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STACKING CHAIR

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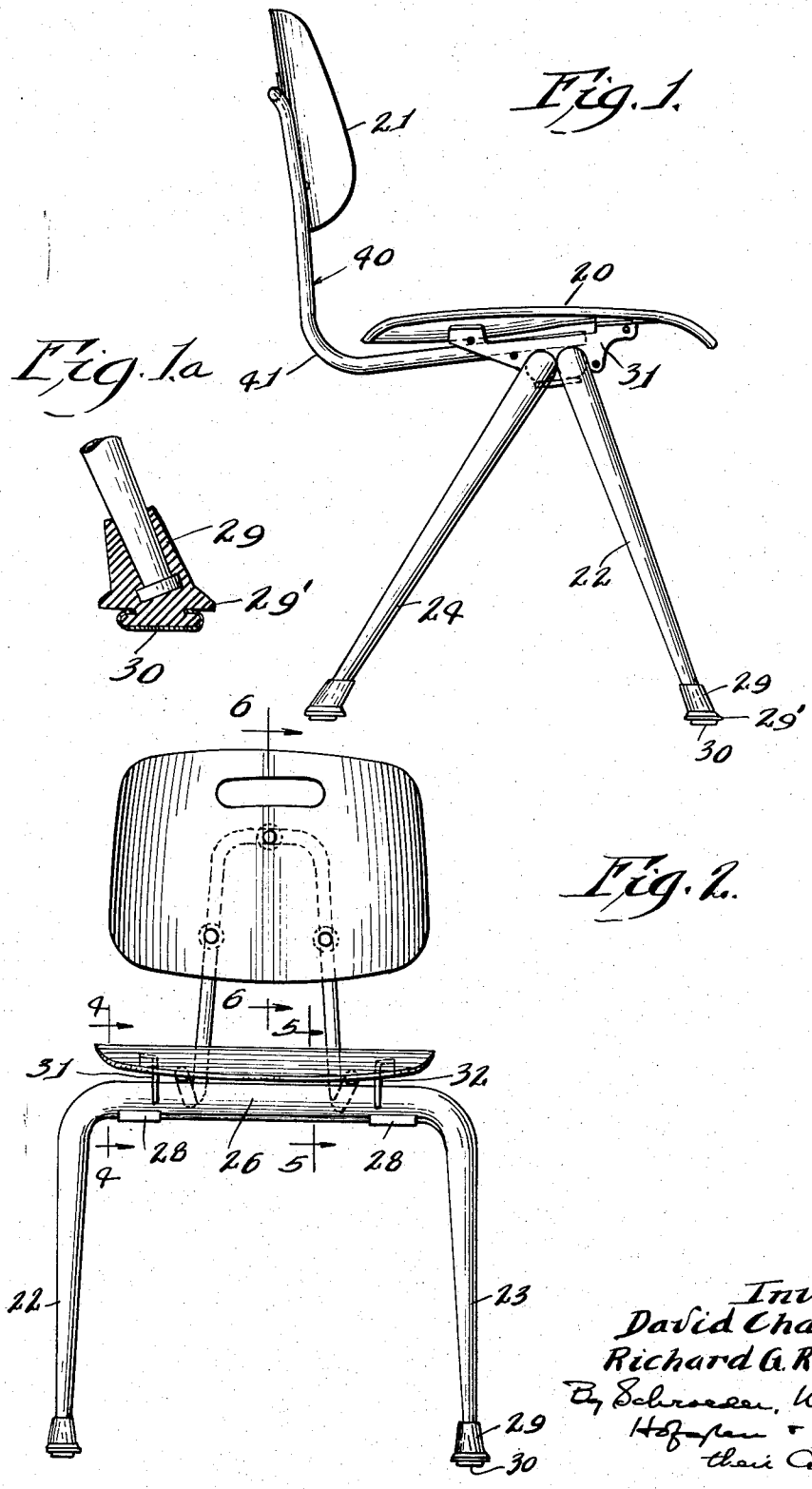


Fig. 1.

Fig. 1a

Fig. 2.

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Fig. 3.

