

No. 695,273.

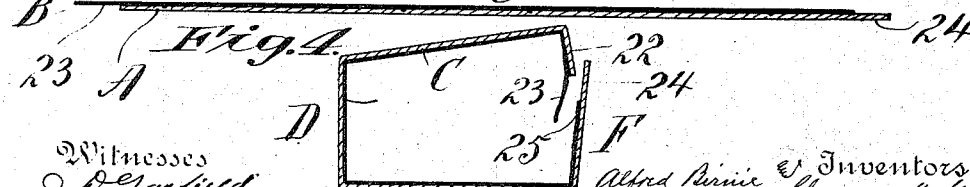
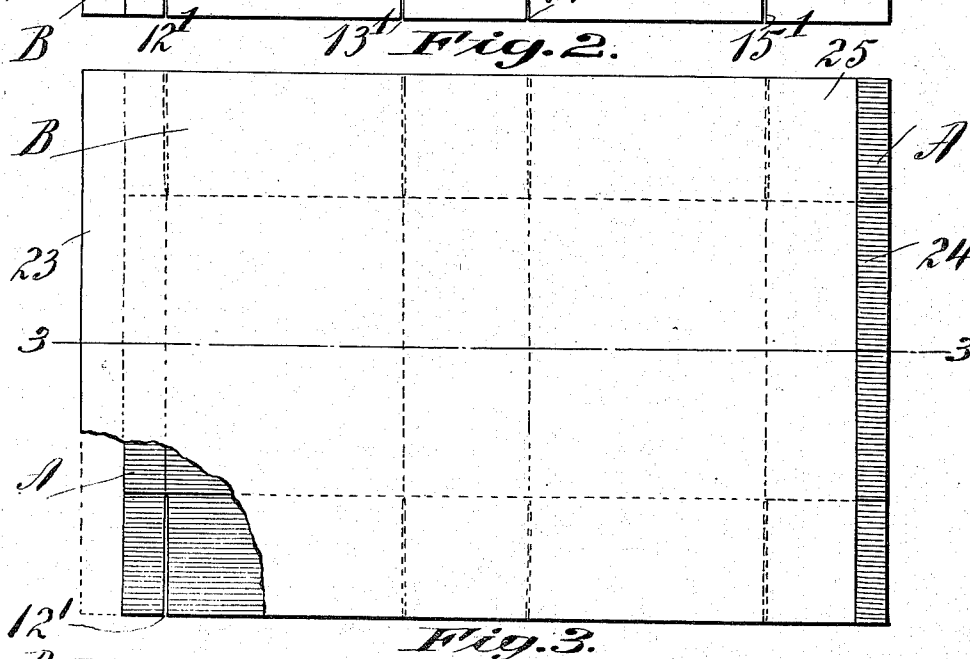
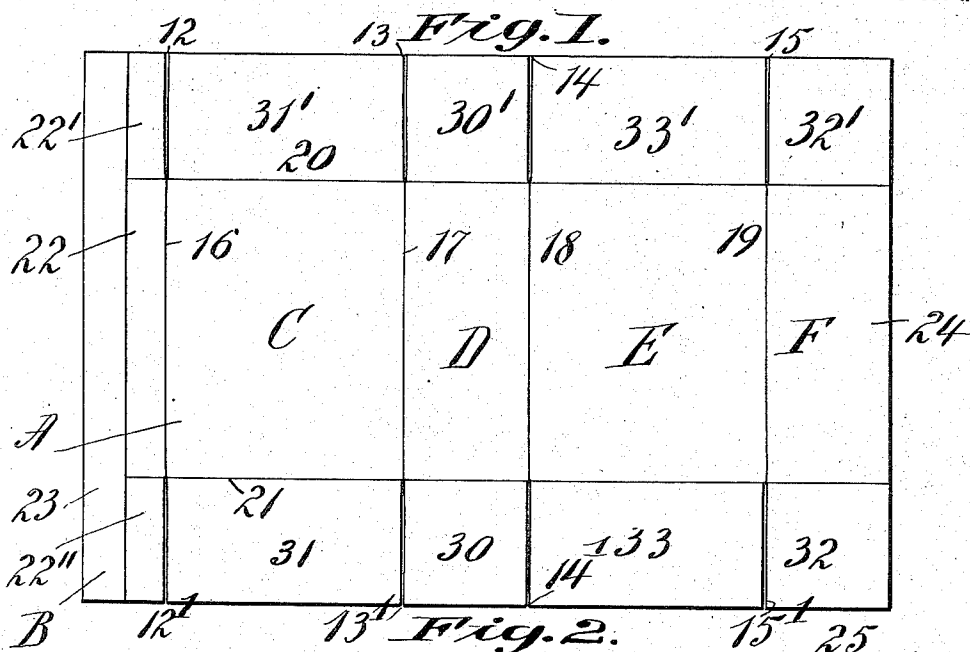
Patented Mar. 11, 1902.

