

Dec. 31, 1968

V. SMITH

3,419,309

COLLAPSIBLE SEAT

Filed July 20, 1967

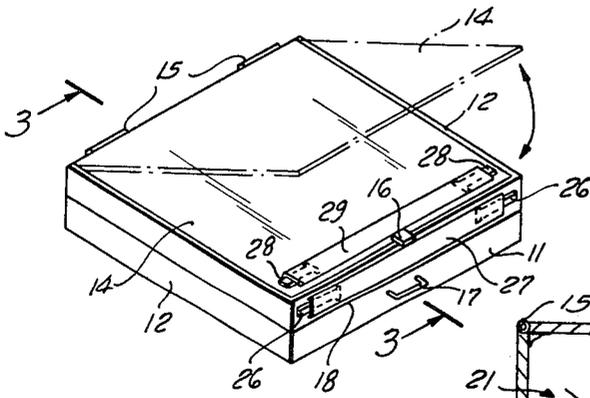


FIG. 1

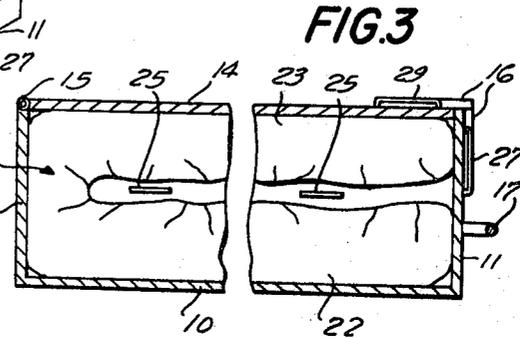


FIG. 3

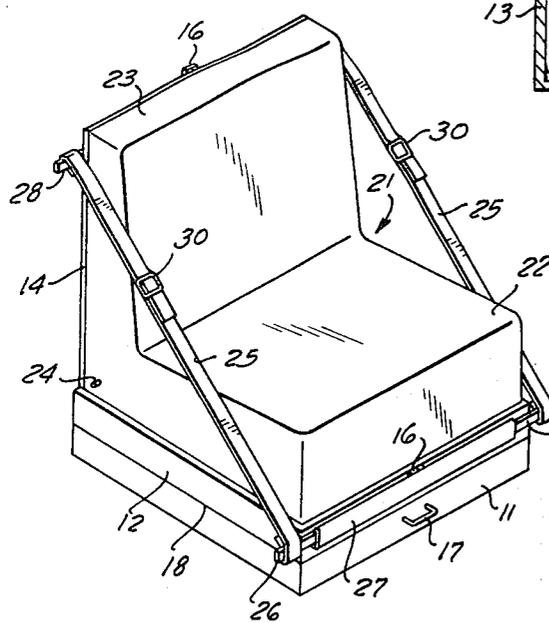


FIG. 2

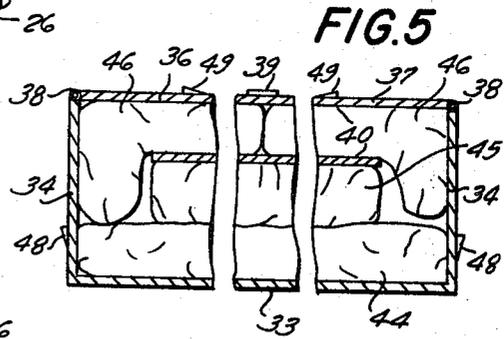


FIG. 5

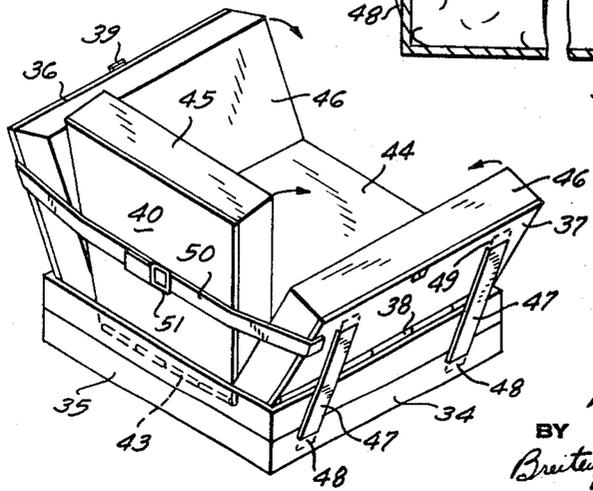


FIG. 4

INVENTOR:
VING SMITH
BY
Breitenfeld & Levine
ATTORNEYS

1

2

3,419,309

COLLAPSIBLE SEAT

Ving Smith, 2 Agar Ave., New Rochelle, N.Y. 10801

Filed July 20, 1967, Ser. No. 654,818

6 Claims. (Cl. 297-456)

ABSTRACT OF THE DISCLOSURE

Box comprising bottom wall, upstanding walls, and hinged cover, contains a deflated cushion. When cover is swung open, cushion can be inflated to form a seat surface and a back. Straps extending between cover and upstanding walls limit movement of cover so that it can support cushion back. Length of straps adjustable to vary position of back. Additional hinged panels and cushion portions may form arms of seat. Box can be latched closed, and has handle for transport of collapsed seat.

