

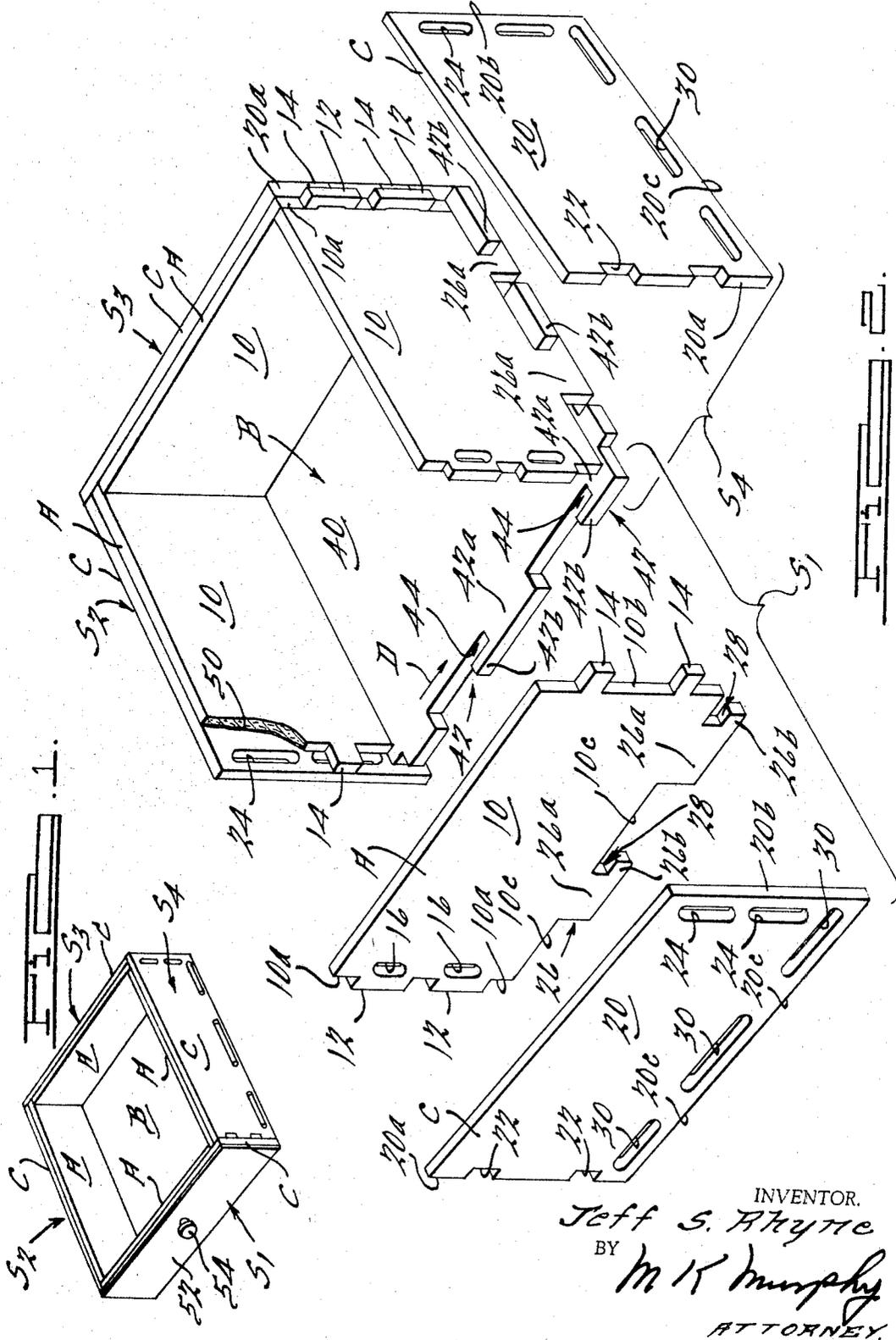
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CONTAINER

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3,410,441
CONTAINER

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ABSTRACT OF THE DISCLOSURE

The method of forming and the construction for a container especially suitable for use as a drawer. A plurality of generally rectangular sides are provided with inner and outer panel members disposed in face-to-face relationship to form a laminar construction. Means are formed integral with the panel members to interlock one end of an inner panel member of each side to the adjacent ends of the inner and outer panel members of the adjoining side.

It is an object of the present invention to provide an improved container construction.

A more specific object is to provide a container construction which is stronger than known constructions.

Another object is to provide a container construction which is less expensive than known constructions.

Yet another object is to provide a container construction which is especially suitable for use in fabricating drawers for bureaus, desks or the like.

