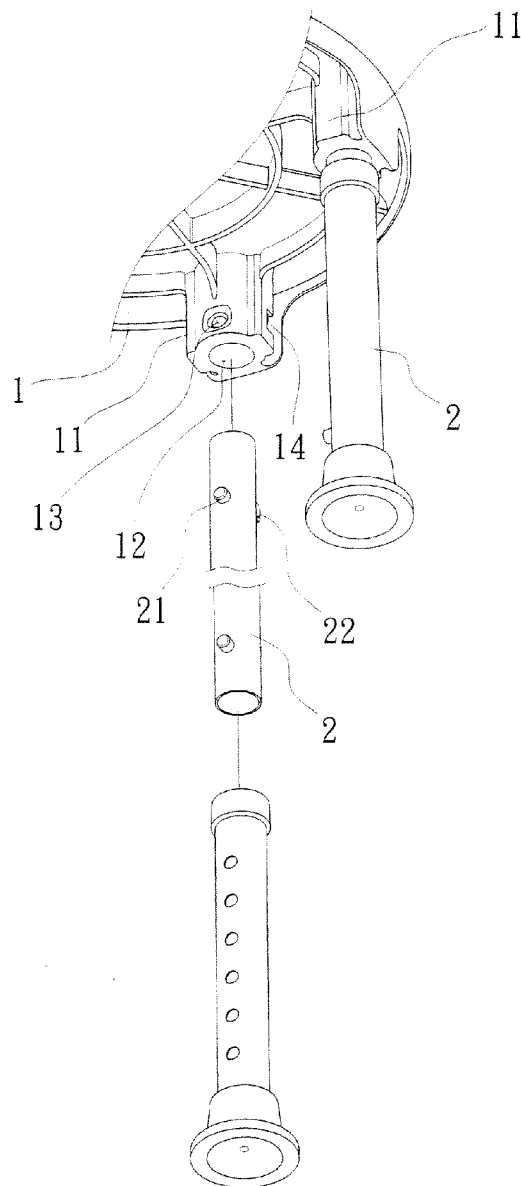


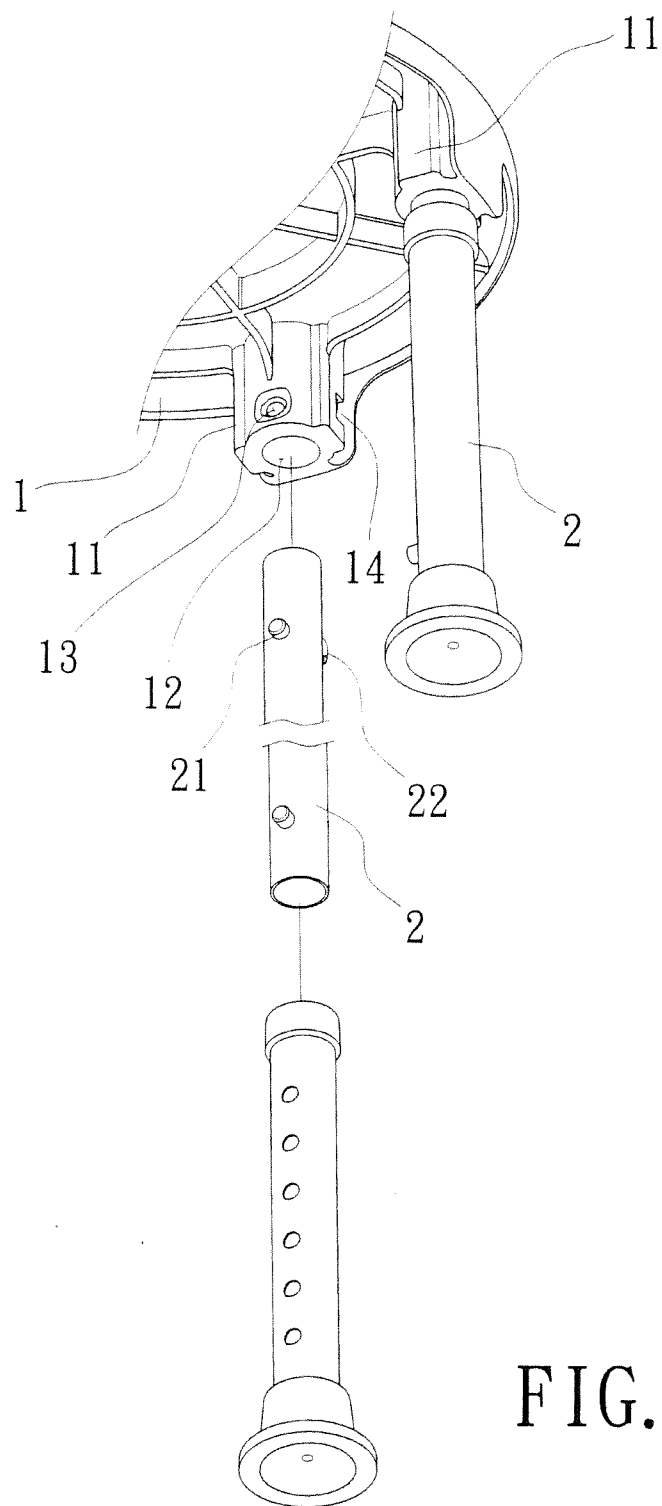


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HUNG(10) **Pub. No.: US 2013/0099541 A1**(43) **Pub. Date: Apr. 25, 2013**(54) **CHAIR STRUCTURE**(76) Inventor: **YU-PU HUNG**, KAOHSIUNG CITY
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A47C 7/02 (2006.01)(52) **U.S. Cl.**USPC **297/344.21; 297/440.14**(57) **ABSTRACT**

