March 24, 1931. H. B. FERGUSON 1,797,681

COLLAPSIBLE CHEST

Filed Feb. 19, 1930 2 Sheets-Sheet 1

Fig. 1.

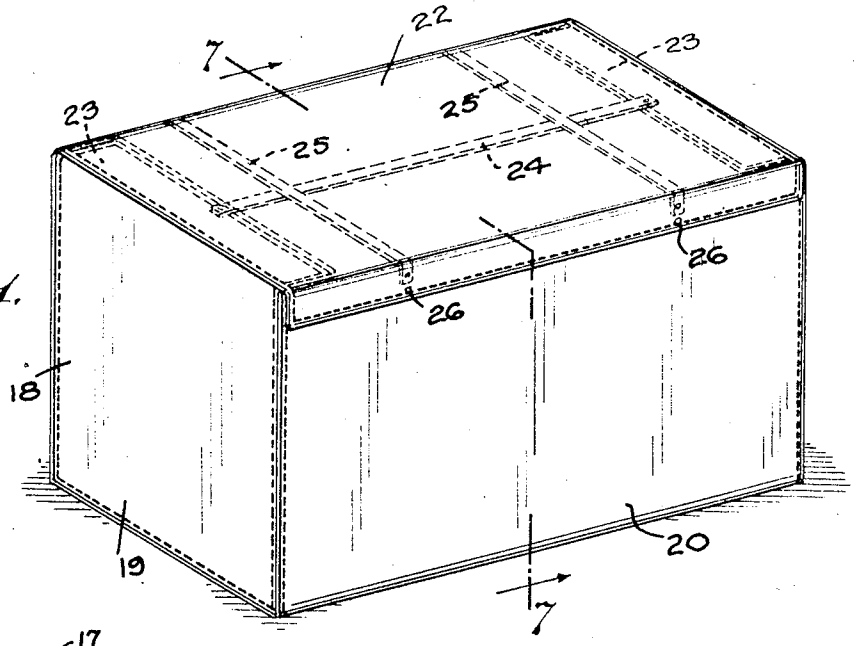


Fig. 5

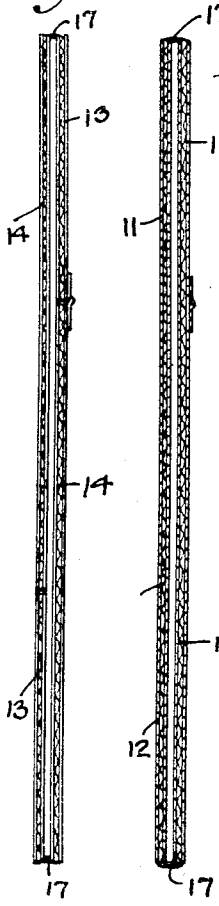
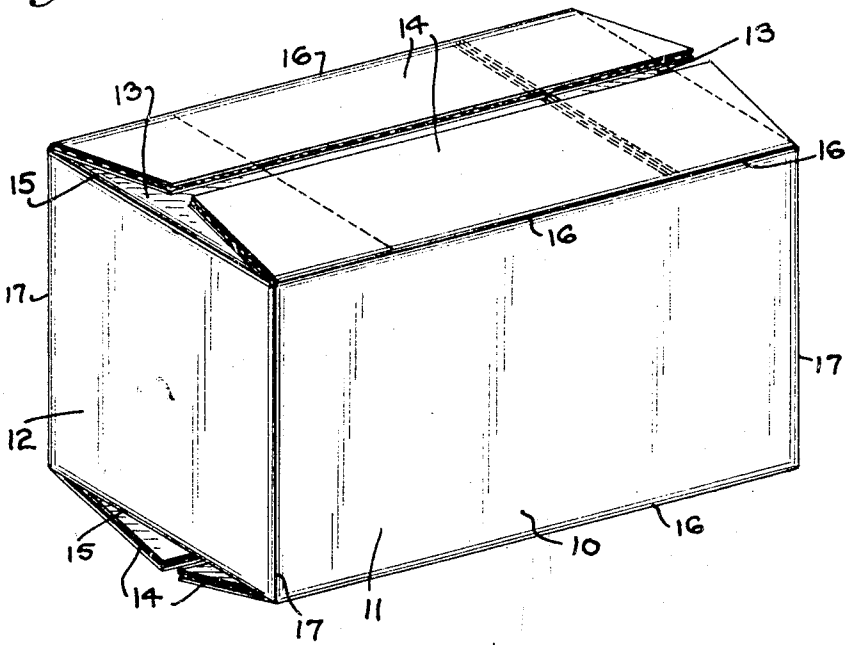