A yet more specific object is to provide a container construction in which all the component parts of the container may be formed by mass production stamping operations.

Still another object is to provide an improved method of forming a container.

The container of the invention is of the type in which a plurality of generally rectangular sides are arranged in angular end-to-end relation to form a closed structure such, for example, as a box. According to an important feature of the invention, each of the sides of the container comprises inner and outer generally rectangular panel members disposed in face-to-face relation to form a laminar construction, and means are provided integral with the panel members to interlock one end of the inner panel member of each side to the adjacent ends of the inner and outer panel members of the adjoining side.

According to a further feature of the invention, means are also provided integral with the panel members to interlock the other end of each inner panel member to the adjacent ends of the inner and outer panel members of the side adjoining that other end.

According to yet another feature of the invention, the container includes a further panel member, such, for example, as a bottom panel, and means are provided integral with the several panel members to interlock this further panel member to the inner and outer panel members of each of the several sides of the container.

According to another important feature of the invention, the laminated construction of the sides allows each of the individual panel members to be formed in an automatic stamping operation from relatively thin board stock, thereby producing uniform, accurate parts on a mass production basis and eliminating the need for costly machining operations.

These and other objects, features and advantages of the invention will be apparent from the following detailed description of a preferred embodiment of the invention and from the accompanying drawing wherein:

FIG. 1 is a perspective view of a container embodying features of the present invention; and

FIG. 2 is a perspective, partially exploded view of the

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container of FIG. 1 showing details of the container construction.

The container of FIG. 1 comprises a plurality of generally rectangular planar sides *S* arranged in end-to-end relation to form a closed structure, and a bottom *B* generally underlying sides *S*. In the disclosed embodiment, there are four sides (*S*₁, *S*₂, *S*₃, *S*₄) arranged in right angular relationship to form a rectangular structure.

Each of the sides *S* includes an inner panel member *A* and an outer panel member *C* arranged in face-to-face relation to form a laminar structure. Panel members *A* and *C* are generally coextensive and may be formed, for example, of one-eighth inch particle board to produce a total wall thickness of one-quarter inch. Panel members *A* and *C*, as well as bottom *B*, are preferably stamped from one-eighth inch board stock on an automatic punch press. The several inner panel members *A* of the several sides *S* are identical, as are the several outer panel members *C*.

Referring now to FIG. 2, each inner panel member *A* includes a main body portion 10, a plurality of tab portions 12 projecting from one end edge 10*a* of main body portion 10, and a plurality of tab portions 14 projecting from the other end edge 10*b* of main body portion 10. A plurality of apertures 16, generally corresponding in size and shape to tab portions 14, extend through main body portion 10. An aperture 16 is provided in main body portion 10 adjacent each tab portion 12. Each aperture 16 is centered with respect to the related tab portion 12 and has its outside edge in general alignment with the end edge 10*a* of main body portion 10.

Each outer panel member *C* includes a main body portion 20, a plurality of notches 22 in one end edge 20*a* of main body portion 20, and a plurality of vertically elongated apertures or slots 24 in main body portion 20 adjacent the other end edge 10*b* of the latter. Notches 22 correspond in size and shape to the tab portions 14 on inner panel member *A*, and apertures or slots 24 correspond in size and shape to the tab portions 12 on inner panel member *A*.

In the assembled relation of the panel members, the apertures 16 in the inner panel *A* of side *S*₁ receive the tab portions 14 extending from the adjacent end of the inner panel *A* of the adjoining side *S*₂, and the tab portions 12 on the inner panel *A* of side *S*₁ are received in the slots 24 in the outer panel *C* of side *S*₂. The inner panel member of side *S*₂ is similarly interlocked to the inner and outer panel members of sides *S*₃, the inner panel member of side *S*₃ is similarly interlocked to the inner and outer panel members of side *S*₄, and the inner panel member of side *S*₄ is similarly interlocked to the inner and outer panel member of side *S*₁. It will thus be seen that the described construction provides an interlock between the end 10*a* of the inner panel member of each side and the adjacent ends of the inner and outer panel members of the adjoining side.

After passing through apertures 16 in the inner panel member of side *S*₄, the tabs 14 on the inner panel member of side *S*₁ are received in the notches 22 in the outer panel member of side *S*₄. The notches 22 in the outer panel members of sides *S*₁, *S*₂ and *S*₃ similarly receive the tabs 14 on the inner panel members of sides *S*₂, *S*₃, and *S*₄, respectively. The described construction will thus be seen to further provide an interlock between the end 10*b* of the inner panel member of each side and the adjacent ends of the inner and outer panel members of the adjoining side.

