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(54) **An Auto-adjusting Table for the Disabled People.**

(57) The invention provides an auto-adjusting table for the disabled people, which comprises a supporting seat; a table top, which can be mounted on the supporting seat in a lifting way; a trigger device, which is provided with a plurality of trigger mechanisms, is installed on the support seat and is connected with the table top; When the wheelchair is rolled on the trigger device, the table top is driven by weight of the wheelchair and the weight of the user to slide down for different distances according to the number of rolled trigger mechanisms. According to the invention, the wheelchair is rolled onto the trigger device, and different numbers of trigger members are triggered by weight of the wheelchair and the weight of the user, so that the height of the table top can be adjusted. The device has stable and reliable structure, convenient operation and low maintenance cost.

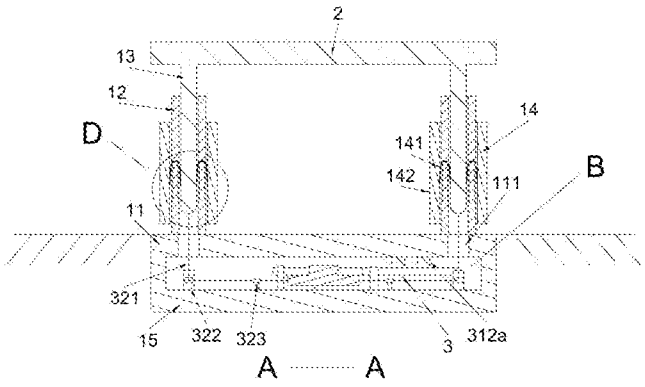


Fig. 3

DESCRIPTION

An Auto-adjusting Table for the Disabled People

TECHNICAL FIELD

The invention relates to the technical field of equipment for the disabled people, in particular to an auto-adjusting table for the disabled people.

BACKGROUND

The disabled people, especially those with legs and feet disabilities, usually travel to work in wheelchairs. Disabled people use their own wheelchairs, but the tables are not so suitable. The multifunctional convenience table disclosed in patent with the number of CN89207151.6; There are many tables that can be lifted in the existing technology; Generally speaking, these tables need to be manually lifted and fixed, and the height of the table top needs to be readjusted for each user. In amusement parks, scenic spots and other crowded places with a large number of people coming and going, the existing tables match the chairs or benches; the disabled people need to adjust the height of the table top when using a wheelchair; but after the disabled people leave, it is very troublesome for others to readjust the table top height.

SUMMARY

In view of the shortcomings in the existing technology, the invention provides an auto-adjusting table for the disabled people to improve convenience.

The invention provides the auto-adjusting table for the disabled people, and it comprises:

a supporting seat;

a table top, which can be installed on the supporting seat in a lifting way;

and a trigger device, which is provided with a plurality of trigger mechanisms, is installed on the supporting seat and is connected with the table top;

when the wheelchair is rolled on the trigger device, according to the number of rolled trigger mechanisms, the table top slides down for different distances driven by the weight of the wheelchair and the weight of the user.

Preferably, the supporting seat comprises:

the first base;

more than one supporting sleeve, which is arranged in parallel with each other, and the ends

of the supporting sleeves are connected with the upper end face of the first base;

a plurality of sliding rods, which are arranged, and the number of the sliding rods corresponds to the number of the supporting sleeves, and the ends of the sliding rods are connected with the lower end face of the table top;

and a counterweight mechanism, which is connected with the sliding rod and is used for driving the table top to rise;

wherein, the end face of the sliding rod far away from the table top is slidably inserted into the supporting sleeve; and the sliding rod is connected with the trigger device.

Preferably, the counterweight mechanism comprises:

counterweight steel wires;

and a counterweight sleeve, which is slidably sleeved outside the supporting sleeve;

wherein, the supporting sleeve is provided with a counterweight channel which runs through the inside and outside; one end of the counterweight steel wire passes through the counterweight channel and is connected with the end of the sliding rod far away from the table top, while the other end of the counterweight steel wire is connected with the end of the counterweight sleeve far away from the table top.

Preferably, the supporting seat further comprises the second base connected with the first base; the second base is positioned below the first base; the first bases are provided with the penetrating first through holes corresponding to each supporting sleeve;

and the trigger device further comprises:

a plurality of bypass mechanisms, which are arranged on the second base and pass through the first through hole and are connected with the end of the sliding rod far away from the table top;

and a furling mechanism, which is connected with a plurality of bypass mechanisms and a plurality of trigger mechanisms at the same time;

wherein, the trigger mechanism drives the furling mechanism to rotate, and then forces the bypass mechanism to move so as to drive the sliding rod to slide downwards.

Preferably, the first base is provided with a placement hole which runs through the upper and lower;

and the trigger mechanism comprises:

a plurality of trigger shafts, which are arranged in parallel with each other, and two ends of the trigger shafts are rotatably installed on the inner wall of the placement hole;

and trigger plates, which are arranged between every two trigger shafts, and one side of the trigger plate is connected with two connecting blocks which are connected with the trigger shafts on the same side;

wherein, the two ends of the trigger shaft are sleeved with torsional springs, and the two ends of the torsion springs are connected with the inner wall of the placement hole and the connecting block respectively; the side of the trigger plate far away from the connecting block is connected with a lap block; the lap block is lapped with the adjacent trigger shafts; the lap block is connected with the trigger shaft through a locking component; and the lower end of the trigger plate is connected with a trigger block for abutting against the furling mechanism.

Preferably, the trigger shaft is provided with a locking hole inclined towards the trigger plate; the orifice part of the locking hole is provided with a locking square ring which contracts inwards;

and the locking mechanism comprises:

a locking wedge block, one end of which is slidably inserted into the locking square ring and connected with the limited block;

and a locking spring, two ends of which are abutted against the limited block and the bottom of the locking hole respectively;

wherein, the limited block is abutted against the locking square ring; the lower end face of the lap block is provided with a semicircular groove with two open ends; a locking groove matched with the locking wedge block is arranged on the inner wall of the semicircular groove corresponding to the locking wedge block.

Preferably, the furling mechanism comprises:

a furling tray, which is rotatably installed on the second base;

a furling gear, which is coaxially connected with the furling tray;

and a furling plate, which is slidably installed on the second base, and is positioned below a plurality of trigger plates, and a driving rod is connected above the furling plate ;

wherein, a rack is arranged on the driving rod, and the rack of the driving rod is meshed with the furling gear; the furling plate is provided with a plurality of driving holes corresponding

to the trigger block; the distance between adjacent driving holes is gradually shortened along the length direction of the driving rod; and the trigger block is a wedge block.

Preferably, the bypass mechanism comprises:

a plurality of bypass steel wires, which are arranged, and each bypass steel wire passes through the first through hole and is connected with the end of the sliding rod far away from the table top;

a plurality of bypass fixed pulleys, which are installed on the second base corresponding to the first through hole;

and a plurality of steering fixed pulleys, which are arranged on the second base;

wherein, a plurality of bypass steel wires bypass the bypass fixed pulley below respectively, then pass the steering fixed pulley and simultaneously connect with the furling tray.

Compared with the existing technology, the invention has the following beneficial effects:

In the technology of the invention, the wheelchair is rolled onto the trigger device, and different numbers of trigger members are triggered by the weight of the wheelchair and weight of user, so that the height of the table top can be adjusted. The device has stable and reliable structure, convenient operation and low maintenance cost.

