May 30, 1950 W. H. REINHOLZ 2,509,451

CHAIR CONSTRUCTION

Filed July 13, 1946

FIG. 1.

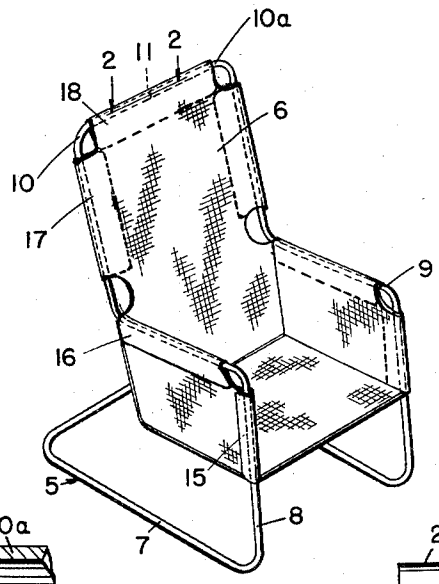


FIG. 5.

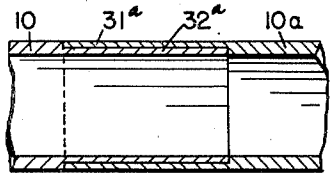


FIG. 2A.

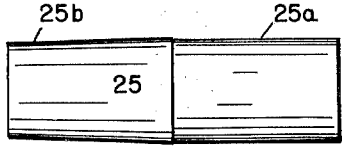


FIG. 2.

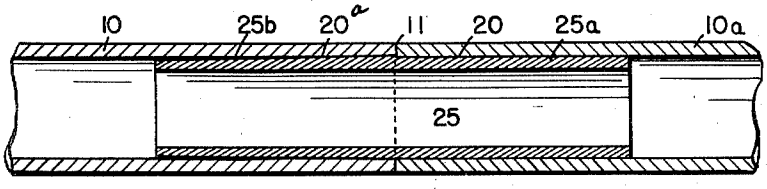


FIG. 3.

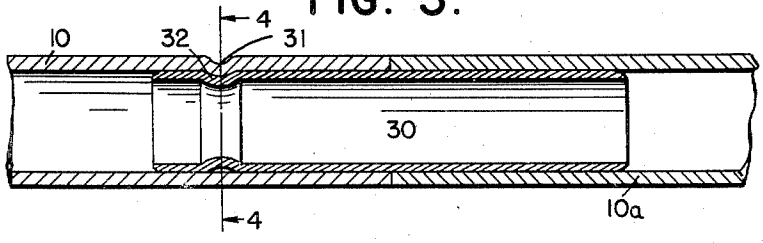
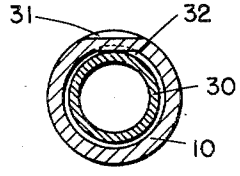


FIG. 4.



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CHAIR CONSTRUCTION

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4 Claims. (Cl. 155—194)

1

This invention has to do with chair construction, having particularly to do with improvements in chairs constructed of tube stock and having fabric seat and back construction.

One of the chief difficulties in this art has been the difficulty of so joining the tubular elements together as to permit their separation for purposes of mounting and changing the fabric seat and back elements and also to form a secure joint when the chair is in use.

It is therefore an object of my invention to provide a chair whose frame may be constructed of a single length of tube stock and in which the free contiguous ends of the tube may be so joined that, although they may be readily separated when desired, they are adequately joined together when the chair is in use.

Another object of my invention is to provide a chair which is highly economical of construction, is very durable and which may be constructed of a minimum number of parts.

More particularly, it is an object of my invention to provide a chair construction of this character wherein the free, contiguous ends of the single length of tubing comprising the frame are held in coaxial alinement by means of a plug insert and wherein those free ends are held against axial displacement by the fabric occupant support, and wherein the fabric support is so constructed and mounted on the frame that it may be mounted and demounted by separating the free ends of the frame and sliding the support along the tubing and between the free ends.

Other objects and advantages of the invention will appear from the following description of presently preferred embodiments selected for the purpose of explaining the invention, and for which purpose I shall refer to the accompanying drawings, in which:

Fig. 1 is a perspective view of a chair embodying my invention;

Fig. 2 is an enlarged section taken on line 2—2 of Fig. 1;

Fig. 2*a* is an enlarged side elevation of the plug insert member;

Fig. 3 is an enlarged fragmentary section showing a modified form of the invention;

Fig. 4 is a section on line 4—4 of Fig. 3; and

Fig. 5 is an enlarged sectional fragmentary view of a still further modification.

Referring now to the drawings, the numeral 5 generally denotes the frame, and 6 generally denotes the occupant-supporting member comprising seat and back rest portions, which member preferably is of a suitable fabric.

2

Referring first to the frame 5, as will be observed from the drawing, it consists of a single length of resilient metal tubing bent to form a U-shape floor-engaging portion 7, parallel upright front posts 8, arm rests 9, and a U-shaped back rest support 10. The occupant-supporting member 6 is formed of fabric having looped or sleeve-like edge portions 15 slidably mounted on posts 8, looped or sleeve-like portions 16 slidably mounted on the arm rests, looped or sleeve-like portions 17 slidably mounted on the side portions of the back rest support, and looped or sleeve-like portions 18 mounted on the cross arm 10*a* of the back rest support.

