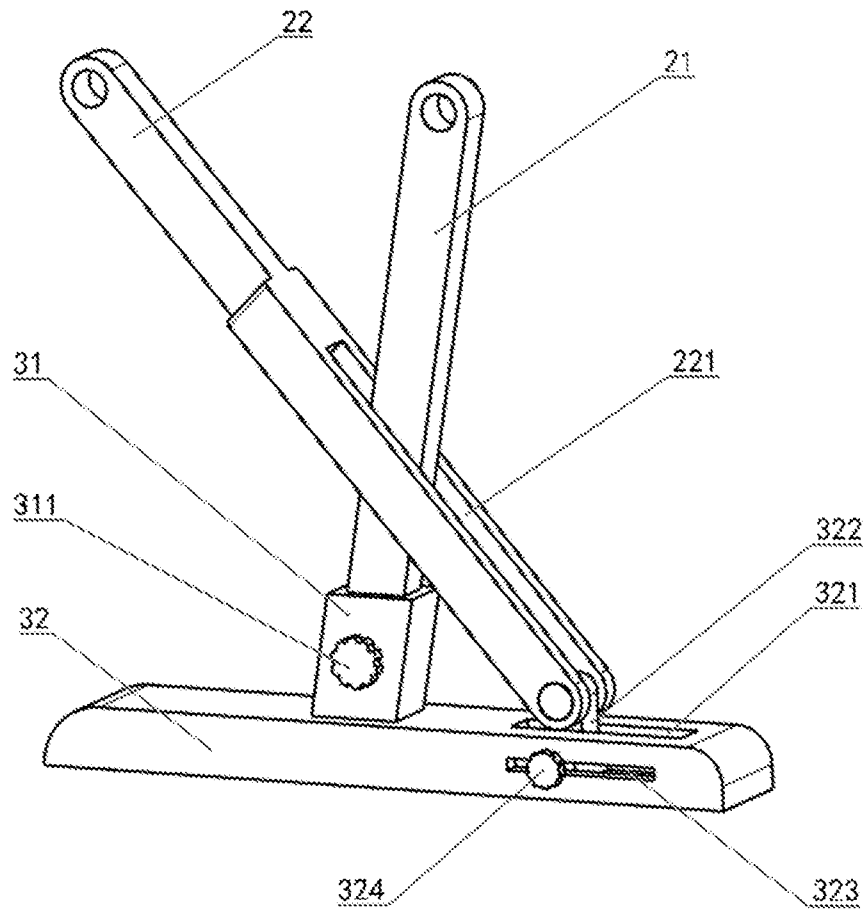


FIG. 3

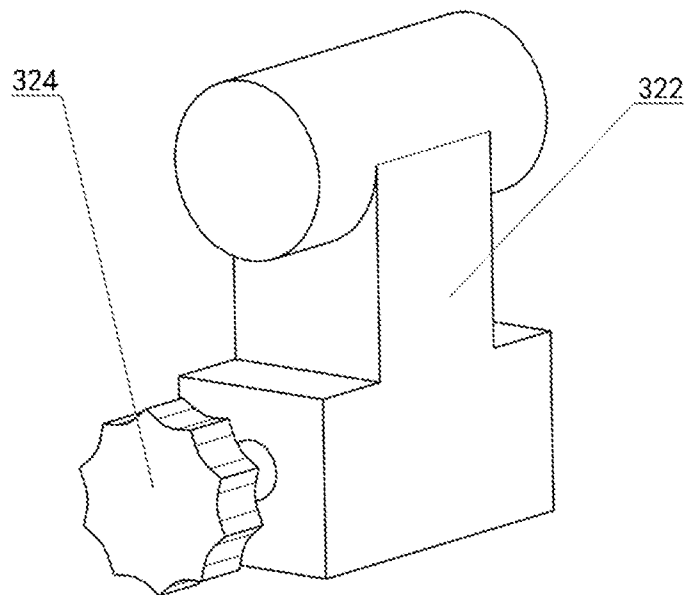


FIG. 4

