Dec. 26, 1961 A. MAUSER 3,014,762

CHAIR STRUCTURES WITH SHELL-SHAPED SEATS

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FIG. 1

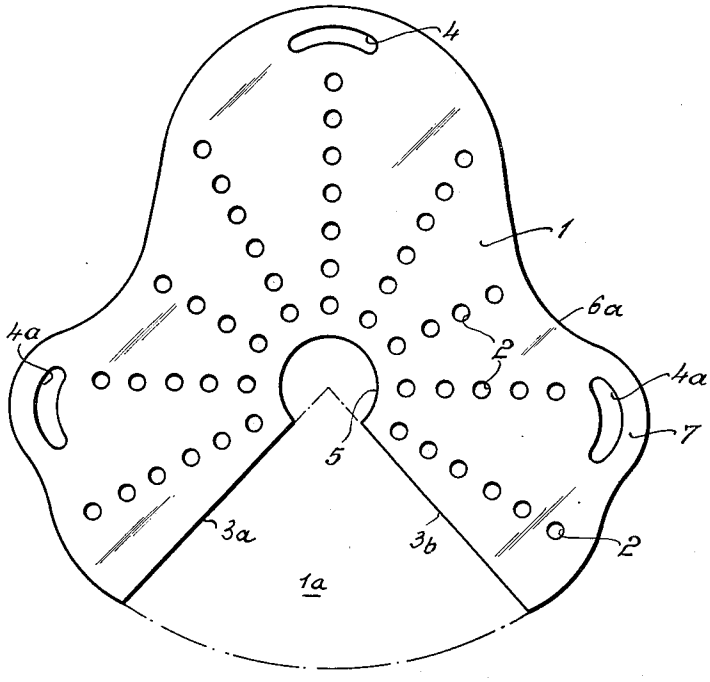



FIG. 2

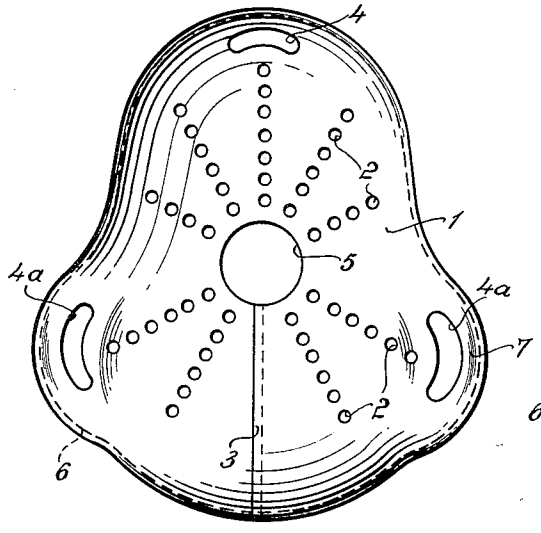
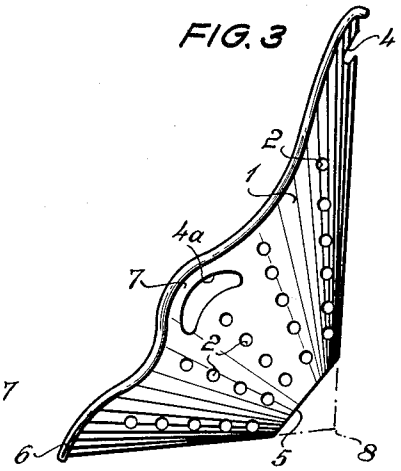



FIG. 3




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CHAIR STRUCTURES WITH SHELL-SHAPED SEATS

