Sept. 12, 1933. S. R. DUMMER 1,926,268

SHIPPING CASE AND THE LIKE

Filed June 7, 1930 2 Sheets-Sheet 1

Fig. 1.

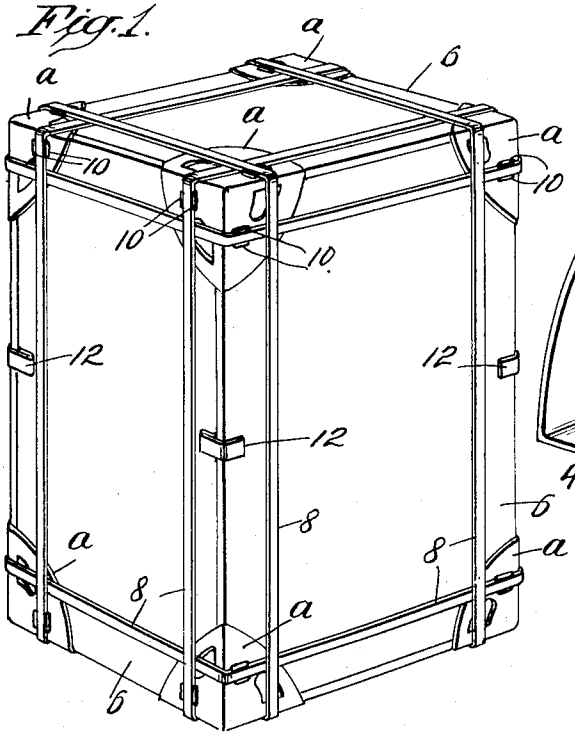


Fig. 2.

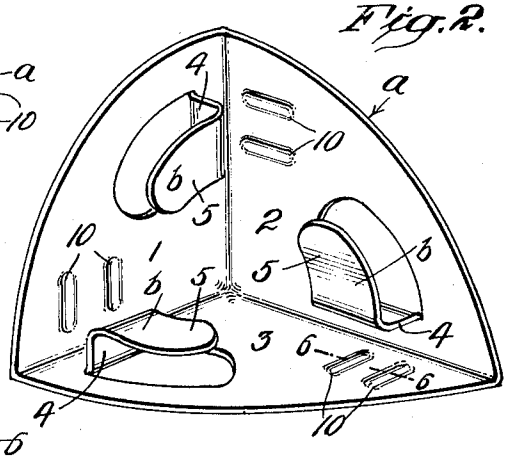


Fig. 4.

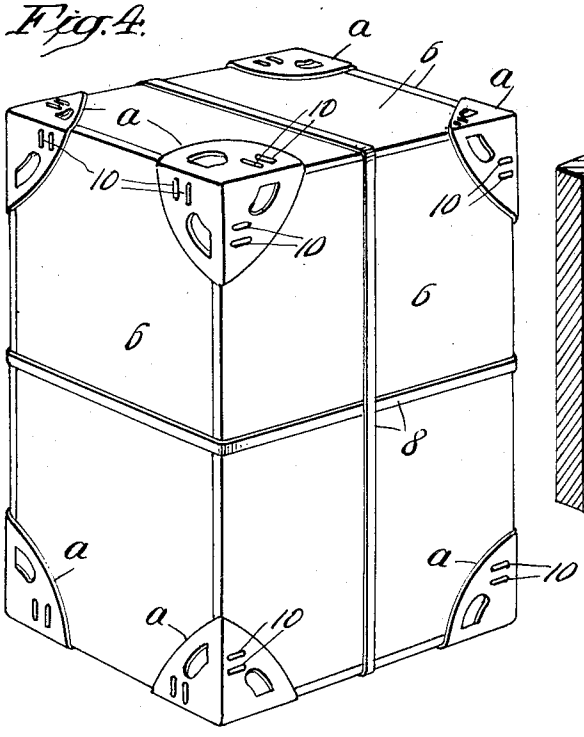
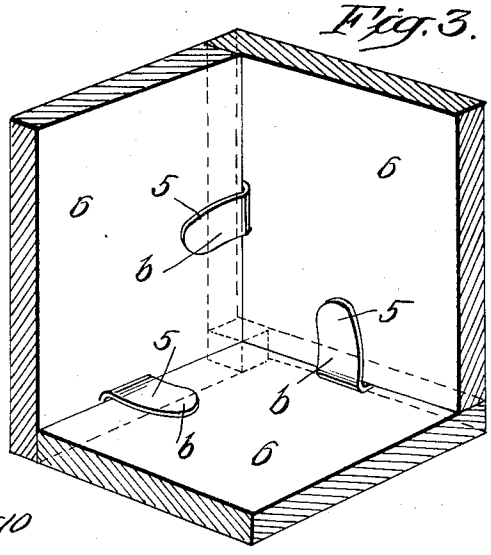


