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(54) FOLDABLE DINING CHAIR

(57) The invention discloses a foldable dining chair which comprises a chair portion(1), a connecting shaft (2), a footrest lever (3) and chair legs (4). Front legs, rear legs, a backrest frame and a footrest lever are respectively fitted on the connecting shaft (2) by corresponding bushings (51,52,53,54); each of the bushings consists of a bushing body (551) and a joint (552) fixedly connected with the bushing body, wherein a connection mechanism is arranged on an inner wall of the bushing body, and the connection mechanism comprises recesses and limiting blocks (57); the connecting shaft is also provided with a locking device (6) consists of a locking block (61), a return spring (62), a moving block (63) and a handle (64), wherein several bumps (611) matching the recesses of each of the bushings are protruded on the locking block; and the individual bushings are sheathed in close proximity to one another on the connecting shaft, the limiting blocks also form several slidable slots (631) at one side in a movement direction of the bumps, and the limiting blocks also extend into the slidable slots. In the invention, the unique design of structures fitted at the connecting shaft allows that the dining chair can have more abundant use states, and it also becomes easier to adjust the dining chair among various states and integrally fold the dining chair; and more importantly, the dining chair has lower machining cost.

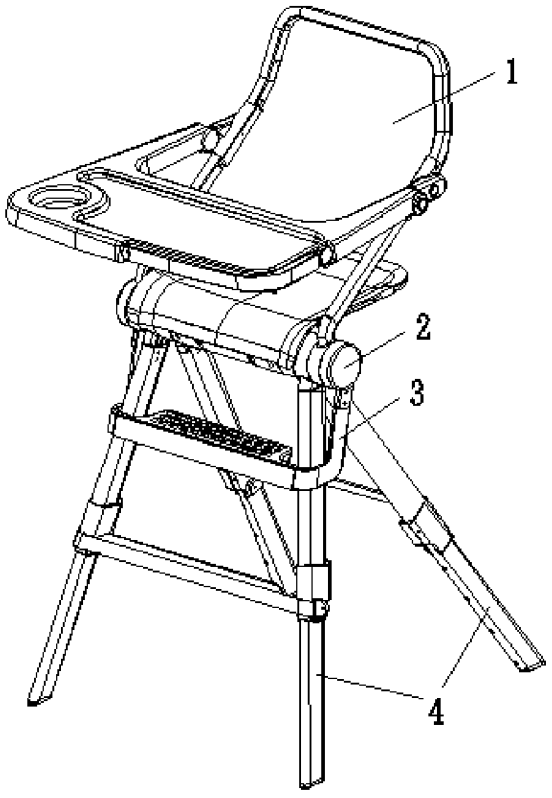


Fig. 1

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Description

FIELD OF THE INVENTION

[0001] The invention belongs to the technical field of daily necessities, and particularly to a foldable dining chair.

BACKGROUND OF THE INVENTION

[0002] Foldable dining chairs are frequently used in real life, and especially dining chairs for infants are most commonly used. A dining chair is generally used at mealtime only and usually unnecessary, and therefore generally needs to have good foldability, which not only facilitates folding, but also provides little occupied space after folding. Dining chairs in the prior art are often improved in the above two aspects, or added with some functions such as toys for infants, but these dining chairs are not improved too much in terms of their use states.
However, based on a large number of practical use and investigation results, the inventor has found that users also have requirements on use states in daily use; and the use states of dining chairs are not very matching for different use environments such as use at home and field use or with the growth of infants. Moreover, the function of a single use state in the prior art cannot meet the above needs.
Accordingly, the inventor designs a foldable dining chair which has multiple use states to suit different use environments and use needs, can be conveniently adjusted among the states and has lower manufacturing cost.

SUMMARY OF THE INVENTION

[0003] An object of the invention is to provide a foldable dining chair which has abundant use states, can be conveniently adjusted and has lower manufacturing cost.
To achieve the above object, the invention adopts the following scheme.
A foldable dining chair comprises a chair portion, a connecting shaft, a footrest lever and telescopic chair legs; wherein the chair portion and the chair legs are connected with the connecting shaft, and the weight borne by the chair portion is dispersed to the individual chair legs by the connecting shaft. The chair portion is located at an upper part of the dining chair, and comprises a seat board, a backrest and a tray, wherein the backrest comprises a backrest frame; and four said chair legs are provided, wherein the chair legs are separately arranged nearby two ends of the connecting shaft, and respectively frontward and rearward to form a pair of front legs and a pair of rear legs.
The front legs, the rear legs, the backrest frame and the footrest lever are rotatably and fixedly fitted on the connecting shaft by a front leg bushing, a rear leg bushing, a backrest frame bushing and a footrest lever bushing respectively, i.e. the front legs, the rear legs, the backrest frame and the footrest lever can be rotated and fixed along a circumferential direction of the connecting shaft, thus the use states of the entire dining chair can be adjusted or the dining chair can be folded.
Each of the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing consists of a bushing body and a joint fixedly connected with the bushing body, wherein the shape of the joint of each of the bushings as well as the angular relation between the joint and the bushing body can be adaptably adjusted according to the needs of each part. The bushing body is a hollow annular structure, a connection mechanism for rotating and fixing each of the bushings is arranged on an inner wall of the bushing body, and the connection mechanism comprises several recesses and two limiting blocks; and the recesses are spacedly arranged along a circumferential direction of the inner wall of the bushing body, and the limiting blocks are arranged outside the two recesses at outermost ends.
The connecting shaft is also provided with a locking device which comprises a locking block, a return spring, a moving block and a handle, wherein the locking block is arranged on the connecting shaft in a manner of moving only along an axial direction of the connecting shaft, several bumps matching the recesses of each of the bushings are protruded on the locking block, each of the bushings can be locked after the bumps are fitted into the recesses, a connecting post matching the moving block is arranged at one end of the locking block, and two ends of the return spring are respectively connected with or abutted against the locking block and the connecting shaft. The moving block is provided with a sliding slot, an orienting slot and a connecting hole, wherein the sliding slot is respectively obliquely arranged at two ends of the moving block and matches the connecting post of the locking block, and the orienting slot is a strip-shaped sliding slot and is arranged along a movement direction of the moving block, thus the moving block can drive the locking block to displace in an axial direction of the connecting shaft when moving along its movement direction. The handle is provided with a fixing screw hole corresponding to the connecting hole on the moving block, a fixing screw is passed through the fixing screw hole and then connected into the connecting hole, and the connecting shaft is provided with a strip-shaped hole at a position corresponding to the fixing screw hole.
The front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing are sheathed in close proximity to one another on the connecting shaft, and the individual bushings may be arrayed in any order. After each of the bushings is sheathed on the connecting shaft, the limiting blocks also form several slidable slots respectively communicated with all the recesses of the same bushing at one side in a movement direction of the bumps, the size of the slidable slots matches that of the bumps, and the limiting blocks also extend into the slidable slots, i.e. the limiting blocks extend to form two ends of the slidable slots, thus restricting

the movement stroke of the bumps in the slidable slots.

