

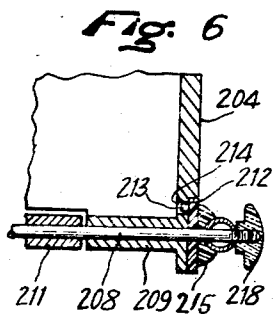
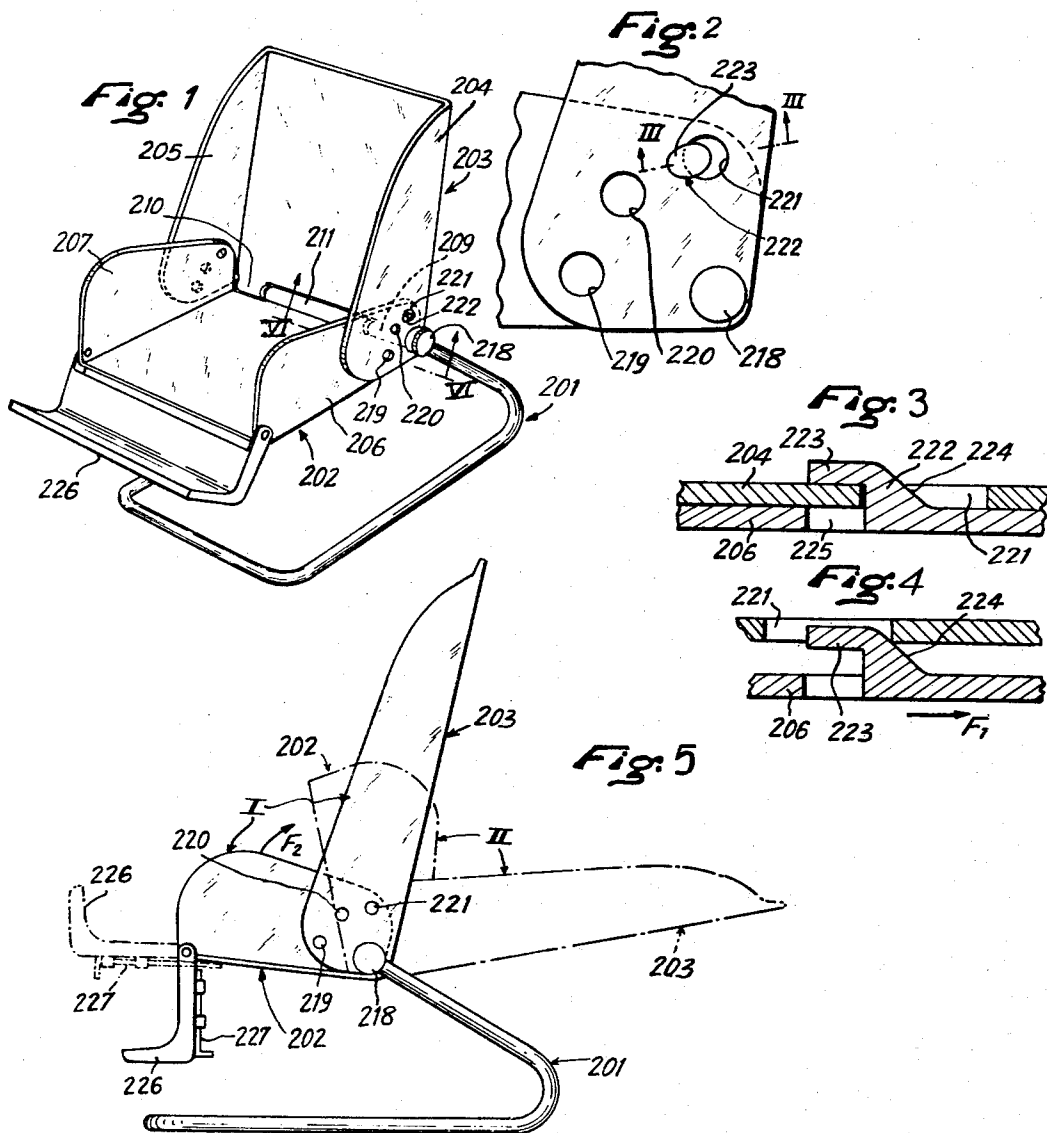
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PIVOTAL CONNECTION FOR SEATS AND SEATS INCORPORATING SAME

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This invention has for its object a pivotal connection between two elements and, more particularly, between the back and seat rest portion of a chair so as to allow for an adjustment of their relative positions and to hold them fixed in any suitable angular position through a very simple operation.

