Oct. 9, 1923. 1,470,455

J. W. LANG

CHAIR

Filed Sept. 29, 1922 3 Sheets-Sheet 1

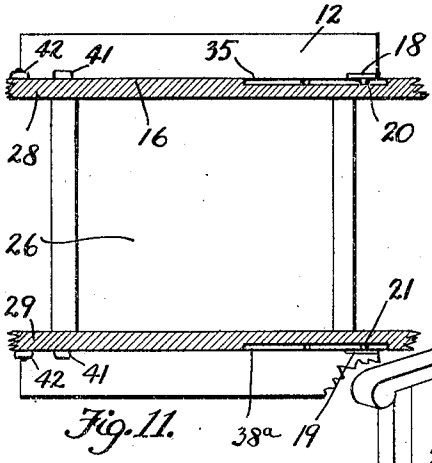


Fig. 1.

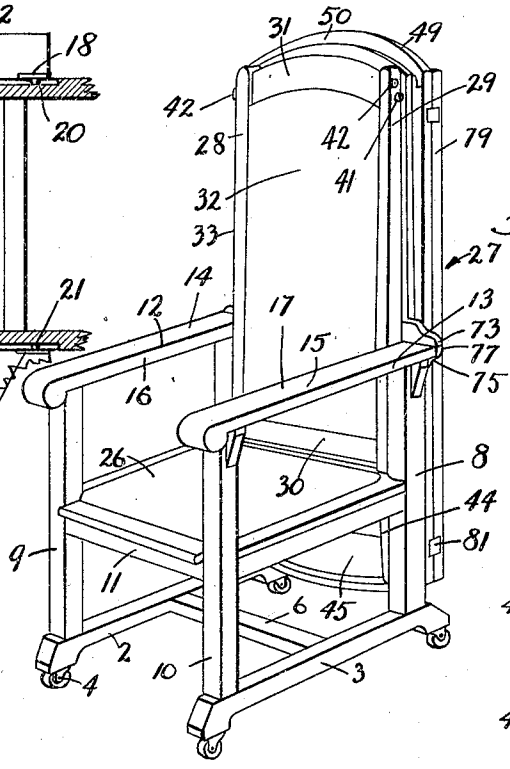


Fig. 3.

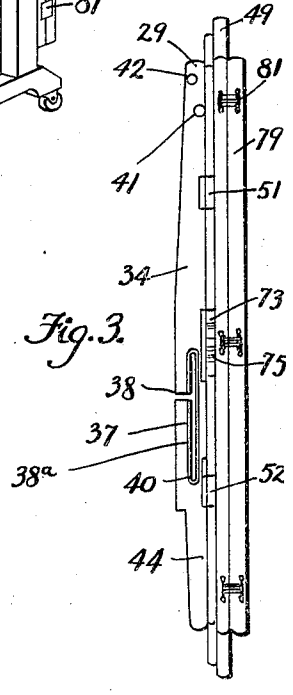
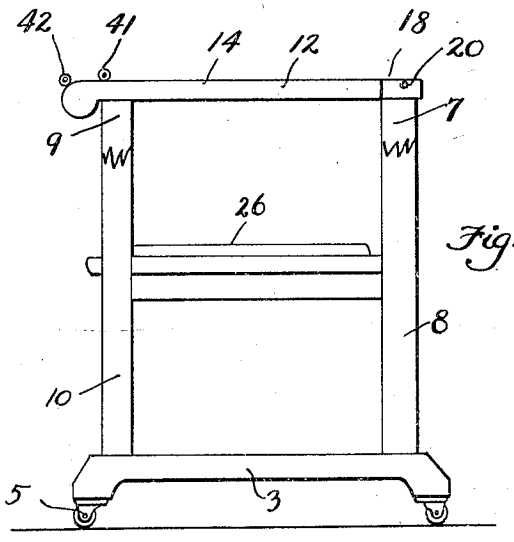


Fig. 2.



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Filed Sept. 29, 1922 3 Sheets-Sheet 2

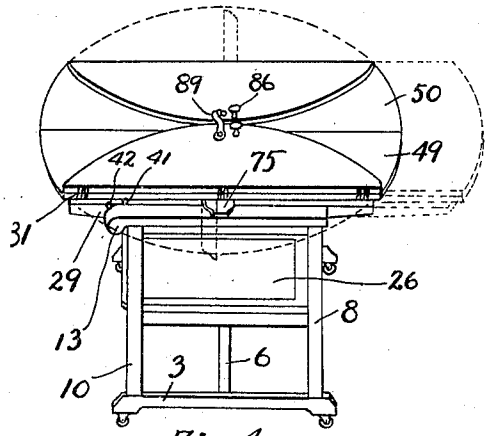


Fig. 4.

