

935,930.

Patented Oct. 5, 1909.

Fig. 1.

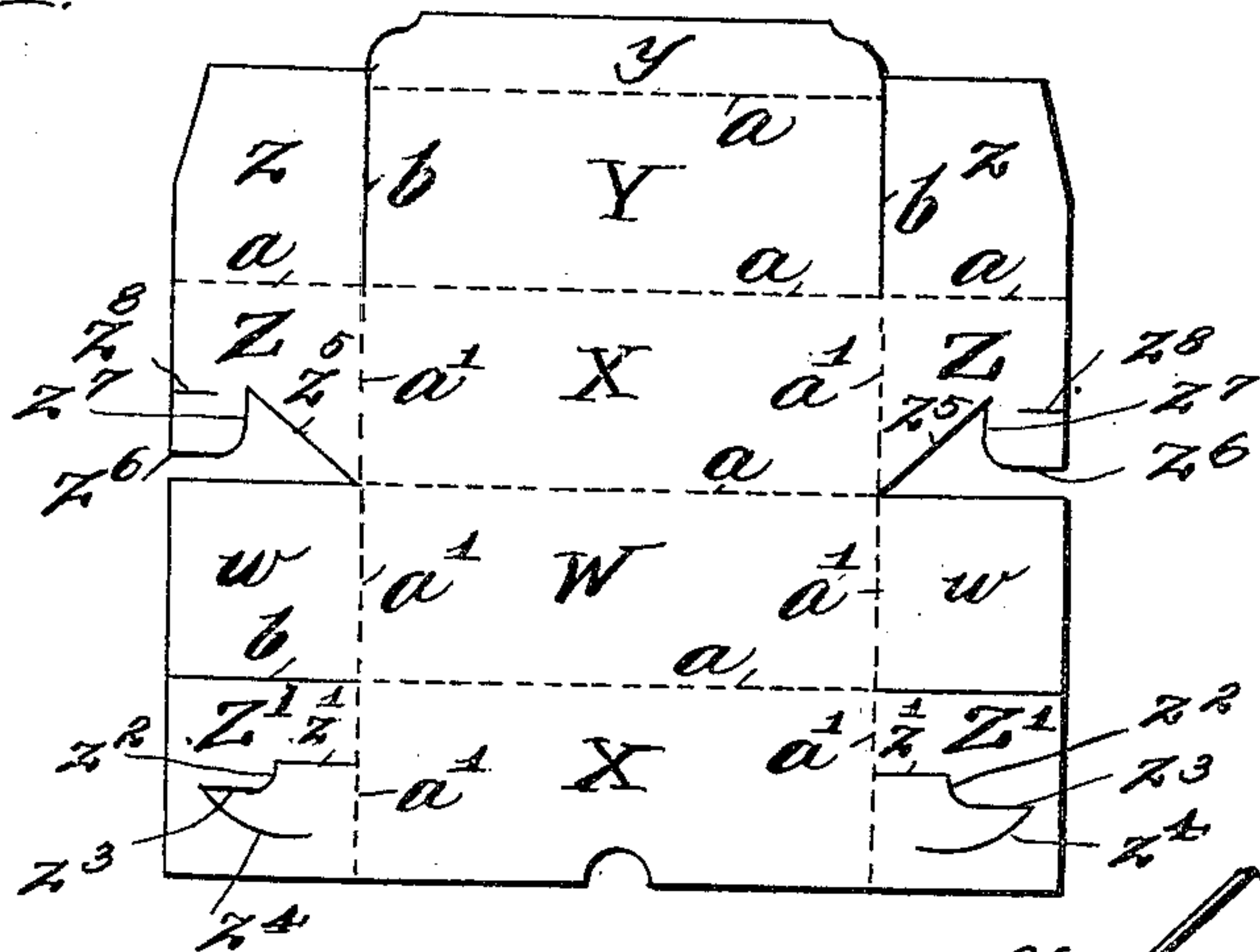


Fig. 3.