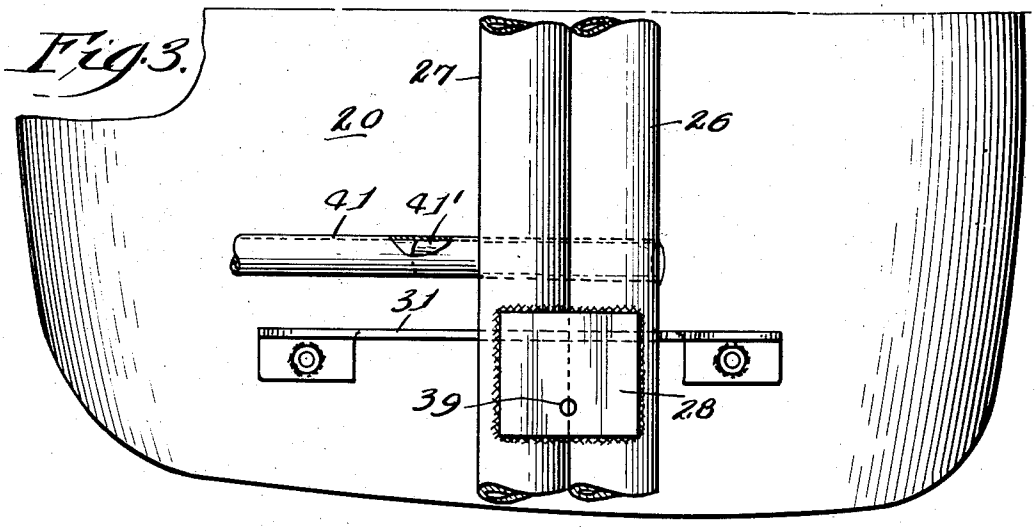


Fig. 4.

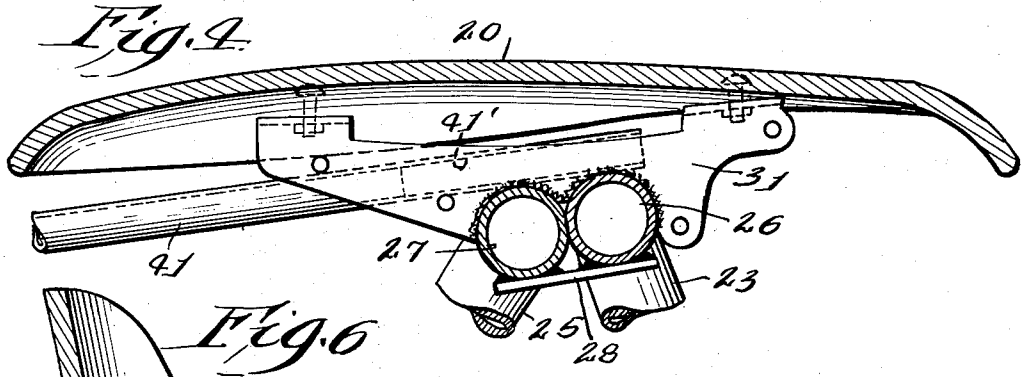


Fig. 6

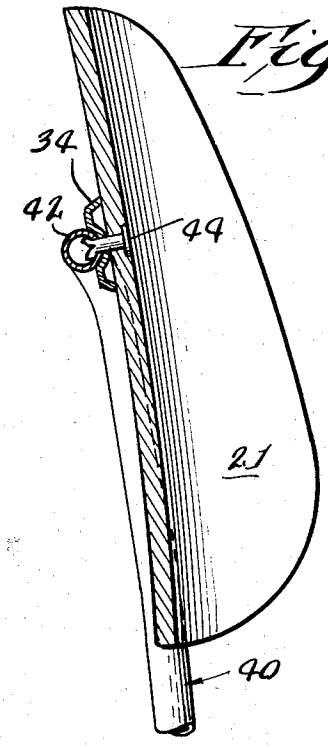
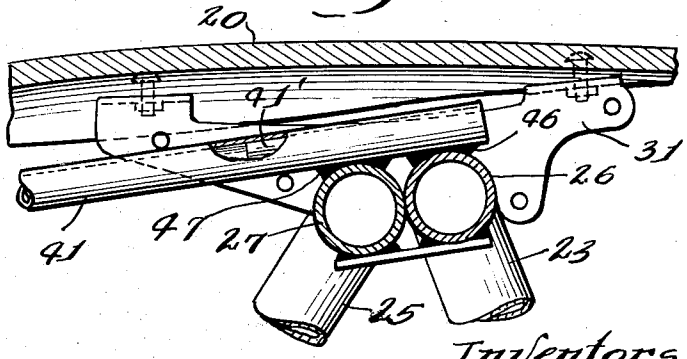


Fig. 5.



