Jan. 30, 1923.

1,443,681

A. H. GOODWIN.
WOODEN SHIPPING CASE.
FILED FEB 8, 1922.

Fig. 1.

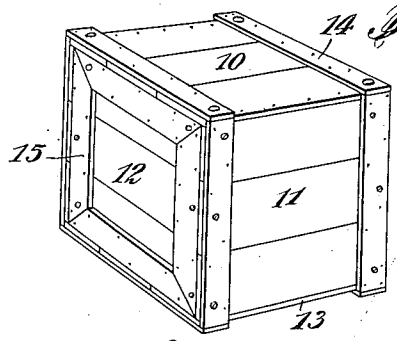


Fig. 2.

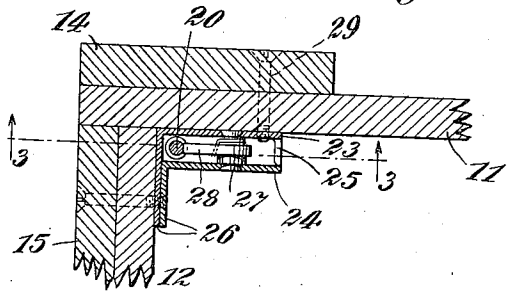


Fig. 11.

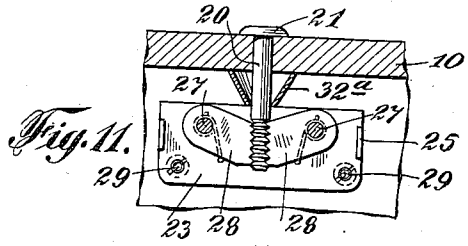


Fig. 3.

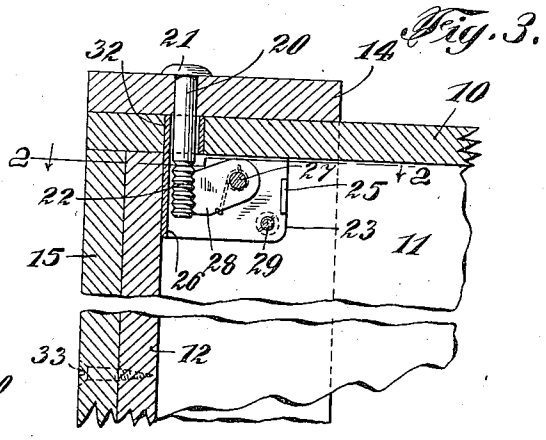


Fig. 6.

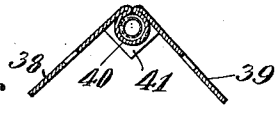


Fig. 5.

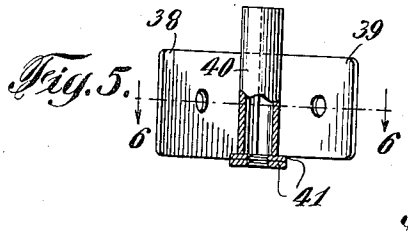


Fig. 7.

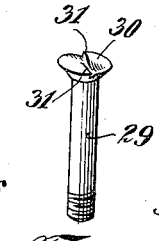


Fig. 12.

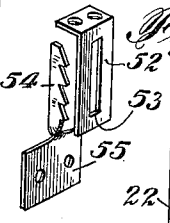


Fig. 4.

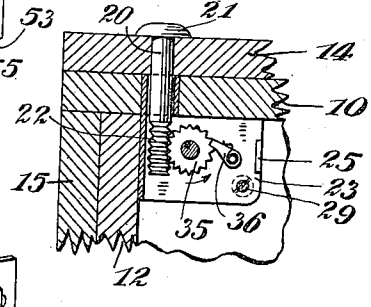


Fig. 8.

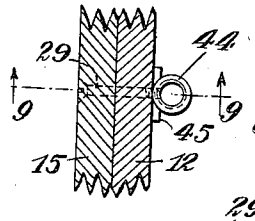


Fig. 10.

