Feb. 16, 1960 R. F. WELSH, JR 2,925,212

BOX WITH MANUALLY-RELEASABLE LATCH MECHANISM

Filed June 26, 1957 2 Sheets-Sheet 1

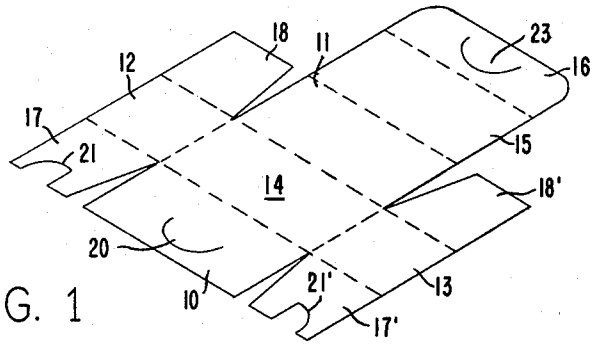


FIG. 1

FIG. 2

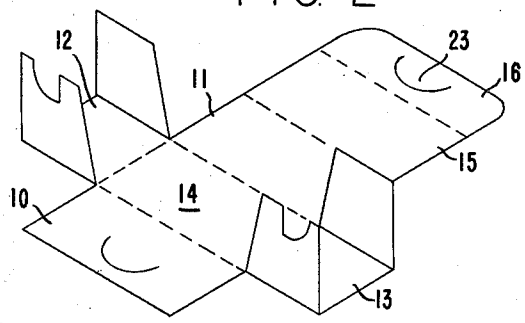


FIG. 3

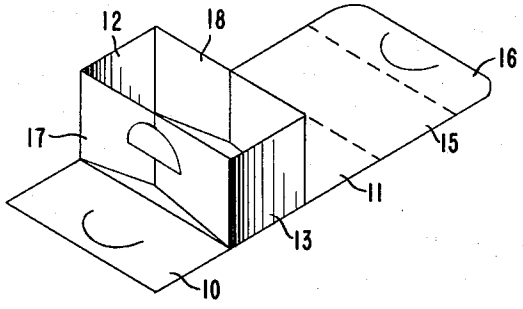
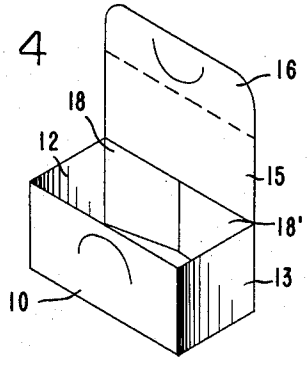