A. BIRNIE & C. W. GAY.
PAPER BOX OR CARTON.

(Application filed Oct. 14, 1901.)

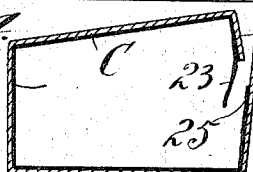
(No Model.)

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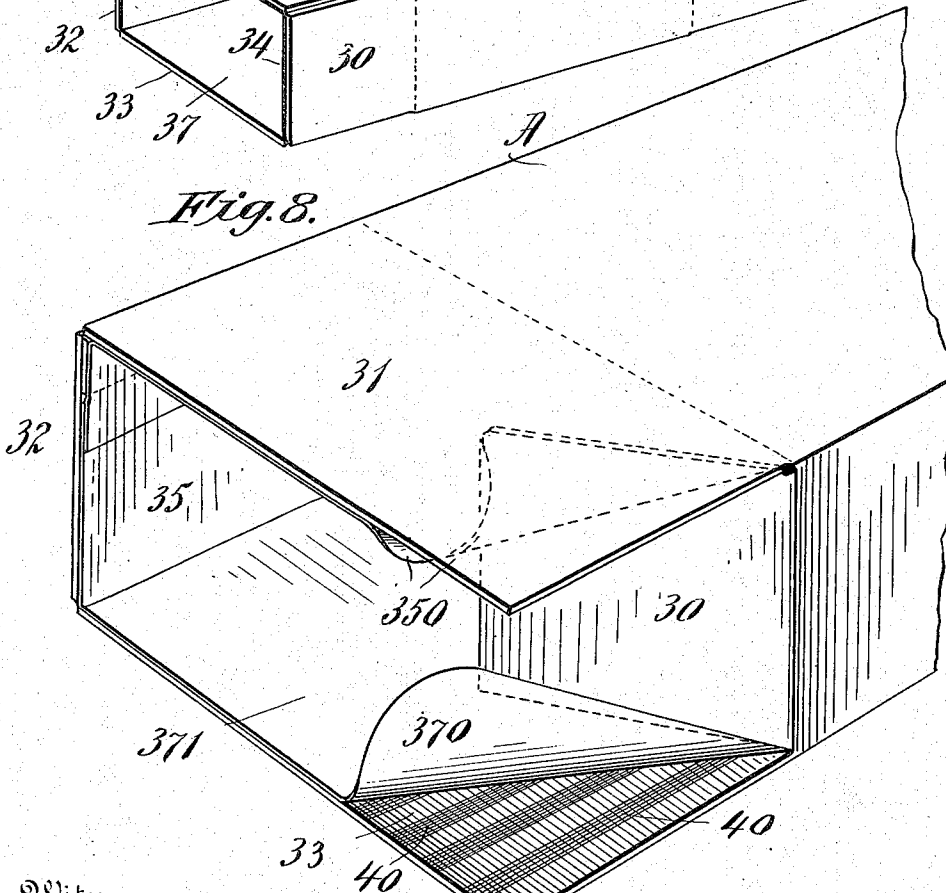
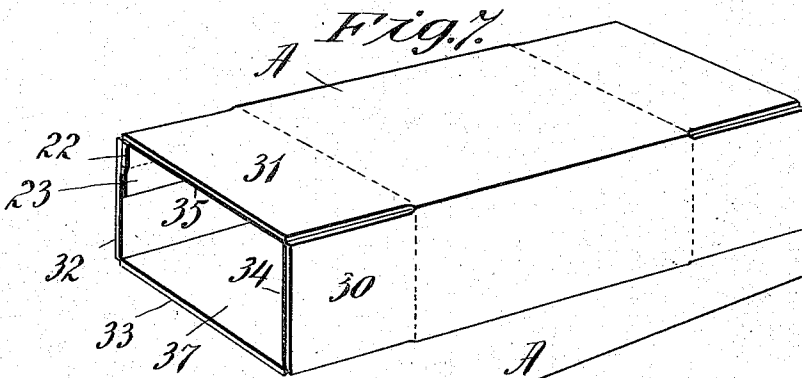
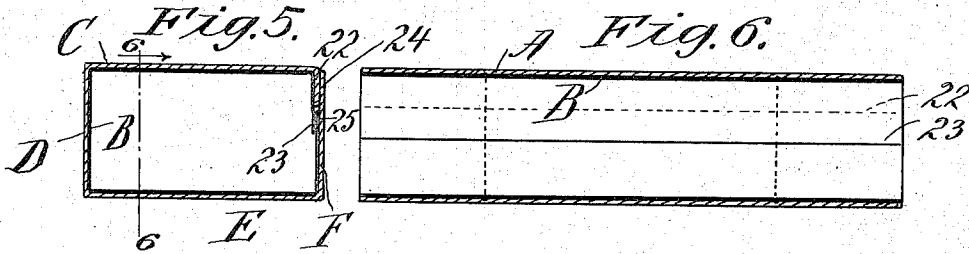
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4 Sheets—Sheet 2.