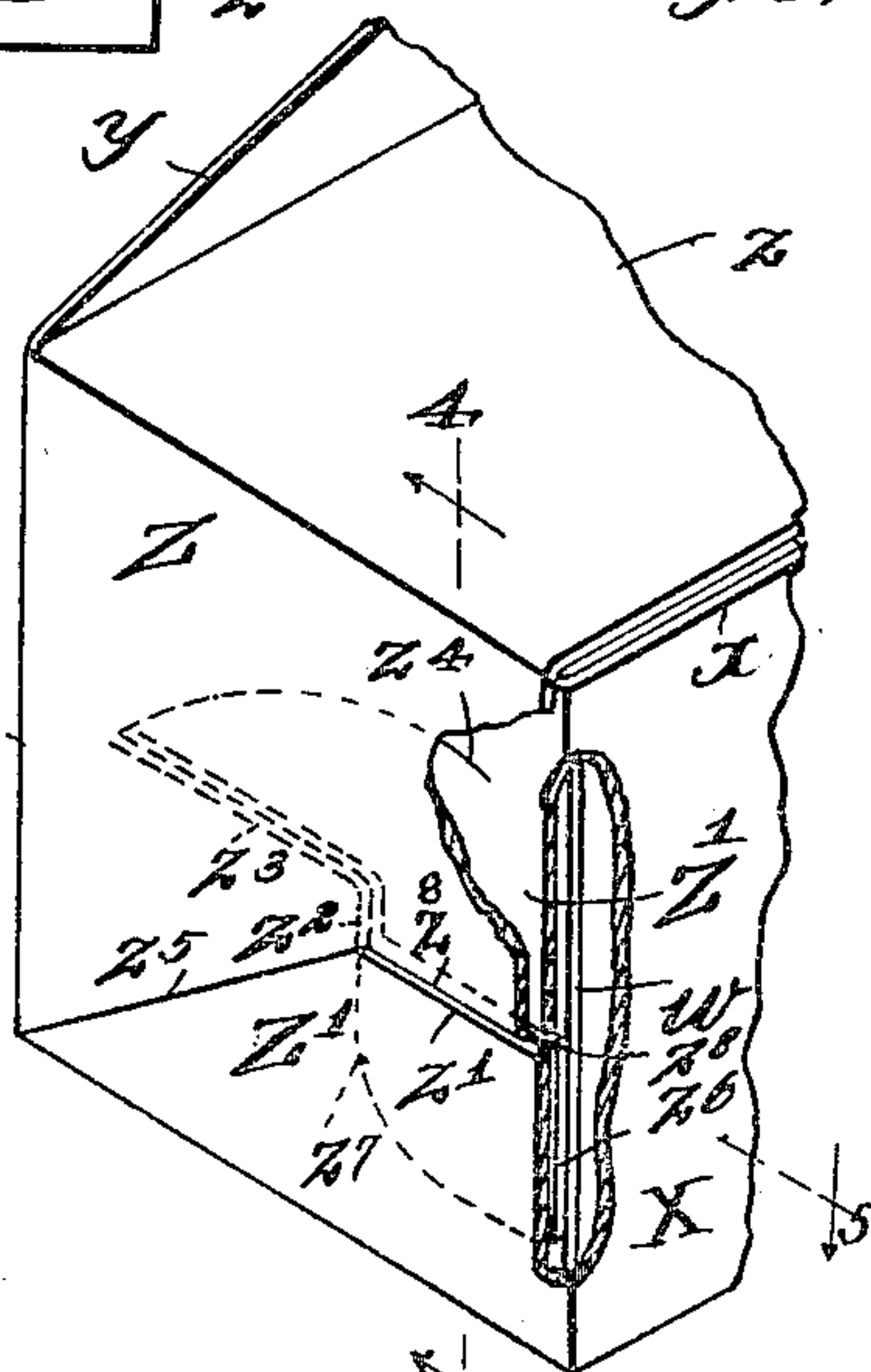


Fig. 2.