FIG. 4



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BOX WITH MANUALLY-RELEASABLE LATCH MECHANISM

Filed June 26, 1957 2 Sheets-Sheet 2

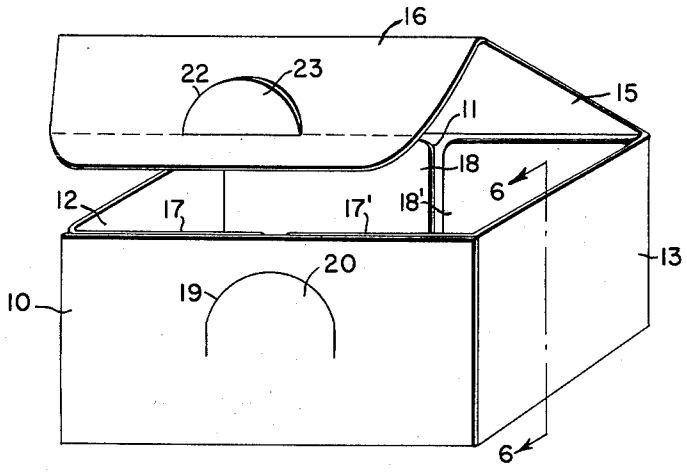


FIG. 5

FIG. 6

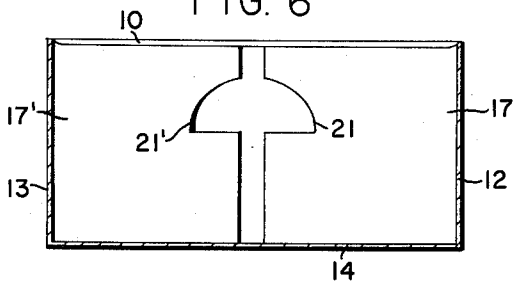


FIG. 7

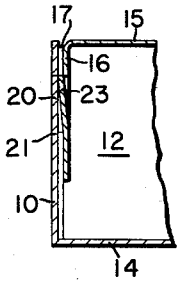


FIG. 8

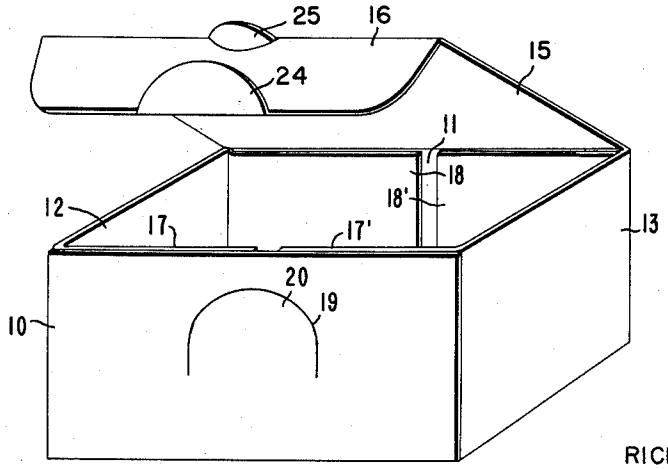
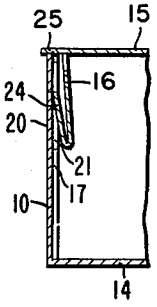


FIG. 9



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BOX WITH MANUALLY-RELEASABLE LATCH MECHANISM

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Application June 26, 1957, Serial No. 668,177

4 Claims. (Cl. 229—36)

The present invention relates to a novel box. More particularly, the present invention relates to a novel release latch for a box which makes it possible to quickly and easily lift the lid of the box whenever necessary.

In the packaging of many products, it is desirable to have a box, the lid of which will not tend to pop open spontaneously, but which can nevertheless be lifted quickly and easily at the appropriate times. In some cases, it is desirable, for example, that the lid of a box which is normally secure in the closed position be susceptible of opening with a minimum of time, effort, and manual manipulation.

It is an object of the present invention to provide a box with a lid which is normally secure in the closed position but which may nevertheless be quickly and easily opened when desired. It is a further object to provide such a box which is economical to manufacture and assemble and which can easily be produced in large quantities. Other and additional objects will become apparent from a consideration of the ensuing specification and claims.

Broadly speaking, my novel box contains a release latch which is formed directly from the walls of the box and does not, for the most part, require any additional components. The latch includes a pair of cooperating tongue members, one cut from the front wall of the box and the second formed on the flap of the lid of the box. The tongue on the lid normally operates to retain the lid of the box in the closed position by engaging an abutment on the inside of the front wall of the box. Pressure on the outer tongue, however, releases the engagement of the inner tongue with the abutment and permits the lid of the box to spring upwardly to at least a partially-open position.

In order to describe the invention more clearly, reference is made to the accompanying drawings which will illustrate several embodiments of the novel box of the present invention. The drawing is for purposes of illustration only and is not to be regarded in any way as a limitation on the scope of the invention.

Referring more particularly to the drawings,

Figure 1 represents an elevational view of a pre-cut and scored box blank from which the box of the present invention may be assembled;

Figures 2–4 represent the box blank of Figure 1 in various stages of assembly;

Figure 5 represents an elevational view of one embodiment of the novel box of my invention;

Figure 6 represents a cross-sectional view taken along the line 6—6 of Figure 5;

Figure 7 represents a cross-sectional view of the latch mechanism of the box depicted in Figure 5 when the lid is in the closed position;

Figure 8 represents an elevational view of an alternate embodiment of the invention; and

Figure 9 represents a cross-sectional view of the latch mechanism of the box depicted in Figure 8 when the lid is in the closed position.

Referring in greater detail to the various figures, the

box of Figure 5 is assembled from a single pre-cut and scored box blank, as illustrated in Figures 1–4. The box consists of a front wall 10, rear wall 11, side walls 12 and 13, a bottom 14, and a lid 15 having a flap 16 at its front end. The side walls 12 and 13 are each provided with a pair of front and rear panel extensions 17, 17′ and 18, 18′. The panel extensions are formed integral with the side walls 12 and 13. The front wall 10 has been cut, as at 19, to provide a generally upwardly extending tongue member 20. The cut 19 is of such a configuration that the tongue 20 is integral at its base with the front wall 10 in which it is formed. Panel members 17, 17′ are each provided with cooperating cutaway portions 21, 21′ which in the assembled position are coextensive with at least the uppermost portion of the tongue member 20.

The flap 16 has also been cut, as at 22 to provide a tongue member 23 integral with the flap. The tongue member 23 is of such a size and such a configuration that when the flap 16 is in the closed position, tongues 23 and 20 will be substantially coextensive and will lie one adjacent the other. The cut 22 in flap 16 is so made that the tongue 23 will normally tend to incline a slight amount in an outward direction when in repose rather than lie entirely in the plane of flap 16, as illustrated more particularly in Figure 3. This is conventional in the box-making arts, and is easily done, for example, by scoring tongue 23 at its base and breaking the tongue forward about this score.

