Jan. 21, 1941. C. G. JONES 2,229,508

HINGE MEANS FOR BOX COVERS

Filed May 17, 1939

Fig.5.

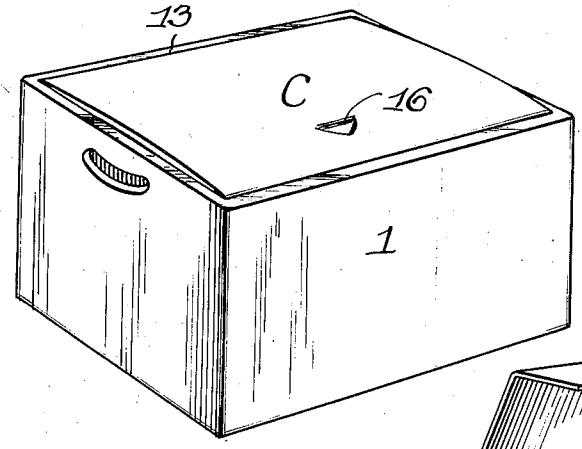
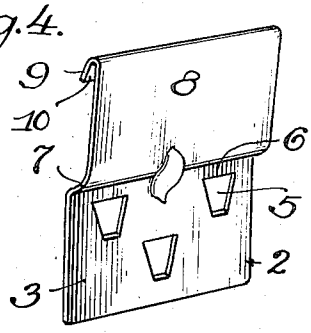


Fig.4.



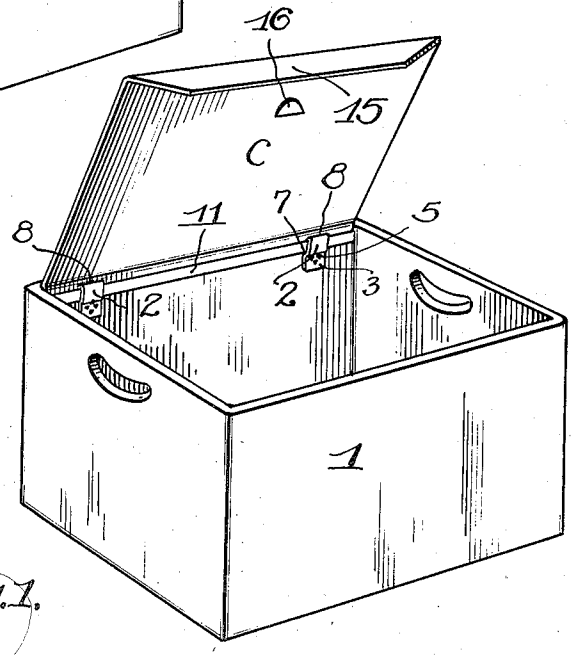


Fig.1.

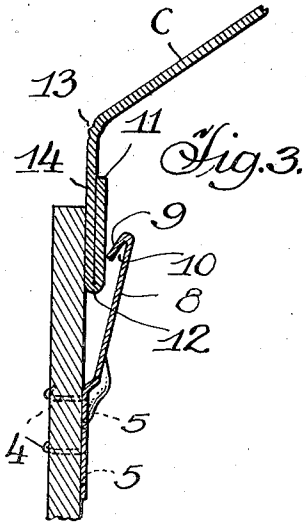


Fig.3.

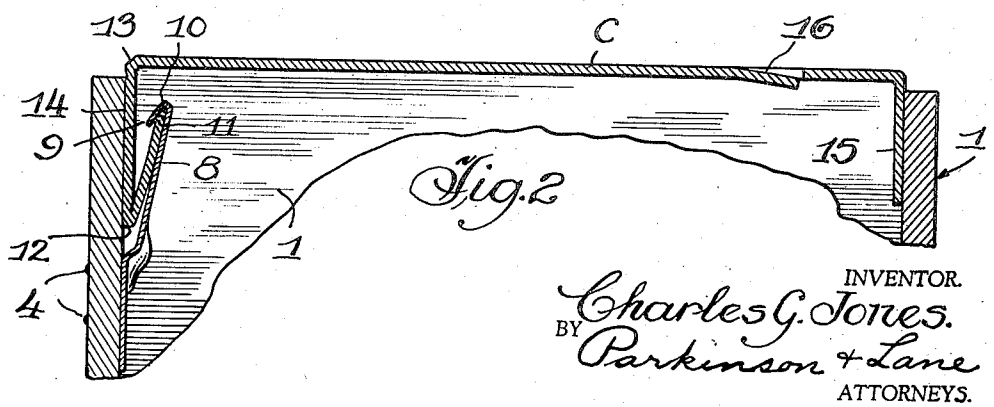


Fig.2.

INVENTOR.
Charles G. Jones.
BY Parkinson & Lane
ATTORNEYS.