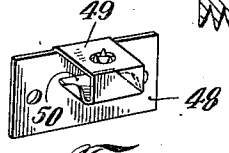
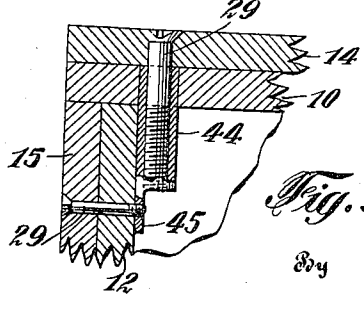


Fig. 9.



Inventor
Abraham H. Goodwin
By Dean, Fairbank, Albright & Hirsch
his Attorneys

Patented Jan. 30, 1923. 1,443,681

UNITED STATES PATENT OFFICE.

ABRAHAM H. GOODWIN, OF NEW YORK, N. Y.

WOODEN SHIPPING CASE.

Application filed February 8, 1922. Serial No. 534,868.

To all whom it may concern:

Be it known that I, ABRAHAM H. GOODWIN (name legally changed from ABRAHAM H. GODKEVITCH), a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Wooden Shipping Cases, of which the following is a specification.

This invention is an improvement in shipping cases, having the parts so constructed that when the case is closed it cannot be opened without breaking some of the parts, such as the wall or fastening members, whereby, even though the case be reclosed after opening there is tell-tale evidence that it has been tampered with.

One of the main objects of my present invention is to provide means whereby the cover is securely held by locking means disposed inside of the case, and the proper cooperating engagement secured even though there be variations in the thickness of the walls of the case, or the positioning of the locking parts.

A further object is to provide means whereby the locking members may be inserted through the wall of the case from the exterior, to engage retaining means on the inside and its removal effectively prevented.

A further object is to provide means whereby the cover may be provided with properly located holes for the insertion of locking members into proper registry with the interior retainer.

Several different constructions whereby these different objects may be secured will now be described in detail, and it will be apparent that each of these several forms involves separate improvements and advantages not necessarily present in the others.

In the accompanying drawings:—

Fig. 1 is a perspective view of a case which may be sealed by means of my improved construction.

Fig. 2 is a transverse section in a plane at a short distance below the inner surface of the cover of a case, as indicated by the line 2—2 of Fig. 3, and showing one form of locking mechanism,

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2,

Fig. 4 is a section similar to Fig. 3, but showing a different construction of retainer,

Fig. 5 is an elevation of a further form of retainer adapted to be inserted in a corner of a case,

Fig. 6 is a section on the line 6—6 of Fig. 5,

Fig. 7 is a perspective view of a locking member adapted to cooperate with the retainer of Figs. 5 and 6,

Fig. 8 is a section of a wall of a case showing a further modified form in place,

Fig. 9 is a section of the case at an angle thereof and taken on the line 9—9 of Fig. 8, and

Figs. 10, 11 and 12 are views of further forms of devices.

My invention is applicable to various forms of constructions of shipping cases. That illustrated in Fig. 1 includes a top or cover 10, side wall 11, end wall 12, and a bottom 13. The top, side and bottom walls may have transverse cleats 14, whereby when these cleats are locked together at the corners, no one of the boards of these walls can be removed. The end wall 12 may also have a frame work or rectangular arrangement of cleats 15.

In the construction shown in Figs. 2 and 3, there is provided a locking member 20, adapted to be inserted through the cover of the case and preferably although not necessarily, through the end of a cleat 14 thereof, to the interior of the case. This locking member is shown in the form of a bolt with a head 21 of such form, that it cannot be engaged by a wrench or screw driver to rotate the bolt. The inner end portion of the bolt is provided with a series of circumferential grooves, which are separate and distinct from each other as distinguished from a screw thread or helical groove.

Within the case there is provided a retainer adapted to receive the inner end of the locking member and engage therewith in such a way that the locking member, when in place, cannot be withdrawn. The retainer is shown as including two sheet metal plate portions 23 and 24, lying substantially parallel and spaced apart by a lug 25. At the edge opposite the lug, the two plates have superposed flanges 26 at right angles to the plates. The body portions of these plates are held in rigid spaced relationship by a pivot pin 27, which may present shoulders, engaging surfaces of the plates, and reduced end portion riveted over for connecting the parts. Mounted on this pivot pin is a pawl 28 held in the path of, or against the locking member 20, by a suitable spring 29. The pawl may have only a single tooth for engagement in a groove of the locking member, or it may have a plurality of such teeth, as illustrated in the drawing.

