Dec. 26, 1939. V. A. R. PRIMAVERA 2,184,470

NESTING CHAIRS

Filed Nov. 1, 1937 2 Sheets-Sheet 1

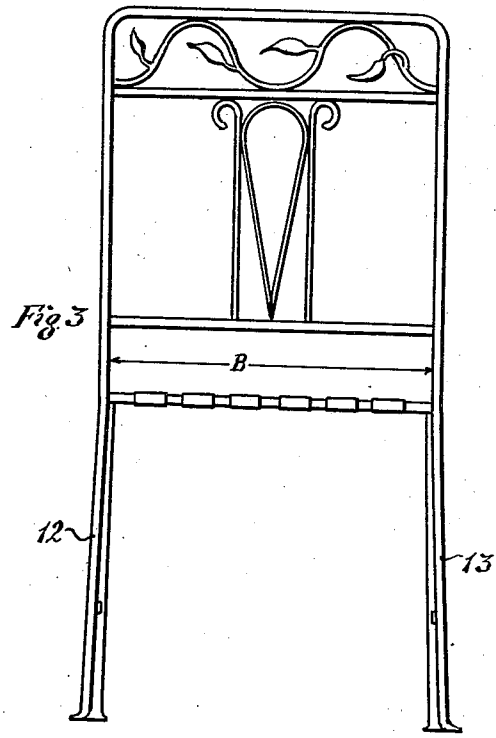


Fig. 3

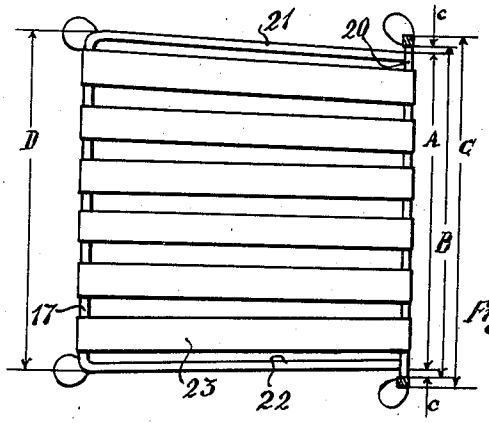


Fig. 4

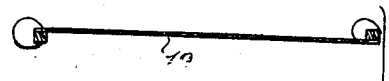


Fig. 5

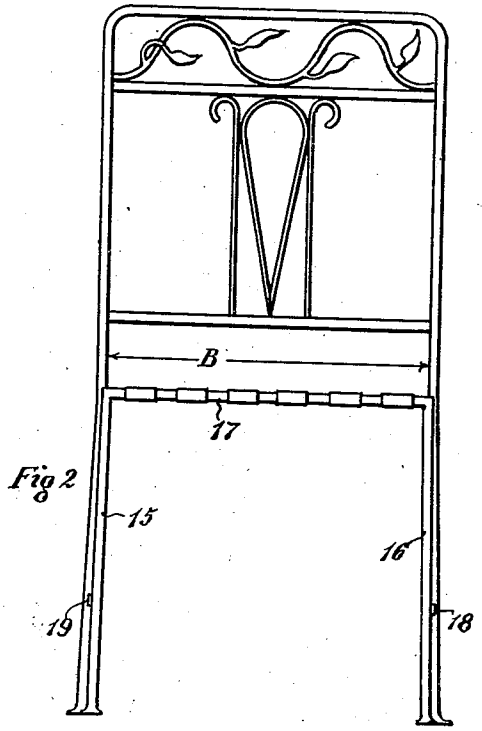


Fig. 2

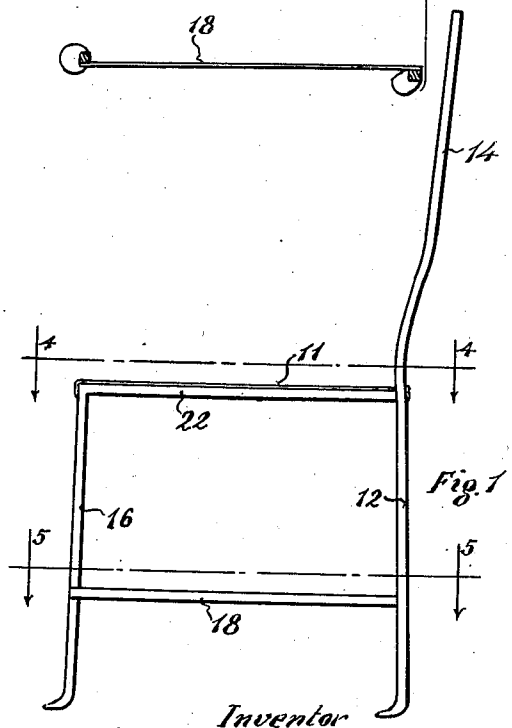


Fig. 1

Inventor
Vincent A.R. Primavera
by Guido M. Falcetta Attorney

Dec. 26, 1939. V. A. R. PRIMAVERA 2,184,470

NESTING CHAIRS

