Sept. 29, 1931. R. PETERSEN ET AL 1,825,158

SELF LOCKING PAPER SLIDE BOX

Filed Oct. 3, 1929

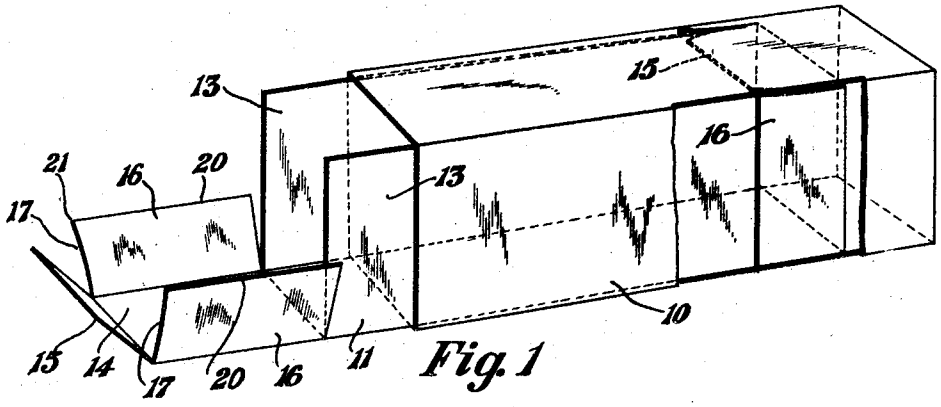


Fig. 1

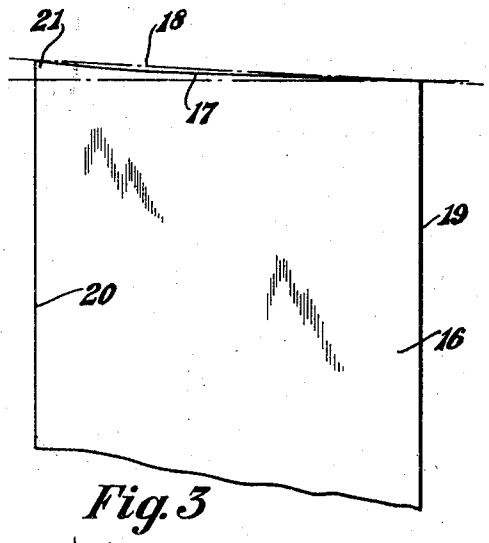


Fig. 3

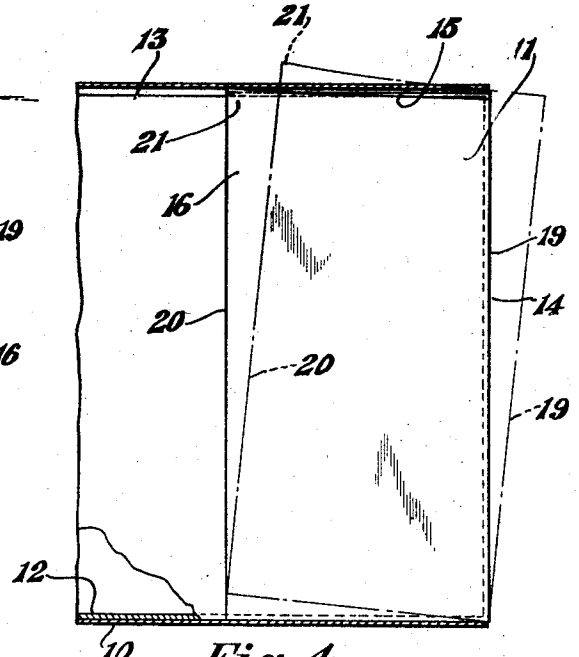


Fig. 4

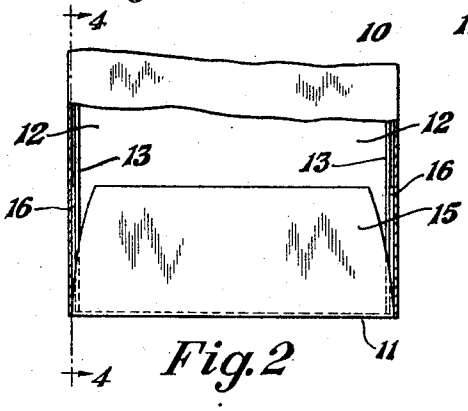


Fig. 2

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UNITED STATES PATENT OFFICE

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SELF-LOCKING PAPER SLIDE BOX

Application filed October 3, 1929. Serial No. 396,970.

This invention relates to paper boxes of the slide or telescoping type, and it has for its object to provide an improved box in which the inner member or slide shall be self-locking under certain conditions, within the outer casing or sleeve, but adapted to be opened by a force such as external pressure exerted on the end of said slide.

