Feb. 8, 1955 A. D. ANDREEF 2,701,607

CHAIR WITH CORDED SEAT AND BACK

Filed March 4, 1953

Fig 1

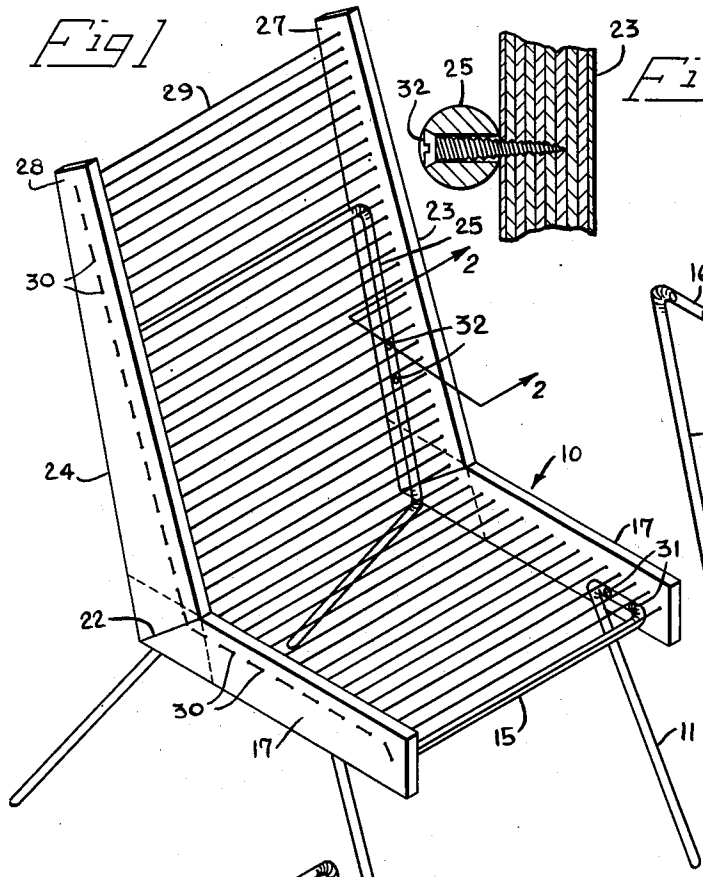



Fig 2




Fig 4

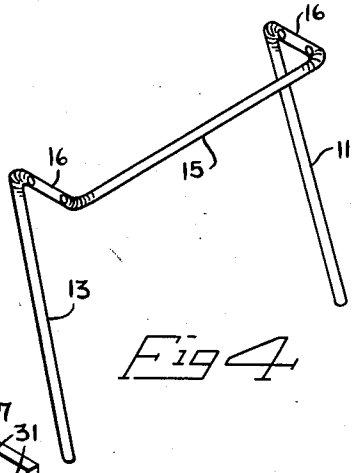



Fig 5

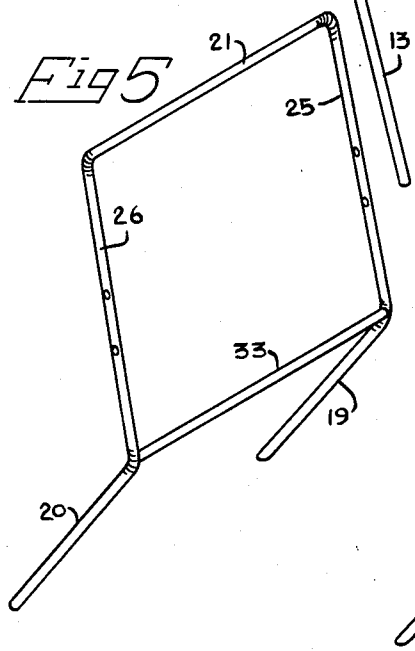
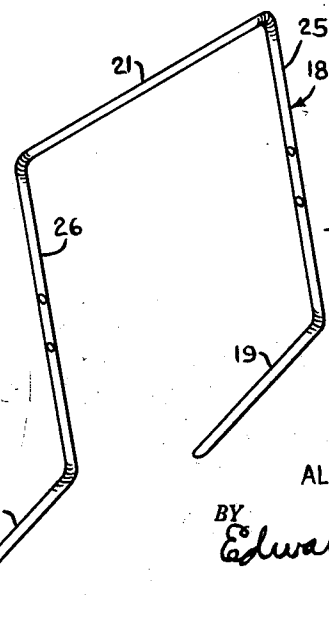