[0004] The dining chair can be adjusted among several different use states. The dining chair can be specifically designed and adjusted to have the following states including but not limited to: a fully folded state; several unfolded use states (such states also include various states in which the telescopic chair legs have different lengths) in which the front legs and the rear legs are respectively unfolded, but have different included angles and relative positions (relative to the chair portion); and a state in which the front legs and the rear legs are retracted and overlapped (i.e. a state in which the front legs and the rear legs together form new rear legs while the original footrest lever is used as new front legs). The specific adjustment process will be described below.

When a use state of the dining chair needs to be adjusted, an acting force is applied to the handle, the handle drives the locking block to retract inwards or stretch outwards by a certain distance in an axial direction of the connecting shaft, and then the return spring is in a compressed or stretching state; after the displacement of the locking block, the bumps leave the recesses and enter the slidable slots, then each of the bushings is in a rotatable state to keep the external force unchanged, and the bushing to be adjusted is rotated to a specified angle; and after the individual bushings are respectively adjusted to a specified angle, the external force is removed, the locking block is restored to an original state under the action of the return spring, the individual bumps enter the corresponding recesses, and each of the bushings is locked by the locking device and hence cannot be displaced or rotated, such that the dining chair is adjusted to a new state and in a locked safe state. During adjustment, a certain bump enters another recess from one recess of a corresponding bushing by a slidable slot; and the limiting blocks are arranged at two ends of the slidable slots to restrict the rotation angle of the bushing (i.e. the movement stroke of the bumps), thus avoiding unnecessary trouble in use.

It should be noted that the arrangement position and the relative positional relation of the individual bumps on the locking block, the number and the mutual angles of the recesses arranged on each of the bushings, the overall arrangement position of the recesses on the inner wall as well as the relative positional and angular relation between the recesses and the joint can be correspondingly designed by those skilled in the art according to the inventive concept of the present application and the actual needs of the overall functional design of the dining chair, as long as the adjustment of the relative position between the bumps and the recesses can be changed and can meet the desired functional requirements.

In the scheme, the parts of the dining chair that need to be adjusted or folded in daily use are fitted on other parts by a unique structural design, such that the dining chair can have more abundant use states, and it also becomes easier to adjust the dining chair among various states and integrally fold the dining chair; and the dining chair overcomes the disadvantages of only one use state and only one folded state in an existing dining chair, and has abundant use states. Moreover, the dining chair of the present application is ingenious in structure and convenient to use, thus designers can easily achieve the dining chair with different use states by correspondingly setting the number and position of the recesses on each of the bushings, the positional relation between the overall distribution of the recesses and the joint, the shape of the joint itself, the corresponding position of the locking block on the connecting shaft as well as the arrangement position of the bumps according to functional needs. In the scheme, each part has lower machining cost due to lower machining requirements. In summary, an adjustable and foldable dining chair which has abundant use states and is convenient to use can be manufactured by lower machining cost and design requirements in the scheme.

[0005] Preferably, the locking device further comprises a double-lock mechanism which consists of a safety block, a return spring and a bayonet, wherein the safety block is provided with a chuck, and arranged on the handle by the return spring, and the bayonet is arranged on the connecting shaft and matches the chuck. The double-lock mechanism functions to protect the locking device, which prevents the dining chair from being unexpectedly adjusted in a normal use state. With the double-lock mechanism, the locking device is normally in a locked state and therefore the dining chair is stable, thus avoiding unexpected accidents; and an acting force needs to be continuously applied to the double-lock mechanism when the dining chair needs to be adjusted, thus significantly improving the safety of the dining chair in use.

Preferably, the individual bumps on the locking block are disposed in linear arrangement along an axial direction of the connecting shaft. In this way, the difficulty in manufacturing the locking block can be reduced and the functional design of the dining chair is also generally not affected. Preferably, the chair legs consist of several sub-rods and connecting blocks, wherein the connecting block consists of an upper interface, a lower interface and an adjusting block, the upper interface and the lower interface are respectively provided for connecting two adjacent sub-rods, the adjusting block is arranged on the upper interface or the lower interface by a rotating shaft and a torsion spring, and the adjusting block and the sub-rod connected with the lower interface or the upper interface are correspondingly provided with a through hole and a stud respectively. Preferably, the dining chair further comprises a reinforcing cross bar which is arranged between two connecting blocks of the same height on the front legs or the rear legs. The reinforcing cross bar can improve the structural strength and stability of the chair legs.

Preferably, the two ends of the connecting shaft respectively further comprise an outer cap which consists of an outer cap head and a fixing block, wherein the fixing block is fixedly connected at an outer end of the connecting shaft and limits the footrest lever bushing at an outermost

side, each of the bushings is axially fixed by a structure at a middle part of the connecting shaft and the fixing block, and the outer cap head is clamped with the footrest lever bushing. Each of the bushings is fixed in an axial direction of the connecting shaft by the outer cap and a top block arranged at the middle part of the connecting shaft.

Preferably, the front leg bushing, the rear leg bushing, the footrest lever bushing and the backrest frame bushing have the same or gradually changing outer diameter.

Preferably, the backrest consists of a backrest frame and canvas, wherein the canvas is arranged between the backrest frame and the seat board, and has a periphery fixedly connected with the backrest frame and the seat board respectively.

Preferably, the footrest lever is also provided with an anti-skid footrest which is made of a high molecular material and has a larger contact area.

Preferably, the tray is also provided with an L-shaped hanging rod, one end of which is hinged at a periphery of the tray, and which is formed integrally with the tray when folded.

[0006] The dining chair of the invention overcomes the defects of insufficient use states in an existing dining chair (only one use state and only one folded state), and has abundant use states. Moreover, the dining chair of the present application is ingenious in structure and convenient to use, thus designers can easily achieve the dining chair with different use states by correspondingly setting the number and position of the recesses on each of the bushings, the positional relation between the overall distribution of the recesses and the joint, the shape of the joint itself, the corresponding position of the locking block on the connecting shaft as well as the arrangement position of the bumps according to functional needs. In the scheme, each part has lower machining cost due to lower machining requirements. In summary, an adjustable and foldable dining chair which has abundant use states and is convenient to use can be manufactured by lower machining cost and design requirements in the scheme.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007]

Fig. 1 is a three-dimensional schematic structural view of an embodiment of the invention;

Fig. 2 is a front exploded view of Fig. 1;

Fig. 3 is a three-dimensional schematic view of main components;

Fig. 4 is a schematic view of fitting at a connecting shaft;

Fig. 5 is a half-side exploded view of Fig. 4;

Fig. 6 is a three-dimensional schematic structural view of a rear leg bushing;

Fig. 7 is a three-dimensional schematic structural view of a front leg bushing;

Fig. 8 is a three-dimensional schematic structural view of a backrest frame bushing;

Fig. 9 is a three-dimensional schematic structural view of a footrest lever bushing;

Fig. 10 is a schematic structural view of the connecting shaft of the embodiment;

Fig. 11 is a schematic structural view of a locking device;

Fig. 12 is a schematic structural view of a locking block;

Fig. 13 is a schematic structural view of a moving block;

Fig. 14 is a schematic structural view of a handle of the embodiment;

Fig. 15 is an exploded view resulting from Fig. 14; and

Fig. 16 is a three-dimensional schematic view of one use state of the embodiment.