BRIEF DESCRIPTION OF THE FIGURES

In order to more clearly explain the specific embodiment of the present invention or the technical solutions in the existing technology, the following will briefly introduce the figures needed in the description of the specific embodiment or the existing technology. In all figures, similar elements or parts are generally identified by similar reference numerals. In the figures, elements or parts are not necessarily drawn to actual scale.

Fig. 1 is a plan view of an auto-adjusting table for the disabled people in an embodiment of the present invention (with part of the table top removed);

Fig. 2 is an AA side view of the auto-adjusting table for the disabled people in fig. 1;

Fig. 3 is a schematic diagram of position D of the auto-adjusting table for the disabled people in fig. 2;

Fig. 4 is a plan view of the trigger plate of the auto-adjusting table for the disabled people in fig. 1 (located on the first base);

Fig. 5 is a CC side view of the auto-adjusting table for the disabled people in fig. 4 (at the trigger plate);

Fig. 6 is a structural diagram of a locking component of the auto-adjusting table for the disabled people in fig. 5;

Fig. 7 is a plan view of the second base of the auto-adjusting table for the disabled people in fig. 1.

Attached figure mark:

1, A supporting seat; 11, The first base; 111, The first through hole; 112, A placement hole; 12, A supporting sleeve; 121, A counterweight channel; 13, A sliding rod; 14, A counterweight mechanism; 141, A counterweight steel wire; 142, A counterweight sleeve; 15, The second base;

2, A table top;

3, A trigger device; 31, A trigger mechanism; 311, A trigger shaft; 312, A trigger plate; 312a, A trigger block; 313, A connecting block; 314, A lap block; 315, A torsional spring; 316, A locking hole; 317, A locking square ring; 318, A semicircular groove; 319, A locking groove; 32, A bypass mechanism; 321, A bypass steel wire; 322, A bypass fixed pulley; 323, A steering fixed pulley; 33, A furling mechanism; 331, A furling tray; 332, A furling gear; 333, A furling plate; 334, A driving rod; 335, A driving hole; 34, A locking component; 341, A locking wedge block; 342, A limited block; 343, A locking spring; 35, a limiting bracket.

DETAILED DESCRIPTION OF THE INVENTION

The embodiments of the technical scheme of the present invention will be described in detail below with reference to the figures. The following embodiments are only used to illustrate the technical scheme of the present invention more clearly, so they are only examples, and cannot be used to limit the scope of protection of the present invention.

It should be noted that unless otherwise stated, the technical terms or scientific terms used in this application should have the ordinary meanings understood by those skilled in the field to which this invention belongs.

In the description of this application, it should be understood that the orientation or positional relationship indicated by these terms such as "center", "vertical", "horizontal", "length", "width", "thickness", "up", "down", "front", "back", "left", "right", "vertical", "level", "top", "bottom" "inside", "outside", "clockwise", "anticlockwise", "axial direction", "radial

direction" and "circumferential direction" is based on the orientation or positional relationship shown in the figures. And the terms are only for the purpose of facilitating and simplifying the description of the invention, and they are not intended to indicate or imply that the referred devices or elements must have a specific orientation, be constructed and operated in a specific orientation, therefore, the terms should not be understood as the limitation of the present invention.

In addition, the terms "first" and "second" are only used for descriptive purposes, and cannot be understood as indicating or implying relative importance or indicating the number of indicated technical features implicitly. In the description of the present invention, "multiple" means more than two, unless otherwise limited specifically.

In this application, unless otherwise specified and limited specifically, the terms "install", "connect with", "connect to" and "fix" should be understood broadly, for example, it can be fixedly connected, detachably connected or integrally connected; it an be mechanically connected or electrically connected; it can be directly connected or indirectly connected through an intermediate medium, and it can be the internal communication of two elements or the interaction relationship between two elements. For those of ordinary skill in the field, the specific meanings of the above terms in the present invention can be understood according to specific situations.

In this application, unless otherwise specified and limited specifically, the first feature "above" or "below" the second feature, which can be the direct contact between the first and second features, or the indirect contact between the first and second features through an intermediary. Furthermore, the first feature is "above", "up" and "on" the second feature, which can be that the first feature is directly above or obliquely above the second feature, or only indicates that the horizontal height of the first feature is higher than that of the second feature. The first feature "below", "under" and "down" the second feature, which can be the first feature directly under or obliquely under the second feature, or only indicates that the horizontal height of the first feature is lower than that of the second feature.

As shown in figs. 1-7, an auto-adjusting table for the disabled people is comprises:

a supporting seat 1;

a table top 2, which can be installed on the supporting seat 1 in a lifting way;

and a trigger device 3, which is provided with a plurality of trigger mechanisms 31, is installed on the supporting seat and is connected with the table top 2;

when the wheelchair is rolled on the trigger device 3, according to the number of rolled trigger mechanisms 31, the table top 2 slides down for different distances driven by the weight of the wheelchair and the weight of the user.

The main purpose of this device is to adjust the height of table top 2 automatically in the case of a large number of users. In parks and other places, people will not be specially assigned to adjust the height of the table. If the table top 2 is adjusted by means of keys, it will often be damaged due to the quality of some users, and it is also easy to be damaged.

The device drives the wheelchair to roll onto the trigger device 3 which is connected to the ground under the table when the disabled need to adjust the height of the table top 2; The wheels of the wheelchair roll different numbers of trigger mechanisms 31 to adjust the descending height of the table top 2 to adapt to the disabled sitting in the wheelchair. Under normal circumstances, when there is no disabled people to use, other directions of the table are equipped with matched bench chairs for ordinary people to use. It is convenient for the disabled people and gives them the warmth of society. The device has low cost and does not need excessive maintenance, and can be equipped with all tables in the park. The table top 2 above the trigger device 3 can be made into a concave shape or a notch to make way for the wheelchair of the disabled people to enter.

Further, the supporting seat 1 comprises:

the first base 11;

more than one supporting sleeve 12, which is arranged in parallel with each other, and the ends of the supporting sleeves are connected with the upper end face of the first base 11;

a plurality of sliding rods 13, which are arranged, and the number of the sliding rods corresponds to the number of the supporting sleeves 12, and the ends of the sliding rods are connected with the lower end face of the table top 2;

and a counterweight mechanism 14, which is connected with the sliding rod 13 and is used for driving the table top 2 to rise;

wherein, the end face of the sliding rod 13 far away from the table top 2 is slidably inserted into the supporting sleeve 12; and the sliding rod 13 is connected with the trigger device 3.

The table top 2 can only be lifted under the restriction of the support sleeve 12. The table top 2 is driven to lift by the weight of the wheelchair and the disabled person on it. Once the weight of the wheelchair changes, the height of the table top 2 changes obviously, so a counterweight mechanism 14 is provided. The counterweight mechanism 14 counteracts the weight of the table top 2, and the table top 2 will not rise or fall quickly when the weight of wheelchair and disabled people at the trigger device 3 is lost. The counterweight mechanism 14 provides a little upward lift to the table top 2, and the table top 2 returns to the normal height after the disabled person drives the wheelchair to leave.