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Fig. 9.

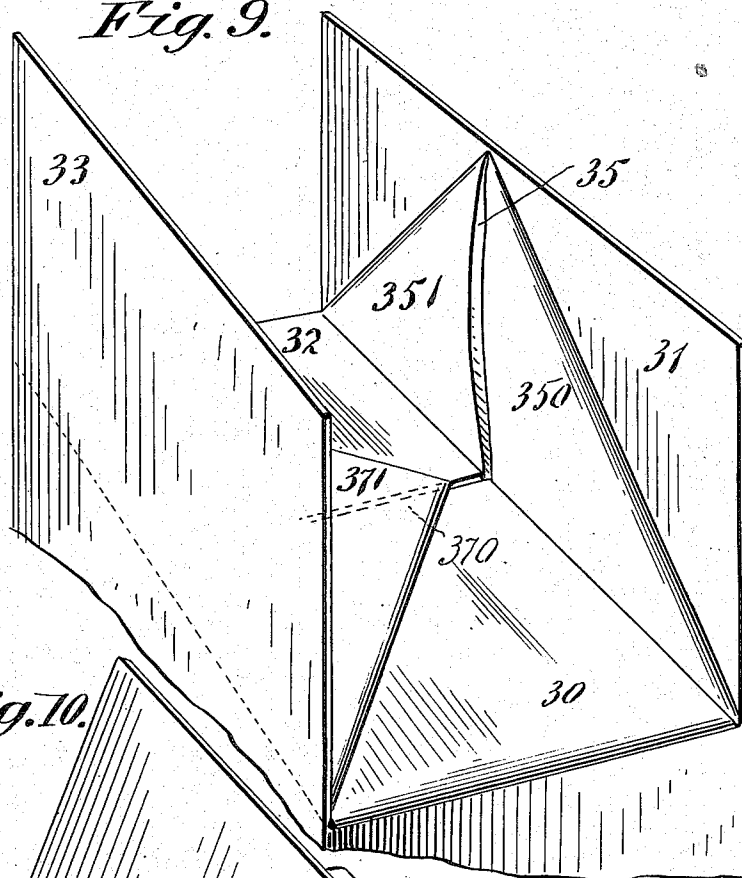
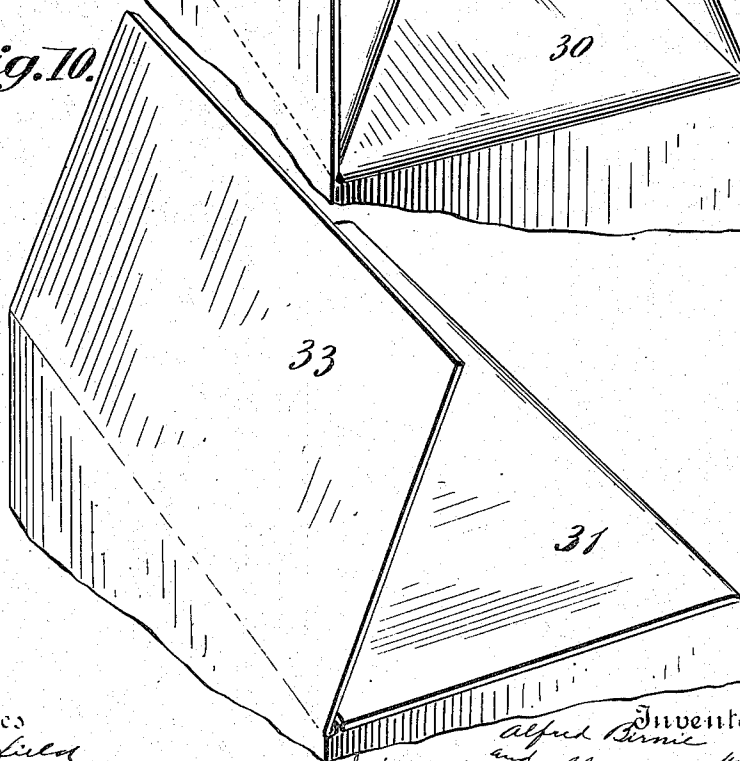


Fig. 10.