The invention also has as another object the necessary elements for pivotally interconnecting the seat and back rest portion so that they may be moved relative to each other about a pivot point.

The improved pivotal connection includes a spindle that extends through the bearing means carried by the seat bottom and back rest portion, as well as a pair of oppositely disposed shoe members. The shoe members are provided with suitable gripping means that cooperate with clamping members, the outwardly disposed surfaces of which are provided with cradle-shaped recesses adapted to engage the free ends of a tubular base member which supports the chair at a suitable height.

Still another object of the invention is to provide an arcuately disposed group of perforations in a first panel member which is slidably arranged relative to another panel member which includes an offstanding hook member. During rotary movement of the panels relative to each other, they may be held in fixed or locked relation by projecting the hook through any particular perforation in the adjacent panel.

The invention will be better understood, as well as additional objects and advantages will become more apparent, from the ensuing specification taken in conjunction with the drawing, in which:

FIG. 1 is a perspective view of the preferred embodiment of the invention;

FIG. 2 illustrates on a large scale a detail of the embodiment as seen from the right hand side of FIG. 1;

FIG. 3 is a cross-section through line III—III of FIG. 1;

FIG. 4 is a cross-section similar to FIG. 3 showing the same detail in a different position;

FIG. 5 is a side view of the entire seat illustrated in FIG. 1 showing it in two different positions; and

FIG. 6 is a cross-section of FIG. 1 through its pivotal axis illustrated at VI—VI.

Turning now to a description of the drawings the chair illustrated in the respective views of FIGS. 1—6 includes a tubular metal support having a base and an upstanding portion identified as 201 to which is pivotally supported a seat bottom 202 and a back portion 203. The seat bottom and back portion may be made of molded plastic or other flexible material and both are provided with wing-like flange elements, those provided on the back portion being identified as 204 and 205, and those carried by the seat portion being identified as 206 and 207. It will be noted that the wing-like flanges 204 and 205 carried by the back rest portion embrace the upstanding flanges 206 and 207 of the seat portion and are pivotally and slidably related to each other in a manner that will be better understood as the description progresses.

The back portion 203 of the chair is pivotally related to the seat by a spindle 208 through transversely spaced and aligned bearings 209 and 210 (see FIG. 1) provided

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in the casting of the back rest portion 203, whereas the seat bottom is pivotally secured relative to the axis 208 of the spindle as provided by the bearing means 211, this portion being cast integrally with the seat 202.

Each outturned edge of the back rest portion 204 carries, in alignment with the bearing axes, a small shoe 212 supported in a corresponding recess and held fast by stud means, such as shown at 213, these being friction-fitted into the perforations 214. The perforations 214 are provided in the casting of the back rest 204 in such a way that the shoe 212 cannot turn in relation thereto. The shoe 212 is provided with suitable gripping means, such as radial corrugations or knurling (not illustrated), which cooperate with a clamping member 215, the outwardly disposed surface of which is provided with a cradle-shaped recess adapted to engage the free end of tube 201.

The axle or spindle 208 extends through the aforementioned bearings, the oppositely disposed shoes 212, the clamping member 215 and transversely through the free end of tube 201 and to its threaded end is secured the nut 218, by means of which the spindle may secure the back rest portion in any desired position relative to the tubular support 201.

The outturned flanges 204, 205 of the back rest portion are provided with a plurality of perforations, as represented by numerals 219, 220, 221, and, correspondingly, the upturned flanges 206 and 207 of the seat portion 202 each carry a laterally extending stud, such as identified as 222, lying at the same distance from the pivotal axis of the spindle as the perforations, the upstanding flange surfaces of the seat portion normally being in slidable contact with the back rest flange surfaces. The locking engagement of these studs into predetermined selected perforations (FIGS. 2 and 3) is performed by exerting a pressure on the upstanding flanges 206 and 207 and urging them inwardly toward each other. When the pressure is released, the flanges return to their original position while at the same time allowing the studs to extend through the selected perforations, whereupon they may engage the surrounding wall area thereof with the result that the seat bottom is held fast relative to the back rest portion in the position desired.

