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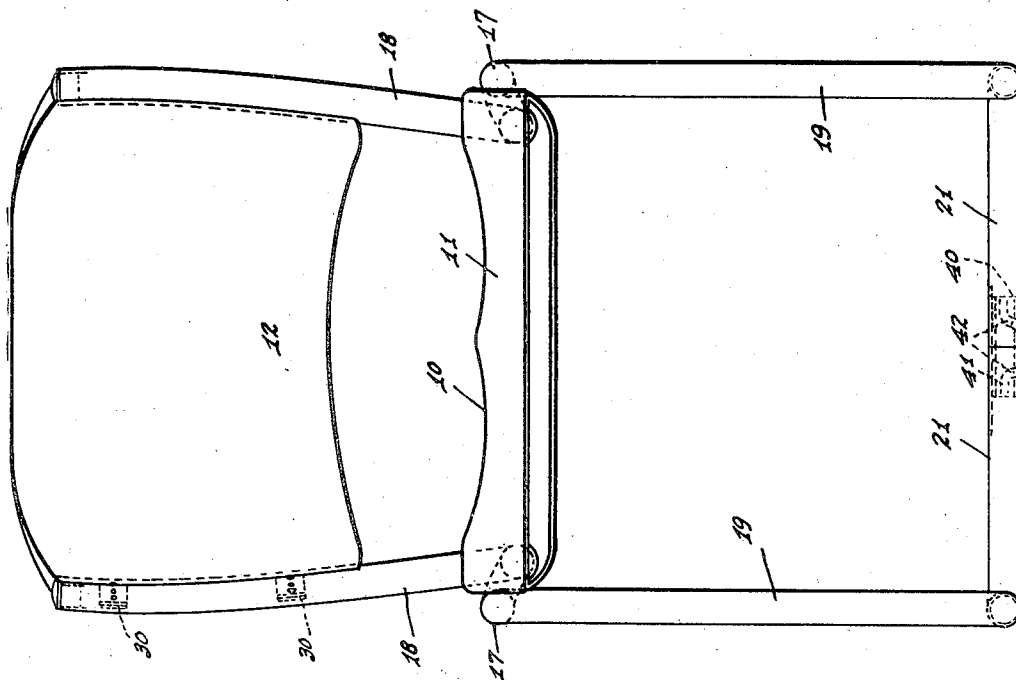
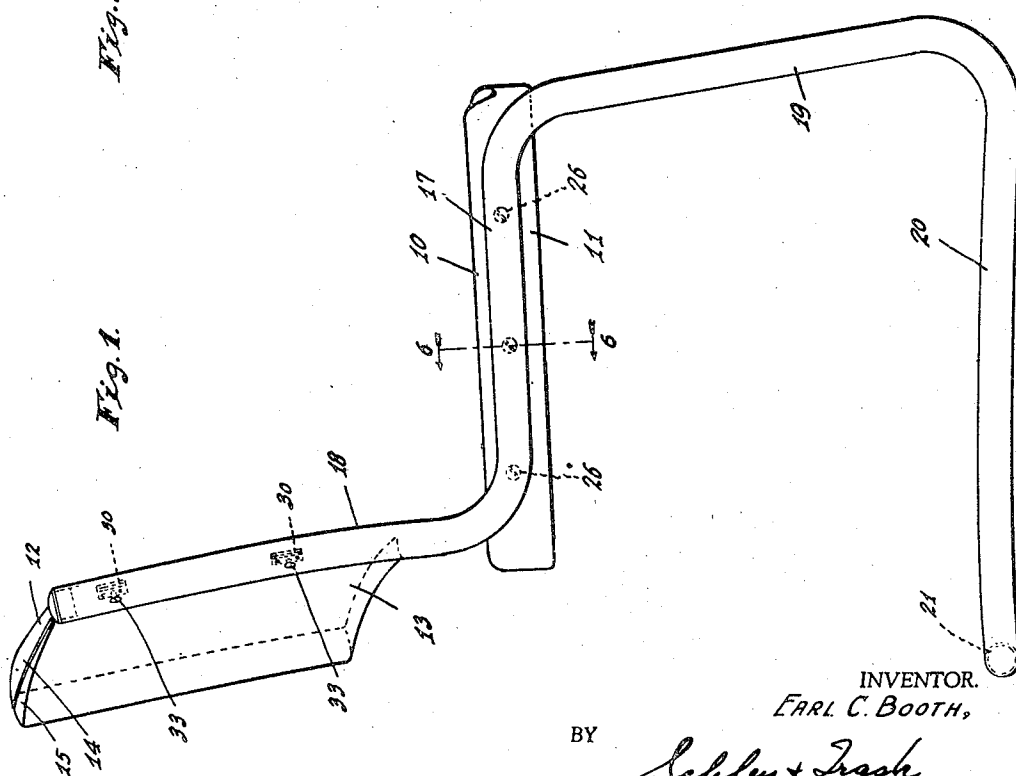
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METAL CHAIR

