Dec. 31, 1957 H. V. THADEN 2,818,107

CHAIR

Filed May 19, 1953 2 Sheets-Sheet 1

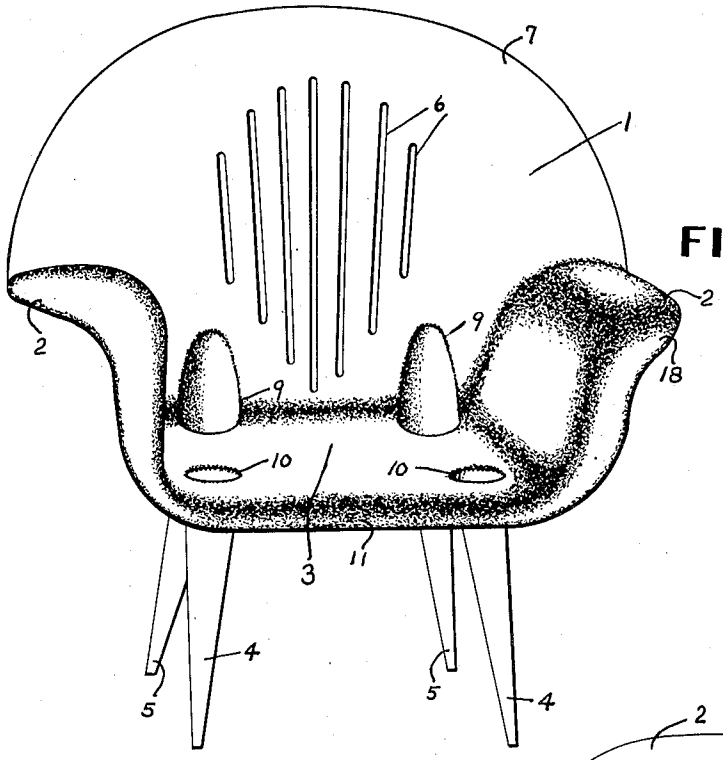


FIG. 1.

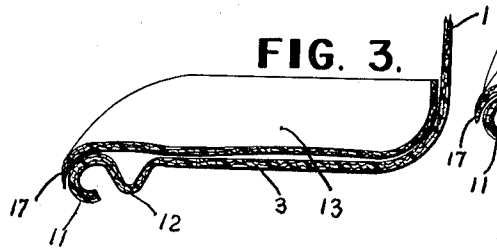


FIG. 3.

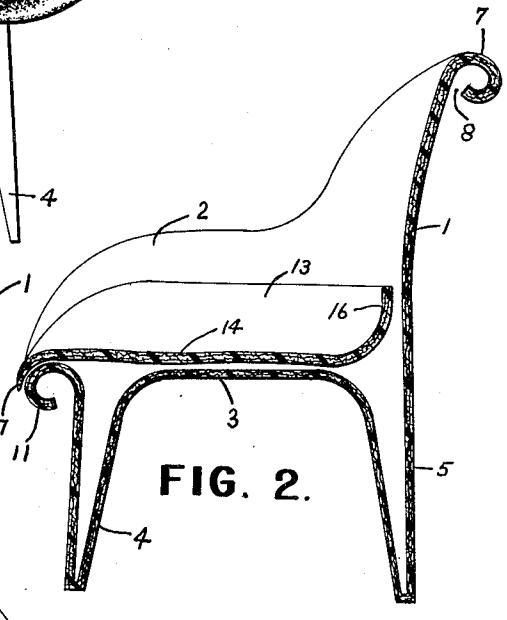


FIG. 2.

