Dec. 21, 1954 E. D. WARNER 2,697,539

BOX WITH HANDLE COVER FASTENING MEANS

Filed May 15, 1952

Fig. 1.

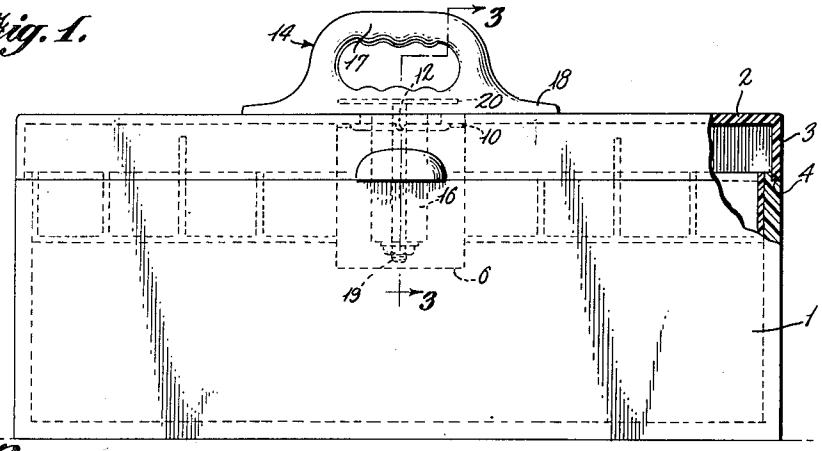


Fig. 2.

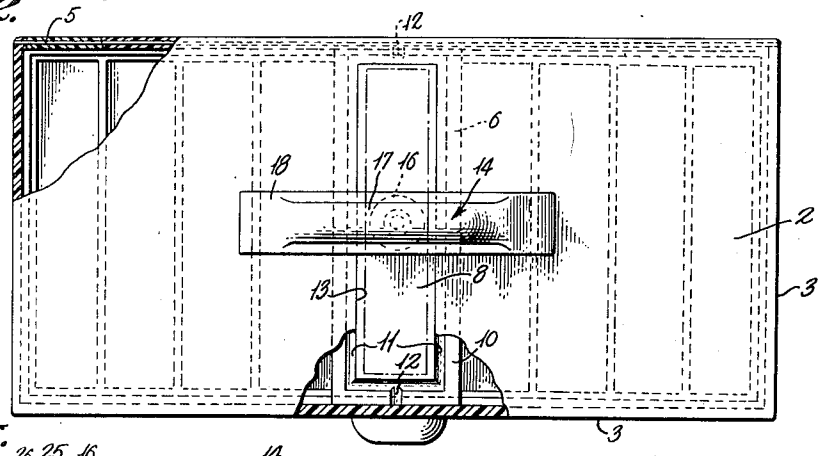


Fig. 5.

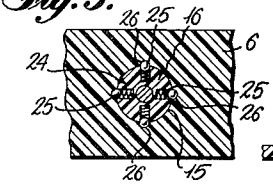


Fig. 6.

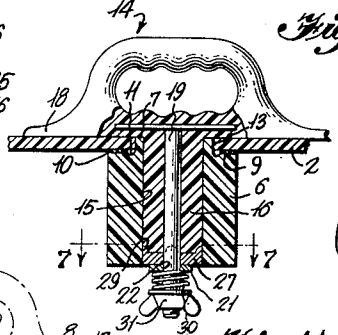


Fig. 4.

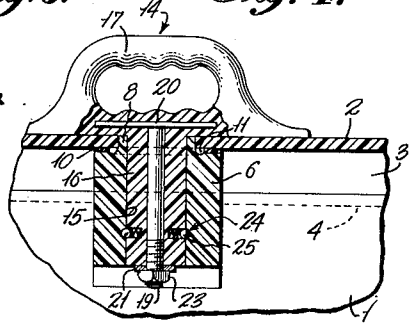


Fig. 3.

