March 6, 1934. H. M. FANCHER 1,950,168

STORAGE CHEST

Filed July 19, 1932

Fig. 1

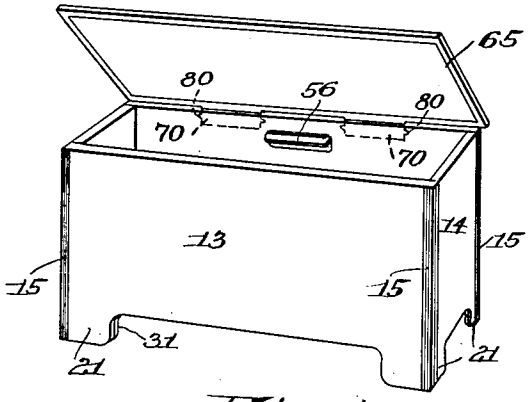



Fig. 2

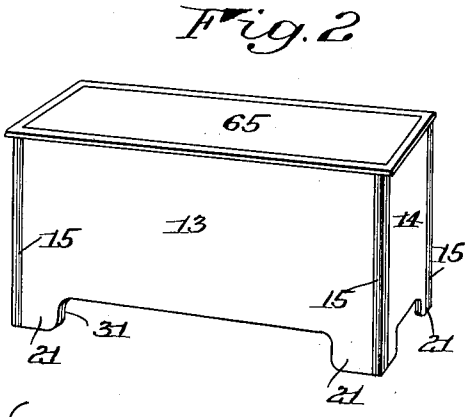



Fig. 4

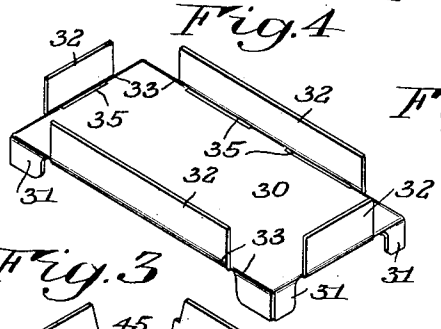



Fig. 5

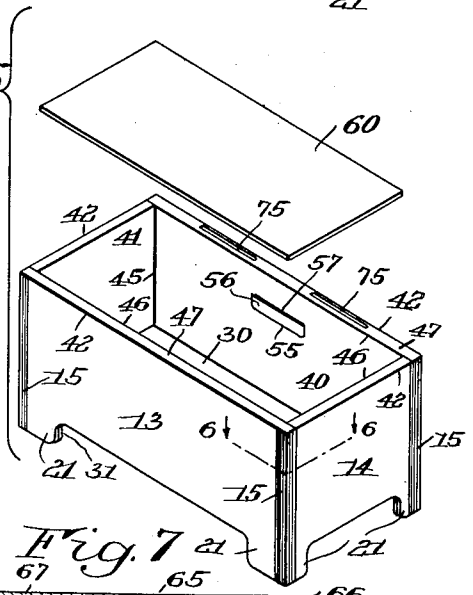



Fig. 3

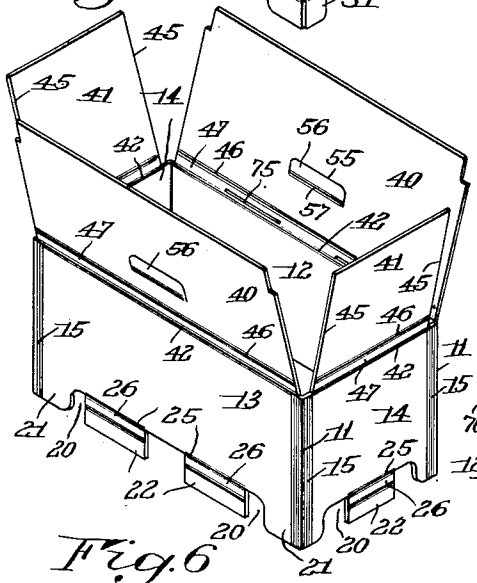



Fig. 7

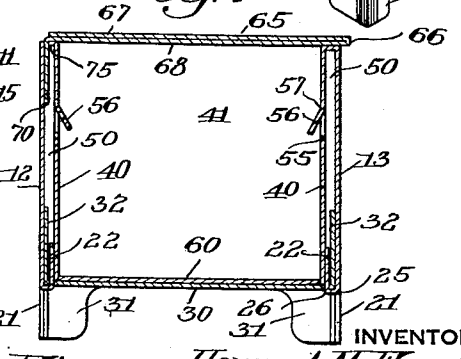



Fig. 6

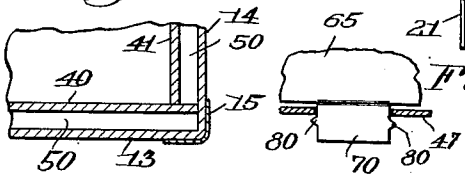



Fig. 8

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# UNITED STATES PATENT OFFICE