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Fig. 7.

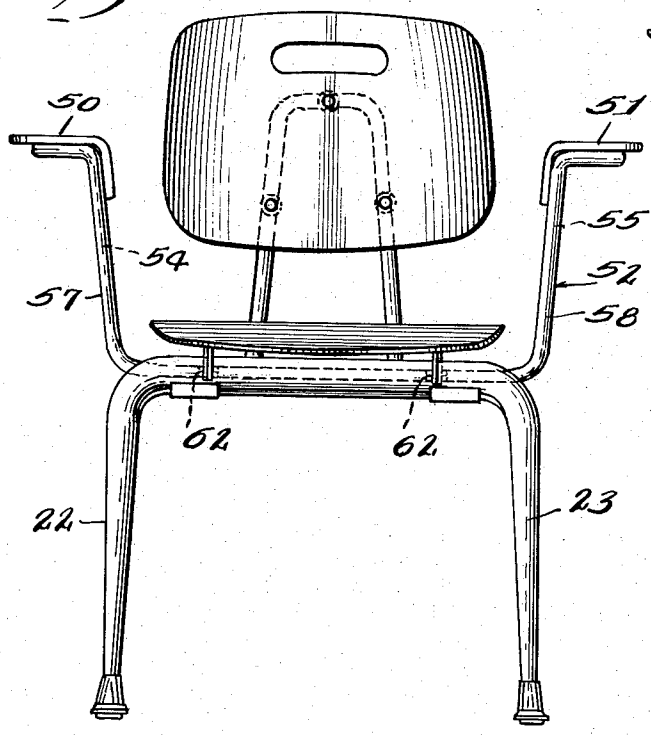
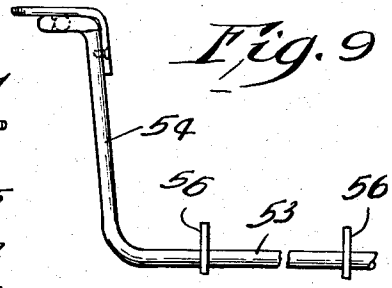


Fig. 9



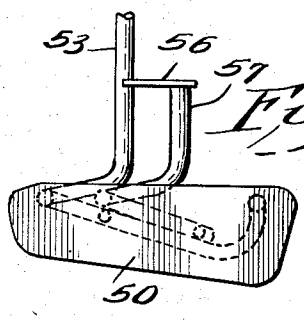


Fig. 10

Fig. 8

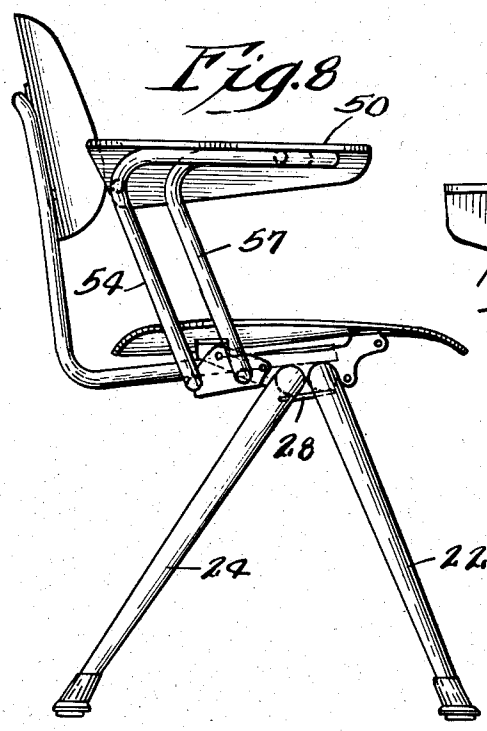


Fig. 11.

