Sept. 17, 1957 F. J. BURST 2,806,515

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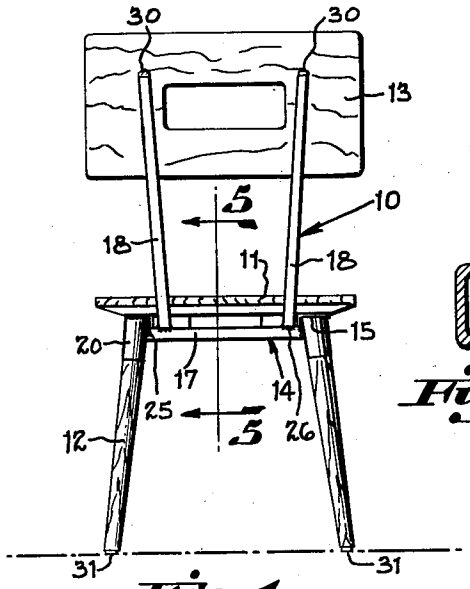

Fig. 1

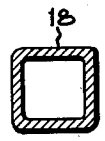

Fig. 6

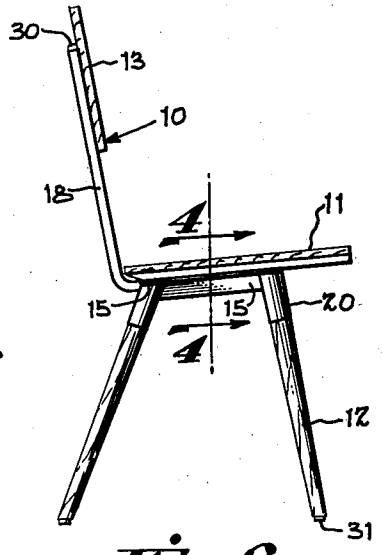

Fig. 2

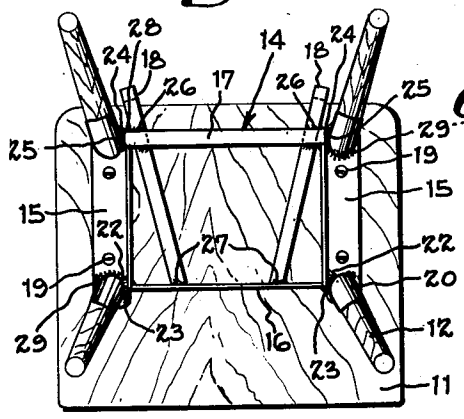

Fig. 3

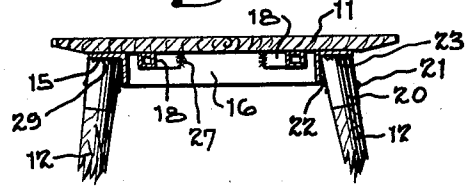

Fig. 4

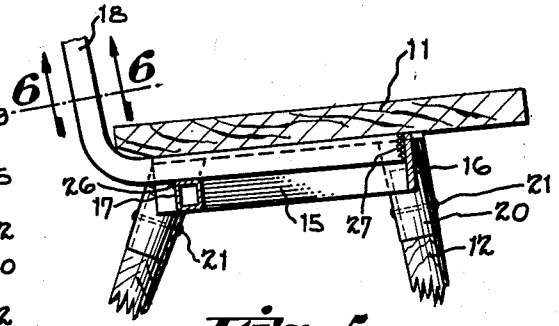

Fig. 5

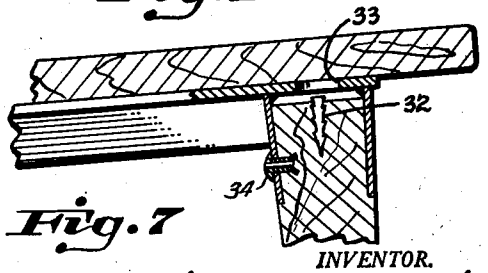

Fig. 7

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This invention relates to furniture and more specifically to chair construction. It is particularly concerned with straight chairs which are intended for use under conditions where they will be subject to very rough handling of a type which the conventional straight chair is not adapted to withstand. One particular environment where straight chairs are subjected to treatment of this sort is in hospitals where conditions require that they be moved about frequently from room to room, stacked in confined spaces when not in use, and subjected to vigorous washings and occasional treatment with disinfectants. There are many other places where chairs of a particularly rugged construction are desirable.