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HINGE MEANS FOR BOX COVERS

Charles G. Jones, Louisville, Ky., assignor to General Box Company, Chicago, Ill., a corporation of Delaware

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2 Claims. (Cl. 217—57)

This invention relates to hinge means for box covers, and more particularly to such means permitting the lid to be quickly and easily snapped into place on a box, with provisions for hinging the cover adjacent the holding means, and enabling a new cover to be easily applied when the old lid or cover has become unduly worn.

In many types of boxes that have heretofore been left open on top, such as bottle boxes in which the bottles generally stand upright or not as desired, and in many other open-top boxes, the contents of the box are subject to dirt, dust and other foreign matter that is free to enter the box at the top. This is highly undesirable because of rendering the goods in the box unsightly and insanitary. In the present invention I have made it possible to quickly and easily apply to the box a hinged lid or cover that will keep out the dirt, dust and foreign matter, and keep the contents of the box clean and sanitary during delivery, shipment or storage, and one that can be easily replaced with a new cover when worn or otherwise damaged. My new cover and hinge means also enables such boxes, when desired, to be used for general delivery purposes and keep the contents of the box clean.

Among the objects of my invention is to overcome the above difficulties and accomplish the above advantages.

Other objects are to provide a cover hinge means that will hold the cover usably on the box as long as it is satisfactory to use, prevent the cover from blowing off as happens in the present one-trip cover, and make it possible for brewers to protect their beer from the light as has not been possible in the type of boxes heretofore used.

Further to provide such hinge means that the cover can be lifted up and swung back out of the way while the box is being filled, and yet prevent removal of the cover without tearing or cutting it off. Also to permit replacing covers on the boxes when necessary anywhere along the conveyors on the filling lines.

Other objects, advantages and capabilities such as are inherent in the invention will later more fully appear.

My invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawing, and while I have shown therein a preferred embodiment, I wish it understood that the same is susceptible of modification and change without departing from the spirit of my invention.

In the drawing:

Fig. 1 is a perspective view of a box provided with a cover and hinge means embodying my invention.

Fig. 2 is a fragmentary transverse vertical section on a plane passing through one of the hinge clips, and showing the cover applied to the box and in closed position.

Fig. 3 is a fragmentary view showing the manner in which the cover is pushed into place behind the hinge clip.

Fig. 4 is a perspective view of one of the hinge clips.

Fig. 5 is an exterior perspective view of a box with the cover applied and in closed position.

Referring more in detail to the drawing and particularly Fig. 1, my improved hinge clip means is shown applied to a wooden box 1 in which the hinge clips 2 are secured to the inner face of one of the side walls of the box sufficiently close to the upper edge so that when the cover C is applied and closed it will assume a position substantially as shown in Fig. 5. I preferably use two of the clips 2 with each box, but any other number may be used as desired.

As shown in Fig. 4, the hinge clips 2 comprise the plate-like body portion 3 from which may be stamped and bent outwardly projections 4, these projections being of the size and shape of the openings 5 and bent outwardly along the attached edge 6. These projections will be preferably tapered in contour to facilitate the bent out projections being driven through the wall of the box and bent over at their outer ends against the outer surface of the box to firmly hold the hinge clip in place. It will be understood, however, that other fastening means, such as screws, nails, bolts, or the like, may, if desired, be used in this connection.

Along the upper edge of the body portion 3 the hinge clip is bent laterally or offset in an inclined plane as shown at 7 to cause the resilient plate 8 to be spaced a slight distance away from the inner face of the side wall of the box and stand at a slight angle thereto. The resilient plate 8 is bent downwardly along its upper edge a relatively short distance with respect to the offset portion 7 to form the angular hook-like flange 9, which is spaced a slight distance laterally from the plate 8 toward the wall of the box, to form a space 10 beneath which the edge 11 of the cover C may extend after the side edge of the cover has been pushed into place behind plate 8 as shown in Fig. 2.

The method of applying the cover to the hinge clip is shown in Fig. 3, from which it will be seen that the side edge of the cover C is bent back on itself at 12 to form the upstanding edge 11. The cover is also provided with a flange 14 adapted to cooperate with the clips to from a hinge, said flange having a fold or scored line 13 defining its upper edge and a lower edge portion 11 folded inwardly upon itself to a width slightly less than the distance from the lower edge of the hook portion 9 of the offset portion 7 to the lower margin of the latter. The arrangement is such

that when the cover is applied to the box, the line 13 will come closely adjacent to the top edge of the box wall, so that the cover may be closed and while closed it will be in approximate alignment with the top edge of the box. It will also be observed that the distance from the hook-like portion 9 to the wall of the box is such that it will be necessary to force the folded flange 14 through the space between said hook and the box wall in order to engage the cover with the hinge clips.