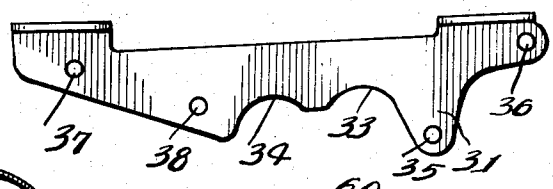
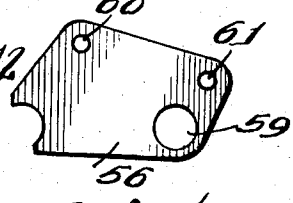


Fig. 12.



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Fig. 13.

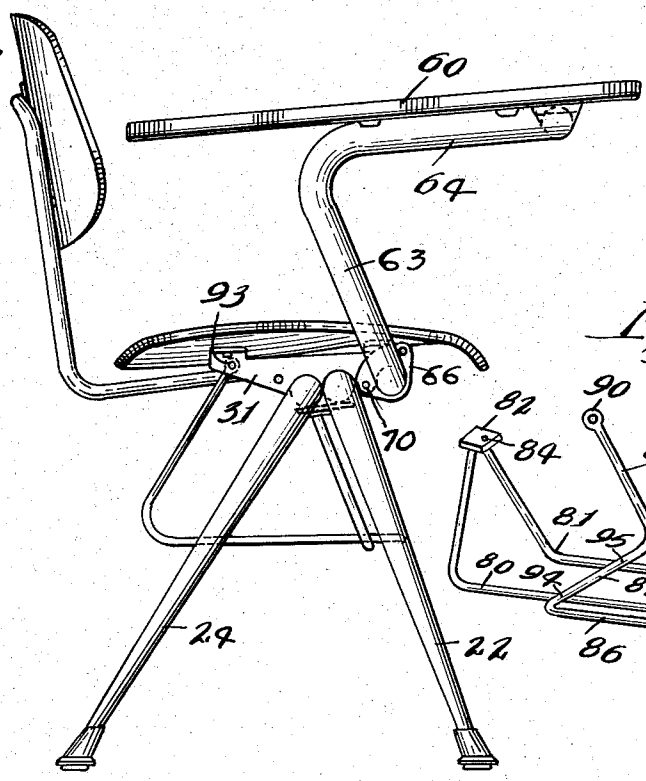


Fig. 17.

Fig. 14.

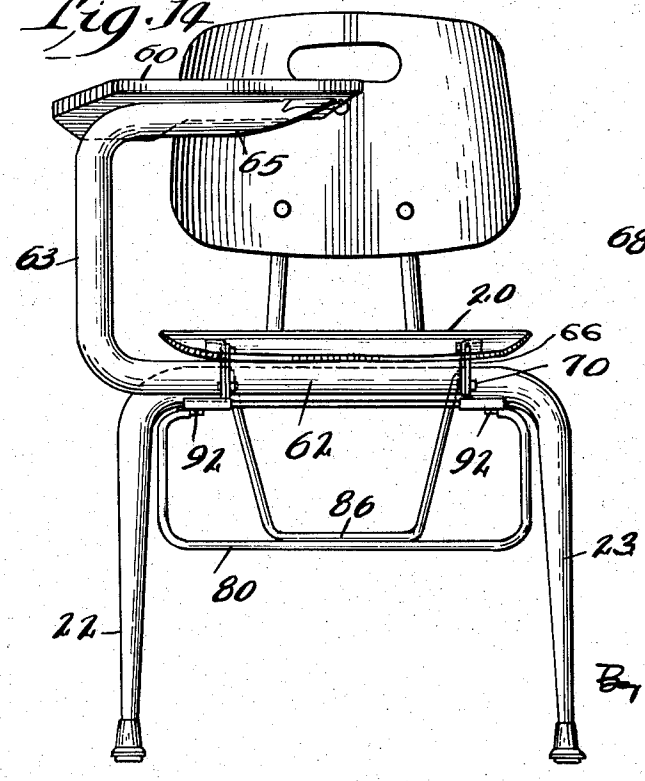
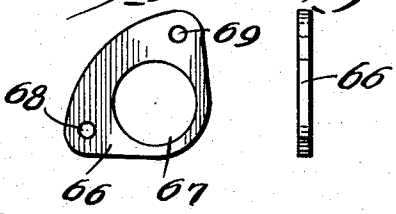


Fig. 15 Fig. 16.



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STACKING CHAIR

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Application February 13, 1953, Serial No. 336,771

12 Claims. (Cl. 155—194)

It is the general object of the invention to provide a new and improved chair.

