April 25, 1939. W. V. CROOK 2,155,530

DIE CUT LOCK TOP FOR PAPER BOXES

Filed June 28, 1937

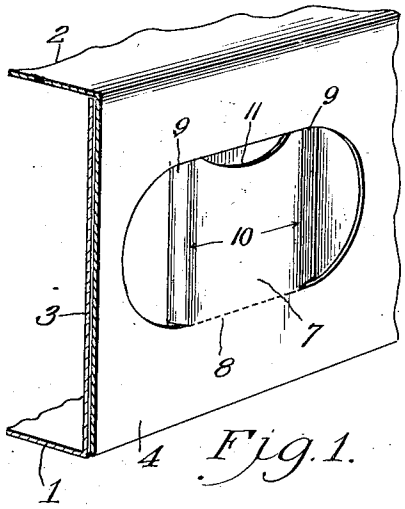
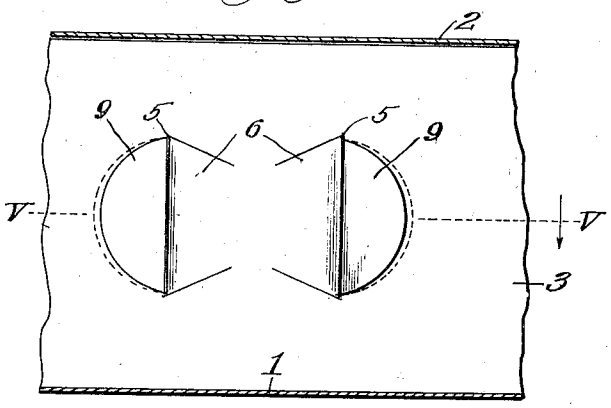


Fig. 1.

Fig. 2.



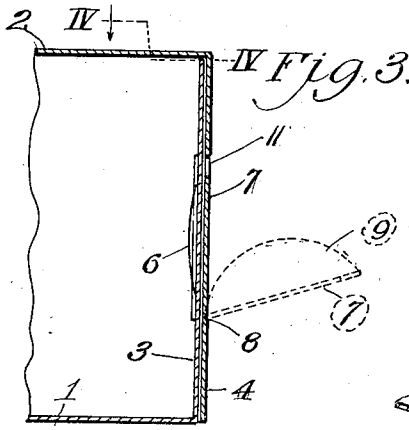


Fig. 3.

Fig. 4.

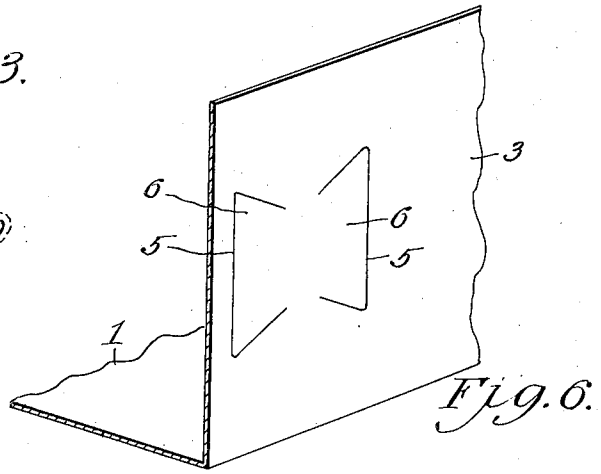
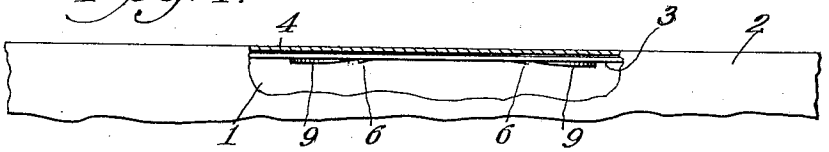


Fig. 6.



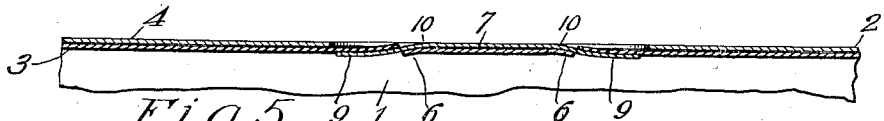


Fig. 5.