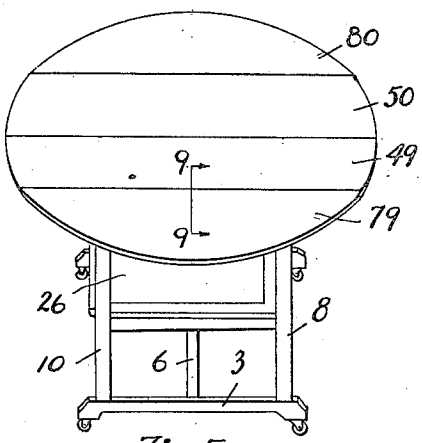


Fig. 5.

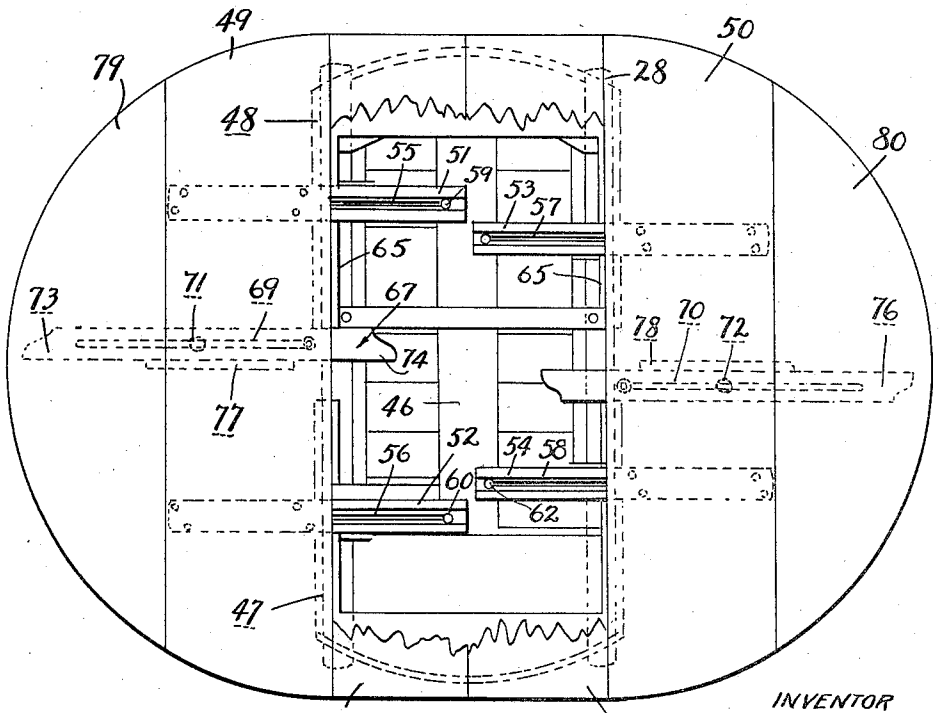


Fig. 6.

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Filed Sept. 29, 1922 3 Sheets-Sheet 3

