Oct. 13, 1931. A. H. CUBBERLEY 1,826,744

SHIPPING CASE

Filed July 3, 1930 2 Sheets-Sheet 1

Fig. 1

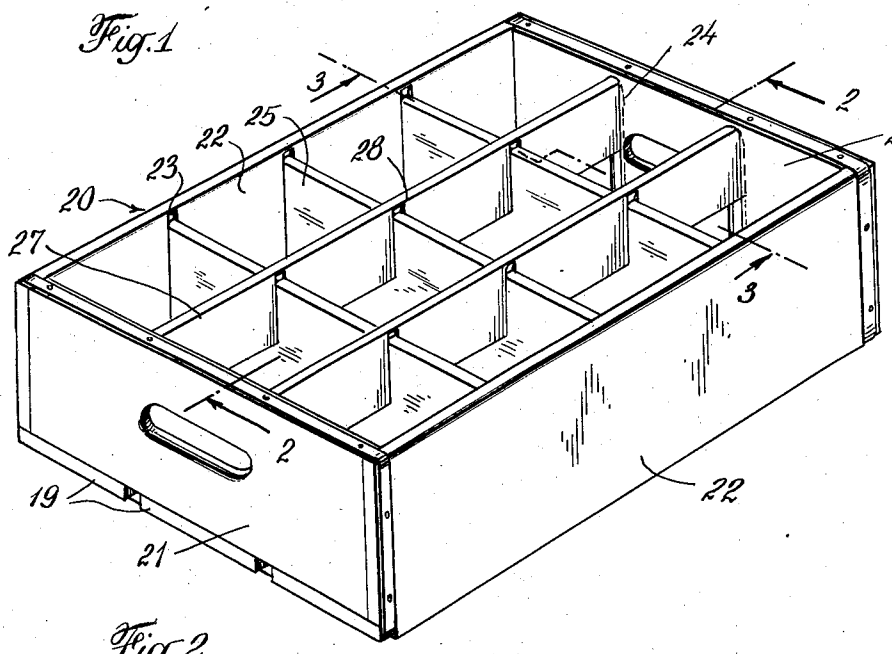


Fig. 2

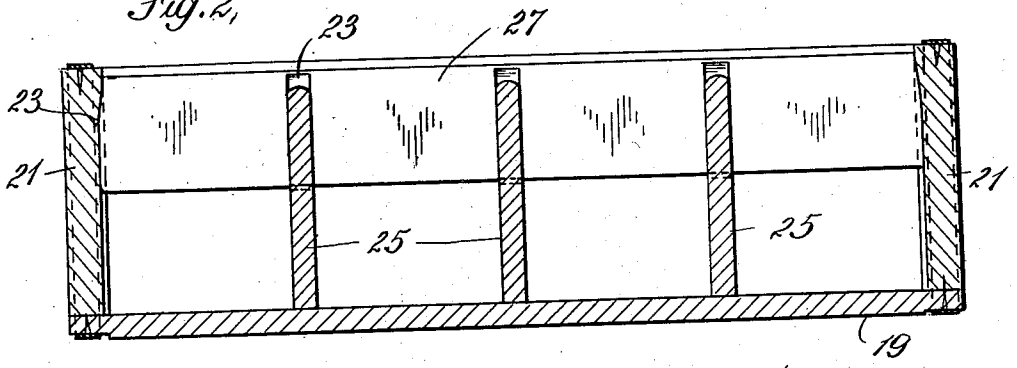
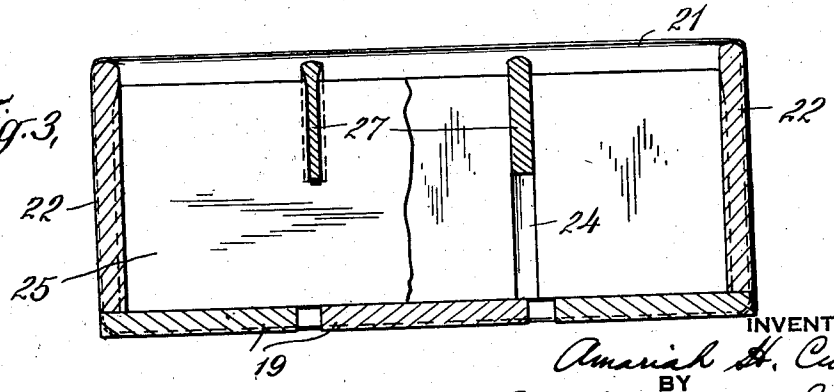