Inventor

William V. Crook.

By Thorpe & Thorpe

Attorneys

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DIE CUT LOCK TOP FOR PAPER BOXES

William V. Crook, Kansas City, Mo.

Application June 28, 1937, Serial No. 150,695

4 Claims. (Cl. 229—45)

This invention relates to die cut box locks for paper boxes and is particularly designed for use in locking telescopic boxes, such as suit boxes, to obviate the necessity of tying them together with string, gummed tape, or the like, although the lock may be used on any box where one side wall telescopes another.

A further object of the invention is to produce a box lock of the general character set forth which does not necessitate the use of any material over and above that used in cutting the blank from which a corresponding box would be made, if not equipped with the lock of the invention.

A still further object of the invention is to produce a box lock which, when used in connection with boxes of the suit box type in particular, will so lock the telescoping side walls that the tendency of the side wall of the top or cover, to bulge outwardly is overcome and said wall is held close to and parallel with the side wall of the bottom member of the box.

With the general objects named in view and others as will hereinafter appear, the invention consists in certain novel and useful features of construction and organization of parts as hereinafter described and claimed; and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1 is a fragmental perspective section through a telescopic box showing the lock in closed or operative position.

Figure 2 is a side elevation of the inner face of the box showing the locking extensions or ears in overlapping location in relation to the inner wall and substantially parallel to the same.

Figure 3 is a section through the lock as it appears in Figure 1 and 2, with the locking tongue of the outer wall dotted in the position it assumes in the operation of locking or unlocking the box parts.

Figure 4 is a section on the line IV—IV of Figure 3.

Figure 5 is a section on the line V—V of Figure 2.

Figure 6 is a perspective view of the repressible flaps formed in the inner wall of the box.

In the said drawing, where like reference characters identify corresponding parts in all of the figures, 1 is the bottom and 2 the top member of a telescoping box, such as a suit box, and 3 and 4 are respectively the side walls of the bottom and top box members. At one or more points in the lengths of the side walls to be locked together to hold the top in position; and if applied to a suit box, being arranged in duplicate relation at opposite sides of the box, the inner wall 3 is formed with a pair of substantially vertically extending, as regards the heighth of the box, openings or slots 5 which are illustrated as formed at the ends of opposite extending flap members 6. These flaps 6 are adapted for repression into the box and for guiding engagement with a locking tongue formed on the overlapping outer wall of the box, as will hereinafter more particularly appear.

The side wall or walls 4 of the box top 2 at points corresponding in location to that of the flaps 6 in the side walls of the box bottom, are formed with tongues 7 of substantially rectangular outline, and hingedly or swingingly connected to the box wall along a score line 8 extending parallel to the longitudinal axes of the oppositely projecting flaps 6. The hinge portion 8 is arranged adjacent the free edge of the side wall 4 to assist in holding such side wall against bulging outwardly away from parallelism with the inner wall 3. Extending in opposite directions from the body of the tongue 7 are a pair of extension ears 9, preferably mounted to swing on scored hinge lines 10, to an angular relation with the body of the tongue as shown in dotted lines in Figure 3.

Normally the box is unlocked and the entire area of the flaps 6 and the tongues 7, including their ears 9, lie in the plane of the side walls of which they form a part. When it is desired to lock the box, the operator inserts his finger nail into the cut out segment 11, and swings the tongue 7 outwardly to the dotted line position shown in Figure 3. In this position the side ears 9 of the tongue are in the same plane as the body of the tongue, it being understood that the distance the tongue must be swung outwardly depends on the area of the ears 9, that is the greater the area adjacent the hinge point 8, the further the tongue must be swung outwardly, so that when the operator presses inwardly on the opposite ears and swings them to their dotted line position Figure 3, their edges will be in position overlying the openings 5 in the inner wall of the box adjacent the bases of the flaps 6. While the ears 9 are being held in this position, the tongue 7 is swung backwardly around its hinge 8, and this action causes the edges of the ears 9 to repress the flaps 6 and start to enter into the box. The pressure on the ears 9 is now released and by the combined guiding action of the flaps 6 and the contents of the box, the ears are directed into substantial parallelism with the

inner face of the box wall 3 and into overlapping relation with the same as shown in Figure 5. When the parts are in this position, it will be evident that any tendency of the top to move upwardly out of telescoping relation with the bottom of the box, will be overcome by contact of the upper edges of the ears 9 with the upper corners of the openings 5 cut in the inner wall of the box. When the box is to be opened the above movements are reversed.

