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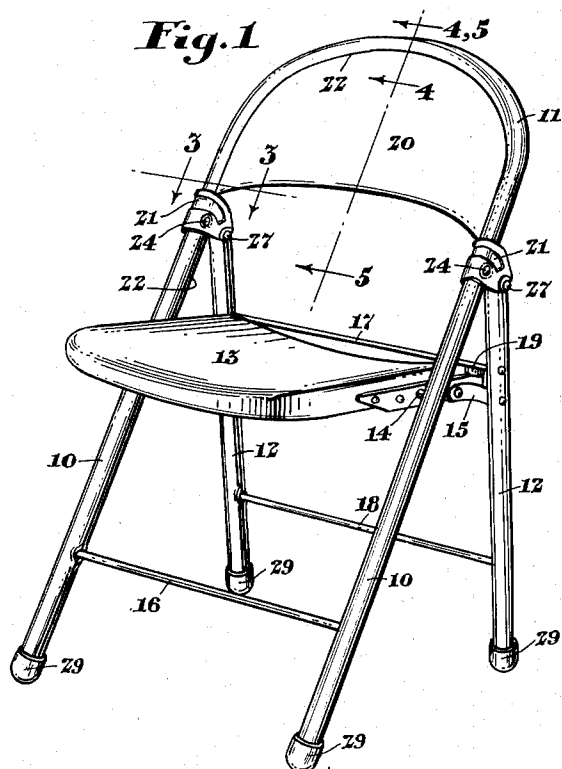
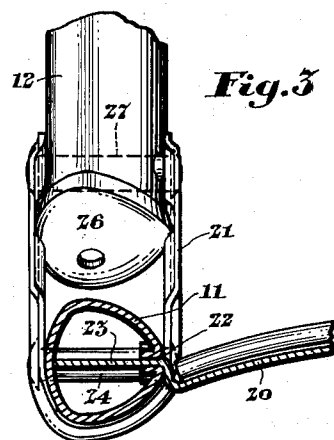
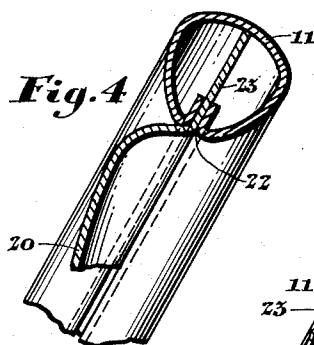
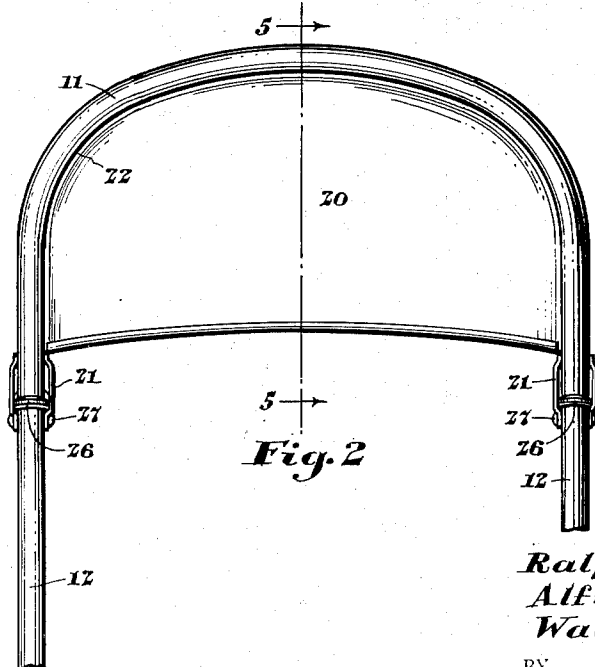
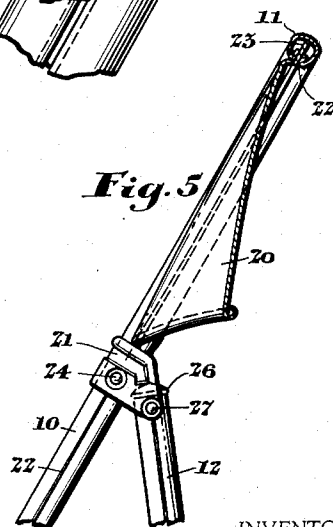
R. K. MERRILL ET AL