The retainer shown in Figs. 2 and 3 is adapted for use in the corner of a case, so that it can serve not only to receive the locking member and hold the cover in place, but also forms a bracket connecting the side and the end walls. It may be secured to the walls in various different ways, by securing means of such character that it cannot be released from the exterior of the case. Ordinary carriage bolts may be employed with nuts on the inner ends, or I may employ bolts having their heads so constructed that the bolts may be readily rotated in one direction by a screw driver, but cannot be rotated in the opposite direction. As illustrated the superposed flanges 26 and the plate 23 are provided with threaded apertures to receive bolts 29, constructed substantially as shown in Fig. 7. Each bolt has a head 30 adapted to be countersunk in the wood, and provided with two shoulder portions 31 facing in opposite directions, so that a screw driver may be employed to rotate the bolt in one direction. The surface opposite to each shoulder 31 is beveled or chamfered, so as to prevent the screw driver from engaging the bolt to turn it in the opposite direction.

The retainer has a portion which projects above the plane of the upper edge of the side walls, by means of which the point at which the hole is to be bored to receive the locking member may be definitely and accurately located.

As shown, one of the plates, for instance plate 23, has an extension 32, bent to tubular form above the upper edge of the body portion of the plate and above the pawl 28. After the retainer is secured in position in a corner of the case with the tubular portion 32 projecting above the edge of the wall of the case, the cover is placed in position and a light pressure applied. The upper end of the extension 32 leaves a mark on the underside of the cover, so that when the cover is removed, a hole may be bored through the cover in such position that when the cover is again placed on the case the tubular extension will fit up in the hole and will act both as a guide for the locking bolt, and to prevent any shifting or lateral movement of the cover. This extension may be of any desired height, and it may enter but a short distance into the top wall or cover, or it may extend all the way through the cover and cleat 14. It is obvious that the head 21 of the locking member must be materially larger than the tubular guide 32, if the guide goes all or most of the way through.

From the foregoing it will be seen that after the retainer is secured in place it serves to hold the cover against any lateral movement, and presents a guide for directing the locking member into proper engagement with the pawl, and that when the locking member is inserted and engaged by the pawl, it cannot be withdrawn either by direct pull or by rotation. Furthermore, as the pawl may engage with the locking members in a plurality of positions, the desired locking effect is secured irrespective of variations in the thickness of the cover, the extent to which the head is countersunk, or the exact position of the retaining member in respect to the upper edge of the case wall.

One of these locking devices may be employed at each of the four upper corners, and if desired at each of the four lower corners, although its use at the lower corners is not as important. Securing brackets of simpler and less expensive character may be used in the four lower corners and applied from the inside before the case is packed. The flanges 26 particularly adapt the construction illustrated to use in the corners of a case. It will be evident that the portions of these flanges which project beyond the surface of plate 24 may be omitted, and a plurality of bolts 29 engaged in the plate 23 so that the retainer may be located at any desired point along the upper edge of a wall of the case, and not merely at the corner.

The locking members and retainers may serve merely to connect the box cleats at their end, or may connect other forms of wall which have no cleats. The cleats if used may be secured to the intermediate boards by screws 33 having heads for one way rotation by a screw driver, as shown in Fig. 7.

A modified form very similar to that shown in Figs. 2 and 3, is illustrated in Fig. 4. Instead of having a pivoted pawl engaging directly with the locking member, there is provided a ratchet wheel 35 engaging with the grooves of the locking member. A spring pressed pawl 36 engages with the

ratchet wheel so as to prevent the rotation of the latter, except in one direction. The locking member, upon being inserted, engages with the ratchet wheel and rotates in a direction indicated by the arrow until the locking member reaches final position. The return movement is prevented as the ratchet wheel cannot be rotated except in one direction.