Filed Nov. 1, 1937 2 Sheets-Sheet 2

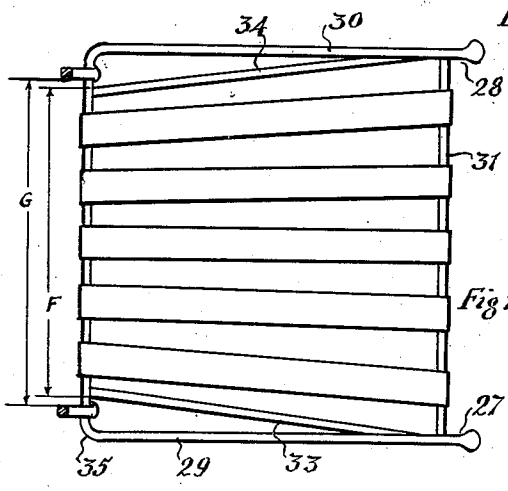


Fig. 10

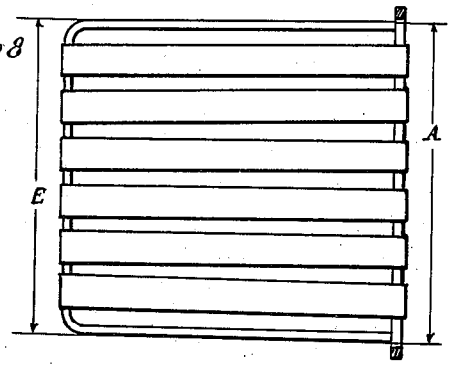
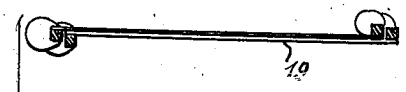


Fig. 8



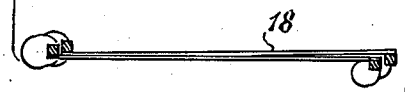


Fig. 7

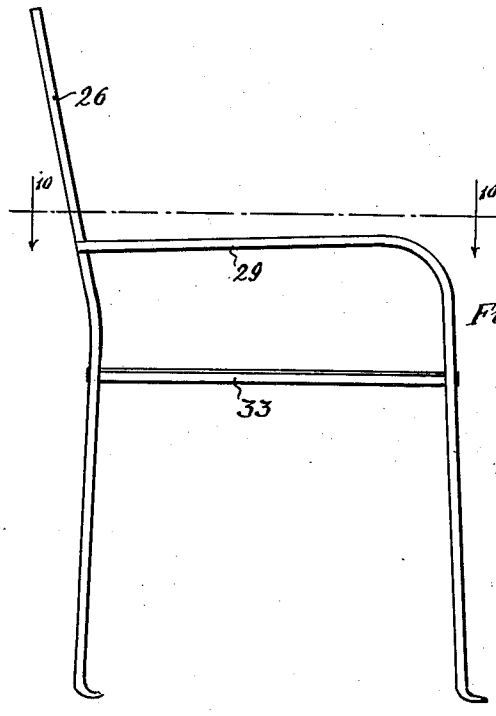


Fig. 9

Fig. 6

Inventor
Vincent A. R. Primavera
by Guido di Sacerdote Attorney

Patented Dec. 26, 1939

2,184,470

UNITED STATES PATENT OFFICE

2,184,470

NESTING CHAIRS

Vincent A. R. Primavera, Brooklyn, N. Y.