In the Figures: 1. chair portion; 2. connecting shaft; 3. footrest lever; 4. chair leg; 11. seat board; 12. backrest; 13. tray; 14. hanging rod; 15. backrest frame; 21. bayonet; 22. groove; 23. outer cap; 24. strip-shaped hole; 25. top block; 31. anti-skid footrest; 41. sub-rod; 42. connecting block; 43. front leg; 44. rear leg; 45. reinforcing cross bar; 51. front leg bushing; 52. rear leg bushing; 53. backrest frame bushing; 54. footrest lever bushing; 551. bushing body; 552. joint; 561. first recess; 562. second recess; 563. third recess; 57. limiting block; 58. slidable slot; 6. locking device; 61. locking block; 62. return spring; 63. moving block; 64. handle; 611. bump; 612. connecting post; 631. sliding slot; 632. orienting slot; 633. connecting hole; 641. fixing screw hole; 65. double-lock mechanism; 651. safety block; 652. return spring; 653. chuck; 231. outer cap head; 232. fixing block.

DETAILED DESCRIPTION OF THE INVENTION

[0008] A foldable dining chair comprises a chair portion, a connecting shaft, a footrest lever and telescopic chair legs; wherein the chair portion and the chair legs are connected with the connecting shaft, and the weight borne by the chair portion is dispersed to the individual chair legs by the connecting shaft. The chair portion is located at an upper part of the dining chair, and comprises a seat board, a backrest and a tray, wherein the backrest comprises a backrest frame; and four said chair legs are provided, wherein the chair legs are separately arranged nearby two ends of the connecting shaft, and respectively frontward and rearward to form a pair of front legs and a pair of rear legs, i.e. two chair legs are arranged nearby each of two ends of the connecting shaft, the two chair legs at each end are respectively arranged frontwards (i.e. the orientation of the chair portion) and rearwards to form a front leg and a rear leg respectively, and the mutual positions of the front legs and the rear legs may be random, i.e. the front legs are inside and the rear legs are outside or the front legs are outside and the rear legs are inside.

The front legs, the rear legs, the backrest frame and the footrest lever are rotatably and fixedly fitted on the connecting shaft by a front leg bushing, a rear leg bushing, a backrest frame bushing and a footrest lever bushing respectively, i.e. the front legs, the rear legs, the backrest frame and the footrest lever can be rotated and fixed along a circumferential direction of the connecting shaft, thus the use states of the entire dining chair can be adjusted or the dining chair can be folded.

Each of the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing consists of a bushing body and a joint fixedly connected with the bushing body, wherein the shape of the joint of each of the bushings (i.e. the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing) as well as the angular relation between the joint and the bushing body can be adaptably adjusted according to the needs of each of the parts (i.e. the front legs, the rear legs, the backrest frame and the footrest lever), which does not affect the implementation of the present application. The bushing body is a hollow annular structure, a connection mechanism for rotating and fixing each of the bushings is arranged on an inner wall of the bushing body, and the connection mechanism comprises several recesses and two limiting blocks; and the recesses are spacedly arranged along a circumferential direction of the inner wall of the bushing body (i.e. the individual recesses are arranged at a certain included angle relative to one another on the inner wall of the bushing body), and the limiting blocks are arranged outside the two recesses at outermost ends.

The connecting shaft is also provided with a locking device which comprises a locking block, a return spring, a moving block and a handle, wherein the locking block is arranged on the connecting shaft in a manner of moving only along an axial direction of the connecting shaft (for example, the connecting shaft is provided with an axially extending groove and the locking block is arranged in the groove, or the connecting shaft is provided with an axially extending guide slot or guide rail and the locking block is correspondingly provided with a mechanism matching the guide slot or guide rail, or other structures publicly known in the prior art which allow the locking block to move only axially relative to the guide slot or guide rail); several bumps matching the recesses of each of the bushings are protruded on the locking block; the arrangement position and the arraying manner of the bumps are not strictly and directly restricted, as long as each of the bushings can be locked after the bumps are fitted into the recesses; a connecting post matching the moving block is arranged at one end of the locking block; and two ends of the return spring are respectively connected with or abutted against the locking block and the connecting shaft. The moving block is provided with a sliding slot, an orienting slot and a connecting hole, wherein the sliding slot is respectively obliquely arranged at two ends of the moving block and matches the connecting post of the locking block, and the orienting slot is a strip-shaped sliding slot and is arranged along a movement direction of the moving block, thus the moving block can drive the locking block to displace in an axial direction of the connecting shaft when moving along its movement direction. The handle is provided with a fixing screw hole corresponding to the connecting hole on the moving block, a fixing screw is passed through the fixing screw hole and then connected into the connecting hole, and the connecting shaft is provided with a strip-shaped hole at a position corresponding to the fixing screw hole.

The front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing are sheathed in close proximity to one another on the connecting shaft, and the individual bushings are arrayed in any order (i.e. the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing may be sequentially fitted on the connecting shaft in any order for the present application, or even the fitting manner of the individual bushings at two ends is also not restricted, which does not affect the implementation of the present application). After each of the bushings (i.e. the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing) is sheathed on the connecting shaft, the limiting blocks also form several slidable slots respectively communicated with all the recesses of the same bushing at one side in a movement direction of the bumps (i.e. at one side in a movement direction of the locking block), the size of the slidable slots matches that of the bumps, and the limiting blocks also extend into the slidable slots, i.e. the limiting blocks extend into the slidable slots to form two ends of the slidable slots, thus restricting the movement stroke of the bumps in the slidable slots.

[0009] The process of using the dining chair will be described in detail so that those skilled in the art have a clearer understanding of relevant structures and their positional relation.

The dining chair may have several different use states, for example, the respective positions and the mutual angles of the front chair legs and the rear chair legs are adjustable. Besides, most of the existing dining chairs have a folding function, and the dining chair of the present application also has such function. Although the functions of the dining chair in terms of use angles have been described above, these functions are technically realized by adjusting the relative positional or angular relation between components and the connecting shaft, and more specifically, mainly realized by adjusting the positional relation between the individual bumps and the individual recesses.