Fig. 6.

Fig. 3.



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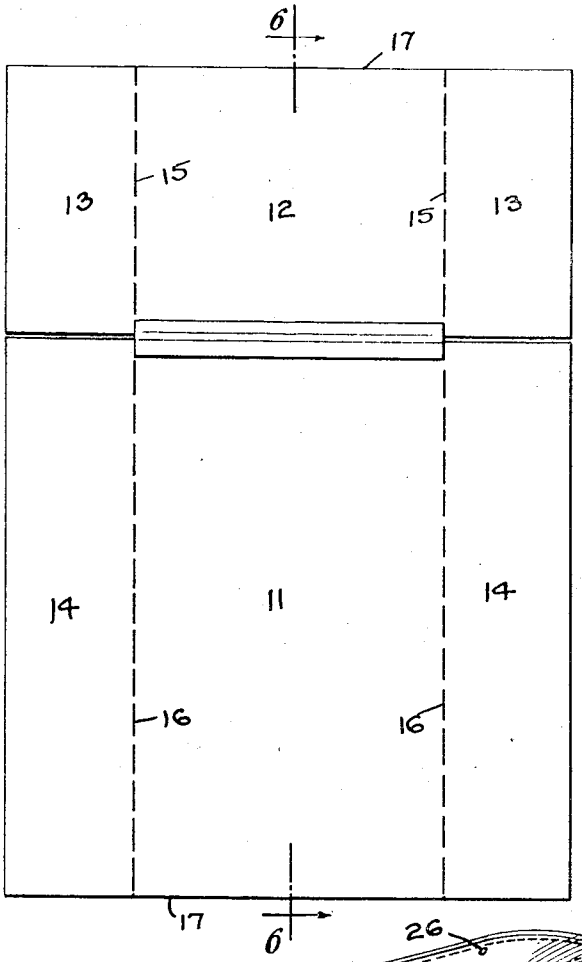
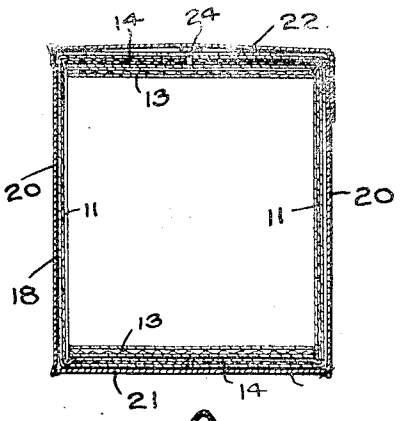


Fig. 4.

Fig. 7.



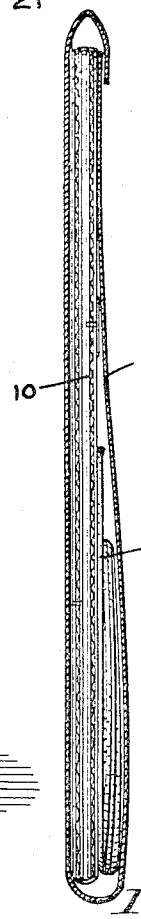


Fig. 8.

