March 5, 1946. P. ZALKIND 2,396,140

COLLAPSIBLE CONTAINER

Original Filed Feb. 21, 1939

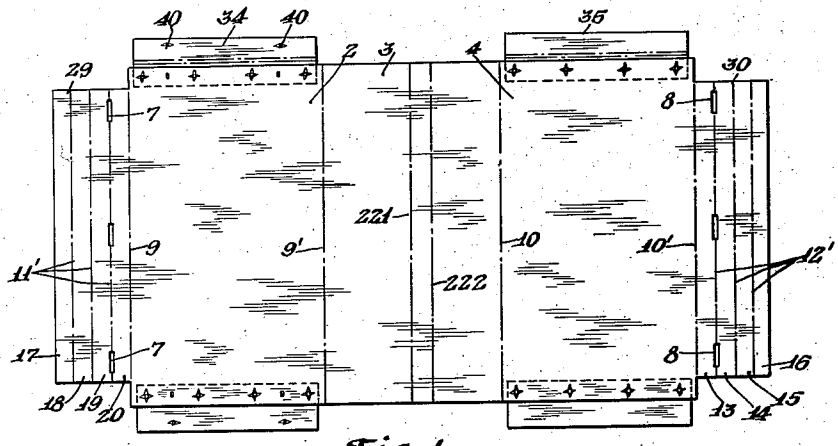


Fig. 1

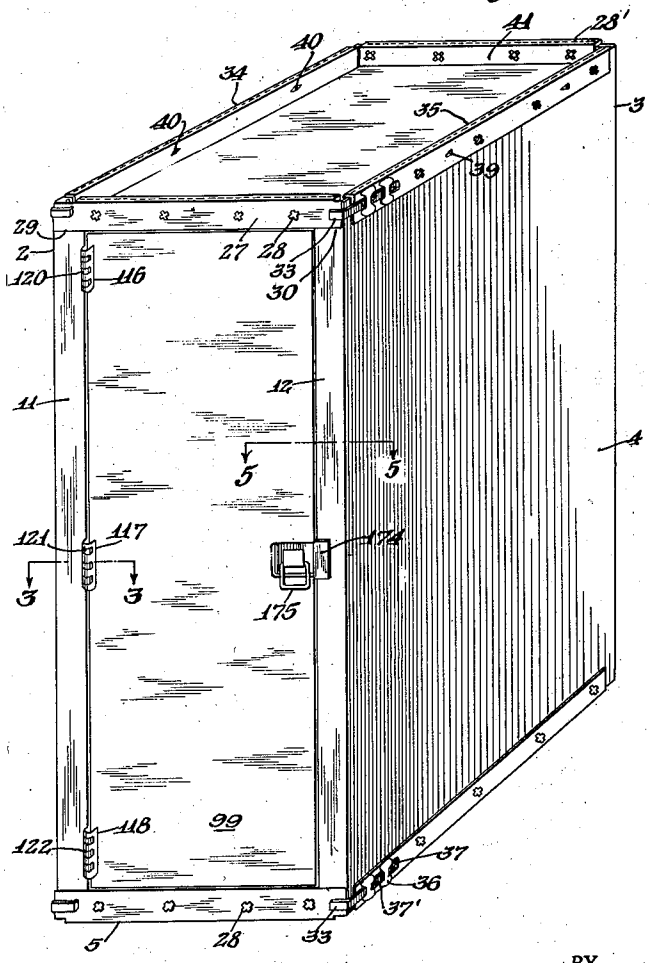


Fig. 2

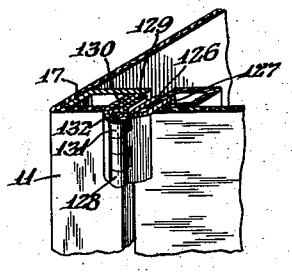


Fig. 3

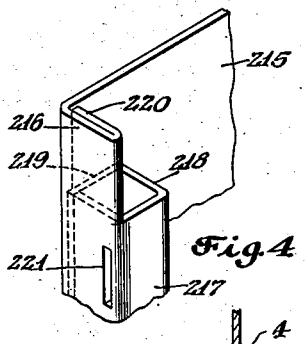


Fig. 4

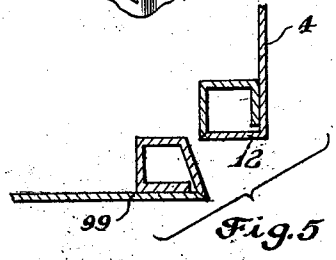


Fig. 5

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Patented Mar. 5, 1946

2,396,140

UNITED STATES PATENT OFFICE

2,396,140

COLLAPSIBLE CONTAINER

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Substituted for abandoned application Serial No. 257,697, February 21, 1939. This application February 19, 1944, Serial No. 523,008

1 Claim. (Cl. 312—144)

This application is a substitute for application Serial No. 257,697, filed Feb. 21, 1939.

My invention relates to doors for containers and more particularly relates to collapsible cabinets, chests, and parts therefor.

Numerous attempts have been made to develop collapsible cabinets made of sheet and/or fibrous material such as plaster board, panel board, corrugated board, container board, fiber board, etc., which can be used for storage of clothing and the like.

Many of such devices have been proven by scientific tests imperfect and inefficient for their stated purposes, such as a moth proof cabinet, for which purpose hermetic tightness is required.

Accordingly an object of my invention is the provision of a door for a collapsible cabinet, said door having tubular side reinforcements, the reinforcements having sloping surfaces so that the door may be wedged closed in the cabinet opening.

There are numerous other objects of this invention which will appear in the course of the following detailed description and drawing in which:

Figure 1 is a plan view of a developed blank comprising rear and side walls and corner members for forming a cabinet of the type illustrated in Figure 2.

Figure 2 is a view in perspective of one form of cabinet showing the arrangement of the hinges and door at the front thereof.