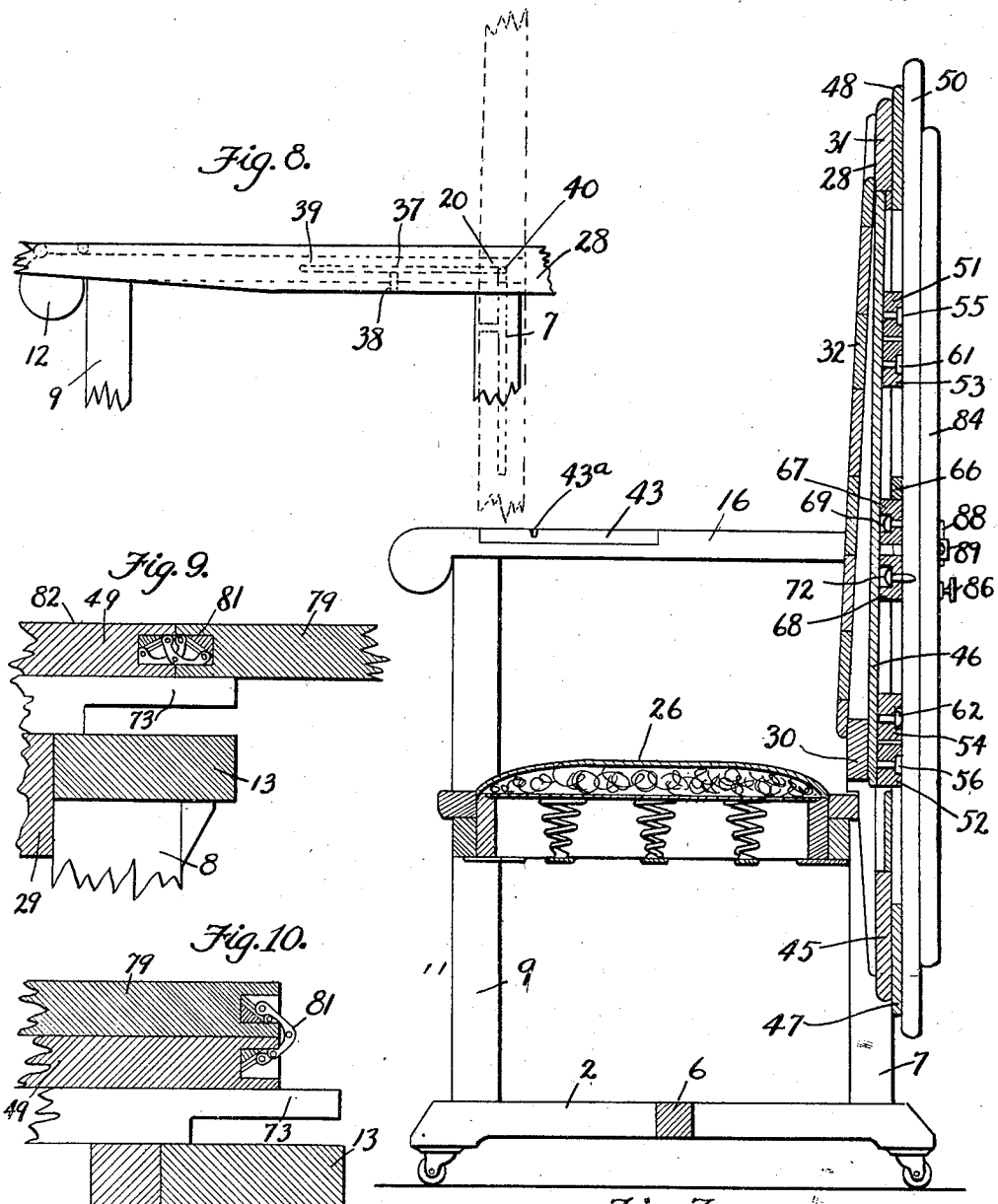


Fig. 7.

INVENTOR

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Patented Oct. 9, 1923. 1,470,455

UNITED STATES PATENT OFFICE.

JOHN W. LANG, OF REDONDO BEACH, CALIFORNIA.

CHAIR.

Application filed September 29, 1922. Serial No. 591,280.

To all whom it may concern:

Be it known that I, JOHN W. LANG, a citizen of the United States, residing at Redondo Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Chairs, of which the following is a specification.

My invention relates to chairs of that type embodied in my Patent No. 1,349,164, dated Aug. 10, 1920, in which the chair is capable of being transformed into a table.

It is a purpose of my present invention to provide a chair of the above described character in which the chair back is provided with rollers and stops, the latter serving to define the horizontal position of the chair back and table top, and the rollers being adapted to engage the arms of the chair for allowing of movement of the chair back and table top to vertical or horizontal position without injury to the chair arms.

It is also a purpose of my invention to provide a chair of the above described character in which the table top is formed of extensible leaves and end leaves directly connected to the extensible leaves through the medium of invisible hinges to allow of the end leaves occupying extended or folded positions.

A further purpose of my invention is the provision of a chair in which metallic plates are secured to the chair arms and provided with recesses adapted to accommodate pins carried by the chair back for securing the chair back and table top in horizontal position.

Although I have herein shown and described only one form of chair embodying my invention, and will point out the novel features thereof in claims, it is to be understood that various changes and modifications may be made without departing from the spirit of the invention and the spirit and scope of the claims.

