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Roeshman

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[54] **PAPER BOARD SEAT STRUCTURE**

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[52] **U.S. Cl.** ..... **297/461;** 297/442; 297/439; 229/14 C; 229/16

[51] **Int. Cl.**..... **A47c 3/00;** A47c 9/12

[58] **Field of Search** ..... 297/17, 417, 418, 430, 297/442, 461; 108/115; 229/14 C, 16, 15, 27, 29 E, 41, 42

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Attorney, Agent, or Firm—Edelson and Udell

[57] **ABSTRACT**

A four-sided box-like structure constructed of a single blank of corrugated fiber board or other suitable lightweight sheet material which is cut and scored to provide top and bottom panels which are individually foldable inwardly from the side wall panels to form double-layered flat top and bottom closures for the structure, the several closure panels each having their side edges tapered for non-interfering folding thereof into their closed positions. The closure panels foldable inwardly from each of two opposed side walls of the structure are split apart in such manner that upon their being infolded they form a slot extending crosswise between said opposed side walls for receiving end flaps provided at the free ends of the other pair of the closure panels, the said slot having its opposite ends spaced inwardly from the side walls between which it extends with its ends respectively connected to said side walls by short slits which act to prevent tearing or otherwise disrupting the integrity of the side walls upon inward and outward folding of the split panels along their respective fold lines.

The box-like structure is hollow to provide for storage therein of one or more upholstered cushions which, upon removal from the structure and after assembly thereof into its final set-up condition, may be placed upon the flat top of the structure to provide a cushioned seat upon which a person may be comfortably seated at a convenient level.

The box-like structure is designed to internally accomodate in each quadrant portion thereof a rigidifying insert of cruciform shape which is made up of interfitted slotted flat panels of the same material of which the box structure is formed.