This invention relates to furniture, and more particularly to a seat including an inflatable portion.

It is an object of the invention to provide a seat which can be readily transported in a compact, collapsed condition, and expanded when desired into an unusually comfortable, full-sized chair.

It is another object of the invention to provide a seat or chair in which an inflatable cushion forms the seat surface, and in which a packing case or carrying box for the deflated cushion serves to support the cushion in seat-defining condition when the box is opened and the cushion inflated.

It is a further object of the invention to provide such a seat wherein the supporting frame of the seat takes the form of a box when collapsed, and completely encloses and protects the more delicate inflatable cushion portion of the chair.

To achieve these objectives, the invention employs a box having a bottom wall, upstanding walls, and a cover panel hinged to one of the upstanding walls. The cover may be latched in a position to close the box. Within the closed box is a deflated cushion formed of plastic sheet material, or some other suitable substance. When the cover is swung open to expose the cushion, the latter may be inflated to form the seat and back cushion of a chair. Straps extending between the cover and the upstanding box walls limit the opening movement of the cover, whereby the cover serves to support the back cushion. Additional panels hinged to other upstanding walls of the box may support inflated arm cushions. The seat, back, and arm cushions may be integrally formed as a single inflatable device, or they may be separate inflatable components.

The invention is more fully described in the following description in which reference is made to the accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of the closed box, indicating the manner in which the cover opens;

FIG. 2 is a perspective view of the chair in erect condition;

FIG. 3 is a cross-sectional view taken on line 3-3 of FIG. 1;

FIG. 4 is a perspective view of an alternative embodiment of this invention; and

FIG. 5 is a cross-sectional view through the chair of FIG. 4 when in collapsed condition.

The seat chosen to illustrate this invention, and shown in FIGS. 1-3, comprises a box formed of rigid material. The box includes a bottom wall 10, upstanding walls which for convenience will be referred to as a front wall

11, side walls 12, and a rear wall 13, and a top wall or cover 14. The cover is pivotally secured along one of its edges to the upper edge of the rear wall 13 by hinges 15. When the cover 14 is closed, as illustrated in full lines in FIG. 1, and in FIG. 3, latching means 16 of any suitable kind may be employed to hold the box closed. The front wall 11 may be provided with a handle 17 so that the closed box may conveniently be transported. Furthermore, the box may be provided with a surface design, including a simulated parting line 18 on the upstanding walls 11-13, such that the box resembles an ordinary suitcase.

Within the closed box is a deflated cushion member 21, formed of a flexible sheet material, such as a suitable plastic. The cushion member 21 includes a seat cushion portion 22 and a back cushion portion 23. Although in the present example the cushion portions 22 and 23 are integrally formed, it may be desirable under some circumstances to form the seat and back cushions as separate elements. It may also be desirable to secure the bottom face of the seat cushion portion 22 to the inner face of the bottom wall 10, and to secure the top face of the back cushion portion 23 to the inner face of the top wall 14. The securement may be accomplished by use of a suitable adhesive.

To convert the closed box of FIGS. 1 and 3 into the chair of FIG. 2, the cover 14 is first swung open, as illustrated by the broken lines and the arrow of FIG. 1, to expose the cushion 21. The cushion 21 is then inflated, with air or other suitable fluid, through a valve 24 to produce the fully expanded cushion seen in FIG. 2.

To enable the cover 14 to serve as a support for the inflated back cushion portion 23, its rearward movement must be limited. This is accomplished by means of non-stretchable straps 25, which may be formed of plastic, leather, or a woven fabric. Each strap 25 is provided with a loop at each end. The lower looped end of each strap is slipped over a bar 26 telescopically arranged within a sleeve 27 secured to the front wall 11 of the box. The upper looped end of each strap is similarly slipped over a bar 28 telescopically arranged within a sleeve 29 secured to the cover 14. When the box is closed (FIG. 1), the bars 26 and 28 are pushed into the sleeves 27 and 29, respectively. When the bars 26 and 28 are to be used (FIG. 2), they are pulled outwardly so that they extend beyond the adjacent edges of the box and serve as anchorages for the ends of the straps 25. Each strap 25 is formed of two parts joined by a buckle 30. In this way, the length of the straps is adjustable and hence the angle at which the cover 14 is held is adjustable. Thus, the angle between the seat and back cushions 22 and 23 can be adjusted.

When it is desired to transport the chair to a different location, or when the chair is to be stored, the cushion 21 is deflated through valve 24, the straps 25 are removed from the bars 26 and 28 and placed upon the seat cushion 22, the bars 26 and 28 are pushed into their respective sleeves, and the cover 14 is swung closed until the latch members 16 engage.