A chair structure has assembly portions provided on its seat for assembling with upper ends of chair legs. Button holes and a latch block are respectively provided on each chair leg and the seat for correspondingly snap fit together. Additionally, mortise holes and tenons are also provided respectively on the seat and the chair legs so that they can joint firmly together after the assembly of the seat and the chair legs. Thus, in addition to the engagement between the latch blocks and corresponding button holes, the joint strength between the seat and the chair legs can be further enhanced by the complementary fixing achieved by the joint action between the tenons and mortise holes.





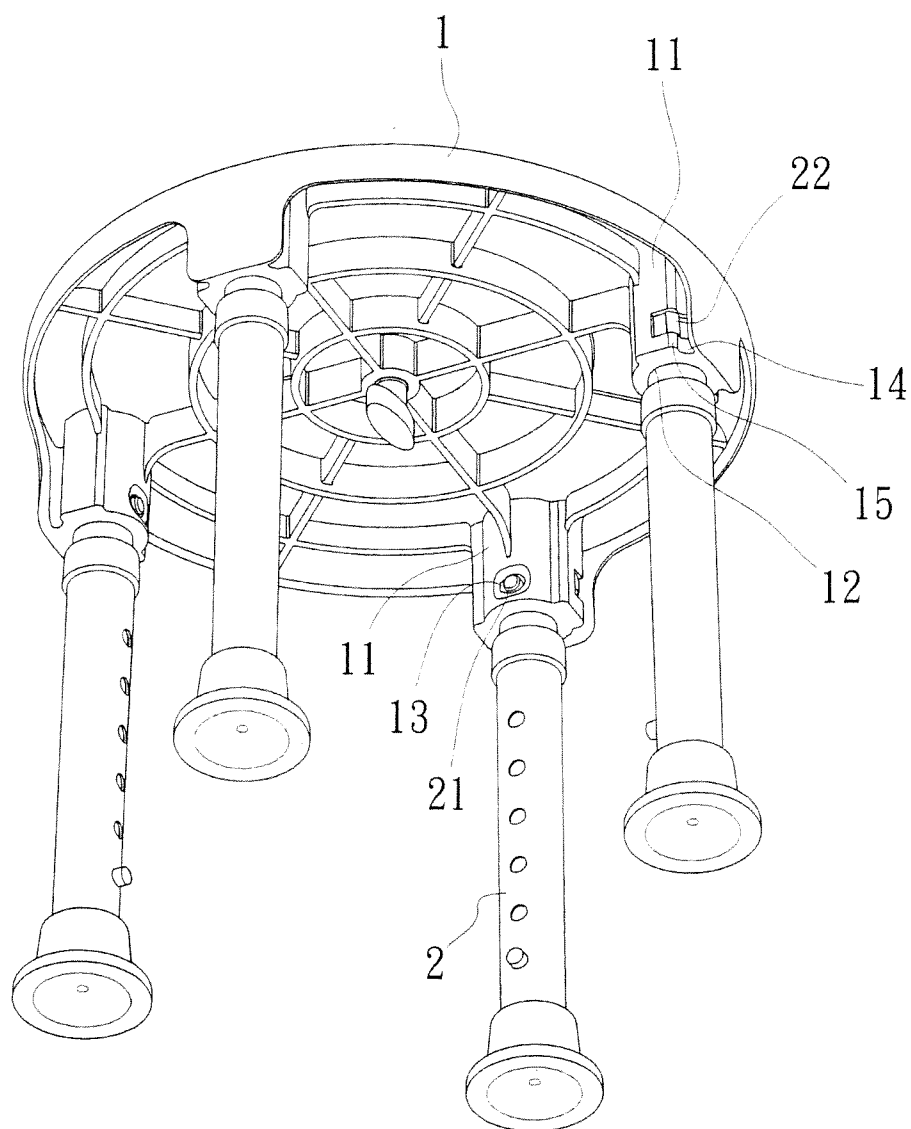


FIG. 2

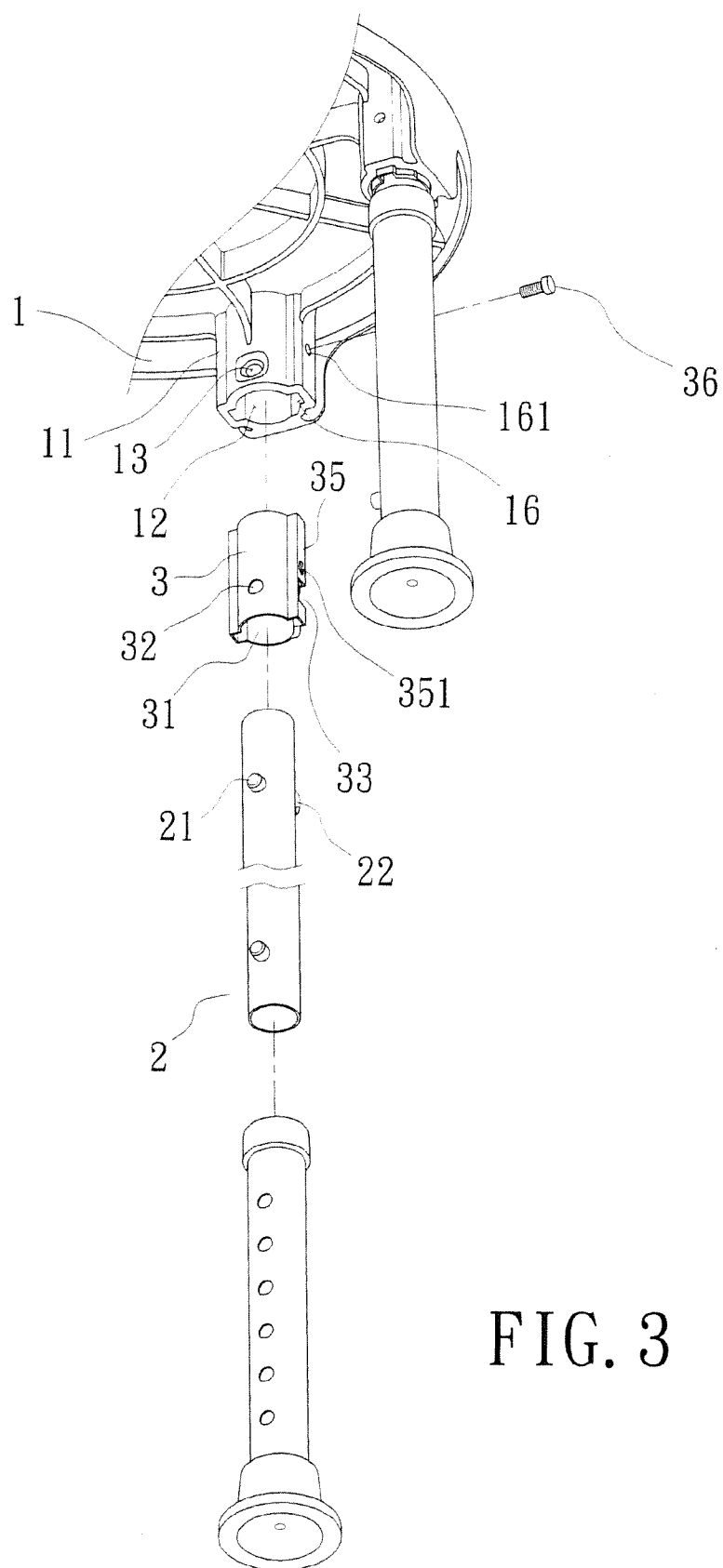


FIG. 3

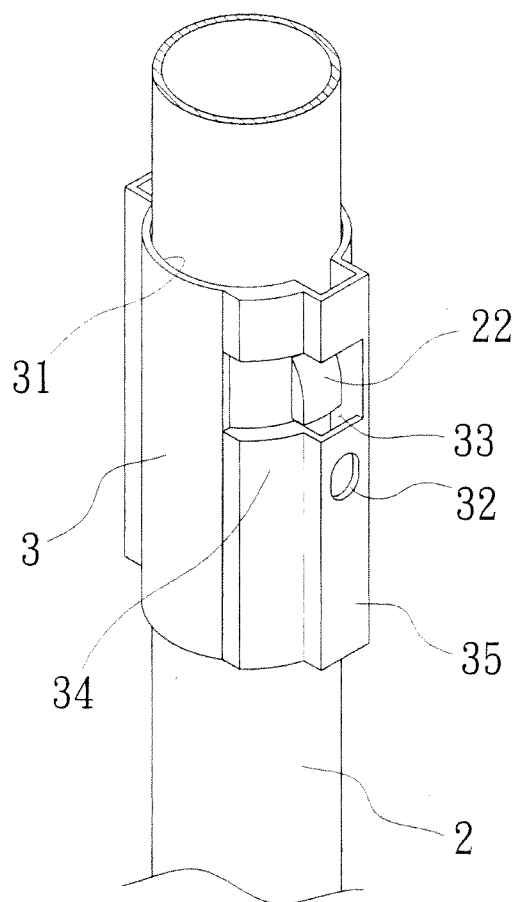


FIG. 4

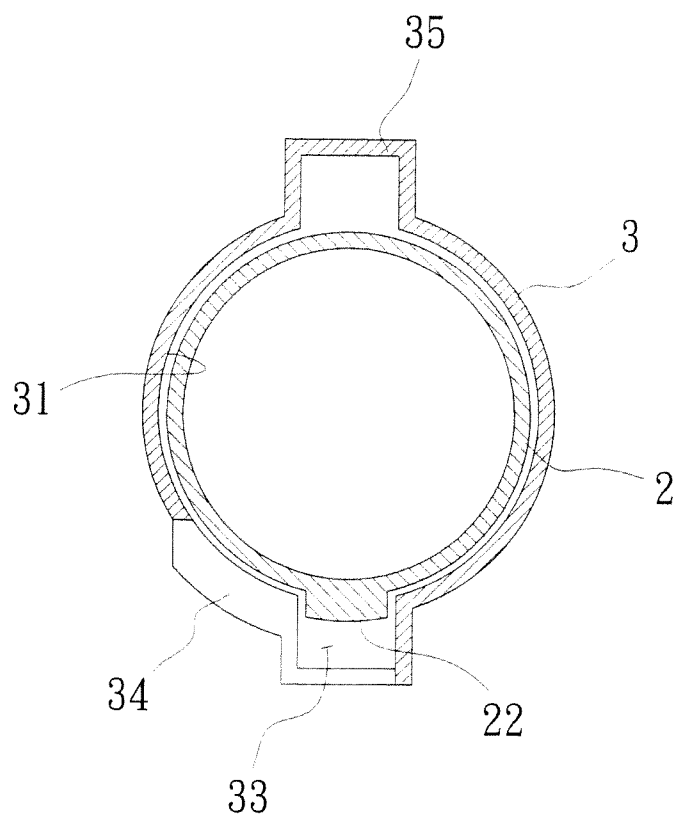


FIG. 5

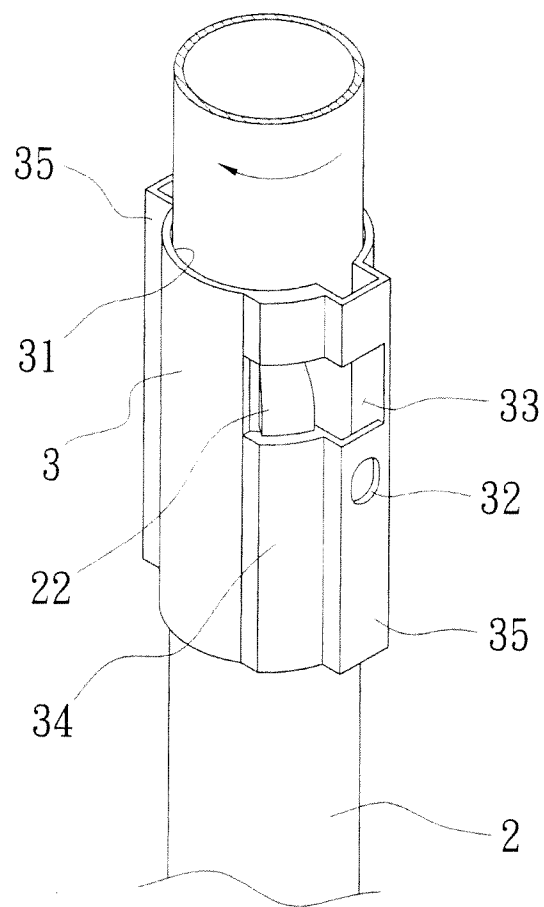


FIG. 6

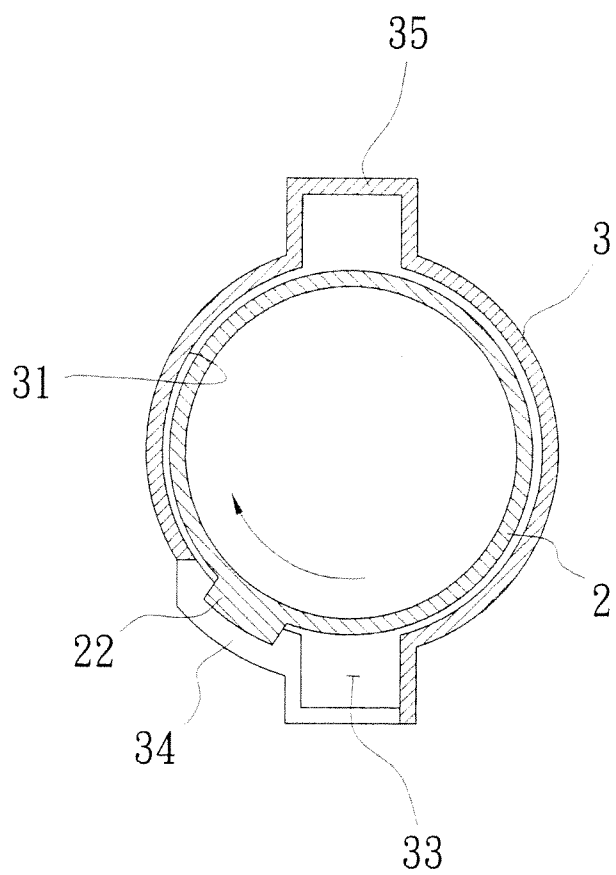


FIG. 7

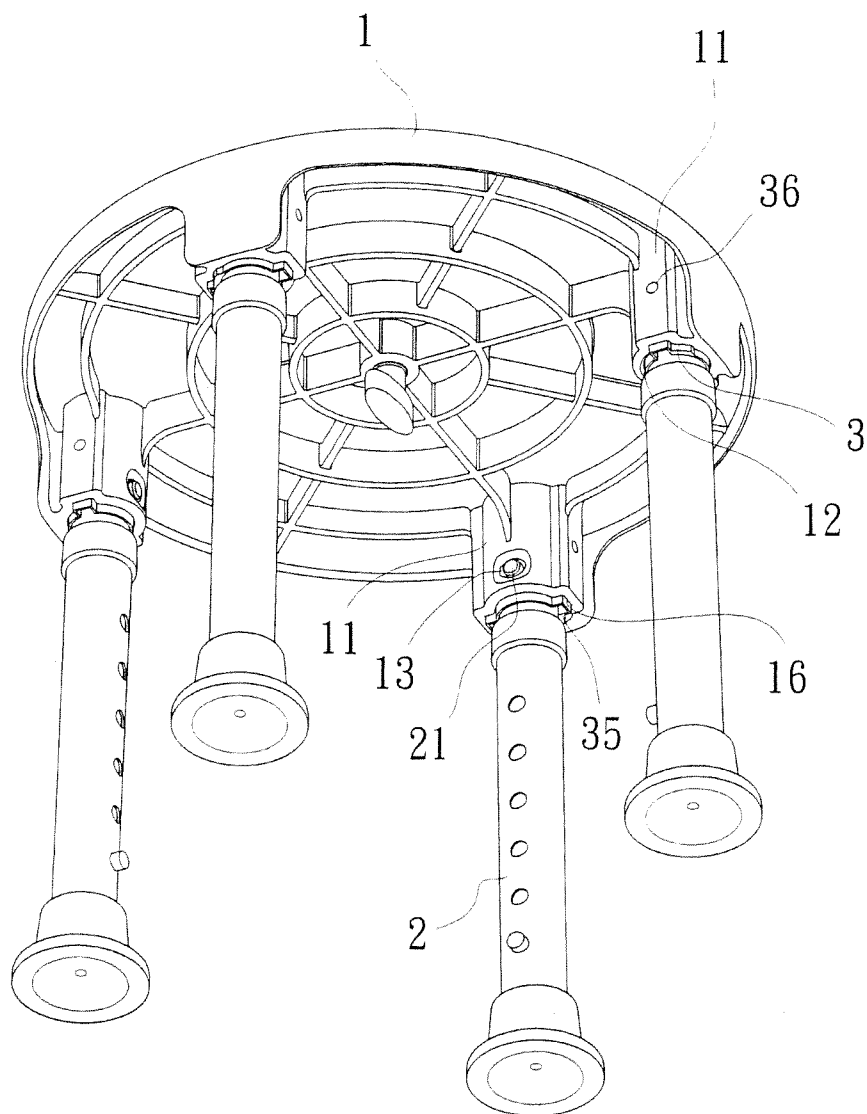


FIG. 8

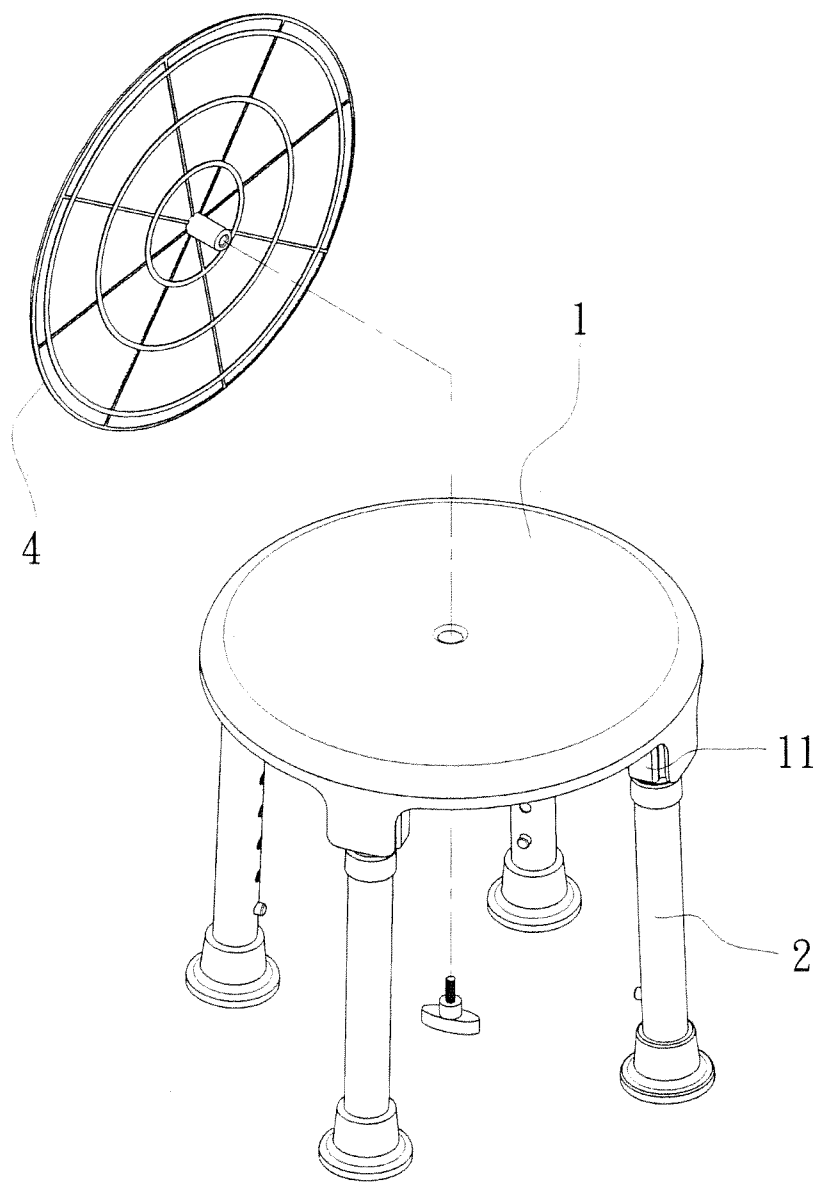


FIG. 9

