

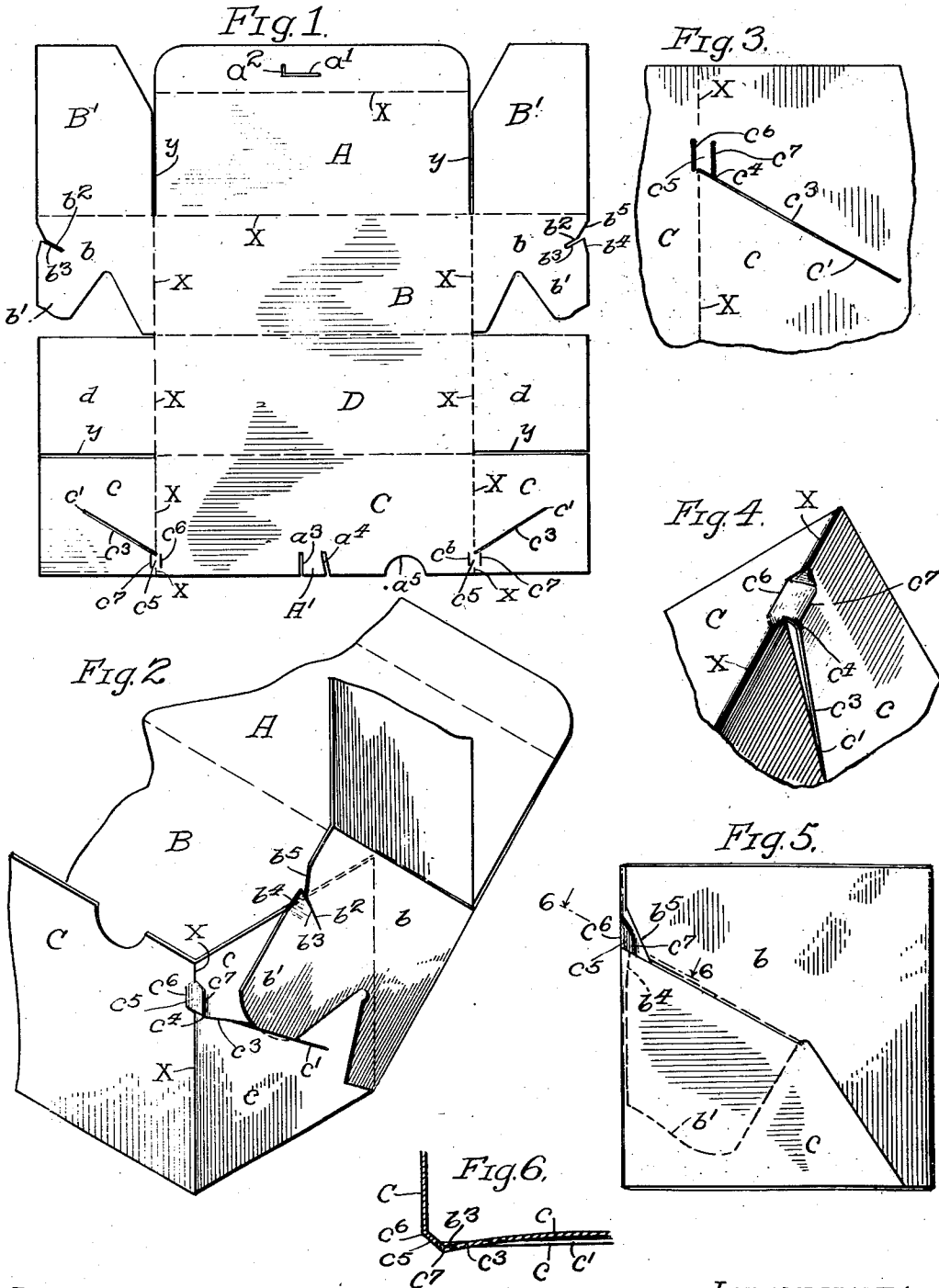
C. H. SEEGMILLER.  
FOLDING BOX.

APPLICATION FILED NOV. 11, 1912.

1,079,583.

Patented Nov. 25, 1913.

2 SHEETS—SHEET 1.



WITNESSES:  
L. B. Graham  
Milton Lenoir

INVENTOR:  
C. H. Seegmiller  
By. *[Signature]*  
His Atty.

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2 SHEETS—SHEET 2.

Fig. 10.