Further, the counterweight mechanism 14 comprises:

counterweight steel wires 141;

and a counterweight sleeve 142, which is slidably sleeved outside the supporting sleeve 12;

wherein, the supporting sleeve 12 is provided with a counterweight channel 121 which runs through the inside and outside; one end of the counterweight steel wire 141 passes through the counterweight channel 121 and is connected with the end of the sliding rod 13 far away from the table top 2, while the other end of the counterweight steel wire 141 is connected with the end of the counterweight sleeve 142 far away from the table top 2.

Both ends of the counterweight steel wire 141 are actually connected to the lower end of the sliding rod 13 and the lower end of the counterweight sleeve 142, respectively; and the whole counterweight steel wire 141 is in an inverted U-shape. The weight of the counterweight sleeves outside the supporting sleeves is slightly larger than the weight of the table top 2. When the counterweight sleeve falls, the sliding rod 13 is pulled upward by the counterweight steel wire 141 to drive the table top 2 to rise. Grooves are respectively arranged on the inner wall and outer wall of the supporting sleeve 12 on both sides of the counterweight channel 121 to give way to the counterweight steel wire 141 and reduce the friction between the counterweight steel wire 141 and the supporting sleeve; In addition, there is friction phenomenon of the counterweight steel wire 141 at the counterweight channel 121, which can be reduced by adding a bearing (not shown in the figure), setting a groove in the outer ring of the bearing, and placing the steel wire across the groove in the outer ring of the bearing, thus prolonging the service life of the device. Generally, two counterweight channels 121 are symmetrically arranged on one supporting sleeve, which has a better effect and makes the counterweight sleeve 142 bear even force.

Further, the supporting seat 1 further comprises the second base 15 connected with the first base 11; the second base 15 is positioned below the first base 11; the first bases 11 are provided with the penetrating first through holes 111 corresponding to each supporting sleeve 12;

and the trigger device 3 further comprises:

a plurality of bypass mechanisms 32, which are arranged on the second base 15 and pass through the first through hole 111 and are connected with the end of the sliding rod 13 far away from the table top 2;

and a furling mechanism 33, which is connected with a plurality of bypass mechanisms 32 and a plurality of trigger mechanisms 31 at the same time;

wherein, the trigger mechanism 31 drives the furling mechanism 33 to rotate, and then forces the bypass mechanism 32 to move so as to drive the sliding rod 13 to slide downwards.

Determine the rotation angle of the furling mechanism 33 according to the number of trigger mechanisms 31 for wheelchair rolling, and then determine the degree to which the furling mechanism 33 rotates to drive a plurality of bypass mechanisms 32 to pull the sliding rod 13 to slide downwards.

Further, the first base 11 is provided with a placement hole 112 which runs through the upper and lower;

and the trigger mechanism 31 comprises:

a plurality of trigger shafts 311, which are arranged in parallel with each other, and two ends of the trigger shafts are rotatably installed on the inner wall of the placement hole 112;

and trigger plates 312, which are arranged between every two trigger shafts 311, and one side of the trigger plate is connected with two connecting blocks 313 which are connected with the trigger shafts 311 on the same side;

wherein, the two ends of the trigger shaft 311 are sleeved with torsional springs 315, and the two ends of the torsion springs 315 are connected with the inner wall of the placement hole 112 and the connecting block 313 respectively; the side of the trigger plate 312 far away from the connecting block 313 is connected with a lap block 314; the lap block 314 is lapped with the adjacent trigger shafts 311; the lap block 314 is connected with the trigger shaft 311 through a locking component 34; and the lower end of the trigger plate 312 is connected with a trigger block 312a for abutting against the furling mechanism 33.

Under normal condition, the trigger plate 312 is tilted under the action of the torsional spring 315. The wheelchair passes from one side of the placement hole 112 to the first trigger plate 312, so that the trigger plate 312 rotates around the trigger shaft 311, and the lap block 314 on the trigger plate 312 overlaps the next trigger shaft 311 adjacent to it and is connected by the locking component 34; The wheelchair passes through different trigger plates 312 in turn, and trigger blocks 312a connected to different trigger plates 312 drive the bypass components to move.

It should be noted that although a locking component 34 can be provided between each lap block 314 and the trigger shaft 311, as long as the wheelchair does not pass to the last trigger plate 312 (to prevent all lap blocks 314 on the trigger plates 312 from connecting with the trigger shaft 311 and locking); Even better, we set the placement hole 112 on one side of the first base 11, and there is no locking component 34 between the lap block 314 on the trigger plate 312 and the trigger shaft 311, which is far away from the edge of the first base 11.

The wheelchair rolls onto the trigger device 3, and uses the gravity of the disabled people and wheelchair to drive the device; The device has the advantages that the disabled people cannot feel the wheelchair sinking; If it sinks, the wheelchair won't retreat when the disabled people need to leave subsequent, and the sinking will drive the wheelchair to sink, affecting the experience.

Further, the trigger shaft 311 is provided with a locking hole 316 inclined towards the trigger plate 312; the mouth part of the locking hole 316 is provided with a locking square ring 317 which contracts inwards;

and the locking mechanism comprises:

a locking wedge block 341, one end of which is slidably inserted into the locking square ring 317 and connected with the limited block 342;

and a locking spring 343, two ends of which are abutted against the limited block 342 and the bottom of the locking hole 316 respectively;

wherein, the limited block 342 is abutted against the locking square ring 317; the lower end face of the lap block 314 is provided with a semicircular groove 318 with two open ends; a locking groove 319 matched with the locking wedge block 341 is arranged on the inner wall of the semicircular groove 318 corresponding to the locking wedge block 341.

The inclined surface of the end of the locking wedge block 341 is upward. When the trigger plate 312 rotates, the lap block 314 moves with the trigger plate 312, so that the semicircular groove 318 is buckled on the trigger shaft 311. At this time, the locking groove 319 in the lap block 314 has passed through the locking wedge block 341, and then the locking wedge block 341 still abuts against the inner wall of the semicircular groove 318 and is compressed in the locking hole 316; When the wheelchair continues to move forward (the trigger plate 312 shown in fig. 5 is temporarily named as No.1 plate, No.2 plate and No.3 plate from right to left), the wheel will leave the No.1 plate and roll onto the No.2 plate, and the No.2 plate will rotate counterclockwise around the trigger shaft 311; After the trigger shaft 311 rotates, the No.2 plate is gradually in a horizontal state, and the locking wedge block 341 pops out and inserts into the semicircular groove 318 of the lap block 314 on the No.1 plate; And the wheelchair passes to the No.2 plate, and the No.1 plate is locked. When the wheelchair retreats, the trigger shaft 311 connected to the No.2 plate rotates clockwise under the drive of the torsional spring 315, and the locking wedge block 341 in the trigger shaft 311 connected to the No.2 plate is compressed in the locking groove 319 until the locking wedge block 341 abuts against the inner wall of the semicircular groove 318. At this time, the No.1 plate is already in a free state, and the wheelchair has been rolled to the No.1 plate. When the wheelchair leaves, the No.1 plate is tilted up under the action of torsional spring 315 and returns to the initial state.

Further, the furling mechanism 33 comprises:

a furling tray 331, which is rotatably installed on the second base 15;

a furling gear 332, which is coaxially connected with the furling tray 331;

and a furling plate 333, which is slidably installed on the second base 15, and is positioned below a plurality of trigger plates 312, and a driving rod 334 is connected above the furling plate ;

wherein, a rack is arranged on the driving rod 334, and the rack of the driving rod 334 is meshed with the furling gear 332; the furling plate 333 is provided with a plurality of driving holes 335 corresponding to the trigger block 312a; the distance between adjacent driving holes 335 is gradually shortened along the length direction of the driving rod 334; and the trigger block 312a is a wedge block.