Fig. 3.



INVENTOR
SAMUEL R. DUMMER
BY
ATTORNEY

Sept. 12, 1933. S. R. DUMMER 1,926,268

SHIPPING CASE AND THE LIKE

Filed June 7, 1930 2 Sheets-Sheet 2

Fig. 5.

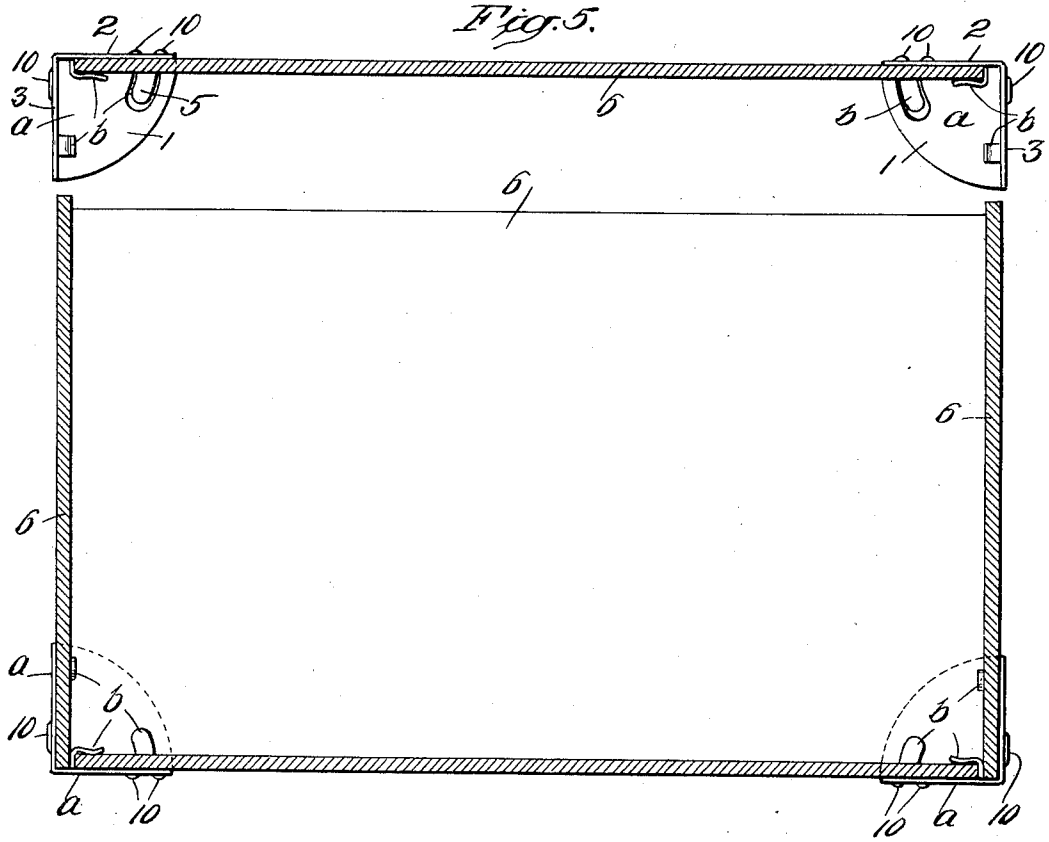
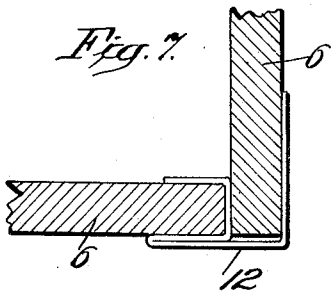


Fig. 6.