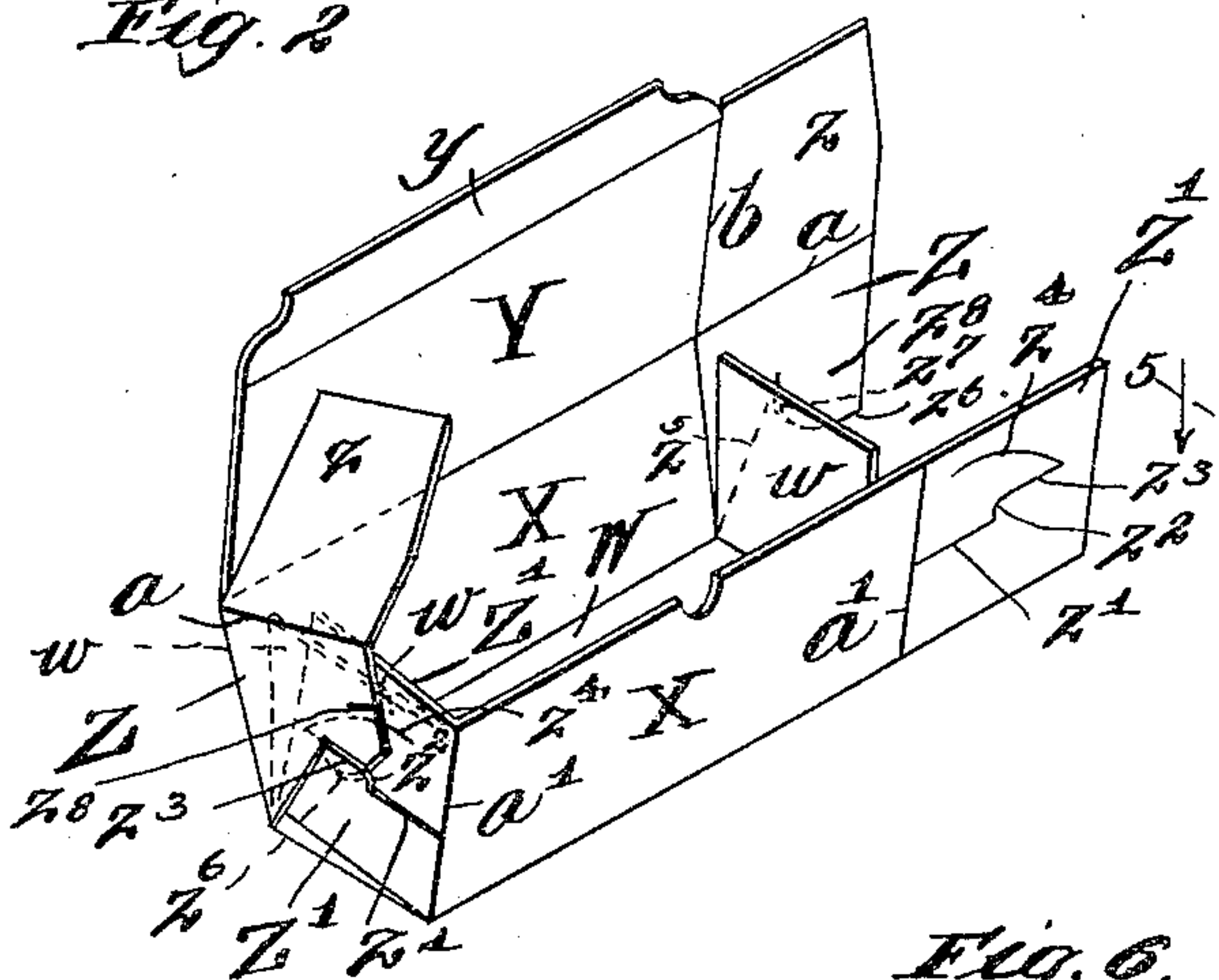


Fig. 6.