Basically, the purpose of the invention is to provide a straight chair of relatively conventional shape and appearance but one which is so constructed that it will withstand almost any possible abuse to which it can be subjected.

Another object has been to provide a chair which, although it is of particularly strong and rugged construction, occupies a minimum amount of space when in use and readily lends itself to stacking when not in use.

Other objects concern particular features of construction including a novel and unusually effective means for securing the legs to the seat, a novel means for securing the back to the seat, and a particularly effective reinforcing arrangement for the entire chair which, in effect, makes it practically a unitary structure.

Other objects and further advantages will be apparent from the further and more detailed description of the invention when considered in conjunction with the drawings in which Figure 1 is a rear elevational view of a chair constructed in accordance with the preferred embodiment of the invention.

Figure 2 is a side elevational view of the same chair as Figure 1.

Figure 3 is a bottom plan view of the underside of the seat illustrating to some extent the leg construction.

Figure 4 is a sectional view along the line 4—4 Figure 2.

Figure 5 is a sectional view along the line 5—5 Figure 1.

Figure 6 is a sectional view along the line 6—6 Figure 5.

Figure 7 is an enlarged sectional view illustrating the preferred means for anchoring the leg members to the chair.

As shown particularly in Figures 1 and 2, the chair of the invention designated generally at **10**, includes the principal elements of a seat **11**, preferably formed from some hard wood such as oak, legs **12** at each of the four corners of the seat and a back **13**. The legs and back are also preferably, although not necessarily, formed from hard wood.

Secured to the underside of the seat, as best illustrated in Figure 3, is a rectangular frame **14** comprising side rails **15** which are right angular in cross section, a flat front rail **16** vertically disposed with respect to the seat

and a rear rail **17** which is preferably formed of hollow steel tubing rectangular in cross section. A pair of seat and back reinforcing rods **18** extend from the front rail **16**, on top of the rear rail **17**, and are then bent upwardly and spread outwardly to form a support for the back, as clearly illustrated in Figures 1 and 3. These rods are likewise formed preferably from hollow steel tubing which is rectangular in cross section. The entire framework **14** is preferably secured to the underside of the seat by pairs of screws **19** inserted through the horizontal legs of the side rails **15**.

At each corner of the frame **14** are leg receiving sockets **20** secured in each case to the ends of the horizontal legs of the side rails or possibly formed integrally therewith. These sockets, which are adapted to receive the legs **12**, are preferably flared outwardly toward the corresponding corners of the seat in the manner illustrated in Figure 3 particularly. After the legs have been inserted in the sockets, attachment means, such as rivets **21**, are passed through the sockets and legs secured in position as illustrated in Figure 5.

A particular feature of the invention is the manner in which all of the reinforcing elements are secured together, preferably by welding, to form what is in effect an integral bracing unit. The side rails are welded to the front rail as at **22**, and the front rail is also welded to the front leg receiving sockets as at **23**. Similarly, the ends of the rear rail **17** are welded to the rear ends of the side rail as at **24** and to the rear sockets as at **25**. The rods **18** are welded to the rear rail at the points **26**, where they pass over it, and the front ends of these members are welded to the inside of the front rail as at **27**. The rods **18** may also be welded to the side rails as at **28**. The sockets are also preferably continuously welded to the side rails as at **29**, although as previously indicated, these sockets may be formed integrally with the side rails or other attachment means may be employed. The back **13** is preferably secured to the extended upper ends of the rod members **18** by blind rivets (not shown), although in this case also, other types of attachment means may be provided if desired. To neaten the appearance of the structure, plugs **30** may be inserted in the open upper ends of the members **18** (see Figure 1), and buttons **31** may be attached to the ends of each of the legs.