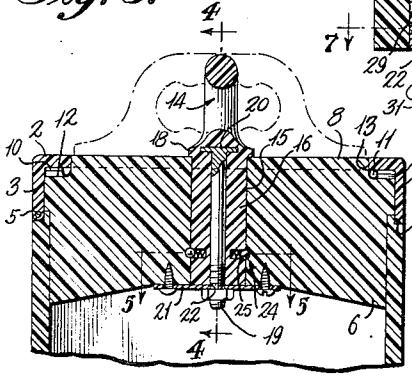
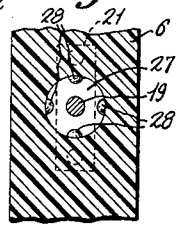


Fig. 7.



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2,697,539

Patented Dec. 21, 1954

2,697,539

BOX WITH HANDLE COVER FASTENING MEANS

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Application May 15, 1952, Serial No. 288,084

2 Claims. (Cl. 220—55)

This invention relates to containers, and more particularly to boxes of the type used as tackle boxes, tool boxes, and similar purposes.

Boxes of the general nature of the present invention are usually provided with a hinged lid which may be locked or in some fashion latched, in closed position. A handle is attached to the lid, and the box is carried by this handle, thus throwing the entire weight of the box and contents on the latching means. As the contents of such boxes are usually quite heavy, the latch suffers severe strains and frequently gives way, allowing the bottom section of the box to swing down around the hinge spilling the contents. Also, the metal hinges and fasteners which have been used were exposed and subject to the corrosive effects of moisture. This has been particularly true of tackle boxes which are subjected to moist salt air and frequently to actual wetting with salt water.

The object of the present invention is to provide a box which will have a carrying handle at the top but which will be attached to the bottom portion of the box so that no strain will be imposed upon the lid, and the box may be carried by the handle when the lid is open or closed.

Another object of the invention is to provide such a box in which the carrying handle also serves as the fastening means to hold the lid in closed position.

Still another object is to provide a box of this general type which has no exposed hardware.

A still further object is to provide a box which will be substantially watertight under all conditions except actual submersion.

Other objects of the invention will appear from the following description of a practical embodiment thereof when considered in conjunction with the drawings which accompany and form a part of this specification.

In the drawings:

Figure 1 is a side elevation of a box embodying the principle of the present invention, parts being broken away to show the interior;

Figure 2 is a top plan view of the box with parts broken away;

Figure 3 is a partial vertical transverse section through the box and is taken substantially on the line 3—3 of Figure 1;

Figure 4 is a partial longitudinal vertical section and is taken on the line 4—4 of Figure 3;

Figure 5 is a horizontal section on the line 5—5 of Figure 3 showing the means for stopping the movement of the handle in its predetermined positions;

Figure 6 is a view similar to Figure 4 showing a modified form of handle positioning means; and,

Figure 7 is a horizontal section taken on line 7—7 of Figure 6.

The box of the present invention has a bottom section 1 and a lid 2, which may be formed of any desired material, but which are preferably plastic or other non-corrosive material. The lid has a downwardly extending peripheral flange 3 which seats in a rabbet 4 extending around the upper edge of the walls of the bottom section. The lid is hinged to the bottom along the rear wall, and the hinge is preferably concealed. This can be accomplished by having a hinge pin 5 extend through upstanding ears on the bottom section and through the rear

section of the flange 3 of the lid. The pin may be made slightly shorter than the length of the box so that its ends will be within the walls of the box, and the opening through which the pin is inserted may then be sealed.

Extending transversely across the upper part of the bottom section of the box is a bridge 6. The bridge is located at the longitudinal center of the box and may be fixed in place by the use of heat, a solvent, or any of the familiar methods of joining plastic members. The bridge has shoulders 7 which seat on the top edges of the sides of the bottom section, and terminate at the edge of the rabbet 4. The exposed portion of the bridge, or that portion above the tops of the bottom section side walls, has its side edges projecting upwardly from the edges of the shoulders 7 to fit snugly within the lid. The bridge at its top terminates in an upstanding boss 8 which has the same general shape when viewed in plan as the bridge, but which is of smaller dimensions. This provides a horizontal shoulder 9 extending completely around the boss 8. The height of the shoulder 9 above the top of the bottom section is such that when the lid is closed the underside of the top of the lid will press tightly against a rectangular gasket 10 which is seated upon the shoulder. Each leg of the gasket is of less width than the shoulder 9 and the gasket is positioned with its outer edges flush with the outer edges of the shoulder 9. This leaves a space between the inner edges of the gasket and the base of the boss 8. A recess, or gutter, 11 is formed in this space and entirely surrounds the boss. At each end of the bridge, drain channels 12 are provided leading from the gutter 11 to the outside edges of the bridge.