More particularly the invention relates to a chair suitable for school and other uses.

Another object is to provide a chair so constructed that a number of similar chairs may be stacked one upon the other for storage purposes.

Another object is to provide such a chair wherein the legs are formed of a pair of U-shaped members positioned with their cross parts together and the legs extending chevron like therefrom at points beyond the sides of the seat.

Another object is to provide a chair having a seat, a back, a supporting leg structure comprising a pair of U-shaped tubular members with the cross parts thereof secured together and the leg portions extending downwardly and apart, means for securing the seat directly to said cross parts and independent means for supporting the back from said cross parts.

Another object is to provide such a chair having a pair of brackets secured to the underside of the seat in laterally spaced parallel relation and fastened to the seat and to the leg members and having portions adapted for the attachment of accessories such as arm rests and book shelves.

A further object is to provide such a chair with a new and improved arm rest structure and means for detachably securing it to the seat brackets.

Other objects will become readily apparent from the following detailed description taken in connection with the accompanying drawings in which:

Fig. 1 is a side elevational view of the preferred form of the invention;

Fig. 1*a* is an enlarged fragmentary section through the lower end of a chair leg;

Fig. 2 is a front elevational view of the chair in Fig. 1;

Fig. 3 is an enlarged fragmentary view looking up at the seat of the chair;

Fig. 4 is an enlarged sectional view along the line 4—4 of Fig. 2;

Fig. 5 is an enlarged fragmentary sectional view along the line 5—5 of Fig. 2;

Fig. 6 is an enlarged fragmentary sectional view along the line 6—6 of Fig. 2;

Fig. 7 is a front elevational view of the invention embodying arm rests;

Fig. 8 is a side elevational view looking at the left hand side of Fig. 7;

Fig. 9 is a fragmentary view of the arm rest structure;

Fig. 10 is a fragmentary view of the arm rest structure looking at the top of the nearest arm rest of Fig. 8;

Fig. 11 is an enlarged side elevational view of a seat bracket;

Fig. 12 is an enlarged elevational view of an arm rest mounting bracket;

Fig. 13 is a side elevational view of a chair embodying a tablet arm rest;

Fig. 14 is a front elevational view thereof;

Fig. 15 is an enlarged elevational view of a mounting bracket;

Fig. 16 is an edge view thereof;

Fig. 17 is a perspective view of a book shelf when detached from the chair.

While we have illustrated in the drawings and shall herein describe in detail a prepared form of the invention together with modifications thereof the invention is not to be limited to the particular forms shown. The scope of the invention will be pointed out in the appended claims.

As illustrated in Figs. 1 to 6 the invention is embodied in a chair having a seat **20**, a back **21** and legs **22**, **23**, **24**, and **25**. The legs are formed of two U-shaped tubular metal leg members having cross parts **26** and **27** extending transversely under the seat and secured together so that the tapered leg portions thereof diverge downwardly to the front and rear from the cross parts and, as shown best in Fig. 2, at points beyond the side edges of the seat so that the legs of one chair may straddle the seat of a lower chair when a plurality of chairs are stacked. The cross parts are preferably welded together and further secured together by means of plates **28** which are welded thereto in laterally spaced relationship as shown in Fig. 2. The bottoms of the legs are preferably equipped with tapered rubber members **29** as shown in Figs. 1, 1*a* and 2 which members have metal inserts **30** to facilitate sliding the chair on a floor. An annular projection **29'** serves as a bumper to prevent the metal legs of one chair from marring the finish on the legs of another when they are stacked together.

As illustrated in the drawings the seat **20** is of relatively thin plywood formed to a desired shape. A pair of seat brackets **31**, **32** are secured to the underside of the seat in laterally spaced parallel relation and extending in a front to rear direction, by means of bolts, rivets or other attaching devices. These brackets, as shown most clearly in Fig. 11, have cut out portions **33** and **34** so that they fit closely over the cross parts **26** and **27** of the leg members, thereby facilitating welding of the seat brackets to said cross parts. The forward or right hand portion of the bracket shown in Fig. 11 is provided with bolt holes **35** and **36** and the left hand portion is provided with bolt holes **37** and **38** to facilitate the attachment of accessory members such as arm rests and book shelves. For this purpose the plates **28**, as shown most clearly in Fig. 3 are provided with a tapped hole **39**.