When a use state of the dining chair (i.e. the fitting relation between each of the bushings and the connecting shaft) needs to be adjusted, an acting force is applied to the handle, the handle drives the locking block to move by a certain distance in an axial direction of the connecting shaft, i.e. to retract inwards or stretch outwards by a certain distance; then the return spring is in a compressed or stretching state; after the displacement of the locking

block, the bumps leave the recesses and enter the slidable slots, then each of the bushings is in a rotatable state to keep the external force unchanged, and the bushing to be adjusted is rotated to a specified angle; and after the individual bushings are respectively adjusted to a specified angle, the external force is removed, the locking block is restored to an original state under the action of the return spring, the individual bumps enter the corresponding recesses, and since the locking block cannot move circumferentially, each of the bushings is locked by the locking device and hence cannot be displaced or rotated in all directions. The dining chair is adjusted to a new state and in a locked safe state. During adjustment, a certain bump enters another recess from one recess of a corresponding bushing by a slidable slot; and the limiting blocks are arranged at two ends of the slidable slots to restrict the rotation angle of the bushing (i.e. the movement stroke of the bumps). The adjustment process of the dining chair has been explained in detail above. It should be noted that the arrangement position and the relative positional relation of the individual bumps on the locking block, the number and the mutual angles of the recesses arranged on each of the bushings, the overall arrangement position of the recesses on the inner wall as well as the relative positional and angular relation between the recesses and the joint can be correspondingly designed according to the needs of the overall functional design of the dining chair, as long as the adjustment of the relative position between the bumps and the recesses can be changed and can meet the desired functional requirements. The above-described adaptability adjustment that can be made by those skilled in the art according to the inventive concept of the present application belongs to the protection scope of the present application.

Embodiment

[0010] As shown in Figs. 1-10, a foldable dining chair consists of a chair portion 1, a connecting shaft 2, a footrest lever 3 and telescopic chair legs 4; wherein the chair portion 1 and the chair legs 4 are connected with the connecting shaft 2, and the weight borne by the chair portion 1 is dispersed to the individual chair legs 4 by the connecting shaft 2. The telescopic chair legs 4 consist of several sub-rods 41 and connecting blocks 42, wherein the connecting block 42 consists of an upper interface, a lower interface and an adjusting block, the upper interface and the lower interface are respectively provided for connecting two adjacent sub-rods 41, the adjusting block is arranged on the upper interface or the lower interface by a rotating shaft and a torsion spring, and the adjusting block and the sub-rod connected with the lower interface or the upper interface are correspondingly provided with a through hole and a stud respectively. The length of the chair legs can be telescopically adjusted after the stud is removed from the through hole, and the locking operation of the chair legs can be performed after the stud is fitted into the through hole. The front legs or the rear legs of the dining chair are also provided with a reinforcing cross bar 45 which is arranged between two connecting blocks 42 of the same height on the front legs 43 or the rear legs 44. Two ends of the reinforcing cross bar 45 are connected to the two connecting blocks 42 by clamping, pins, screws or welding.

The chair portion 1 is located at an upper part of the dining chair, and consists of parts such as a seat board 11, a backrest 12 and a tray 13, wherein the backrest 12 consists of a backrest frame 15 and canvas, and the canvas is arranged between the backrest frame 15 and the seat board 11, and has a periphery fixedly connected with the backrest frame 15 and the seat board 11 respectively; and the tray 13 is also provided with an L-shaped hanging rod 14, wherein one end of the hanging rod is hinged at a periphery of the tray 13, and the hanging rod is formed integrally with the tray when folded, thus the hanging rod can be used as a hanging rod for toys when unfolded and does not affect the overall aesthetics of the tray when folded. Four said chair legs are provided, wherein the chair legs are divided into a group of two front legs 43 and a group of two rear legs 44, and the front legs 43 and the rear legs 44 are respectively arranged nearby two ends of the connecting shaft 1. The front legs 43 and the rear legs 44 are respectively fitted on the connecting shaft 2 by a front leg bushing 51 and a rear leg bushing 52, the backrest frame 15 is fitted on the connecting shaft 2 by a backrest frame bushing 53, and the footrest lever 3 is fitted on the connecting shaft 2 by a footrest lever bushing 54; and the rear leg bushing 52, the front leg bushing 51, the backrest frame bushing 53 and the footrest lever bushing 54 are sequentially fitted on the connecting shaft 2 from inside to outside. The front leg bushing 51, the rear leg bushing 52, the footrest lever bushing 54 and the backrest frame bushing 53 used in the embodiment have the same outer diameter such that the portions on the connecting shaft seem to have the same specification; and, of course, it is also possible if the individual bushings are gradually changing in appearance. The front leg bushing 51 consists of a bushing body 551 and a joint 552, wherein the bushing body 551 is a hollow annular structure and hence can be sheathed outside the connecting shaft 2, and the joint 552 is fixedly connected with the bushing body 551 to allow the front leg 43 to be fixedly connected therewith; and the front leg 43 can be fixedly connected with the joint 552 by clamping, screws and other approaches capable of realizing fixed connection in the prior art. A connection mechanism is arranged on an inner wall of the bushing body 551, and the connection mechanism consists of three recesses and two limiting blocks 57; and the recesses are spacedly arranged along a circumferential direction of an inner wall of the front leg bushing 51, the individual recesses are at a certain included angle relative to one another, the three recesses respectively include a first recess 561, a second recess 562 and a third recess 563, and the limiting blocks 57 are arranged outside the two recesses (i.

e. the first recess 561 and the third recess 563) at two ends.

The rear leg bushing 52 consists of a bushing body 551 and a joint 552, wherein the bushing body 551 is a hollow annular structure and hence can be sheathed outside the connecting shaft 2, and the joint 552 is fixedly connected with the bushing body 551 to allow the rear leg 44 to be fixedly connected therewith; and the rear leg 44 can be fixedly connected with the joint 552 by clamping, screws and other approaches capable of realizing fixed connection in the prior art. A connection mechanism is arranged on an inner wall of the bushing body 551, and the connection mechanism consists of three recesses and two limiting blocks 57; and the recesses are spacedly arranged along a circumferential direction of an inner wall of the rear leg bushing 52, the individual recesses are at a certain included angle relative to one another, the three recesses respectively include a first recess 561, a second recess 562 and a third recess 563, and the limiting blocks are arranged outside the two recesses (i.e. the first recess and the third recess) at two ends.

The backrest frame bushing 53 consists of a bushing body 551 and a joint 552, wherein the bushing body 551 is a hollow annular structure and hence can be sheathed outside the connecting shaft 2, and the joint 552 is fixedly connected with the bushing body 551 to allow the backrest frame 15 to be fixedly connected therewith; and the backrest frame 15 can be fixedly connected with the joint 552 by clamping, screws and other approaches capable of realizing fixed connection in the prior art. A connection mechanism is arranged on an inner wall of the bushing body 551, and the connection mechanism consists of two recesses and two limiting blocks 57; and the recesses are spacedly arranged along a circumferential direction of an inner wall of the backrest frame bushing 53, the two recesses respectively include a first recess 561 and a second recess 562 which are arranged at a certain included angle relative to each other, and the limiting blocks 57 are arranged outside the first recess and the second recess.

The footrest lever bushing 54 consists of a bushing body 551 and a joint 552, wherein the bushing body 551 is a hollow annular structure and hence can be sheathed outside the connecting shaft 2, and the joint 552 is fixedly connected with the bushing body 551 to allow the footrest lever 3 to be fixedly connected therewith; and the footrest lever 3 can be fixedly connected with the joint 552 by clamping, screws and other approaches capable of realizing fixed connection in the prior art. A connection mechanism is arranged on an inner wall of the bushing body 551, and the connection mechanism consists of two recesses and two limiting blocks 57; and the recesses are spacedly arranged along a circumferential direction of an inner wall of the footrest lever bushing 54, the two recesses respectively include a first recess 561 and a second recess 562 which are arranged at a certain included angle relative to each other, and the limiting blocks 57 are arranged outside the first recess and the second recess. The footrest lever 3 is provided with an anti-skid footrest 31 which is made of a high molecular material and has a larger contact area.