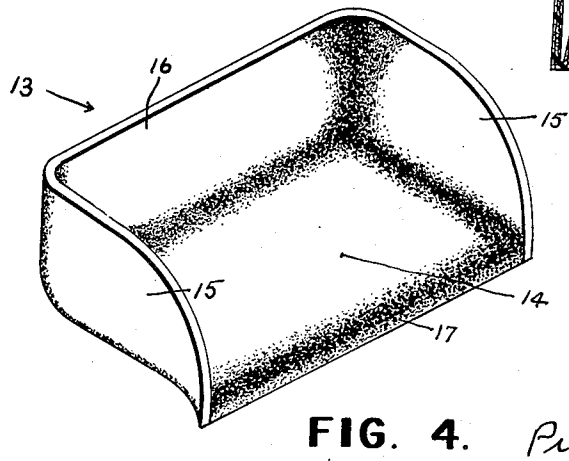


FIG. 4.

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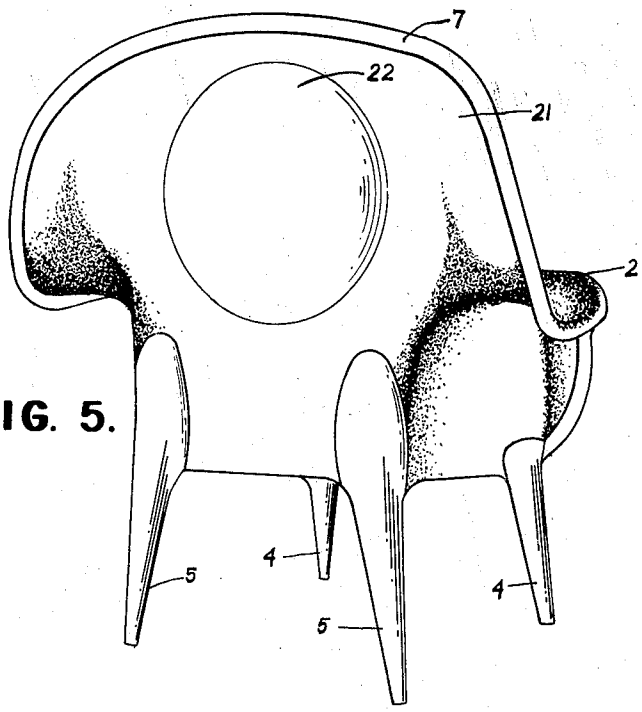


FIG. 5.

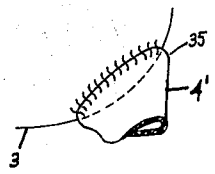


FIG. 7.

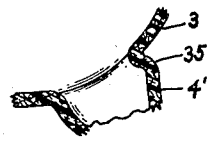


FIG. 8.

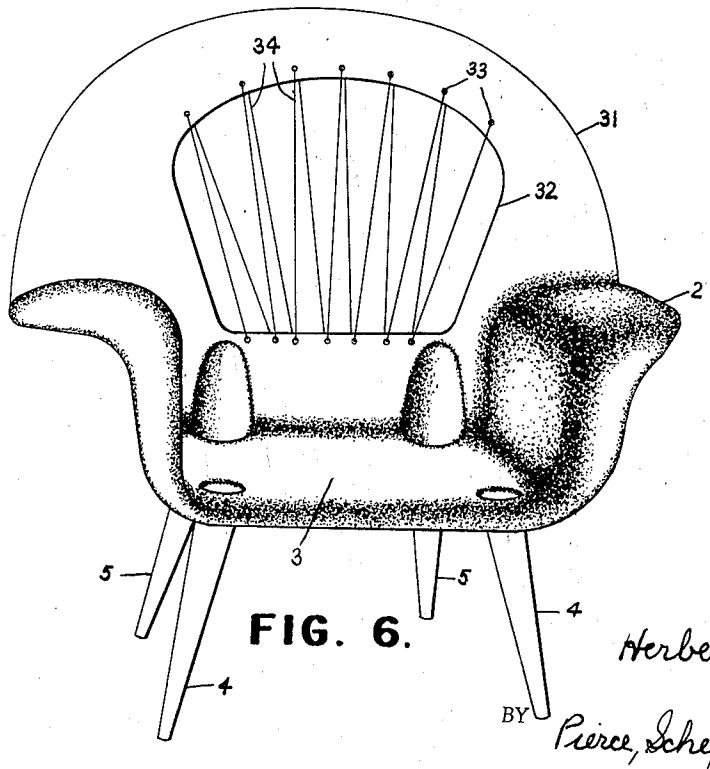


FIG. 6.

