No. 801,579. PATENTED OCT. 10, 1905.

E. E. FLORA & J. H. HUSTED.

FOLDING CARTON.

APPLICATION FILED NOV. 9, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

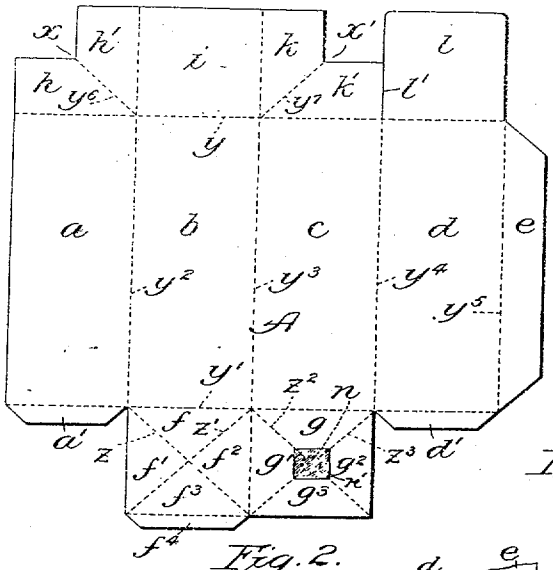


Fig. 5.

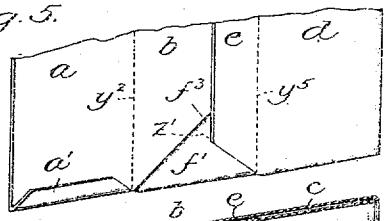


Fig. 6.

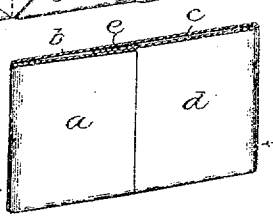


Fig. 7.

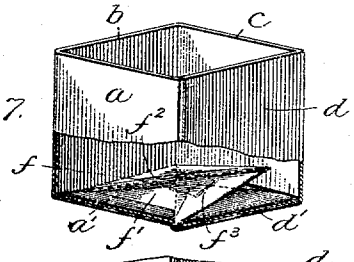


Fig. 2.

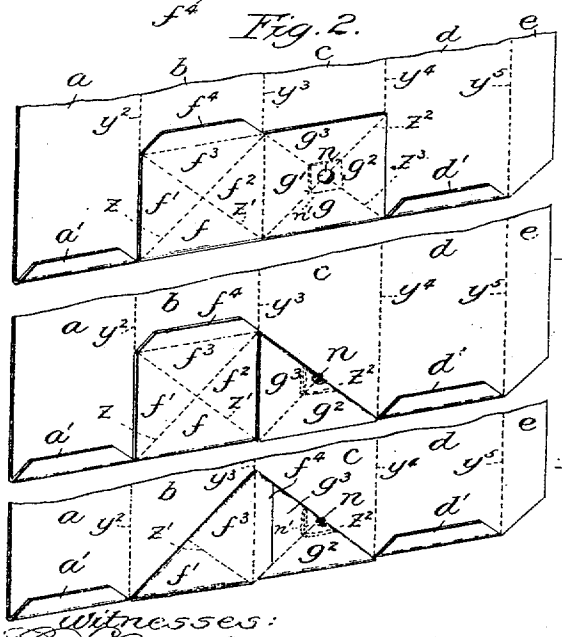


Fig. 8.

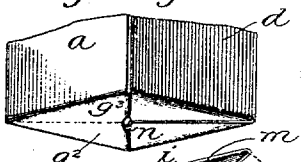


Fig. 3.

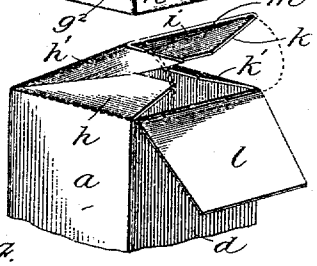
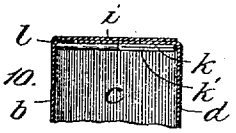


Fig. 9.

Fig. 4.

Fig. 10.



Witnesses:

Chas. E. Gaylord.

John. Enders.

Inventors:

Ellsworth E. Flora and
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Attys.

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2 SHEETS—SHEET 2.

Fig. 11.

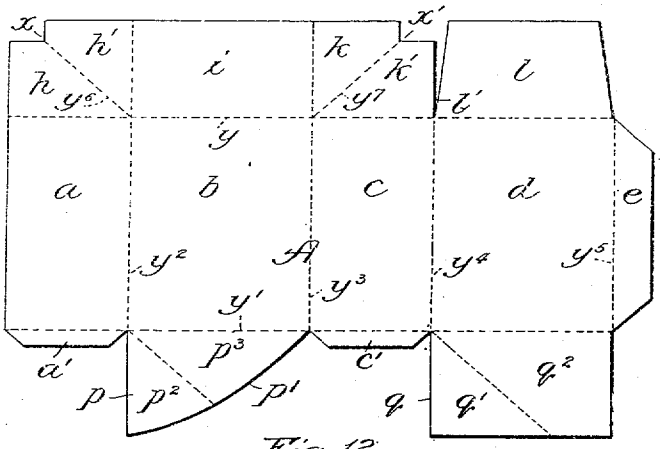


Fig. 12.