Fig. 7.



INVENTOR
SAMUEL R. DUMMER
BY
ATTORNEY

Patented Sept. 12, 1933 1,926,268

UNITED STATES PATENT OFFICE

1,926,268

SHIPPING CASE AND THE LIKE

Samuel Russell Dummer, Verona, N. J.

Application June 7, 1930. Serial No. 459,622

6 Claims. (Cl. 217—12)

The present invention relates to improvements in shipping cases, packing box structures and the like and has for its object to produce a simplified and economically made protective case which may be easily and quickly assembled and wherein the members are interrelated and reinforced so as to possess materially greater strength than obtaining in the types of shipping case structures as at present used.

An important feature of my improved box structure, which contributes to obtaining added strength so as more successfully to withstand the shocks and stresses to which the case is subjected in shipment consists of an improved form of corner reinforcing and supporting member adapted to retain the side or panel members in position. These corner members of the present invention are specially designed to support the panels in position to form a lock type of joint or corner structure peculiarly adapted for obtaining maximum resistance to displacement and damage. The improved corner members are further of a form to support the side or panel members so as to resist movement under pressures acting inwardly and outwardly of the formed case and by their interlocked engagement with the sides or panels are retained in effective assembled position without the aid of other fastening means such as nails or screws. Accordingly, the assembled case may be firmly secured and sealed with metal strapping with all parts thereof firmly and securely interlocked as a rigid structure thereby to insure against pilfering or tampering with the contents. The non-requirement of nailing results in substantial economy in the assembling operation, eliminates the damage to the sides or panels and the other objections incident to the use of nails and moreover materially adds to the salvage value in the reuse of the case or parts thereof. The improved corner reinforcing and supporting members are particularly well adapted for use with panel members formed of laminated or ply wood thereby to form a case of substantial strength and having the advantages of greater resistance to fracture, reduced tendency to shrink and desirable reduction in weight.

The foregoing and other important features and advantages of the present improvements will be more fully understood by reference to the accompanying drawings wherein like reference numerals are applied to the corresponding parts in the several views.

In the drawings:

Fig. 1 is a view in perspective illustrating a shipping case or container made in accordance with the present invention.

Fig. 2 is a view in perspective showing the improved corner reinforcing and supporting member of my invention as viewed from the inner side thereof.

Fig. 3 is a view in perspective generally similar to Fig. 2 and having the panel members in assembled position.

Fig. 4 is a view generally similar to Fig. 1 showing a modified form of strapping.

Fig. 5 is a view in vertical section of an assembled shipping case or box with the top panel separated therefrom and in position for assembling for completing the case.

Fig. 6 is a detail sectional view taken on line 6—6 of Fig. 2.

Fig. 7 is a detail sectional view showing the centrally positioned reinforcing clip.

The improved corner reinforcing and supporting members, *a*, as here illustrated in an approved form, are preferably made of sheet metal stamped and pressed to form as best shown in Fig. 2 into an open base and hollow tetrahedron or corner contour adapted to fit onto the corners of a rectangular box, shipping case or similar container. The corner members are further specially formed to have interlocking and supporting engagement with the sides or panel members of the case with the panels in the mutually overlapping and supporting relation for producing the well known lock type corner construction which produces a particularly strong and rigid structure or container.

