May 29, 1962 ZENTARO ARAI 3,036,864

FIXING DEVICE FOR BACK BOARD, ELBOW RESTS AND LEGS OF A CHAIR

Filed Dec. 21, 1960 2 Sheets-Sheet 1

Fig. 1.

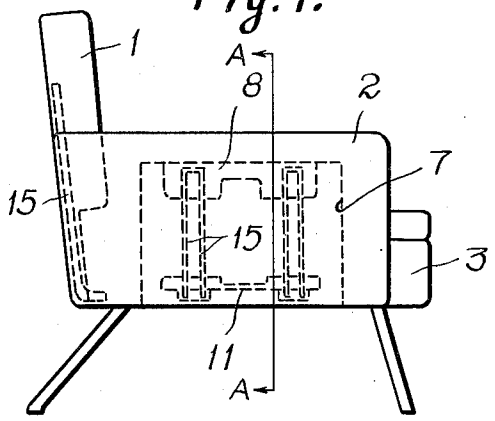


Fig. 3.

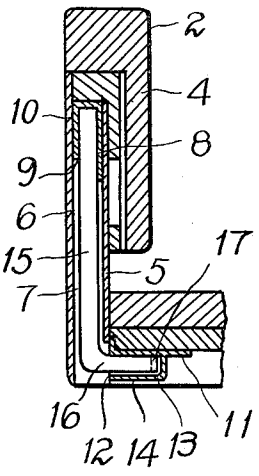


Fig. 2.

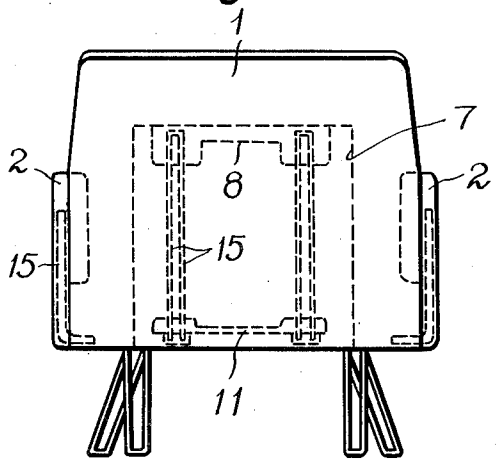
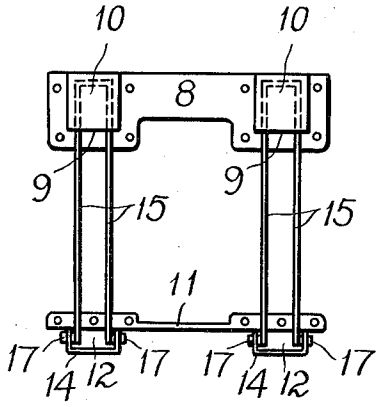


Fig. 4.



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Fig. 5.

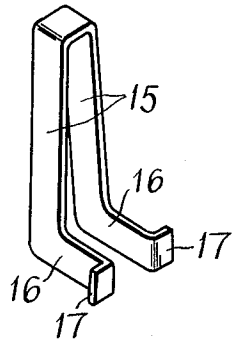


Fig. 7.

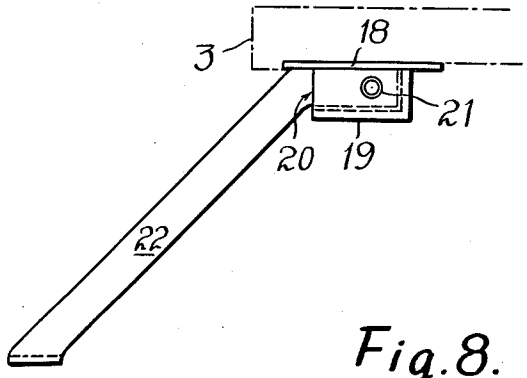


Fig. 6.