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2,818,107

CHAIR

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Application May 19, 1953, Serial No. 355,919

2 Claims. (Cl. 155—193)

This invention relates to a chair adapted to be made by a molding process.

An object of my invention is to provide an inexpensive but strong and durable chair construction. A more particular object of my invention is to provide a molded chair construction having all of the essential parts thereof, i. e. the back, seat, arms and legs unitary. A further object of my invention is to provide reinforcing or strengthening ribs at the point or points where the greatest strength is required.

A further object of my invention is to provide an integral flange around the edges of the back, arms and seat to facilitate the attachment of upholstery.

A further object of my invention is to provide a seat liner which may be upholstered separately and then attached to the seat, arms and back in such a way as to reinforce and strengthen the structure.

The molding material or composition and the manner in which it is molded are well known and form no part of my present invention. It may be said, however, that any suitable synthetic resin such as the polyester, polyethylene or phenol resins may be employed. The resin may be self-hardening or hardenable by heating or may be of either the thermoplastic or the thermosetting type. The resin preferably is used with a filling or strengthening material such as fiber or fabric either promiscuously dispersed in the resin or arranged in layers therein. A convenient method of forming the chair is by laying a plurality of layers of fabric, e. g. four layers of burlap impregnated with the resin, over a form where they are united and hardened or permitted to harden and then removed from the form.

The invention is illustrated in the accompanying drawings in which:

Fig. 1 is a front perspective view of the chair without the seat liner;

Fig. 2 is a section through the chair in the plane of one front and one rear leg;

Fig. 3 is a section through the seat only of the chair with the seat liner in place, the section being in a plane midway between the legs and perpendicular to the back;

Fig. 4 is a perspective view of the seat liner;

Fig. 5 is a rear perspective view of the chair showing a modified back construction;

Fig. 6 is a front perspective view of the chair showing a second modified back construction; and

Figs. 7 and 8 are a front view and a section respectively of a modified connection between the legs and the body of the chair.

Referring to Figs. 1–4, **1** is the back, **2, 2** are the arms, **3** the seat, **4, 4** the front legs and **5, 5** the rear legs. The back may be of any suitable shape but it is to be noted that the molding method of forming the back is well adapted to the production of a shape which is most comfortable to the occupant of the chair and which is also of ornamental appearance or design without waste of material. To illustrate this aspect of the invention, I have

shown a chair back having a curved upper edge and wings which join the wide arms at the rear. Flexibility is provided in the back where the shoulders of the occupant rest by cutting the parallel slits **6**.

As may be seen more particularly in Fig. 2, the edge of the back is turned over at **7** to form an almost closed tubular flange, a narrow space **8** being left between the edge of the flange and the back which may serve for attachment of upholstering fabric. The upholstering fabric may be attached by providing it with an edging preferably in the form of a bead with some elasticity which may be stretched over the flange **7** and inserted into or through the space **8**.

Also, as appears more particularly in Fig. 2, the rear legs are hollow and merge at their rear edges into the back and at the front edges into the seat. The shape of the boundary lines between the rear legs with the back and the seat is shown at **9, 9** in Fig. 1. In the same way, the front legs **4** are hollow and flared at their upper ends and merge into the seat, the boundary lines being shown at **10, 10** in Fig. 1.

The front edge of the seat is provided with the flange **11**, similar to the flange **7** around the edge of the back described above. The arms **2, 2** curve upwardly and outwardly from the seat and have flanges **18, 18** at their outer edges. The flange **7** around the back and the flanges **18, 18** around the outer edges of the arms and the flange **11** along the front edge of the seat join each other and thus form a continuous flange, the different portions of this flange curving into each other without sharp angles.