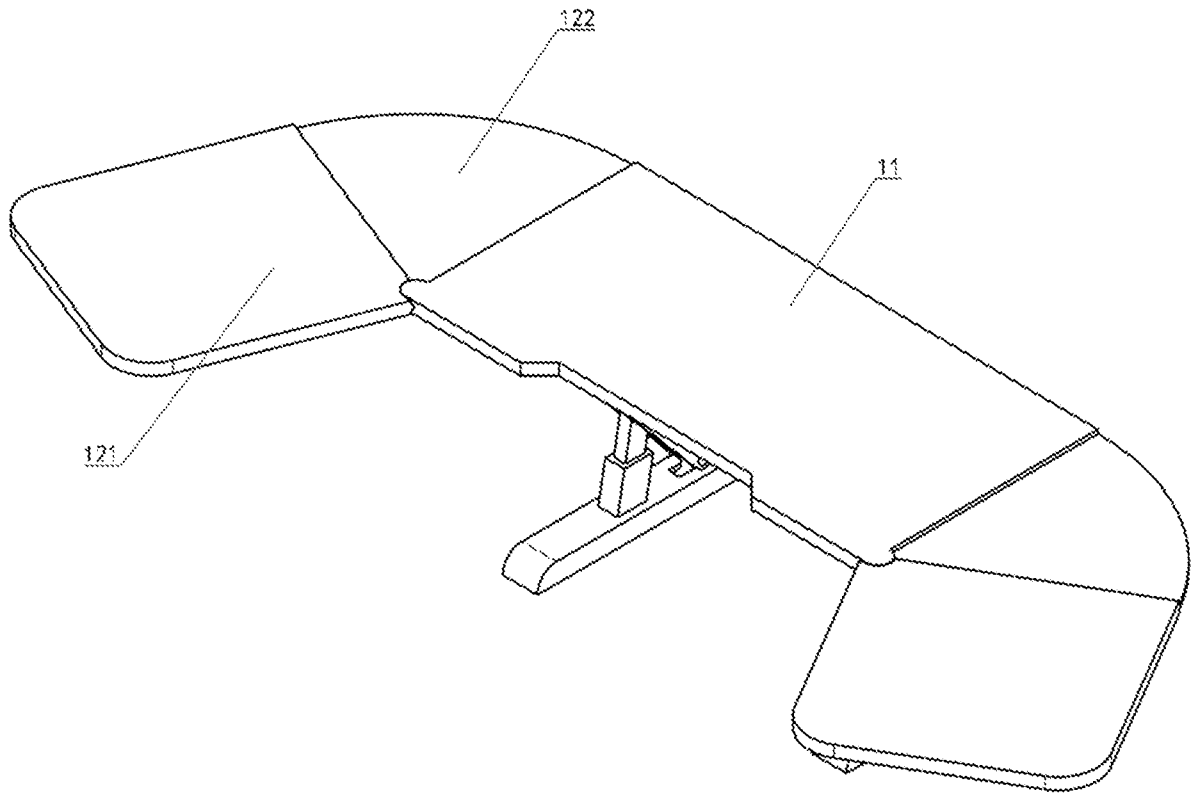


FIG. 5

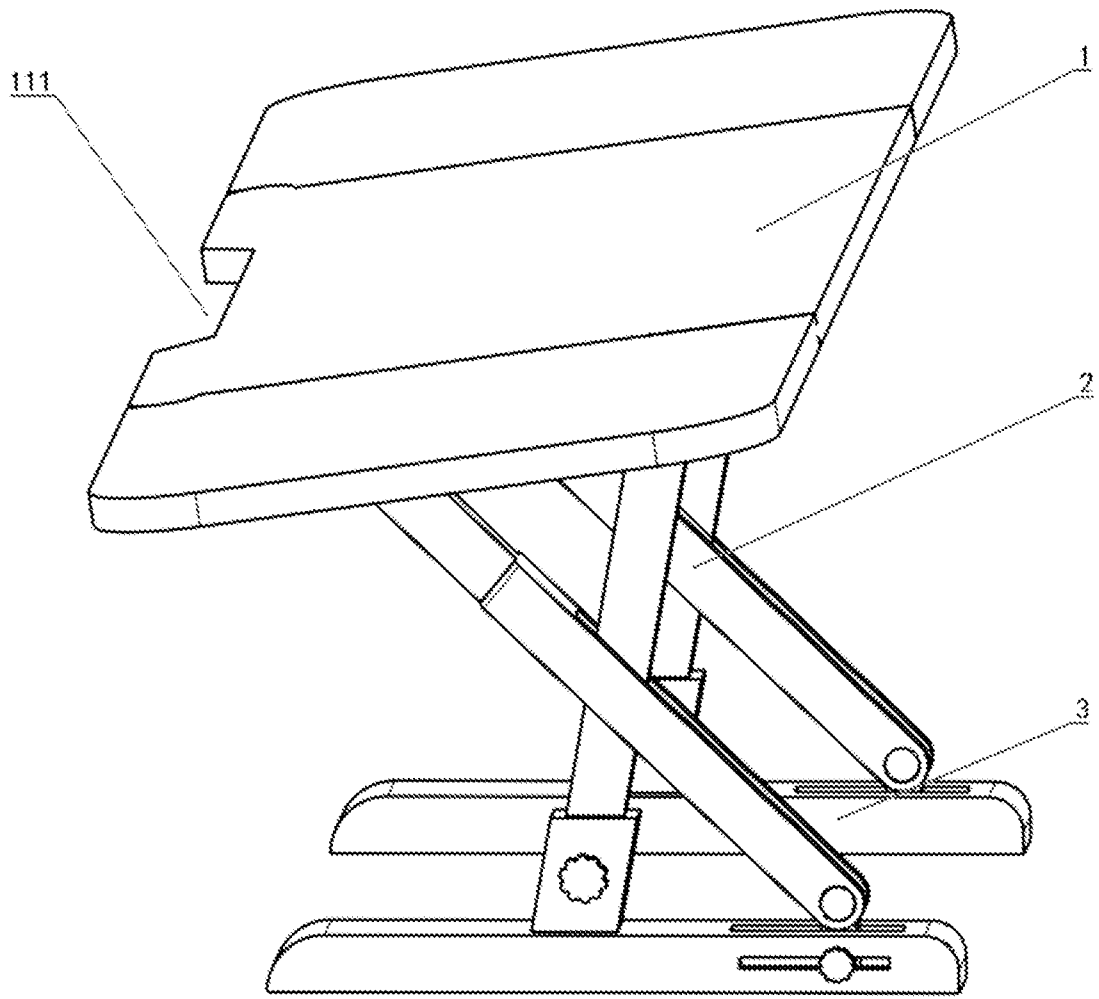


FIG. 6