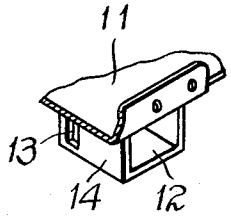
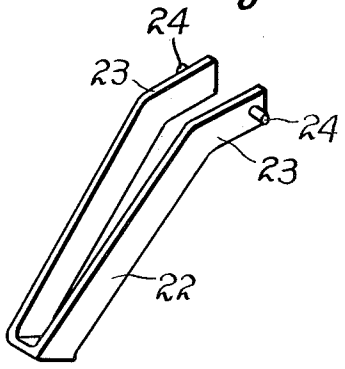


Fig. 8.



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FIXING DEVICE FOR BACK BOARD, ELBOW RESTS AND LEGS OF A CHAIR

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Claims priority, application Japan May 31, 1960
6 Claims. (Cl. 297—463)

This invention relates to an improved device for attaching the back, elbow or arm rests and legs to the feet of a chair to form a knock-down chair in which the individual elements may be assembled and disassembled in a simple and easy manner.

For an understanding of the invention, reference is made to the following description of a typical embodiment thereof as illustrated in the accompanying drawings.

In the drawings:

FIG. 1 is a right side elevation view of a chair embodying the invention;

FIG. 2 is a rear elevation thereof;

FIG. 3 is a cross sectional view of the chair taken on the line A—A of FIG. 1;

FIG. 4 is an outside elevation view of an assembly of mounting members and attachment elements used in assembling the chair;

FIG. 5 is the perspective view of one form of attachment embodying the invention;

FIG. 6 is a partial perspective view, partially in section, of a mounting member and one of its associated pockets;

FIG. 7 is a side elevation view with the seat shown in phantom of a part of the chair illustrating the leg assembly; and

FIG. 8 is a perspective view of a chair leg illustrating a form of seat attachment means differing from that of FIG. 5.

Referring to the drawings, a back member 1 and elbow or side arm members or rests 2, which are arranged to extend from respective edges of a seat 3, have, as particularly illustrated in FIG. 3, spring cushioned pads 4 on their inner sides. While FIG. 3 is a sectional view through a side arm member, it equally illustrates the construction of the back member 1. Overlapping the lower portions of the cushions 2, the back and side arm members are provided with a pair of spaced plates 5 and 6 fixed in parallel spaced relation with each other to provide a parallel walled chamber 7. At the upper part of this chamber there is fixed a mounting member 8 which is relatively elongated and which overlaps the upper edge of the plate 5. Mounting member 8 includes a pair of pockets 10 spaced longitudinally thereof and having downwardly facing openings 9.

Other relatively elongated members 11 are arranged to be secured along the undersurface of seat 3 in parallel relation to the respective edges thereof. Each of the mounting members 11 includes a pair of pockets 14 spaced longitudinally thereof and open toward the associated seat edge, as at 12. Each of the pockets 14 includes spaced parallel side walls formed with aligned apertures 13.

The pockets 10 and 14 are arranged to disengageably receive opposite ends of attachment elements 15 which are in the form of elongated strips of resilient metal bent intermediate their ends, about a first bend line, into a U-shape including a bight and a pair of elongated substantially parallel legs. In addition, each strip 15 is further bent about a second bend line substantially perpendicular to the first bend line to form a relatively long leg adjacent the bight and a relatively short leg 16 adjacent the free ends of the strip. In the arrangement shown in FIGS. 1 through 5, attachment elements 16 have extensions 17 projecting laterally outwardly from the free ends of legs 16. However, it should be understood that extensions 17 may just as well comprise pins 24, such as shown in FIG. 8.