Application November 1, 1937, Serial No. 172,202

4 Claims. (Cl. 155—2)

This invention relates to furniture and more particularly refers to improvements in chairs of the non-collapsible type.

Non-collapsible chairs, that is, chairs consisting of a rigid frame cannot as a rule be arranged in a nested relation to one another unless the chairs composing a set are made in dimensions gradually increasing from a minimum to a maximum.

The primary object of this invention is to provide a chair of a novel and improved construction adapted to be arranged in nested relation with one or more chairs of exactly the same construction, having the same dimensions.

Another object is to provide a novel and improved type of nesting chair adapted to be easily arranged in nested relation with other similar chairs or to be set up independently of them, said chair possessing all the strength and rigidity of an ordinary chair.

A further object is to provide a nesting chair of the character specified having a seat wider at the front than at the rear as is customary in chairs of the usual type.

A still further object is to provide a chair of the character specified adapted to be arranged in nested relation with other similar chairs in spite of the fact that all the said chairs are provided with side arms or elbow rests.

Other objects and advantages of the present invention will more fully appear as the description proceeds and will be set forth and claimed in the appended claims.

My invention is illustrated by way of example in the accompanying drawings in which:

Fig. 1 is a side view in elevation of a chair embodying my invention;

Fig. 2 is a front view in elevation thereof;

Fig. 3 is a rear view in elevation thereof;

Fig. 4 is a horizontal section taken through line 4—4 of Fig. 2;

Fig. 5 is a horizontal section taken through line 5—5 of Fig. 1;

Fig. 6 is a side view in elevation of two chairs such as shown in the preceding figures arranged in a nested relation to each other;

Fig. 7 is a horizontal section through line 7—7 of Fig. 6;

Fig. 8 is a horizontal section similar to that of Fig. 4 illustrating a modified type of chair also embodying my invention;

Fig. 9 is a side view in elevation of an arm chair embodying my invention; and

Fig. 10 is a horizontal section through line 10—10 of Fig. 9.

For various reasons it is very desirable to produce a chair possessed of sufficient rigidity so that it will stand ordinary and even severe service, adapted to be stacked in nesting relation with other similar chairs without sacrificing any of its usefulness or comfort. The nesting of chairs, tables and similar articles of furniture makes it possible to pack or store a number of the articles in a relatively small space, such packing or storing being particularly advantageous for shipping and other purposes.

However, as stated, heretofore nesting articles of the character to which this invention refers have been made in sets comprising a given number of chairs or tables fitting one within the other so that their dimensions vary from a minimum to a maximum.

A chair should preferably be of the proper dimensions, insuring a comfortable and restful posture, and therefore it is of advantage that all the chairs used be of the same right dimensions. The main characteristic of my invention is that the special construction of chair that I will here describe makes it possible to arrange in nesting arrangement a number of chairs of identical dimensions.

The chair illustrated in Figs. 1 to 7, comprises a seat 11, two rear legs 12, 13 extending upwardly to form a back 14, two front legs 15, 16 supporting the front end 17 of the seat frame and preferably two side reinforcing bars 18, 19. Besides the front member 17, the seat frame comprises a rear cross member 20 extending between the two rear legs 12, 13 and two side bars or members 21, 22 extending between front member 17 and rear member 20.

The seat frame should, of course, be equipped with a seat proper, the seat in the case illustrated being constituted by a series of laterally spaced flat bands 23 extending between the front and rear member. The chair illustrated in these figures is of the usual type where the seat is somewhat wider at the front than at the rear and the stacking of a number of chairs is accomplished by vertical movement of the upper chair with respect to the one directly underneath.

In order to make this maneuver possible, it is necessary that the rear legs and side bars of the chair above clear the seat of the chair underneath. To this end, I make the distance at the rear between the outer surface of the two side bars 21—22 of the seat frame, somewhat less than the distance between the inner surfaces of the rear legs.