Fig. 3



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Fig. 4,

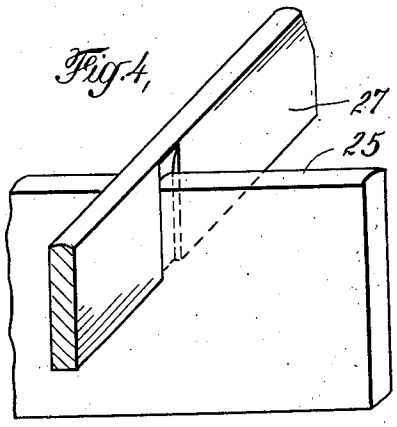


Fig. 5,

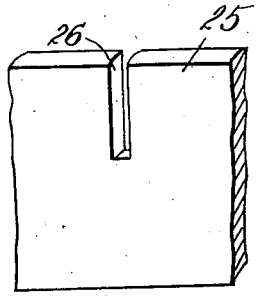


Fig. 6,

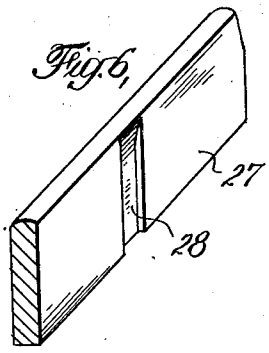


Fig. 7,

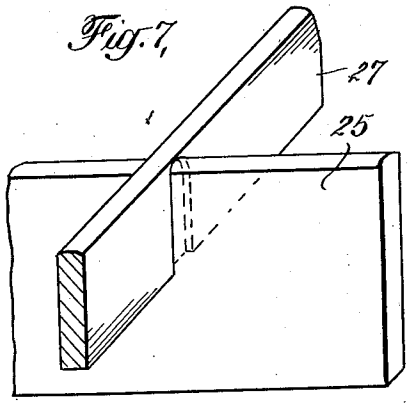


Fig. 8,

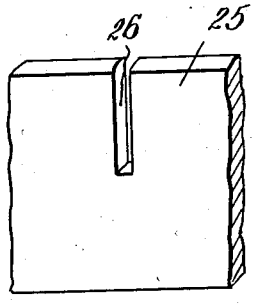


Fig. 9,

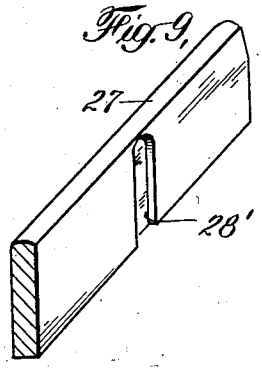


Fig. 10

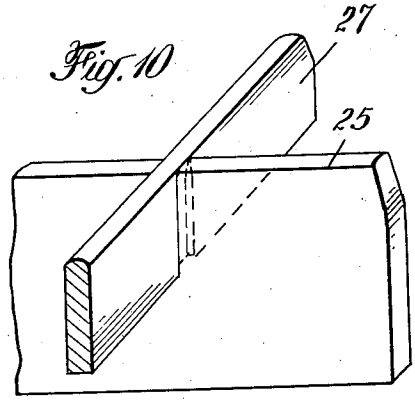


Fig. 11,

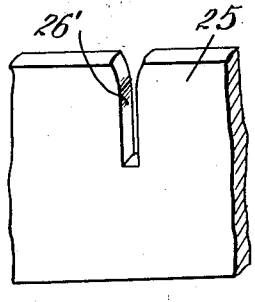
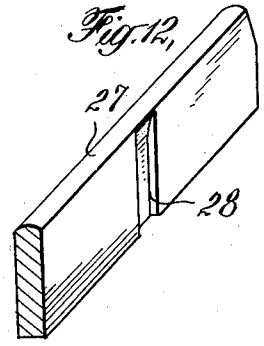