Fig. 3 shows the cover being applied to the box, at which time the bent over edge 11 will bear against the adjacent edge face 14 and the two be forced downwardly between the free edge of the flange 9 and the adjacent inner face of the box wall. During this movement the plate 8 may or may not be forced to spring a slight distance outwardly away from the box wall face, it requiring only a small amount of pressure to force the double thickness 11, 14 of the box cover behind the hinge plate 6. As soon as the doubled thicknesses 11, 14 of the box cover have been pushed home the bent back edge portion 11 will immediately, through its tendency to straighten out, spring into position with its upper edge under the flange 9. The lid will then be closed and the flange 15 forced inside of the upper edge of the opposite wall of the box, the friction between this flange and the box wall holding the cover closed. If desired, additional means may be added between the flange 15 and the box wall for holding the same in closed position.

The outward springing of the edge 11 of cover C will continuously hold the edge portion 11 underneath flange 9, which will hold the cover in position. The score line or lines 13 enable the cover to bend therealong to serve as a hinge for the cover.

The removal of the cover from the box can only be effected by tearing the cover loose from the hinge member 2, or cutting the same to free the flap 11 from beneath flange 9. The tendency of the inwardly bent edge 11 to straighten out, and the fact that the resilient plate 8 was bent slightly outwardly while the doubled-over cover edge was being pushed therebehind, with a consequent inward springing of plate 8 as soon as the edge 11 had passed under flange 9, would make it impossible to remove the doubled-over cover edge from the hinge clip without tearing or cutting unless a tool be used to bend the plate 8 inwardly sufficient to allow the bent over edge 11 of the cover to be pulled upwardly past the free edge of flange 9. This latter mode of removing a worn cover from the box could be made use of if desired. Otherwise the cover would, as stated above, have to be torn or cut away, after which a new cover could be applied in the same manner as described above.

If desired a triangular portion 16 may be cut in the cover of the box to permit the operator's finger to be inserted therethrough for opening the lid, and yet permit a flap to serve as a closure for said opening to prevent access of dirt, dust, or the like, to the interior of the box. The doubled-over or bent back portion 11 may, if desired, extend the full length of the cover or it may be limited in length to substantially or roughly that of the width of the hinge clips 2.

From the above it is seen that I have provided a novel hinge means for a box cover which will permit the cover to be swung about its hinge to open position to permit the box to be emptied or refilled at any time, and of such nature that the cover may be removed when worn or otherwise damaged and a new cover quickly and easily applied to the box for the purposes set forth earlier herein.

Having now described my invention, I claim:

1. In combination, a box having upright side and end walls, a cover therefor of resiliently flexible material, and means for hingedly securing one side of said cover to said box, said means comprising relatively spaced metal plates secured to the inner face of one wall of the box below the upper edge thereof, each plate having an upper portion disposed in an inclined plane and having its upper edge provided with an overhanging hook portion extending outwardly toward said side wall and downwardly a relatively short distance with respect to the vertical length of said upper inclined portion, said cover having a flange cooperating with each clip to form a hinge, said flange having a fold-line defining its upper edge, said flange having a lower edge portion folded inwardly upon itself to a width slightly less than the distance from the lower edge of the hook portion of said upper inclined portion to the lower margin of the latter, the inner edge of said hook portion being spaced from the adjacent face of said wall a distance approximating the thickness of the folded portion to permit forced passage of the latter, whereby the folded-over portion will spring outwardly to a position beneath said hook portion in such manner that removal of the cover will be prevented by reason of the engagement of said folded-over portion with said hook portion, the other edges of said cover being free.

2. In combination, a box having upright side and end walls, a cover therefor of fibre-board, and means for hingedly securing one side of said cover to said box, said means comprising relatively spaced metal plates secured to the inner face of one wall of the box below the upper edge thereof, each plate having a resilient upper portion offset in an inclined plane from the rest of the plate, the upper edge of the resilient portion being provided with an overhanging hook portion extending outwardly toward said box wall and downwardly a relatively short distance with respect to the vertical length of said resilient offset portion, said cover having a flange cooperating with each clip to form a hinge, said flange having a fold-line defining its upper edge, and having a lower edge portion folded inwardly upon itself, the folded portion having a width slightly less than the distance from the lower edge of the hook portion of said resilient member to the lower margin of the latter, the inner edge of said hook portion being spaced from the adjacent face of said wall a distance slightly less than the thickness of said folded-over portion, to permit forced passage of said folded-over portion, whereby the resilient member will yield outwardly to permit forced passage of the folded portion between it and the box, and said folded-over portion will spring outwardly to a position beneath said hook portion in such manner that removal of the cover will be prevented by means of the engagement of said folded-over portion with said hook portion, the other edges of the cover being free, one of said free edges having a flange for releasably engaging the inner surface of the box wall so as to normally retain the cover in closed position.

CHARLES G. JONES.