Feb. 24, 1959 M. J. SMITH 2,874,755

NESTING CHAIRS

Filed May 2, 1955 2 Sheets-Sheet 1

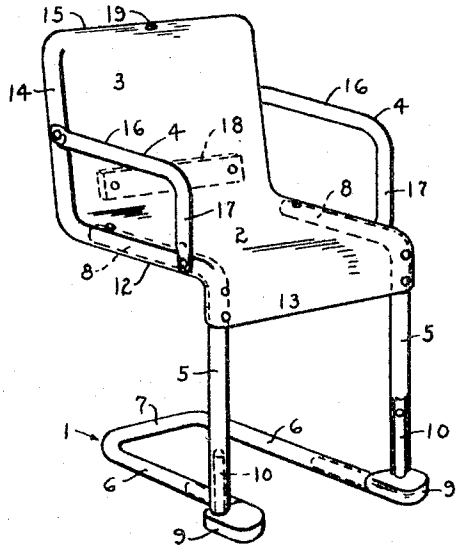


Fig.-1

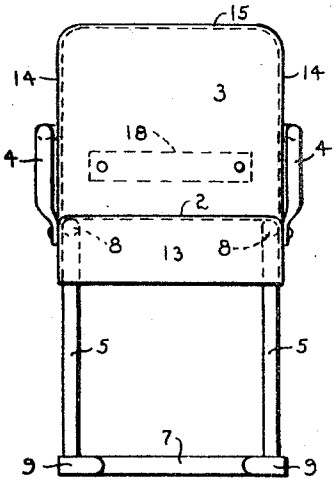


Fig.-2

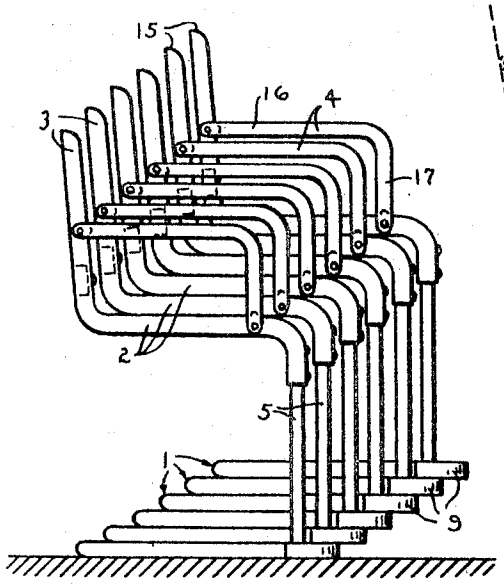


Fig.-3

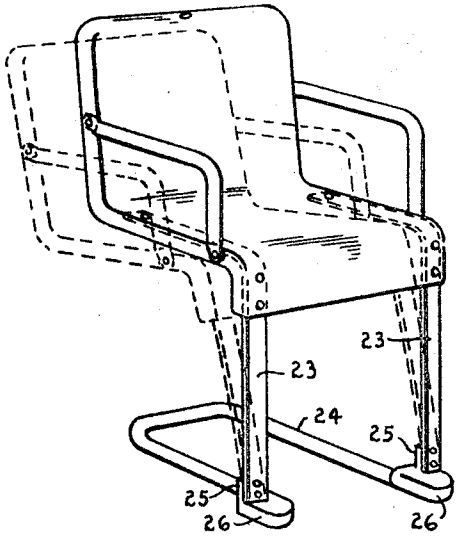


Fig.-4

INVENTOR.
MARION J. SMITH

BY Charles S. Pennfold
ATTORNEY

Feb. 24, 1959 M. J. SMITH 2,874,755

NESTING CHAIRS

Filed May 2, 1955 2 Sheets-Sheet 2

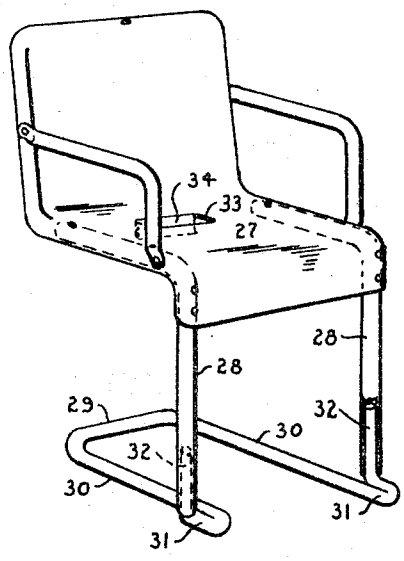


Fig.-5

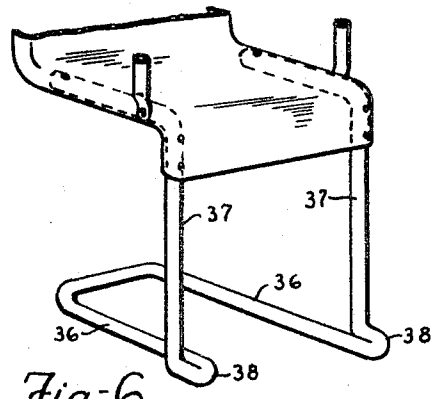


Fig.-6

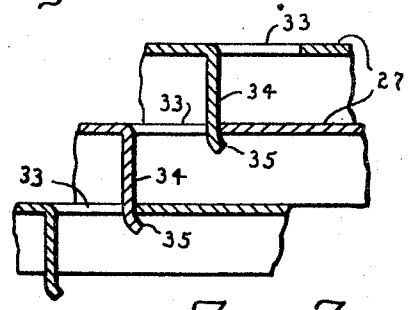


Fig.-7

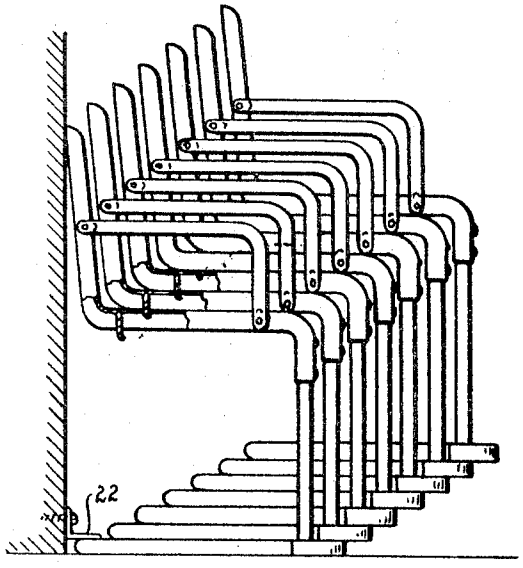


Fig.-8

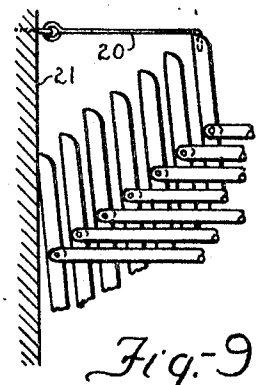


Fig.-9

INVENTOR.
MARION J. SMITH
BY Charles S. Penfold
ATTORNEY

United States Patent Office 2,874,755 Patented Feb. 24, 1959

2,874,755

NESTING CHAIRS

Marion J. Smith, Columbia City, Ind.

Application May 2, 1955, Serial No. 505,179

4 Claims. (Cl. 155—2)

The invention relates generally to furniture and more particularly is directed to improvements in chairs or body supporting structures.

There are a multitude of various kinds or types of chairs in current use. Those of the folding type offer an advantage with respect to storage but those of a rigid character, with which the subject invention is concerned, take up considerable space, and insofar as heretofore known, cannot be nested or interconnected by inserting one chair generally horizontally into substantially within the confines of another to materially reduce space.

With the foregoing in mind, the principal object of the invention is to provide a chair or body support embodying improved principles of design and construction whereby chairs of corresponding shape and size can be easily and quickly stacked in a nesting relationship to facilitate storage and use.