The seat **3** is provided with the downwardly extending ridge **12** (Fig. 3) adjacent its front edge and extending across between the front legs **4, 4**. This ridge serves to strengthen the seat at the front where the heaviest weight is applied by the occupant and where sagging or breakage might otherwise occur.

The surface irregularities in the seat due to the openings **9, 9** and **10, 10** where the legs are attached and the ridge **12** are covered by the seat liner **13** which is formed by molding in the same way as the chair body. The seat liner **13** has a bottom wall **14**, the side walls **15, 15** and the rear wall **16** which are all integral and preferably joined by curved portions thereby avoiding sharp angles. The front edge of the bottom wall **14** extends forwardly and curves downwardly forming the lip **17** which is adapted to snugly fit over the flange **11**.

The seat liner **13** may simply rest on the seat **3** as shown in Figs. 2 and 3 and remain removable therefrom or it may be attached by means of adhesive.

As has been noted, in the structure illustrated in Figs. 1–4 the back **1** curves into the seat at its lower edge and into the arms at its sides and the seat curves into the arms and even the legs curve into the back and seat so that the entire structure is free of sharp corners or angles where cracking or breakage would be likely to occur. This rounded structure contributes not only to the strength and durability of the structure but also, together with the integral continuous flange **7, 11, 18, 18** around the edges of the back, arms and seat, greatly facilitates upholstering the chair, the flange serving for the attachment of the upholstery fabric.

The seat liner may be upholstered separately and then inserted. If secured into the chair structure by means of adhesive, e. g. by means of the same synthetic resin as that used to form the body, it serves to stiffen and strengthen the resulting composite structure. As is apparent, the seat liner may be adhesively attached along its front edge **17** to the flange **11**, at its rear wall **16** to the back **1**, at its side walls **15, 15** to the arms **2** and at its bottom wall **14** to the seat **3**.

Referring to Fig. 5, in the modified back construction

illustrated, the back 21 has a portion 22, of any desired shape and size, which instead of being rendered flexible by slitting as in the construction of Fig. 1 is made flexible by the application of a suitable resin plasticizer to the lay-up just prior to closing the die and heat hardening the molding. Thus while the remainder of the molding will be hard and relatively rigid, the part 22, due to the presence of the plasticizer, will remain flexible and will tend to conform to the shape of the shoulders of the occupant.

Referring to Fig. 6, in the modification illustrated, the back instead of being slitted as in Fig. 1 or plasticized as in Fig. 5 is provided with the opening 32, and the surrounding structure may be thickened if desired to provide adequate strength and provided with eyelets 33 through which a rope or tape 34 may be laced to provide a flexible back rest.

In Figs. 7 and 8, I have shown a fragment of the seat 3 and a connected fragment of a front leg 4' for the purpose of illustrating a modified shape of the connection between the leg and seat. The leg 4' and the seat 3 are of course integral as in the structure illustrated in Fig. 1, but instead of the leg curving into the seat as in Fig. 1, the leg is provided with the bead 35 adjacent its connection to the seat to give it the appearance of a separately made and attached leg similar to the appearance of a chair as customarily made of wood.

I claim:

1. A chair structure comprising a molded integral body having a back, a seat, arms and hollow legs, the connecting portions thereof being curved and merging into each other with a continuity of strength, an integral strengthening ridge in the seat in the form of a corrugation extending downwardly therein between the front legs to form a groove in the upper surface of the seat; and a seat liner secured to said body to cover the groove and the openings from the seat into the hollow legs.

2. A chair structure comprising a molded integral body having a back, a seat, arms and hollow legs, the connecting portions thereof being curved and merging into each other with a continuity of strength; and a seat liner secured to said body to cover the openings from the seat into said hollow legs.

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