Dec. 7, 1948. E. H. CURTIS 2,455,739

COLLAPSIBLE STORAGE CABINET

Filed June 2, 1945 4 Sheets-Sheet 1

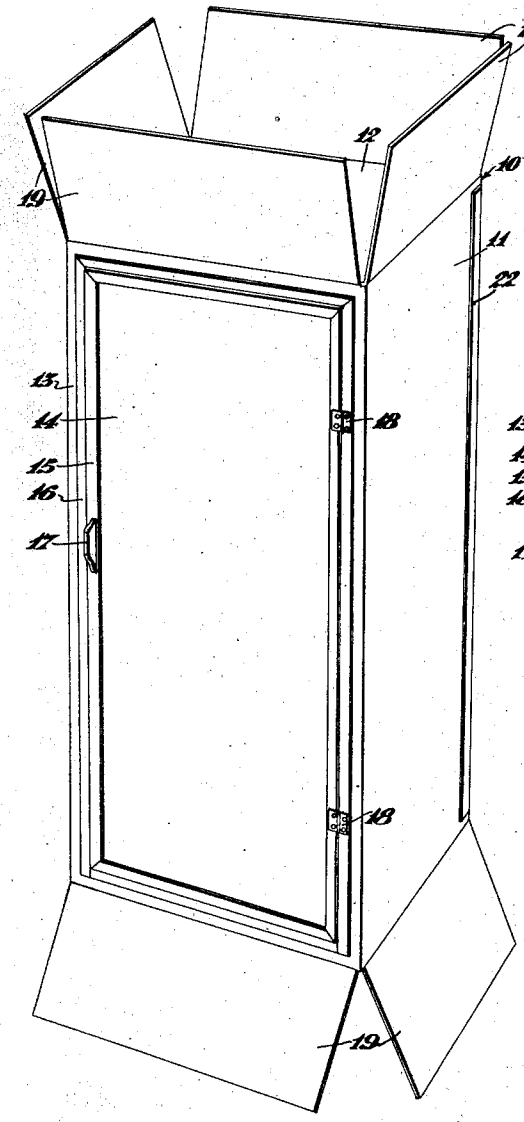


Fig. 1

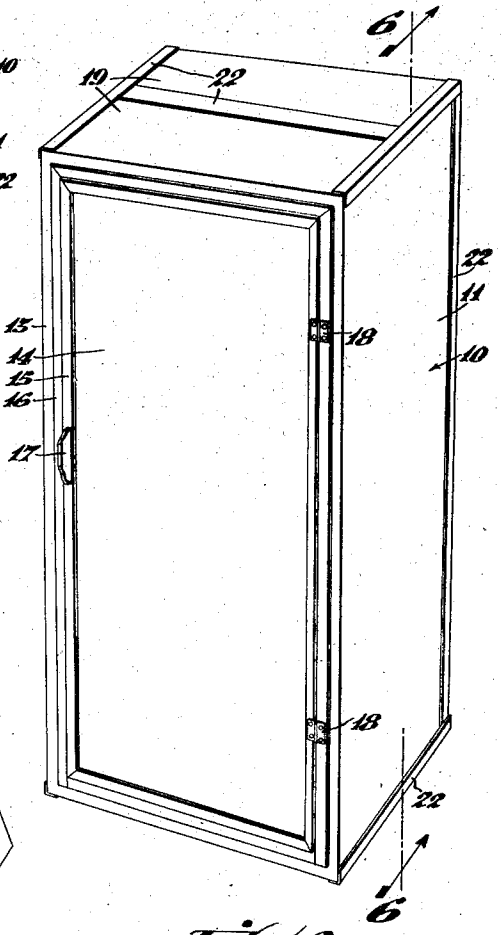


Fig. 2

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Filed June 2, 1945 4 Sheets-Sheet 2