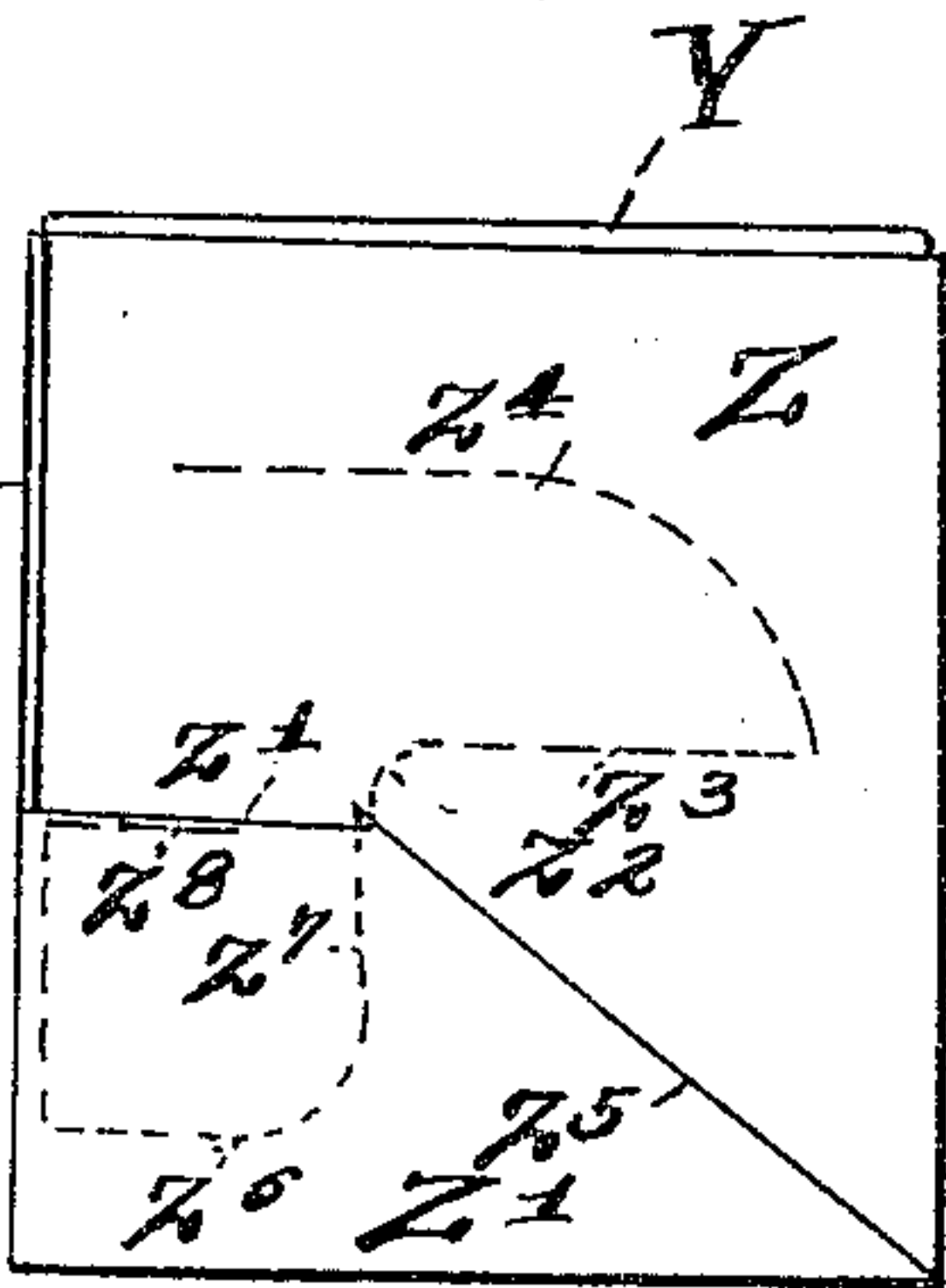


Fig. 4.