Thus, it will be apparent that in order to prevent the seat portion from dropping, the studs may carry at their ends a transverse element, such as a hook or finger 223, which is adapted to extend through the perforation and engage the surrounding wall area as explained above and shown in FIG. 3.

The stud is also provided at its end opposite to the hook 223 with a camming or sloping surface 224 which is adapted to facilitate the releasing of the flanges carried by the seat bottom. Specifically, when the seat bottom is shifted relative to the back rest portion, in the direction indicated by arrows F1 and F2 of FIGS. 4 and 5, respectively, the inclined cam surface 224 cooperates with the wall area surrounding the corresponding perforation so as to allow the studs to slide inwardly as shown in FIG. 4, thereby disengaging the studs from the perforations.

In view of the foregoing it is believed that the construction will be understood to operate as follows: When the seat is placed in the position I illustrated in solid lines in FIG. 5, and it is desired to move it into a horizontal position, such as that illustrated in dotted lines in FIG. 5, it is first necessary to release the pivotal connection by rotating the lock nut 218, after which the seat and back may be locked into the dotted line position illustrated at II. The lock nut 218 then is tightened again, and thereafter, it is necessary to exert convergent pressures on the flanges 206, 207 to thereby permit withdrawal of the studs from the perforations 221 and, while continuing to exert pressure on the flanges, they are shifted forwardly so that the studs may be introduced into an appropriate per-

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foration, whereupon the seat portion is positioned at any desired elevation.

The seat is also provided with a pivotally mounted footrest 226 which may be moved from the solid line position shown in FIG. 5 and locked into a forwardly extending position as indicated by dotted lines, also shown in FIG. 5, and held in its extended position by a bolt 227, the end of which is moved into engagement with the underside of the seat bottom 202.

Although only one embodiment of the invention has been depicted and described, it will be apparent that this embodiment is illustrative in nature and that a number of modifications in the apparatus and variations in its end use may be effected without departing from the spirit or scope of the invention as defined in the appended claims.

What I claim is:

1. An adjustable chair comprising a ground-engaging support means having upstanding portions, an occupant supporting seat means associated with said support means, a back mounted in association with said support means, mounting means pivotally joining said seat and back to the support means, said mounting means including a spindle whose axis is fixed relative to the seat and back and arranged to cooperate with the seat, back and support means to permit conjoined and independent pivotal motion of said seat and back about the spindle axis, first locking means for adjusting the angular position of the seat and back relative to the ground-engaging means about said axis, and retractable second locking means permitting selective angular adjustment of the seat means about said axis and relative to said back.

2. An adjustable chair as claimed in claim 1, wherein the retractable locking means is carried by the seat means.

3. An adjustable chair as claimed in claim 1, wherein the back includes first flange means and the seat means is provided with upstanding parallel spaced wall means, a portion of which is overlapped by and confined between said flange means, said retractable locking means being confined to the aforementioned overlapped area of said means carried by the seat and back.

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4. An adjustable chair as claimed in claim 3, wherein the first locking means comprises a pair of relatively rotatable clamping elements pierced by said spindle, one of said clamping elements, a shoe carried by the back and the other of said elements having a cradle-shaped surface arranged to engage an upstanding portion of the ground-engaging support means.

5. An adjustable chair as claimed in claim 4, wherein the spindle also includes actuating means for controlling the clamping elements carried thereby.

6. An adjustable chair as claimed in claim 1, wherein the occupant supporting seat and back means are constructed of a flexible plastic material.

References Cited

UNITED STATES PATENTS

1,240,587	9/1917	Mesinger	297—373
1,796,949	3/1931	Huntley	297—373
2,043,287	6/1936	Dorton	297—336
2,410,088	10/1946	Lundquist	297—373 X
2,771,124	11/1956	Borsain	297—363 X
2,908,468	10/1959	Thomas	248—225.5
3,054,637	9/1962	Pambello	297—373 X
3,099,485	7/1963	Beierbach et al.	297—373
3,138,400	6/1964	Reid	297—353 X
3,193,324	7/1965	Stock	297—64

FOREIGN PATENTS

993,321	7/1951	France.
1,022,477	12/1952	France.
1,289,504	2/1962	France.
1,054,858	4/1959	Germany.
494,290	5/1954	Italy.

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