The corner reinforcing and supporting members, hereinafter referred to as "corner members", are as shown composed of the three integrally formed and generally triangular shaped walls 1, 2 and 3 in mutual right angular relation, being pressed from a suitable metal blank into the hollow tetrahedron formation and desirably having the apex suitably rounded off so as to avoid a cutting point. Each of the side portions or walls has stamped out and pressed inwardly therefrom a bearing and supporting lip or shoulder *b* of angular formation having a spacing bearing portion 4 at right angles to its side wall and having a flattened face parallel to the flat opposed surface of an adjacent wall, for example, the face of the bearing portion 4 of the bearing shoulder of wall 1 is parallel to the inner opposed face of the wall 2. Similarly, the bearing portion 4 of the shoulder stamped up from the wall 2 is parallel to the inner surface of the wall 3 and that of the wall 3 is parallel to the

face of the wall 1. The inner free end or clamp portions 5 of the bearing shoulders are turned outwardly into substantially parallel relation with their related side walls and are desirably of the form as shown having a slight curvature or flare to facilitate assembling of the panel members therewith. In the forming of the bearing shoulders, the spacing portions 4 thereof are pressed up in spaced relation to the adjacent outer wall member a distance proportionate to the thickness of the side of panel members to be assembled therewith. Similarly, the angles of the shoulder members are positioned to space the lip portions 5 from their related wall members proportionate to the thickness of the panels so as to closely embrace the latter upon assembling of the parts.

This arrangement of the bearing shoulders provides for supporting the side members or panels 6 of the box or case in the overlapping relation as shown for producing a lock type corner structure having interbracing bearing engagement of the panels. Each of the panels, as is common to the lock type corner construction, overlies the edge of an adjacent panel at right angles thereto. As will be observed, this is accomplished in the corner construction as shown wherein the seating of each of the panels is upon a spacer bearing portion 4 with one marginal edge clamped between the shoulder clamp portion 5 and the related corner member wall and with the other marginal edge of the panel abutting the inner surface of the adjacent wall at right angles to the first referred to and seated behind the spacer portion 4 of said adjacent wall. Each panel is accordingly seated within a bearing shoulder or clip of one wall and spaced from an adjacent wall thereby and within the bearing seat formed between the first wall and the shoulder of the third wall of the corner member. Thus each rectangular corner of a panel will have abutting engagement with the inner surface of one corner wall to overly the edge of an adjacent panel and will be in spaced relation from a corner wall perpendicular thereto to reecive thereunder the panel in face engagement with the latter wall.

The panels or sides of the box or case are formed as rigid rectangular units and desirably are single sections of plywood of suitable thickness to have substantial strength. In completing the box, a corner member is assembled with the panels at each corner of the rectangular box structure and the complete assembly is desirably secured and sealed by the customarily employed metal strapping 8.

The described structural arrangement of the corner members and assembling of the panels therewith produces an interlocked relation of the parts of the corner structure wherein the metal corner members are retained in position and fully secured upon the girdling of the panels by the metal strapping as shown in Figs. 1 and 4. The metal corner members have supporting and reinforcing engagement with the outer and inner surfaces of the panels in addition to edgewise bearing engagement therewith thereby offering desirable protection to the corners and materially reinforcing the structure by lending strength thereto and rigidly securing the panels in proper coacting relation.

In the assembling of the improved box structure, as best understood by reference to Fig. 5, the metal corner members may be initially applied to all corners of the bottom panel and the four side panels then set into interlocked relation therewith to form an open top case which may be temporarily secured by a releasable strap during packing. The cover panel is then fitted with four metal corner members and is applied by pressing downwardly onto the side panels to effect locking engagement of the corner members therewith. The assembled box is then finally secured by affixing metal strapping encircling the panels in opposite directions as shown. For domestic or light load packing the strapping arrangement as shown in Fig. 4 may be employed having securing straps centrally arranged and encircling the box in opposite directions. For export shipment and additional greater security, additional bands or straps may be used in the arrangement shown in Fig. 1 and bearing upon the corner members.

As an additional feature of the present invention and as related to the latter method of strapping, the corner members may be formed with suitably spaced and stamped up shoulders or ridges 10—10 projecting outwardly from the wall surface; the shoulders 10 being spaced to receive between them the securing straps to act as keepers therefor to prevent shifting of the straps from their proper securing position. A pair of these retaining shoulders 10 may as shown be formed on each side wall of the corner member.