The driving holes 335 in fig. 5 are temporarily named as No.1 driving hole 335, No.2

driving hole 335 and No.3 driving hole 335 from right to left. Trigger blocks 312a on a plurality of trigger plates 312 are arranged at equal intervals; As the No.1 plate is buckled, the inclined surface of the trigger block 312a on the No.1 plate abuts against the side wall of the orifice of the No.1 driving hole 335 (the driving hole 335 farthest from the furling gear 332) to push the furling plate 333 to move, so that the driving rod 334 drives the furling gear 332 to rotate, the furling tray 331 is driven to rotate, and the furling tray 331 is connected with the bypass mechanism 32 to pull the sliding rod 13, thus realizing the descending of the table top 2. And when the trigger block 312a of the No.1 plate pushes the furling plate 333 forward for a certain distance, the inclined surface of the trigger block 312a of the No.2 plate contacts the orifice of the No.2 driving hole 335, further pushing the furling plate 333 forward; It should be understood that the driving hole 335 is the hole with long strip shape. When the trigger block 312a of the No.2 plate pushes the furling plate 333 forward, the trigger block 312a of the No.1 plate is still in the front No.1 driving hole 335 and moves in the No.1 driving hole 335, and there is enough space in the driving hole 335 to give way. The distance between adjacent driving holes 335 is the key point. When the trigger block 312a on the No.1 plate is inserted into the No.1 driving hole 335 and after it pushes the furling plate 333 forward (at this time, the No.1 plate is in a horizontal state), and the No.2 plate is buckled, the trigger block 312a on the No.2 plate is just inserted into the No.2 driving hole 335 and abuts against the orifice of the No.2 driving hole 335. After the disabled people use it, the furling plate 333 retreats. Under the action of the torsional spring 315, the trigger block 312a on the No.2 plate first separates from the No.2 driving hole 335, and then the trigger block 312a on the No.1 plate leaves the No.1 driving hole 335. The torsional spring 315 can ensure that the trigger plate 312 is fully tilted up and prevent the trigger blocks 312a on the trigger plate 312 from interfering with the furling plate 333 when the trigger plate 312 is not rolled, especially under the condition that the distance between the trigger blocks 312a is small and the trigger plates 312 are densely arranged. The function of the locking mechanism is that the trigger plate 312 prevents the wheelchair from being retreated out because the rolled trigger plate 312 has been tilted up by the torsional spring 315. The furling plate 333 can be slidably installed with the second base 15. Grooves are arranged on both sides of the furling plate 333, and a plurality of brackets are erected on the second base 15. The brackets are arranged on both sides of the furling plate 333, and guide rails which are slidably matched with the grooves of the

furling plate 333 are arranged on the brackets. The second base 15 is also provided with a limiting bracket 35, which is located at the side of the furling plate 333,and the side is far away from the furling gear 332. The limiting bracket 35 abuts against the furling plate 333 to limit the furling plate 333.

Further, the bypass mechanism 32 comprises:

a plurality of bypass steel wires 321, which are arranged, and each bypass steel wire 321 passes through the first through hole 111 and is connected with the end of the sliding rod 13 far away from the table top 2;

a plurality of bypass fixed pulleys 322, which are installed on the second base 15 corresponding to the first through hole 111;

and a plurality of steering fixed pulleys 323, which are arranged on the second base 15;

wherein, a plurality of bypass steel wires 321 bypass the bypass fixed pulley 322 below respectively, then pass the steering fixed pulley 323 and simultaneously connect with the furling tray 331.

The bypass fixed pulley 322 and the steering fixed pulley 323 change the direction of the vertical bypass steel wire 321 below the sliding rod 13 and then connect it with the furling tray 331, and the furling steel wires between the furling tray 331 and the sliding rod 13 are the same length. When the furling tray 331 rotates, the speed of furling the bypass wire 321 is the same, and the feeding amount of the bypass wire 321 is the same, so the sliding rod 13 moves downward at the same speed. The device has low energy consumption, zero energy consumption when no one is using it, stable structure and low maintenance.

In the specification of the present invention, numerous specific details are explained. However, it will be understood that embodiments of the present invention may be practiced without these specific details. In some embodiments, well-known methods, structures and techniques have not been shown in detail in order not to obscure the understanding of this specification.

Finally, it should be explained that the above embodiments are only used to illustrate the technical scheme of the present invention, but not to limit it; Although the invention has been described in detail with reference to the foregoing embodiments, it should be understood by those skilled in the field that it can still modify the technical solutions described in the foregoing

embodiments, or equivalently replace some or all technical features thereof; These modifications or substitutions do not make the essence of the corresponding technical solutions deviate from the scope of the technical solutions of various embodiments of the present invention, but should be covered in the scope of the claims and the specification of the present invention.

CLAIMS

1. An auto-adjusting table for the disabled people is characterized in that it comprises:

a supporting seat;

a table top, which can be installed on the supporting seat in a lifting way;

and a trigger device, which is provided with a plurality of trigger mechanisms, is installed on the supporting seat and is connected with the table top;

when the wheelchair is rolled on the trigger device, according to the number of rolled trigger mechanisms, the table top slides down for different distances driven by the weight of the wheelchair and the weight of the user.

2. The auto-adjusting table for the disabled people according to claim 1 is characterized in that the supporting seat comprises:

the first base;

more than one supporting sleeve, which is arranged in parallel with each other, and the ends of the supporting sleeves are connected with the upper end face of the first base;

a plurality of sliding rods, which are arranged, and the number of the sliding rods corresponds to the number of the supporting sleeves, and the ends of the sliding rods are connected with the lower end face of the table top;

and a counterweight mechanism, which is connected with the sliding rod and is used for driving the table top to rise;

wherein, the end face of the sliding rod far away from the table top is slidably inserted into the supporting sleeve; and the sliding rod is connected with the trigger device.

3. The auto-adjusting table for the disabled people according to claim 2 is characterized in that the counterweight mechanism comprises:

counterweight steel wires;

and a counterweight sleeve, which is slidably sleeved outside the supporting sleeve;

wherein, the supporting sleeve is provided with a counterweight channel which runs through the inside and outside; one end of the counterweight steel wire passes through the counterweight channel and is connected with the end of the sliding rod far away from the table top, while the other end of the counterweight steel wire is connected with the end of the counterweight sleeve far away from the table top.

4. The auto-adjusting table for the disabled people according to claim 3 is characterized in that the supporting seat further comprises the second base connected with the first base; the second base is positioned below the first base; the first bases are provided with the penetrating first through holes corresponding to each supporting sleeve;

and the trigger device further comprises:

a plurality of bypass mechanisms, which are arranged on the second base and pass through the first through hole and are connected with the end of the sliding rod far away from the table top;

and a furling mechanism, which is connected with a plurality of bypass mechanisms and a plurality of trigger mechanisms at the same time;

wherein, the trigger mechanism drives the furling mechanism to rotate, and then forces the bypass mechanism to move so as to drive the sliding rod to slide downwards.