It is to be noted in this connection that by placing the hinge line 8 adjacent the lower or free edge of the telescoping box top, the tendency of such wall to bulge or move out of parallelism with the inner wall is overcome, although, of course, the hinge may be at the top edge of the tongue, and as far as the locking of the box is concerned, the action will be just as effective as that of the preferred construction.

From the above description it will be apparent that I have produced a construction embodying all of the features of advantage set forth as desirable, and while I have described and illustrated the preferred embodiment, it is to be understood that I reserve the right to all changes within the spirit of the invention and without the ambit of the prior art.

1 claim:

1. A lock for telescopic paper boxes comprising top and bottom box members having side walls in telescoping relation, the inner wall having a pair of spaced vertically extending slots with their ends terminating intermediate the height of said wall, and the outer wall being formed with a tongue of oblong rectangular shape, the long axis being parallel to the bottom of the box, said tongue being cut free of the box wall except for a limited area along its bottom edge to prevent outward bulging of the bottom edge of the outer wall when the two walls are interlocked, the ends of the tongue constituting extensions and being engaged with the slots of the inner wall only by swinging the tongue outwardly around its attached edge and then bending the extensions upwardly to substantially right angles to the body of the tongue and into alinement with the slots in the inner wall.

2. A lock for telescopic paper boxes comprising top and bottom box members having side walls in telescoping relation, the inner wall having a pair of spaced vertically extending slots with their ends terminating intermediate the height of said wall, and the outer wall being formed with a tongue of oblong rectangular shape, the long axis being parallel to the bottom of the box, said tongue being cut free of the box wall except for a limited area along its bottom edge to prevent outward bulging of the bottom edge of the outer wall when the two walls are interlocked, the ends of the tongue constituting extensions and being engaged with the slots of the inner wall only by swinging the tongue outwardly around its attached edge and then bending the extensions upwardly to substantially right angles to the body of the tongue and into alinement with the slots in the inner wall, that portion of the tongue between the extensions being in the plane of the outer wall when the parts are locking in position, and a recess in the free edge of the tongue adapted to be engaged by an operator to swing the tongue outwardly to withdraw its extensions from the slots in the inner walls.

3. A lock for paper boxes comprising top and bottom box members having side walls adapted for telescoping relation, the inner wall being formed with a pair of spaced vertically extending slits having their inner ends terminating short of the top and bottom of the wall, and the outer wall having a generally rectangular-shaped tongue connected to the wall by a hinge line intermediate one long side of the tongue so that the tongue may be swung outwardly to a position substantially at right angles to the box wall, and a pair of ears at the opposite ends of the tongue formed by a pair of parallel score lines extending transversely across the tongue, said ears being insertable into the slits only by swinging the tongue around its hinge outwardly from the box wall until the ears can be swung to angular relation with the body of the tongue and in substantial alinement with said slits.

4. A lock for paper boxes comprising top and bottom box members having side walls adapted for telescoping relation, the inner wall being formed with a pair of horizontally extending repressible spaced flaps, and the outer wall having a tongue mounted to swing outwardly from the box on a horizontal hinge intermediate the top and bottom of the side walls, the opposite ends of the tongue forming a pair of extensions mounted to swing on parallel vertical hinge lines, said extensions being adapted to be swung to angular relation to the tongue when the latter is swung outwardly on its hinge so that said tongues can come into endwise abutment with and repress the flaps for entry through and interlocking engagement with the inner wall of the box.

WILLIAM V. CROOK.