CHAIR STRUCTURE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a chair structure, more particularly to a chair structure having enhanced joint strength between the seat and the chair legs so as to provide ease feeling and comfortable seating for users.

[0003] 2. Brief Description of Prior Art

[0004] Instead of conventional screw fastening structure, the relevant industries have proposed a fitting structure between latch blocks and corresponding button holes respectively provided on a seat and chair legs, so as to avoid the disadvantages of screw-loosening due to jolt or vibration and of finding the detached screws or its substitutes founded in the chair with screw fastening structure. However, if the flexible latch blocks in the conventional chair are pushed carelessly by user's hand, when user is taking the chair, the latch blocks are easily to be detached from the button holes in such a manner that the seat might be separated from the chair legs.

SUMMARY OF THE INVENTION

[0005] The main object of the present invention is to provide a novel chair structure having enhanced joint strength between the seat and the chair legs so as to provide ease feeling and comfortable seating for user.

[0006] In order to achieve above implementation object, the inventor of the present invention proposes the following chair structure, comprising a seat and chair legs, wherein:

[0007] the seat has assembly portions provided at the bottom thereof, each assembly portion having a deep insertion hole provided at the bottom thereof, two button holes opposite to each other being provided on the side faces of each assembly portion and being in communication with the insertion hole, a mortise hole being further provided between the two opposite button holes on the side faces of the assembly portion and the mortise hole being in communication with the insertion hole;

[0008] each chair leg having its upper end fitted in the insertion hole, the a latch block corresponding to the button holes of the seat being provided at the lateral side of each chair leg; a tenon corresponding to each mortise hole of the seat being provided on the lateral side of each chair leg and the tenon being locked with the bottom edge of each mortise hole of the seat.