The locking member shown in Figs. 2, 3 and 4, has circumferential grooves which permit of its rotation without loosening effect. Inasmuch as the pawl or the ratchet wheel engages with only one side of the locking member, it will be evident that the locking member might be square, or of other non-circular shape in cross section, so that it cannot be rotated, and in that event it is not necessary to have the grooves extended all the way around the locking member. They may be only on the side thereof which engages the pawl or the ratchet wheel. It will also be evident that the grooves in the locking members may be in the form of a screw thread, if the locking member be so designed that it cannot be rotated to unscrew it from the exterior of the case. The head may be of such form that it cannot be engaged by a screw driver, wrench or other tool to rotate it in either direction, or it may have the head construction shown in Fig. 7, so that it may be rotated as far as desired when inserting it, but cannot be rotated to unscrew or remove it.

A further form is illustrated in Figs. 6 and 7. In this form the retainer may be cut and bent from a single piece of sheet metal so as to form two wings or flanges 38 and 39, a tubular part 40, and a threaded flange or nut part 41. If this retainer is to be at a point intermediate of the end of a side wall, flanges 38 and 39 may be in the same plane, but if it is to be used in a corner, then they are bent at right angles to each other as shown. Each of the two flanges 38 and 39 may have a lug 41, these being bent to lie in superposed position, and provided with a threaded aperture registering with the tubular portion 40. This tubular portion may have an extension adapted to project beyond the upper edge of the wall of the case, and corresponding to the portion 32 shown in Fig. 3. The retainer shown in Figs. 5 and 6 is adapted to receive the locking member 29 shown in Fig. 7. After the case has been closed the locking member may be inserted through a hole in the cover, and the screw threads thereon caused to engage the nut-like part 41 by proper rotation with the aid of a screw driver. Due to the construction of the head the locking member cannot be removed when once in place.

In the form shown in Figs. 8 and 9, the tubular member 44 which corresponds with the tubular member 40 of Figs. 5 and 6, may be formed as a casting with suitable lugs 45, whereby it may be attached in place, and the tubular member itself may be internally threaded to receive the locking member 29, with its head constructed for one way rotation only.

In the form shown in Fig. 10, the locking member includes a sheet metal plate 48, which may be secured to the inner surface of the case in any suitable manner. This plate has a portion 49 bent to form a housing for non-rotatably retaining a nut 50. The nut itself may be constructed in various different ways as a lock-nut in which the bolt may be rotated in one direction, but cannot be rotated in the other direction. As the plate 48 keeps the nut from rotation and holds it in position, and as the nut will grip the bolt and permit rotation of the latter for tightening the bolt but not for loosening it, it will be apparent that any ordinary bolt may be employed. The construction of the head is not material, except in so far as it shall have means whereby the bolt may be screwed in and properly tightened.

I have not illustrated the details of the construction whereby the nut grips the bolt to prevent unscrewing the latter as the details employed may be the same as are used in a wide variety of lock-nuts heretofore designed by others and in common use. One such form of lock-nut which might be employed is that shown in the Schlotterback Patent No. 1,043,258. The upper surface of the nut housing 49 preferably has flanges on projections extending upwardly therefrom, and adapted to mark or dent the under surface of the cover when the latter is first applied, so that when the cover is taken off the point at which the hole is to be bored for the cooperating locking members is accurately located.

Various other forms might be designed within the scope of my invention. For instance, the plates 23 and 24 of Figs. 2 and 3 might be made of approximately double the width, with the flanges 26 omitted and the parts symmetrically disposed in respect to the locking bolt, as shown in Fig. 11. Thus there might be two of the lugs 25, pivot pins 27 and pawls 28 disposed on opposite sides of the bolt. Such a construction would be adapted for use along the edge rather than in the corner.

The retainers shown in Figs. 2 to 9 inclusive might have the upwardly projecting guides entirely omitted, or the retainers might be mounted in such position that the upper ends of the guides came flush with or slightly below the edge of the wall. In that event the guide might be flared or conical or funnel shape, so as to better direct the

locking member into proper engagement with the movable part of the retainer, as shown at 32ª in Fig. 11.