The back **21** is also preferably of plywood formed to a desired shape and is formed by means of a somewhat U-shaped tubular member **40**, the legs of which have a substantially right angle bend **41** therein (Fig. 1). The upstanding portions of the legs together with the cross part **42** of this member are secured to the back **21** by means of washers **43** and rivets **44** as shown most clearly in Figs. 2 and 6. These rivets are shown of a type that may be expanded after they are inserted through the back and washer and into an opening in the tubular member. The other ends of the legs of the supporting member are preferably filled with plugs **41'** and secured directly to the cross parts of **26** and **27** as by welding at **46** and **47**, as shown in Fig. 5. Thus it will be seen that the back is supported from the leg members independently of the seat and its supporting brackets **31** and **32**.

The basic chair illustrated in Figs. 7 to 12 is similar to that of Figs. 1 to 6. In addition however, it is equipped with arm rests of a construction which may be added to the basic chair and, may be removed therefrom. The arm rests, numbered **50** and **51**, may be of formed plywood or other suitable material and are secured to the opposite ends of a U-shaped tubular member **52** which, when the arm rests are installed, has its cross part **53** extending transversely under the seat and the arm por-

tions 54 and 55 extending upwardly as shown in Figs. 7, 8, and 9. A pair of mounting brackets 56 are secured to the cross part 53 by welding and are spaced apart thereon a distance enabling them to lie alongside the seat brackets 31, 32 when the arm rests are in their normal installed position. Preferably supplemental supporting members 57 and 58 extend from the mounting brackets 56 to the arm rests 50 and 51 as shown in Figs. 7 and 8, the lower ends of the members being fitted into openings 59 in the mounting brackets 56 and suitably welded to said brackets. The mounting brackets, as shown best in Fig. 12, are provided with bolt holes 60 and 61 so located that when the mounting brackets 56 lie alongside the rear portions of the seat brackets 31, 32 the bolt holes 60 register with holes 37 and holes 61 register with holes 38. Suitable bolts or other attaching devices 62 are provided to secure the mounting brackets to the seat brackets.

In the form shown in Figs. 13 and 14 there is added to the basic chair of Figs. 1 to 6, a tablet arm structure and a book shelf. The tablet arm structure is shown attached to the forward portion of the seat brackets 31, 32 whereas the book shelf is shown attached partly to the plates 28 and partly to the rear portions of the seat brackets.

The tablet arm consists of a tablet 60 supported by means of a somewhat U-shaped tubular member having a lower leg 62 thereof extending horizontally under the seat 20 and parallel to and in front of the cross part 26 of the front leg member. The connecting portion 63 of the member 62 extends upwardly as shown in Figs. 13 and 14 whereas the other leg portion of the member has a forwardly extending part 64 and a transversely extending part 65 both located under and secured to the tablet 60 by suitable screws or other devices. The part 62 of the tubular member has a pair of mounting brackets 66 secured thereto and spaced apart a distance enabling them to lie alongside the seat brackets 31, 32 when the arm structure is in its normal installed position as shown in the drawings. The brackets 66 are preferably shaped as shown in Figs. 15 and 16, having openings 67 through which the tubular member 62 extends and bolt holes 68 and 69 which register with the seat bracket bolt holes 35, 36 respectively. Suitable bolts 70 are used to secure the arm structure in position by fastening the mounting brackets 66 to the seat brackets.

When desired, the basic chair structure may also be equipped with a book shelf as shown in Figs. 13, 14 and 17. As illustrated, the book shelf is made of metal rod members. As shown best in Fig. 17, a pair of U-shaped members 80 and 81 have their opposite ends secured to supporting brackets 82 and 83 which have bolt openings 84 and 85 arranged to register with the tapped holes 39 (Fig. 3) in the plates 28. Another U-shaped member has a cross part 86 and leg members 87 which extend rearwardly over the cross parts of the members 80 and 81 and are then bent upwardly at 88 so that portions 89 thereof form a rear guard for the shelf structure. The opposite ends of the portions 89 have openings 90 and 91 respectively arranged to register with the holes 37 in the seat brackets. Suitable screw devices 92 are provided for attaching the supporting brackets 82 to the plates 28 and bolts 93 are provided to secure the upper ends of rod portions 89 to the seat brackets. To reinforce the structure the parts are preferably welded together at the points where the members intersect, indicated at 94 and 95 in Fig. 17.