[0009] Thus, in addition to the snap fit between the latch blocks and corresponding button holes, mortise holes and tenons joints structure are further provided in such a manner that the joint strength between the seat and the chair legs can be further enhanced by complementary fixing achieved by the joint between the tenons and mortise holes so as to provide ease feeling and comfortable seating for user.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a perspective exploded view of the present invention.

[0011] FIG. 2 is a perspective assembled view of the present invention.

[0012] FIG. 3 is a perspective exploded view showing the second embodiment of the present invention.

[0013] FIG. 4 is a partial perspective enlarged view of the second embodiment of the present invention.

[0014] FIG. 5 is a sectional view the second embodiment of the present invention.

[0015] FIG. 6 is perspective view showing the usage state of the second embodiment of the present invention.

[0016] FIG. 7 is sectional view showing the usage state of the second embodiment of the present invention.

[0017] FIG. 8 is a perspective assembled view of the second embodiment of the present invention.

[0018] FIG. 9 is a perspective exploded view of still another embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

[0019] The objects, the technical contents and the expected effectiveness of the present invention will become more apparent from the detailed description of the preferred embodiment in conjunction with the accompanying drawings.

[0020] Firstly referring to FIGS. 1 and 2, the chair structure of the present invention comprises a seat (1) and chair legs (2).

[0021] The seat (1) has assembly portions (11) provided, in equiangular manner, at the bottom thereof; each assembly portion (11) has a deep insertion hole (12) provided at its bottom face. Two button holes (13) opposite to each other are provided on the side faces of each assembly portion (11) and the button holes (13) are in communication with the insertion hole (12), a mortise hole (14) being further provided between the two opposite button holes (13) on the side face of each assembly portion (11), the mortise hole (14) being also in communication with the insertion hole (12). Further, a locating portion (15) is formed on the wall surface of each assembly portion (11) at the bottom edge of the mortise hole (14).