Fig. 12,



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UNITED STATES PATENT OFFICE

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SHIPPING CASE

Application filed July 3, 1930. Serial No. 465,574.

This invention relates to shipping cases and has particular reference to cases or crates for transporting packaged goods such as bottled beverages. Shipping cases for bottled goods as constructed include a honey-comb partition having a plurality of separate interstices, each of which is adapted to hold a bottle. This honey-comb partition is formed of longitudinal and transverse wooden strips, the transverse strips being wider than the longitudinal strips and being provided with saw-cut slots in which the longitudinal strips are fitted, the longitudinal strips usually being rabbeted transversely so as to hold the two crossing strips in fixed relation without requiring the use of independent fastening means such as nails. The inside surfaces of the box are also rabbeted for the reception of the ends of the strips so as to hold the partition in the box without requiring the use of nails for that purpose.

The saw-cut slots in the transverse strips are necessarily cut across the grain of the wood, so that the extension lying between the slots is weakened and frequently breaks off because of the rough handling to which the case is subjected. These broken pieces, not being secured in place, fall out and are lost, so that the effectiveness of the partition is destroyed, and the only recourse is to repair the case by replacing the broken transverse strips. Furthermore, as the strips are not secured together to prevent the longitudinal strips from slipping out of the transverse strips, they frequently separate when an old case in which the partition has become loosened is inverted.

It is the principal object of this invention to provide a shipping case for packaged goods, such as bottles, which is rugged and not subject to the objectionable disintegration of the partitions which occurs in present forms of shipping cases, because of the breakage of the partition strips.

Another object of this invention is to provide a shipping case which is manufactured of the same materials and by the same machinery as those employed heretofore, whereby no additional first cost is entailed but, on the contrary, much is saved because of greatly decreased repair and replacement costs, and a large reserve supply of cases for replacing the broken ones is no longer necessary.

A further object of this invention is to secure together the transverse and longitudinal strips constituting the partition without requiring the use of positive fastening means, such as nails, in order to prevent the longitudinal members from slipping out of the corresponding slots in the transverse members when the case is inverted, or when the ends of the strips become detached from the walls of the box due to warping or the like.

These and other objects and advantages of this invention are realized in a preferred embodiment thereof, consisting of the usual box having spaced, rabbeted grooves on its inner walls for the reception of the ends of the partition strips, these grooves preferably extending from the bottom edges of the box and terminating short of the top edges thereof, so that the partition may be inserted from underneath before the bottom of the case is secured in place and will not slip out of the top of the case.

The partition comprises transverse and longitudinal strips which are secured together in interlocking crossed relation, the transverse strip being slotted at spaced intervals for the reception of the longitudinal strips, and being wider than the longitudinal strips. Instead of extending clear across the longitudinal strips, the rabbeted grooves in the opposite surfaces thereof adapted for interlocking with the slots of the transverse strips, are blind, i. e., stop short of the top edges of the strip. These blind grooves are formed either by stopping the rabbet saw cut short of one edge of each longitudinal strip, or by mortising the strip from one edge to a point adjacent the other edge.

Accordingly, when the longitudinal strips are slipped into the corresponding slots of the transverse members, the top edges of the former do not lie flush with the top edges of the latter, for the reason that the top edge of each transverse member at the slots thereof jams into the blind end of the correpsonding

rabbeted groove of the longitudinal strip. The transverse strips are accordingly braced against transverse bending at points between the crossing longitudinal strips, whereby breakage of those portions of the former is prevented.