The body supporting structure embodying the subject invention preferably includes, among other things, a base, a seat, and front supports or legs connecting the frontal portions of the base and seat. The invention is primarily directed to making the base of a width or size somewhat less than the distance between the front legs so that the base of one structure can be inserted in a substantially horizontal direction between the legs of an identical or corresponding structure.

As a further objective, the body supporting structure may be provided with a back and arms connecting the back and seat, in which event, the width or size of the seat and back is made less than the distance between the arms so that the seat and back of one structure can be inserted in a substantially horizontal direction between the arms of an identical or corresponding structure. In other words, the base and seat of one chair can be respectively inserted between the legs and arms of another identical chair. These unique principles of design and construction afford a setup whereby corresponding chairs of the rigid type can be readily assembled and disassembled to facilitate storage, shipping and general all around use.

A particular object of the invention is to provide various improved means for joining or connecting the base of a body supporting structure with the front legs which carry the seat.

Another object of the invention is to provide novel means whereby identical body supporting structures can be connected together to prevent their accidental separation when stacked together and in which such means affords an opening for the hand to facilitate lifting of the structure and whereby any water falling on the seat may drain through the opening.

A specific object of the invention is to provide the back of a chair with a weight so as to assist in holding chairs in a stacked relationship.

A further object of the invention is to provide means carried by a wall whereby to assist in holding chairs in a stacked relationship.

Other objects and advantages of the invention will become apparent after the description hereinafter set forth is considered in conjunction with the drawings annexed hereto.

