Jan. 21, 1936. E. H. LUPTON 2,028,678

LOCKING AND REENFORCING MEANS FOR PAPER BOARD BOXES

Filed April 18, 1935

FIG. 1.

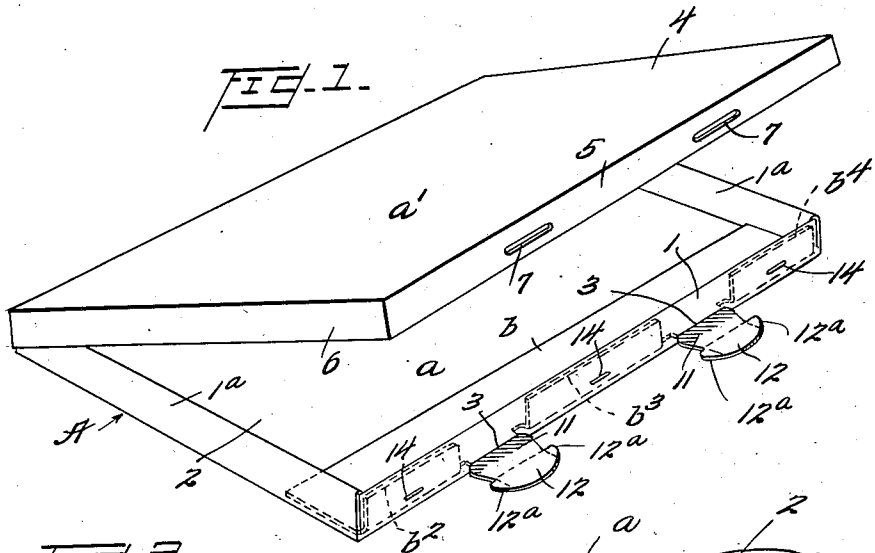


FIG. 2.

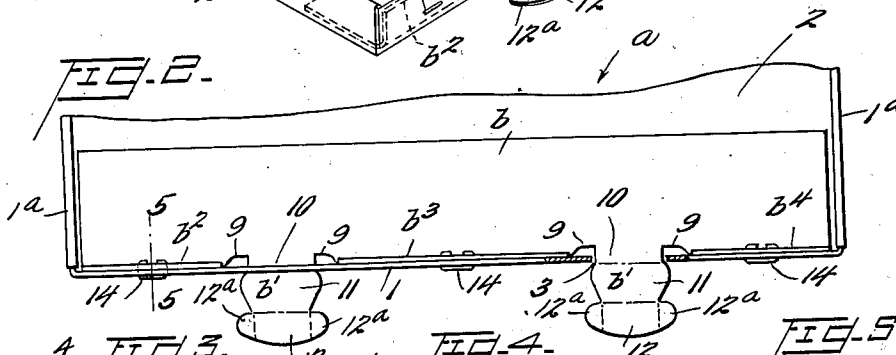


FIG. 3.

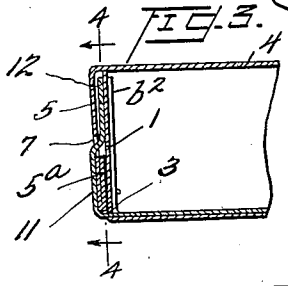


FIG. 4.

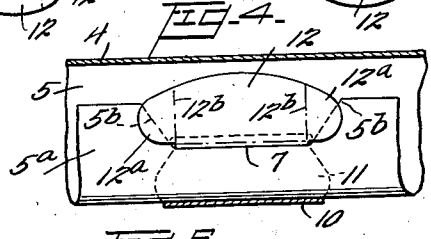


FIG. 5.

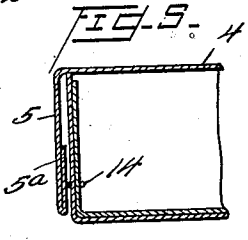
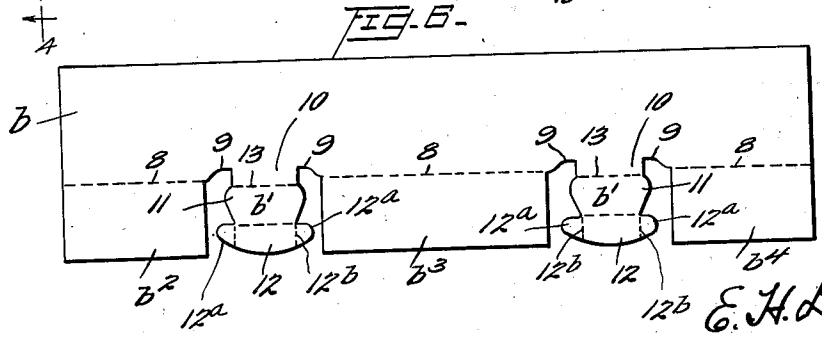


FIG. 6.