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## STORAGE CHEST

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Application July 19, 1932, Serial No. 623,380

11 Claims. (Cl. 229—23)

This invention relates to containers, and particularly to those made of sheet material such, for example, as fiber board, straw board, and the like, and adapted to be used as storage chests. One object of the invention is the provision of a container of this class which is simple in construction, inexpensive to manufacture, and effective in use.

Another object is the provision of a container of this kind having a one-piece wall structure adapted to be easily and quickly erected to form a structure of substantial size, yet which may be folded into a relatively small compact package suitable for storing or shipping.

Still another object is the provision of such a container which, although adapted to be constructed of materials of a relatively inexpensive nature, affords a strong, light, rigid structure.

A further object is the provision of a container of this class which combines strength with lightness.

A still further object is the provision in a container of this kind of suitable receptacles for receiving moth-proofing or deodorizing material, the receptacles being so arranged that the material does not come into direct contact with the articles positioned within the chest.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a perspective view of a storage chest constructed in accordance with the present invention, showing the cover in a partly open position;

Fig. 2 is a view similar to Fig. 1 with the cover in closed position;

Fig. 3 is a perspective view of the wall structure showing the relation of the various parts thereof;

Fig. 4 is a perspective view of the bottom member;

Fig. 5 is a perspective view of the wall structure and the bottom member in assembled relation, with the bottom pad in position to be inserted within the hollow wall structure;

Fig. 6 is a fragmentary horizontal sectional view of the erected wall structure illustrated in Fig. 5, but drawn to a larger scale and taken substantially on the line 6—6 of Fig. 5;

Fig. 7 is a vertical sectional view taken transversely of the container illustrated in Fig. 2 showing the relation of the various parts comprising the container, and

Fig. 8 is a fragmentary view of the container illustrated in Fig. 2 showing the locking means for the cover.

The same reference numerals throughout the several views indicate the same parts.

The present invention is embodied in the present instance, by way of illustration, in a storage chest made of inexpensive sheet material such, for example, as fiber board, straw board, or other analogous substances. The chest comprises, in general, a folding one-piece wall structure, a detachable bottom member supported within and holding the wall structure against collapse, and a cover hingedly and detachably secured to the wall structure. The members, when assembled, provide a strong, light, inexpensive chest of substantial dimensions in which articles such as blankets, bedding, woolen clothing, etc., may be stored. The wall structure is provided with receptacles or compartments in which suitable moth-proofing or deodorizing material may be placed.

Referring now to the drawing, Fig. 3 shows a wall structure which is made from a single sheet of fiber board scored and folded on the corner lines 11 to provide a back 12, front 13, and ends 14, the free ends of the sheet being secured in any suitable manner, as for example, by a strip of adhesive tape 15. If desired, all the corners 11 may be reinforced by such strips, as clearly shown in the drawing. The front, back, and ends may be broadly considered as side wall members which are hingedly connected to each other at points corresponding to the corners of the chest. The corner lines 11 thus afford hinge-like members which enable the wall members to be erected, as shown in Fig. 3, or to be collapsed substantially into a plane for storing or shipping, as hereinafter more fully described.

Each of the side walls is recessed or notched out adjacent the bottom thereof, as shown at 20, Fig. 3, to provide corner supporting legs 21, and depending tabs 22 intermediate the legs 21, as clearly illustrated in Fig. 3. These tabs 22 are scored along the parallel lines 25 and 26, see Fig. 3, to enable the tabs to be folded upon themselves to engage the bottom member to provide supporting means therefor, as hereafter pointed out.

When the wall members are erected, they are arranged substantially at right angles to each other, as shown in Fig. 3. These wall members are held in such erected position by a suitable supporting member which, in the present embodiment, is in the form of a separate bottom member placeable within the wall structure and engaging the side wall members to hold the latter

in erected position. This bottom member is preferably made from a single sheet of fiberboard suitably cut and scored to provide a central flat portion 30, and corner and marginal portions 31 and 32, respectively, which are hingedly secured to the flat portion 30 along the score lines 33, see Fig. 4. The corner portions 31 extend downwardly while the marginal portions 32 extend upwardly from the flat portion 30, for purposes to be hereinafter pointed out.