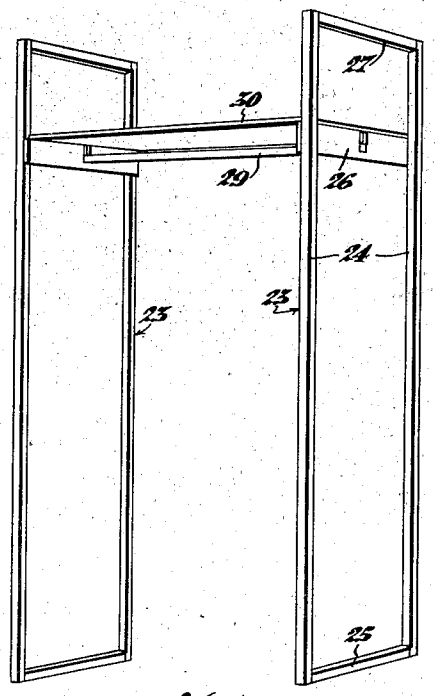


Fig. 3

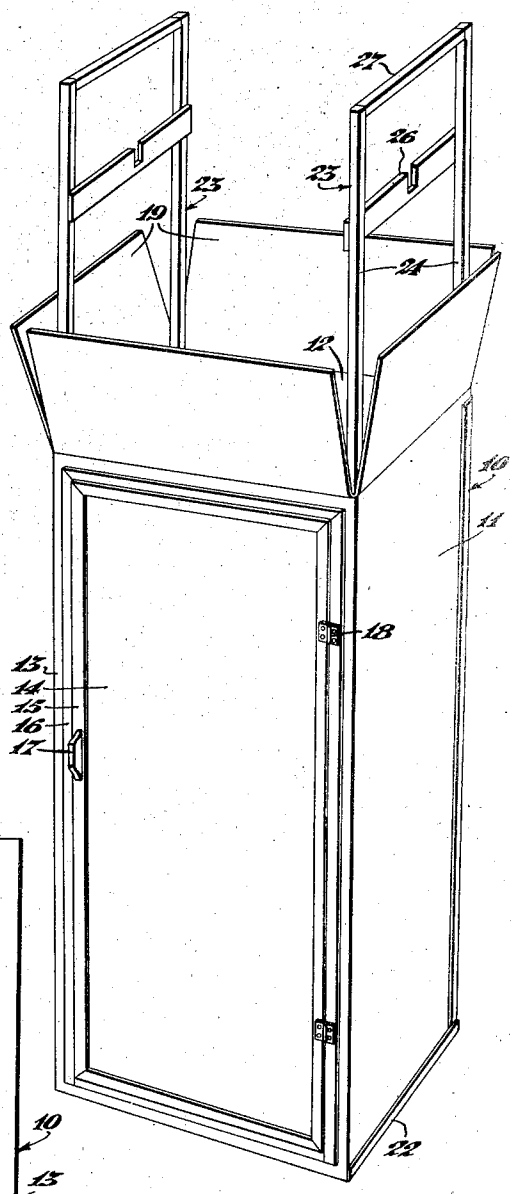


Fig. 4

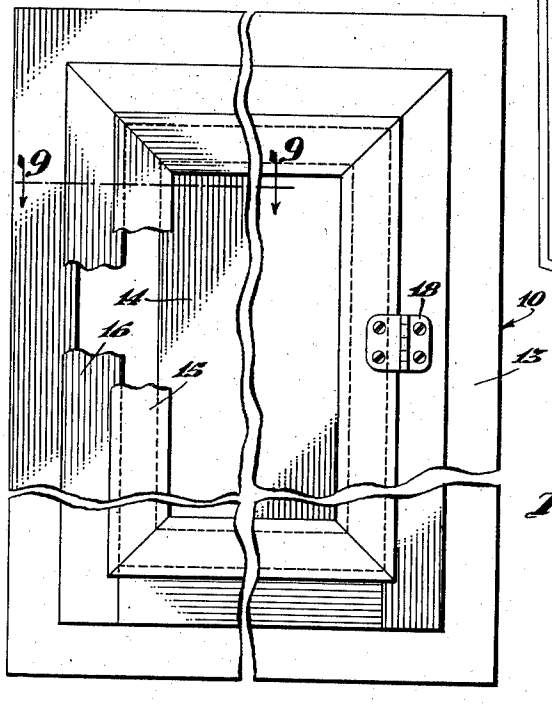


Fig. 8