Figure 3 is a horizontal section in perspective taken on the line 3—3 of Figure 2.

Figure 4 is a view in perspective of one form of corner of a cabinet showing a modified box structure.

Figure 5 is a cross-sectional view on line 5—5 of Figure 2 showing the door partly open and illustrating the wedging action of the door in the cabinet opening.

Referring to Figure 1, I have shown a blank in developed form employed in carrying out my invention. As shown, the blank comprises three main sections 2, 3 and 4 with suitable score lines as at 9, 9', 10 and 10' for defining the sections.

When the blank is turned on the score lines 9' and 10, the sections 2 and 4 form the side wall of my cabinet and section 3 the rear wall.

Extending from section 4, I have provided a flap comprising units 13, 14, 15 and 16 suitably separated by the score lines 12' and having longitudinal slots 8 therein for purposes to be described hereinafter. A similar flap consisting of units 17, 18, 19 and 20 extending from section 2, and separated by score lines 11, are also provided with longitudinal slots such as 7.

The sections 13, 14, 15 and 16, when turned on their score lines, form vertical posts for supporting the top and bottom member of the cabinet. In forming this post, section 13 is first turned at right angles to section 4 on the score line 10', bringing it parallel to the back wall 3 when the cabinet is set up for use. Section 14 is then turned on the next score line 12' until it is at right angles to the section 13 and parallel with section 4 but spaced therefrom a distance equal to the width of section 13. Section 15 is then turned on its score line until it is at right angles to section 14 and parallel to section 13. Inasmuch as the width of sections 13 and 15 is equal, the edge of section 15 will come in contact with the section 4. Section 16 is turned in on its score line until it is at right angles to section 15, forming a reentrant or closed post formation, although it will be understood that, if desired, section 16 may be turned outwardly rather than inwardly.