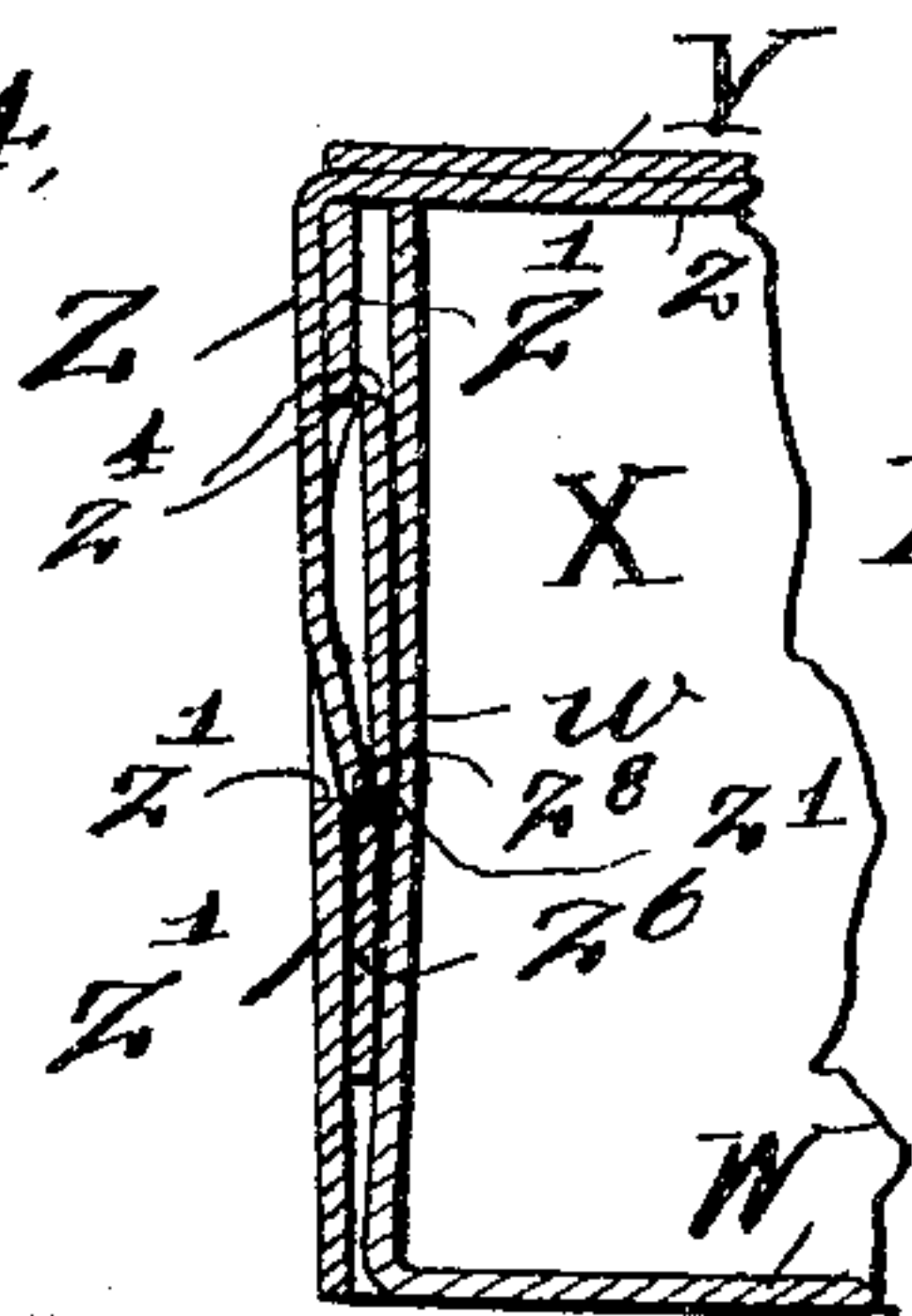
