March 13, 1951 K. MICHAELIS 2,544,800

CHAIR

Filed April 3, 1947

Fig. 1.

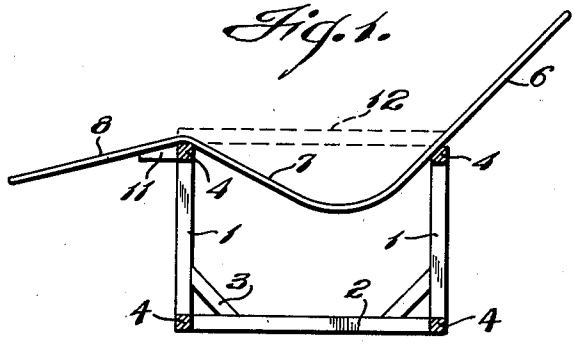


Fig. 3.

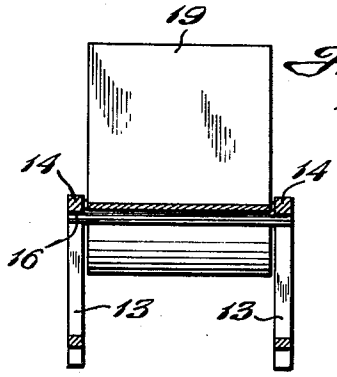


Fig. 2.

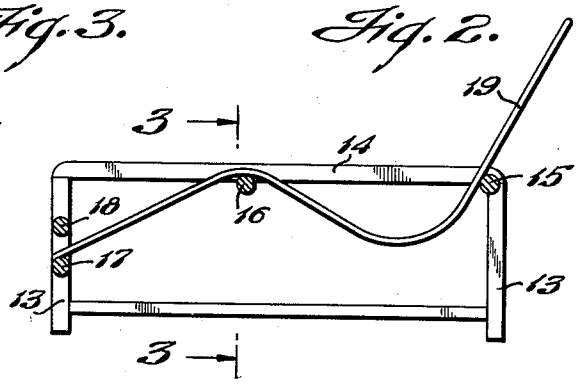
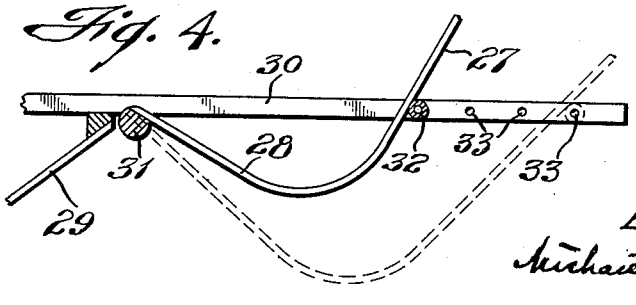


Fig. 4.



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CHAIR

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2 Claims. (Cl. 155—186)

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This invention relates to body supporting furniture and more particularly to chairs. It has for one of its objects to provide an article of this kind which is of particularly simple design and fit to be manufactured in low-cost quantity production on the assembly line plan.

It is a further object of the invention to provide an article of the kind aforesaid which, while covering a comparatively large floor space, is light in weight and easy to handle by weak or elderly persons.

It is another object of the invention to provide an article of this kind which lends itself to shipment in knock down condition, more particularly on the mail order plan, and which can easily be assembled by unskilled persons.

It is a still further object of the invention to provide chairs, or the like, of particularly graceful appearance and which can be exposed to the temperatures and weather conditions of all seasons and are equally fit to be used indoors and outdoors, on the porch, roof, beach, in the garden and on board a ship.

Their most characteristic feature is that part which forms the body support proper and which, according to this invention is constituted by a thin wood panel, preferably of laminated or plywood construction, which need not exceed three-eighths of an inch in thickness, but may be as thin as three-sixteenths, and which is curved by bending to adapt itself to some or all main curves of the human body which it comes in contact with. Thanks to this adaptation, the inherent hardness of the material is not felt by the person lying on such support to the extent of making it indispensable to cover the wood surface with a soft material, or with upholstering, although the support would not lose thereby any of its elasticity.

It has proven sufficient for most purposes to bend the supporting panel in such manner as to make the back-supporting section and the adjoining rump-supporting section extend at a right or a slightly obtuse angle and to arrange the section, which supports the legs, at a large obtuse angle to the middle or rump-supporting section.