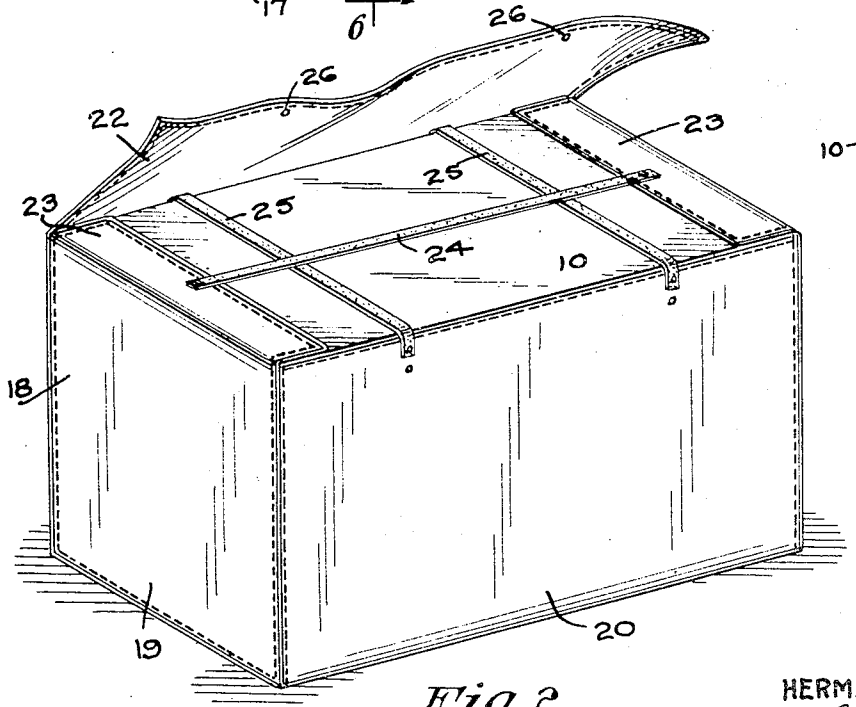


Fig. 2.

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UNITED STATES PATENT OFFICE

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COLLAPSIBLE CHEST

Application filed February 19, 1930. Serial No. 429,531.

This invention relates generally to chests, trunks and other such containers for storing sundry articles and more particularly to improvements in the construction thereof whereby to render the same readily collapsible when not in use.

The chest as constructed in accordance with the present invention is intended to take the place of or at least supplement the usual trunk as well as that type of container known more or less generally as a cedar chest within which are adapted to be stored various articles, such as wearing apparel, woolens, linens and the like. Not only are these chests and trunks ordinarily bulky, heavy and relatively expensive but they also occupy considerable floor space even when empty. In the present days of small apartments and homes the fact that these chests occupy so much floor space even when not in use offers a serious problem and accordingly their use in quarters of limited space has been of necessity greatly curtailed with the result that the modern housekeeper has found it increasingly difficult to provide ample storage space in the home during certain seasons of the year.

It is among the aims of the present invention to overcome the aforementioned difficulties by providing a collapsible type of storage chest which may be collapsed during the period of its non-use and so permit it to be stored away until that time when it is again placed in use.

A further aim or object of the invention is to provide a collapsible chest of such nature that when collapsed it occupies a veritable minimum of space and so conserves to the fullest extent the valuable space of the modern home.

A still further object of the invention is to provide a chest for storage purpose which is not only sturdy and durable in construction and of ample proportions but which is exceedingly inexpensive to manufacture and therefore cheap in price.

Still another object of the invention is the provision of a collapsible chest constructed of relatively light-weight but nevertheless strong material which may be readily treated to render the chest moth-proof and waterproof.

Still another and important object of the invention is the provision of a chest which may be readily collapsed and as readily set up without the use of any tools or securing devices whatsoever.

Further objects and advantages of the invention will appear more fully hereinafter.