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FIG. 5

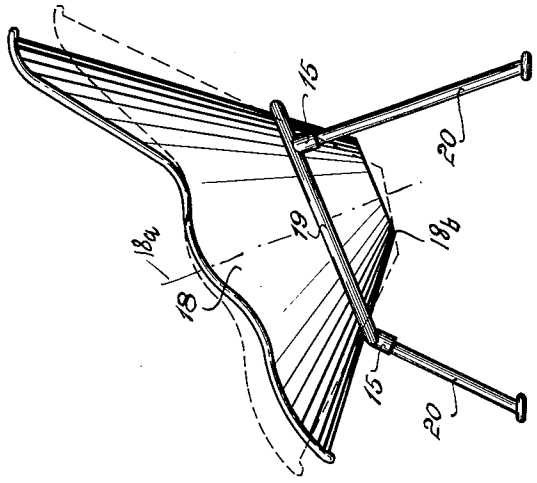
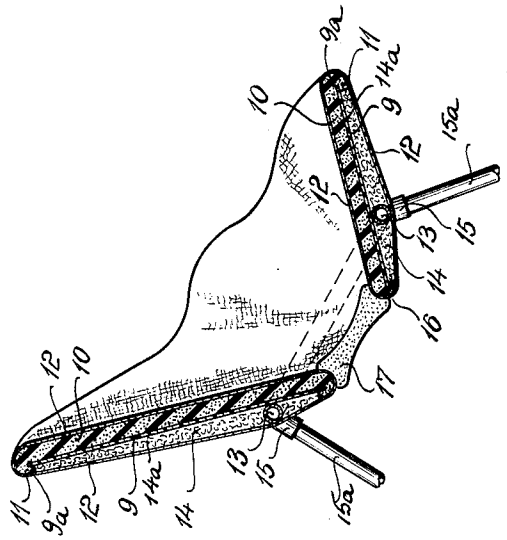



FIG. 4




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United States Patent Office 3,014,762 Patented Dec. 26, 1961



# 3,014,762
# CHAIR STRUCTURES WITH SHELL-SHAPED SEATS

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Filed Nov. 20, 1957, Ser. No. 697,612
2 Claims. (Cl. 297—445)

The present invention relates to chair structures in general, and in particular to chairs which have a shell-like or a tub-like seat body.

Prior art chairs of the described type are relatively expensive to manufacture due to the excessive amount of material which must be used and due to the precise tools required for the manufacture thereof, as well as the relatively complicated manufacturing process. In the prior art processes the shell seat is given its final shape by pressing, planing or heat treatment steps.

One of the primary objects of the present invention is to obviate the complicated manufacturing process and costly tools and materials of the prior art so as to permit the production of a shell- or tub-chair body having a very convenient and simple base structure which can be produced at low cost.

Another object of the present invention is to provide means contributing to the final shape formation of the seat member or body by predetermining and arranging the locations or points at which the seat is fastened to the supporting frame.

Another object of the present invention is to provide a shell- or tub-seat member which can be readily worked upon in a manner heretofore impossible in the case of finished pressed tub seats.

A further object of the present invention is to provide means facilitating a highly novel arrangement for predetermining the final seat shape of the cone which defines the seat member.

Other and additional objects and advantages of the present invention will become apparent from a reading of the following description taken in connection with the illustrative drawings of the presently preferred embodiments of the invention.

In the drawings:

FIG. 1 is a top plan view of a seat forming blank, pursuant to the present invention, the blank being shown in an intermediate stage thereof and in a developed state;

FIG. 2 is a top plan view of a seat, transformed from the blank of FIG. 1;

FIG. 3 is a side elevational view of FIG. 2;

FIG. 4 is a sectional view taken through an upholstered chair pursuant to the present invention; and

FIG. 5 is a side elevational view of a chair, similar to that of FIG. 4.

Referring now to FIG. 1 of the drawings in detail there is shown a seat blank 1 from which there is formed and developed the seat body of a chair pursuant to the present invention. The blank 1 is formed of relatively thin, flexible sheet material, such as, for example and not by way of limitation, a sheet metal plate or a plate formed from a suitable plastic material. A segment 1*a* is cut from the blank to define the inwardly extending edges 3*a*, 3*b*. Series of aligned perforations 2 are also provided in the blank, each series extending from the edge of the blank to a central cut-out 5. The perforations can be formed by rectilinear punching or stamping tools, and similar tools can be used to form the other stamped out parts without impeding the bending of the blank into its desired shape. The marginal edge 6*a* corresponds to the desired final shape of the seat member which will be formed from the blank 1. Provision is also made for a top cut-out 4 and a pair of lateral cut-outs 4*a*, each of which constitutes a hand grip. The blank is wound or turned into the form of a truncated cone by abutting or overlapping the edges 3*a*, 3*b* and securing them together to form the seam 3 as shown in FIG. 2.



The edge 6*a* is bent over to form the border 6. The lateral and wider projection 7 at each side cut-out 4*a* forms an arm rest, as best shown in FIG. 3. FIGS. 2 and 3 illustrate the seat body or element for a chair which is formed from the blank 1. It will be noted that all of the rows of perforations 2 run from the border 6 to the peak 8 of the truncated cone formed by the blank 1. In this connection, it will be understood that the cut-out 5 may be formed either while the blank is in the flat and developed condition thereof shown in FIG. 1 or after it is formed into a cone, as shown in FIG. 3. The rows of perforations 2 provide desired flexibility to the conical seat element or member which, as seen in FIGS. 2 and 3 is of shell-like or tub-like conformation.