In the accompanying drawings,

Figure 1 is a perspective of a chair transformable into a table in accordance with the principles of my invention;

Figure 2 is a side elevation of the stand and chair seat with the back and table construction removed;

Figure 3 is an edge view of the chair back and table construction removed from the stand;

Figure 4 is a perspective showing the chair back tilted forwardly upon the stand in solid lines and showing the movement of the chair back upon the stand in dotted lines, and showing the leaves unfolded to make a round table in dotted lines;

Figure 5 is a view analogous to Figure 4 and showing the leaves unfolded;

Figure 6 is a top plan view upon an enlarged scale and showing the table extended and with a portion thereof broken away;

Figure 7 is a sectional side elevation upon an enlarged scale with the parts in position to form a chair;

Figure 8 is a fragmentary detail showing the connection between the stand and the chair back with the parts shown in full lines in the position forming a table and in dotted lines in the position forming a chair;

Figure 9 is a sectional detail showing the disappearing hinge, the view being taken on the line 9—9 of Figure 5 and showing the leaves unfolded;

Figure 10 is a view analogous to Figure 9 and showing the leaves folded;

Figure 11 is a transverse sectional view taken through the arms of the chair shown in Figure 1.

The details of the stand 1 are shown in Figures 1, 2, 4 and 5. The lower side bars 2 and 3 are mounted upon casters 4 and 5 and are rigidly connected by a cross piece 6. The rear posts 7 and 8 extend upwardly from the rear ends of the side bars 2 and 3 and the front posts 9 and 10 extend upwardly from the forward ends of the side bars 2 and 3. The seat frame 11 rigidly connects the posts 7, 8, 9 and 10 about half way up from their bottoms, the lower ends of the posts 7, 8, 9 and 10 serving as legs for the chair and the upper ends of the posts serving as supports for the chair arms. The chair arms 12 and 13 are rigidly mounted upon the upper ends of the posts 9 and 7 and 10 and 8. The chair arms 12 and 13 have flat straight horizontal upper faces 14 and 15 and straight parallel vertical inner faces 16 and 17. Pivot plates 18 and 19 are recessed into the faces 16 and 17 at their rear ends and the pivot pins 20 and 21 extend inwardly from the plates 18 and 19.

The chair back frame consists of the side bars 28 and 29, the lower cross bar 30, the upper cross bar 31 and the panel 32 inserted between the side bars and cross bars. The side bars 28 and 29 have straight outer faces 33 provided with longitudinal slots 37

and cross slots 38 leading laterally to the longitudinal slots 37, the cross slots 38 being slightly above the centers of the longitudinal slots 37. The slots 37 and 38 are lined with strips 38[a] of metal or the like to insure of the easy movement of the pins 20 and 21 therein and to prevent wearing of the walls of the slots.

The pivot pins 20 and 21 pass through the cross slots 38 into the longitudinal slots 37 and when the chair back is elevated to a vertical position and lowered bodily the pins 20 and 21 pass to the upper ends 39 of the slots 37, and when the back is tilted forwardly and moved forwardly to be centered over the stand 1 the pins 20 and 21 pass to the lower ends 40 of the slots 37. When the chair back and table construction 27 is in a vertical position the chair back and table construction may be removed bodily from the stand 1 by lifting it until the pins 20 and 21 will pass outwardly through the slots 38. The slots 38 extend forwardly when the parts are in a vertical position and extend downwardly when the parts are in a horizontal position.

As clearly shown in Figures 3 and 11, the outer faces of the side bars 28 and 29 carry adjacent their forward or upper ends stop pins 41 adapted to rest upon the chair arms 14 and 15 when the chair back is in horizontal position as shown in Figure 11. Rollers 42 are rotatably sustained upon the side bars 28 and 29 at points in advance of the pins 41 and in different vertical planes with respect to the pins when the bars 28 and 29 are in vertical position. When the bars are in horizontal position, as shown in Figure 11, the rollers are disposed below the pins and being in advance of the same they are adapted to be disposed adjacent to or in contact with the curved front ends of the chair arms. By this arrangement, it will be seen that by lifting the chair back into horizontal position, the rollers 42 may be caused to contact with the upper faces of the chair arms 14 and 15 so as to allow of the rolling of the chair back rearwardly upon the arms and finally into vertical position. This obviously prevents the marring of the chair arms, as well as facilitates the movement of the chair back from vertical to horizontal position or vice versa.