The operation of the latch mechanism is as follows. The tongue 23 in flap 16 normally leans in an outward position, as described above. When the lid 15 is closed, with flap 16 tucked down behind front wall 10, the outwardly leaning tongue 23 will engage the abutment formed by the cutaway portions 21, 21′ in panel extensions 17, 17′. The engagement of the tongue 23 with the underside of the top edges of these cutaway portions normally tends to retain the lid 15 in the closed position. However, when tongue 20 is deflected inwardly, for example, with manual pressure, it forces tongue 23 back into the plane of flap 16 and out of contact with the edges of cutaway portions 21, 21′. The inherent resiliency of the folded material from which the box is formed will frequently cause the lid 15 to deflect at least a short distance upwardly. At any rate, the lid is then easily grasped and lifted to give access to the contents of the box. When the box is closed again by replacing the lid, the outwardly inclined tongue 23 will again engage the upper edge of cutaway portions 21, 21′ to secure the lid 15 in its closed postion until released again.

In Figure 8 there is illustrated an alternate embodiment of the invention in which the tongue 24 is formed as an extension of the flap 16 which is then folded upward about the lowermost edge of the flap. The operation of this embodiment of the invention is illustrated in Figure 9 which shows tongue 24 latched in the closed position underneath the uppermost edge of the cutaway portions 21, 21′. All other components of this embodiment are exactly the same as those of the box illustrated in Figure 5, and the latch is released by the same means, i.e., by inward pressure on tongue 20.

If desired, the lid 15 of the box of the present invention may be provided with a tab member, illustrated at 25 in Figures 8 and 9, cut directly from lid. The tab member 25 projects over the front side 10 of the box, as shown in Figure 9, and provides a convenient projection for grasping to elevate the lid 15.

The tongue member 20 and the cooperating tongue 23 or 24 may be of any suitable configuration, provided only that the tongue in the front wall and the tongue in the flap of the lid are in proper proximity to coact in the manner described above. The tongues may be narrow or broad, tall or short. They may be rounded, as illus-

trated in the drawings, or squared, or angular. The specific size and shape of the tongues is thus in no way critical to the present invention, so long as the tongues can operate to form a releasable latch in the aforementioned manner.

Similarly, the abutment provided by the cutaway portions **21, 21'** in panel extensions **17, 17'** may be formed in any suitable fashion in lieu of that described above. For example, cutaway portions **21, 21'** may be of a different size or configuration from that illustrated in Figure **2**, or panels **17, 17'** may be considerably reduced in size, or the abutment may, if desired, be formed by a separate piece of material which is affixed at the appropriate place, such as by glueing, to the inner face of front wall **10**.

The box can be formed of cardboard or any other suitable material which is commonly used for the manufacture of boxes and may be made in any size or shape desired, depending upon the intended end-use. The box may be retained in assembled position by any suitable means, such as, for example, by glueing, taping, or staple-stitching.

It will be readily apparent from the foregoing description that the box of the present invention is a convenient container which will remain closed under normal conditions. The latch member for securing the lid in the closed position, however, is easily released by light manual pressure to open the lid and gain access to the contents of the box. To lock the lid in the closed position thereafter, it is only necessary to close the lid and the outwardly inclined tongue member **23** will automatically catch underneath the abutment formed by the top edges of cutaway portions **21, 21'**. The box is simple to manufacture, being assembled generally from a single box blank.

The invention has been described at length in the foregoing specification. It will be expressly understood, however, that many variations may be made in the form, shape, and materials of construction, and in other details of the box, without departing from the spirit of the present invention. I intend to be limited therefore only by the following claims.

I claim:

1. In a box having a lid with a flap, the flap of which in the closed position tucks down behind the front wall of the box, a releasable latch mechanism comprising an inwardly movable tongue in the said front wall formed by a suitably-shaped cut in the wall, said tongue extending in a generally upward direction and being connected at its base to the main body of said front wall, an abutment on the inner face of the front wall at least a portion

of which lies just atop the uppermost extremity of the tongue, said abutment being formed integral with the unfolded box blank from which the box is formed, an outwardly inclined tongue on the flap of the lid having a size and configuration similar to the inwardly movable tongue of the front wall and being so positioned that the two tongues are substantially coextensive when the lid of the box is in the closed position, said outwardly inclined tongue engaging said abutment when the lid of the box is in the closed position and said first-named tongue serving to disengage said outwardly inclined tongue when the first named tongue is deflected inwardly.

2. A box as in claim 1, wherein the outwardly inclined tongue on the flap of the lid is formed in the flap by a suitably-shaped cut.

3. A box as in claim 1, wherein the outwardly inclined tongue on the flap of the lid is formed as an extension of the flap which is folded back about the lower edge of the flap.

4. In a box having a lid with a flap, the flap of which in the closed position tucks down behind the front wall of the box, a releasable latch mechanism comprising an inwardly movable tongue in the said front wall formed by a suitably-shaped cut in the wall, said tongue extending in a generally upward direction and being connected at its base to the main body of said front wall, an abutment on the inner face of the front wall at least a portion of which lies just atop the uppermost extremity of the tongue, an outwardly inclined tongue on the flap of the lid having a size and configuration similar to the inwardly movable tongue of the front wall and being so positioned that the two tongues are substantially coextensive when the lid of the box is in the closed position, said outwardly inclined tongue on the flap of the lid being formed as an extension of the flap which is folded back about the lower edge of the flap.

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