The connecting shaft 2 is also provided with a locking device 6 which consists of parts such as a locking block 61, a return spring 62, a moving block 63 and a handle 64, wherein several bumps 611 disposed in linear arrangement along an axial direction of the connecting shaft and matching the recesses on each of the bushings are protruded nearby one end of the locking block 61; the connecting shaft is provided with a groove 22 extending along its axial direction, and the locking block 61 is movably arranged in the groove such that the locking block is arranged in the connecting shaft in a manner of moving only along an axial direction of the connecting shaft, and the bumps 611 are fitted into the recesses on each of the bushings to lock each of the bushings, thus preventing each of the bushings from rotating about the connecting shaft; a connecting post 612 matching the moving block is arranged at the other end of the locking block 61, and two ends of the return spring 62 are respectively connected with or abutted against the locking block 61 and the connecting shaft 2; the moving block 63 is provided with a sliding slot 631, an orienting slot 632 and a connecting hole 633, the sliding slot 631 is respectively obliquely arranged at two ends of the moving block 63 and matches the connecting post 612 of the locking block 61, and the orienting slot 632 is a strip-shaped sliding slot and is arranged along a movement direction of the moving block 63; and the handle 64 is provided with a fixing screw hole 641 corresponding to the connecting hole 633 on the moving block 63, a fixing screw is passed through the fixing screw hole 641 and then connected into the connecting hole 633, and the connecting shaft 2 is provided with a strip-shaped hole 24 at a position corresponding to the fixing screw hole 641 such that the locking device can move normally to drive the locking block to move leftwards and rightwards in an axial direction of the connecting shaft and return to an original position (the handle moves forward or backward relative to the dining chair by a force applied thereto, the sliding slot obliquely arranged on the moving block drives the locking block to move leftwards and rightwards, and the spring is used for restoring the locking device to a locked state after the external force is removed). The locking device further comprises a double-lock mechanism 65 which consists of a safety block 651 and a return spring 652, wherein the safety block 651 is provided with a chuck 653, and arranged on the handle 64 by the return spring 652, and the connecting shaft 2 is provided with a bayonet 21 matching the chuck 653.

The two ends of the connecting shaft 2 respectively further comprise an outer cap 23 which consists of an outer cap head 231 and a fixing block 232, wherein the fixing block 232 is fixedly connected at an outer end of the connecting shaft 2 and limits the footrest lever bushing 54 at an outermost side, each of the bushings is axially fixed by a top block 25 at a middle part of the connecting

shaft 2 and the fixing block 232, and the outer cap head 231 is clamped with the footrest lever bushing 54.

Claims

1. A foldable dining chair, comprising a chair portion, a connecting shaft, a footrest lever and telescopic chair legs; the chair portion and the chair legs being connected with the connecting shaft; the chair portion being located at an upper part of the dining chair, and comprising a seat board, a backrest and a tray, and the backrest comprising a backrest frame; and four said chair legs being provided, and the chair legs being separately arranged nearby two ends of the connecting shaft and respectively frontward and rearward to form a pair of front legs and a pair of rear legs; wherein,
the front legs, the rear legs, the backrest frame and the footrest lever are rotatably fitted on the connecting shaft by a front leg bushing, a rear leg bushing, a backrest frame bushing and a footrest lever bushing respectively;
each of the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing consists of a bushing body and a joint fixedly connected with the bushing body, the bushing body being a hollow annular structure, a connection mechanism being arranged on an inner wall of the bushing body, and the connection mechanism comprising several recesses and two limiting blocks; and the recesses being spacedly arranged along a circumferential direction of the inner wall of the bushing body, and the limiting blocks being arranged outside the two recesses at outermost ends;
the connecting shaft is also provided with a locking device which comprises a locking block, a return spring, a moving block and a handle, the locking block being arranged on the connecting shaft in a manner of moving only along an axial direction of the connecting shaft, several bumps matching the recesses of each of the bushings being protruded on the locking block, a connecting post matching the moving block being arranged at one end of the locking block, and two ends of the return spring being respectively connected with or abutted against the locking block and the connecting shaft; the moving block being provided with a sliding slot, an orienting slot and a connecting hole, the sliding slot being respectively obliquely arranged at two ends of the moving block and matching the connecting post of the locking block, and the orienting slot being a strip-shaped sliding slot and being arranged along a movement direction of the moving block; and the handle being provided with a fixing screw hole corresponding to the connecting hole on the moving block, a fixing screw being passed through the fixing screw hole and then connected into the connecting hole, and the connecting shaft being provided with a strip-shaped hole at a position corresponding to the fixing screw hole; and
the front leg bushing, the rear leg bushing, the backrest frame bushing and the footrest lever bushing are sheathed in close proximity to one another on the connecting shaft in any order; and after each of the bushings is sheathed on the connecting shaft, the limiting blocks also form several slidable slots respectively communicated with all the recesses of the same bushing at one side in a movement direction of the bumps, the size of the slidable slots matches that of the bumps, and the limiting blocks also extend into the slidable slots.

2. The foldable dining chair according to claim 1, wherein the locking device further comprises a double-lock mechanism which consists of a safety block, a return spring and a bayonet, the safety block being provided with a chuck and arranged on the handle by the return spring, and the bayonet being arranged on the connecting shaft and matching the chuck.

3. The foldable dining chair according to claim 1, wherein the individual bumps on the locking block are disposed in linear arrangement along an axial direction of the connecting shaft.

4. The foldable dining chair according to claim 1, wherein the chair legs consist of several sub-rods and connecting blocks, the connecting block consisting of an upper interface, a lower interface and an adjusting block, the upper interface and the lower interface being respectively provided for connecting two adjacent sub-rods, the adjusting block being arranged on the upper interface or the lower interface by a rotating shaft and a torsion spring, and the adjusting block and the sub-rod connected with the lower interface or the upper interface being correspondingly provided with a through hole and a stud respectively.

5. The foldable dining chair according to claim 4, wherein the dining chair further comprises a reinforcing cross bar which is arranged between two connecting blocks of the same height on the front legs or the rear legs.

6. The foldable dining chair according to claim 1, wherein the two ends of the connecting shaft respectively further comprise an outer cap which consists of an outer cap head and a fixing block, the fixing block being fixedly connected at an outer end of the connecting shaft and limiting the bushing at an outermost side, and the outer cap head being clamped with the footrest lever bushing.

7. The foldable dining chair according to claim 1,

wherein the front leg bushing, the rear leg bushing, the footrest lever bushing and the backrest frame bushing have the same or gradually changing outer diameter.