Fig 3




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# CHAIR WITH CORDED SEAT AND BACK

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4 Claims. (Cl. 155—191)

This invention relates to chairs and is herein illustrated in some detail as embodied in a chair including metallic elements yet presenting the advantages of a wood chair.

Wood chairs have the advantage of feeling agreeable to the touch, have convenient sizes of parts to handle, are often capable of production by standard wood working machinery, and may be comfortable to sit in.

Metal chairs are often less expensive, but their parts are unpleasant to the touch, a seat of non-metallic material must ordinarily be attached to the metallic frame of the chair and special hooks or welded on elements are needed to hold the non-metallic parts in place, the metallic elements of the frame additionally are uncomfortable to lean against and to hold, and the metal frame chairs are unsightly.

According to the present invention the foregoing and other difficulties and objections are overcome and a chair is provided in which the legs and certain connecting parts may be of metal, but parts usually handled or touched may be of wood, and in which a highly agreeable and comfortable seat is provided, and, if desired, the seat may serve, in large part, to hold together the structural elements of the chair.

In the form shown the seat takes the form of stretched cords which are easily threaded through wood elements which hold them in place and thus avoid the need for expensive special projections on the metallic elements or expensive cuts or holes in them.

The most satisfactory cord for such seat and holding element seems to be the synthetic product sold as nylon which is strong, highly elastic, water-proof, and otherwise resistant to weather.

In the form shown the legs of the chair are metal, preferably with the two front legs shaped from one continuous rod or tube, and the two rear legs formed from a separate, continuous rod or tube. The rear legs element may extend part way above the seat so that its two leg sections, in effect, extend part way to the top of the back, but are bent to form a connecting cross-piece somewhere near half-way up the back.

It is found that the tight nylon cross-wise cords above the cross-piece may hold the back legs properly spaced despite the usual lack of spacing devices below the cross-piece.

Other features and advantages will hereinafter appear.

In the accompanying drawing:

Fig. 1 shows one form of chair of the present invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 shows one form of rear legs;

Fig. 4 shows one form of front legs;

Fig. 5 shows an alternative form with additional cross piece spacing back legs.

In the form shown in Fig. 1 the chair **10** structure includes a metal front leg element having a right hand front leg **11** which may be suitably bent into a conventional curve, a left hand front leg **13** with a matching curve, a top connecting cross piece **15**, and a connecting curved portion **16** at the top of each leg adapted to lie flat against the inside front of the adjacent wood side piece **17** near the front.

The chair also includes a rear leg element **18** having a right rear leg **19**, and a left rear leg **20**, and a connecting cross piece **21** well above the height of the front cross piece **15**.

In the form shown the chair includes wood side pieces **17** that connect at an angle **22** at the rear of the seat



level with side wood uprights **23**, **24** that lie outside the upper extensions **25** and **26** of the rear leg **19** and the rear leg **20**, and extend well above the cross piece **21**, so the upper ends **27** and **28** of the wood uprights **23** and **24** are clear of the extensions **25** and **26**.

The seat of the chair is shown as a cord **29** threaded through small spaced openings **30** in the opposing wood side pieces **17**, and also through similar openings in the wood upright extensions **23** and **24**, drawing the wood upright extensions against the metal extensions **25** and **26** of the the legs **19** and **20**. The cord **29** is preferably an inch in front of the cross-pieces **15** and **21** to keep them free of anyone seated in the chair.