The lid 2 has a rectangular opening 13 to register with and fit over the boss 8 on the bridge when the lid is closed. The edges of the opening will seal against the gasket 10, and any water which seeps through the openings around the sides of the boss will be collected in the gutter 11, and when the lid is raised will drain off along the channels 12.

In order to lock the lid in closed position, a handle 14 is pivotally attached to the bridge. Centrally of the bridge there is a cylindrical opening 15 passing vertically therethrough. The handle is provided with a cylindrical shank 16 to fit for rotation within the opening 15. The upper part of the handle is formed in any desired manner to form a grip 17 and has a flat rectangular base portion 18 which is proportioned to pass freely through the opening 13 in the lid when the handle is rotated to align the base portion with the boss on the bridge.

To secure the handle to the bridge, a bolt 19 is embedded in the shank of the handle which has a flat horizontal plate 20 as its head. Plate 20 is of substantial proportions so as to extend well into the handle and reinforce it. A securing plate 21 is fixed to the underside of the bridge covering the opening 15, and provided with an opening 22 to receive the bolt 19. A nut 23 is threaded on the end of bolt 19 to hold the handle against vertical movement.

To assist the user of the box to find the proper locked and unlocked positions of rotation of the handle, and to releasably hold the handle in such positions, locating means 24 may be used. This means may be of a number of different forms. Two types of locating means have been shown. In Figures 3, 4, and 5, the familiar spring-pressed ball type is shown. Four horizontal bores are formed in the shank of the handle spaced 90° apart, and springs and balls 25 are inserted in them. Four companion recesses 26 are formed around the walls of the opening 15 into which the balls may seat. When rotative pressure is exerted upon the handle the balls are forced into the openings in the shank, and when the next position of the handle is reached, the springs will force the balls into the recesses.

In Figures 6 and 7 a modified form of locating means is shown. Here the bottom plate 27 has a circular center portion which fits within the bottom of the bridge bore 15. The bottom plate is provided with upstanding lugs 28 for engagement with recesses 29 in the bottom of the handle shank 16. The handle bolt is made longer, and a spring 30 is interposed between the bottom plate and the nut 31. Thus the handle may move axially of the bore in the bridge against the tension of the spring when

the handle is rotated to release the lugs from the recesses, and the handle will move downward when the next position is reached.

From the above it will be evident that when the lid is closed the handle may be rotated to position its flat base across the opening in the lid. This will effectively lock the lid in closed position. When the box is lifted by the handle, the weight is carried by the bottom section of the box, for the handle is connected to the bridge and the bridge, in turn, is connected to the bottom section. When the box is to be opened, the handle is rotated 90° until its flat base is above the boss on the bridge and the lid may then be swung back on its hinges, the opening in the lid passing freely over the handle. The box may be lifted by the handle when open as well as when closed.

While in the above one practical embodiment of the invention has been disclosed, it will be understood that changes may be made from the precise structure shown and described without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. In a box having a bottom section and a lid hinged thereto, a bridge extending transversely of the bottom section and projecting above the top of said bottom section, said bridge terminating at its top in a rectangular boss of smaller dimensions than said bridge whereby a shoulder is formed peripherally of said boss, a rectangular gasket upon said shoulder, said lid having a rectangular opening to register with and receive said boss when said lid is in closed position, a gutter on said shoulder at the base of said boss and encircling said boss, drain channels extending from said gutter to the outer edges of said shoulder, and a handle pivoted for rotation upon said bridge, said handle having an elongated base, said handle being rotatable to positions in alignment with said boss and perpendicular thereto.

2. In a box as claimed in claim 1, locating means to yieldably hold said handle in said positions of rotation.

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