

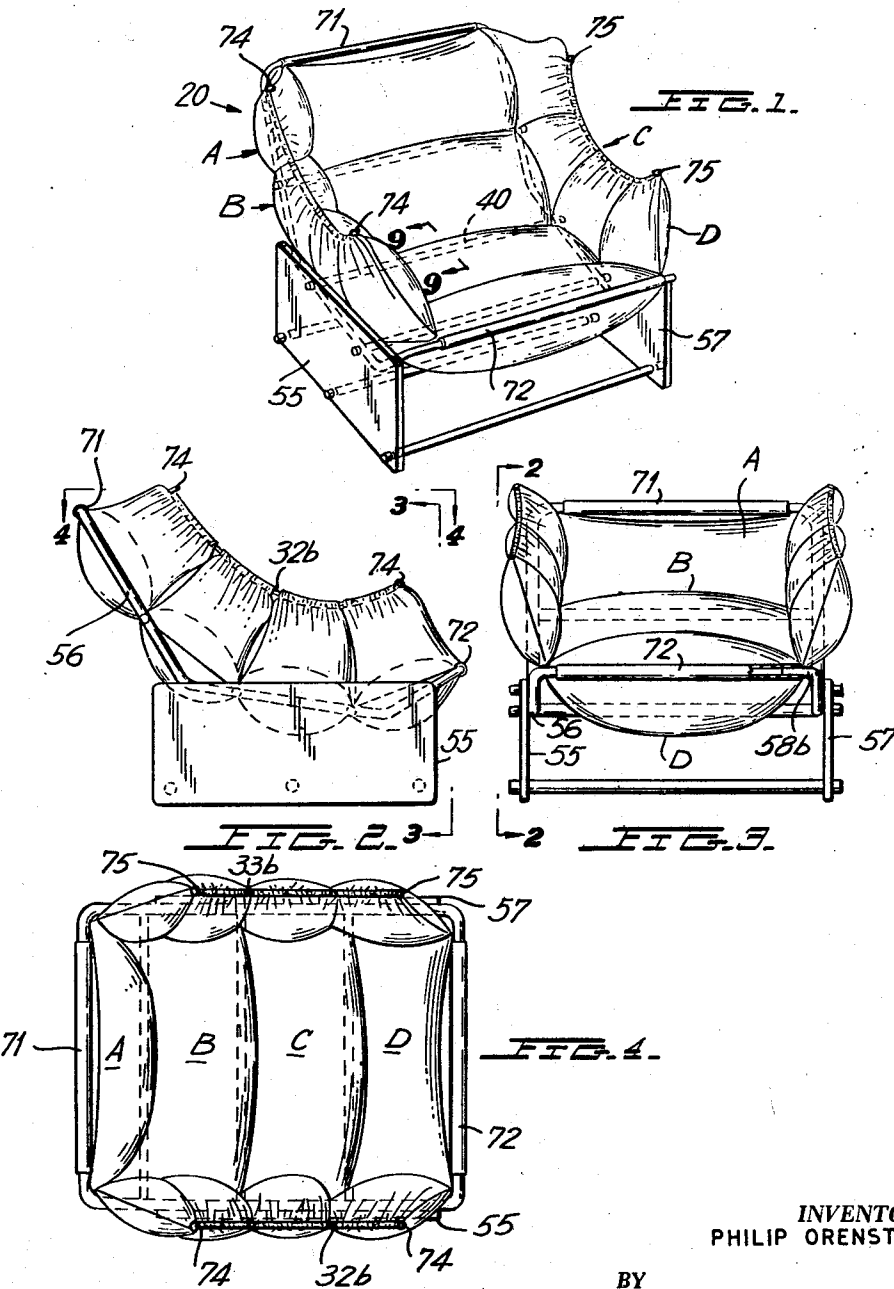
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P. ORENSTEIN
INFLATABLE CHAIR