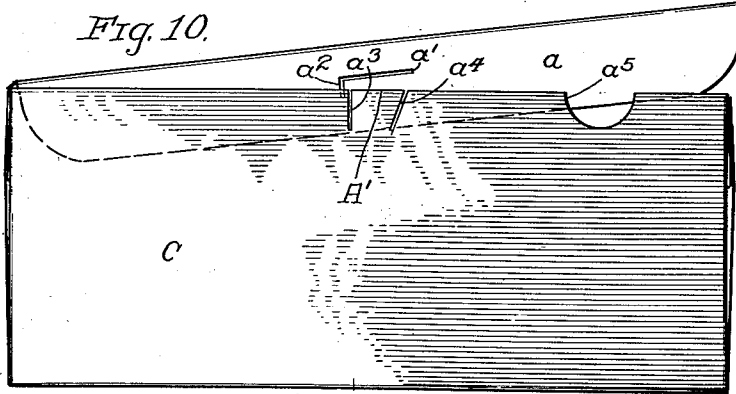


Fig. 11

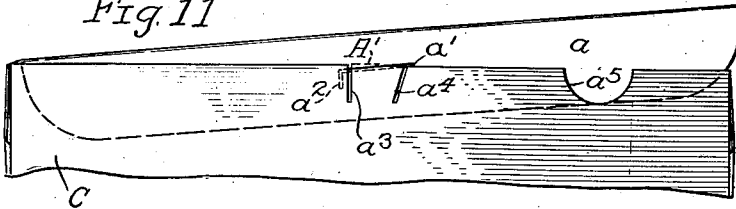


Fig. 12.

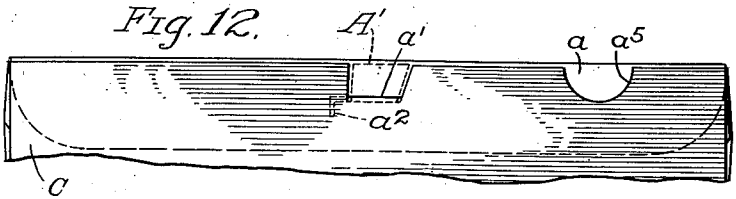


Fig. 9

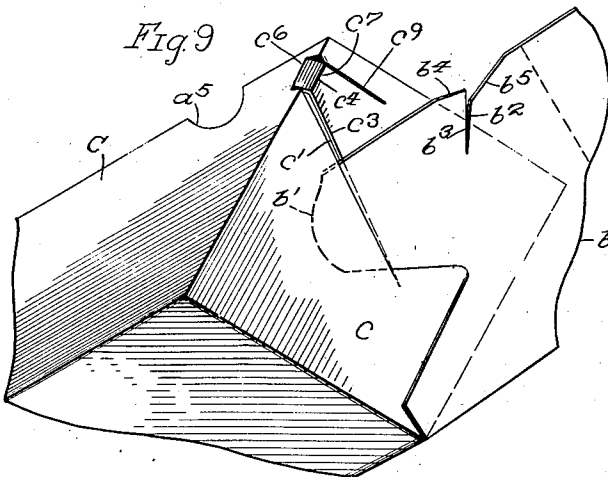


Fig. 7.

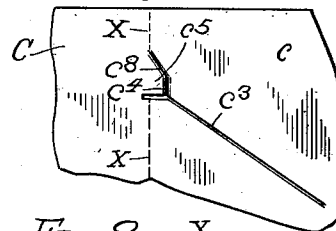
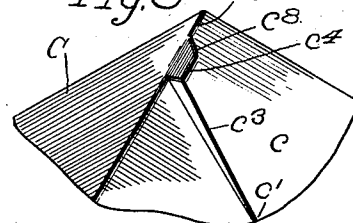


Fig. 8



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# UNITED STATES PATENT OFFICE.

CHARLES H. SEEGMILLER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS,  
TO SAID CHARLES H. SEEGMILLER AND FRED J. DENNIS, OF CHICAGO, ILLINOIS.

## FOLDING BOX.

1,079,583.

Specification of Letters Patent.

Patented Nov. 25, 1913.

Application filed November 11, 1912. Serial No. 730,551.

*To all whom it may concern:*

Be it known that I, CHARLES H. SEEGMILLER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Folding Boxes, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in paper boxes or cartons, and consists in the matters hereinafter set forth and then pointed out in the appended claims, all of which will be fully understood by reference to the accompanying drawings which illustrate practical embodiments thereof.