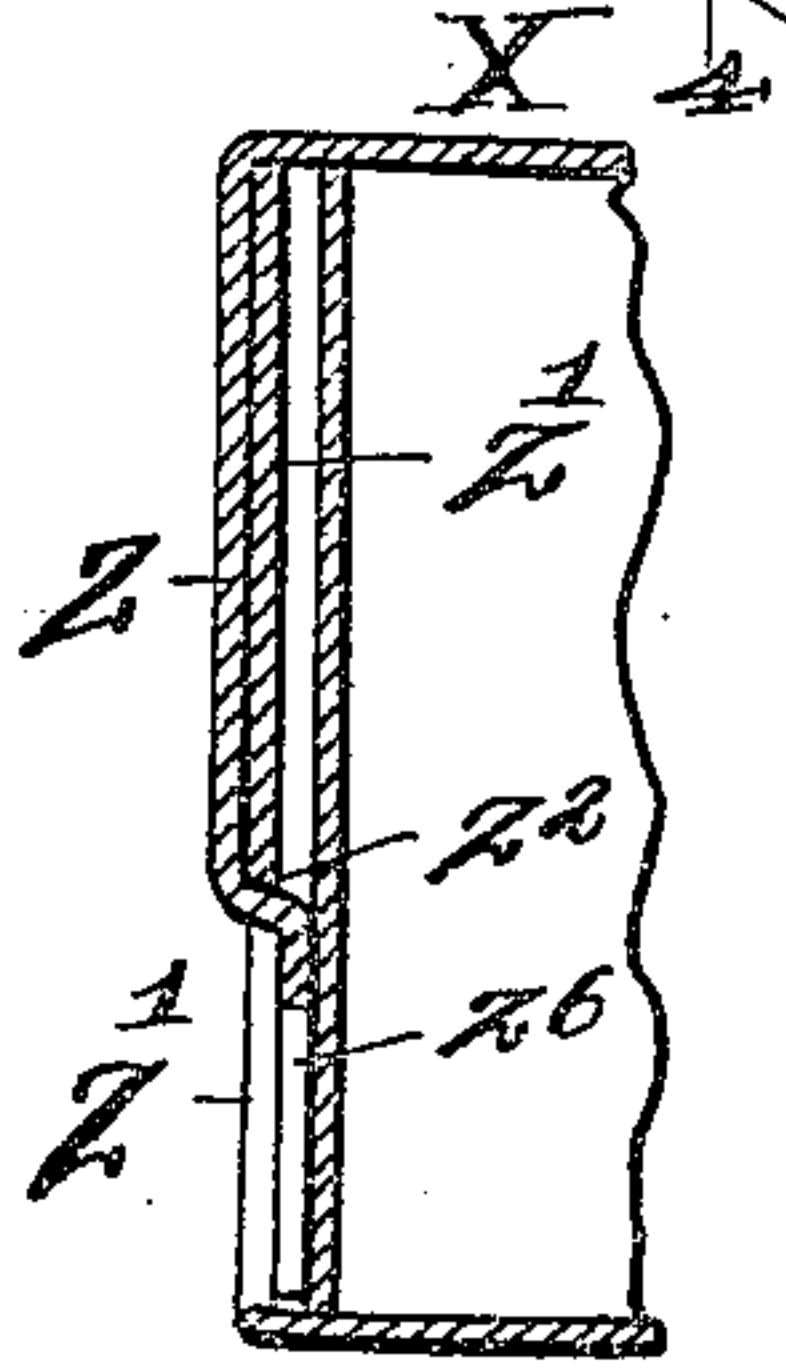