When the bottom member is positioned within the erected wall members, the flat portion 30 extends over substantially the entire area enclosed by the wall members, and the marginal portions 32 extend upwardly along the inner surfaces of the side wall members and provide bearing surfaces which cooperate with the flat portion 30 to maintain the side wall members in proper erected position. The corner portions 31, on the other hand, extend downwardly along the inner surfaces of the corner legs 21, and provide means for maintaining the portion 30 in elevated position, as shown in Fig. 7. These corner portions thus not only provide a support for the bottom member, but also afford reinforcing means for the corner legs 21. When the chest is to be collapsed, as hereinafter described, the bottom member is removed from the wall structure, and the corner and marginal portions 31 and 32 are folded on the score lines 33 so as to lie in the plane of the flat portion 30.

While the corner portions 31 afford a substantial support for the bottom member, it is preferred to provide additional means for supporting the parts of the bottom member intermediate the corner portions 31. To this end, the portion 30 of the bottom member is provided with spaced slots 35 arranged adjacent the score lines 33 and in alinement with the tabs 22 on the side wall members. When the bottom member is placed within the wall structure, the tabs 22 are folded on the score lines 25 and 26 and are inserted upwardly through the registering slots 35 and overlie the marginal portions 32, as clearly shown in Fig. 7. The sections of the tabs 22 between the score lines 25 and 26 are substantially equal in width to the thickness of the marginal portions 32, and provide means which engage the bottom edges of the marginal portions to afford a support for the bottom member intermediate the corner portions 31. These tabs are clamped in place by locking means hereafter described. If desired, the corner portions 31 of the bottom member may be omitted, in which event the bottom member is supported entirely by the tabs 22 which are formed integral with the side wall members. It is thus evident that the bottom member holds the side wall members in erected position and is in turn supported, in part at least, by the wall members

The side wall members are also provided with upwardly extending side and end flaps 40 and 41 respectively, which are hingedly secured to the various wall members along the score lines 42 which form the upper edges of the wall members. The flaps 40 are secured to the back 12 and front 13, and the flaps 41 are secured to the ends 14, as clearly shown in Fig. 3. The side flaps 40 are substantially equal in length to the distance between the ends 14, and when folded within the wall structure so as to overlie the back and front wall members, as shown in Figs. 5 and 7, engage the ends 14, as indicated in Fig. 6, and afford a longitudinal bracing means for the chest. The flaps 41, on the other hand, are substantially equal in width to the distance between the opposite side flaps 40, and, when folded inwardly to overlie the end members 14, have the edges 45 thereof substantially in engagement with the inner faces of the flaps 40 to hold the latter in position, also as shown in Fig. 6, and to provide lateral bracing means for the chest.

Each of the flaps is preferably scored along the line 46, parallel to the line 42, to provide a narrow horizontally extending strip 47 which forms a top edge of each wall of the chest, and which cooperates with the tabs 22 and marginal portions 32 to hold the flap in substantially parallel relation to the adjacent side wall member to provide a hollow chamber or compartment 50 in which suitable moth-proofing or deodorizing material may be placed. The lower ends of the flaps rest substantially on the flat portion 30 of the bottom member, as clearly shown in Fig. 7. These flaps thus not only provide bracing means for the chest, but also cooperate with the adjacent wall members to afford hollow wall panels which conceal the tabs 22 and marginal portions 32 and in which suitable moth-proofing material may be placed. The flaps with the integral side wall members, constitute a one-piece collapsible wall structure which is held against collapse by the bottom member.

To facilitate the placing of the moth-proofing material in any of the compartments 50, the adjacent flap is cut at 55 to provide a tongue 56 hinged along the score line 57 to the flap. This tongue may be swung on the line 57 out of the plane of the flap, as shown in Fig. 7, to provide an opening through which the material may be placed in the compartment. While the present embodiment shows such tongues only on the side flaps 40, this is by way of illustration only, as it is contemplated that similar tongues may also be provided on the end flaps 21 if desired.

The flaps 40 and 41 are locked in position by means of a bottom pad 60, of the shape best shown in Fig. 5. This pad is made of fiber board and is equal in length and width to the space enclosed by the inturned flaps. When this pad is positioned within the chest so as to overlie the bottom member, as illustrated in Fig. 7, the edges of the pad engage the lower portions of the flaps to force them outwardly and to lock them against inward movement. By means of this arrangement, the flaps are held in engagement with the tabs 22 and cooperate with the outer walls to clamp the tabs 22 and marginal portion 32 in position within the compartments 50. It is thus evident that the bottom member and the bottom pad hold the various wall members and flaps in erected position, and are in turn supported, in part at least, by the wall members.