In the drawings:

Figure 1 is a perspective view of one form of a chair embodying the invention;

Figure 2 is an elevational front view of the structure illustrated in Figure 1;

Figure 3 depicts the manner of assembling or stacking chairs of the kind shown in Figures 1 and 2;

Figure 4 is a perspective view of a second form of chair embodying the invention;

Figure 5 is a perspective view of a third form of a chair embodying the invention;

Figure 6 is a perspective view of a portion of a fourth form of a chair embodying the invention;

Figure 7 is a partial sectional view showing the seats of stacked chairs provided with means assisting to hold the chairs in such relationship;

Figure 8 is a view similar to Figure 3 showing a wall provided with a fitting or abutment which serves to assist in holding the chairs in a stacked relationship; and

Figure 9 is a view showing a wall provided with a different form of means which may be employed to hold the chairs in a stacked relationship.

The chair structure exemplified in Figures 1, 2 and 3 of the drawing includes, among other things, a base generally designated 1, a seat 2 provided with a back 3, arms 4 connecting the seat and back, and a pair of supports or legs 5 connecting the seat and base. These components may be designed and constructed in various way and be made from any materials suitable for the purpose.

The base 1 is preferably made from metal tubing or pipe, is generally flat and U-shaped in form, and includes a pair of side rails 6 joined together by a rear cross rail 7. The front legs 5 are also made of tubing and include upper offset rearwardly extending rest portions 8 which carry the seat.

The base 1 and legs 5 may be joined or connected in various ways, and, as shown most clearly in Figure 1, they are connected together by connectors or fittings. Each of the fittings is preferably made of cast metal and includes a relatively flat body 9 provided with an upright cylindrical projection 10 secured in a leg 5 and a similar cylindrical projection 11 which is offset inwardly from the projection 10 and extends rearwardly into a side rail 6. The projections can be press-fitted in the side rails and supports, or other means, such as rivets or welding, can be utilized to effect the connections therebetween. The projections can be cast integrally with the body or may be in the form of rods secured in holes provided in the body. It should be noted that the thickness of the base is substantially the same as the thickness of the fittings in order to locate them in the same plane. The fittings are relatively heavy to promote balance and assist in anchoring the chair in place so there is less likelihood that the chair will overturn on a windy day.

The seat 2 preferably includes depending side flanges 12 and a downturned frontal portion 13 which impart rigidity and strength to the seat. The side flanges and the frontal portion partially conceal the supports and afford means whereby to facilitate connection of the seat to the supports by any suitable means, such as welding, rivets or screws.

The back 3 is similarly provided with rearwardly extending side flanges 14 and a top flange 15. The arms 4 are respectively connected to the side flanges of the seat and back and are offset from the seat and back for clearance purposes as will be pointed out more in detail subsequently. Each of the arms are preferably made from tubing and includes a horizontal rest 16 and a depending portion 17.

Although not essential, a weight 18 is preferably secured to the rear part of the chair, such as to the back as shown. This weight serves the dual purpose of assisting to anchor the chair in place and also assist in holding the chair against accidental displacement from a nesting position in another chair, as shown in Figure 3. In other words, the rear part of each chair is weighted so that there is less likelihood that they will slip or fall out of place from a nested relationship. The weight shown is secured in an out of way position to the rear surface of the chair back, but it is to be understood that the chair can be fabricated so as to provide additional weight without using a separate weight as shown. For example, a reenforcing bar of heavy stock can be secured to the rear side of the chair adjacent the curved junction between the seat and back. Also, if desired, the rear rail 7 could be weighted. Furthermore, counter action to forward tipping can be overcome to some extent by extending the base rearwardly.

The top flange 15 on the chair back is preferably provided with an aperture 19 so that if desired, a hook 20 carried by a wall 21, partition or other buttress can be disposed in the aperture to hold a group of stacked chairs from tipping forwardly as shown in Figure 9. A hook is of particular advantage in a trailer for holding a group of nested chairs in place.

In view of the foregoing and Figure 2 of the drawing it will be manifest that the side rails 6 of the base are inset with respect to the legs 5 and that the width of the seat and back structure is slightly less than the space or distance between the arms in order to provide the necessary clearances to permit nesting of the chairs as shown in Figure 3 of the drawing. To assemble or nest the chairs one chair or unit is lifted slightly and then moved in a generally horizontal direction toward a stationary chair or second unit so that the base and seat of the one chair will be respectively received between the legs and arms of the stationary chair with the seats resting upon one another and the bases resting upon one another as shown in Figure 3. If found desirable, the chairs can be made so that only the bases will rest upon one another or so that only the seats will rest upon one another. If, for example, the bases are only made to engage, then there is less opportunity for the seats to be scratched during assembly and disassembly of the chairs. Also, if desired, the fittings 9 can be made thicker than the base, so that the fittings will engage one another in a manner to cause an upper nested chair to tilt and place its weight farther to the rearward, thereby providing a better nesting relationship.