5. The auto-adjusting table for the disabled people according to claim 4 is characterized in that the first base is provided with a placement hole which runs through the upper and lower;

and the trigger mechanism comprises:

a plurality of trigger shafts, which are arranged in parallel with each other, and two ends of the trigger shafts are rotatably installed on the inner wall of the placement hole;

and trigger plates, which are arranged between every two trigger shafts, and one side of the trigger plate is connected with two connecting blocks which are connected with the trigger shafts on the same side;

wherein, the two ends of the trigger shaft are sleeved with torsional springs, and the two ends of the torsion springs are connected with the inner wall of the placement hole and the connecting block respectively; the side of the trigger plate far away from the connecting block is connected with a lap block; the lap block is lapped with the adjacent trigger shafts; the lap block is connected with the trigger shaft through a locking component; and the lower end of the trigger plate is connected with a trigger block for abutting against the furling mechanism.

6. The auto-adjusting table for the disabled people according to claim 5 is characterized in that:

the trigger shaft is provided with a locking hole inclined towards the trigger plate; the orifice part of the locking hole is provided with a locking square ring which contracts inwards;

and the locking mechanism comprises:

a locking wedge block, one end of which is slidably inserted into the locking square ring and connected with the limited block;

and a locking spring, two ends of which are abutted against the limited block and the bottom of the locking hole respectively;

wherein, the limited block is abutted against the locking square ring; the lower end face of the lap block is provided with a semicircular groove with two open ends; a locking groove matched with the locking wedge block is arranged on the inner wall of the semicircular groove corresponding to the locking wedge block.

7. The auto-adjusting table for the disabled people according to claim 6 is characterized in that the furling mechanism comprises:

a furling tray, which is rotatably installed on the second base;

a furling gear, which is coaxially connected with the furling tray;

and a furling plate, which is slidably installed on the second base, and is positioned below a plurality of trigger plates, and a driving rod is connected above the furling plate ;

wherein, a rack is arranged on the driving rod, and the rack of the driving rod is meshed with the furling gear; the furling plate is provided with a plurality of driving holes corresponding to the trigger block; the distance between adjacent driving holes is gradually shortened along the length direction of the driving rod; and the trigger block is a wedge block.

8. The auto-adjusting table for the disabled according to claim 7 is characterized in that the bypass mechanism comprises:

a plurality of bypass steel wires, which are arranged, and each bypass steel wire passes through the first through hole and is connected with the end of the sliding rod far away from the table top;

a plurality of bypass fixed pulleys, which are installed on the second base corresponding to the first through hole;

and a plurality of steering fixed pulleys, which are arranged on the second base;

wherein, a plurality of bypass steel wires bypass the bypass fixed pulley below respectively, then pass the steering fixed pulley and simultaneously connect with the furling tray.

REVENDICATIONS

1. Une table d'ajustement automatique pour les personnes handicapées est caractérisée en ce qu'elle comprend:

un siège de soutien;

une table de table, qui peut être installée sur le siège de support de manière de levage;

et un dispositif de déclenchement, qui est fourni avec une pluralité de mécanismes de déclenchement, est installé sur le siège de support et est connecté avec le dessus de la table;

lorsque le fauteuil roulant est roulé sur le dispositif de déclenchement, selon le nombre de mécanismes de déclenchement roulés, la table supérieure glisse sur différentes distances entraînées par le poids du fauteuil roulant et le poids de l'utilisateur.

2. La table d'ajustement automatique pour les personnes handicapées selon la revendication 1 est caractérisée en ce que le siège de soutien comprend:

la première base;

plus d'un manchon de support, qui est disposé en parallèle les uns avec les autres, et les extrémités des manchons de support sont liées à la face supérieure de la première base;

une pluralité de tiges coulissantes, qui sont disposées, et le nombre de tiges coulissantes correspond au nombre de manches de support, et les extrémités des tiges coulissantes sont reliées à la face inférieure du dessus de la table;

et un mécanisme de contrepoids, qui est lié à la tige coulissante et est utilisé pour conduire le dessus de la table;

dans lequel, la face finale de la tige coulissante loin du dessus de la table est insérée de manière gaspillée dans la manche de support; et la tige coulissante est connectée au dispositif de déclenchement.

3. La table d'ajustement automatique pour les personnes handicapées selon la revendication 2 est caractérisée en ce que le mécanisme contrepoids comprend:

fils en acier contrepoids;

et une manche de contrepoids, qui est à manches délicates à l'extérieur de la manche de support;

dans lequel, le manchon de support est fourni avec un canal contrepoids qui passe à l'intérieur et à l'extérieur; une extrémité du fil d'acier contrepoids passe par le canal contrepoids et est connectée à l'extrémité de la tige coulissante loin du dessus de la table, tandis que l'autre

extrémité du fil d'acier contrepoids est connecté à l'extrémité du manchon de contrepoids loin de la table en haut.

4. La table d'ajustement automatique pour les personnes handicapées selon la revendication 3 est caractérisée en ce que le siège de support comprend en outre la deuxième base liée à la première base; la deuxième base est positionnée en dessous de la première base; les premières bases sont fournies avec la pénétration en premier à travers des trous correspondant à chaque manche de support;

et le dispositif de déclenchement comprend en outre:

une pluralité de mécanismes de dérivation, qui sont disposées sur la deuxième base et passent à travers le premier trou et sont connectées à l'extrémité de la tige coulissante loin du dessus de la table;

et un mécanisme enroulé, qui est lié à une pluralité de mécanismes de pontage et à une pluralité de mécanismes de déclenchement en même temps;

dans lequel, le mécanisme de déclenchement entraîne le mécanisme enroulé pour tourner, puis force le mécanisme de dérivation pour se déplacer de manière à conduire la tige coulissante pour glisser vers le bas.

5. La table d'ajustement automatique pour les personnes handicapées selon la revendication 4 est caractérisée en ce que la première base est fournie avec un trou de placement qui traverse le haut et le bas;

et le mécanisme de déclenchement comprend:

une pluralité d'arbres de déclenchement, qui sont disposées en parallèle les uns avec les autres, et deux extrémités des arbres de déclenchement sont installées rotatifs sur la paroi intérieure du trou de placement;

et les plaques de déclenchement, qui sont disposées entre les deux arbres de déclenchement, et un côté de la plaque de déclenchement est connecté avec deux blocs de connexion qui sont connectés avec les arbres de déclenchement du même côté;

où, les deux extrémités de l'arbre de déclenchement sont manchés avec des ressorts de torsion, et les deux extrémités des ressorts de torsion sont reliées à la paroi intérieure du trou de placement et du bloc de connexion respectivement; le côté de la plaque de détente loin du bloc de connexion est connecté à un bloc de tour; le bloc de tour est lapé avec les arbres de déclenchement adjacents; le bloc LAP est connecté avec l'arbre de déclenchement via un

composant de verrouillage; et l'extrémité inférieure de la plaque de déclenchement est liée à un bloc de déclenchement pour se soumettre au mécanisme enroulé.