Each inner panel member *A* further includes a plurality of tab portions 26 extending from the lower or bottom side edge 10*c* of main body portion 10. Each tab portion 26 includes a first section 26*a* extending generally

normally away from side edge 10c and a second section 26b adjoining the outer end of section 26a and extending generally parallel to, but in spaced relation to, side edge 10c. Second section 26b and side edge 10c thus coact to define a slot 28 therebetween closed at one end by first section 26a.

Each outer panel member C further includes a plurality of horizontal elongated apertures or slots 30 in main body portion 20 adjacent the lower or bottom side edge 20c of the latter.

Bottom B may comprise a panel of one-eighth inch particle board including a generally rectangular main body portion 40 and tab portions 42. A plurality of tab portions 42 are provided at each side edge of main body portion 40. Each tab portion 42 includes a first section 42a extending generally normally away from the adjacent side edge of main body portion 40 and a second section 42b adjoining the outer end of the section 42a and extending generally parallel to, but in spaced relation to, the adjacent side edge of main body portion 40. Second section 42b and the adjacent side edge of main body portion 40 thus coact to define a slot 44 therebetween closed at one end by first section 42a.

In the assembled relation of the bottom and side panel members, the tab portions 26 on each inner panel member A coact with the tab portions 42 on a respective side of bottom panel member B. Specifically, the first section 26a of each tab portion 26 is received in the slot 44 defined by the corresponding tab portion 42 and the first section 42a of each tab portion 42 is received in the slot 28 defined by the corresponding tab portion 26. The second sections 42b of tab portions 42 are received in the apertures 30 in the respective outer panels C. Bottom panel member B is thus interlocked to the inner and outer panel members of each of the several sides.

The assembly of the various panel members to form the completed, interlocked structure is relatively simple. The tabs 26 on the inner panel member A of, for example, side S₁ are first positioned in confronting relation to the slots 44 defined by the tab portions on the corresponding side edge of bottom B. Panel member A is then slid in the direction of its length (as depicted by arrow D in FIG. 2) to interlock tab portions 42 and 26. Inner panel member A of side S₂ is then positioned adjacent the respective side edge of bottom B and thereafter slid forwardly. This forward movement not only interlocks the respective tab portions 42 and 26 but also passes the tab portions 14 on the inner panel member of side S₂ through the apertures 16 in the inner panel member of side S₁, thereby interlocking these inner panel members. The inner panel members of sides S₃ and S₄ are thereafter slidably positioned in similar manner to interlock them with bottom panel member B as well as with the adjoining inner panel member. The outer panel members C of the several sides are thereafter positioned over the corresponding inner panel members with the slots or apertures 24 passing over the corresponding tab portions 12, the notches 22 fitting over the ends of the corresponding tab portions 14, and the slots 30 passing over the second sections 42b of the corresponding tab portions 42.

Following and/or during this assembly operation, a suitable adhesive 50 may be applied between panel members A and C and/or at the several junctures of the various panel members.

The construction described above provides a container which is extremely rigid and strong. For example, containers constructed according to the invention using two back-to-back one-eighth inch particle boards have been found to be considerably stronger in most respects than containers employing a single wooden panel of quarter-inch thickness.

The construction of the invention also provides a container which is relatively inexpensive, since the various apertures and tabs on the one-eighth inch particle board comprising the several panel members may be formed in

a simple, automatic stamping operation on a punch press, thereby eliminating the several costly machining operations previously required on the quarter-inch wooden panels. The cost of the container is further reduced by the fact that the elements by which the various panel members are interlocked are formed integral with the panel members themselves, thereby eliminating the cost of separate fastener elements. The cost of the container is still further reduced by the fact that the cost of the required quantity of particle board is considerably less than the cost of the quantity of wood panels required with previous constructions.

The construction of the invention also provides a container in which the outer surfaces of the several sides are completely free of protrusions or depressions.

The high strength, low cost, and smooth outer side walls provided by containers constructed in accordance with the teachings of the invention render these containers especially suitable for a wide variety of job applications. For example, and as seen in FIG. 1, the container of the invention may be employed as a drawer by applying a finish veneer 52 to the outer face of side S₁ and securing a suitable drawer pull 54 to that side.

While a preferred embodiment of the invention has been illustrated and described in detail, it will be understood that various changes and modifications may be made in the disclosed embodiment without departing from the scope or spirit of the invention.

I claim:

1. A container comprising:

(A) A plurality of generally rectangular, planar sides arranged in angular, end-to-end relation to form a closed structure;

(1) each of said sides comprising inner and outer generally coextensive, rectangular panel members disposed in face-to-face relation; and

(B) locking means formed integral and substantially coplanar with each of said panel members interlocking one end of the inner panel member of one side to the adjacent ends of the inner and outer panel members of the side adjoining said one end.