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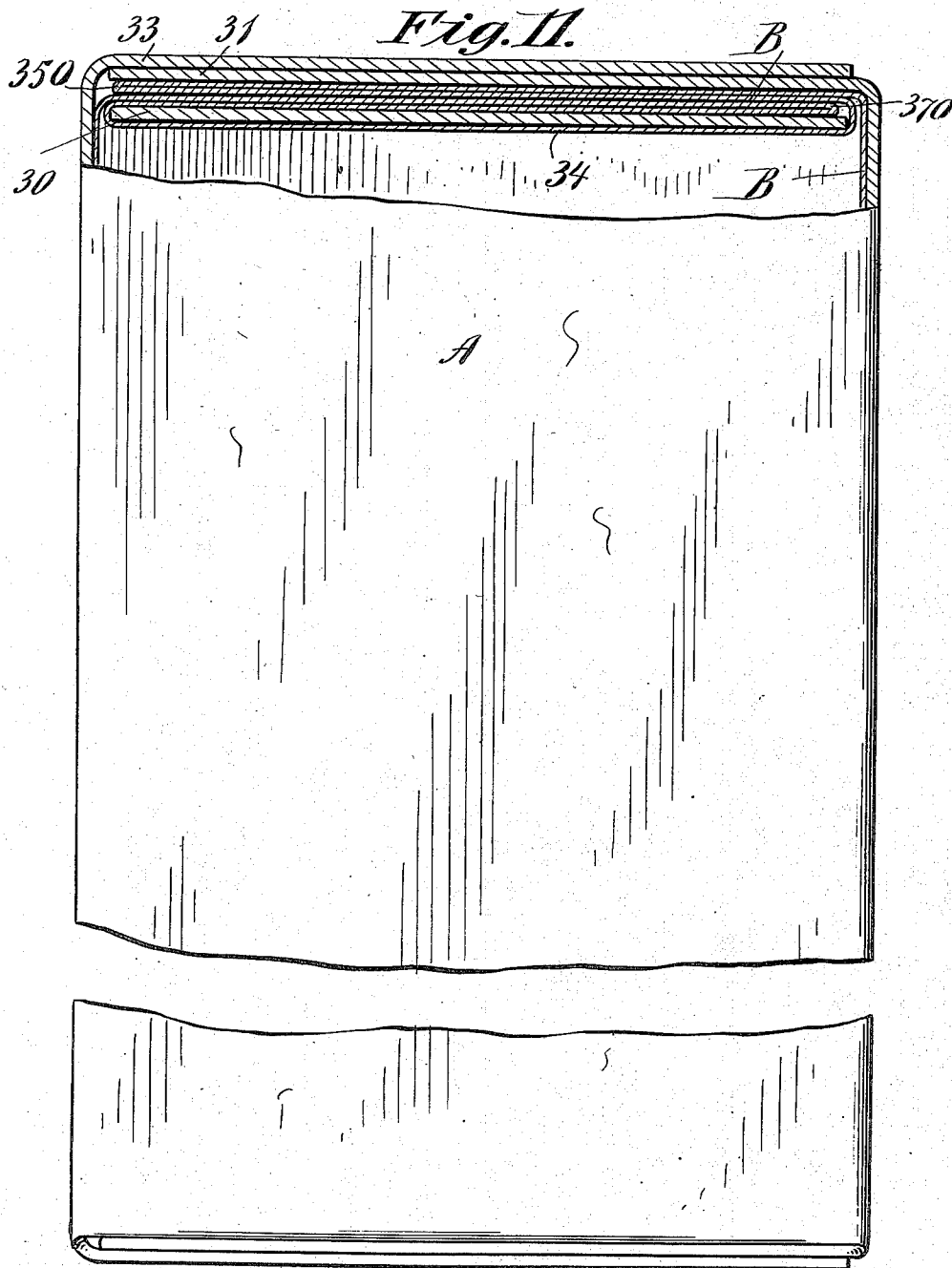
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

ALFRED BIRNIE, OF SPRINGFIELD, AND CHAUNCEY W. GAY, OF WEST
SPRINGFIELD, MASSACHUSETTS.

PAPER BOX OR CARTON.

SPECIFICATION forming part of Letters Patent No. 695,273, dated March 11, 1902.

Application filed October 14, 1901. Serial No. 78,517. (No model.)

To all whom it may concern:

Be it known that we, ALFRED BIRNIE, a resident of Springfield, and CHAUNCEY W. GAY, a resident of West Springfield, in the county of Hampden and State of Massachusetts, citizens of the United States of America, have invented certain new and useful Improvements in Paper Boxes or Cartons, of which the following is a full, clear, and exact description.

This invention relates to boxes or cartons made of cardboard or like material.

The object of our invention is to provide a box having end flaps with an inner lining of a continuous sheet of non-absorbent material, such as wax-paper or paper treated with paraffin, which is removably adherent to both the body portion and the flaps, so that by the act of folding in the flaps the lining adherent thereto will line the innermost flaps and be interfolded between the other flaps, except, preferably, between the outer contiguous flaps, that are in many instances desired to be permanently secured by a suitable cementing material.

With this object in view our invention comprises such constructions and arrangements, either separately or in combination, as will be hereinafter described with reference to the accompanying drawings, and pointed out in the claims.