Thus for instance, by referring to Fig. 4 it

will be seen that the distance A between the two outer surfaces of side seat frame members 21, 22 at the rear is less than the distance B between the inner surfaces of the two rear legs, the resulting difference at each side being designated by *c* so that the distance B is equal to A+2*c*. The clearance *c* which need not be more than about $\frac{3}{16}$ to $\frac{1}{4}$" is provided in order to insure an easy insertion and removal of a chair from a nested group and also in order to prevent scratches and marks by one chair rubbing against another.

When two chairs are in superimposed nesting relation as shown in Fig. 6, it is seen that the side bars of the upper chair remain above the side bars of the lower chair. However, it is necessary for the rear legs of the upper chair to clear the rear end of the side bars of the lower chair and therefore the rear end of each side bar is shown abutting against the inner surface of the corresponding rear leg.

Thus it is seen that the clearance *c* between the outer surface of each side seat frame member at the rear and the inner surface of the corresponding rear leg, also serves to permit the free passage of the rear end of the corresponding side bar of a chair nesting over it, the thickness of said side bar being naturally not more and preferably somewhat less than the width of said clearance.

It is also necessary for the side bars of the upper chair to clear the sides of the seat of the lower chair and therefore the front end of each side bar is shown abutting against the outer surface of the corresponding front leg. Both the front and rear legs are preferably somewhat spread apart from the seat toward the floor in order to improve the appearance and stability of the chair, and this feature also makes it easier to place one chair on top of another.

By virtue of this construction a number of chairs can be arranged in nesting relation to one another without appreciably increasing the cubic space occupied by a single chair both in a vertical and a horizontal direction.

As previously stated, the chair illustrated in Figs. 1 to 7 has a seat wider at the front than at the rear as is customary in chairs of ordinary design, the reason being that a more comfortable seat is thus provided; however such a construction makes it necessary, in order to arrange a number of chairs in nesting relation, to lift each chair far enough from the floor so that the lower end of its legs will clear the top of the seat of the upper chair in the group or chair directly underneath.

It may at times be preferable to avoid such a necessity and the labor that the lifting of the chairs entail. In such cases, the construction shown in Fig. 8 may be adopted.

The seat of the chair illustrated in said figure is narrower at the front than at the rear so that if the distance between the outer surface of the two side seat frame members at the rear corresponds to the distance A shown in Fig. 4, the distance E between the two outer surfaces of said seat side frame members at the front is somewhat less, so that the seat tapers down somewhat in a frontward direction.

In all other respects the construction of the chair is similar to that previously described and the resulting structure is such that a number of chairs can be arranged in nesting relation either by vertical movement or by sliding each chair on or off the other chairs in a horizontal front to rear direction. Such a construction only requires the lifting of each chair to a point where the lower surface of its seat frame clears the upper surface of the seat of the chair upon which it is to be placed.

It is obvious that although the side bar members 18, 19, have their rear end abutting against the inner surface of the adjoining rear leg in order to clear the rear legs of the chair immediately above, a similar action could also be provided if the rear end of said side bar members were offset from the adjoining rear leg in an outward direction.

An arrangement of this type is shown in Figs. 9, 10, not in connection with the side bar members but in connection with the arms of an arm chair also embodying my invention. Said arm chair comprises two rear legs 24, 25, upwardly extending from the seat of the chair to form a back 26 and two front legs 27, 28 upwardly extending beyond the plane of the seat and bent rearwardly to form the arms 29, 30 of the chair, the rear end of each arm being joined to the adjoining side of the back.

Like in the previous case, the seat frame comprises a front member 31, a rear member 32 and two side members 33, 34, and the distance F between the outer surfaces of the side seat frame members at the rear is less than the distance G between the inner surfaces of the rear legs, leaving a clearance at each side sufficient to permit the easy passage of the rear legs of a chair to be placed in nesting relation on top of it.

In order to make it possible for said rear legs to clear the side arms of the chair, the rear end of each side arm is bent outwardly from the adjoining upright of the chair back as shown at 35.

The same alternative construction could be used, as stated, in connection with the side bars 18, 19 of the chair previously described.

The chair illustrated in Figs. 9 and 10 is shown without the side bars below the seat because such side bars would be interfered with by the side arms and prevent nesting of one chair with respect to another; furthermore, the side arms already provide the necessary reinforcement for the chair structure. Therefore so far as their reinforcing function is concerned, the side bars 18, 19, and the side arms 29, 30, may be considered equivalent and are so referred to in a generic sense in some of the appended claims.