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COLLAPSIBLE STORAGE CABINET

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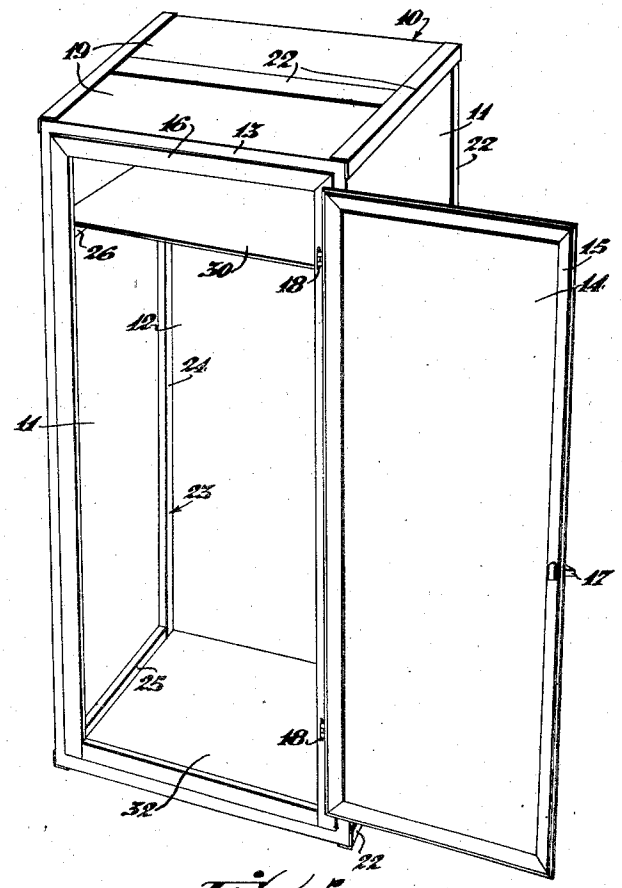