6. La table d'ajustement automatique pour les personnes handicapées selon la revendication 5 est caractérisée en ce que:

l'arbre de déclenchement est fourni avec un trou de verrouillage incliné vers la plaque de déclenchement; la partie orifice du trou de verrouillage est dotée d'un anneau carré de verrouillage qui se contracte vers l'intérieur;

et le mécanisme de verrouillage comprend:

un bloc de coin de verrouillage, dont une extrémité est insérée de manière gré dans l'anneau carré de verrouillage et connecté au bloc limité;

et un ressort de verrouillage, dont deux extrémités sont attachées contre le bloc limité et le bas du trou de verrouillage respectivement;

dans lequel, le bloc limité est attaché à l'anneau carré de verrouillage; la face inférieure du bloc de tour est fournie avec une rainure semi-circulaire avec deux extrémités ouvertes; une rainure de verrouillage correspondant au bloc de verrouillage de verrouillage est disposée sur la paroi intérieure de la rainure semi-circulaire correspondant au bloc de coin de verrouillage.

7. La table d'ajustement automatique pour les personnes handicapées selon la revendication 6 est caractérisée en ce que le mécanisme enroulé comprend:

un plateau enroulé, qui est installé rotatif sur la deuxième base;

un engrenage enroulé, qui est connecté coaxialement avec le plateau enroulé;

et une plaque enroulée, qui est installée de manière gaspillée sur la deuxième base, et est positionnée sous une pluralité de plaques de déclenchement, et une tige de conduite est connectée au-dessus de la plaque enroulée;

dans lequel, une grille est disposée sur la tige de conduite et la grille de la tige de conduite est maillée avec l'équipement enroulé; la plaque enroulée est fournie d'une pluralité de trous de conduite correspondant au bloc de déclenchement; la distance entre les trous de conduite adjacente est progressivement raccourcie le long de la longueur de la tige de conduite; et le bloc de déclenchement est un bloc de coin.

8. Le tableau d'ajustement automatique pour les handicapés selon la revendication 7 est caractérisé en ce que le mécanisme de contournement comprend:

une pluralité de fils en acier de contournement, qui sont disposées, et chaque fil d'acier de

contournement passe par le premier trou et est connecté à l'extrémité de la tige coulissante loin du dessus de la table;

une pluralité de pontage fixes des poulies fixes, qui sont installées sur la deuxième base correspondant au premier trou;

et une pluralité de poulies fixes de direction, qui sont disposées sur la deuxième base;

dans lequel, une pluralité de fils en acier de contournement contourne la poulie fixe de dérivation en dessous respectivement, puis passe la poulie fixe de direction et se connectez simultanément avec le plateau enroulé.

FIGURES

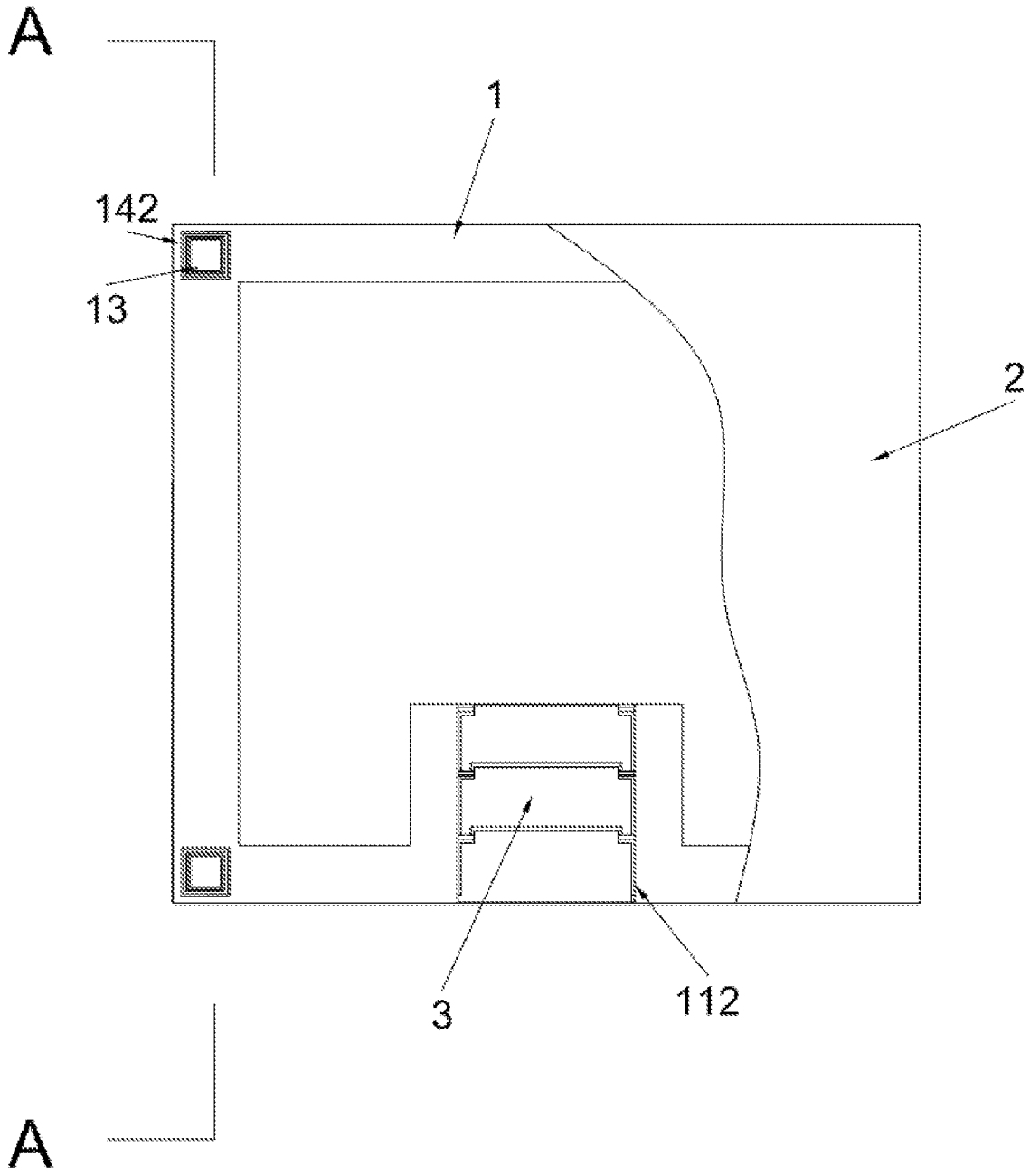
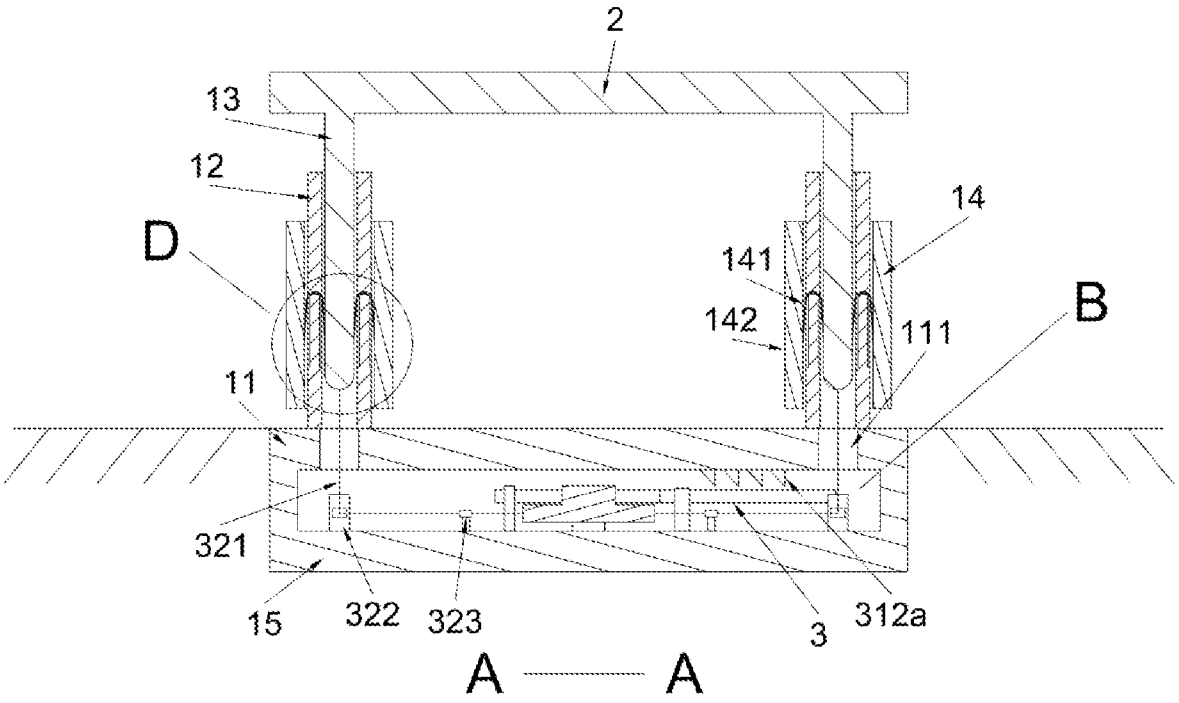