Filed April 3, 1944

2 Sheets-Sheet 1



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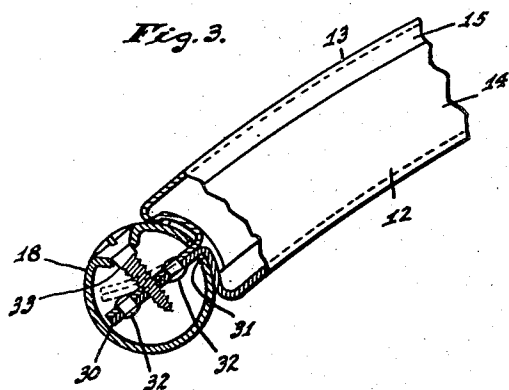
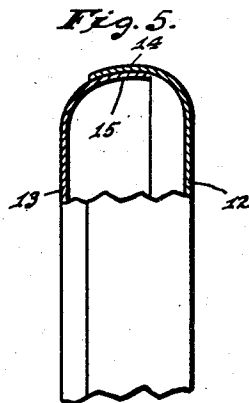
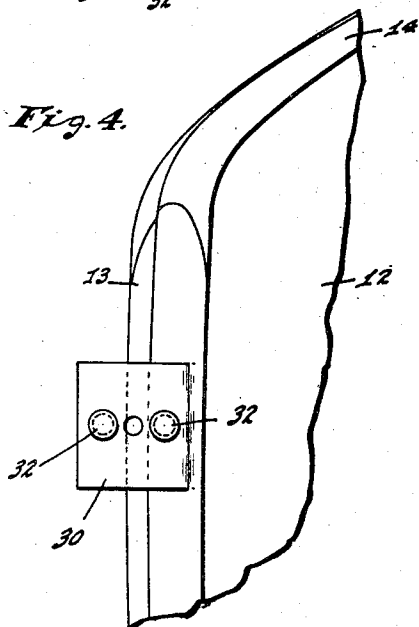
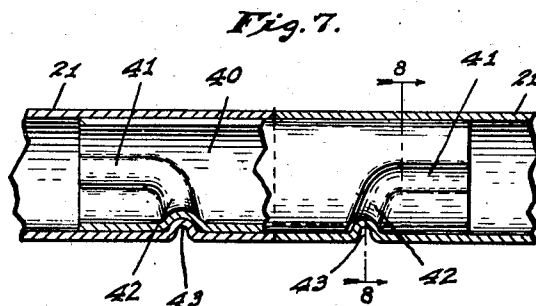
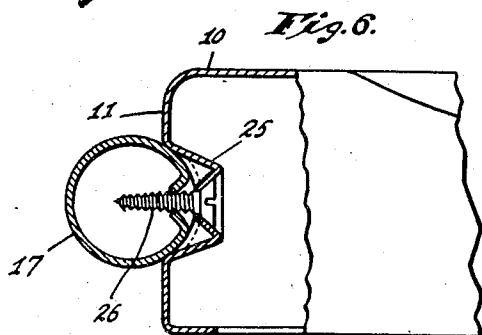
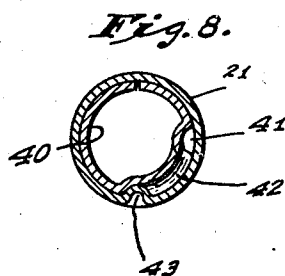
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METAL CHAIR

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

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## METAL CHAIR

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5 Claims. (Cl. 155—194)

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My invention relates to a metal chair and particularly to a relatively small chair in which the seat and back are formed of sheet-metal stampings interconnected and supported by bent pieces of metal tubing.