Fig. 5

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COLLAPSIBLE STORAGE CABINET

Filed June 2, 1945 4 Sheets-Sheet 4

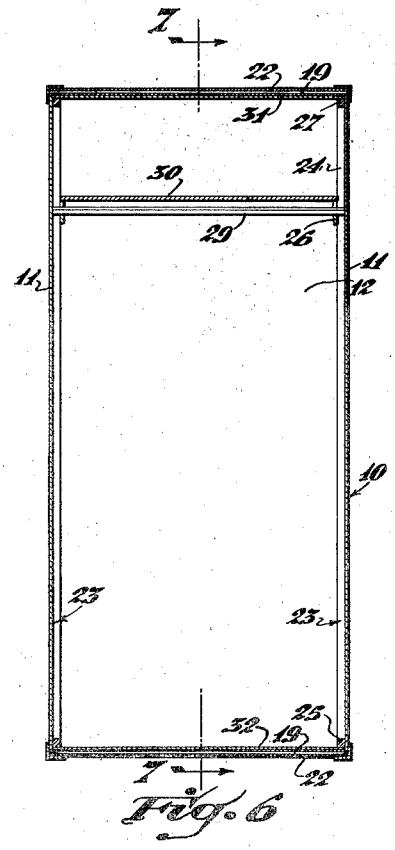


Fig. 6

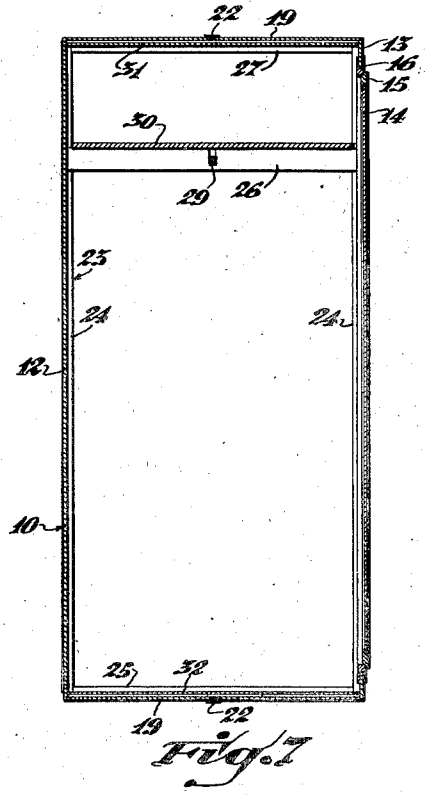


Fig. 7

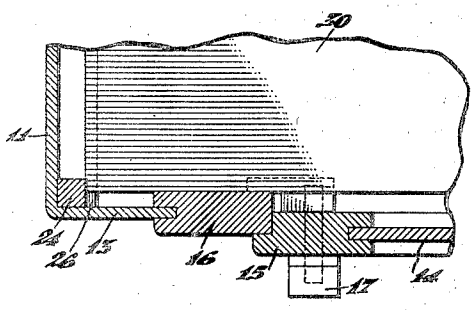


Fig. 9

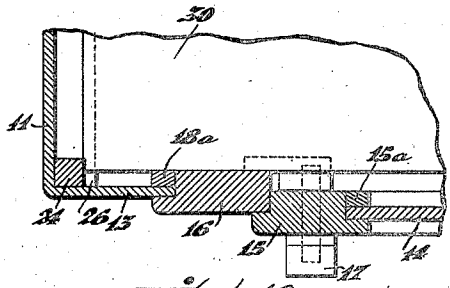


Fig. 10

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Patented Dec. 7, 1948

2,455,739

UNITED STATES PATENT OFFICE

2,455,739

COLLAPSIBLE STORAGE CABINET

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Application June 2, 1945, Serial No. 597,194

4 Claims. (Cl. 312—144)

1

This invention relates to wardrobes and storage cabinets of the collapsible or knock-down type. The invention is directed particularly to a structure which may be readily and inexpensively constructed from common materials, such as corrugated board and light pieces of wood or the like.

Wardrobes of the general type with which the invention is concerned have been constructed in the past of steel, wood, or other panel members, suitably fastened together by screws, nails or brackets, and have been generally considered to be articles of substantial permanence. Sometimes the cabinets are shipped in a knock-down condition but considerable skill or time is required to assemble the parts or erect the unit. If the cabinets are shipped in an assembled condition then the weight and space requirements increase transportation charges.

The principal purpose of this invention has been to provide a light weight, inexpensive, collapsible cabinet or wardrobe which occupies a minimum of space in a knock-down condition and which may be erected quickly and conveniently by an inexperienced householder.

A further objective of the invention has been to provide a wardrobe having walls of paperboard, fiber board, corrugated board, or similar panel-like sheets which are inexpensive and which, however, are integrated in a strong and rugged manner. Collapsible wardrobes in which corrugated board is employed at the wall areas heretofore have been available but the paneling has been embraced in wooden frames, and for that reason the work of assembling the panels with the framing members, as well as the assembly of the panels one with another to form the cabinet, has been tedious, time-consuming and expensive.

A further objective of this invention has been to provide a structure which can be fabricated conveniently on a production scale with the use of conventional paperboard machinery through which a collapsible container is produced having all of its parts, including the entrance door, nested together in a minimum of space and adapted for insertion either in a common container or packaged and shipped without any container.

Briefly, the invention contemplates a structure having an exterior shell formed of corrugated paperboard or fiber board panels which are hinged or bendably joined together so as to lie flatwise one against another in knock-down condition and so as to be folded to rectangular or box-like formation upon erection. Some of the panels or all of them have flaps extending from their free edges which are foldable in overlapping or mating relationship to form end closures for the shell or, as in the case of a wardrobe, to form the top and bottom thereof. Within this box and through one of the ends thereof, frames are inserted so that they lie against opposite side walls. These frames carry battens which support a clothes rod and also carry a shelf which serves the dual purpose of a spreader for holding the frames in spaced relationship to one another against the side walls of the box and against inward collapse of the frames, and a shelf upon which articles may be sorted. Both the shell and the frames are relatively weak. However, when assembled, each mutually supports the other and the erected unit is strong in all directions.