2 Claims, 8 Drawing Figures

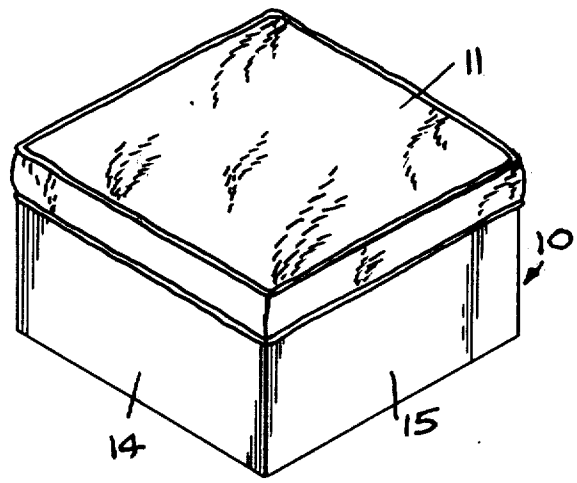


FIG. 1

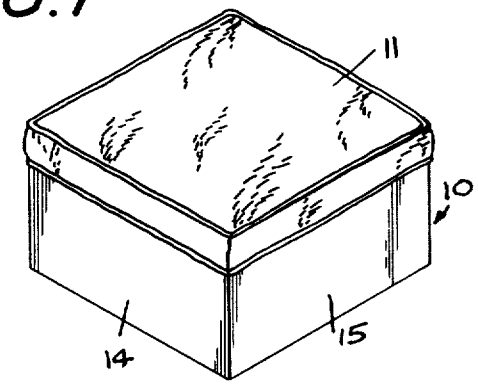


FIG. 2

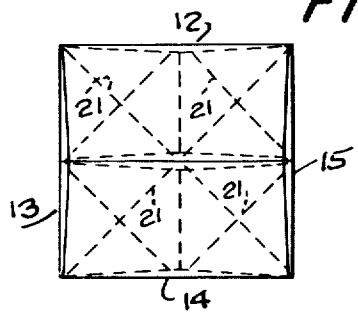


FIG. 3

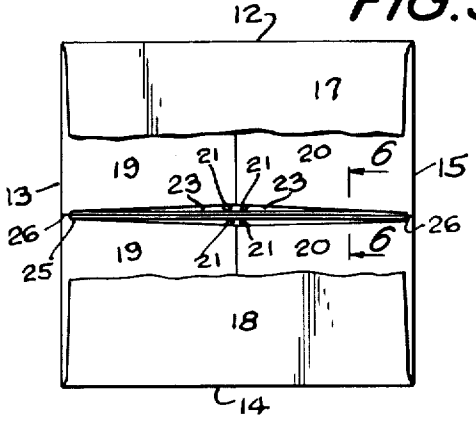


FIG. 4

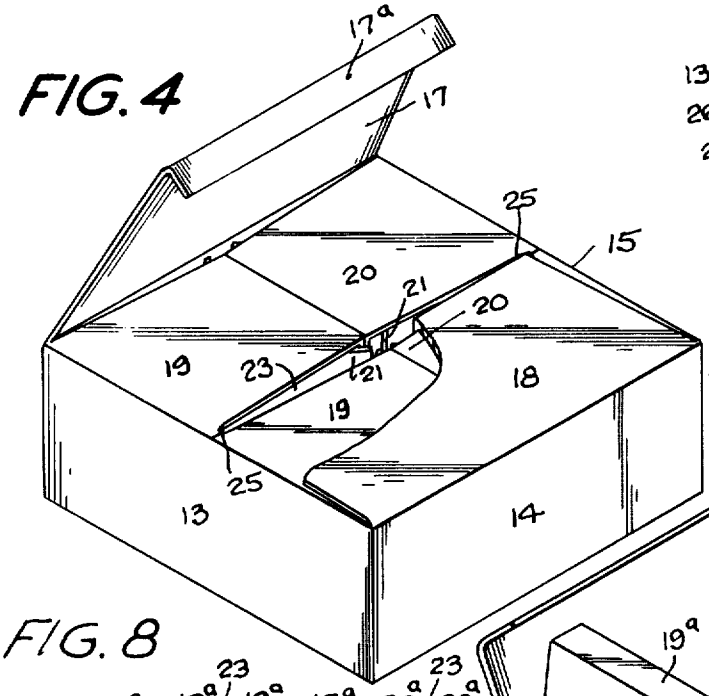


FIG. 7

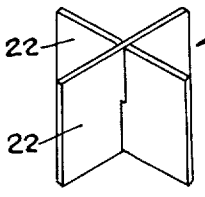


FIG. 8

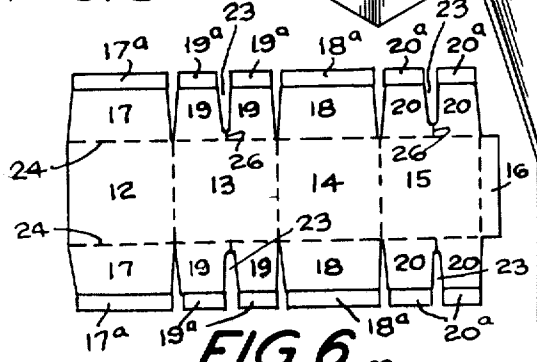


FIG. 6

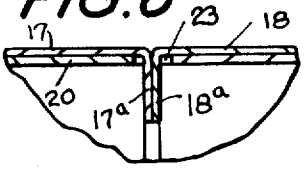
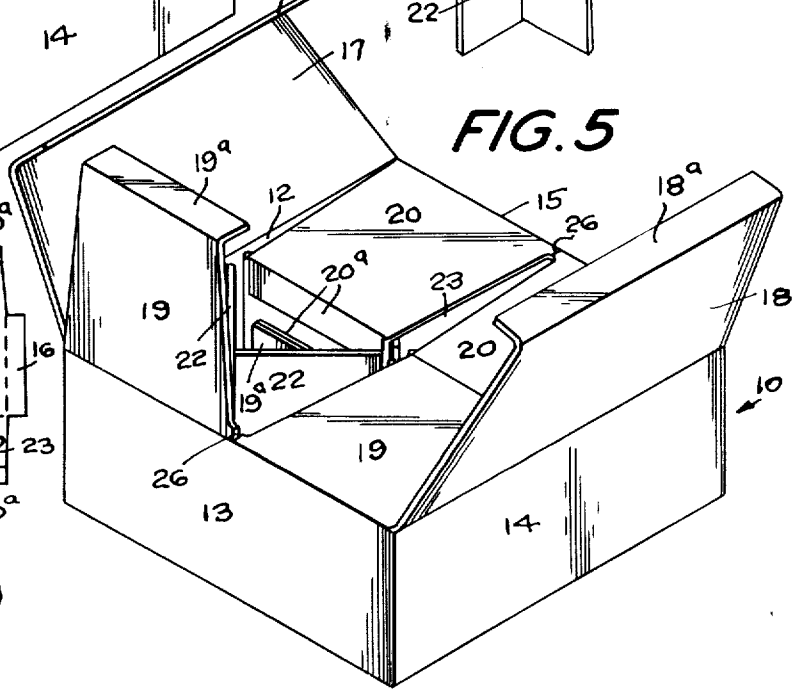


