

2,604,141

2 SHEETS--SHEET 1



INVENTOR.
Fred C. Maurer.
BY *W. B. Harpman*
ATTORNEY.

July 22, 1952

F. C. MAURER

2,604,141

ADJUSTABLE CHAIR WITH LEG SUPPORTING PLATFORM

Filed Aug. 11, 1951

2 SHEETS—SHEET 2

FIG. 3.

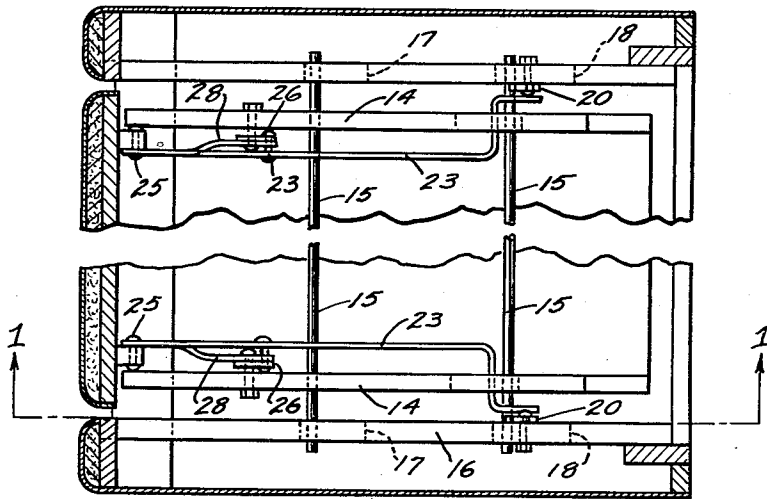
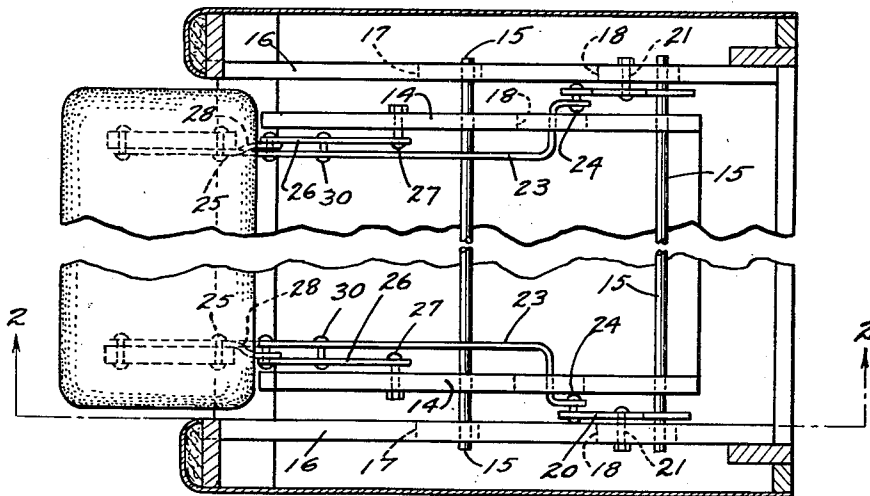


FIG. 4.



INVENTOR.
Fred C. Maurer.
BY *W. B. Harpman*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,604,141

ADJUSTABLE CHAIR WITH LEG SUPPORTING PLATFORM

Fred C. Maurer, East Palestine, Ohio, assignor to
The Kenmar Manufacturing Company, East
Palestine, Ohio, a corporation of Ohio

Application August 11, 1951, Serial No. 241,435

7 Claims. (Cl. 155-105)

1

This invention relates to chairs and more particularly to an adjustable chair wherein a unitary seat and back unit are adjustably positioned with respect to a pair of spaced stationary arms and wherein a leg supporting platform is operated by the movement of the unitary seat and back.

The principal object of the invention is the provision of a simple and efficient adjustable chair with a leg supporting platform.

A further object of the invention is the provision of an adjustable chair in which the base portion comprises a pair of spaced stationary arms.

A still further object of the invention is the provision of an adjustable chair with a leg supporting platform in which tilting movement of the seat and back portion of the chair results in upward and outward movement of the leg supporting platform.

A still further object of the invention is the provision of an adjustable chair and leg supporting platform in which a stationary base including arms positions a unitary seat and back and wherein movement of the unitary seat and back relative to the base results in positioning the leg supporting platform in desirable relation to the seat and back unit.

The adjustable chair with leg supporting platform disclosed herein comprises an improvement in the art and particularly with respect to Patent No. 2,516,712 issued July 25, 1950 on Reclining Chair With Stationary Arms in that a leg supporting platform and operating mechanism therefor has been combined with a chair construction similar to that disclosed in the above Maurer patent so that reclining motion of the seat and back unit of the chair results in elevating the leg supporting platform to a position in substantial longitudinal alignment with the seat of the chair and forwardly thereof.