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LOCKING AND REENFORCING MEANS FOR PAPER BOARD BOXES

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Application April 18, 1935, Serial No. 17,092

4 Claims. (Cl. 229—45)

This invention relates to locking and reenforcing means for paper board boxes such as are used in stores for packaging suits and dry goods of various kinds. The invention is particularly applicable to boxes comprising upper and lower sections hingedly connected together, the upper section having walls which extend around the walls of the lower section when the box is closed. In my application Serial Number 14,348, filed April 2, 1935, I have shown such a box with a locking device consisting of a strip of paper board which rests on the bottom of the lower section and which has laterally extending tongues which project through slots in a side wall of the latter section and are adapted to fit into and inter-lock with slots in the corresponding wall of the upper section. In the present invention, the features of the locking device illustrated and described in that application are retained, but, in addition, the strip has side flaps which are secured to the wall of the bottom section, which flaps reenforce the wall vertically and particularly along the crease line where it joins the bottom section. The details of construction of this locking and reenforcing device will be clear from the following specification.

In the accompanying drawing,

Fig. 1 is a perspective view of a paper board box provided with a locking and reenforcing device made in accordance with my invention;

Fig. 2 is a top plan view of the lower part of the box, partly broken away and partly in section, showing the locking device therein;

Fig. 3 is a vertical section through a portion of the box, the box parts being in closed position and locked;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a section on the line 5—5 of Fig. 2, and,

Fig. 6 is a plan view of the locking and reenforcing strip.

Referring to the drawing, A indicates a folding paper board box such as used in stores for packaging suits and other articles of apparel. This box is preferably made in accordance with my Patent #1,827,593, dated October 13, 1931, and comprises the bottom section *a* and a top section *a'* hinged together at one side. In the side wall 1 of the bottom section, where it joins the bottom 2, narrow longitudinal slots 3 are formed, these slots being between the center and the ends of said wall. The top section of the box comprises the panel 4 which extends over the bottom section and the side wall 5 and end walls 6 which fit closely around the corresponding walls of the lower section when the box is closed. Slots 7, similar to slots 3, are formed in the wall 5 of the top section in vertical alinement with the slots 3 in the bottom section and these slots 7 are spaced from the lower edge of the wall 5, as shown. In the particular box shown, the side wall 5 has a flap 5^a folded against its inner side, and where this construction is employed, the flap, which extends above the slots 7, is cut away adjacent the slots as shown at 5^b in Fig. 4, to permit the locking tongues hereinafter described to pass through the slots in locking the box.

The locking and reenforcing device of the present invention comprises a paper board strip *b* having laterally extending tongues *b'*, to this extent being the same as the locking strip shown in my co-pending application Ser. No. 14,348, filed April 2, 1935, but in the present invention, as shown best in the plan view, Fig. 6, the strip has a longitudinal crease line 8 and flaps b^2, b^3 and b^4 extending laterally from the crease line at the sides of the tongues and approximately to the same extent. The strip is made of a single blank, recessed inwardly from the crease line 8 at each side of each tongue, as indicated at 9, leaving a short part 10 at the base of each tongue which is narrower than the length of a slot 3, and beyond this part the edges of each tongue curve convexly in opposite directions, forming a wider part 11 which, at its central portion, is of the full or slightly greater width than the length of the slot, and the outer end portion 12 of each tongue has laterally extending flaps 12^a forming a head wider than the length of a slot 3 in the box, these flaps being foldable inwardly along crease lines 12^b so that the heads may be passed through the slots when the flaps are folded. The parts 11, after being pushed through the slots will offer sufficient resistance to the return of the tongues to hold the strip against accidental displacement. Each tongue also has a transverse crease line 13 between the parts 10 and 11. The locking strip shown in the aforesaid application is made in the same way, except that instead of creasing the blank along the line 8 and leaving the flaps b^2, b^3 and b^4 attached, these flaps are cut off along said line. It is found, however, that by creasing the blank along this line to form flaps, what would otherwise be waste material, serves the very useful purpose of a reenforcement for the front wall of the lower section of the box by attaching the flaps thereto.

