A. L. SMITH & A. H. DREUX.

PAPER BOX.

APPLICATION FILED APR. 19, 1910.

1,105,215.

Patented July 28, 1914.

2 SHEETS—SHEET 1.

Fig. 1,

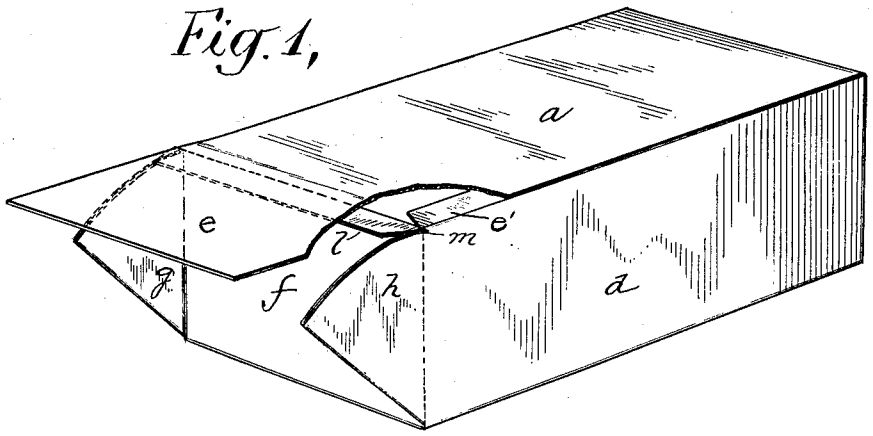
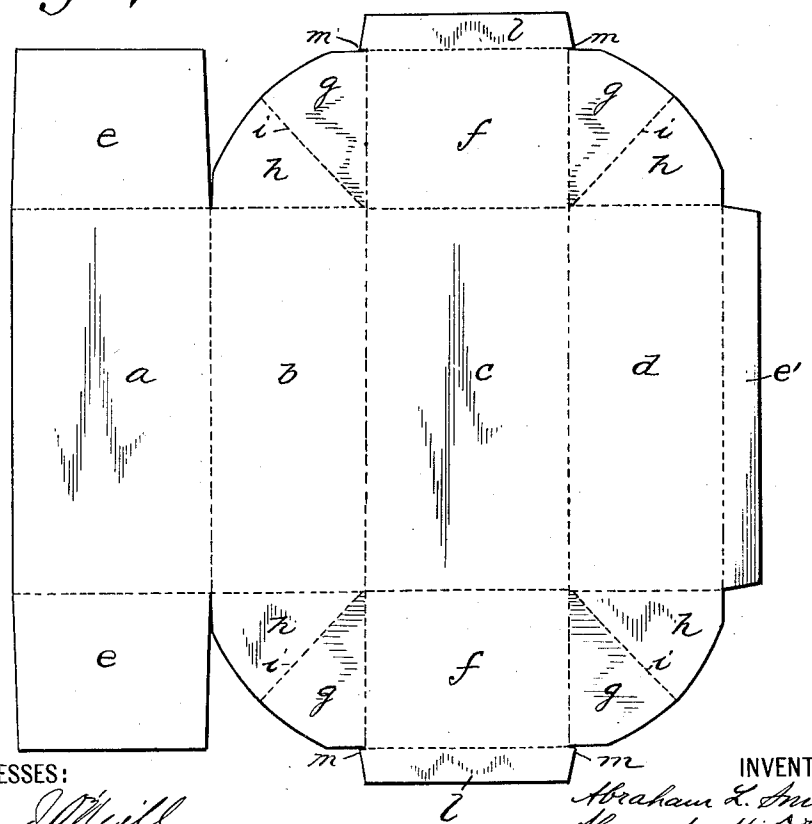


Fig. 2,



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2 SHEETS—SHEET 2.