The seat of FIGS. 1-3 is not provided with cushioned arms. However, such a chair can be provided, according to this invention, as illustrated in FIGS. 4 and 5. The box of this embodiment includes a bottom wall 33, side walls 34, a back wall 35, and a front wall (not shown) on which a handle is mounted. The cover of the box comprises two panels 36 and 37 pivotally secured to the upper edges of the side walls 34 by hinges 38. When the box is closed (FIG. 5), each of the cover panels 36 and 37 extends across one-half the width of the box, and a suitable latch mechanism 39 secured at the free edges of the panels, maintains the box closed.

An intermediate panel 40 is pivotally secured along one edge, by means of a hinge 43, to the inner surface of the rear wall 35. The connection of the panel 40 to the rear wall 35 is at a point spaced downwardly from the upper edge of the rear wall, so that when the panel 40 is swung into its collapsed position (FIG. 5), it will be spaced below the cover panels 36 and 37 thereby leaving room for a portion of the deflated cushion. Preferably, the hinge 43 is mounted on a bracket (not shown) which spaces it inwardly from the rear wall 35 so that the panel 40 can be tilted rearwardly past the vertical before it engages the upper edge of the rear wall 35.

The cushion, which may be all one piece, or separate elements, as desired, comprises a seat portion 44, a back portion 45, and two arm portions 46. These cushion portions are, of course, deflated when the box is closed, as shown in FIG. 5. To erect the chair, the panels 36, 37, and 40 are swung upwardly, and the cushion portions are inflated, as described above with reference to FIGS. 1-3. To limit the opening movement of the panels 36 and 37, rigid strips 47 are provided, the ends of which fit into pockets 48 and 49 struck out of the side walls 34 and cover panels 36 and 37, respectively. Thus, the cover panels serve to support the arm cushions 46.

Opening movement of the panel 40 is limited by strap 50 extending across the back of the chair between the cover panels 36 and 37. The ends of the strap may carry snap fastener elements (not shown) which engage co-operable fastener elements on the exterior of the cover panels. The strap 50 is preferably formed of two pieces joined by a buckle 51 so that its length, and hence the angle of the chair back, are adjustable. If desired, the cushion portions may be adhesively secured to the box portions which support them.

The invention has been shown and described in preferred form only, and by way of example, and many variations may be made in the invention which will still be comprised within its spirit. It is understood, therefore, that the invention is not limited to any specific form or embodiment except insofar as such limitations are included in the appended claims.

What is claimed is:

1. A seat collapsible between an erect position and a condition in which it assumes the configuration of a box, comprising a box having a bottom wall, upstanding walls, and a cover hinged along one of its edges to the remainder of the box, means for latching said cover in a closed position, an inflatable cushion within said box, said cushion when collapsed fitting completely within said box when the latter is closed, a portion of said cushion when inflated remaining within the confines of said upstanding box walls, the height of said cushion when inflated being greater than the height of said upstanding box walls, so that said cover must be opened to permit full inflation of said cushion, and a handle secured to said box, whereby when said box is closed it may readily be transported.

2. A seat as defined in claim 1 wherein said cushion when inflated includes a portion having a substantially horizontal upper surface defining a seat surface, and a

substantially vertical portion constituting a seat back, and including means for limiting the opening movement of said box cover to retain it in a location immediately behind said back portion of said cushion, whereby said cover serves to support the seat back.

3. A seat as defined in claim 2 wherein said limiting means include anchorages on said cover and the remaining portion of said box, at least one strap extending between said anchorages, and means for adjusting the length of said strap so as to adjust the position of said box cover and hence the seat back.

4. A seat collapsible between an erect position and a condition in which it assumes the configuration of a box, comprising a box having a bottom wall, upstanding walls, and three panels hinged to three adjacent upstanding box walls, at least one of said panels being a cover, an inflatable cushion within said box, said cushion when collapsed fitting completely within said box when the latter is closed, a portion of said cushion when inflated remaining within the confines of said upstanding box walls, the height of said cushion when inflated being greater than the height of said upstanding box walls, so that said cover must be opened to permit full inflation of said cushion, and said cushion when inflated including a portion having a substantially horizontal upper surface defining a seat surface, a substantially vertical portion constituting a seat back, and arm portions above said seat surface and on either side of said seat back portion, and means for limiting the opening movement of said panels to retain them in locations immediately behind said cushion back and arm portions, whereby said panels support said cushion back and arm portions.

5. A seat as defined in claim 4 wherein said limiting means for said arm-cushion-supporting panels are rigid elements extending between said panels and the upstanding walls of said box.

6. A seat as defined in claim 4 wherein said limiting means for said back-cushion-supporting panel is a strap secured to both of said arm-cushion-supporting panels and extending behind said back-cushion-supporting panel.

References Cited

UNITED STATES PATENTS

2,401,995	6/1946	Weinzimmer	297—456
2,981,313	4/1961	Odell	297—17 X
2,987,735	6/1961	Nail	5—348
3,309,134	3/1967	Roberts	297—17
3,310,341	3/1967	Connell	297—378
3,323,147	6/1967	Van Dean	5—99 X

FOREIGN PATENTS

776,934 6/1957 Great Britain.

CASMIR A. NUNBERG, *Primary Examiner*.

U.S. CI. X.R.

5—98, 348; 297—380, 17