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One of the wall panels has an opening cut therein, the door outline being spaced marginally from the extremities of this panel, and framing members in the form of wood, metal, plastic or other rigid material strips or the like are arranged within the opening with portions of the strips marginally overlapping the walls beyond the door opening. This arrangement protects the paperboard material against scuffing or bending and also provides the mounting for the door. The door forms a substantially dust-tight seal with the frame.

From the foregoing principles of the invention and from the following detail description of the drawings in which a typical embodiment of the invention is illustrated, those skilled in the art will comprehend the various modifications to which the invention is susceptible.

In the drawings:

Figure 1 is a perspective view showing the unit in a partically erected form just prior to insertion of frames and sealing of the end closures.

Figure 2 is a view of the unit fully erected and ready for use.

Figure 3 is a perspective view of the skeleton or framework of the cabinet around which the walls are disposed.

Figure 4 is a perspective view illustrating the insertion into the partially erected shell of the skeleton frames.

Figure 5 is a view similar to Figure 2 showing the door in an open position.

Figure 6 is a sectional view taken on the line 6—6 of Figure 2.

Figure 7 is a sectional view taken on the line 7—7 of Figure 6.

Figure 8 is a view of the front of the cabinet showing the door construction thereof.

Figure 9 is a sectional view through the door taken on the line 9—9 of Figure 8.

Figure 10 is a view similar to Figure 9 showing a modified form of door frame and door construction.

In the drawings the cabinet is indicated generally at **10**. Its exterior or shell comprises two side walls **11**, of similar construction, a rear wall **12** and a front wall **13**. A door is positioned in the front wall **13** and includes a central panel **14** which, like the side walls, comprises a panel of corrugated board or the like and a door frame **15** which surrounds the margins of the panel **14** for reenforcement thereof. The panel **14** is within the door frame member **15** within slots, as shown in Figure 9, or within a rabbet as shown in Figure 10. In the latter instance the panel is held in place within the frame by means of a beading strip **15***a*. The door proper is received within a frame **16** which is disposed in a die-cut opening in the front wall **13**. The hardware for the door includes a handle **17** and hinges **18** which are carried on the frame **16**.

The frame **16** is associated with the front panel **13** through a construction which is similar to that employed at the door, that is, the framing members as shown in Figure 9 have longitudinal grooves therein which marginally overlap the edges of the front panel **13** adjacent the opening therein or, as shown in Figure 10, the framing members **16** are rabbeted so that the exterior surfaces thereof overlap the panel **14** and strips **18***a* are placed at the inside of the cabinet. Either construction is dust-tight. It is also to be noticed that the two vertical framing members **16**, as shown in the drawings, are in mitered engagement with the upper crosswise member, while the lower crosswise member engages the bottom portions of the vertical framing members through butt joints. This enables the frame to be assembled easily, the bottom crosswise member acting as a keeper for the assembly.

The side walls have flaps **19** at their upper and lower extremities provided as extensions thereof. These flaps are folded to form the end closures and strips of adhesive tape, gummed paper tape or the like, **22**, are placed over the joints as shown in Figures 2 and 5. Where, as in the preferred embodiment, the four walls of the wardrobe are constructed from a single length of corrugated board or like material the mating edges at the ends of the single length which form the fourth corner of the box also are secured by an adhesive strip. Cabinets of larger sizes may be built up, for instance, of two lengths of material, each length comprising two of the walls and these sections may be joined by tape. However, the crease fold type of construction in a continuous length of material is preferred where size permits because of the greater strength of the corners. The closure at the bottom of the cabinet shown in the drawings is similar to the closure as described at the top thereof.