Fig. 3,

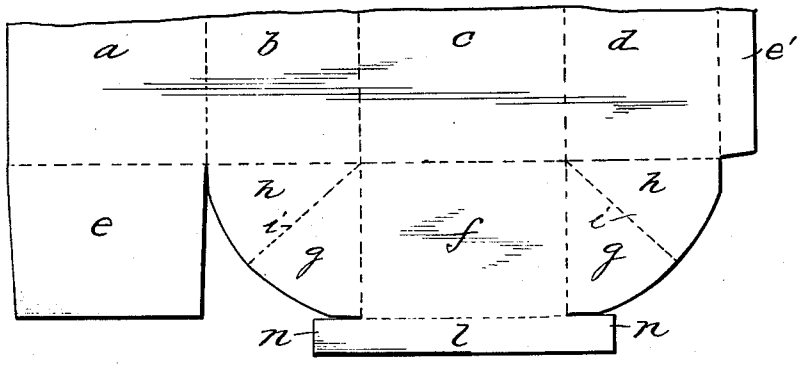


Fig. 4,

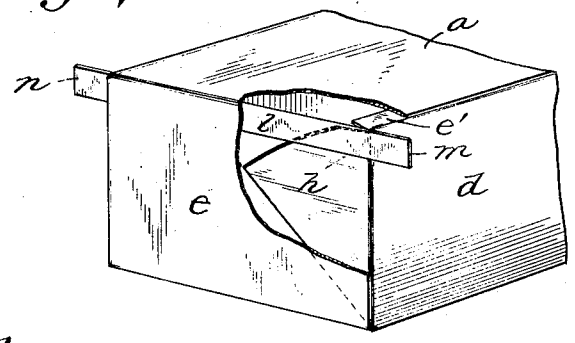
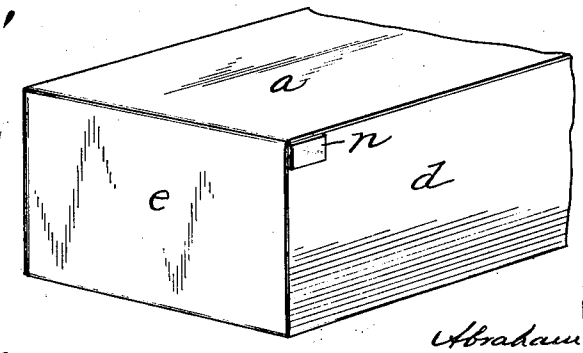


Fig. 5,



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UNITED STATES PATENT OFFICE.

ABRAHAM L. SMITH, OF NEW YORK, N. Y., AND ALEXANDER H. DREUX, OF BLOOMFIELD, NEW JERSEY, ASSIGNORS TO SCOOP FOLDING BOX COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PAPER BOX.

1,105,215. Specification of Letters Patent. Patented July 28, 1914.

Application filed April 19, 1910. Serial No. 556,350.

To all whom it may concern:

Be it known that we, ABRAHAM L. SMITH, a citizen of the United States, residing at No. 306 Third avenue, city of New York, county of New York, and State of New York, and ALEXANDER H. DREUX, a citizen of the United States, residing at Bloomfield, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Paper Boxes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to the manufacture of boxes from blanks or cartons of paper stock, such as paper board, card board, and the like, and particularly to boxes intended for holding material in a more or less fine state of subdivision, and which is liable, for that reason, to sift out of the ordinary box, such as flour, breakfast cereals, granulated sugar, and the like.

Generally speaking, the improvement consists in providing the box with an end closure having certain features of construction which efficiently serve as a safeguard against the sifting out of the contents of the box during transportation or handling, and which may be opened out into the form of a convenient discharge spout, after the box has been opened, and which may thereafter be closed so as to substantially exclude the external air from access to the contents or partial contents of the opened box.

In the accompanying drawings, Figure 1 represents a perspective view of a box embodying our invention, and with the end closure partially folded, and with one of the sides partly broken away so as to better illustrate certain details of construction. Fig. 2 represents a plan view of the carton or blank from which the box of Fig. 1 is made. Fig. 3 represents a partial view of a carton or blank suitable for a slightly modified form of the closure; Fig. 4 represents, in perspective, an end view of this modified construction of box, immediately before the final step of sealing it; and Fig. 5 represents, in perspective, a like view of the end of the completed box constituting said modification.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawings, and particularly to Figs. 1 and 2 thereof, it will be noted that the box, as therein shown, consists of a folded blank, whose main body portion consists of subdivisions, *a*, *b*, *c*, *d*, together with a supplemental pasting strip *e'*. The subdivisions *a* and *c* constitute opposite sides of the box, when the blank is folded into its rectangular form. The subdivision *a* is provided with panels *e* constituting a continuation of said subdivision, these panels constituting ultimately the sealing flaps for the folded spout-closure. The subdivision *c* is provided with end panels *f*, and these end panels *f* are connected at their edges to the edges of the adjacent subdivisions *b*, *d*, constituting the intermediate sides of the box, by foldable flaps made up of two sectors *g*, *h*, which fold along a line *i*. The panels *f* are provided with anti-sifting extensions *l*, which, when the blank is folded during the operation of closing the box, overlap the lower margin of the end panel *e*, so as to be adapted to be pasted along said lower margin. Each extension *l* is provided at the ends with lateral tabs or projections *m*, which rest upon the sideflaps when folded inward and which extend beyond the plane of the sides of the box.

