

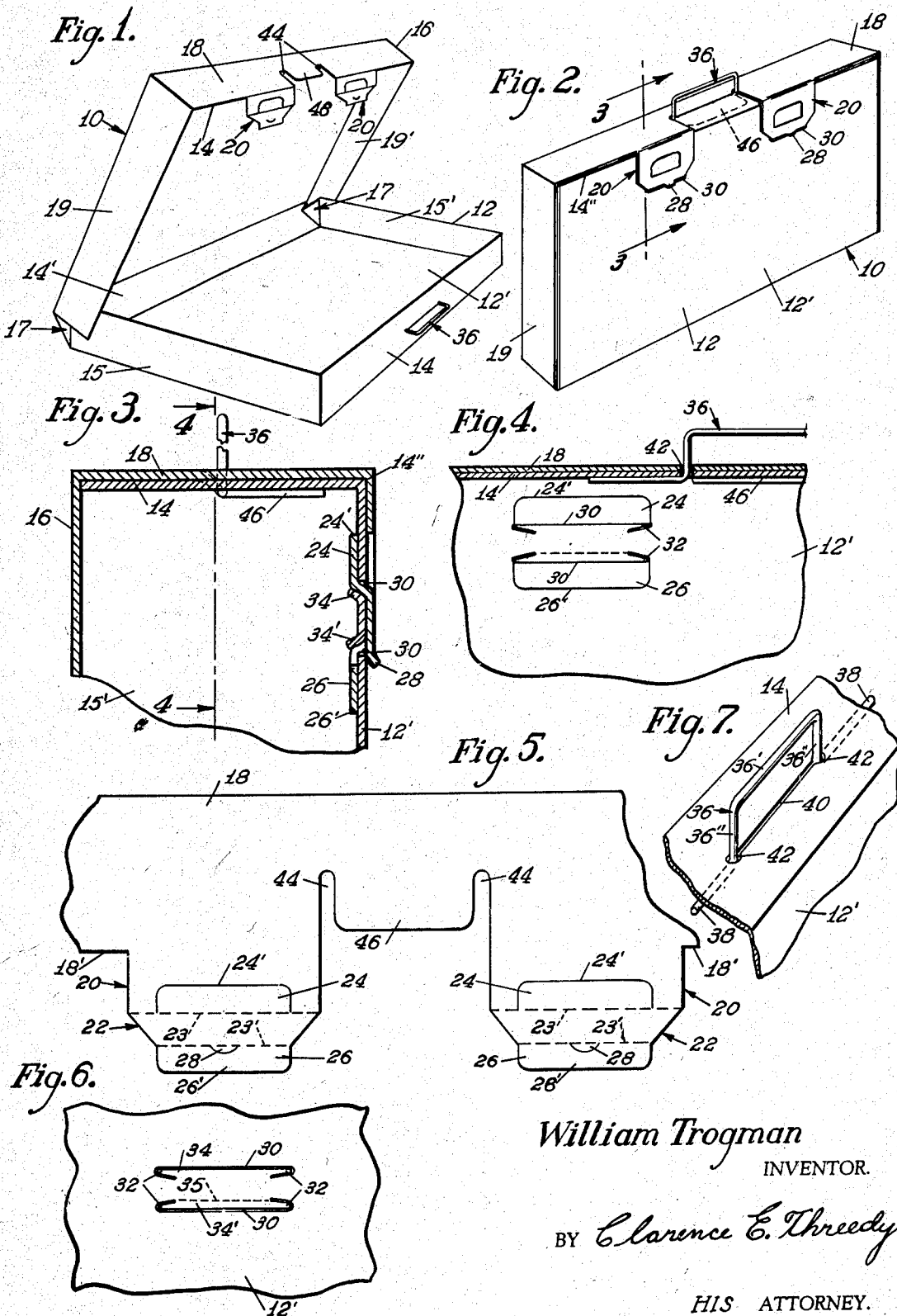
Dec. 14, 1937.

W. TROGMAN

2,102,497

BOX

Filed June 8, 1936



UNITED STATES PATENT OFFICE

2,102,497

BOX

William Trogman, Chicago, Ill.

Application June 8, 1936, Serial No. 84,083

8 Claims. (Cl. 229—52)

This invention relates to boxes, and more particularly to boxes and cartons fabricated from fibrous materials such as cardboard and the like.