8. The foldable dining chair according to claim 1, wherein the backrest consists of a backrest frame and canvas, the canvas being arranged between the backrest frame and the seat board, and having a periphery fixedly connected with the backrest frame and the seat board respectively.

9. The foldable dining chair according to claim 1, wherein the footrest lever is also provided with an anti-skid footrest which is made of a high molecular material.

10. The foldable dining chair according to claim 1, wherein the tray is also provided with an L-shaped hanging rod, one end of which is hinged at a periphery of the tray, and which is formed integrally with the tray when folded.

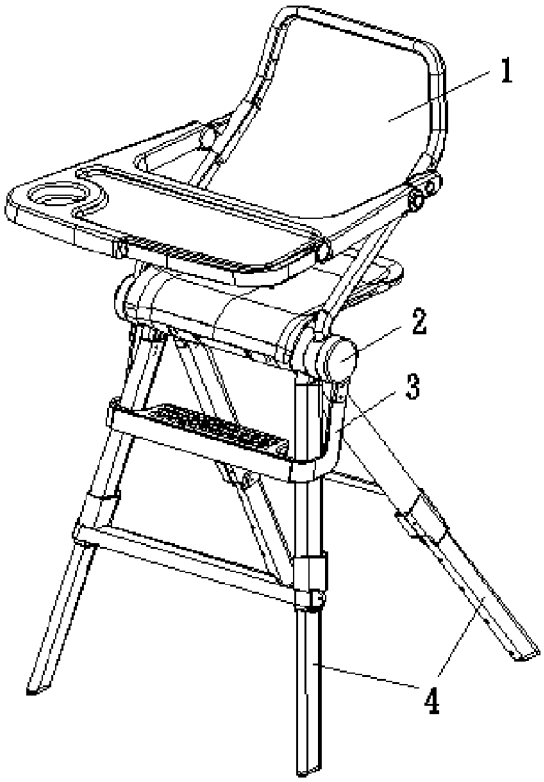