Of the accompanying drawings,

Fig. 1 is a perspective view, partly broken away and in section, showing a partly-opened box embodying our invention.

Fig. 2 is a plan and horizontal section taken through one end of the box adjacent the top wall of the casing.

Fig. 3 is a partial side elevation of one of the locking flaps, on a larger scale.

Fig. 4 is a longitudinal vertical section on the line 4—4 of Fig. 2, on a larger scale, parts of the slide being broken away and in section.

In the packing of articles of substantial weight such as footwear, pneumatic inner tubes and many other kinds of goods, a flat-folding telescope paper box of good appearance is desirable on account of one or more qualities possessed by such boxes as compared with lid boxes or those having locked ends, such as greater facility of opening and closing, greater security when closed, capability of being stored flat in knock-down condition, and cheapness of manufacture. Such boxes as heretofore constructed, however, have been subject to the objection that the pressure of the contents on the folded end wall of the box tends to open said end wall or to pull out the slide, and the contents may even fall out if the box is held vertically. This objection is remedied by our present invention.

Referring to the drawings, 10 is an outer casing or sleeve of rectangular section, open at both ends and adapted to be made from a single sheet blank of paper board, longitudinally scored at the lines of fold and having a lapped, pasted seam (not shown) adjacent one of said lines, said casing being adapted to fold flat in accordance with common practice.

11 designates the inner member or slide as a whole, adapted to be made from a single sheet blank of similar material. Said slide includes a bottom wall 12, foldable side walls 13 and end walls 14 connected with said bottom wall along scored hinge lines, and foldable top and side flaps 15, 16 similarly connected with the end walls 14. The end walls 14 are of substantially the full height of the sleeve aperture and form end closures for the box. The height of the side walls 13 relative to that of the casing aperture may vary, but by making them of nearly full height their lateral supporting action on the flaps 16 when the box is closed is increased.

The top edge 17 of each side flap 16, or the chord 18 of said top edge, makes an angle of not less than 90 degrees with the outer edge or hinge line 19 of said flap, and at the junction of said top edge with the vertical inner edge 20 of the flap is a locking corner 21 for coaction with the top wall of the casing 10 when the box is closed. By making the inner edge 20 slightly longer than the height of the casing aperture and making an acute angle at the corner 21, an effective self-locking action of said corner in one direction against the top wall of the casing is obtained at all times, notwithstanding the tolerances allowed in quantity production for fitting together the casing and the slide. The top edge 17 may be slightly concave as shown, to accentuate the acuteness of the corner 21 and increase its flexibility and compressibility.

In fitting the parts of this box together, the side walls 13 of slide 11 are turned up approximately at right-angles to the bottom wall 12, the top and side flaps 15, 16 at one end are folded substantially at right-angles to the end wall 14, said end wall is turned up at right-angles to the bottom wall 12, with the flaps 16 on the outside of the walls 13, and the slide is inserted in the casing with that end foremost, the corners 21 of the flaps bending inward and compressing edgewise to a slight degree if necessary to allow them to enter, which they will easily do as there is no snubbing action in that direction of movement. The end wall and flaps at the trailing end are similarly folded and that end is inserted to close the box, with some

slight manipulation of the corners 21 if required.

With the box thus closed, its end walls are locked by the snubbing action of the flap corners 21 against the top wall of casing 10 as the flaps attempt to take the broken-line position shown in Fig. 4 in response to internal outward pressure from the contents of the box, and such locking action is effective against a considerable pressure of this character caused by handling of the box, turning it on end, etc. An external push on either end wall tends to depress the corners 21 and prevent any snubbing action. Hence the box may be easily opened by pushing the slide from either end, and the latter may be partly opened and locked against the weight of the contents with the box turned to or toward a vertical position when it is desired to display the contents in the box.

Some latitude of variation is permissible without departing from our invention, and the latter is not to be limited except as defined in the claims.

We claim:

1. A paper box comprising an outer casing open at both ends, and a sliding member therein comprising a bottom wall, end walls foldably attached to said bottom wall, and side flaps foldably attached to said end walls and having self-locking engagement with the top wall of the casing, against internal outward pressure, each end wall being automatically releasable by pushing said slide from the other end.

2. A paper box comprising an outer casing, and a sliding member therein comprising a bottom wall, and a foldable end wall thereon provided with a foldable side flap whose inner edge is slightly longer than the interior height of said casing and terminates in an acute-angled corner adapted for self-locking engagement with the top wall of the casing.

3. A paper box comprising an outer casing open at both ends, and a sliding member therein comprising a bottom wall, foldable side walls thereon, and foldable end walls on said bottom wall having foldable side flaps positioned between said side walls and the sides of the casing, and provided with corners in self-locking engagement with the top wall of the casing.

In witness whereof we have hereunto set our hands this 14th day of September, 1929.

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RALPH E. FARMER.