The tranverse and longitudinal strips are also wedged securely together, because of these interlocking grooves and slots, and even if the wood between the slots of the transverse strips should crack or split because of a sudden blow it will not fall out for the reason that the blind ends of the longitudinal strip grooves hold it securely in position. Accordingly, the partition cannot disintegrate under any conditions of normal usage, because of the security of the peculiar interlocking joint which holds the transverse and longitudinal strips in crossed relation.

In a modified arrangement the slots in the transverse strips are recessed or tapered adjacent the top edges of these strips in order that the blind ends of the grooves of the longitudinal strips may lodge therein, whereby the top edges of the transverse and longitudinal strips lie flush, while preserving the advantages described.

For a better understanding of this invention, reference is made to the accompanying drawings, in which

Figure 1 illustrates in perspective a shipping case embodying this invention;

Fig. 2 is an enlarged longitudinal section thereof as seen along 2—2 of Fig. 1;

Fig. 3 is an enlarged transverse section thereof as seen along line 3—3 of Fig. 1;

Fig. 4 is a perspective view of the joint between the longitudinal and transverse strips forming the partition of the case;

Figs. 5 and 6 illustrate the separate transverse and longitudinal partition strips respectively, which are assembled as shown in Fig. 4;

Figs. 7, 8, and 9 illustrate a modified form of joint between longitudinal and horizontal partition strips; and

Figs. 10, 11, and 12 show another modified form of the joint between the transverse and longitudinal partition strips.

In these drawings, numeral 20 designates the frame of the shipping case and comprises two end members 21 and two side members 22, joined together at their ends in the usual way. The inside surfaces of the respective end and side members 21 and 22 are rabbeted for the reception of the ends of the transverse and longitudinal partition strips, which, when joined in accordance with this invention, form a honey-comb structure, each interstice of which is adapted to support an individual article such as a bottle. The rabbeted grooves 23 in the inner surfaces of the side members 22 and also the rabbeted grooves 24 in the inner surfaces of end members 21 are formed by a saw, and are not cut through to the upper edges of end and side members 21 and 22, but stop short thereof, as illustrated in Figs. 1, 2 and 3. This arrangement is preferred in order that the honey-comb partition may be inserted from the bottom of the case before the bottom 19 is nailed in place, and will not fall out when the case is turned upside down.

As shown in the drawings, the transverse partition strips 25 are wider than the longitudinal strips and are sawn approximately half-way across at spaced points to provide the slots 26, shown particularly in Fig. 5. In a case of the size shown, two such spaced slots are formed in each of the three transverse partition strips 25, and inasmuch as the grain of the wood runs lengthwise of these members, the wood between the two slots 26 is weakened and is liable to break off at the bottoms of the slots 26, and frequently does. In crates as now arranged, these broken pieces fall out, and the whole partition is rendered useless for the purpose indicated, because it will not then properly support the bottles or other packaged articles intended to be transported therein. In order to avoid the falling out of the pieces of wood that tend to break off between the slots 26 of the transverse partition strips 25, and to decrease this breakage, I have devised a partition which strengthens and prevents the breakage of the transverse partition strips, and also prevents the loss of any of these pieces of wood, should they become broken in any way, while at the same time rendering the partition strong and rigid without the use of separate fastening members, such as nails.

In one arrangement, shown particularly in Figs. 1 to 6, inclusive, I rabbet the opposite sides of the longitudinal partition strips 27 in such a way that the groove 28 so formed does not extend clear across the strip of wood, but stops short of the top edge thereof, as shown particularly in Figs. 4 and 6. A circular rabbeting saw is used for this purpose so that the blind end of each groove 28 slopes upwardly to the surface of the longitudinal strip 27. Of course, the thickness of the wood remaining between the bottoms of opposite rabbet grooves 28 of longitudinal strips 27 is equal to the width of one of the slots 26 in the transverse members 25, so that the longitudinal strips 27 will fit closely in the slots 26 of the transverse members 25.