We claim:

1. A chair having, in combination, a formed plywood seat, a formed plywood back, two U-shaped tubular metal leg members with the cross parts thereof placed alongside each other and secured together and positioned under said seat and transversely thereof with the legs tapered to their ends and extending downwardly beyond the side edges of the seat in chevron fashion to positions to the front and rear of said cross parts, a pair of brackets secured to the underside of the seat in laterally spaced parallel relation and also secured to said cross parts of the leg members for supporting the seat on the leg members, and a U-shaped tubular member secured to the back and to the cross parts of the leg members for supporting the back on the leg members independently of the seat.

2. A chair having, in combination, a seat, a back, two U-shaped leg members with the cross parts thereof placed alongside each other and positioned under said seat and transversely thereof with the legs extending beyond the side edges of the seat and downwardly in chevron fashion to positions to the front and rear of said cross parts, means for rigidly connecting said cross parts together, a pair of brackets secured to the underside of the seat in laterally spaced parallel relation and also secured to said cross parts of the leg members for supporting the seat on the leg members and a member secured to the back and to the cross parts of the leg members for supporting the back on the leg members independently of the seat.

3. A chair having, in combination, a seat, a back, two U-shaped leg members with the cross parts thereof placed alongside each other and secured together and positioned under said seat with the legs extending downwardly in chevron fashion, and a pair of brackets secured to the underside of the seat in laterally spaced parallel relationship and also secured to said cross parts of the leg members for supporting the seat on the leg members.

4. A chair having, in combination, a seat, a back, two U-shaped tubular metal leg members with the cross parts thereof placed alongside each other and secured together and positioned under said seat and transversely thereof with legs extending downwardly beyond the side edges of the seat in chevron fashion, means secured to the underside of the seat and also to said cross parts of the leg members for supporting the seat on the leg members and means secured to the back and to the cross parts of the leg members for supporting the back on the leg members independently of the seat.

5. A chair having, in combination, a seat, a back and two U-shaped tubular metal leg members with the cross parts thereof placed alongside each other and secured together and positioned under said seat and transversely thereof with legs extending downwardly beyond the side edges of the seat to positions to the front and rear of said cross parts.

6. A chair having, in combination, a seat, a back and two U-shaped tubular metal leg members with the cross parts thereof placed alongside each other and secured together to form an integral leg structure and positioned under said seat and transversely thereof with legs extending downwardly in chevron fashion.

7. A chair as defined in claim 1 having a pair of arm rests, a U-shaped member having end portions secured to the undersides of said arm rests, a pair of mounting brackets secured to the cross part thereof and spaced apart a distance enabling them to lie alongside the seat brackets when the arm rests are in normal position, and means for securing said mounting brackets to said seat brackets.

8. A chair as defined in claim 1 having an arm rest and means supporting said arm rest from said seat brackets comprising a U-shaped member having a pair of mounting brackets on one leg thereof and spaced apart a distance enabling them to lie alongside the seat brackets when the arm rest is in normal position, and means for securing said mounting brackets to said seat brackets.

9. A chair as defined in claim 1 having a pair of metal plates secured in spaced apart relation to the underside of said leg members, a book shelf structure suspended beneath said seat and means for securing said book shelf structure to said plates and to the seat brackets.

10. A chair as defined in claim 3 having a pair of arm rests, a U-shaped member having end portions secured to the undersides of said arm rests, a pair of mounting

brackets secured to the cross part thereof and spaced apart a distance enabling them to lie alongside the seat brackets when the arm rests are in normal position, and means for securing said mounting brackets to said seat brackets.

11. A chair as defined in claim 3 having an arm rest and means supporting said arm rest from said seat brackets comprising a U-shaped member having a pair of mounting brackets on one leg thereof and spaced apart a distance enabling them to lie alongside the seat brackets when the arm rest is in normal position, and means for securing said mounting brackets to said seat brackets.

12. A chair as defined in claim 3 having a pair of metal plates secured in spaced apart relation to the underside of said leg members, a book shelf structure suspended beneath said seat and means for securing said book shelf structure to said plates and to the seat brackets.

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