In the drawings Figure 1 is a plan view of a blank from which a carton containing the several features of my invention may be made; Fig. 2 is a perspective view on an enlarged scale of one end of the carton with the bottom and one side wall set up and the other side wall partly set up, and with the interlocking end flaps in initial relation to more clearly illustrate the organization; Fig. 3 is a detail view of a section of one of the sides with its connected flap laid out flat and showing one way of producing the outward bend or distortion in the top wall of the slot of the inner flap; Fig. 4 is a perspective view on the underside of the parts shown in Fig. 3 when in their positions with the flap bent inwardly to its box-like position; Fig. 5 is an outside view of an end of the box with the side-flap in their interlocking positions; Fig. 6 is a sectional view on line 6-6 of Fig. 5; Fig. 7 is a view similar to Fig. 3 but showing a different way of producing the outward bend in the top wall of the slot of the inner flap; Fig. 8 is a perspective view on the underside of the parts of Fig. 7 when the side-flap is bent inwardly to its box-like position; Fig. 9 is a perspective view on the underside of one end of the box showing another way of producing the outward bend in the top of the slot of the inner flap and with the tongue of the outer flap partly entered therein; Fig. 10 is a front view of the carton showing the locking means for the top tuck with the latter in its initial position; Fig. 11 is a view similar to Fig. 10 with the top tuck partly in place to engage the interlocking tongue; and Fig. 12 is a sim-

ilar view with the top tuck in place and the locking means fully engaged.

As shown in the drawings the box or carton is formed from a suitable blank illustrated in Fig. 1 and scored on the lines  $x$  and cut on the lines  $y$  to provide the top wall A, two parallel front and back walls B and C respectively, a bottom wall D having end extensions  $d$ , and end walls consisting of a pair of interlocking flaps extending from the side walls. The flap at each end of one of the sides, as for example the flaps  $c$  of the side C, is provided with an internal cut or slot  $c'$  which extends from its base outwardly toward its free end and receives a tongue  $b'$  cut in the associated flap  $b$  of the other side as B.

Each flap  $b$  of the side B has a marginal slot or cut  $b^2$  in its outer edge and near its top, the distance of the mouth of the slot from the top of the flap being the same as the distance of the base of the slot  $c'$  from the top edge of its flap C, the term "top" being used to designate the edges that are uppermost when the parts are assembled as in Fig. 5, so that the slots will aline as shown in that figure when the tongue  $b'$  of the flap  $b$  enters the slot  $c'$  and the top edges of the two flaps are in line when the box is erected. The slots  $c'$  and  $b^2$  may be arranged longitudinally or obliquely. In order to interlock the bottom wall or edge  $b^3$  of the slot  $b^2$  of the tongue with the wall or edge  $c^3$  of the slot  $c'$  which is the top wall of the slot  $c'$  when the parts are assembled, the material or stock of the blank at the base of the flap  $c$  and between its top edge and the end of the slot  $c'$  adjacent its side C is caused to bulge or protrude outwardly to form a slight hump or nodule  $c^4$  so that after the tongue is slipped to place in the slot  $c'$  the top edge or wall  $c^3$  of this slot intermediate its ends will project over or overlie the bottom edge or wall  $b^3$  of the slot  $b^2$  as shown in Fig. 6. This slight outward protuberance or distortion of the material of the top wall of slot  $c'$  may be provided in a variety of ways. For example, it will be noted in Fig. 1 that the joint provided by the score or crease  $x$  between the side C and its flap  $c$  is not continuous beyond the slot  $c'$  toward the free edge of the side but is interrupted and the material is plain or unscored for a short space as at  $c^5$