2,620,019

FOLDING CHAIR

Filed Oct. 21, 1950

2 SHEETS--SHEET 1



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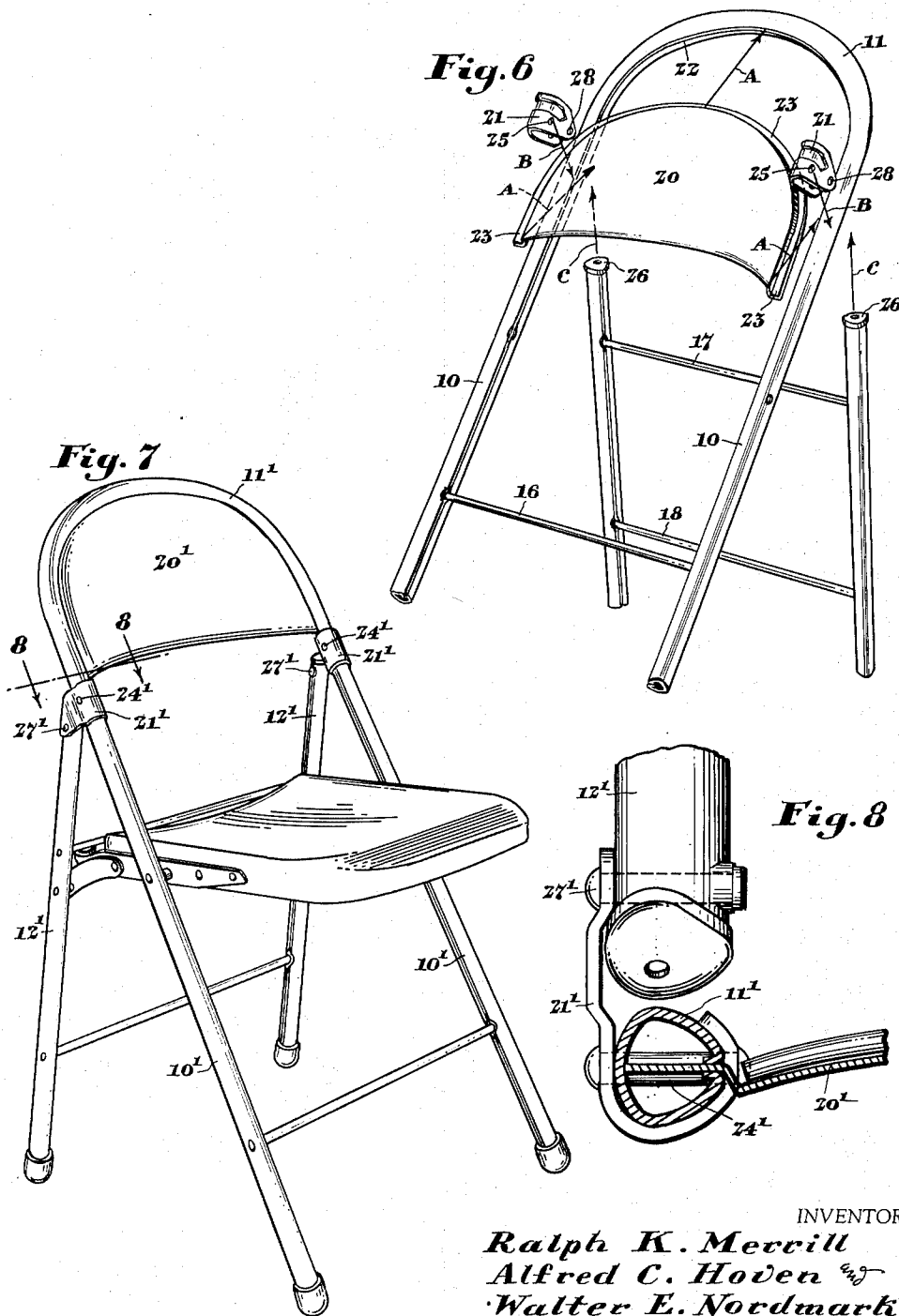
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UNITED STATES PATENT OFFICE