In applying the device to the box, the flaps b^2, b^3 and b^4 are bent upwardly at right angles to the body portion *b* and the latter is laid on the bot-

tom 2 of the box parallel with the wall 4. The strip is of such length that its ends extend close to the end walls 1a, and this causes the tongues to be correctly positioned opposite the slots 3. By doubling the flaps 12a over the tongues, the latter may then be readily pushed through the slots and the widened portions 11 prevent the accidental return of the tongues. The reenforcing flaps b^2, b^3 and b^4 are then fastened to the inner side of the front wall 1 by suitable means, such as the staples 14. These flaps stiffen the front wall 1 vertically and also stiffen the box at the angle between this wall and the bottom 2.

To lock the box, the top section is brought to its closed position, the tongues are bent upwardly along the crease lines 13 and the flaps on the heads of the tongues are folded over the tops of the tongues. The heads are then pushed through the slots 7 in the upper section where they are deflected upwardly and lie against the wall 5, as shown in Figs. 3 and 4. The flaps or wings 12a of the heads expand when pushed through the slots and released, and these flaps prevent withdrawal of the tongues. After the box has been locked, it is impossible to withdraw the tongues. The box is opened by cutting the tongues transversely. In the particular box shown in the drawing, the side wall 5 of the top section has a flap 5a folded against its inner side, and where this construction is employed, the flap, which extends above the slots 7, is cut away adjacent the slots, as shown at 5b in Fig. 4, in order to permit the tongue to pass through the slots 7, in locking the box. When locked, the body b of the strip bears against the wall 1 of the lower section throughout the length of the strip, along the crease line 8, except adjacent the ends of the slots 3 where the strip is cut away, as shown at 9, so that it will not bear against the wall immediately at the ends of the slots which might cause tearing of the wall.

What I claim is:

1. A paper board box comprising upper and lower sections hingedly connected at one side, the lower section having an upwardly extending wall provided with a longitudinally extending slot adjacent the bottom thereof, a locking and reenforcing device comprising a paper board strip resting on the bottom of the lower section and having a locking tongue extending through said slot and upwardly extending flaps at opposite sides of said tongue, said flaps secured to the inner side of said wall, and the upper section having a downwardly extending wall provided with a slot adapted to receive and inter-lock with the free end of said tongue when the box is closed.

2. A paper board box comprising upper and lower sections hingedly connected at one side, the lower section having an upwardly extending wall provided with a longitudinally extending slot adjacent the bottom thereof, a locking and reenforcing device comprising a paper board strip resting on the bottom of the lower section and extending substantially to the ends of the latter section, said strip having a locking tongue extending through said slot and upwardly extending flaps at opposite sides of said tongue, said flaps secured to the inner side of said wall, and the upper section having a downwardly extending wall provided with a slot adapted to receive and inter-lock with the free end of said tongue when the box is closed.

3. A paper board box comprising upper and lower sections hingedly connected at one side, the lower section having an upwardly extending wall provided with longitudinally extending slots adjacent the bottom thereof, one slot at each side of the longitudinal center of said wall, a locking and reenforcing device comprising a paper board strip resting on the bottom of the lower section and having locking tongues extending through said slots and upwardly extending flaps secured to the inner side of said wall, and the upper section having a downwardly extending wall provided with slots adapted to receive and inter-lock with the free ends of said tongues when the box is closed.

4. A paper board box comprising upper and lower sections hingedly connected at one side, the lower section having an upwardly extending wall provided with longitudinally extending slots adjacent the bottom thereof, one slot at each side of the longitudinal center of said wall, a locking and reenforcing device comprising a paper board strip resting on the bottom of the lower section and extending substantially to the ends of the latter section, said strip having locking tongues extending through said slots and upwardly extending flaps secured to the inner side of said wall, and the upper section having a downwardly extending wall provided with slots adapted to receive and inter-lock with the free ends of said tongues when the box is closed.

ELMER H. LUPTON.