Fig. 1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A

Fig. 2

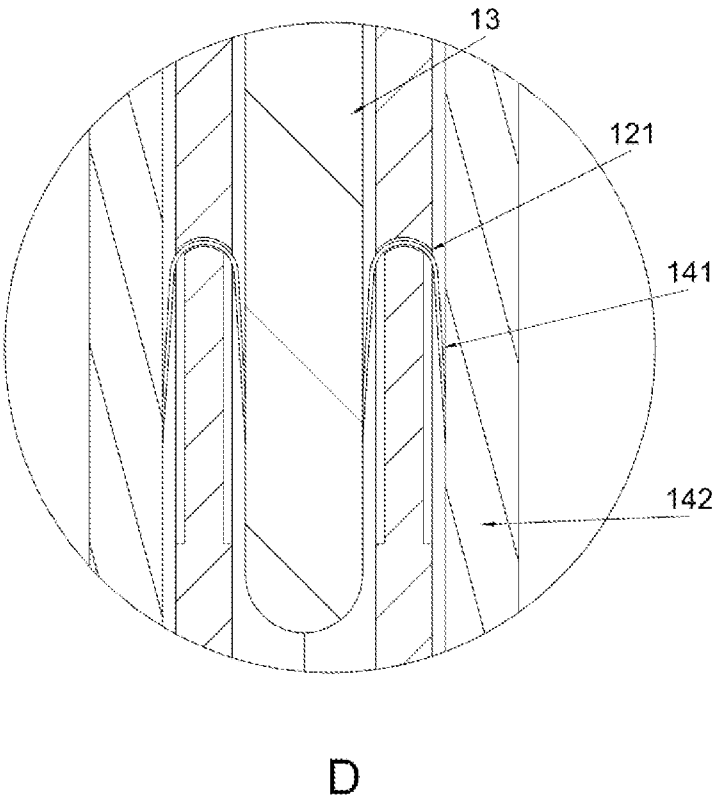
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Fig. 3