The upper end of the wall structure is closed by a suitable closure member or cover generally indicated by the numeral 65, Figs. 1 and 2. This cover is preferably made from a single piece of fiber board folded upon itself along the score line 66 to provide a two ply cover member having an upper member 67 and a lower member 68, as clearly illustrated in Fig. 7. These two members may be secured together in any suitable manner, as for example by adhesive strips such as shown at 15, Fig. 6. The lower member 68 of the cover is provided with two or more outwardly projecting tabs 70 hingedly secured to the section 68 along the rear edge thereof. These tabs are arranged to extend through registering slots 75 formed on the upper edge 47 of the rear wall

panel, see Figs. 5 and 7, to hingedly secure the cover to the wall member.

In order to retain the cover in position relative to the wall structure, means is preferably provided for locking the tabs 70 in the slots 75. This locking means comprises, in the present embodiment, lugs or projections 80 which extend outwardly from opposite side edges of the tabs 70 and engage the under side of the strip 47 on the rear wall panel, as clearly illustrated in Fig. 8, to firmly secure the tabs against accidental removal from the slots 75. When the tabs are inserted in the slots, the lugs 80 bend slightly to permit such insertion and then spring outwardly to the position shown in Fig. 8 to lock the tabs in position. These lugs are sufficient to prevent accidental removal of the tabs by a slight force, but will bend when a greater force is applied to permit the tabs to be withdrawn from the slots. When the container is to be collapsed, as hereafter described, the tabs are removed from the slots 75 by moving them upwardly relative thereto, the lugs 80 bending sighty to permit such removal. By means of this simple arrangement, the cover is secured against accidental detachment, yet may be detached when desired.

Although the above described chest, when erected, is intended to form a more or less permanent structure, it may be collapsed into a small package if desired. When the chest is to be collapsed, the cover 65 is removed by withdrawing the tabs 70 out of the slots 75, as heretofore described. The bottom pad 60 is then removed, and the flaps 40 and 41 are swung inwardly and upwardly to the position shown in Fig. 3. The bottom member is next removed and flattened into the plane of the portion 30, as heretofore pointed out. After the bottom member has been removed, the wall structure appears as shown in Fig. 3, and is collapsed substantially into a plane by folding it about the corner score lines 11. The entire chest may thus be folded into a small compact article when not in use, and may be shipped from the factory similarly folded, ready for erection by the ultimate user.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive idea may be carried out in a number of ways. This application is therefore not to be limited to the precise details described, but is intended to cover all variations and modifications thereof falling within the spirit of the invention or the scope of the appended claims.

I claim:

1. A container of sheet material having upright walls forming a hollow polygonal figure, a bottom member separate from and placeable within said walls, portions folded upwardy from adjacent the bottoms of said walls and interlocked with said bottom member to support it, portions folded inwardly and downwardy from adjacent the tops of said walls to provide inner lining walls reaching downwardly substantially into contact with said bottom member, and an inner bottom plate overlying said bottom member and substantially contacting with said inner lining walls to prevent inward movement of the lower edges of said lining walls.

2. A container of sheet material having upright walls forming a hollow wall structure, a bottom member within said wall structure, marginal portions secured to the edges of said bottom member and extending upwardly along the inner faces of said walls to hold the latter against inward collapse, tabs hingedly secured to the upright walls adjacent the bottoms thereof and extending through said bottom member to support the latter, flaps associated with said walls to form inner lining walls reaching downwardly substantially into contact with said bottom member, said tabs and said marginal portions being positioned between and spacing said lining walls from the outer walls, and a bottom pad overlying said bottom member and engaging said lining walls adjacent the bottoms thereof to clamp said tabs and said marginal portions between said lining walls and the outer walls of the container.

3. A container for sheet material having upright walls forming a hollow wall structure, a bottom member within said wall structure, tabs hingedly secured to said upright walls adjacent the bottoms thereof and extending through said bottom member to support the latter, flaps folded inwardly and downwardly from the upper edges of said walls to provide inner lining walls, said tabs being positioned between said lining walls and said upright walls, and a bottom pad overlying said bottom member and engaging said lining walls to clamp said tabs between said lining walls and the outer walls of the container.