As best shown in Figs. 1 and 7, in the instance of elongated shipping cases particularly, there may be provided additional and intermediate reinforcing elements for the purpose of reinforcing the case at its central portion. In accordance with the present improvements reinforcing elements of the form shown at 12 may desirably be employed for this purpose. These elements or clips as shown in Fig. 7 may be formed of flat metal band stock bent to form channels or seats for the panel marginal edges in right angular relation and to position the panels in overlying relation with bearing support for the overlaid panel to support same against inward displacement.

While I have herein disclosed a preferred form of my invention, it will be readily understood that various structural modifications may be made therein without departing from the scope of the invention as defined in the appended claims. It is accordingly intended that all matter herein shall be interpreted as illustrative and not in a limiting sense.

It will be further understood that the improved structural features of the present invention are applicable to other types of rectangular structures or containers such as crates and shipping cases having battened marginal edges although it is specially adapted for plywood panelled cases as aforesaid which offers substantial economies by the elimination of the battens and the cost of nailing.

As will be noted by reference to Figs. 1 and 4, the corner members of the described construction are made in rights and lefts with relation to the formation of the shoulders so as to properly fit the respective corners.

Having described my invention, I claim:

1. A corner reinforcing and supporting member for shipping cases and the like having single piece panel members consisting of a corner member formed to overly the panel members at their corner portions and having inwardly projecting shoulders positioned to have interlocking engagement with the panel members with

the latter in similarly overlying relation to produce a lock type corner structure, said shoulders being of angular form having inner clamp portions spaced from the corner member wall proportionate to the thickness of the panel associated therewith.

2. A corner reinforcing and supporting member for shipping cases and the like having rigid panel members consisting of a corner member formed to overly the panel members at their corner portions and having inwardly projecting shoulders from each wall thereof positioned to have interlocking engagement with the panel members with the latter in mutually overlying relation to produce a lock type corner structure, said shoulders being of angular form having spacer bearing portions at right angles to the related wall and clamp portions parallel to the related wall, each of said shoulder portions being spaced from a parallel wall proportionate to the thickness of the panels.

3. A corner reinforcing and supporting member for shipping cases and the like having panel members consisting of a one piece sheet metal corner member having walls in open base tetrahedron formation to overly the panel members at their corner portions and having integral, inwardly projecting shoulders pressed up from each wall thereof and positioned to have interlocking engagement with the panel members with the latter in mutually overlying relation, said shoulders being of angular form having spacer bearing portions at right angles to their related wall and clamp portions parallel to the related wall, each of said shoulder portions being spaced from a parallel wall proportionate to the thickness of the panels and said clamp portions having flared end portions.

4. A corner reinforcing and supporting member for shipping cases and the like having panel members consisting of a metal corner member formed to overly the panel members at their corner portions and having inwardly projecting shoulders positioned to have interlocking engagement with the panel members with the latter in similar mutually overlying relation to produce a lock type corner structure, said corner members being formed with outwardly projecting, spaced shoulders adapted to engage the opposite edges of a securing strap to retain the latter in position.

5. A shipping case of the character described comprising single piece side or panel members positioned to have mutual overlying relation to produce a lock type corner structure, metal reinforcing and supporting members fitted to the corners thereof and consisting of one piece sheet metal corner members of hollow corner formation to overly the panel corner portions and having internal bearing shoulders positioned to have interlocking engagement with each of the panels and securing straps secured upon the case in right angular relation, substantially as described.

6. A shipping case of the character described comprising single piece panel members positioned to have mutual overlying relation to produce a lock type corner structure, metal reinforcing and supporting members fitted to the corners thereof and consisting of triangular wall members integrally formed in corner formation and having integrally formed shoulders projecting inwardly from each wall thereof for interlocking engagement with the panels, said shoulders being of angular form having spacer bearing portions at right angles to the related wall and clamp portions parallel to the related wall, each of said shoulder portions being spaced from a parallel wall proportionate to the thickness of the panels and securing straps secured upon the case in right angular relation.

SAMUEL RUSSELL DUMMER.