Fig. 5.



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FOLDING BOX.

935,930.

Specification of Letters Patent.

Patented Oct. 5, 1909.

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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 knock-down or collapsible paper boxes or cartons of that class consisting of a single blank or wrapper designed to be packed in a flat position and adapted to be folded or set up to provide a package of rectangular form, preferably including the top, and it is particularly directed toward constructing the ends with improved locking means.

The principal object of my invention is to provide an improved lock which shall hold the sides of the box from spreading apart. In paper boxes and cartons as heretofore constructed the side flaps are provided with interlocking tongues and slits which fail to hold the sides of the box from spreading apart because the tongues ride or rise more or less out of their slots owing to the cam like action of either or both of the opposing surfaces due to the fact that one or both are made more or less rounded or beveled. My present invention obviates this defect by providing a lock in which the tongue and slit are provided with opposed straight edges, a practical embodiment thereof being herein disclosed.

A further object of my invention is to provide a supplemental straight-edge lock in which the opposing edges are arranged and disposed in substantially horizontal alignment so as to prevent the disengagement of the opposing surfaces of the main lock.

With these ends in view the invention consists in the matters hereinafter described and then pointed out in the claims.

In the accompanying drawings, illustrating an embodiment of my invention; Figure 1 is a view of an unfolded blank from which the box may be made; Fig. 2 is a view in perspective of a box illustrating my present invention in the process of folding or setting up; Fig. 3 is a perspective view of one end of the box of Fig. 2, when the same is erected, parts being broken away for clearness of illustration; Fig. 4 is an enlarged detail sectional view on the line 4—4 of Fig. 3;

Fig. 5 is an enlarged detail sectional view on the line 5—5 of Fig. 3, and Fig. 6 is an enlarged detail view of the parts of Fig. 3, but taken at the opposite end of the box.

A box blank, preferably of rectangular form, as shown in Fig. 1 is scored or creased upon the lines a , a' , and is cut upon the lines b to facilitate the folding and to divide the blank into suitable bottom W , sides X , and top Y , with their associated flaps hereinafter more fully described. The top is provided with the usual front tuck or flap y , and the body or bottom W is provided with the usual end flaps w equal in width to the bottom or body. The rear side X is provided with end flaps Z which preferably are provided with top extensions z adapted to be folded inwardly over the contents of the box and underneath the top Y as clearly shown in Figs. 2 and 3. The front side X is provided with end flaps Z' , each of which is provided with an internal slit or slot which extends from its base lengthwise of the flap parallel with its sides and toward the free end thereof to approximately the center of the flap as shown at z' in Fig. 1, and which then extends at substantially a right angle to form a vertical shoulder or abutment as shown at z^2 , and which then extends toward the free end of the flap as at z^3 preferably parallel with its sides. The outer end of the slit is preferably extended outwardly and rearwardly as at z^4 in order to permit the associated tongue to more readily enter the slit, although it is to be understood that the extension z^4 need not necessarily be employed. Each flap Z is provided with a notch z^5 upon its lower edge adjacent to the center flap w and forming on one edge of the flap a tongue z^6 which preferably is somewhat shorter than the base of the flap. The tongue z^6 is formed with an internal straight edge z^7 extending parallel with the side edges of the flap and parallel with but slightly outside of the line of the vertical shoulder or abutment z^2 in the associated flap Z' . The corner of the straight edge z^7 may be rounded and formed as shown in Fig. 1, if desired. By having the edge z^7 outside the line of the edge z^2 before the blank is erected to box-like form, the shoulder or edge z^7 passes into place behind the shoulder z^2 as the parts are erected without binding on the latter so that the parts slip easily and freely into abutting engagement.

When the blank is set up or erected into

box-like form the front side X is bent to assume substantially a right angle to the bottom or body W to form the front of the box, and the center flaps w are likewise bent at right angles to the body to form the inner portions of the ends, the relative positions of the several parts being clearly indicated in Fig. 2. The flaps Z' are then folded inwardly upon the center flaps w and the flaps Z are then brought up into initial position upon the outside of the associated flaps Z' , the tongue z^6 being passed into portion z^3 of the slit in the flap Z' as shown in Fig. 2, and as the rear side X is brought to vertical position the tongues pass downwardly and forwardly into the slits until they reach the position shown in Figs. 3 and 6, at which time the straight edge z^7 of each tongue z^6 passes down in front of the vertical shoulder or abutment z^2 formed by the perpendicular portion of the slit in the associated flap Z' . When the parts are in this position the straight edges formed at z^2 and z^7 are opposed to each other in engagement and hold the sides of the box from spreading apart. The engagement of the opposed straight edges holds the sides of the box from spreading apart as it prevents either flap from moving or shucking with respect to the other and prevents the outer flap Z from being drawn back; the lock is effective because the straight-edge of the shoulder z^2 affords an extended bearing for the tongue and does not have any cam-like action due to inclined or rounded or beveled surfaces heretofore employed. This is more particularly illustrated in Figs. 3 and 6 which show the straight edges interlocked.