It is found that openings **30** are satisfactory for holding a nylon cord **29** when spaced about three-fourths of an inch apart, and that the cross stretches of the cord **30** above the cross piece **21** hold the seat stretches near the angle **22** properly spaced.

The front legs **11** and **13** are preferably held against slipping on the side pieces **17** by two small screws **31** passing through the flat portions **16** of the front leg piece and threaded into the adjacent wood. The uprights **23** and **24** are similarly held in place by two small screws **32** passing through the extensions **25** and **26** and threaded into the adjacent uprights **23** and **24** somewhat below the cross piece **21**.

The wood side pieces **17** are preferably nearly straight for economy in cutting the wood and laminated, and the wood uprights **23** and **24** are similarly laminated, so that some side pieces extend entirely across some upright pieces, and some upright pieces extend entirely across some side pieces.

Then when properly cemented as by suitable hot cured thermosetting resin, the joints **22** become almost as strong as the body of the uprights **23** and **24**. Melamine resin has been found satisfactory, and one-eighth to one-quarter inch thick veneer for the laminations. The outer surface of each piece is usually selected from an ornamental species of wood and the outer layers of veneer joined at the angle **22** at about 45°.

The rod **15** would tend to form a pivot around which the cords would tilt the side pieces **17**, but those side pieces are in effect integral extensions of the nearly upright pieces **23** and **24** which are strongly held against tilting on the rod **15** because they are spaced apart well above the level of the pieces **17** by the rod **21**.

The wood uprights **23** and **24** are usually somewhat curved and slanted slightly rearwardly for comfort.

The metal legs may be ⅝ inch rod or 3.4 inch tubing, iron or aluminum where lightness is more of an item than saving of expense.

In the form of the invention shown in Fig. 5, a second back metal cross-piece **33** may join the metal upright extensions **25** and **26**, thus relieving the strain on the upper cords, and stabilizing to seat level to suit the fancy of some people.

Having thus described one form of the invention in some detail, what is claimed is:

1. A chair including two metal rear legs, wood side pieces attached to said legs, metal front legs attached to to said side pieces and forming the sole connection to the chair, spacing means at the chair front for spacing the front ends of the side pieces to form the sides of a seat, upward extensions of said metal rear legs, upward wood extensions of said wood side pieces outside the metal rear legs, a metal cross piece connecting the wood extensions well below the top of the wood extensions, and cords crosswise between the side pieces and the upward wood extensions and holding the side pieces apart at the rear legs by tension above the metal cross piece.

2. A chair including two metal rear legs, wood side pieces attached to said legs, metal front legs attached to said side pieces and forming the sole connection to the chair, spacing means at the chair front for spacing the front ends of the side pieces to form the sides of a seat, upward extensions of said metal rear legs, upward wood extensions of said wood side pieces outside the metal rear legs, a metal cross piece connecting the tops of the metal leg extensions well below the top of the wood extensions, and cords crosswise between the side pieces

and the upward wood extensions and holding the side pieces apart at the rear legs, said wood side pieces and said upward wood extensions formed of laminated cemented substantially straight plies completely overlapping where they intersect, and held together as a unit by said cement.

3. A chair including a metal front leg member having legs and a spacing section joining the legs, a metal rear leg member including legs and a cross piece above the level of said spacing section, a single wood side piece on each side composed of ply layers cemented to form a unit and lying outside the front and rear leg members, cords threaded across between the side pieces, and holding the parts together.

4. A chair including front legs and a spacing section joining the legs, rear legs independent of the front legs and a cross piece above the level of said spacing section, a single wood side piece on each side composed of ply



layers cemented to form a unit including the side and the back and spacing the front and rear legs, cords threaded across between the side pieces forming the seat and back, and clear of the spacing section and cross piece, and holding the parts together, said spacing section and cross-piece holding the side pieces against twisting under the pull of the cords.

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