[0022] The upper end of each chair leg (2) is fitted into the insertion hole (12) provided on the assembly portion (11) of the seat (1). A flexible latch block (21) corresponding to the button holes (13) of the seat (1) is provided at the lateral side of each chair leg (2) to be in snap fit into the button holes (13). Furthermore, a tenon (22) corresponding to the mortise hole (14) of the seat (1) is provided on the lateral side of each chair leg (2). The tenon (22) is formed as a drop shape tapered upward from its bottom and the bottom face of the tenon (22) is locked with the upper end face of the locating portion (15) provided on the bottom edge of the mortise hole (14) of the seat (1).

[0023] When assembly of the chair is conducted as depicted in FIGS. 1 and 2, the upper end of each chair leg (2) is fitted into the insertion hole (12) provided at the assembly portion (11) of the seat (1), and simultaneously the tenon (22) is allowed to align with the mortise hole (14) of the seat (1). In this manner, the chair legs (2) are easily to be fitted into the insertion holes (12) by the design of drop shape tapered upward from the bottoms of the tenons (22). When the tenon (22) of each chair leg (2) reaches the position of the mortise hole (14) of the seat (1), the bottom face of the tenon (22) is locked with the bottom edge of the mortise hole (14), and in turn a rotation force is applied to the chair leg (2) in such a manner that the tenon (22) of each chair leg (2) is rotated to engage with the lateral side of the mortise hole (14) of the seat (1). At this moment, the bottom face of the tenon (22) is displaced from the bottom edge of the mortise hole (14) to the upper end face of the locating portion (15), which is extended from the bottom edge of the mortise hole (14), so that the bottom face of the tenon (22) is completely locked with the upper end face of the locating portion (15). Meanwhile, the

flexible latch block (21) provided at the lateral side of each chair leg (2) is also displaced to the button hole (13) of the seat (1) and is then extended to conduct snap-fit within the button holes (13). In this manner, the assembly of the seat (1) and the chair legs (2) is completed.

[0024] When the flexible latch blocks (21) of the chair legs (2) are pushed carelessly by an user and thus are moved to the inside of the button holes (13) of the seats (1), the seat (1) and the chair legs (2) can still be kept in firm joint state by the locking between the tenon (22) of each chair leg (2) and the locating portion (15) provided at the bottom edge of the mortise hole (14) of the seat (1) under the state of disengagement of the latch block (21) and the button holes (13). Therefore, the chair can be maintained in good shape and is ready for continual use without any detachment of the seat (1) and the chair legs (2) happened.

[0025] FIGS. 3 and 4 show another embodiment of the present invention. Referring to the figures, connection sleeves (3) can be provided for the coupling of the seat (1) and the chair legs (2). A through hole (31) is provided at the center of each connection sleeve (3) for fitting with the upper end of a chair leg (2). Further, two button holes (32) opposite to each other are provided on the side faces of each connection sleeve (3). The button holes (32) are communicated with the through hole (31) and are correspondingly in snap fit with the latch block (21) of each chair leg (2). Further, a mortise hole (33) is provided between the two opposite button holes (13) on the side face of each connection sleeve (3), the mortise hole (33) being also in communication with the through hole (31). Further, a locating portion (34) is formed on the wall surface of the connection sleeve (3) at the bottom edge of the mortise hole (33), and the bottom face of the tenon (22) of each chair leg (2) is allowed to be locked with the upper end face of the locating portion (34) provided on the bottom edges of the mortise hole (14) of the seat (1). Each connection sleeve (3) has opposite insertion strips (35) formed on the side faces thereof and one of the insertion strips (35) is formed to pass through the place where the mortise hole (33) is provided. Correspondingly, an insertion groove (16) is provided on the wall of the insertion hole (12) of the assembly portion (11) of the seat (1) so as to fit with the insertion strip (35) of the connection sleeve (3). Corresponding fastening holes (351), (161) for the penetration of a fastening member (36) are respectively provided on the insertion strip (35) of the connection sleeve (3) and the insertion groove (16) of the assembly portion (11) of the seat (1).

[0026] When assembly of the chair is conducted as depicted in FIG. 4, the upper end of each chair leg (2) is fitted into the through hole (31) of the connection sleeve (3), and simultaneously the tenon (22) of each chair leg (2) is allowed to align with and then to be fitted into the mortise hole (33) of the connection sleeve (3), as shown in FIG. 5. Next referring to FIGS. 6 and 7, a rotation force is applied to the chair leg (2) in such a manner that the tenon (22) of each chair leg (2) is rotated to engage with the lateral side of the mortise hole (33) of the connection sleeve (3). At this moment, the bottom face of the tenon (22) is completely locked with the upper end face of the locating portion (34) provided at the bottom edge of the mortise hole (33). Meanwhile, the flexible latch block (21) provided at the lateral side of each chair leg (2) is also displaced to the button holes (32) of the connection sleeve (3) and is then extended to conduct snap-fit within the button hole (32). Next referring to FIG. 8, after assembly of each chair leg (2) and the connection sleeve (3), the connection sleeve (3) is