The operation of interlocking the flaps is duplicated at each end and is usually carried on at the same time, the box thus being erected or set up, and after the box has been filled the flaps z are turned down over the contents and the cover or top Y is brought down to place and its flap y is inserted within the front side X and between it and flap z .

I may utilize a supplemental straight-edge lock for the purpose of preventing the end flaps Z from rising sufficiently far to disengage the vertical interlocking straight edges z^2 and z^7 . For this purpose I make a straight cut z^8 in the outer edge of each flap Z extending inwardly toward but not reaching the top of the edge z^7 and substantially upon a line slightly below the same. When the tongue is brought to position within the slit in the flap Z' , the lower edge of the cut z^8 takes under the top edge of the portion z' of the slit in the flap Z' thereby effecting an engagement between the opposing straight edges formed by the slits z' and z^8 and affording a horizontal straight-edge lock which prevents the tongue from rising out of the slit in the flap Z' and thereby supplement-

ing the action of the straight-edge vertical lock by preventing the edge z^7 from riding up the edge z^2 .

While a supplemental lock may be employed it is not necessary, as the straight-edge of the shoulder z^2 forms an effective lock being so located and disposed in relation to the tongue that the outside flaps cannot yield or move under outward pressure on the side walls until the tongue has virtually traveled up and over the shoulder. The portion z' of the slit is substantially the same length as the distance from the portion z^7 to the outer edge of the tongue, and therefore these parts have a close fit and prevent the box from spreading unless the tongue is lifted above or over the shoulder of the slit. Also, by thus having the outer edges of the extension flaps z in substantially the line of the front side X, the tuck y is held by friction of these parts on its opposite sides and the cover is thus securely held down in place.

I claim:—

1. A box having connected bottom and side walls, each side wall provided with a flap, one of said flaps having an angular slit providing a straight edge, and the other flap having a tongue providing a straight edge abutting and interlocking with the first straight edge when the tongue is in position in the slit.

2. A box comprising connected side and bottom walls having on its side walls a pair of flaps, one of said flaps having a slit extending from its base toward its free end and providing an angularly disposed shoulder or abutment, and the other flap having a tongue providing a straight edge adapted to interlock with the shoulder or abutment when the tongue is in position in the slit.

3. A paper box or carton having connected side and bottom walls, flaps on the side walls adapted to interlock to form an end wall, one of said flaps provided with a slit extending from its base toward its free end parallel with its sides and having a right-angular portion, and the other flap provided with a tongue adapted to enter said slit and interlock with the right-angular portion thereof.

4. A paper box or carton having connected side and bottom walls, flaps on the side walls adapted to interlock to form an end wall, one of said flaps provided with a slit extending from its base toward its free end parallel with its sides and having a right-angular portion, and the other flap provided with a tongue adapted to enter said slit and having a straight-edge adapted to interlock with the right-angular portion thereof.

5. A paper box or carton having connected side and bottom walls, flaps on the side walls forming the end walls and having opposed vertically disposed straight-edges and opposed horizontally disposed straight-edges.

6. A paper box or carton having connected side and bottom walls, flaps on the sides forming end walls and having vertically opposing and interlocking tongue and slit to
5 hold the sides from spreading and horizontally opposing and interlocking portions to prevent the tongue from rising in the slit.

7. A paper box or carton having connected
10 side and bottom walls, flaps on the sides forming end walls and having vertically and horizontally opposing and interlocking tongue and slit.

8. A box having connected top, bottom,
15 and side walls, the top having a flap or tuck and the sides having flaps provided with extensions adapted to overlie the box content, the end flaps provided with a shouldered slit and tongue connection in which the length

of the slit from the base of the flap to the
20 shoulder is substantially equal to the width of the tongue, whereby the tuck of the top is held between the front side and the end flap extensions.

9. A blank for folding boxes or cartons
25 having bottom and side walls, end flaps on the sides, one of said flaps having a slit provided with a shoulder, and the associated flap having a tongue provided with a shoulder outside of the line of the first shoulder
30 when the blank is extended and extending to the free end of the flap.

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

CHARLES H. SEEGMILLER.

Witnesses:

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