Among other objects of the invention are the provision of a novel box of increased utility and which is simple and inexpensive to manufacture.

A further object of the invention is the provision of a box having integrally formed latching means for readily securing a closure member to the body of the box.

Still another object is the provision, in boxes or cartons having a box portion and top portion, of integrally formed latching means to secure the top to the box, and an improved handle arrangement facilitating the assembly of the box for use.

Other novel objects and provisions of the invention will appear in view of the following detailed description, together with the drawing, in which:

Fig. 1 is a perspective view of the novel box in open position;

Fig. 2 is a perspective view of the box of Fig. 1 in closed condition, with the handle extended ready for carrying;

Fig. 3 is a fragmentary vertical section along the line 3—3 of Fig. 2, showing particularly a section of the latching means;

Fig. 4 is a fragmentary detail partly in section, and taken along the line 4—4 of Fig. 3;

Fig. 5 is an enlarged plan detail of the latching tabs before folding;

Fig. 6 is a fragmentary plan detail of the latching or receiving slots; and

Fig. 7 is a perspective detail of the handle and handle-engaging slot provided in the box.

The generally indicated box 10 in Fig. 1 may be formed preferably from cardboard or similar fibrous material by any suitable means well known in the box making art, and comprises a box or body portion 12 having upstanding wall portions 14, 14', 15 and 15', and a top or closure member 16 having walls 18, 19 and 19', the top being preferably formed integrally with the bottom member 12 by suitably folding or creasing the marginal portions of the wall 14' formed therebetween and providing additional folds and creases in the corner portion 17 in a manner well known in the art. In this manner is formed a box having a body or box portion 12 and a top 16 integrally hinged therewith, whereby the top portion may be folded back upon the box or body portion to provide the closed box or carton shown in Fig. 2.

I prefer to form my improved latching means

20 in the free longitudinal edge 18' of the wall 18 of the top 16 of the box. This latching means comprises a tab 22, which may be extended laterally from the edge 18' of the wall 18 (Fig. 5). In this latch tab are provided two divergently extensive wing portions 24 and 26 having free edge portions 24' and 26', respectively, these edge portions being extended in the embodiment shown substantially parallel to the edge 18' in the side wall 18 of the top.

In the manufacture of the box it is desirable to crease portions of the latching tabs 20 along the portions indicated by the dotted lines 23, 23' in Fig. 5. This facilitates the flexing of the wing portions 24 and 26 in latching the box.

Also provided in the tabs 22 are small fly tabs 28, adapted to be hinged along the crease-line 23' and engaged for the manipulation of the latching means in the operation thereof. These fly tabs, as well as the wing portions 24 and 26, are provided in the manufacture of the box by well known methods, which require simply cutting the fibrous material of the box along the marginal extremities of the desired configuration.

Formed in the bottom wall 12' of the box 10 are latch-receiving slots 30 and 30' (Fig. 6). These slots may be spaced apart a distance corresponding substantially to the distance between the fold or crease-lines 23 and 23' in the latching tabs, and are extended in substantially parallel direction to the front longitudinal edge 14'' of the wall 12' and spaced from said edge 14'' at a distance corresponding respectively to the distances of the crease-lines 23 and 23', below the edge 18'.

To facilitate the insertion of the tabs 20 into the slots 30 and 30', the latter are provided at their extremities with re-entrant curved or hooked portions 32 which result in the provision of relatively flexible flap portions 34, 34' the latter being readily flexed or depressed to permit the free movement of the wing portions 24 and 26 of the tabs 20 during the latching and unlatching operations.

To provide additional flexibility and a slight bias to the lowermost flap 34', a light scoring 35 may be applied thereto as shown in Fig. 6, to facilitate the withdrawal and insertion of the wing portion 26'.

In Fig. 7 is illustrated the simple manner in which a handle means 36 may be applied to the box. The handle 36 may be a generally U-shaped wire or the like, having divergently extended end portions 38, and is adapted to be readily applied to or removed from the box in an elongated slot

40 having at its extremities enlarged portions 42 whereby the handle portion 36' of the handle 36 may be inserted through the slot 40, the longitudinal marginal portions of which will readily flex for this purpose, and the side extensions or arms 36'' of the handle will be fitted closely into the enlarged terminal portions 42 of the slot 40.