It will be seen that when the longitudinal strips 27 are placed in the slots 26 of the transverse strips 25 and the two strips forced together, the top edges of the transverse strips 25 will stop short of the top edges of the longitudinal member 27, as shown in Fig. 4, and the two strips will wedge or jam together because of the wedge-like shape of the rabbet grooves 28 near the top edge of longitudinal partition strip 27. Accordingly, the several transverse partition strips 25 and the longi-

tudinal partition strips 27 are held securely together by the considerable friction in the cross joint shown in Fig. 4, and, if desired, these partition strips may be connected with greater security by striking the top edge of each of the longitudinal members 27 with a hammer at its joint with the transverse partition members 25. Thus, the likelihood of breakage of the piece of wood between the slots 26 of transverse partition strips 25 is minimized and, in fact, largely eliminated entirely, but even if such breakage should occur, the broken piece cannot fall out or become loose, because it is wedged in the sloping rabbeted grooves 28, of adjacent longitudinal partition strips 27.

In Figs. 7, 8, and 9, I have shown a modified form of joint for connecting together the transverse and longitudinal partition strips of the crate, also without the use of positive fastening means such as nails or the like. In this arrangement, I do not taper the rabbeted grooves 28′ of the longitudinal strips 27, but I terminate their ends with a round recess which is preferably formed by boring the wood to the predetermined depth of the slot 28′, and then joining the bored hole with the rabbeted groove, so that the groove so formed resembles a mortise. The top edges of the transverse partition strips 25 are also rounded, so that when the longitudinal partition strips are forced into the slots 26 of the transverse strips 25, the upper edges of each strip 25 at the slots 26 will lodge in the rounded end of the rabbeted grooves 28′ of the longitudinal partition strips 27. As explained in connection with the arrangement illustrated in Figs. 4 to 6, inclusive, the liability of breakage of the wood between the slots 26 of transverse strips 25 is practically eliminated because the edges of the rabbeted grooves 28′ of the longitudinal partition strips 27 hold the transverse partition strips 25 from movement in both sidewise and upward directions. Also, even if the wood between the slots 26 of transverse strips 25 should crack or split, it cannot fall out, but is held in place from all directions so that the partition remains intact at all times and under all circumstances to perform its function of properly holding and keeping separated the packages or bottles inserted in its interstices.

In Fig. 10, I have shown another arrangement which resembles that shown in Fig. 4, except that the slots 26′ in the transverse partition strips 25 are formed with tapered edges, whose curvature follows the curvature of the blind ends of the rabbeted grooves 28 in the longitudinal partition strips 27. Accordingly, when the longitudinal partition strips 27 and the transverse partition strips 25 are joined as shown in Fig. 10, the slots 26′ and the grooves 28 interlock throughout their entire length, so that the top edges of the transverse and longitudinal partition strips lie flush instead of extending one above the other, as shown in Figs. 1 to 3, 4 and 7. This advantage can also be obtained in the arrangement illustrated in Figs. 7 to 9, inclusive, by widening the open end of slot 26 to accommodate the full thickness of the longitudinal strip 27 which lies between the blind end of grooves 28′ and the top edge of longitudinal strip 27.

It will be seen that the shipping case of this invention is simple and easy to manufacture with existing equipment and from the usual materials, without additional expense or labor. The partition of the shipping case of this invention is so arranged that it cannot fall apart under any conditions of normal usage, and the liability of breakage is minimized, so that repair and maintenance of the case is practically unnecessary, and the case has an indefinite life without requiring any attention whatever.

While a preferred embodiment of this invention has been illustrated and described herein, it is to be understood that the invention is not limited thereby, but is susceptible of various changes in form and detail within its scope.