2. A container comprising:

(A) a plurality of generally rectangular, planar sides arranged in angular, end-to-end relation to form a closed structure;

(1) each of said sides comprising inner and outer generally coextensive, rectangular panel members disposed in face-to-face relation; and

(B) means integral with said panel members interlocking one end of the inner panel member of one side to the adjacent ends of the inner and outer panel members of the side adjoining said one end, said interlocking means comprising

(1) at least one tab portion on said one end of said inner panel member of said one side extending from the main body portion of that panel member;

(2) an aperture in the main body portion of said inner panel of said one side adjacent said tab portion;

(3) at least one tab portion on the said adjacent end of the inner panel member of the said adjoining side, said last named tab portion passing through said aperture; and

(4) at least one aperture in the said adjacent end of the outer panel member of said adjoining side, said first named tab portion passing through said last named aperture.

3. A container according to claim 2 wherein said interlocking means further includes:

(G) at least one notch in the adjacent end edge of the outer panel member of said one side receiving the tab portion on the inner panel member of the said adjoining side following passage of that tab portion

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through the aperture in the inner panel member of said one side.

4. A container comprising:

- (A) a plurality of generally rectangular planar sides arranged in angular, end-to-end relation to form a closed structure,
- (1) each of said sides comprising inner and outer generally coextensive, rectangular panel members disposed in face-to-face relation;
- (B) a further panel member having a peripheral shape generally corresponding to the cross sectional shape of said closed structure;
- (C) means integral with said panel members interlocking said further panel member to the inner and outer panel members of each of said sides; said interlocking means comprising
- (1) at least one tab portion at each side edge of said further panel member, each tab portion including
- (a) a first section extending generally normally away from the adjacent side edge and
- (b) a second section adjoining the outer end of said first section and extending generally parallel to, but in spaced relation to, the adjacent side edge to define a slot therebetween closed at one end by said first section;
- (2) at least one tab portion at one side edge of each inner panel member, each such tab portion including
- (a) a first section extending generally normally away from the adjacent side edge and
- (b) a second section adjoining the outer end of said first section and extending generally parallel to, but in spaced relation to, the adjacent side edge to define a slot therebetween closed at one end by said first section; and
- (3) at least one aperture in one side edge of each outer panel member, said tab portions on the several side edges of said further panel member being selectively interlocked with said tab portions on said inner panel members by passing the first section of each tab portion on each inner panel member into the slot defined by the corresponding tab portion of said further panel member and passing the first section of each tab portion on said further panel member into the slot defined by the tab portion on the corresponding inner panel member, each of said outer panel members being thereafter interlocked to said further panel member by passing the second section of the tab portion on the corresponding side edge of said further panel member through the aperture in that outer panel member.

5. A container according to claim 4 and further including

- (E) means integral with said panel members interlock-

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ing one end of the inner panel member of one side to the adjacent ends of the inner and outer panel members of the side adjoining said one end.

6. A container according to claim 5 wherein said interlocking means of 5(E) comprises
- (F) at least one tab portion on said one end of said inner panel member of said one side extending from the main body portion of that panel member;
- (G) an aperture in the main body portion of said inner panel member of said one side adjacent said tab portion;
- (H) at least one tab portion on the said adjacent end of the inner panel member of the said adjoining side, said last named tab portion passing through said aperture; and
- (I) at least one aperture in the said adjacent end of the outer panel member of said adjoining side, said first named tab portion passing through said last named aperture.
7. A method of forming a container comprising the steps of
- (A) stamping a plurality of generally rectangular panel members from relatively thin stock with a plurality of mutually interlockable end tabs and apertures;
- (B) arranging said panel members in face-to-face pairs to form a plurality of relatively thick, generally rectangular sides of laminar construction;
- (C) arranging said laminated sides in angular end-to-end relation; and
- (D) joining the juxtaposed ends of said sides to form a rigid closed structure by interengaging the interlocking tabs and recesses on the juxtaposed ends of the panel members.
8. A laminar panel construction comprising
- (A) a pair of panel members;
- (B) a common locking member for said panel members;
- (1) said locking member having a tab portion extending therefrom;
- (C) a tab portion of said first panel member, said tab portion slidably engageable in one direction with said tab portion of said locking member;
- (D) an aperture portion of said second panel member;
- (1) said second panel member movable in a direction transverse to said first direction to bring said aperture portion into locking engagement with said tab portion of said locking member for retaining said first panel member between said locking member and said second panel.

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