The divergently extensive ends 38 of the handle are adapted to underlie the wall portion 18 of the top of the box, as shown in Fig. 7, for supportable engagement therewith in carrying position. The handle 36 may be readily removed by pushing it back into the longitudinal slot 40, the longitudinal lips or margins of which will flex sufficiently to permit the handle to pass through the wall 18.

The handle 36 is designed to fit freely into the enlarged terminal portions 42 of the slot 40, and when the box is in closed upright position, as in Fig. 2, the handle will tend to drop by its own weight, so that the handle portion 36' thereof rests against the top 18 of the box. When the box is in closed condition, the handle 36 is prevented from falling or being pushed through the slot 40 by the tongue 46 which is at this time fitted into the groove 40 to underlie the handle, as shown in dotted lines in Fig. 2. Thus the handle 36, in its depressed condition as just described, may readily be grasped and raised to carrying position.

In the embodiment shown, for the purposes of illustration, the handle 36 has been applied in the uppermost side wall 14 of the box. In this arrangement it is desirable to provide in the side wall 18 of the top 16, lateral slots 44 separated by the tongue portion 46, adapted to be inserted in the longitudinal slot 40 when the box is closed, the upright or side portions 36'' of the handle 36 fitting into the slots 44 as the top is advanced to closed position.

In the embodiment shown, the outermost margins of the slots 44 are extended to provide the lateral edges of the tabs 20; and to facilitate the formation and flexing of the tab wings 26, the lateral margins or extremities of tabs 20 have been cut angularly between crease or hinge lines 23, 23' therein.

In operation, beginning with the box in the open condition of Fig. 1, the top or closure portion 16 of the box may be folded upon the bottom portion 12 thereof, and assuming the handle 36 to have been previously applied in slot 40, the tongue portion 46 in the side wall 18 of top 16 may be slidably inserted into the groove 40, whereupon the tab portion 20 may be folded over toward the bottom wall 12' and by grasping the fly tab 28 the latch wing 24 may be flexed slightly inwardly, toward the wall 12' and the latching slot 30, to be inserted in the latter.

After the latch wing 24 has been suitably inserted in the slot 30, the wing 26 may be further flexed inwardly toward and into the latching slot 30', whereupon the wing portion 26 will tend to assume a position in the plane substantially parallel with that of the wall 12'.

In this condition the box is securely closed and it will be observed by reference to Figs. 2 and 3 that the latch members 20 are prevented from moving in a vertical direction by the confrontation of the tabs in the region of the crease-line 23 with the longitudinal margins of the upper slots 30. Similarly, any downward vertical movement of the latching tabs 20 is prevented by a confrontation of the portion of tab 26 in the region of its crease-line 23' with the longitudinal

edge 20' of the latching slot. Additionally, the protruding fly tabs 28 provide further security against movement in this latter direction.

It will thus be apparent that any attempt to raise the cover portion 16' of the box, when the latching tabs 20 are secured as above described, will be prevented by the binding effect of these tabs against the longitudinal edge of the box between the walls 12' and 14' thereof.

However, the box may be readily opened by grasping the fly tabs 28 and pulling them away from the wall 12' and adding a slightly upward bias to the direction of pull in so doing. This will serve to remove the lower latch wing 26 from the lower latching slot 30', whereupon a further upward pull on the fly tab 28 and an additional bias, tending to pull the latch member 20 back upon itself along the crease-line 23, will remove the uppermost latching wing 24 from the upper latch slot 30.

The foregoing detailed description of the latching and unlatching operation is very quickly and conveniently effected, and requires no previous familiarity with the device, which is adapted by its inherent construction to immediately suggest the method of operation.

Although I find it convenient to manufacture my improved box in the general form shown in Fig. 1, it will be readily understood that this structure may be easily modified to make the top and bottom members 12 and 16 separate in the usual form, without the common wall 14', duplicating the latching tab structure 20-30 in this (14') side of the box to provide securing means desirable in the absence of the common wall 14'.

While I have described in detail for purposes of illustration a particular embodiment of my invention, I do not desire to be restricted to the precise details recited, but desire to avail myself of all variations and modifications of the invention coming within the scope of the appended claims.