4. A container formed of fiber board and having upright walls arranged to provide a hollow wall structure, a bottom member placeable within said walls, corner portions extending downwardly from the corners of said bottom member and serving to support the latter, marginal portions extending upwardly from the edges of said bottom member intermediate said corner portions, said corner and marginal portions engaging the inner faces of said walls to reinforce the latter and to hold them against inward collapsing, and flaps secured to the upper edges of said walls to provide inner lining walls for the container.

5. A container formed of fiber board and having upright walls arranged to provide a hollow wall structure, a bottom member placeable within said walls, corner portions extending downwardly from the corners of said bottom member and serving to support the latter, marginal portions extending upwardly from the edges of said bottom member intermediate said corner portions, said corner and marginal portions engaging the inner faces of said walls to reinforce the latter and to hold them against inward collapse, tabs formed on said walls adjacent the bottoms thereof and arranged to extend through said bottom member intermediate said corner portions and to cooperate with the latter to support the bottom member, and flaps folded inwardly and downwardly from the upper edges of said walls to provide inner lining walls spaced from the outer walls of the container.

6. A container formed of fiber board and having upright walls arranged to provide a hollow wall structure, a bottom member placeable within said wall structure, marginal portions extending upwardly from the edges of said bottom member, tabs on said walls adjacent the bottoms thereof and extending upwardly through said bottom and engaging said marginal portions to support the bottom member, and flaps hingedly secured to said walls and extending substantially parallel thereto to provide inner lining walls.

7. A container formed of fiber board and having upright walls arranged to provide a hollow wall structure, a bottom member placeable within said walls, corner portions extending downwardly from the corners of said bottom member and serving to support the latter, marginal portions

extending upwardly from the edges of said bottom member intermediate said corner portions, said corner and marginal portions engaging the inner faces of said walls to reinforce the latter and to hold them against inward collapsing, tabs formed on said walls adjacent the bottoms thereof and arranged to extend through said bottom member intermediate said corner portions and to cooperate with the latter to provide supporting means for said bottom member, flaps hingedly secured to the upper edges of said walls and arranged to overlie said tabs and marginal portions to provide inner lining walls spaced from the outer walls of the container, and a bottom pad overlying said bottom member and engaging the lower portions of said inner lining walls to lock said lining walls against inward movement and to securely clamp the tabs and marginal portions in position between the inner and outer walls of the container.

8. A container of fiber board having upright walls forming a hollow rectangular wall structure, a separate bottom member placeable within said wall structure, marginal portions extending upwardly from the edges of the bottom member in engagement with the inner faces of said walls and serving to hold the latter against inward collapse, tabs folded upwardly from said walls adjacent the bottoms thereof and extending through said bottoms to support the latter, flaps folded inwardly and downwardly from the upper edges of said walls to form inner lining walls spaced from the outer walls of the container, and a bottom pad overlying said bottom member and engaging said flaps to hold them against inward movement, said tabs and marginal portions being positioned between and spacing the inner and outer walls to form hollow compartments therebetween, said tabs and marginal portions being in turn clamped between said inner and outer walls to afford supporting means for the bottom member.

9. A container of fiber board having upright walls forming a hollow wall structure, a bottom member placeable within said walls and serving to hold them against inward collapse, portions hingedly secured to said walls adjacent the bottoms thereof and extending upwardly through registering slots in said bottom member to afford a support therefor, portions attached to and overlying said walls to provide inner lining walls, one side of said container being provided with spaced slots adjacent the upper edge thereof, a cover for closing the top of said container, and tabs formed on said cover and extending through said slots and positioned between said inner and outer walls to hingedly secure said cover to said container.

10. A container of fiber board having upright walls forming a hollow wall-structure, one of said walls being provided with spaced slots of predetermined length adjacent the upper edge thereof, a cover for closing the top of said container, tabs formed on said cover and extending through said slots to hingedly secure said cover to said wall structure, said tabs being of a length capable of being inserted in and withdrawn from said slots, and projections on said tabs arranged to engage the ends of said slots but capable of being forcibly passed through said slots, so that said projections serve to retain said hinge tab frictionally within said slots when they have been inserted therein.

11. A container of fiber board having upright walls forming a hollow wall structure, portions folded substantially horizontally inwardly for a material distance from the tops of said walls and thence downwardly to provide inner lining walls spaced from the outer walls of the container, one of said inwardly extending portions being provided with spaced slots, a cover for closing the top of said container, tabs formed on said cover and extending through said slots and positioned between the inner and outer walls to hingedly secure the cover thereto, and means associated with said tabs tending to hold them frictionally in said slots.

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