I claim:

1. In a shipping case, the combination of a box frame, a partition strip having a groove extending only partially across the surface thereof, a second partition strip having a transverse slot for receiving said first partition strip at the groove thereof in interlocking, crossed relation, and means for mounting the partition thus formed in said frame.

2. In a shipping case, the combination of a box frame, a partition strip having surface grooves extending only partially across opposite sides of said strip, a second partition strip having a slot equal in width to the thickness of the first strip between the bottoms of the grooves therein for receiving the first strip in interlocking, crossed relation, and means for mounting the partition thus formed in said frame.

3. In a shipping case, the combination of a box frame, a partition strip therein having a groove extending only partially across the surface thereof, and a second partition strip having a transverse slot substantially equal in length to the length of the groove in the first strip for receiving the latter in interlocking, crossed relation.

4. In a shipping case, the combination of a box frame, a lower partition strip therein, said strip having a transverse slot, and an upper partition strip having a transverse groove extending only partially across the surface thereof, said upper strip being adapted to fit at the groove thereof into the slot of the lower strip to the limits of the groove of the upper strip.

5. In a shipping case, the combination of a box frame, a partition strip therein, said

strip having a transverse slot, and a second partition strip having a transverse groove extending only partially across the surface thereof and decreasing in depth at its terminus, said second strip being adapted to fit at its groove into the slot of said first strip and being wedged to the latter by the decreasing depth of the groove thereof.

6. In a shipping case, the combination of a box frame, a partition strip therein, said strip having a transverse slot extending only partially across the same, a second partition strip having a groove extending from one edge and terminating adjacent the opposite edge thereof, the length of said groove being substantially equal to the length of said slot, and said second strip being adapted to fit at its groove into the slot of said first strip in crossed, interlocking relation.

7. In a shipping case, the combination of a box frame, a partition strip therein, said strip having a transverse slot, and a second partition strip having aligned grooves on opposite surfaces extending from one edge and terminating adjacent the opposite edge but short thereof, said second strip being adapted to fit at its grooves into the slot of said first strip so that the one edge of said first strip lodges in the ends of the grooves of said second strip.

8. In a shipping case, the combination of a box frame, a partition strip extending between opposite sides of said frame, said strip having at least one slot in its upper edge, and a second partition strip having at least one surface groove extending from the bottom edge to a point adjacent the top edge but short thereof, said second strip being adapted to fit at its groove into the slot of said first strip to the end of the groove therein in crossed, interlocking relation.

9. In a shipping case, the combination of a box frame, a partition strip therein, said partition having spaced slots extending from one edge, and second partition strips each having a groove extending only partially across the surface thereof and adapted to cooperate with the slots of the first strip in crossed, interlocking relation, whereby the material of the first strip between the slots thereof is secured in all directions against damage and displacement.

10. In a shipping case, the combination of a box frame, a partition strip therein, said partition having spaced slots extending from one edge, and second partition strips each having aligned grooves on opposite surfaces extending from one edge and terminating short of the opposite edge, one of said second strips being adapted to be inserted at its grooves into one of the slots of the first strip in interlocking, crossed relation, whereby the material of the first strip at each side of said slots is braced in all directions against damage and displacement.

11. In a shipping case, the combination of a box frame, and a honey-comb partition therein comprising a plurality of strips having spaced grooves extending only partially across the surface thereof, and a plurality of transverse partition strips having slots for the reception of said first strips at the grooves of the same.

12. In a shipping case, the combination of a box frame, and a honey-comb partition therein comprising at least one transverse partition strip having at least two spaced slots extending from the top edge thereof, and at least two second partition strips each having a surface groove extending from its lower edge and terminating short of the upper edge, one of said second strips being adapted to be inserted at its groove into a slot of said first strip in interlocking, crossed relation, whereby the material of the first strip extending to either side of the slots thereof is braced in the grooves of said second strips against damage and displacement.

In testimony whereof I affix my signature.

AMARIAH H. CUBBERLEY.