In Figure 7, I have shown a modified means for securing the chair back in horizontal position upon the chair arm. In this embodiment of my invention, plates 43 are fitted in suitable recesses formed in the arms, and these plates are provided with depressions or pockets 43[a] which are adapted to be engaged by pins 43[b] carried by the bars 28 and 29 so as to lock the chair back against horizontal movement when in horizontal position.

Arms 44 extend downwardly from the side bars 28 and 29 and a cross bar 45 connects the lower ends of the arms 44. The arms 44 engage the seat frame 11 and form stops to hold the chair back and table construction upright.

The side bars 28 and 29 are slightly tapered in side elevation and the panel 32 is slightly inclined. Frame boards 46 are secured to the back of the cross bar 30 and fit against the lower edge of the cross bar 31 so as to bring the boards 46 practically straight up and down. A spacing board 47 is secured to the back side of the cross bar 45, and a similar spacing board 48 is secured against the back side of the cross bar 31.

The rigid sliding table top leaves 49 and 50 fit against the back sides of the boards 47 and 48 when the table top is contracted. The slides 51 and 52 are fixed against the bottom of the leaf 49 and the slides 53 and 54 are fixed against the bottom of the leaf 50, said slides 53 and 54 being offset relative to the slides 51 and 52 so that the slides 51 and 53 will pass alongside of each other and the slides 52 and 54 will pass alongside of each other when the table is contracted. T-slots 55, 56, 57 and 58 are formed in the slides 51, 52, 53 and 54.

Screws 59, 60, 61 and 62 are inserted downwardly through the T-slots 55, 56, 57 and 58 and screwed rigidly into the board 46, said screws fitting loosely enough in the slots to allow the slides 51, 52, 53 and 54 to move, and the slots being long enough to allow the leaves 49 and 50 to move together as in Figure 5 and to allow the leaves 49 and 50 to move apart for the insertion of the extension leaves 63 and 64.

Filler blocks 65 are inserted against the back sides of the side bars 28 and 29 to a level with the back face of the board 46 and form slideways for the slides 51, 52, 53 and 54. A brace 66 connects the center ones of the filler blocks 65 and passes back of the board 46 to stiffen the board.

The folding leaf supporting slides 67 and 68 have T-slots 69 and 70, and the slides 67 and 68 fit upwardly against the sliding leaves 49 and 50 and screws 71 and 72 are inserted upwardly through the slots 69 and 70 and screwed rigidly into the leaves 49 and 50. The slides 67 and 68 are longer than the widths of the leaves 49 and 50 together, so that when the leaves 49 and 50 are together the ends 73, 74, 75 and 76 of the slides 67 and 68 extend beyond the side edges of the leaves 49 and 50 and these ends are directly back of the rear ends of the arms 12 and 13. Spacing blocks 77 and 78 are fixed against the lower sides of the leaves 49 and 50 so as to bear against the inner sides of the slides 67 and 68 and hold the slides straight.

End or outer folding leaves 79 and 80 are connected to the outer edges of the sliding

leaves 49 and 50 by invisible hinges 81. Referring to Figures 9 and 10, the hinges 81 are recessed into the meeting edges, so that when the leaves 79 and 80 swing outwardly they can be supported by extending the slides 67 and 68, and the upper face 82 of the table will be perfectly smooth.

When the table is contracted and folded, as in Figure 4, the leaves 83 and 84 lie upon the leaves 49 and 50, respectively. Hand wheels 86 and 87 are secured to the lower faces of the leaves 83 and 84 and a hook 88 is secured to one leaf to engage an eye 89 secured to the other leaf to hold the leaves folded while the parts are upright.

I claim as my invention:

1. A transformable chair comprising arms, having rounded free ends, a chair back movably supported to occupy vertical and horizontal positions, stops carried by the chair back, and rollers carried by the chair back, said rollers being disposed in a plane below the plane of the stops so as to support the chair back for rolling movement on the arms until the rollers engage the rounded ends of the arms when the chair back will be lowered to allow the stops engaging the arms.

2. A transformable chair comprising arms, a chair back movably supported to occupy vertical and horizontal positions, stops carried by the chair back, and rollers carried by the chair back, said rollers being disposed in a plane below the plane of the stops so as to support the chair back for rolling movement on the arms until the rollers engage the free ends of the arms when the chair back will be lowered to allow the stops to engage the arms.

In testimony whereof I have signed my name to this specification.

J. W. LANG.