2,620,019

FOLDING CHAIR

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2 Claims. (Cl. 155-142)

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The present invention relates to folding chairs and more particularly to steel folding chairs of the Y-type wherein a front frame forms the front legs and back support and the rear legs are hingedly connected to the front frame. Examples of this general type of chair are shown in Patent No. 1,958,042 issued May 8, 1934, to W. M. Hanson and Patent No. 2,211,289 issued August 13, 1940 to M. K. Orton.

The primary objects of the invention are to provide an improved method of making such a folding chair, in which method certain assembly operations heretofore considered essential are eliminated; and to provide such a chair which is especially comfortable, attractive in appearance and sturdy in construction.

Illustrative embodiments of the invention are shown in the accompanying drawings, wherein:

Figure 1 is a perspective view of a steel folding chair constructed according to this invention;

Figure 2 is a fragmentary rear elevational view of the upper part of said chair;

Figure 3 is an enlarged fragmentary sectional view of parts of the chair, the section being taken on line 3-3 of Figure 1;

Figure 4 is an enlarged fragmentary sectional view taken on line 4-4 of Figure 1;

Figure 5 is a fragmentary central vertical sectional view of the upper part of the chair, the plane of section being indicated by lines 5-5 of Figures 1 and 2;

Figure 6 is a perspective view of certain parts of the chair in unassembled relation and illustrates the method of assembly of these parts;

Figure 7 is a perspective view of a folding chair illustrating a slightly modified form of the invention; and

Figure 8 is an enlarged, fragmentary sectional view of parts thereof, the section being taken on line 8-8 of Figure 7.

Referring now in detail to these drawings and referring first particularly to Figures 1-6 inclusive, the Y-type steel folding chair therein illustrated has an inverted U-shaped, tubular metal frame the leg portions of which form the front legs 10 of the chair and the bight portion 11 of which forms the back support for the chair. Rear legs 12 have their upper ends pivotally connected to the U-shaped frame at opposite sides thereof and support the unfolded chair in the rear. A seat 13 is pivotally connected at 14 to the frame at opposite sides thereof, and links 15 connect the rear of the seat to the rear legs 12 in a conventional manner for this type of folding chair. Struts 16 connect the front legs 10

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and struts 17 and 18 connect the rear legs 12 for lending rigidity to the structure, and the chair is limited to its extreme unfolded position by the contact of stops 19 on the rear of the seat with the upper rear strut 17.

It has heretofore been common practice to weld connecting hinge elements to the front frame of the chair and pivotally connect the rear legs to the hinge elements by means of rivets, and to secure a back panel within the bight portion of the frame by means of screws or welding. Such a construction is shown in the prior art patents referred to in the opening paragraph of this specification. In the present construction, however, the back panel 20 has been formed so as to extend downwardly at the sides of the frame, and the connecting hinge elements 21 are secured to the opposite sides of the frame in abutment with the lower corners of the back panel 20 thus to maintain said back panel in assembly with the frame's bight portion 11.

The U-shaped frame is fabricated from a length of seamed metal tubing in such a manner that the seam 22 faces inwardly all around the chair. The back panel 20 is fabricated from sheet metal formed so as to provide a U-shaped laterally extending flange or border 23 extending across the top and down the sides of the panel. The method of assembling the U-shaped frame, the back panel, the hinge elements and the rear legs of the chair is best illustrated in Figure 6. The back panel 20 is first inserted into the bight of the U-shaped frame with its flange or border 23 fitted within the inwardly facing seam of said bight, as indicated by the arrows A. The hinge elements 21 of strap form, are then secured to the U-shaped frame in abutment against the lower corners of the back panel 20 by means of rivets 24 passing through apertures 25 in the opposite flanges of the strap-form hinge elements and through the tubing of the frame, as indicated by the arrows B. The rear legs 12, which have domes 26 at their upper ends, are secured to the rearwardly extending portions of the strap-form hinge elements by means of rivets 27 passing through apertures 28 in said portions of the hinge elements and through the tubing of the rear legs, as indicated by the arrows C. The riveting operations for clinching rivets 24 and rivets 27 are all performed at the same time. It will thus be seen that the construction of these particular parts and the method of assembling them are such that no welding is necessary, and the entire assembly of these parts is accomplished in a single operation. The seat is there-

after installed in a more or less conventional manner, and domes and rubber feet 29 may be applied to the lower ends of the chair legs at any convenient time during assembly of the chair.