In its preferred form the invention consists substantially in the combination, construction, location and relative arrangement of parts, all as will be described in greater detail hereinafter, as shown in the accompanying drawings, and as finally pointed out in the appended claims. In the said accompanying drawings:—

Figure 1 is a view in perspective of the collapsible chest constructed in accordance with the present invention and showing the same as it appears in use;

Figure 2 is a similar view showing the cover flap of the outer fabric casing in raised or open position;

Figure 3 is a view in perspective showing the interior foldable structure expanded into the shape of a box;

Figure 4 is a side elevational view of the structure shown in Figure 3 when folded upon itself;

Figure 5 is an edge view of the folded structure shown in Figure 4;

Figure 6 is a vertical cross-sectional view of this folded structure taken on the line 6—6 of Figure 4;

Figure 7 is a transverse cross-sectional view taken on the line 7—7 of Figure 1; and

Figure 8 is a vertical sectional view showing the box-like structure of Figure 3 and the fabric casing therefor each in folded condition and disposed within a suitable envelop therefor.

Referring now more particularly to the drawings and particularly to Figures 3 to 6 inclusive it will be observed that the chest as constructed in accordance with the present invention includes an interior box-like structure, designated generally by the reference numeral 10. This structure 10 is preferably formed of relatively stiff cardboard or cor-

rugated paper and is provided with side and end walls 11 and 12 respectively permanently joined together in any suitable manner. In other words, these side and end walls 11 and 12 are continuous throughout the perimetral extent of the structure. Formed upon the opposed top and bottom edges of the end walls 12 are the top and bottom flaps 13. Similar flaps 14 are provided at the top and bottom edges of the side walls 11 of the structure. By scoring the structure 10 along the lines 15 and 16 at the top as well as at the bottom thereof the flaps 13 and 14 may be disposed respectively in the planes of the end and side walls of which they form parts, or they may be folded over into the position and relative relation shown in Figure 3.

The structure 10 is further scored along the vertically extending lines 17 which separate the end walls 12 from the side walls 11 thereof. Due to the relative arrangement of parts and by reason of the lines of scoring 15, 16 and 17, the structure 10 is adapted to be folded upon itself to take the form shown in Figures 4, 5 and 6 wherein it will be observed that one of the side walls 11 and its adjacent side wall 12 lie in a common plane arranged parallel to and in superposed relation with respect to the opposite end wall 12 and its adjacent side wall 10. It will further be observed that when the structure is so folded upon itself the top and bottom flaps at opposite sides of the box are respectively disposed in the planes of the side walls 11 to which they are secured, at the same time that the top and bottom end flaps 13 at opposite ends of the box are respectively disposed in the plane of the end wall 12 to which they are secured. The result is that a substantially flat structure is obtained of a width equal to that of the overall depth of one side wall 11 and the top and bottom flaps 14 secured thereto and of a length equal to the combined length of one side wall 11 and one end wall 12.

It will be understood of course that the structure 10 does not in itself form a self-sustained and independently complete box or the like adapted for ordinary use. In order to give sustenance to the structure and to maintain it in the shape of a box adapted to receive various articles to be stored away, there is provided a fabric jacket or casing 18 of the character best shown in Figures 1, 2 and 7. It will be observed that this fabric jacket 18 which is limp and inherently incapable in itself of being sustained in the form of a box is also provided with the end wall panels 19 and side wall panels 20. In addition to these end and side walls 19 and 20 the jacket 18 is provided with a bottom panel 21 and a top cover flap 22. I find it preferable in the construction of the jacket to form the side wall panels 20, the bottom panel 21 and the cover panel 22 of one continuous length of cloth material. The fabric or cloth of which the jacket is formed is preferably non-extensible in character to prevent stretching thereof. As clearly appears in Figures 1 and 2 the upper edges of the end wall panels 18 are provided with extensions 23.