Owing to its thinness such panel possesses a high degree of elasticity and may be deformed elastically by the weight of the body resting thereon to the extent of adapting its form to the body contour still more closely.

All these effects are brought out to the best advantage in a combination of such a bent panel with a ground supporting structure, in which

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the rump-supporting middle section of the panel is freely suspended in two points, one of which lies near the waist line, the other one at or near the hollow of the knees of a person lying thereon.

The points, at which this body support is suspended in the ground-supported structure are preferably so chosen that the back and rump-supporting sections sag like a hammock. Preferably the two points of suspension lie at approximately the same horizontal level. The foot rest section may but need not be supported at its end. In a body support as here described, the major part of the first section (the back rest) is free to give way resiliently according to the elasticity of the material.

While sheet material might be satisfactory as a substitute material in some respects, its tendency to become deformed and its high heat conductivity and high weight would be objectionable. Wood, being relatively rigid and a poor heat conductor, possesses all the properties required in this respect, more especially if used in laminated form. It combines light weight and high tensile strength with considerable elasticity, more especially in the dimensions suitable for the purpose here in view.

The ground-supported structure may be made of solid wood (lumber) which may be bent according to the steam- or the dry-heat bending process. Light-metal tubes or channels, cane and plastics may also be used in its construction, either by themselves or in combination with wood.

In the drawings affixed to this specification and forming part thereof, several embodiments of chairs according to this invention are illustrated diagrammatically by way of example.

In the drawing:

Fig. 1 is a side elevation, partly in longitudinal section, of the first embodiment,

Figs. 2 and 3 are a longitudinal and a cross-section, respectively, of the second embodiment.

Fig. 4 is a vertical middle section of part of a third embodiment.

In the drawing, Fig. 1 is a side elevation, partly in longitudinal section, of a simple embodiment comprising a ground-supported structure composed of two parallel extending frames, one of which is shown with the horizontal longitudinal member 2 connecting the two uprights 1. Braces 3 secure the parts in position and four cross bars 4 connect the two frames to form a cubic skeleton frame. From the two top bars 4 is suspended the body support in the form of a plywood panel bent to a right angle. The

back rest 6 fixed to and extending beyond the right hand cross bar 4 is the first section of the body support which together with the second section 7 fixed to the left hand cross bar 4 takes up most of the weight of the body of the user. His knees are thus held near or even above the level of his waistline.

The third section or leg rest 8 is normally formed in one piece with the other sections, but extends at an obtuse angle to the middle section 7. Its free end may be reinforced and braced by a panel 11 fixed to it. An arm rest 12 connecting the top ends of the uprights 1 is shown in dotted lines.

In a second embodiment illustrated in Figs. 2 and 3 in longitudinal and cross-section, respectively, the ground supporting structure consists of four corner posts 13 connected by two longitudinal top members 14, and four cross bars 15, 16, 17, 18, the last one serving as an abutment for the feet. The body-supporting panel 19 is fixed to the bars 15 and 17 and extends scross the bar 16. The longitudinal members 14 form armrests.

Instead of a body support formed of a single panel, I may make the first and middle sections 27 and 28 independent from and rockable relative to the third section 29 in the manner shown in Fig. 4, where the middle section 28 is fixed to a cross-bar 31 rotatably mounted between the longitudinal members 30, while the cross-bar 32, which serves as an abutment for the first panel section can be held in position at different points between extensions of the members 30, as indicated by holes 33. I am thus enabled to vary the angle, at which the first and middle sections of the body-supporting panel extend relative to the ground.

The basic forms here shown of the new chairs may be varied in many ways, more especially if bent elements are used in the construction of the ground-supported structure.

I wish it to be understood that I do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to persons skilled in the art.

I claim:

1. Chair comprising in combination, a leg-supported substantially horizontal quadrangular frame and a curved panel suspended between opposed frame members to form an ascending backrest and ascending thigh support, the other frame members forming armrests substantially extending from the hip level to the knee level of the seated person.

2. The chair of claim 1, in which the frame member supporting the thigh support is rotatably mounted, while the opposite frame member supporting the backrest is displaceably arranged between the lateral frame members, means being provided on said lateral frame members for fixing said opposite member at different distances from said rotatable member.

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