The skeleton forming the interior framework for the shell as shown in Figure 3 is made up of light frames **23**, each of which comprises vertical corner posts **24**, lower rails **25**, battens **26** and upper rails **27**. All of these members may be light weight material, preferably wooden strips. Each frame, as shown, spans a side wall **11**. The framing members are nailed together to hold them in assembly but rigid fastening of these members is not necessary because of the lateral strength of the adjacent side walls. The battens are notched or otherwise provided with sockets for the reception therebetween of a coat hanger rod **29** and a shelf **30** rests upon the upper surfaces of the batten and keeps the frames spread apart and flatwise against the side walls. Preferably, though not necessarily, a base board and a top board, similar in configuration to the shelf, also are provided as indicated at **31** and **32** (Figures 6 and 7). These boards preferably are beyond the top and bottom extremities of the frames and therefore are prevented from moving inwardly by the frames. The boards strengthen the end closures and also provide tables against which the end flaps are supported while the adhesive tape is being applied.

In erection of a unit the frames **23** are introduced endwisely through the flapped ends of the cabinets into the interior thereof. Up to this point, that is, before the bottom and top boards are installed and before the end flaps are closed and sealed, the cabinet is collapsible diagonally. Pressure exerted on one corner while an opposite corner is held will cause the box to become out of square and move toward a collapsed position. However, when the shelf is inserted and the top and bottom boards are in place and the end flaps are joined, the cabinet has diagonal stability which enables it to be moved about, even when loaded, without collapsing. The frames carry the weight loading of the clothes if the cabinet is used as a wardrobe and therefore eliminate the difficulties which previously have been encountered in trying to fasten coat rods of different sorts to the thin walls. Thus, the completed structure is effectively supported in all directions and reenforced against all types of stresses. By virtue of the rabbeted construction at the margin of the door the door overlaps the door frame and provides a seal against the entrance of dirt.

Having described my invention, I claim:

1. A collapsible cabinet comprising paperboard wall members hinged to one another at their longitudinal edges and, by virtue of said hinged connections, being collapsible into flat-folded form, frame members adapted respectively for facial engagement with opposite side walls of the cabinet at the interior thereof, the said frame members having longitudinal members residing adjacent the said walls of the cabinet which are contiguous to said opposite side walls, and members for maintaining said frames in spaced relationship to one another against inward collapse thereof, one of said hinged walls having a die-cut opening therein, and a frame and door assembly carried by said wall upon the margin of said die-cut opening.

2. A collapsible cabinet comprising paperboard wall members having their longitudinal edges respectively in hinged connection with one another, the said walls, by virtue of said hinged connections, being collapsible into flat-folded form, and framing members respectively in facial engagement with opposed side walls of said cabinet, the said side walls of said cabinet having flap means extending from the longitudinal extremities thereof which are foldable in overlapping relationship to form end closures for said cabinet, one of said walls of said cabinet having an opening therein which is spaced marginally from the extremities of said side wall, a frame having portions thereof overlapping said side wall at the margins of said opening and a door mounted upon said frame.

3. A collapsible cabinet comprising a unitary length of paperboard having lines of weakening extending transversely thereof delineating wall sections, the said wall sections being bendable relative to one another along side lines of weaken-

ing whereby the walls may be folded to lie in facial engagement with one another, side frames including corner posts and batten members joined to said posts adapted respectively for facial engagement with two opposed side wall sections, means including a shelf adapted to rest on said batten members for maintaining said framing members in engagement with said side walls and for supporting the frames against inward collapse, the respective side walls supporting said framing members against outward collapse whereby the frames are enabled to carry substantial compressive loads, and foldable flaps extending from the free extremities of said side walls constituting end closures for said cabinet.

4. A collapsible cabinet comprising contiguous paperboard side wall members continuously hinged to one another at adjoining edges whereby the side walls are foldable from a flat collapsed form in which they are in facial engagement to a box-like form upon erection, pairs of corner posts having lateral members extending therebetween forming frames which are adapted respectively for facial engagement with opposed side walls of the cabinet at the interior thereof, foldable flap members extending from the free edges of the side walls and bendable in overlapping relationship to form end closures for the cabinet, means for supporting the frames against inward collapse, one of said side walls having an opening therein, the contour of which is spaced from the extremities of said side wall, door framing means having portions disposed within said opening and having portions extending beyond said opening and in engagement with portions of said side wall marginally surrounding said opening, and a door carried by said framing means.

EDMA H. CURTIS.

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