The unit or section 16 may be secured to the section 4 by any suitable means as by glueing the face-to-face portions of sections 16 and 4, or by means of staples 21 or other fastening means such as the member 21. One side of member 21, which may be a clip, cleat, brace, etc., is first connected to the edge of section 16 and when the post is formed, the other side of the member 21 is secured to wall 4. Alternatively, member 21 may be replaced by a strip of tape or other suitable material such as a strip of wood or metal adhesively secured to the face-to-face portions of both walls. This member may be coterminous with the post or may extend for short lengths.

A similar post formation is made with the sections 17, 18, 19 and 20 to form the posts shown in Figure 3.

Although the corners of the blank at the posts in Figure 1 are shown cut away on four sides to form a lowered seat, it will be clear that the posts may extend to the top of the cabinet walls, or one or more sides of the posts may extend to the top, as shown at 216, Figure 4.

The top and bottom portions of the cabinet may comprise sunken end members as shown in Figure 2 and as described in my Patent No. 2,159,069.

The door 99, shown in Figures 2 and 3 may be made of the same material as the cabinet body and is also constructed with a reinforcing frame. Columns of square cross-section are formed from scored portions of the door blank by turning the sections on their score lines, to form the posts

visible in Figures 2 and 3. These posts are secured by adhesive substance or other suitable means, as by rivets. The surface of the edge opposite the hinged edge may be sloped inwardly as shown in the cross-sectional view of Figure 5 to produce a width of door on the inside slightly narrower than the door opening and on the outside, slightly wider than the door opening producing a wedge construction. As a result, when the door is closed, it is held closed by the wedge construction. At one side of the door blank, a series of slots are cut in the material at either side of a score line, as may be best suited for any specific formation.

Hinge parts 116, 117 and 118 (Figure 2) are introduced into these slots and secured by means of prongs as hereinafter described, or by other fastening methods. Corresponding hinge parts 120, 121 and 122 are secured in slots 7 and 8 as illustrated in Figure 1 for cooperating with the first mentioned hinge parts.

My hinge resides in simple metal stampings secured to the wall and door and interlocking to form a hinge and its own pivot, with means struck up in the parts themselves for attaching the hinge.

One illustration of the principle is found in Figure 3. A metal stamping punched to desired shape is formed into a U shape having sides 126 and 127 and eyelets or punched out openings 128. This forms one half of the hinge. A similar metal stamping comprises corresponding sides 129 and 130 with eyelets 131.

The section having sides 126 and 127 is secured around the edge of the door at its hinge pivot. These as shown are secured to the walls by prongs 28 stamped from the parts at either one or both sides of the openings and engaging the walls. Similarly, other sections having sides 129 and 130 are secured to the wall around the edge adjacent its pivot. These are so secured that the metal portion 126' curved into a U, lies within the eyelet 128 and the metal U shaped portions 129' lie within the eyelets 131. The U shaped metal portion, extending from diametrically opposite directions, forms a bearing or hinge openings 132 into which a pin is inserted. Such a hinge construction could be especially adapted for the cabinet construction shown in Figure 2, where the thick walls anchor the U member and the doors are to be shipped detached from the body portion of the cabinet.

While I have described my novel doors and hinges in connection with a collapsible cabinet, it is obvious that they will be useful for other purposes as well, and accordingly, I prefer to be limited, not by the specific disclosures, but only by the appended claim.

I claim:

A cabinet having an open front side and comprising a bottom, top, and side walls, said walls being made of sheet material having fold lines along which the same is folded to form said walls; a tubular reinforcement at an edge of said open front side, said tubular reinforcement having one surface substantially perpendicular to said open front side; and a door to close said open front side, said door being pivoted to the cabinet at the edge of the open front side opposite to said tubular reinforcement and having a tubular reinforcement along the edge thereof opposite the pivoted edge, said last mentioned reinforcement having one surface sloped inwardly slightly off from perpendicular to said front side and forming an angle with the said one surface of said tubular reinforcement when said door is closed, the opening of said angle being directed toward the interior of said cabinet, said sloped surface cooperating with the inner front corner of said first mentioned reinforcement to form a wedge closure when said door is brought into closed position.

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