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

1. A cardboard box including a closure therefor and having handle means including the provision in a wall of the box of an elongated slot, and an elongated handle of U-shape with the elongated extremities of the U diverged and the bight portion thereof passed through said slot, with the said diverged portions engaging an undersurface of the box to limit the movement of said handle therethrough, and said closure having a tab portion adapted to fit into said slot when the same is in closed relation with the box in a manner effectively closing said slot and preventing passage of the bight portion of the handle therethrough.

2. A box of fibrous material including a main box portion and a cover receivable thereon, and handle means in the form of an elongated slot cut in a wall portion of said box member, and a U-shaped handle having its bight portion passed through said slot from the interior of the box and having diverged extremities adapted to limit the outward movement of the handle, said cover portion having a tab receivable in said slot when the box is closed to prevent passage of the handle back into the box.

3. A cardboard box and cover portion receivable thereon, and handle means for the box in the form of a U-shaped wire having its free ends turned outwardly in opposite directions and having its main or bight portion passed through an

elongated cut in a wall portion of the box from the interior to the exterior thereof, with said turned-out extremities adapted to bear against the inner surface of the box and limit the outward movement of the handle therefrom, said cover having a portion adapted to overlie the aforesaid wall portion of the box in which the cut is formed and a portion adapted to extend into said cut when said box is closed so as to reinforce said wall portion in the region of said cut and prevent movement of the handle back into the box.

4. A box of cardboard or the like and including a cover portion and a handle structure in the form of an elongated slot having enlarged cut-away portions at its extremities and formed in a wall portion of the box, together with a U-shaped handle member having its outer end portions diverged and the bottom or bight portion of the U passed through said slot from the interior to the exterior of the box with said diverged portions being adapted to bear against an inner surface of the latter adjacent said slot to limit the outward movement of the handle in the same, and the side portions of the U-shaped handle adjoining the bight or bottom portion thereof fitting freely in said enlarged end portions of the slot, said cover having a tongue adapted to slide into said slot between the side portions of the handle when the box is closed.

5. A box of cardboard or the like including a main box member and a cover receivable on the same, said cover having a pair of latching tabs extended from the edge of the wall of the cover and arranged to fold onto a wall of said main box portion for latching engagement therewith, and to be secured to the latter by tongue and slot engagement, said box having handle means in the form of a U-shaped handle having its end portions diverged, the bight portion thereof being passed through an elongated slot formed in a wall of said main box under the aforesaid wall of the cover with said diverged portions preventing the removal of said handle outwardly from the slot, and said cover having a tab portion formed between said latching tabs and adapted to fit into said slot so as to prevent removal of the handle inwardly through the slot, said latching tabs being adapted to hold the wall portion of the cover from which they extend down against the underlying wall portion of the main box

through which said handle is extended and thus reinforce the box structure in the region of the handle.

6. A cardboard box and telescoping cover therefor, and including a U-shaped handle member passed through an elongated slot in an end wall of the box and having outwardly extending end portions adapted to limit the movement of the handle through the slot, and said cover having a tongue adapted to slide into the slot between the sides of the handle when the box is closed, and further having a latch tab positioned at each end of said tongue and handle and adapted for tongue and slot latching engagement with the box to latch the cover in place and reinforce the box structure in the region of said handle.

7. A box having a cover with a wall portion adapted to overlie a surface of the box, said surface having a slit formed therein and a handle loop passed outwardly therethrough and having end formations engageable with the inner surface of the box adjacent said slit to limit outward movement of the handle, the aforementioned overlying wall of the cover having latch-tab means engageable with latch formations in a wall of said box adjoining the wall in which the slit is formed, said overlying cover wall further having a tongue-like formation insertible into said slit when the box is closed.

8. A box structure including a main box member and a cover portion receivable thereon and provided with a wall portion adapted to overlie a particular wall portion of the main box when in closed relation with the latter, together with handle means for said box including a handle loop, the bight of which is inserted through a slot in said particular wall portion of the main box, the free end portions of said loop being provided with means limiting the movement of the same outwardly of the box, said overlying wall portion of the cover having a tongue receivable in said slot to prevent removal of the loop handle in a direction inwardly of the box, said cover further being provided with edgewise tabs extended therefrom on either side of said tongue and adapted to be folded onto a wall portion of said main box adjoining said particular wall portion thereof when said cover is in closed position, said tabs having means for latching engagement with said adjoining wall portion.

WILLIAM TROGMAN.