In Figs. 2 to 11 inclusive the grooves transverse to the general direction of the length of the locking member are on both the locking member and on the retainer. It is evident that the locking effect with the parts in different relative positions might be secured with only a single groove, flange, ridge, or shoulder on one and cooperating with any one of several grooves, shoulders, or the like on the other. In Fig. 12 I have shown a locking member 52 having a single shoulder 53 for engaging any one of the teeth or grooves of the retainer 54. Although the locking member preferably is extended through the cover after it is closed, it may be carried by the inner surface of the cover as in my prior Patent 1,391,470, or as shown in Fig. 12.

Although one of the members preferably has a movable part such as the pawl of Figs. 3 and 11, or the wheel of Fig. 4, the member itself may be made of resilient material, so that no separate spring is needed. In Fig. 12 the member 52 or the member 54, or both, may be resiliently pressed against the other. In this form either member may be carried by the cover, and the other by the wall.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A shipping case having a retainer secured to the inner surface of the wall thereof and presenting a guide portion, and a locking member adapted to be inserted through the cover, and said guiding means into interlocking engagement with said retainer.

2. A shipping case having a retainer secured to the inner surface of the wall thereof, and presenting a guide portion extending above the upper edge of the wall into the cover, and a locking member adapted to be inserted through the cover and said guiding means into interlocking engagement with said retainer.

3. A shipping case having a retainer secured to the inner surface of a wall thereof, and a locking member adapted to extend through the cover into engagement with said retainer, said retainer having a portion projecting above the upper edge of the wall for locating the point on the cover at which the locking member is to be inserted to insure registry with the retainer.

4. A shipping case having a retainer adapted to be secured to the inner surface of a wall and including a plate portion and a spring pressed pawl mounted thereon, and a locking member projecting inwardly from the cover and having a series of notches for engagement with the pawl.

5. A shipping case having a retainer adapted to be secured to the inner surface of a wall and including a guide portion and a spring pressed pawl extending inwardly at an angle to said guide portion, and a locking member projecting inwardly from the cover and adapted to engage with said guide portion and said pawl, said locking member being held against return movement by the gripping action between said pawl and said guide member.

6. A shipping case having a retainer adapted to be secured to the inner surface of a wall and including two relatively movable members and a locking member projecting inwardly from the cover and adapted to extend between said first mentioned members, said first mentioned members acting to grip said locking member in any one of a plurality of positions of the latter, and prevent separation of said cover and said wall.

7. A shipping case having a member adapted to be secured to the inner surface of the wall of the case and having a projecting part adapted to enter the inner surface of the cover, a member projecting inwardly from the cover, and a member carried by the first member and adapted for gripping engagement with the second member to prevent removal of the cover.

8. A device adapted for use in sealing shipping cases, including a member adapted to be secured to the inner surface of a wall of the case with a part projecting above the upper edge thereof to enter the inner surface of the cover when the latter is applied, a member adapted to be carried by the cover and project inwardly therefrom, and means carried by said first mentioned member for automatically gripping the second mentioned member to prevent removal of the cover.

9. A device adapted for use in sealing shipping cases, including a member adapted to be secured to the inner surface of the wall of the case and having a substantially vertical surface, a member mounted on the first mentioned member and movable upwardly and toward said surface, a spring normally tending to hold said second mentioned member in the upper limiting position, and a member adapted to be carried by the cover and project inwardly therefrom between said surface and said second mentioned member, and to be gripped against said surface by said second mentioned member to prevent the removal of the cover with said third mentioned member.

10. A device adapted for use in sealing shipping cases including a retainer adapted to be secured to the inner surface of a wall, and including a gripping member movable in a direction having vertical and horizontal components, a spring normally pressing said member upwardly and laterally, and a mem-

ber adapted to be carried by the cover and project inwardly therefrom, and adapted to force said first mentioned member inwardly and laterally in the other direction against the action of said spring, the engagement of said first mentioned member with said second mentioned member serving to prevent the removal of the cover with the latter.

11. A device of the character defined in claim 10 and in which said retainer has a projection adapted to engage with the cover and thereby locate the point on the cover for the proper positioning of the second mentioned member.

Signed at New York in the county of New York and State of New York this 8th day of February A. D. 1922.

ABRAHAM H. GOODWIN.