It is the object of my invention to produce a chair of the type indicated which can be simply and economically manufactured and which will be of sturdy construction and attractive appearance.

In carrying out my invention I employ two tubular supporting members each of which has a generally horizontal intermediate stretch disposed at the side of and secured to the chair-seat. The chair-back is formed of front and rear metal stampings having nested peripheral flanges and outwardly projecting ears which extend inwardly through slots in the sides of upwardly extending stretches of the tubular members. From the front corners of the seat of the chair-bottom, the tubular members extend downwardly, then rearwardly along the floor or other supporting surface, and then inwardly toward each other, their ends being located in aligned and abutting relationship. A connector formed of sheet metal and located within the abutting ends of the tubes serves to interconnect them.

The accompanying drawings illustrate my invention: Figs. 1 and 2 are side and front elevations respectively of the chair; Fig. 3 is a fragmental plan view of the chair-back, with parts thereof broken away in shown sections; Fig. 4 is a fragmental front elevation of the back; Fig. 5 is a fragmental view of the back with portions thereof broken away; Fig. 6 is a fragmental section on the line 6—6 of Fig. 1; Fig. 7 is an axial section illustrating the joint between the two tubular members; and Fig. 8 is a transverse section on the line 8—8 of Fig. 7.

The chair shown in the drawings comprises a seat 10 formed as a sheet-metal stamping with a downturned peripheral flange 11. The chair-back is formed of two sheet-metal stampings 12 and 13 provided respectively with peripheral flanges 14 and 15, which are received in nesting relationship as will be apparent from Fig. 5.

Each of the tubular members which serve to interconnect and support the seat and back has an intermediate, generally horizontal stretch 17 extending along one side of the seat 10; an upper, generally vertical stretch 18 extending along the ends of the seat-back; a front, generally vertical stretch 19; a lower, generally horizontal stretch 20; and an end portion 21. The end portions 21, as will be clear from Figs. 1 and 2, are located in

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aligned and abutting relationship, and are interconnected by a means hereinafter described.

At the sides of the seat 10, the flange 11 is formed to provide an outwardly presented groove of arcuate cross-section adapted to receive the intermediate stretch 17 of the associated tubular supporting member. At intervals along the length of this groove, the sheet-metal is displaced inwardly of the seat to form bosses 25. The inner end of each of such bosses is perforated to receive a screw 26, desirably of the flat-head type, and the metal around the screw-receiving perforation is shaped to provide a countersink adapted to accommodate the head of such screw. In alignment with each of the bosses 25, the inner wall of the tube 17 is perforated to receive the screw 26. Desirably, the screw 26 is of the self-tapping type and the metal surrounding the perforation in the tube-wall is displaced inwardly, as will be clear from Fig. 6.

Along the sides of the chair-back, the nesting flanges 14 and 15 are shaped to provide an outwardly presented groove of arcuate cross-section adapted to receive the upper stretch 18 of the tubular member. Along each of such grooves, I provide a pair of spaced ears 30 adapted to extend into the adjacent tubular member through a slot 31 in the wall thereof. Conveniently, the ears 30 are formed by portions of the nesting flanges 14 and 15 bent outwardly and secured together by rivets 32. In the rear of the upper stretch 18 of the tubular member, and spaced at approximately 90° from the slot 31 the tube-wall is perforated to receive a screw 33 which extends inwardly of the tube and into a hole in the ear 30. Desirably, the screw 33 is of the flat-head or oval-head type, and the metal around the perforation in the tube wall is displaced inwardly so that the head of the screw will not project beyond the outer surface of the tubing. As the screws 33 are tightened, the ears 30 are drawn toward the dotted-line position illustrated in Fig. 3, thus causing the tube-stretch 17 to be seated firmly in the associated groove in the side of the chair-back.