In the several sheets of drawings, in which the characters of reference indicate corresponding parts throughout the several views, Figure 1 is a plan view of a cut and scored blank, showing a lining-sheet projecting beyond at one side. Fig. 2 is a view of the parts shown in Fig. 1 from the opposite side, showing the lining with the blank projecting beyond at one side. Fig. 3 is a cross-section on the line 3 3, Fig. 2. Fig. 4 is a cross-section of the box in the final stage of forming the body portion. Fig. 5 is a view similar to Fig. 4, showing the manner of uniting the blank to form the body portion. Fig. 6 is a sectional view on the line 6 6, Fig. 5. Fig. 7 is a perspective view of the formed box before the end flaps are folded in. Fig. 8 shows the first stage in the operation of folding in the end flaps and interleaving the lining. Fig. 9 shows a subsequent stage of the folding-in process. Fig. 10 shows a fur-

ther step in the folding in of the flaps. Fig. 11 is a side elevation of the box with the flaps completely folded, showing in broken section the relative positions of the flaps and lining on a middle cross-section.

Referring now to the accompanying drawings, the reference character A indicates the blank of cardboard or paper-box stock having a lining-sheet B of a non-absorbent material, such as wax-paper or paraffin-paper, removably adherent thereto—that is, the paper can be readily stripped off when desired without rupture of either itself or the blank.

We preferably have the lining-sheet of the same dimensions as the blank A, but in sticking them together facewise by the use of a suitable adhesive, as paste, dextrin, or sizing, we have a portion 23 of the lining to project beyond the margin of the blank, which will result in the blank having a portion 24 not covered by the lining-sheet B, but projecting beyond it.

We preferably form the blank A with the longitudinal scoring-lines 20 and 21 and also with the transverse scoring-lines 16, 17, 18, and 19 and with the transverse cutting-lines 12, 13, 14, and 15 and also 12', 13', 14', and 15'. This will divide the blank into parts C, D, E, and F and a smaller part 22 and into flaps 30, 31, 32, and 33, 30', 31', 32', and 33', and also smaller flaps 22' and 22''. The blank A and its attached continuous lining-sheet B is now bent at the scoring-lines 16, 17, 18, and 19 in the manner shown in Figs. 4 and 5, from which it will be apparent that the extension or flap or stay section 22 of the side C will overlap and come actually in contact with the end portion 24 of the blank that is not covered by the lining-sheet, and hence the said flap or stay section can be readily glued to the side F of the box, no obstruction thereto at this place being occasioned by any intervening portion of the wax-paper lining. It will be further observed that the margin 25 of the lining just meets the margin of the extension 22, while the extension 23 of the lining overlaps this margin 25 and may be secured thereon by sticking or left unsecured, as desired.

The process of closing the ends of the box

or carton is as follows: One of the flaps, as 30, is bent downward slowly, which will carry with it the portion 34 of the lining-sheet adherent to its inner face; but as this portion 34 is integral with the portion 35 of the lining-sheet adherent to the flap 31, and as the portion 34 is also integral with the portion 37 of the lining-sheet that is adherent to the flap 33, when the portion 34 is carried downward it will strip off a triangular portion 350 from the flap 31 and also strip off a triangular portion 370 from the flap 33. Thereupon the flap 32 opposite the flap 30 is folded down, which will in like manner strip a triangular portion 351 from the flap 31 and also a similar portion 371 from the flap 33. The result of these two steps in the process just recited is to leave the flap 31 with the doubled triangular portion formed by the two parts 350 and 351 and the part of the portion 35 remaining adherent thereto, and the flap 33 will have a similar triangular doubled portion adherent to it. The next step is to strip the flap 33 of the said doubled triangular lining portion and to fold the latter down onto the folded flaps 30 and 32, as shown in Fig. 9. Thereupon the flap 31, with its adherent triangular lining portion, is folded downward onto the said folded triangular lining portion, as shown in Fig. 10, and finally the remaining flap 33 is folded down facewise and in actual contact onto the flap 31 and suitably secured in this position in any preferred manner, such as by glue or paste.

Of course it will be understood that the fastening of the superimposed flaps 31 and 33 may be performed in a much more secure manner by gluing or pasting than would be the case were there a layer or layers of the wax-paper lining intervening between the surfaces of said flaps.

From the section shown in Fig. 11, taken in connection with Figs. 8 and 9, it will be seen the flaps 30 32 each have a lining adherent to their inner sides, while between their outer sides and the adjacent flap 31 are the overlapping doubled triangular flaps, (best shown in Fig. 9,) whose greatest width is at the adjacent margins of the flaps 30 32, where the sealing is most needed.