From the foregoing it will be seen that I provide a useful and novel construction of chair adapted to be arranged in nested relation with other similar chairs without sacrificing any requirement of rigidity and comfort.

Minor constructional details of my invention may vary from those shown without departing from the inventive idea. The drawings should therefore be understood as being intended for illustrative purposes only and not in a limiting sense.

Accordingly, I reserve the right to carry my invention into practice in all those ways and manners which may enter, fairly, into the scope of the appended claims.

I claim:

1. A chair of the character described comprising a seat, two front leg members, two rear leg members, and two side bar members extending between the front and rear leg members at a level lower than that of said seat, the width of said seat at the rear being less than the distance between the inner side surfaces of the rear leg

members so as to permit the rear leg members of a similar chair superimposed in nesting relation thereto with its legs directly in front of and in the same front to rear planes as the leg members of said first mentioned chair, to clear the sides of said seat when said second mentioned chair is placed in or removed from its nesting position, leaving a clearance at each side between said seat and leg members, the rear end of each side bar member abutting the inner surface of the adjoining rear leg member, said clearance being sufficient to allow the passage of said side bar member by vertical movement of the upper with respect to the lower chair, the width of said seat at the front being greater than its width at the rear and being no greater than the distance between the outer surfaces of the front leg members, the distance between the inner surfaces of the rear leg members being less than the distance between the outer surfaces of the front leg members.

2. A chair of the character described comprising a seat, two front leg members, two rear leg members, and two side bar members extending between the front and rear leg members at a level lower than that of said seat, the width of said seat at the rear being less than the distance between the inner side surfaces of the rear leg members so as to permit the rear leg members of a similar chair superimposed in nesting relation thereto with its legs directly in front of and in the same front to rear planes as the leg members of said first mentioned chair, to clear the sides of said seat when said second mentioned chair is placed in or removed from its nesting position, leaving a clearance at each side between said seat and leg members, the rear end of each side bar member abutting the inner surface of the adjoining rear leg member, said clearance being sufficient to allow the passage of said side bar member by vertical movement of the upper with respect to the lower chair, the front end of each side bar member abutting the outer surface of the adjoining front leg member, the width of said seat at the front being greater than its width at the rear and being no greater than the distance between the outer surfaces of the front leg members, the distance between the inner surfaces of the rear leg members being less than the distance between the outer surfaces of the front leg members.

3. A chair of the character described comprising a seat, two front leg members and two rear leg members, the width of said seat at the the rear being less than the distance between the inner side surfaces of the rear leg members so as to permit the rear leg members of a similar chair superimposed in nesting relation thereto with its leg members directly in front of and in the same front to rear planes as the leg members of said first mentioned chair, to clear the sides of said seat when said second mentioned chair is placed in or removed from its nesting position, and two side arm rest members having their rear end outwardly offset with respect to the rear leg members to clear the leg members as well as the seat of said second mentioned chair when said second mentioned chair is placed in or removed from its nesting position by vertical movement with respect to the first mentioned chair, the space under the seat of at least the second chair being entirely free of obstructions so as to permit full nesting of said chair to a position where its seat rests directly upon the seat of the underlying chair.

4. A chair of the character described comprising a seat, two front leg members and two rear leg members, the width of said seat at the rear being less than the distance between the inner side surfaces of the rear leg members so as to permit the rear leg members of a similar chair superimposed in nesting relation thereto with its leg members directly in front of and in the same front to rear planes as the leg members of said first mentioned chair, to clear the sides of said seat when said second mentioned chair is placed in or removed from its nesting position, the upper end of each front leg member above the seat being bent rearwardly to form a side arm member joined at the rear to the adjoining rear leg member, the two rear leg members rising above the level of the seat to form a back for said chair, the rear end of each side arm member being laterally offset from the adjoining leg member so as to clear the corresponding rear leg member of said second mentioned chair, when said second mentioned chair is placed in or removed from its nesting position by vertical movement with respect to the first mentioned chair.

VINCENT A. R. PRIMAVERA.