For the purpose of interconnecting the abutting ends of the two tube-portions 21, I employ the connector 40 illustrated in Figs. 7 and 8. This connector is tubular in cross-section and of a size to be received within the ends of the tubular portions 21. It is conveniently formed of sheet-stock rolled into a tubular shape, and its abutting edges need not be secured together.

At each end, the connector is formed to provide a bayonet-joint groove comprising a portion

41 extending axially inward from the end of the connector and joined at its inner end to a helically extending portion 42. The helically extending portions 42 of both grooves are of the same hand. Each of the grooves 41—42 is adapted to receive a boss 43 formed by inward displacement of the wall of the tube-portion 21. The bosses 43 are desirably located at the bottom of tube-portions 21, where they will be inconspicuous.

In assembling the chair, the connector 40 is brought into association with one of the tube-portions 21, with the boss 43 on such tube-portion located in the helical portion 42 of the groove of the connector. The portion 21 of the other supporting member is then slipped over the projecting end of the connector 40 with its boss 43 entering the groove 41—42. By relative rotation of the two supporting members about the common axis of their aligned portions 21, the opposed ends of the portions 21 are brought firmly into contact with each other. The helical groove-portions 42 and the bosses 43 are so arranged that when the opposed ends of the tube-portions 21 are firmly in contact with each other, the horizontal stretches 20 of the supporting members will be substantially co-planar. Desirably, the design is such that in the rotation of the two supporting members the ends of the aligned portions 21 come into contact slightly before the stretches 20 reach co-planar relationship. The material of the connector and/or of the tubing is soft enough to permit any distortion of the bosses 43 or walls of the grooves 42 which may be necessary to bring the stretches 20 into co-planar relationship after the ends of the portions 21 have engaged each other.

After the two supporting members have been assembled in the manner just described, their upper members are sprung apart and the back 12—13 put in place, the ears 30 entering the slots 31. The seat 30 is then put in place between the intermediate horizontal stretches 17 of the supporting members, and the screws 26 and 33 are inserted and tightened to hold the seat and back in place.

I claim as my invention:

1. In a chair, a back comprising front and rear sheet-metal stampings provided with telescoping peripheral flanges formed to provide at each side of the back an outwardly presented groove, back-supporting members of metal tubing seated respectively in said grooves, the wall of each of said back-supporting members adjacent the associated groove being provided with one or more longitudinally extending slots, ears on said back extending into said slots, and screws passing through the walls of the back-supporting members and into said ears.

2. In a chair, a back comprising front and rear sheet-metal stampings provided with telescoping peripheral flanges formed to provide at each side

of the back an outwardly presented groove, back-supporting members of metal tubing seated respectively in said grooves, the wall of each of said back-supporting members adjacent the associated groove being provided with one or more longitudinally extending slots, ears on said back extending into said slots, and means for retaining said ears in said slots.

3. The invention set forth in claim 1 with the addition that said ears are out-bent portions of said telescoped flanges.

4. In a chair, a back comprising front and rear sheet-metal stampings having flanges which overlap each other at the sides of the back, back-supporting members of metal tubing extending along such overlapping flanges, the wall of each of said back-supporting members adjacent the associated flanges being provided with one or more slots, portions of said overlapping flanges being bent outwardly to form ears extending into said slots, and screws extending through the tube-walls and into said ears.

5. In a chair, a back comprising front and rear sheet-metal stampings having flanges which overlap each other at the sides of the back, back-supporting members of metal tubing extending along such overlapping flanges, the wall of each of said back-supporting members adjacent the associated flanges being provided with one or more slots, portions of both said overlapping flanges being bent outwardly to form ears extending into said slots, and means for holding said ears in place in said slots.

EARL C. BOOTH.

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