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3 Sheets-Sheet 1



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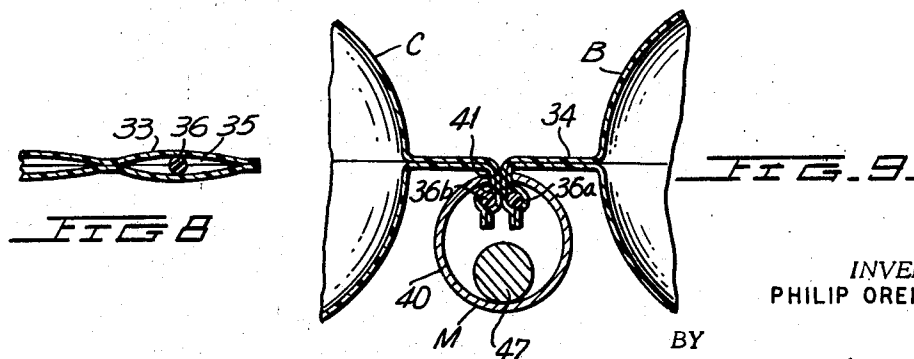
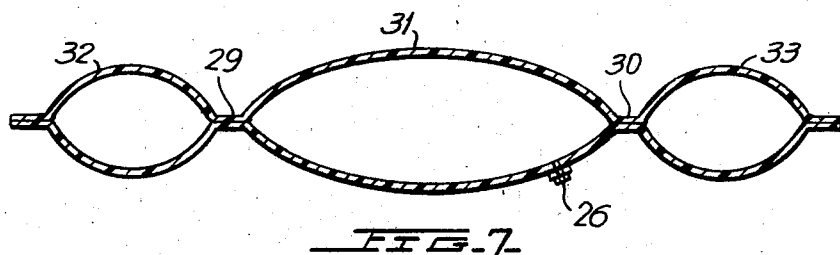
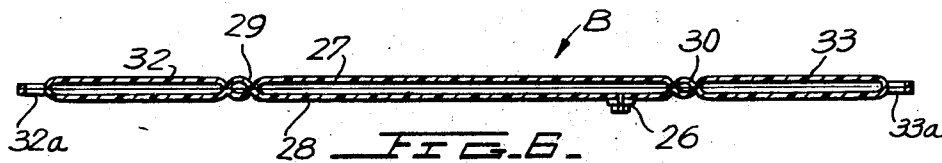
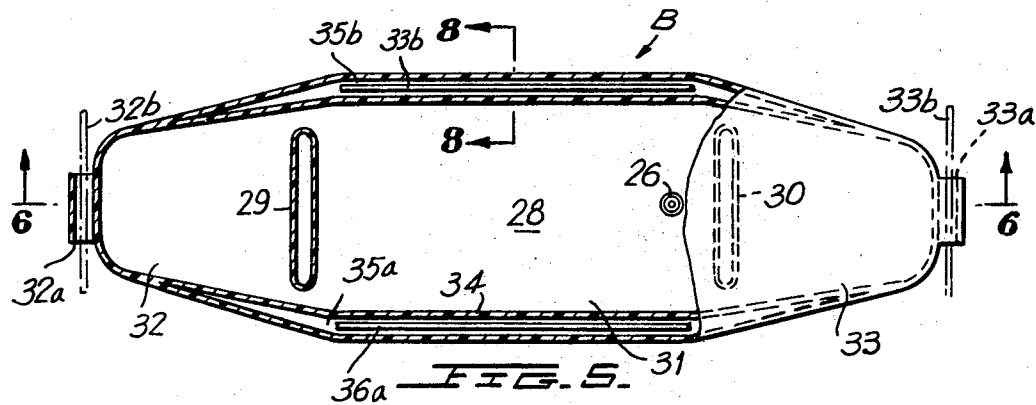
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P. ORENSTEIN
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INFLATABLE CHAIR

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6 Claims

ABSTRACT OF THE DISCLOSURE

A plurality of inflatable panels are joined together at hinge-type connections and are mounted to a frame in a configuration producing a seat and having a backrest. The frame sections are readily disassembled and the panels are readily detachable from the frame. Each panel is provided with end sections that are upwardly foldable and cooperate with end sections of the remaining panels to form arms along the sides of the chair.