The leg supporting platform is so formed that when the chair is in upright position it is concealed in the front of the base portion of the chair and so arranged that the relative movement of the seat and back unit of the chair with respect to the arms results in the extension and retraction of the leg platform.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure.

2

which do not constitute departures from the spirit and scope of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a vertical section of the chair taken on line 1-1 of Figure 3.

Figure 2 is a vertical section of the chair taken on line 2-2 of Figure 4 and showing the chair in reclining position.

Figure 3 is a horizontal section taken on line 3-3 of Figure 1.

Figure 4 is a horizontal section taken on line 4-4 of Figure 2 and showing the chair in reclining position.

By referring to the drawings and Figure 1 in particular it will be seen that an adjustable chair with leg supporting platform is disclosed and comprises a base 10 including a pair of spaced arms 11 affixed thereto and arranged to adjustably position a seat and back unit therebetween, the upright portion of which is a back 12 and the horizontal portion of which is a seat 13.

The seat and back unit includes a pair of spaced rails 14 positioned beneath the sides of the seat portion 13. The rails 14 serve to position a pair of rods 15-15 transversely of the seat portion 13. The base 10 has a pair of spaced vertical side sections 16-16 positioned beneath the arms 11 and parallel with and adjacent to the rails 14 heretofore referred to. Two pairs of semi-arcuate slots 17 and 18 are formed in the vertical side sections 16-16 in oppositely disposed relation so that the extending ends of the rods 15-15 register therein for sliding movement therein.

It will thus be observed by referring to Figure 1 of the drawings that when the seat and back unit is in position, as shown, with the seat portion 13 in substantially horizontal position, the rods 15-15 are in the forward ends of the semi-arcuate slots 17 and 18.

By referring to Figure 2 of the drawings it will be seen that the rods 15 move to the opposite or rear ends of the semi-arcuate slots 15 and 17 when the seat and back unit is tilted backwardly to reclining position. The front portion of the seat portion 13 is cut away beneath the upper edge thereof so that a leg supporting platform 19 may be positioned therebeneath in vertical position when the chair is in upright position, as shown in Figure 1 of the drawings. The leg supporting platform 19 is preferably upholstered so that it matches the appearance of the seat portion 13 of the seat and back unit of the chair

and is of a size and shape so that it conforms with the chair lines in upright position, as shown in Figure 1 of the drawings, and does not indicate its presence.

Mechanism is provided, as shown in Figures 1 and 2 of the drawings, for moving the leg supporting platform 19 outwardly and upwardly at such time as the seat and back unit is moved backwardly to reclining position. The mechanism for moving the leg supporting platform 19 comprises a plurality of levers which are pivotally affixed to the leg supporting platform 19 and which are actuated by the movement of the unitary seat and back portion with respect to the stationary base. The movement is initiated by a pair of oppositely disposed levers 20—20 pivoted midway between their ends by pivots 21—21 to the vertical side sections 16.

The levers 20—20 lie inwardly of the vertical side sections 16 and adjacent the rearmost pair of arcuately formed slots 18. The levers 20—20 are pivoted to the vertical side sections 16—16 so that their uppermost ends, as seen in Figure 1, move on an arc comparable with that of the arcuate slots 18 and the uppermost ends of the levers 20—20 are bifurcated as at 22 so that they may slidably engage the rods 15 at points thereon between the side rails 14 of the seat and back unit and the vertical side sections 16 of the base, as best shown in Figure 4 of the drawings.

By referring again to Figure 1 of the drawings it will be observed that a pair of offset links 23 are pivoted at their opposite ends to the lower ends of the levers 20 by pivots 24—24 and to the upper portions of the leg supporting platform 19 by pivots 25—25. It will be observed that the bottom portion of the side rails 14 of the seat and back unit have recesses 26 cut therein registering with the offset portion of the offset links 23 which permits the rearward ends of the offset links 23 to lie on a plane between the side rails 14 and the vertical side sections 16 while their forward portions lie within the area between the rails 14 of the seat and back unit.

A pair of secondary levers 26—26 are pivoted at their uppermost ends to the inner sides of the side rails 14 by means of pivots 27—27 and at their lowermost ends to a pair of secondary links 28—28 by means of pivots 29—29. The secondary levers 26—26 are also pivoted intermediate their ends to the links 23—23 by means of pivots 30—30 and the foremost ends of the secondary links 28—28 are pivoted to the lower portion of the leg supporting platform 19 by means of pivots 31—31. It will thus be seen that when the seat and back unit is in upright position, as shown in Figure 1 of the drawings, the levers 20 are in approximately vertical position with their bifurcated upper ends 22 engaged upon the rod 15 which is in the upper portion of the arcuate slots 18. The offset links 23 extend between the lower ends of the levers 20 and the upper pivotal attachment points of the leg supporting platform 19.

The leg supporting platform 19 is in vertical position by reason of the positioning of the secondary levers 26 and the secondary links 28. The secondary levers 26 are pivoted to the side rails 14 of the seat and back unit by the pivots 27 and are in substantially vertical position with their lower ends pivoted to the rear ends of the secondary links 28 through the pivots 29. The pivots 30 intermediate the ends of the secondary levers 26 are pivoted to the offset links 23 at a distance spaced from the forward end of these

links such that the leg supporting platform 19 is held in vertical position, as shown in Figure 1 of the drawings.