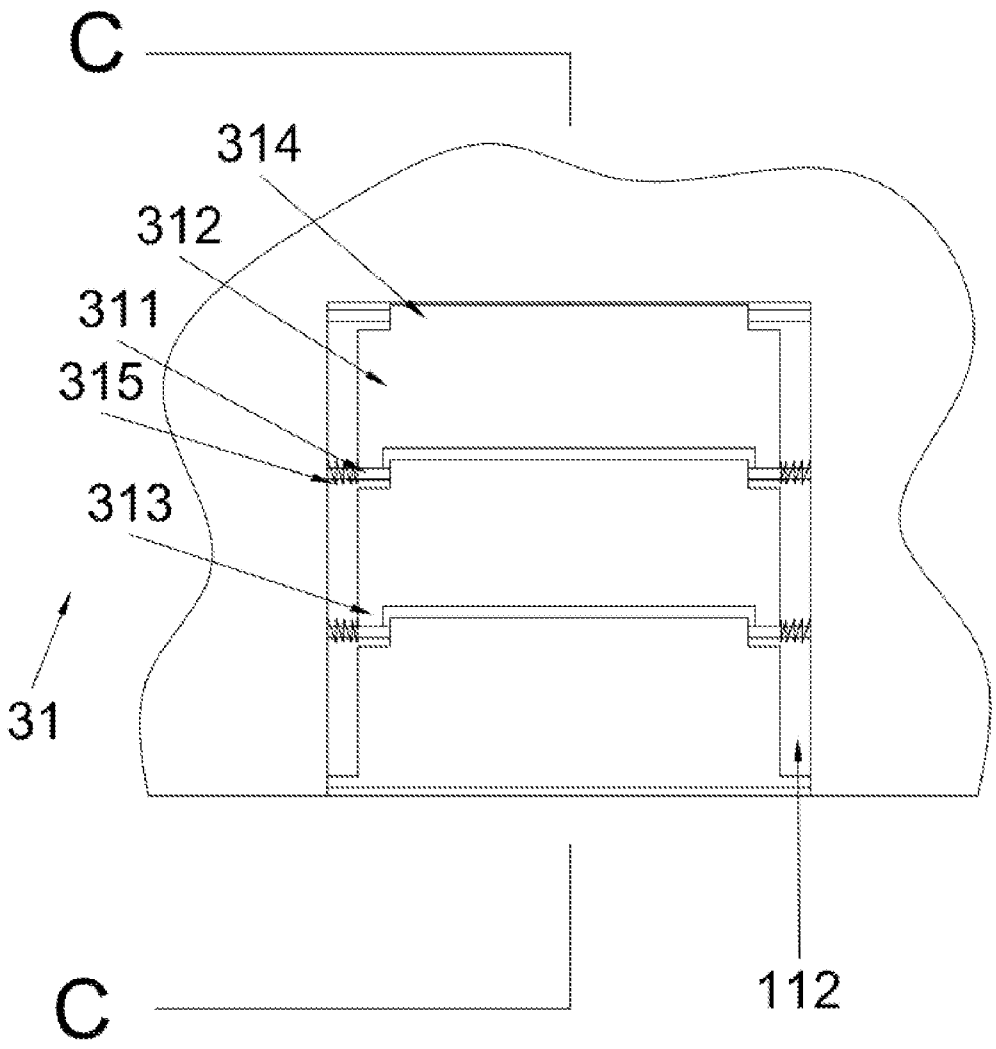

Fig. 4

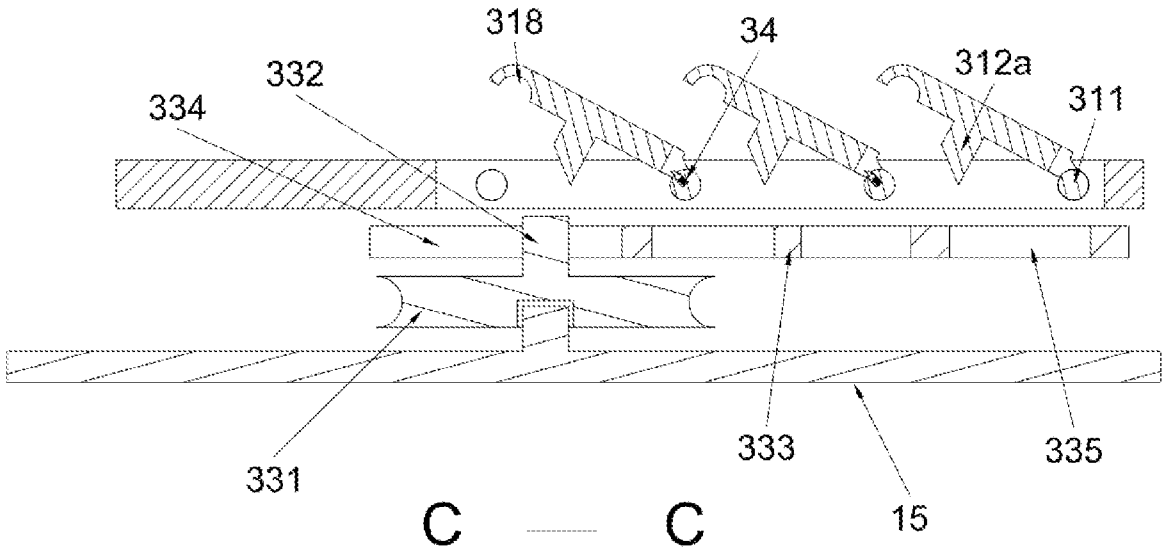
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Fig. 5

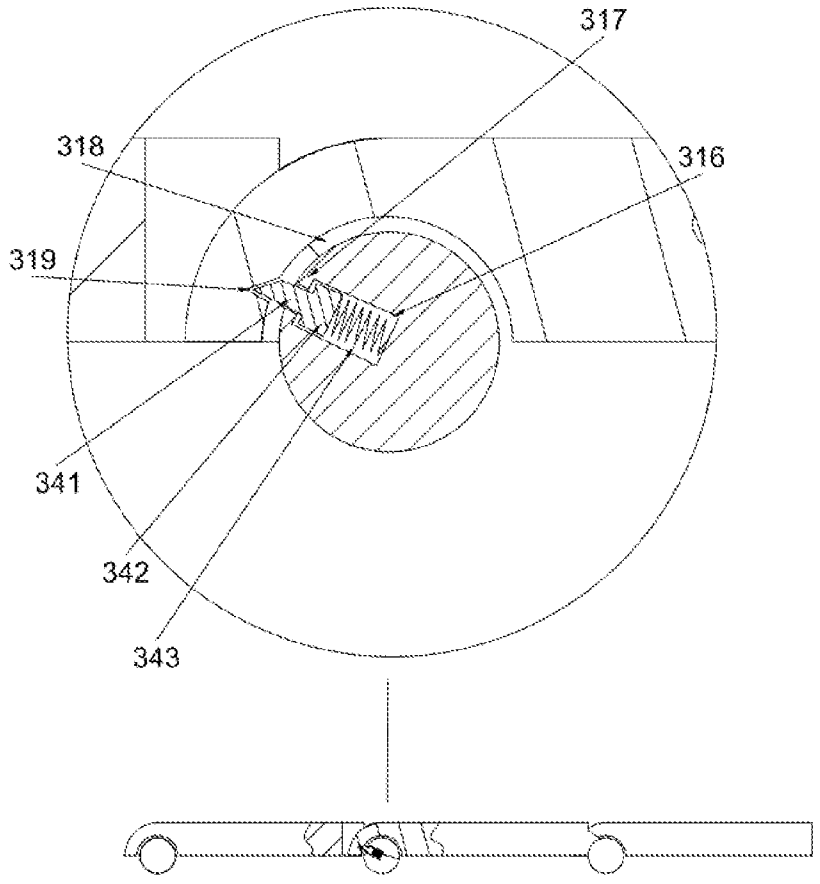
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Fig. 6

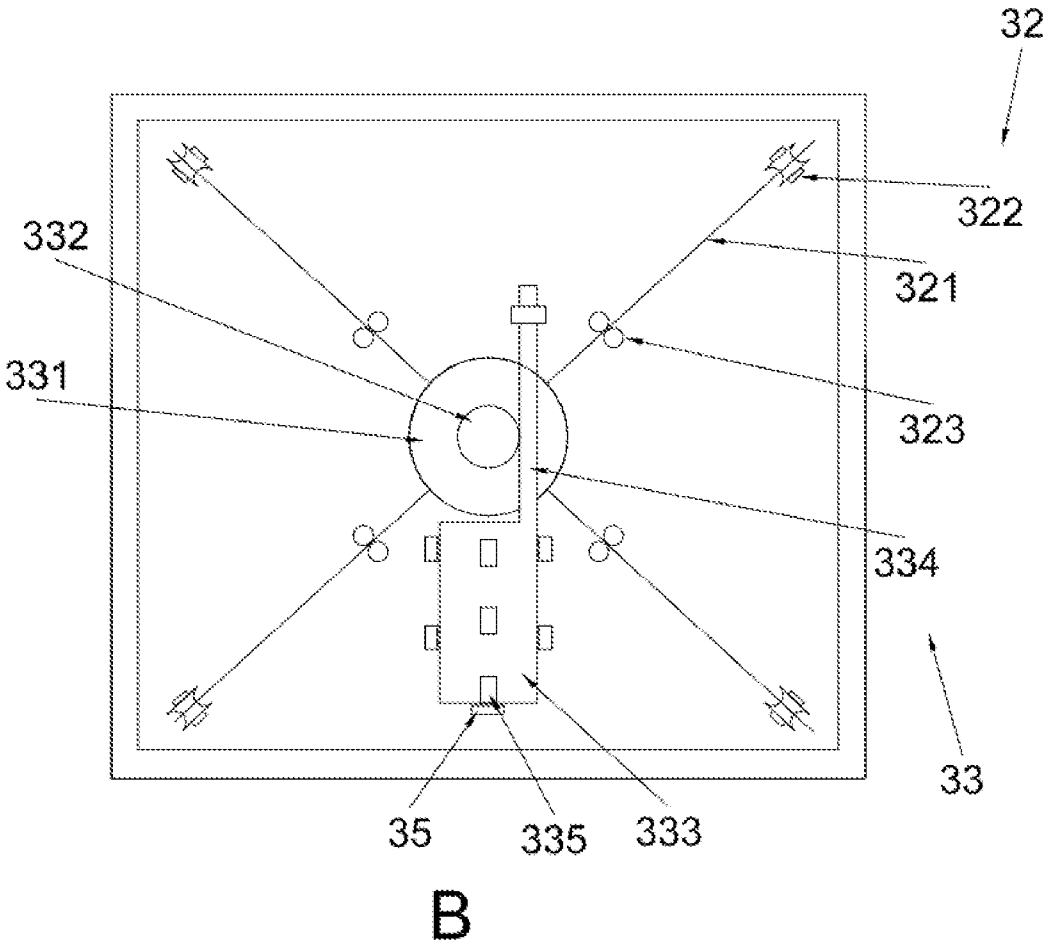

Fig. 7