To set up the chest for use the folded structure of Figures 4, 5 and 6 is expanded into the shape shown in Figure 3 and so expanded is enveloped within the cloth jacket or casing 18, the latter serving to maintain the foldable structure 10 in the shape of a box. When the structure 10 and the jacket 18 are assembled in the relation shown in Figures 1, 2 and 7 they serve conjointly to form a substantially complete and self-sustained chest, although each of these parts is in itself inherently incapable of being sustained in box-like form. Secured to one edge of the extension 23 of the fabric end wall panel is a strap or similar element 24 preferably in the form of a rubberized tape. The free end of this tape is provided with a suitable snap element for engagement with a co-operating element secured to the extension 23 of the opposite end wall panel 19 of the jacket. Secured to the upper edge of the rear wall panel 20 of the jacket are a pair of straps 25 each similar to the strap 24. The free ends of these straps 25 are equipped with snap elements for co-action with similar elements secured to the upper edge of the front wall panel 20 of the jacket. These straps serve to retain the jacket 18 in closely fitting relation with respect to the structure 10 received therewithin.

In order to obtain access to the interior of the structure 10 the straps 24 and 25 are detached from their fasteners thereby permitting the flaps 13 and 14 of the interior structure 10 to be lifted. The cover flap 22 of the external jacket 18 reaches over the upper front edge of the unit and is provided with suitable snap fasteners or similar devices 26 for securing the free edge of the cover to the forward wall of the chest. As appears most clearly in Figure 2 the strap 24 is of sufficient width and so disposed that when the same is fastened in the position shown it serves to cover the adjoining edges of the flaps 14 thereby effectually precluding the passage of dust and the like between said flap edges and into the interior of the chest.

When it is desired to store the chest away, as when the same is not in use, the structure 10 is removed from its envelop and form-retaining jacket 18 and is folded upon itself in the form shown in Figure 4. The jacket may also be folded upon itself and the latter together with the folded structure 10 may be placed within an envelop 27 (see Figure 8). This envelop 27 together with its contents can then be stood against the wall of a closet or the like so as to occupy a veritable minimum of floor space. The collapsible chest as described hereinbefore is inexpensive to manu-

facture, is durable in use and has a number of other advantages readily apparent to the user thereof. If desired, and it is preferable to do so, the structure 10 may be treated to render the same waterproof and the interior thereof may be sprayed with cedar oil or the like to render the chest moth and insect proof.

It will be understood of course that the invention is susceptible of various changes and modifications without departing from the the real spirit or general principles of the same and it is accordingly intended to claim the invention broadly, as well as specifically, as indicated by the appended claims.

What is claimed as new and useful is:—

1. In a collapsible chest, in combination, a normally foldable structure inherently incapable of self-sustenance in the shape and adapted to be expanded into the form of a box, said structure having side and end walls hingedly joined together an openable closure flaps swingably connected to the bottom edges of each of said walls, said structure being foldable into the form of a double-paneled substantially flat unit each panel of which includes one side wall, one end wall and the closure flaps connected to said last-mentioned walls, and a relatively strong flexible jacket having side, end and bottom walls permanently secured together within which the expanded structure is adapted to be received, said jacket walls being each substantially coextensive in size with the corresponding walls of said expanded structure and together with said closure flaps being relatively so shaped and proportioned that the tension of the surrounding flexible jacket sustains the said expanded structure in the form of a completed chest, the expanded structure being collapsible when removed from said jacket into the form of the said substantially flat unit without necessitating the individual collapse of any one or more of the side or end walls thereof.

2. In a collapsible chest, in combination, a normally foldable structure inherently incapable of self-sustenance in the shape and adapted to be expanded into the form of a box, said structure having side and end walls hingedly joined together and an openable closure flap swingably connected to one bottom edge thereof to constitute, when swung into right angle position with respect to said walls of the structure, a bottom wall element of the expanded structure, said structure being foldable into the form of a substantially flat unit, and a relatively strong flexible jacket having side, end and bottom walls permanently secured together within which the expanded structure is adapted to be received, said jacket walls being each substantially coextensive in size with the corresponding walls of said expanded structure and relatively so arranged that they coact with said swingable bottom closure flap to sustain the said expanded structure in the form of a completed chest; the expanded structure being collapsible, when removed from said jacket, into the form of said substantially flat unit without necessitating the individual collapse of any one or more of the side or end walls thereof.