At such time as the seat and back unit is tilted backwardly, as shown in solid lines in Figure 2 of the drawings, the levers 20 move from approximately vertical position to approximately horizontal position as they follow the movement of the rod 15 in the oppositely disposed arcuate slots 18. The opposite ends of the lever 20 therefore move the links 23 forwardly which causes the upper end of the leg supporting platform to move outwardly and forwardly as the links 23 are pivoted by way of the secondary levers 26 and the pivots 27 to the side rails 14 of the seat and back portion. The lower end of the leg supporting platform 19 swings outwardly and upwardly on an arc based on the pivots 25 on the ends of the offset links 23 by reason of the secondary links 28 and the secondary levers 26 to which they are pivoted.

It will thus be seen that the leg supporting platform 19 moves in a predetermined pattern directly responsive to the tilting motion of the seat and back unit and that when the seat and back unit is in reclining position, as shown in solid lines in Figure 2 of the drawings, the platform has moved into substantially horizontal position in horizontal alignment with the forward end of the seat portion 13 where it forms an effective leg supporting platform. Those skilled in the art will observe that any intermediate position of the seat and back unit with respect to the base will result in a similar intermediate position of the leg supporting platform 19.

It will occur to those skilled in the art that the mechanism is efficient and incapable of becoming inoperative and that it may be inexpensively formed and positioned in the chair in a minimum of space.

It will thus be seen that the adjustable chair with leg supporting platform disclosed herein meets the several objects of the invention.

Having thus described my invention, what I claim is:

1. In a reclining chair the combination of a seat and back unit, means for supporting the same in tiltable relation to a supporting surface, said supporting means comprising a base relatively wider than said seat and back unit and including vertical side sections having slots formed therein at an inclination and in oppositely disposed relation, said seat and back unit having sidewardly projecting means engaging said slots, levers pivoted intermediate their ends to said side sections adjacent said slots and engaged on said sidewardly projecting means, secondary levers pivoted at their upper ends to said seat and back unit, a leg supporting platform and links pivotally secured to said levers and secondary levers and to said leg supporting platform, and secondary links pivotally secured to said secondary levers and to said leg supporting platform for positioning said leg supporting platform in movable relation to said seat and back unit.

2. In a reclining chair the combination of a seat and back unit, means for supporting the same in tiltable relation to a supporting surface, said supporting means comprising a base relatively wider than said seat and back unit and including vertical side sections having slots formed therein at an inclination and in oppositely disposed relation, said seat and back unit having sidewardly projecting means engaging said slots,

5

levers pivoted intermediate their ends to said side sections adjacent said slots and having bifurcated ends engaged on said sidewardly projecting means, secondary levers pivoted at their upper ends to said seat and back unit, a leg supporting platform and links pivotally secured to said levers at their opposite ends and to said secondary levers intermediate their ends and to said leg supporting platform, and secondary links pivotally secured to the lower ends of said secondary levers and to said leg supporting platform for positioning said leg supporting platform in movable relation to said seat and back unit.

3. The structure set forth in claim 2 and further characterized by said links pivotally engaging said leg supporting platform adjacent its uppermost edge and said secondary links engaging said leg supporting platform adjacent its lowermost edge.

4. The structure set forth in claim 2 and further characterized by the positioning of said levers between said vertical side sections and said seat and back unit.

5. The structure set forth in claim 2 and further characterized by the positioning of said levers between said vertical side sections and said seat and back unit and wherein said links are offset intermediate their ends so that their ends lie on opposite sides of the seat and back portion to which they are pivoted by said secondary levers.

6. The structure set forth in claim 2 and further characterized by said links pivotally engaging said leg supporting platform adjacent its uppermost edge and said secondary links engaging said leg supporting platform at points thereon below said uppermost edge.

6

7. In a reclining chair the combination of a seat and back unit, means for supporting the same in tiltable relation to a supporting surface, said supporting means comprising a base relatively wider than said seat and back unit and including vertical side sections having oppositely disposed pairs of arcuate slots formed therein at an inclination and in oppositely disposed relation, said seat and back unit having sidewardly projecting means engaging said slots, levers pivoted intermediate their ends to said side sections adjacent said slots and engaged on said sidewardly projecting means, secondary levers pivoted at their upper ends to said seat and back unit, a leg supporting platform and links pivotally secured to said levers and secondary levers and to said leg supporting platform, and secondary links pivotally secured to said secondary levers and to said leg supporting platform for positioning said leg supporting platform in movable relation to said seat and back unit.

FRED C. MAURER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
948,029	Trimble	Feb. 1, 1910
1,688,576	Doyle	Oct. 23, 1928

FOREIGN PATENTS

Number	Country	Date
205,484	Switzerland	Sept. 1, 1939