FIG. 5



PAPER BOARD SEAT STRUCTURE

This invention relates to furniture and more particularly to a cushion-supporting seat structure of corrugated paperboard, solid fiberboard or other suitable stiff sheet material to provide an inexpensive seat of strong and durable construction capable of withstanding hard wear.

An important object of the invention is to provide the cushion-supporting base with foldable top and bottom closure panels which constitute integral elements of a single blank of suitably cut and scored sheet material, such as corrugated paperboard and the like, to provide a four-sided box-like structure the side walls of which are entirely free of any visible cuts, slits or bulges to mar the appearance thereof.

More specifically it is an object of the invention to provide the sheet material blank of which the box-like cushion-supporting structure is formed with individually foldable panels and end flaps which are so cut and scored relatively to one another that when infolded to form doubled layered top and bottom closures for the assembled structure there is no tendency for such panels to interfere with one another during the operation of folding the same into their closed positions, thereby eliminating all possibility of said closure panels disrupting or otherwise marring the integrity in appearance of the several side wall panels of the structure.

Also, it is an object of the invention to provide internally of the assembled box-like structure a plurality of reinforcing members each of a cruciform shape which is secured in fixed position between top and bottom pockets formed within a discrete quadrant portion of the box structure by tucked-in end flaps of the closure panels in cooperation with the side wall panels of the box structure.

A further object is to provide a cushion-supporting seat base structure of box-like form which is of neat and pleasing appearance devoid of any unsightly tears or bulges in its side walls and which in itself serves as a closed storage container for one or more upholstered cushions which, upon removal from the container and after re-assembly of the latter into its closed-up form, may be placed upon the flat top therof as a decorative adjunct for comfortably seating a person at a convenient level above the floor.

Other objects and advantages of the present invention will appear more fully hereinafter, it being understood that the invention assists substantially in the combination, construction and relative arrangement of parts as described in the following specification, as shown in the accompanying drawings and as finally pointed out in the appended claims.

In the accompanying drawings:

FIG. 1 is a perspective view of a cushioned seat assembly constructed in accordance with and embodying the principles of the present invention;

FIG. 2 is a top plan view of the cusion-supporting base member of the seat assembly;

FIG. 3 is a top plan view of the base member with its uppermost top panels partially broken away to reveal infolded panels which immediately underlie said topmost panels, the bottom of the base member having a set of infolded panels similar to those shown in FIG. 3;

FIG. 4 is a perspective view of the base member which shows the top infolded panels thereof;

FIG. 5 is a perspective view similar to FIG. 4 but showing certain of the top panels in their opened position prior to infolding the same to close the top of the seat base member;

FIG. 6 is a detail cross-sectional view of the closed top of the set-up seat base as taken along the line 6—6 of FIG. 3.

FIG. 7 is a perspective view of one of the several reinforcing and bracing inserts employed to rigidify and strengthen the seat base against collapse during use thereof; and

FIG. 8 is a plan view on a reduced scale of a sheet of corrugated fiber board or other suitable stiff material cut and scored for assembly into its final set-up condition shown in FIG. 1.