In addition to simplification of the assembling of the chair as above described, the method of construction affords other advantages over former methods. In recent years there has been a trend toward bi-color chairs having the seat and back panel of one color (sometimes covered with, or finished coated in imitation of, fabric or leather) and the other parts of the chair in another color. The earlier constructions did not lend themselves well to such finishing. For obvious reasons it was impractical to finish a completely assembled chair in more than one color. On the other hand if the parts were first finished in different colors and later assembled, the welding operations necessary in the earlier constructions spoiled the finishing. Hence the present invention makes possible the finish coating of the parts first and later assembly, the welding operations having been eliminated. Also the new method eliminates drips and runs which were present when the completely assembled chairs were coated by the old method.

Figures 7 and 8 show a slightly modified construction in which the same principles are employed and the same advantages accrue. In this construction the back panel 20' is formed the same and inserted in the bight 11' of the U-shaped frame in the same manner as heretofore described. The connecting hinge elements 21' which secure the back panel in position and the rear legs 12' to the front legs 10' are desirably of heavier gauge metal. The front portions of these hinge elements are curled around the opposite sides or legs of the U-shaped frame and secured thereto by means of rivets 24' passing through the tubing of the frame and through the hinge elements at both sides of the tubing. Only the outer portions of the hinge elements 21' are extended rearwardly and secured to the rear legs 12' by means of rivets 27'.

It will thus be seen that the invention provides a method and construction resulting in a folding chair having exceptional comfort and eye appeal in addition to features of economy. While but two specific embodiments of the chair have been herein shown and described, it will be understood that details may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

We claim:

1. A folding chair comprising: an inverted U-shaped frame formed of metal tubing having an inwardly facing seam, the legs of said frame constituting the front legs of the chair and the bight of the frame constituting a support for a

chair back panel; a chair back panel having its upper and side borders conforming to the shape of the bight of the frame and engaged in the seam of said frame's bight portion; hinge members comprising metal straps embracing the front and side surfaces of the front legs of the chair and extending rearwardly therefrom; fastening means securing said strap hinge members to the front legs of the chair with the upper edges of said members in abutment with the opposite lower corners of said back panel so as to maintain said panel in assembly with the frame's bight portion; rear legs for the chair having their upper ends pivotally secured to the rearwardly extending portions of said strap hinge members; and a chair seat supported by and between the opposite pairs of front and rear legs.

2. A folding chair comprising: an inverted U-shaped frame formed of metal tubing having an inwardly facing seam, the legs of said frame constituting the front legs of the chair and the bight of the frame constituting a support for a chair back panel; a chair back panel having its upper and side borders conforming to the shape of the bight of the frame and engaged in the seam of said frame's bight portion; hinge members comprising metal straps embracing the front and side surfaces of the front legs of the chair and extending rearwardly therefrom; fastening means passing through the opposite side portions of each metal strap and through the inner seam and outer side wall of the adjacent front leg for securing said strap hinge members to the front legs of the chair with the upper edges of said members in abutment with the opposite lower corners of said back panel so as to maintain said panel in assembly with the frame's bight portion; rear legs for the chair having their upper ends pivotally secured to the rearwardly extending portions of said strap hinge members; and a chair seat supported by and between the opposite pairs of front and rear legs.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,730,916	Cable	Oct. 8, 1929
1,958,042	Hanson	May 8, 1934
2,238,817	Morgan	Apr. 15, 1941
2,381,574	Clarín	Aug. 7, 1945

FOREIGN PATENTS

Number	Country	Date
611,245	France	July 3, 1926