The final shape of the shell-like seat member is determined by the support or base therefor. Referring now to FIG. 4 in detail there is shown an upholstered shell or tub-chair pursuant to the present invention. Provision is made for the conical seat element 9 formed of hard but flexible sheet material. An upholstery covering 10, preferably formed of foam rubber, is inserted into the conical seat 9.

The padded covering 10 acts as a supporting element so that the wall thickness of the seat member 9 can be kept relatively thin. The covering layer 10 can be cut in one piece and inserted into the seat member without the formation of folds therein. An outer rim 11 is formed by bending the layer 10 over the marginal edge 9*a* of the seat member. The padding layer 10 is formed complementary to the seat member 9 and is suitably secured thereto, as by a suitable adhesive or glue. A fabric covering layer 12, having a form complementary to the padding 10 and the seat member 9, overlies the padding. The open areas or spaces 14, at the rear of the seat member 9 are provided with suitable filler material 14*a*. A porous insert element 17 is inserted into the central cut-out 16 at the inner end of the conical seat member 9. The base or support for the seat member is constituted by a closed ring 13 of suitable material, such as for example and not by way of limitation, a metal tube, into which the narrower end of the conical seat 9 is inserted. The ring 13 may be of circular or oval shape, depending upon the desired final configuration of the seat 9.

The ring is provided with connectors or sockets 15 into which there are received the chair legs 15*a*, which may be fixedly or removably secured therein. The fabric covering 12 extends over both the front and the rear of the seat, the fabric extending over the outer edge or rim 11, over the ring 13 and also covering the fillers 14*a* and the cut-out 16 and the insert 17 therein. However, the sockets or connectors 15 project through the fabric covering.

The base or support element determines the final shape of the flexible seat member and provides the desired contour thereto. Referring now to FIG. 5 in detail there is shown a side elevation of a chair constituted by the conical seat member 18 mounted by a support or pedestal. The support comprises a round ring 19 to which there are removably or fixedly secured the legs 20. The axis 18*a* of the cone which defines the seat member 18 is perpendicular to the plane of the ring 19. This provides a circular cross-section to the seat 18. It will be noted that the point 18*b* at the central cut-out constitutes the lowest point of the seat element so that if the chair is left out of doors during rain, the rain water can run off from the rear of the seat.

If the position of the seat 18 is changed to the broken

line position thereof, the axis **18***a* will now be at an acute angle relative to the plane of the ring **19** and the cross-section of the seat will assume an oval configuration to provide a larger sitting area. In either case, the seat is shaped according to the ring, it being noted that there are at least two points of support for the seat, namely at the front and rear end thereof.

The various embodiments illustrate only some of the many possible shapes and constructions of shell-seats pursuant to the present invention, both as to the shape of the shell seat member and the construction of the support therefor.

It will be noted that each construction utilizes a minimum number of simple parts, each of which is in the form of a standardizable basic element which is inexpensive to produce, so as to permit the manufacture of beautifully shaped and comfortable chairs at relatively low cost, which can be made available to a large section of the public.

Various changes and modifications may be made without departing from the spirit and scope of the present invention and it is intended that such obvious changes and modifications be embraced by the annexed claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A shell-like chair, comprising a seat member formed into a shell having substantially the outline of a truncated cone open at its top and bottom, and supporing means for supporting said shell, said supporting means including an endless member defining an open space and ground-engaging leg members connected to said endless member, said shell being inserted into the open space defined by said endless member with the open truncated top facing downwardly, said endless member supporting and shaping said shell at the areas of contact between said endless member and said shell, said areas of contact being variable in accordance with the angle between the plane of said endless member and the center axis of said cone-like shell.



2. A shell-like chair comprising a seat member formed into a shell having substantially the outline of a truncated cone open at its top and bottom, and supporting means for supporting said shell, said supporting means including a ring member slightly inclined relative to the horizontal plane and ground-engaging leg members connected to said ring member, said shell being inserted into the space defined by said ring member with the open truncated top facing downwardly, said ring member supporting and shaping said shell at the areas of contact between said ring member and said shell, said areas of contact being variable in accordance with the angle between the plane of said ring member and the center axis of said cone-like shell.


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