Referring now more particularly to the drawings, it will be observed that the cusion-supporting seat base of the present invention, designated generally by the reference numeral 10, is generally in the form of a square box which is adapted to rest upon a floor and support upon its upper surface a cushion or set of cushions 11 to serve as a cushioned seat able to comfortably support a person in sitting position.

The box-like base is basically formed of a blank of sheet material such as corrugated fiber board or other suitable rigid material, which is cut and scored as shown in FIG. 8 to provide a plurality of relatively foldable side wall panels 12, 13, 14 and 15 and an end flap 16 adapted to be secured, adhesively or by tape, stitching or otherwise, in overlapping relation to the free end of the panel 12 to form a four-sided hollow structure. Each of the opposed pair of side wall panels 12 and 14 is provided with a pair of oppositely projecting, relatively foldable panels 17—17 and 18—18, all of which latter are provided with foldable end flaps, designated 17*a* for each of the panels 17 and flaps 18*a* for each of the panels 18.

The opposed pair of side wall panels 13 and 15 are respectively provided with oppositely projecting, relatively foldable pairs of panels 19—19 and 20—20, all of which latter are also provided with foldable end flaps, designated 19*a* for each of the paired panels 19—19, and 20*a* for each of the paired panels 20—20.

Also provided as elements of the seat base assembly 10 are a plurality of inserts 21 (see FIG. 7) each of which is adapted to be inserted in a quadrant portion of the set-up box-like structure 10. These inserts 21 each consist of a pair of correspondingly slotted members 22—22 of sheet material which are adapted to be interfitted as shown into cruciform relation, the overall depth of each insert being such as to enable it to be fitted snugly between the infolded top and bottom panels of the seat base when the latter is assembled in its final set-up condition.

In setting up the seat base assembly into its square box-like form as shown in the drawings, after initially shaping the blank to present the several side wall panels 12, 13, 14 and 15 in right angular relation with respect to one another and securing the free ends of the blank to provide a four-sided hollow structure, the bottom of said structure is closed by first infolding the bottom set of the opposed paired panels 19—19 and 20—20 and then infolding the bottom set of the opposed single panels 17 and 18 to overlie the infolded paired panels. Simultaneously as all of these panels are infolded, the flap ends thereof (17*a* and 18*a* of the bottom closure panels 17 and 18 and 19*a* and 20*a* of panels of the

paired bottom closure panels 19—19 and 20—20) are respectively upturned to form in the bottom of the box-like structure four pockets, one for each quadrant portion of the box-like structure.

Thereafter, one each of the assembled cruciform inserts 21 is inserted in each quadrant section of the box-like structure so as to respectively occupy their broken line positions as shown in FIG. 2, the inserts being held in such positions between the upturned flaps aforesaid and the side walls of the structure.

It will be noted that the paired bottom closure panels 19—19 and 20—20 which are the first to be infolded are separated from one another by an intervening tapered notch 23 (as see the blank of FIG. 8); which notch extends cross-wise of the set-up box-like structure between the side walls 13 and 15 thereof. Since there are two infolded pairs of these infolded bottom closures, the tapered notches 23 therebetween are in registry and conjointly form a bottom slot extending substantially across the full width of the box structure into which may be inserted the end flaps 17*a* and 18*a* of the infolded outermost closure panels 17 and 18 to complete formation of the bottom wall of the structure.

The top wall of the box-like structure is similarly formed, following insertion of the internal reinforcing inserts 21, the top wall being formed by the infolded paired panels 19—19 and 20—20 and their overlying infolded single panels 17 and 18 with the end flaps 17*a* and 18*a* of the latter being tucked into a top wall slot similar to that formed in the bottom wall of the box structure as above described.

It will be noted that all of the closure flaps which form the bottom as well as the top walls of the set-up structure have their side edges slightly converging toward their free ends so that when the same are infolded as above described there is no interference between adjoining coplanar panels or between any such panels and the adjoining side walls of the seat-forming box when the same are folded into their closed coplanar relations. Also, it is important to note that the notches 23 which separate the paired infolded top and bottom inner panels and form the above mentioned slots into which are tucked the end flaps of the outermost closure panels do not extend completely to the horizontal fold lines 24 of said panels (as see FIG. 8) but instead terminate short of said fold lines, as at 25, from which termination point each set of the paired panels 19—19 and 20—20 are further separated by a short slit 26 extending to the said fold lines 24—24 as a longitudinal continuation of each notch 23.