The chairs are preferably so constructed and balanced that two to six chairs can be readily nested without additional support, but when more than six are nested, the hook 20 may be used, or, if desired, an abutment in the form of a bracket 22 secured to the wall near a floor may be employed so that the rear rail 7 of the bottom chair can be disposed under the abutment to prevent forward displacement of the chairs as depicted in Figure 8.

The tubular legs of the chair offer some flexibility to permit a little rocking action by a person seated in the chair but this action can be improved by constructing the legs out of some desirable resiliently flexible material. As shown in Figure 4, legs 23 of flat strip stock offers this advantage. The lower ends of the legs 23 may be secured to a base 24 in any suitable way but as depicted, they are attached to abutments 25 carried by fittings 26.

A modified form of chair is exemplified in Figure 5 of the drawing. This chair includes a seat 27, a pair of tubular legs 28 and a base 29. The base is preferably constructed from metal stock, solid in cross-section, and includes a pair of side rails 30 which extend between and forwardly of the legs. Each side rail is provided with a reversely bent portion 31 disposed along the outer side of the rail and in the same plane therewith.

The reversely bent portion extends forwardly of a leg and is provided with an upturned projection 32 which is secured in the tubular leg.

The seat of the chair shown in Figure 5 is provided with a generally rectangular opening 33 formed by striking a portion of the seat downwardly to form a lip 34. This opening is preferably located adjacent to the rear of the seat and is of a size to permit insertion of an individual's hand to facilitate lifting or manipulation of the chair. The opening also affords a drain for any water falling on the seat and thereby tends to keep the seat dry. Moreover, as shown in Figure 7, the lower edge of each of the lips 34 is preferably bent slightly forward as indicated at 35 so that when chairs provided with such means are stacked as illustrated in Figures 7 and 8, the lip of a top chair will project into the opening of a lower chair to effect an interlock or hooked connection between the chairs in order to prevent, within practical limits, the forward tipping of a plurality of stacked chairs.

In Figure 6 where another modified form of chair is illustrated, the base and legs are made in one piece. More particularly in this regard, the base and legs are made from a length of resiliently flexible rod, solid and round in cross-section. The base includes side rails 36 which extend between and forwardly of legs 37. Each rail is provided with a reversely bent portion 38 contiguous with a side rail. These bent portions respectively join with the legs at locations to the rear of a forward portion of the base as in the other forms of the chairs.

In view of the foregoing, it is manifest that the invention offers many advantages over the various types of conventional rigid chairs now in current use. It is to be understood, of course, that the invention is applicable to body supporting structures of the kind exemplified and also to structures which do not include backs or arms. Also, it is to be understood that the structures can be made so that more than six can be nested without relying on an additional support such as the hook or bracket, all of which is dependent on where the weight of the stacked structures is located.

Having thus described my invention, it is obvious that various modifications may be made in the same without departing from the spirit of the invention, and, therefore, I do not wish to be understood as limiting myself to the exact forms, constructions, arrangements, and combinations of parts herein shown and described.

I claim:

1. A structure for supporting an individual, said structure comprising a base, a seat, and spaced legs connecting only the frontal portions of the base and seat, said base being of a width somewhat less than the space between the legs for the purpose described, said seat having a portion struck with relation thereto to provide an opening for the hand, said opening being located to constitute a drain, and said portion being arranged for engagement with the seat of a corresponding structure.

2. A first structure for supporting an individual, said structure comprising a base, a seat, and a back extending from the seat, said seat being provided with a relatively small opening extending entirely through the seat at a location adjacent to the back, a projection extending downwardly from the seat, and a second substantially identical structure superimposed on the first structure and having its projection extending into the opening of the first structure assisting to hold the structures in assembled relationship.

3. A first structure for supporting an individual, said structure comprising a base, a seat, and spaced legs connecting the frontal portions of the base and seat, said seat being provided with receiving means constituting a drain, and a second structure of similar construction nested in the first structure with means on its seat extending into the receiving means for detachably holding the structures assembled.

4. A structure for supporting an individual, said structure comprising a base, a seat, a pair of front legs supporting the seat, means connecting the lower ends of the legs to the base, said means comprising formations having portions extending laterally from the sides of the base and portions extending rearwardly from said lateral portions connected to the legs, said seat having a portion struck therefrom to provide a drain, and said portion being arranged for engagement with a seat of a substantially corresponding structure.

References Cited in the file of this patent

UNITED STATES PATENTS

1,492,798	Houston	May 6, 1924
1,716,746	Tyner	June 11, 1929
2,736,905	Lang	Mar. 6, 1956

FOREIGN PATENTS

152,786	Austria	Nov. 15, 1937
524,397	Great Britain	Aug. 6, 1940
638,200	Great Britain	May 31, 1950