An unusually strong and rigid leg construction results from the attaching means illustrated in Figure 7. As shown in this view the upper end of the leg is slit transversely to receive a metal wedge **32** which serves to expand the upper end of the leg which is within the socket **20**. In assembling the chair, the leg is first fitted into the socket and the wedge then engaged in the transverse slit through an aperture **33** which is cut through the horizontally disposed web of angle iron **15** in alignment with the socket. The wedge, which is preferably serrated as shown in Figure 7, may be driven into place by means of a tool placed through aperture **33** and then one or more expanding rivets of the type shown at **34** employed to lock the leg within the socket.

From the above it will readily be appreciated that a particularly strong and rugged chair has been provided. The reinforcement of the members is such that a strain imparted to any one element, such as the back, seat or legs, is transmitted to and absorbed by the entire structure. The securance of the legs in the sockets in the manner described provides a particularly effective method of supporting chair legs and has the additional advantage that no cross rungs of any kind are required. This greatly facilitates the washing and disinfecting of the structure and makes it possible to store a plurality of units in less space.

The construction is one which readily lends itself to mass production, as aside from the welding and the at-

tachment of the various elements to each other, very little handwork is required.

While the structure, as herein described, constitutes a preferred embodiment of the invention, it will be obvious that various changes may be made without departing from the spirit of the invention or the scope of the appended claims.

Having fully described my invention, I claim:

1. In a heavy duty straight chair having a seat with a flat undersurface and a separate backrest, the improvement comprising a rectangular metal frame having two side pieces presenting planar supporting surfaces to the undersurface of said seat, two tubular rods which are substantially L-shaped to provide vertical portions and horizontal portions, the horizontal portions of the two L-shaped rods being disposed between the side pieces of the frame and being welded to the front and to the back of the frame for mutual reinforcement, and the horizontal portions of said L-shaped rods having uppersurfaces which are in the plane of the planar surfaces of the side pieces of the frame to provide supports for the seat intermediate the side pieces of said frame.

2. In a heavy duty chair having a wooden seat with a flat undersurface and a separate backrest, the improvement comprising a rectangular frame, said frame having side pieces which present flat surfaces to the underside of said seat with means being provided to secure the seat to said side pieces, backrest supporting means consisting of two L-shaped members, the horizontal legs of said members being rigidly secured to the front of the rectangular frame and to the back of the rectangular frame, the vertical legs of said members extending up at the back of the seat to receive said backrest, and the uppersurfaces of the horizontal legs of the L-shaped members presenting seat supporting surfaces to the undersurface of said seat intermediate the two side members of the rectangular frame.

3. In a heavy duty chair having a seat with a flat undersurface, a separate backrest and four legs, the improvement comprising a rectangular metal frame having two side members each of which is right angular in cross section to provide a horizontal flange and a vertical flange, said side members disposed with the horizontal flanges thereof extending outwardly from the sides of the frame to present planar surfaces to the undersurface of said seat, a metal leg receiving socket welded to each corner of the rectangular frame with the upper end of the socket in engagement with the underside of the horizontal flange of the side member and with the side of said socket welded to the vertical flange thereof for mutual reinforcement, backrest supporting members each of which is L-shaped to provide a vertical leg and a horizontal leg, the respective horizontal legs of the backrest supporting members being welded to the front of the rectangular frame and to the back of the rectangular frame and presenting uppersurfaces in the plane of the uppersurfaces of the two horizontal flanges at the sides of the frame, whereby the seat is supported by the sides of the frame and by the horizontal legs of the backrest members intermediate the sides of the frame.

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