3. In a collapsible chest, in combination, a normally foldable structure inherently incapable of self-sustenance in the shape and adapted to be expanded into the form of a box, said structure having rigid side and end walls hingedly joined together and openable closure flaps swingably connected to the bottom edges of each of said walls, said structure being normally foldable into the form of a double paneled substantially flat unit each panel of which includes one side wall, one end wall and the closure flaps connected to the edges of said last-mentioned side and end walls, and a flexible jacket of relatively strong tensile qualities having side, end and bottom walls permanently secured together within which said structure is adapted to be received, the said side and end walls of the structure and the said bottom closure flaps thereof being relatively so shaped and proportioned that independently of the top closure flaps of the structure, the tension of the surrounding fabric jacket sustains the said box-like structure in the form of a completed chest, the latter being non-collapsible when the top closure flaps thereof are swung into open position.

4. In a collapsible chest, in combination, a normally foldable structure inherently incapable of self-sustenance in the shape and adapted to be expanded into the form of a box, said structure being characterized in that the top and bottom edges of each side and end wall thereof are provided with hinged closure flaps which are each swingable into the plane of the particular wall to which they are respectively hinged, and a normally limp relatively strong form-retaining casing for said structure having side, end and bottom walls hingedly secured together, and a limp top closure flap operative merely to cover the top surface of the expanded structure, said hinged bottom closure flaps of the foldable structure being each so arranged and proportioned that when swung into planes at right angles to their respective walls of the foldable structure the said side, end and bottom walls of the casing, independently of the top closure flap thereof, coact with the bottom closure flaps of said structure to form a self-sustained completed chest which is non-collapsible in character when the hinged top closure flaps are swung into open position.

5. A collapsible chest composed of a normally foldable box-like structure formed of rigid material and being inherently incapable of self-sustenance in the shape of a box, said structure having side and end walls to the op-

posite upper and lower edges of which are hingedly secured a plurality of swingable closure flaps, the closure flaps secured to the lower edges of the end walls of said structure being so shaped and proportioned that, when swung into right angle position with respect to said end walls, they maintain a right angle relation between said side and end walls of the structure, and a limp form-retaining jacket for encasing said structure, the side, end and bottom walls of said jacket being formed of material of relatively strong tensile quality and of a character arranged to coact solely with the side and end walls of the structure and the swingable flaps secured to the lower edges thereof to sustain said encased foldable structure in the form of a completed box-like chest, the latter being non-collapsible in character even when the upper closure flaps thereof are swung into open position.

6. In a collapsible chest, in combination, a normally foldable box-like structure inherently incapable of self-sustenance in the shape of a box and having hingedly joined side and end walls to each of the opposite upper and lower edges of which is swingably secured an openable closure flap, the swingable closure flaps at the lower edges of said structure being so proportioned and arranged that when swung into a common plane extending at right angles to said structure walls they constitute the bottom wall of the said box-like structure, a flexible form-retaining jacket of relatively strong tensile character for encasing said structure having side, end and bottom walls permanently secured together and arranged to coact solely with the side and end walls of said structure and the swingable flaps secured to the lower edges thereof to sustain said encased structure in the form of a non-collapsible box-like chest, said foldable structure being collapsible, when removed from said jacket, without necessitating the individual folding or collapse of any one or more of the side or end walls thereof, a plurality of straps for interconnecting the opposed upper edges of said jacket, and a top cover flap secured to one edge of the jacket and arranged to overlie and conceal said straps and the upper surface of said encased box-like structure.

In testimony whereof, I have hereunto affixed my signature.

HERMAN B. FERGUSON.