force to be fitted into the insertion hole (12) with the insertion strip (35) on the connection sleeve (3) aligning and thus locking with the insertion groove (16) provided on the wall of the insertion hole (12) of the seat (1). At the same time, the latch block (21) extending out of the button hole (32) of the connection sleeve (3) is in snap fit with the button hole (13) of the assembly portion (11) of the seat (1). Simultaneously, the hole (351) on the insertion strip (35) of the connection sleeve (3) is aligned with the fastening hole (161) provided on the insertion groove (16) of the assembly portion (11) of the seat (1), so that the fastening member (36) can penetrate through the fastening holes (351), (161) for locking the seat (1) and the connection sleeve (3) together. In this manner, the connection sleeve (3) and the seat (1) can be assembled firmly together by the engagement between the insertion strip (35) and the insertion groove (16), the snap fit between the latch block (21) and the button hole (13), and the fastening action by the fastening member (36). On the other hand, in addition to the fitting between the connection sleeve (3) and each chair leg (2) is further enhanced by the locking between the mortise hole (33) of the connection sleeve (3) and the tenon (22) of each chair leg (2) with the locking joint between the mortise hole (33) and the tenon (22) being embedded within the insertion hole (12) and being enclosed by the assembly portion (11) of the seat (1). Thus, the locking joint between the mortise hole (33) and the tenon (22) can be protected from detaching by outside impact. Configuring like this, a firm assembly among the seat (1), the chair legs (2) and the connection sleeves (3) can be ensured so as to enhance the structural strength and the steadiness of the whole chair structure.

[0027] FIG. 9 shows still another embodiment of the present invention. Referring to the figure, a rotating disc (4) is further pivotally provided on the seat surface of the seat (1). Users can change their face orientation as desired by the provision of this rotating disc (4) without the need of standing up, moving to desired orientation and then sitting down again. Therefore, this design can significantly expedite the operation of frequent orientation change for users in working.

What is claimed is:

1. A chair structure, comprising a seat and chair legs, wherein:

said seat has assembly portions provided at the bottom thereof, each said assembly portion having an insertion hole provided on the bottom face thereof, two button holes opposite to each other being provided on the side faces of each said assembly portion and being in communication with said insertion hole, a mortise hole being further provided between said opposite button holes on the side faces of each said assembly portion and the mortise hole being in communication with said insertion hole;

each said chair leg having its upper end fitted in said insertion hole, a latch block corresponding to the button holes of said seat being provided at the lateral side of each said chair leg; a tenon corresponding to the mortise hole of the seat being provided on the lateral sides of each said chair leg and said tenon being locked with the bottom edge of said mortise hole of said seat.

2. The chair structure as claimed in claim 1, wherein a locating portion is formed on the wall surface of each said

assembly portion at the bottom edge of said mortise hole so that the bottom face of said tenon is locked with the upper end face of said locating portion.

3. The chair structure as claimed in claim 1, wherein a rotating disc is further pivotally provided on the seat surface of said seat of said chair structure.

4. A chair structure, comprising a seat, chair legs and connection sleeves, wherein:

said seat has assembly portions provided at the bottom thereof, each said assembly portion having an insertion holes provided on the bottom face thereof;

said chair legs being formed that each chair leg has a latch block, corresponding to two button holes of said seat, provided at the lateral sides thereof so as to be in snap fit with said button holes of said seat, a tenon being further provided at the lateral side of each said chair leg;

said connection sleeves being formed that each having a through hole provided at the center thereof for fitting with the upper end of said chair leg; two button holes opposite to each other being provided on the side faces of each said connection sleeve and being in communication with said through hole, said button holes being correspondingly in snap fit with said latch block of each said chair leg; a mortise hole being further provided on the side faces of each said connection sleeve between said opposite button holes and the bottom edge of said mortise hole being locked with the bottom face of said tenon of each chair leg.

5. The chair structure as claimed in claim 4, wherein a locating portion is formed on the wall surface of each said connection sleeve at the bottom edge of said mortise hole, and

the bottom face of said tenon of each said chair leg being allowed to be locked with the upper end face of said locating portion.

6. The chair structure as claimed in claim 4, wherein a rotating disc is further pivotally provided on the seat surface of said seat of said chair structure.

7. The chair structure as claimed in claim 4, wherein two opposite insertion strips are formed on the side faces of each said connection sleeve and correspondingly an insertion groove is provided on the wall of said insertion hole of said assembly portion of said seat, so as to engage with one of said insertion strips of each said connection sleeve.

8. The chair structure as claimed in claim 7, wherein corresponding fastening holes are respectively provided on said insertion strip of each said connection sleeve and said insertion groove of each said assembly portion of said seat, and a fastening member being provided to penetrate through said holes on said insertion strip and on said insertion groove for locking them together.

9. The chair structure as claimed in claim 4, wherein corresponding fastening holes are respectively provided on each said connection sleeve and each said assembly portion of said seat, and a fastening member being provided to penetrate through said holes on each said connection sleeve and on each said assembly portion of said seat for locking them together.

10. The chair structure as claimed in claim 4 wherein button holes opposite to each other are further provided on side faces of each said assembly portion of said seat, said button holes being in communication with said insertion hole of each said assembly portion and being in snap fit with said latch block of each said chair leg.

* * * * *