This invention relates to furniture in general, and more particularly relates to a novel chair having inflatable sections which provide the seat, backrest and arms.

Today because of high costs involved in warehousing and shipping bulky articles such as furniture, there has developed a necessity for constructing furniture so that it is collapsible and readily disassembled into a compact unit. While the prior art has produced many examples of collapsible and so-called knock-down constructions, these constructions have not been adaptable for stylish furniture.

The instant invention provides a chair that is readily assembled from a set of parts which when disassembled occupy relatively little space with the assembled chair, though relatively light in weight, presenting a massive appearance. More particularly, a chair constructed in accordance with the instant invention comprises a plurality of four identical inflatable panels, each having a generally rectangular main section and generally trapezoidal end sections. An aluminum tube having a longitudinal slit is used to join the long edges of adjacent rectangular sections. The trapezoidal sections are folded upwardly and are held in this position by rope-like members to constitute arms extending along the seat and backrest of the chair.

Accordingly a primary object of the instant invention is to provide a novel construction for a so-called knock-down type piece of furniture.

Another object is to provide a novel construction for an inflatable seat.

Still another object is to provide an inflatable chair comprising a plurality of identical inflatable panels joined together by hinged-type connections with the panels having portions joined together to form arms for the chair.

A further object is to provide novel means for connecting inflatable panels to form a hinge-type connection.

These objects as well as other objects of this invention will become readily apparent after reading the following description of the accompanying drawings in which:

FIGURE 1 is a perspective of a chair constructed in accordance with the teachings of the instant invention.

FIGURE 2 is a side elevation looking in the direction of arrows 2—2 of FIGURE 3.

FIGURE 3 is a front elevation looking in the direction of arrows 3—3 of FIGURE 2.

FIGURE 4 is a plan view looking in the direction of arrows 4—4 of FIGURE 2.

FIGURE 5 is a partially cut-away plan view of one of the inflatable panels when deflated.

FIGURE 6 is a cross-section taken through the line 6—6 of FIGURE 5.

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FIGURE 7 is a cross-section taken through line 6—6 of FIGURE 5 with the panel inflated.

FIGURE 8 is a cross-section taken through line 8—8 of FIGURE 5 looking in the direction of arrows 8—8.

FIGURE 9 is an enlarged fragmentary cross-section taken through line 9—9 of FIGURE 1 looking in the direction of arrows 9—9.

FIGURE 10 is a perspective of the chair frame.

FIGURES 11, 12 and 13 are enlarged fragmentary views in cross-section illustrating the joints between various members constituting the frame of FIGURE 10.

Now referring to the figures, chair 20 of FIGURE 1 comprises frame 25 illustrated in FIGURE 10 and an assembly of four identical inflatable panels A, B, C and D mounted to frame 25. Since panels A, B, C and D are identical, only panel B will be described in detail by particular reference to FIGURES 5 through 8.

Panel B is constructed of two identical overlapping sheets 27, 28 of heat-sealable, non-porous plastic material connected together at a plurality of heat seal lines. In particular, closed seal lines 29, 30 divide panel B into rectangular central section 31 and generally trapezoidal end sections 32, 33. Continuous seal line 34 provides the outer boundaries for sections 31—33. The marginal portions along the longer edges of rectangular section 31 are each provided with an elongated pocket 35 wherein a plastic rod 36 is disclosed, for reasons to be hereinafter explained. Extending outboard from the short bases of the trapezoidal sections 32, 33 are portions of plastic sheets 27, 28 forming passages 32a, 33a, respectively, through which rope-like elements 32b, 33b, respectively, extend for a reason to be hereinafter explained. Valve 26 set in sheet 28 permits all three sections 31—33 of panel B to be inflated. Since seal lines 29, 30 do not extend across the entire boundary between rectangular section 31 and trapezoidal sections 32, 33, air entering through valve 26 will be effective to inflate all three sections 31—33.