beyond the slot in the direction of said free edge; by thus interrupting or omitting the crease or score the stock at that place does not break on the line of the joint when the flap is turned inwardly to place, but forms an outward bend or bulge in the flap near the corner so that when the side is turned up and the flap *c* bent inwardly the upper wall or edge *c*<sup>3</sup> of slot *c*<sup>1</sup> is bent or bulged slightly outward and when the tongue *b*<sup>1</sup> is inserted in the slot *c*<sup>1</sup> this projecting portion of the edge or wall will overlie the lower edge or wall *b*<sup>3</sup> of slot *b*<sup>2</sup>. The provision of this lock is the essence of the present invention, and it may be obtained in a variety of ways and by a number of arrangements. It is obtained in a practical manner by interrupting or omitting the crease or score forming the joint as just described and ordinarily this will be the practice when the material or stock is stiff or springy; but as a preferable construction practical for all weights and kinds of stocks scores or creases are also used. For example, I may use a crease on each side of the gap *c*<sup>5</sup> in the joint forming the nodule, and laterally separated so as to be staggered with relation to the line of the joint, the inner one *c*<sup>6</sup> being offset from this line only a slight distance and nearer to this line than the outer one *c*<sup>7</sup> whereby when the flap is turned inwardly on its joint *x* the line of the outer crease *c*<sup>7</sup> will be outside of or beyond the joint near the base end of the slot *c*<sup>1</sup> so that the nodule formed by the angular bend or break at this outer crease will extend outwardly beyond the lower wall or edge of the slot as shown in Figs. 2, 3, and 4. These two scores or creases are usually of sufficient length to bridge the gap between the inner and outer portions of the score *x*, and when the side C is bent upwardly and the flap *c* inwardly the material breaks along the lines or these scores or creases and the angular bend formed by the break at the outer score *c*<sup>7</sup> extends outwardly beyond the lower wall of the slot *c*<sup>1</sup> and so overlies the upper edge *b*<sup>3</sup> when the tongue is in place as shown. Another practical form for producing the nodule for this lock consists in laterally prolonging or extending the inner end of the outer section *x* of the score or crease of the joint toward the free edge of the flap as at *c*<sup>8</sup> so that it will overhang or blend with the base end of slot *c*<sup>1</sup> as shown in Figs. 7 and 8; when the flap *c* is turned inwardly to position, this offset end of the score of the joint will cause the stock or material between its lower end and the slot *c*<sup>1</sup> to bulge or protrude over the base end of the lower wall or edge of the slot. In this form the slot *c*<sup>1</sup> may extend through score *x* as in Fig. 7 or only to it as in Fig. 8. Another means for producing this nodule is shown in Fig. 9 where the slot *c*<sup>1</sup>

is extended through the score or joint *x* to the base of crease *c*<sup>6</sup>, and an auxiliary slot *c*<sup>9</sup> is made in the flap at a point between its top and the other slot *c*<sup>1</sup> and extending across the score to the top of crease *c*<sup>6</sup>, the crease *c*<sup>7</sup> extending between the slots *c*<sup>1</sup> and *c*<sup>9</sup>. When the flap is turned inwardly the offset joint provided by the crease *c*<sup>7</sup> is thrown outwardly as shown in Fig. 9. In all these forms when the flap *c* is turned to position the outwardly bulged material *c*<sup>4</sup> above the inner end of the slot *c*<sup>1</sup> projects out over the lower wall or edge of the slot and so overlies the lower edge *b*<sup>3</sup> of the slot of the tongue when the latter is in position inside the slot *c*<sup>1</sup> and so back of the lower wall or edge.

The material at the mouth of the slot *b*<sup>2</sup> is cut away by being rounded or beveled as at *b*<sup>4</sup> and *b*<sup>5</sup>. The cut-away at *b*<sup>4</sup> facilitates the entrance of tongue *b*<sup>1</sup> into the slot, and the cut-away at *b*<sup>5</sup> facilitates the locking of the tongue under the nodule as it prevents the upper edge of the flap *b* from pressing or binding against the latter when the tongue is in place. The upper reduction at *b*<sup>5</sup> is deeper than the lower so that the lower edge or wall *b*<sup>3</sup> of the slot *b*<sup>2</sup> will pass under the nodule while the upper wall or edge will not press upon it, as clearly shown in Fig. 5.

The lock provided by the bent portion of the material of the inner flap overlying the upper edge of slot *b*<sup>3</sup> securely holds the sides of the box in erected form.

The top or cover A is formed on the upper edge of one of the sides as B and is provided at its free edge with a narrow tuck or flap *a* which fits inside the upper edge of the other side wall C between the end walls when the box is erected, and the flap *a* is provided with a longitudinal cut or slot *a*<sup>1</sup> at its center adapted to receive a locking tongue A' cut in the free edge of the side C to hold the flap in place, the cut or slot *a*<sup>1</sup> being provided with an angular extension *a*<sup>2</sup> so that the intermediate material readily yields to open the slot to facilitate the entrance of the tongue. The tongue is formed by making marginal cuts in the side C to provide opposite edges or walls *a*<sup>3</sup> and *a*<sup>4</sup>; the wall *a*<sup>4</sup> opposite the plain end of the slot *a*<sup>1</sup> is diagonal to the top edge of the side, and its base or inner end is in the line of the plain end of the slot when the tuck is in position between the upstanding ends of the box as shown in Fig. 12. In assembling the parts the left hand end of the tuck is passed down to place, the tuck being held slightly tilted or raised at the right as shown in Fig. 10 by the thumb of the operator bearing against it through the thumb-notch *a*<sup>5</sup> in the upper edge of the side C so that the plain-end of slot *a*<sup>1</sup> is in line with the upper end of wall *a*<sup>4</sup>, and the tongue A' is then pressed inwardly and