Thus it will be observed that by separating the elements forming the cross arm 10*a* at the joint 11, the tubular elements may be "threaded" through the looped portions of the fabric for the purpose of mounting or removing the fabric seat and back rest portions, thus rendering it unnecessary to stitch the fabric after it is mounted on the frame. It will also be observed that the seat is suspended from the arm rests, which is not only conducive to economy of construction but to greater comfort in use.

One of the features of novelty of my invention is the manner and means by which I detachably join the contiguous free ends of the tubing going to form the cross arm 10*a* of the back rest support and by which I hold these free ends against axial separative movement.

As will be best seen from Fig. 2, the left-hand free end of the tubing going to form the cross arm 10*a* is cylindrical, as shown at 20*a*, and the free end 20 is also cylindrical. An insert member or plug 25, having a cylindrical end 25*a* and a tapered end 25*b*, has its said tapered end 25*b* frictionally fitting with a wedge fit in the end 20*b* of the tubing, while its cylindrical end 25*a* slidably engages in cylindrical end 20 of the tubing. The side portions 10 of the back rest support have sufficient resiliency to normally urge the ends of the tubing together at the joint 11, although this resiliency as well as the sliding fit of the insert end 25*a* may be overcome by slight manual effort in order to separate the tubing at the joint. The purpose of the plug is to hold the free ends of the tubing in coaxial relationship. The back rest portion of the fabric support 6 is of such width in relation to the width of the back rest portion 10 of the frame that when the loops 17 are mounted thereon, the fabric holds the free ends of the frame at the joint against axial separative movement. Thus the side and back rests may be mounted on the frame

by separating the tubing ends at the joint and sliding the looped portions of the fabric over one leg of the cross arm 10*a*, and then closing the joint and sliding half the loops over the joint and onto the other half of the cross arm, after which the loops may be moved downwardly along the back rest support, arm rest and seat support. To remove the fabric support the loops are passed along the tubing in the opposite direction. To reduce the weight, the insert 25 is preferably tubular, although solid stock may be used.

In Figs. 3 and 4 I show a modified form of joint structure wherein, instead of one of the contiguous free ends of the portions of the tubing going to make up cross member 10*a* being flared and instead of the insert 30 being tapered at one end, one of the tubing elements and one end of the insert have complementary depressions 31, 32, the tubing and insert at the other end being cylindrical for relative axial sliding movement. Thus the depressed portion or inward projection 31 of one end of the tubing engages in the depressed portion or recess 32 of the insert and hold said insert against escape from the tubing end. The depression or recess 32 in the insert is annular so that the depression 31 may engage therein regardless of the position of the insert.

In Fig. 5 I show a further modified form of joint for the free ends of the tubing. Here one of the free ends 10 has an integral reduced outside diameter cylindrical portion 32*a* which slidably fits in a reduced inside diameter cylindrical portion 31*a* of free end 10*a*.

While, in the foregoing, I have resorted to considerable detail of structure and association of parts in describing a particular example of my invention, I wish it to be understood that I have done so merely to make my invention understood and that I do not limit my invention to such details. On the contrary, my invention is only to be limited as appears in the appended claims.

I claim:

1. In chair construction, a length of metal tubing bent to provide a chair frame wherein the two ends of the tubing terminate in coaxial, contiguous relationship, a retaining member carried by one of said ends and slidably engaging the other end to retain said ends in coaxial alinement, and a fabric occupant support having sleeve-like edge portions slidably fitting over said tubing, said support being of such width in relation to the width of the frame as to yieldably hold said ends together and thereby to oppose axial separative movement thereof.

2. In chair construction, a length of metal tubing bent to provide a chair frame wherein the two ends of the tubing terminate in coaxial, contiguous relationship, means for retaining said ends in coaxial alinement, including a plug engaged at one end in one of the ends and slidably engaging at its other end in the other end, and a fabric occupant support having sleeve-like side edge portions slidably fitting over said tubing, said support being of such width in relation to the width of the frame as to yieldably hold said ends together and thereby to oppose axial separative movement thereof.

3. In chair construction, a length of metal tubing bent to provide a chair frame wherein the two ends of the tubing terminate in coaxial, contiguous relationship, means for retaining said ends in coaxial alinement, including a plug anchored at one end in one of the ends and slidably engaging at its other end in the other end, and a fabric occupant support having sleeve-like side edge portions slidably fitting over said tubing, said support being of such width in relation to the width of the frame as to yieldably hold said ends together and thereby to oppose axial separative movement thereof.

4. A chair comprising a length of resilient metal tubing bent into a shape providing a U-shaped floor-engaging portion, a pair of upright front posts, a pair of backwardly disposed arm rests, a pair of upwardly disposed back-rest-supporting posts and terminating in transversely disposed end portions together providing a top cross arm, said end portions being disposed in coaxial relationship, means cooperating with said end portions to maintain them coaxial, and a fabric occupant support having a back rest portion, side portions and a seat portion, said back rest portion having sleeve-like side edge portions slidably fitting over the back-rest-supporting posts and yieldably holding said last-named posts against separative movement, and said side portions being fixed at their bottom edges to the seat portion and having sleeve-like portions at the top edges slidaby fitting over said arm rests whereby to suspend the seat portion from said arm rests.

WILLIAM H. REINHOLZ.

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