This combined notch and slit separation of the infolded top wall and bottom wall paired panels 19—19 and 20—20 is a most important feature of the present invention since it permits individual infolding of the paired top and bottom closure panels without any such unsightly tearing or rupture of the fiber board at the point of separation of these panels along the fold lines thereof as would mar the finished appearance of the seat side walls 13 and 15.

Since each pair of the individually foldable inner closure panels 19—19 and 20—20 have their adjoining inner side edges spaced apart by the intervening notch 23 and in close engagement only along the very short length of the slit 26 associated with each notch, interference between the paired panels when the same are relatively folded into their fully closed positions is reduced to a negligible degree and thus the tendency for any unsightly tearing or mutilation of the side wall of the seat closed box structure is reduced to a minimum.

It will be noted that the box-like structure 10 may serve in and of itself as a closed container not only for the disassembled flat members 22—22 of the several reinforcing assembly but also for one or more of the upholstered cushions adapted to be placed upon the top of the closed seat base structure and that the side walls of the closed seat base may be printed in any color or otherwise decorated to suit the decor of the room in which the seat is placed. The box with its enclosed flatly packed reinforcing members and cushions as an assembly may be in turn be encased in a container (not shown) for shipment and storage of the assembly.

It will be apparent that the seat base structure of the present invention may be of rectangular instead of square shape as shown, it being merely necessary to this end to horizontally lengthen one opposed pair of the side wall panels (12 and 14 or 13 and 15) relatively to the other pair and correspondingly increase the depth of the top and bottom closure panels associated with the shorter pair of the side wall panels. Thus, it will be understood that the present invention is susceptible of various changes and modifications which may be made from time to time without departing from the general principles or real spirit thereof, and it is accordingly not intended to limit the invention except as set forth in the appended claim or claims.

What is claimed as new and useful is:

1. A seat assembly comprising a four-side box-like structure formed basically of a flat blank of stiff sheet material which is cut and scored to provide a plurality of right-angularly related side wall panels each having at its opposite ends corresponding relatively foldable top and bottom closure panels, the closure panels associated with one opposed pair of said side wall panels being each split into two relatively foldable panels and those associated with the other pair of said side wall panels being unsplit, all of said closure panels having relatively short end flaps adapted to be inturned normal to the planes of their associated panels, the split pair of closure panels being individually inwardly foldable from their associated side wall panels into coplanar relation to conjointly constitute an inner layer of closure panels at the bottom and top ends of said structure, the unsplit pair of closure panels being also individually inwardly foldable from their associated side wall panels into coplanar relation to conjointly constitute an outer layer of closure panels closely overlying each said inner layer of closure panels, all of said inwardly foldable closure panels having convergingly tapered edges to render the same non-interfering with one another as the same are infolded into their closed positions, each said split pair of closure panels providing a tapered slot between their proximate edges terminating short of their respective fold lines and being further separated from one another by a short slit extending to said fold lines from the apex of said tapered slot in longitudinal continuation thereof, each of said tapered slots formed between each split pair of said inwardly folded closure panels being in horizontal alinement to conjointly provide an opening extending cross-wise of the structure between a spaced pair of said short slits into which said inturned end flaps of said unsplit panels may be inserted to secure the same in their closed positions at the top and bottom ends of the structure.

2. A seat assembly as defined in claim 1 wherein said inturned end flaps of said split closure panels provide conjointly with said inturned end flaps of said unsplit closure panels and with the side wall panels of the structure to which said closure panels are respectively attached a pair of vertically opposed pockets in each quadrant portion of the structure to secure therebetween reinforcing inserts of cruciform shape extending between the top and bottom walls of the structure and wherein said inserts are respectively nested in said pockets to rigidify the structure against vertical collapse.

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