In assembling the back member or a side arm member to the chair, a pair of the attachment elements 15 have their bight ends inserted into the chamber 7 formed by the plates 5 and 6 and into the pockets 10, the attachment elements having a springy fit within the pockets 10. The free ends of the attachment elements 15 are then compressed together so that the legs 16 may be fitted into the pockets 14 until such time as the extensions 17 (or the pins 24) are sprung outwardly to engage through the aforementioned aligned apertures in the side walls of the pockets 10. The back member, or the side arm member, is then firmly attached to the seat 3 and may be easily disengaged therefrom by compressing the two legs 16 together to withdraw the extensions 17 (or the pins 24) from the associated apertures, after which the back member or side member may be readily disengaged from the seat by pulling the extension 16 out of the pockets 10. The openings for receiving the extensions 17 or pins 24 are indicated at 13 in FIG. 6, which also illustrates the lower or outer wall 12 of each pocket 14.

The legs are attached to the seat 3 in the same manner. Referring to FIG. 7, a mounting member 18 corresponding substantially to the mounting members 11 has a pair of pockets 19 spaced longitudinally thereof and open toward the associated edge, as indicated at 20. The members 18 are arranged to be secured to the undersurface of seat 3 adjacent the respective front and rear edges thereof, and each pocket 19 includes a pair of parallel side walls formed with aligned apertures such as 21.

One of the legs as illustrated in FIG. 8, and it will be noted that this leg is formed in essentially the same manner as are the attachment elements 15, including relatively short legs 23 carrying pins 24. Of course, with the leg member 22, the pins 24 could be replaced by lateral extensions such as the extensions 17 of FIG. 5. The legs are secured in position by squeezing the legs 23 toward each other to engage these extensions into the pockets 19 until the pins 24 (or the extension such as 17) project outwardly through the apertures 21.

The described arrangement provides a chair which has a pleasing and smart appearance, as well as a strong construction. Despite this, the chair can be easily assembled and disassembled without the use of special tools.

While a specific embodiment of the invention has been shown and described to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. In a knock-down chair including a seat, attachment means for disengageably attaching a back member, side arm members, and legs to said seat, said attachment means comprising, in combination, relatively elongated mounting members each arranged to be secured along the undersurface of said seat in parallel relation to an edge thereof, each mounting member including a pair of pockets spaced longitudinally thereof and open toward the adjacent seat edge, and each pocket including spaced parallel side walls formed with aligned apertures; and attachment elements in the form of elongated strips of resilient metal bent intermediate their ends, about a first bend line, into a U-shape including a bight and a pair of elongated substantially parallel legs, each strip being further bent, about a second bend line substantially perpendicular to the first bend line, to form a relatively long leg adjacent the bight and a relatively short leg adjacent the free ends of the strip; the free ends of

the strip carrying projections extending outwardly therefrom, whereby, when the free ends are inserted into a pocket, the projections will spring outwardly through said aligned apertures to releasably latch such free ends in the associated pockets with the long legs extending outwardly from the seat; certain pairs of attachment members being arranged to support the back member and side arm members, and other pairs of attachment elements constituting the chair supporting legs.

2. In a knock-down chair, attachment means as claimed in claim 1, a relatively elongated mounting member arranged to be secured to extend laterally of each of said back member and side arm members adjacent the upper edge thereof and in parallel relation to such upper edge, each mounting member including a pair of pockets spaced longitudinally thereof and open toward the lower edge of the respective back member and side arm members; the pockets of each of said last named mounting members being arranged to receive the bight ends of an associated pair of said attachment elements, with the longer legs of such associated pair of attachment elements extending along the respective back member and side arm members.

3. In a knock-down chair, attachment means as claimed in claim 2, in which each back member and side

arm member includes a cushion element formed with a recess in its rear surface to receive the associated mounting member.

4. In a knock-down chair, attachment means as claimed in claim 3, including a pair of spaced parallel plates extending into the cushion recess to form a parallel walled chamber; the associated mounting member overlapping the inner one of said plates with itss pockets extending into said chamber.

5. In a knock-down chair, attachment means as claimed in claim 1, in which said projections comprise outwardly bent ends on the free ends of said strips.

6. In a knock-down chair, attachment means as claimed in claim 1, in which said projection means comprise upwardly extending pins in aligned relation on the free ends of said strips.

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