The opposite end of the box is folded in the same manner.

We preferably form the blank of such relative dimensions that the aggregate area of the flaps 30 and 32 is about equal to the area of the end of the box and also that the area of each of the flaps 31 and 33 is about equal to said end area.

In surface-pasting the blank A in order to have the lining B adhere thereto we find it desirable to apply the paste in stripes, as indicated at 40, Fig. 8, or otherwise non-continuous, this being of especial advantage with respect of the flaps 33, (the one last turned down and to be stuck to the one 31,) for the reason that if the lining B is pasted to the whole surface of the said flap 33 such portion of the

lining so pasted to said flap in being stripped off therefrom, as shown in Figs. 8 and 9, will leave in some objectionably-excessive degree a surfacing throughout all the area of such flap of the wax or paraffin, so that the paste or glue for the final security of the closure will not fade and set in so reliable and effective a manner as where there are "raw" areas or stripes.

We may construct a lined box having the general aspect at its end to be closed up—that shown, for instance, in Fig. 9—but omitting the flap 33 of the cardboard blank, and still have a box of utility, the securing of the flap 31 in its closed position being performed in any of the manners of fastening and retaining such flaps.

It will be appreciated that to provide in the box a lining separate from the box-body necessitates at best the exercise of hand labor, and in the packaging of articles the latter are inclosed in the lining and the whole set up and inclosed by the carton or box proper by hand; but by providing the lining, as described, as an adherent part of the box-blank and yet "stripable" as to required portions thereof from the blank the boxes or cartons completed to the tubular form shown in Figs. 5, 6, and 7 may be practicably, rapidly, and very cheaply produced by machinery, and such production would be impracticable or very difficult either by hand or machinery were the lining wax-paper blanks worked in connection with the box-blanks without the adhesion of the one to the other, substantially as described, and while we have shown and particularly described the invention as exemplified in a box of particular formation we are not to be limited under certain aspects or departments of the invention to boxes and the manufacture thereof of exactly the form of component sections and flaps shown and specified.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A box or carton comprising a body portion and marginal flaps at one or both ends, and an inner lining-sheet of non-absorbent material removably adherent thereto whereby in folding down a pair of opposite flaps the lining is adapted to be partly stripped from the adjacent flaps without rupture and turned down onto the plane of the end of the box.

2. A box or carton comprising a body portion and marginal flaps at one or both ends, and an inner lining-sheet of non-absorbent material removably adherent to one of the end flaps whereby in folding down a pair of opposite flaps adjacent to said flap the lining is adapted to be partly stripped from said flap without rupture and folded down onto the plane of the end of the box.

3. A box or carton comprising a body portion and marginal flaps at one or both ends, and an inner lining-sheet of non-absorbent material removably adherent thereto; one

pair of opposite folded flaps lying with their extremities in apposition and each having a portion of the lining corresponding to the other opposite flaps lying folded onto their meeting ends; and another pair of box-flaps lying on said latter lining portions.

4. A box or carton comprising a body portion and marginal flaps at one or both ends, and an inner lining-sheet of non-absorbent material removably adherent thereto; one pair of opposite folded end flaps lying with their extremities in apposition and each having a portion of said lining on their inner faces; a flap of the said lining extending from one edge of the body portion adjacent said extremities and overlying a portion of each of said flaps thereby covering their meeting

ends; another flap portion of the lining extending from an edge of the body portion opposite said latter edge, and lying partly upon said other flap portion of the lining at said meeting ends; a flap of the body portion of the box adjacent to said first lower lining-flap lying folded down upon said last-mentioned lining-flap and adherent thereto; and another flap of the box overlying said last-mentioned flap.

Signed by us at Springfield, Massachusetts, this 10th day of October, 1901.

ALFRED BIRNIE.

CHAUNCEY W. GAY.

Witnesses:

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