Tube 40 (FIGURE 9), having slit 41 extending along the length thereof, connects panels B and C together with a hinge-type connection. More particularly, rod 36a of panel B and rod 36b of panel C are both disposed within tube 40. Since slit 41 is only slightly wider than four thicknesses of plastic material 27, 28, the marginal portions of panels B and C cannot be withdrawn from tube 40 by other than axial movement. Other individual tubes of the same construction as tube 40 connect panel A to panel B and panel C to panel D. The tubes 40 joining panels A, B, C and D together as an assembly are connected to frame 25 by having rods 46, 47, 48 extend therethrough. In particular rod 46 extends through the tube 40 connecting panels A and B, rod 47 extends through the tube 40 connecting panels B and C, and rod 48 extends through tube 40 connecting panels C and D.

Referring more particularly to FIGURES 10 through 13, it is seen that rods 46, 47, 48 together with tubes 51, 52 and 53 constitute the transverse members of frame 25. The right side members of frame 25 include clear Lucite plate 55 and formed tube 56 having inwardly extending end portions 56a, 56b. The left side of frame 25 is symmetrical with the right side thereof and includes Lucite plate 57 and formed tube 58 having inwardly extending end portions 58a, 58b.

The ends of rods 47 and 48 are connected to the other frame members in the manner shown in FIGURE 11 which particularly shows the connection of rod 48 to Lucite plate 55. Rod 48 extends beyond the end of tube 40 extending through aligned clearance holes 59, 59 in tube 56 as well as through clearance hole 60 in plate 55. The threaded portion at the right end of rod 48 extends beyond the outboard surface of plate 55 and is engaged by cap nut 61. This pushes plate 55 against the side of

tube 56 which in turn is forced against the near end of tube 40 through which rod 48 extends.

Each of the tubes 51, 52, 53 is connected to Lucite plates 55, 57 in the manner shown in FIGURE 12. More particularly, stub tube 63 located in closely fitting aperture 64 of Lucite plate 55 extends beyond both surfaces thereof projecting into one end of tube 51 and into one end of stub cover tube 65 of the same diameter as tube 51. Self-tapping screws 66, 66 secure tubes 51 and 65 to tube 63. Disc 67, held by spring fingers 68, fits over the outboard end of tube 65 forming a closure therefor.

Rod 46 is secured to the other members of frame 25 by extending into tubes 56 and 58. As seen in FIGURE 13 the end of rod 46 extending into tube 56 is angularly offset at 46a with respect to the main section of rod 46. Similarly, although not shown, the other end of rod 46 is offset in the same plane as offset ends 46a but is offset in the opposite direction. This permits ready insertion of rod 46 into tubes 56 and 58 yet the offset ends of rod 46 serve to limit any tendency for the upper ends of rods 56, 58 spread apart.

Inwardly extending tube ends 56a, 58a are in axial alignment and extend into the ends of tube 71. Tubes 40 and 71 are of similar construction with tube 71 also having a longitudinally extending slot through which the outboard marginal edge of panel A extends with rod 36b of panel A being disposed within tube 71 to operatively position the rear edge of assembly A, B, C, D. The front edge of assembly A, B, C, D is held in operative position in a similar manner by tube 72 having its ends receive aligned offset tube ends 56b, 58b with rod 36a of panel D disposed within tube 72 and the outboard marginal edge of panel D extending through a longitudinal slit in tube 72.

Plastic rope-like element 32b extends through passages 32a of all four panels A, B, C, D and is drawn tightly so as to draw trapezoidal sections 32 of all four panels A, B, C, D upwardly to form the right arm of chair 20. Enlarged ornamental caps 74, 74 gripping the opposite ends of element 32b prevent these ends from being drawn back through passages 32a. Similarly, plastic rope-like element 33b extends through passages 33a of all four panels A, B, C, D and is drawn tightly to move sections 33 of panels A, B, C, D upwardly to form the left arm of chair 20. Enlarged ornamental caps 75 gripping opposite ends of element 33b prevent such ends from being drawn back through passages 33b.