enters the slot when the tuck is lowered as shown in Fig. 11; the continued pressure on the right hand end of the top causes the tuck to pass evenly to position in which relation the base of the inclined or diagonal wall of the tongue locks against the plain-end of the slot as shown in Fig. 12 and prevents the tuck from rising as it is held between the base of the diagonal wall and the adjacent end of the box and so its slot cannot ride up the incline of that wall. The top and front side of the box are thus securely locked in place, and when it is desired to open the box pressure of the thumb on the tuck through the notch  $a^5$  draws the right hand end of the tuck upwardly and laterally in the line of the wall  $a^4$  so that the tongue readily passes out of the slot, the notch being on the same side of the part C as the inclined wall for this purpose. This construction provides a lock which prevents the top or cover from spreading at its center, and also prevents the side C from spreading at its center. The flaps  $b'$  of the rear side B are provided with top extensions  $B'$  cut apart from the top A as at  $y$  and adapted to be folded inwardly below the top and over the contents of the box.

I claim:—

1. A box having connected bottom and side walls, each side wall provided with a flap, one of said flaps having a slot extending from its base toward its free end and the other having a tongue to enter the slot, the material of the flap above the base-end of the slot being bent outwardly from alinement with the material at the ends of the slot to overlie the lower edge or wall of the slot behind which the tongue lies, and the tongue of the other flap having a wall underlying the outwardly bent portion of the first flap.

2. A box having connected bottom and side walls, each side wall provided with a flap flexibly connected thereto upon a scored line, the inner one of said flaps having a slot extending from its base toward its free end and the other having a tongue to enter the slot, the score between the inner flap and its side being interrupted above the slot to bend the material of the upper wall of the slot outwardly, and the tongue of the other flap having a wall to underlie the bent portion of the inner flap.

3. A box having connected bottom and side walls, each side wall provided with a flap, the inner one of said flaps having a slot extending from its base toward its free end and the other having a tongue to enter the slot, the material of the flap above the base-end of the slot being bent outwardly from alinement with the material at the ends of the slot to overlie the lower wall

of the slot behind which the tongue lies, and the other flap having a marginal slot registering with the slot in the inner flap to provide a wall to underlie the said outward bend and being cut-away at the top of its slot.

4. A box having connected bottom and side walls, each side wall provided with a flap flexibly connected thereto upon a scored line, one of said flaps having a slot extending from its base toward its free end and the other having a tongue to enter the slot, the score between the side and flap having a gap above the slot, and a lateral score in the flap above the base-end of the slot, the tongue having a cut to provide a wall underlying the material at the lateral score in the flap.

5. A box having connected bottom and side walls, each side wall provided with a flap flexibly connected thereto upon a scored line, one of said flaps having a slot extending from its base toward its free end and the other with a tongue to enter the slot, the score between the side and flap having a gap above the slot, a lateral score in the flap above the base-end of the slot, and a lateral score in the side associated with the flap, said lateral scores being at the sides of the gap in the score between said side and its flap, the tongue having a cut to provide a wall underlying the material at the lateral score in the flap.

6. A box having connected bottom and side walls, each side wall provided with a flap flexibly connected thereto upon a scored line, one of said flaps having a slot extending from its base toward its free end and the other having a tongue to enter the slot, the score between the side and flap having a gap above the slot, and the tongue having a marginal cut to provide a wall to underlie the upper wall of the slot in the associated flap and having the upper wall of the marginal cut beveled or cut-away.

7. A box having connected bottom and side walls, each side wall provided with a flap flexibly connected thereto upon a scored line, one of said flaps having a slot extending from its base toward its free end and the other having a tongue to enter the slot, the score between the side and flap having a gap above the slot, and the tongue having a marginal cut to provide a wall to underlie the upper wall of the slot in the associated flap and having the upper and lower walls of the marginal cut beveled or cut-away.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. SEEGMILLER.

Witnesses:

J. McROBERTS,  
F. J. DENNIS.