In making up the box from the blank, the main body portion is first folded into rectangular form and connected by the pasting flap *e'*. The end panel *e* is then turned up away from the body of the box, and there is applied to it a coating of liquid glue, so that it is ready to serve as a sealing flap when the folding of the end of the box is completed. The side flaps *h g* and the end flap *f* are then simultaneously folded to bring them into the position shown in Fig. 1. This results in causing the extension *l* to be pasted on to the lower margin of the panel *e*. The double flaps *h g* are then folded in on to the flap *f*, and the panel *e* is thereupon folded down over these flaps *h g* thereby completing the sealing of the closures. In this operation the projections *m* have prevented the panel *f* from being forced into the interior of the box which has previously been filled.

It will be noted that the free outer edges of the sectors *g h* of the folding side flaps have straight portions where they merge into the flaps *d* and *f*, as shown in Figs. 1

and 2. When these side flaps are folded, the straight portions coincide with each other and are alined with the folding or creasing line of the extension *l*, so that these straight portions serve as a fulcrum guide when the panel *e* and the extension *l* which has been pasted to it, are folded down to seal the carton. In this way the complete closure and anti-sifting properties of the cartons are assured.

The box may be conveniently opened by running a knife between the glued end panel *e* and the folded spout-closure, and then by running a knife between the glued surfaces of the extension *l* and the said panel *e*, whereupon, the spout may be unfolded to advantage, that is, by swinging the sideflaps out beyond the plane of the sides of the box, which thereby causes the panel *f* to recede sufficiently from the mouth or opening of the box to permit the insertion of the fingers. Finally, the spout can be fully opened and the panel *e* restored to its original position. In this position, any part of the contents of the box may be removed by pouring through the open spout, and, thereafter, by pushing inwardly the panel *f*, the box may be closed with substantial exclusion of the outer air to a degree sufficient for temporary purposes, the sideflaps rising to the position shown in Fig. 1 and maintaining the panel *f* closed, until again opened. In opening the box, as above noted, the swinging of the sideflaps out beyond the plane of the sides of the box causes the end panel *f* to jump or spring quickly in an outward direction, to effect its opening movement. In order to provide for an especially quick and reliable opening movement of this kind, when the sideflaps are properly actuated, we find it expedient to make the sideflaps *g*, *h* of slightly different average width, so that these flaps in conjunction with the end panel *f* will form a bow-like structure, one element of which is longer than the other. More particularly, the flaps *g* are of greater average width than the corresponding adjacent flaps *h*, in order that the panel *f* and flaps *g* will normally resist being pushed into the box opening and assume a slightly open position, although it will be understood that when the panel *f* is closed by the hand it may be held reliably in that position by folding the sideflaps inward in the position represented in Fig. 1, wherein it is impossible for the closing panel to move outward. In the embodiment illustrated, the average width of the sector-shaped flap *g* is made slightly greater than that of the flap *h* by drawing the creasing line *i* from the center of the outer or free edge of the two flaps, considered as a unit, to a point slightly offset from the apex of the angle formed by the side boundaries of the respective sideflaps.

The form of closure illustrated in Figs. 3 to 5 inclusive is identical with that just described, with two exceptions. In the first place, the projections or tabs at the ends of the extension *l* are made longer, as indicated at *n*, so that in the operation of closing the box these projections or tabs can be pasted down on the side walls of the box, as shown in Fig. 5, whereby an additional precaution against sifting is provided. In the second place, the folding or creasing line *i* runs to the intersection of the side boundaries of the flaps *g*, *h*. However, the opposite end of said line is offset from the center of the common outer or free edge of the two flaps, considered as a unit, so that the average width of the flap *g* is greater than that of the corresponding flap *h*, as before, with the same good results in obtaining a quick opening movement of the panel when the side flaps are moved, as previously explained.

Having thus described our invention, what we claim is:—

In a rectangular paper box, a spout end, consisting of a rectangular end panel forming a continuation of one of the sides of the box, and flaps connecting the edges of the two adjacent sides of the box with the side edges of said panel, said flaps being foldable inwardly on top of said panel and free to swing outwardly beyond the plane of the sides to which they are connected, and said flaps consisting of two sectors of slightly different width whereby on swinging the flaps outwardly in the act of unfolding the spout, the end panel thereof will recede from the mouth or opening of the box; substantially as described.

In testimony whereof we affix our signatures, in presence of two witnesses.

ABRAHAM L. SMITH.
ALEXANDER H. DREUX.

Witnesses:
JOHN C. PENNIE,
WILLIAM H. DAVIS.