Fig. 1

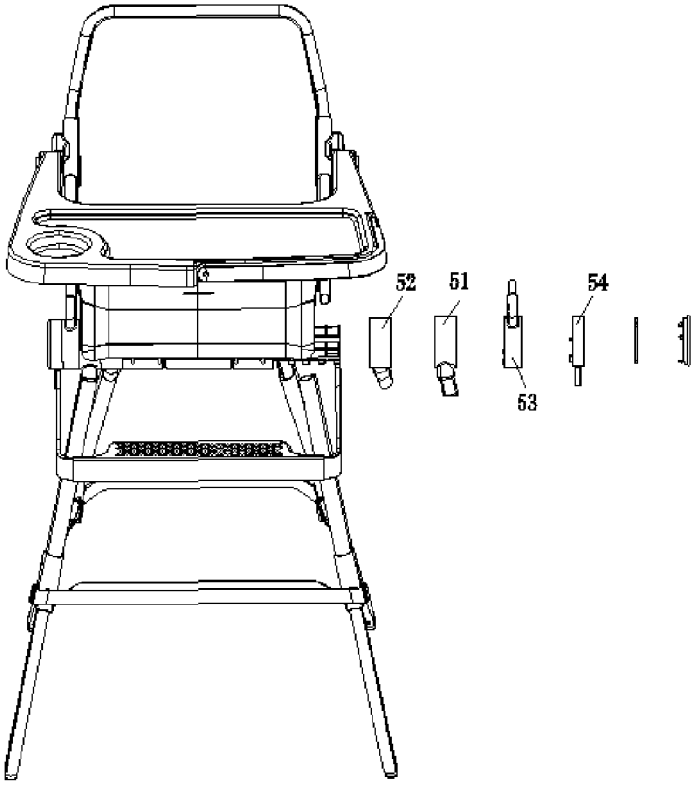


Fig. 2

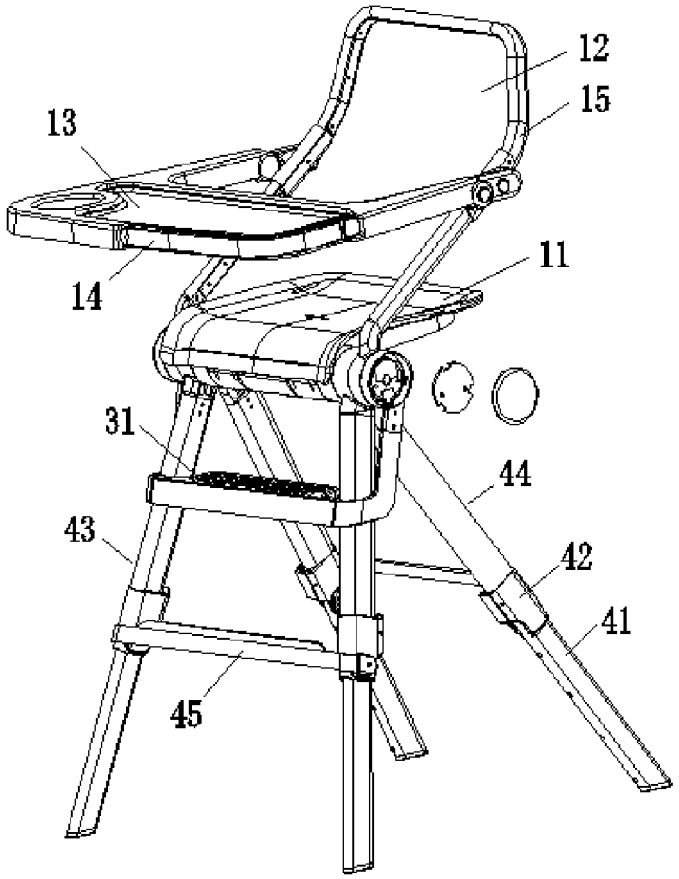


Fig. 3

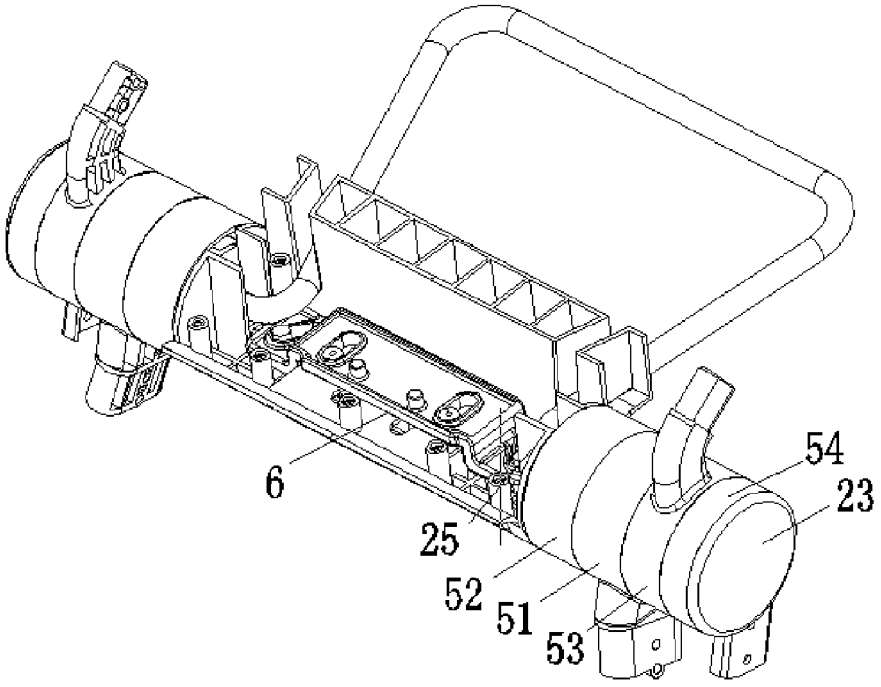


Fig. 4

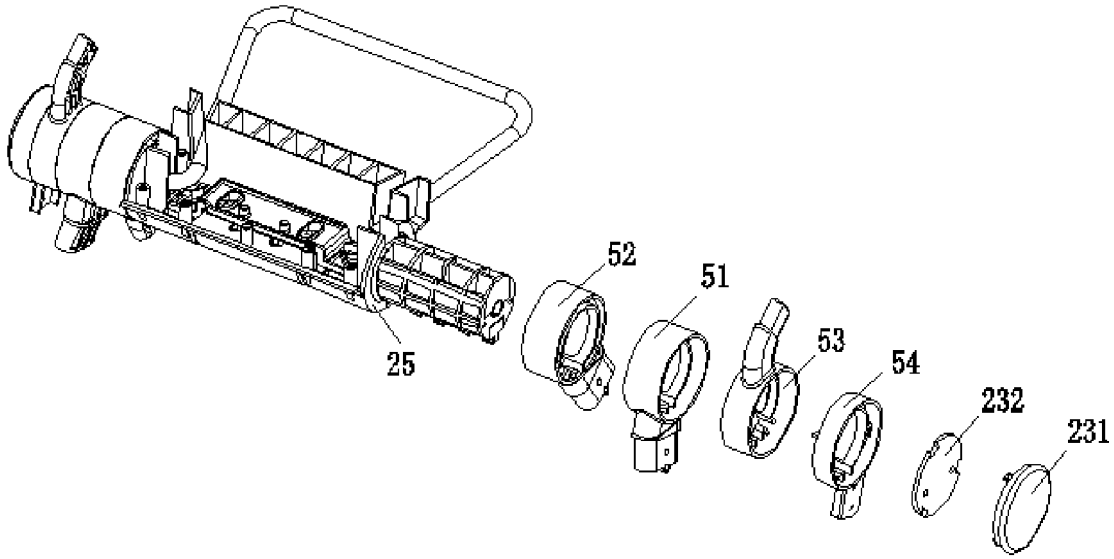


Fig. 5

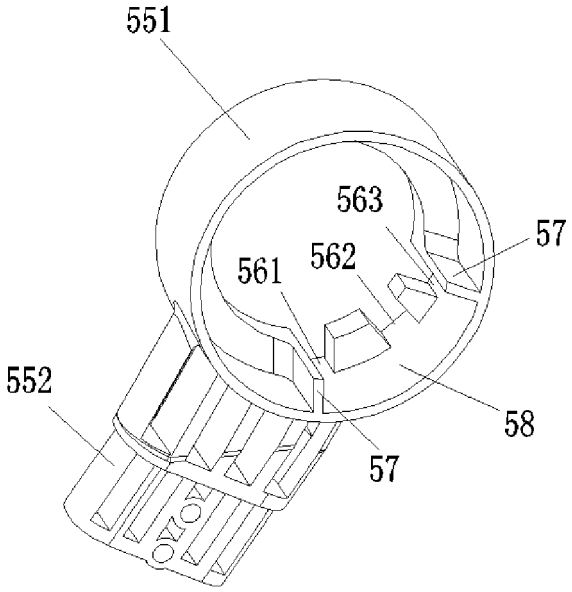


Fig. 6

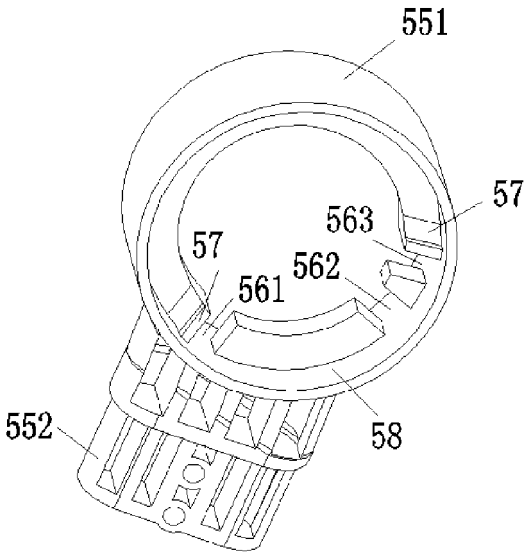


Fig. 7

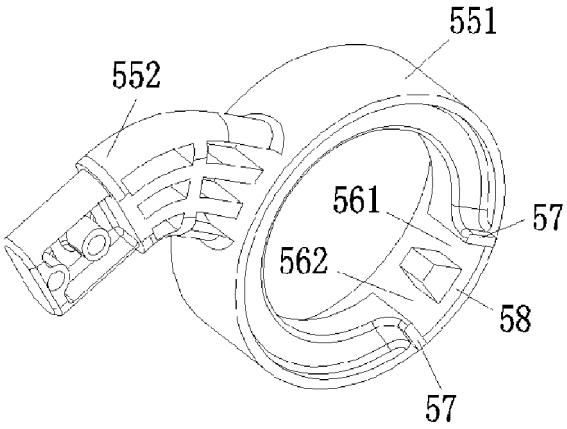


Fig. 8

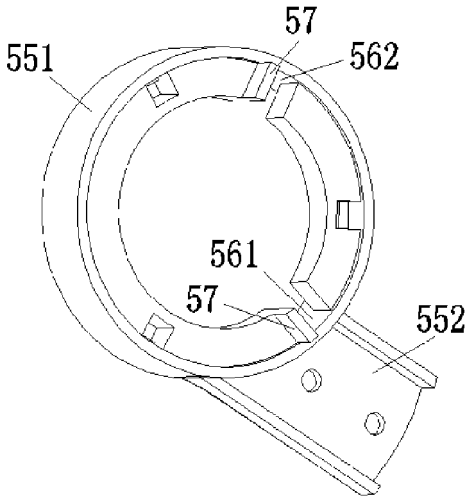


Fig. 9

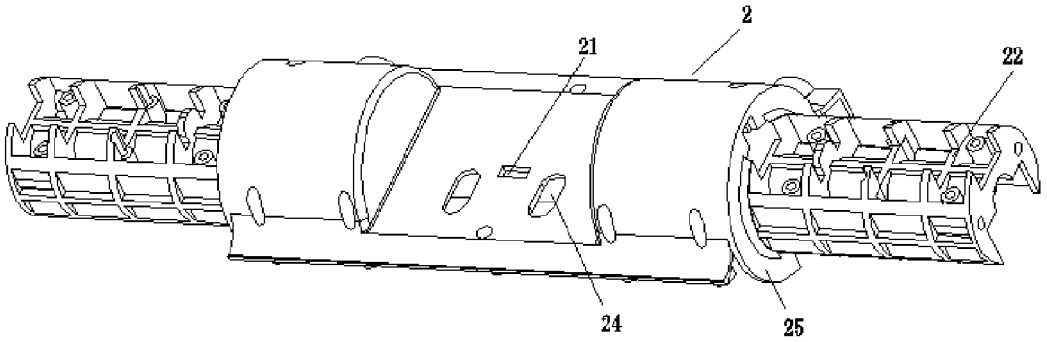


Fig. 10

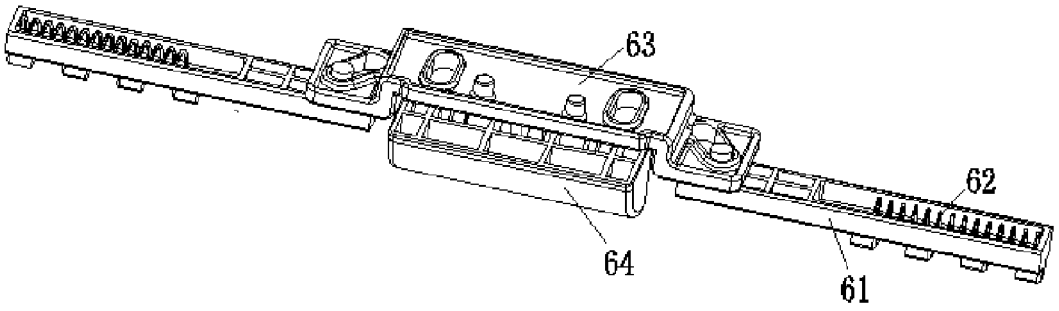


Fig. 11

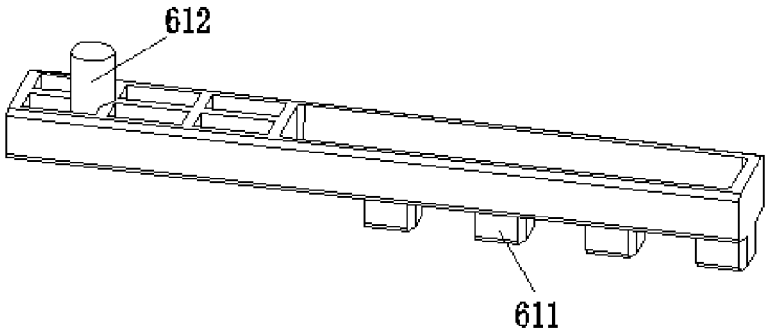


Fig. 12

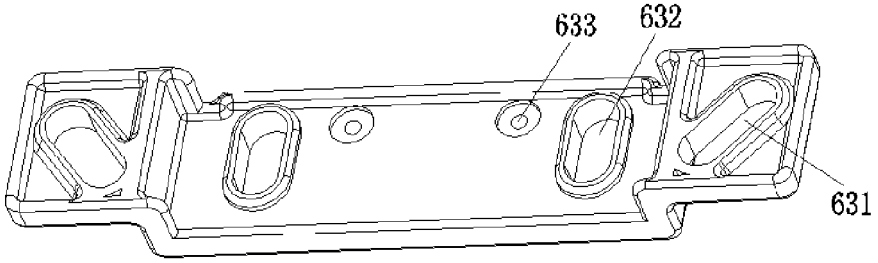


Fig. 13

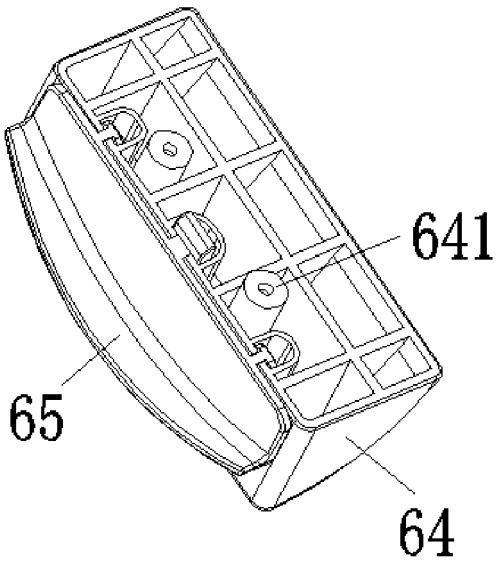


Fig. 14

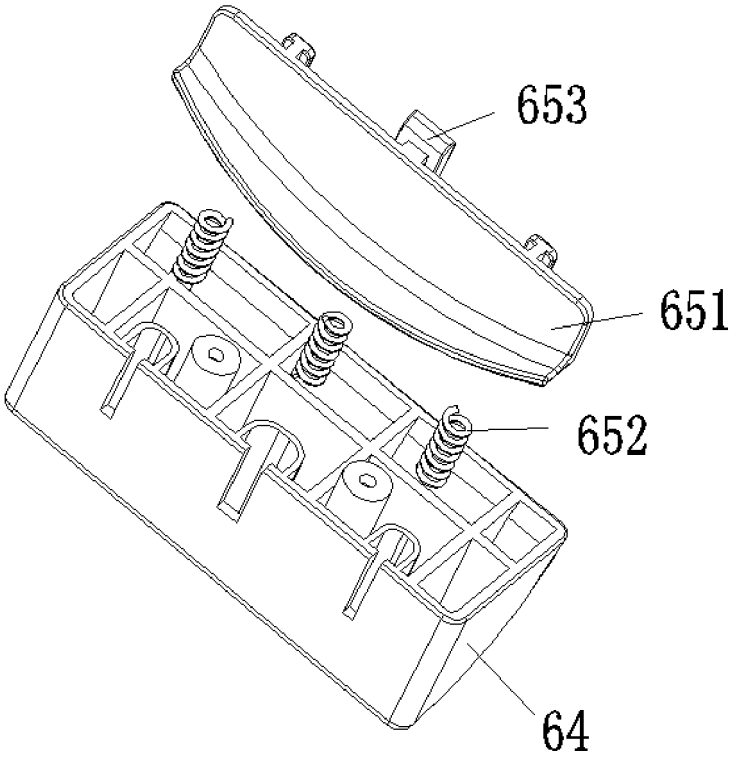


Fig. 15



Fig. 16

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EUROPEAN SEARCH REPORT

Application Number
EP 17 18 8725

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 3 090 659 A1 (DONGGUAN MASTER KIDS PRODUCTS CO LTD [CN]) 9 November 2016 (2016-11-09) * paragraph [0017] - paragraph [0027]; figures 1-17 *	1-10	INV. A47D1/00
A	CN 205 885 154 U (ZHEJIANG CH BABY CO LTD) 18 January 2017 (2017-01-18) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A47D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	16 January 2018	Lehe, Jörn

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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16-01-2018

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82