It should now be readily apparent that when chair 20 is disassembled, the elements thereof will fit into a relatively compact space and it should also be obvious that elaborate tools are not required for assembly of chair 20. It should also now be apparent that while frame elements 56 and 58 have been illustrated as one-piece units, each may be formed as a two-piece unit with the pieces being joined together by means similar to stub tube 63 and screws 66, or these pieces may be joined together by other means well known to the art.

It is noted that frame 25 may be constructed of relatively light members. In fact, these members may be so light that unless panels A, B, C and D are properly inflated a frame constructed of such members will not be strong enough to support the weight of the average human being. It appears that when all of the panels A, B, C, D are properly inflated, the assembly thereof serves to distribute weight in a manner such that even when frame 25 is of particular light weight construction, chair 20 will be able to support the weight of an average human being.

The embodiments of the invention in which an exclusive privilege or property is claimed are defined as follows:

1. A seating unit comprising a frame and a seating assembly, said frame including side portions along opposite sides of said assembly, said assembly including a plurality of detachable sections each having a generally rectangular inflated pocket aligned in side by side rela-

tionship with the long sides of said pockets extending generally perpendicular to said side portions, each of said sections having marginal extensions along the longer edges of said pockets, a plurality of individual securing means releasably connecting a marginal extension of one of said sections in hinged type relationship to a marginal extension of the section adjacent thereto, a plurality of individual transverse frame members extending between said side portions, each of said transverse frame members mounting an individual one of said securing means, and additional means mounting the endmost ones of said marginal extensions to said frame, each of said securing means comprising a tube having a longitudinally extending slit, each of said marginal extensions that is connected to one of said securing means including a relatively thick section extending generally parallel to said longer edges and a relatively thin section interposed between said pocket and said relatively thick section; each of said tubes having the relatively thick sections of a first and second of said marginal extensions disposed therein with the relatively thin sections of said first and said second marginal extensions extending through said slit, each of said slits being too thin to permit as few as two of said relatively thick sections to pass therethrough together, said transverse frame members extending through the tubes, said additional means including first and second tubes each having a longitudinal slit, said endmost ones of said marginal extensions each including an additional relatively thick section extending generally parallel to said longer edges and an additional relatively thin section interposed between said additional relatively thick section and the pocket adjacent to this one of said endmost marginal extensions, each of said first and second tubes having one of said additional relatively thick sections disposed therein, said slits of each of said first and second tubes being too narrow to permit one of said additional relatively thick sections to pass therethrough.

2. A seating unit as set forth in claim 1 in which said assembly is curved from front to back of said seating unit to form a seat and a backrest, each of said sections including inflated end pockets positioned at the short sides of rectangular sections, holding means maintaining said end pockets in positions folded upward with respect to said rectangular sections and in cooperating relationship with one another to constitute arms extending along the sides of said seating unit.

3. A seating unit as set forth in claim 2 in which each of said end pockets is generally in the shape of a trapezoid having its long base adjacent to one of said rectangular pockets.

4. A seating unit as set forth in claim 3 in which the sections are provided with narrow passages adjacent the short bases of said end pockets; said holding means comprising rope-like elements extending through said passage.

5. A seating unit as set forth in claim 1 in which each of said sections is of identical construction.

6. A seating unit as set forth in claim 5 in which said assembly is curved from front to back of said seating unit to form a seat and a backrest, said plurality of detachable sections being at least four in number.

References Cited

UNITED STATES PATENTS

3,129,975	4/1964	Emery	297—397
3,222,108	12/1965	Pablos	297—441
3,230,012	1/1966	Beckman et al.	297—452 X
3,265,438	8/1966	Regan et al.	297—456 X
3,286,285	11/1966	Harvey	297—456 X

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