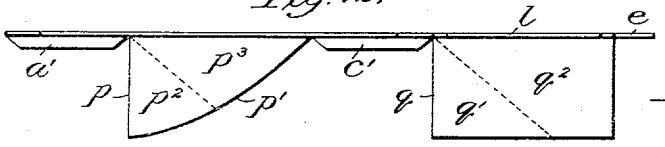


Fig. 13.

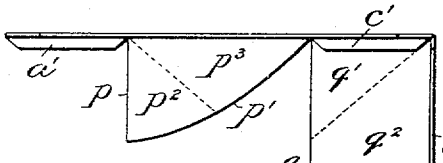


Fig. 14.

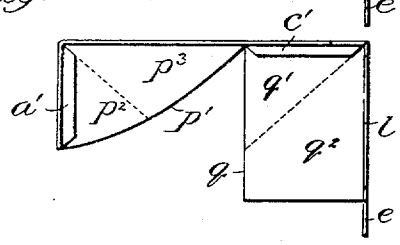


Fig. 15.

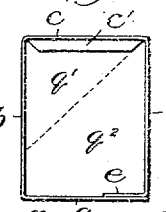


Fig. 16.

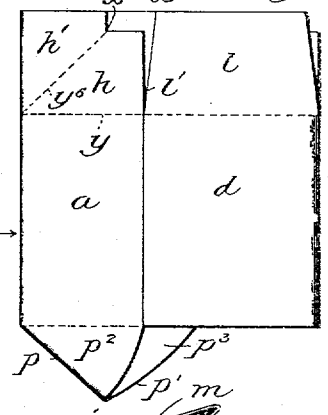
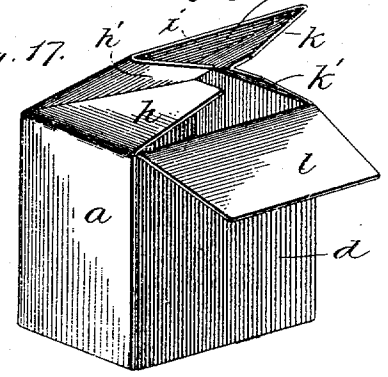


Fig. 17.



Witnesses:
Chas. E. Gaylord.
John Enders.

Inventors:
{Ellsworth E. Flora and
Julius H. Husted,
By Dyrenforth, Dyrenforth & Lee,
Attys.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ELLSWORTH E. FLORA AND JULIUS H. HUSTED, OF CHICAGO, ILLINOIS; SAID FLORA ASSIGNOR OF ONE-FOURTH TO ALBERT F. BIDLAS AND ONE-FOURTH TO JOHN G. KOTRBA, OF CHICAGO, ILLINOIS.

FOLDING CARTON.

No. 801,579. Specification of Letters Patent. Patented Oct. 10, 1905.

Application filed November 9, 1903. Serial No. 180,385.

To all whom it may concern:

Be it known that we, ELLSWORTH E. FLORA and JULIUS H. HUSTED, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Folding Cartons, of which the following is a specification.

This invention relates to improvements in folding paper boxes or cartons for use as packages or for any other purpose where a close readily-sealed small paper shipping-package is desired.

Our object is to provide a folding carton of improved construction which when collapsed extends flatwise for convenience in shipping and handling and which when opened out or expanded forms a receptacle presenting a tight bottom and sides with a cover or top which may be readily fastened down to form a close package.

Our object is, further, to provide such a carton which in its make-up will require, comparatively speaking, but a minimum amount of material.

Referring to the drawings, Figure 1 shows a paper blank for a carton square in cross-section, the scores at which folds occur being indicated by dotted lines; Figs. 2, 3, 4, 5, and 6, broken views of the blank, illustrating the successive steps in making the folds; Fig. 7, a broken perspective view showing the lower part of the interior of the carton with the base thereof partly collapsed; Fig. 8, a broken perspective view of the lower end portion of the carton; Fig. 9, a similar view of the upper end portion of the carton partly closed; Fig. 10, a sectional view of the same with the cover closed; Fig. 11, a blank for a rectangular carton oblong in cross-section; Figs. 12, 13, 14, and 15, top plan views illustrating the manner of folding the blank into a carton; Fig. 16, a view of the oblong carton collapsed to extend flatwise, and Fig. 17 a perspective view of the oblong carton expanded.

A is a blank provided in the upper edge, shown with notches x x'. The parts which form the top and bottom of the carton are separated from the body portion, forming the four sides of the carton, by creases or scores y y'. The body portion is divided by scores y^2 y^3 y^4 into the side spaces a, b, c, and d. At the lower ends of the spaces a d are the pasting-flaps a' d', and on the edge of the space or part d is a pasting-flap e, separated therefrom by a score y^5. Extending from the lower end of the spaces b c is a projection separated by the score-lines y' y^3 into square spaces or parts to form the bottom of the carton. One bottom part is separated by the creases or scores z z' into triangular spaces f f' f^2 f^3, the space f^3 having an extension or pasting-flap f^4. The other part of the bottom is separated by the creases or scores z^2 z^3 into triangular spaces g g' g^2 g^3.

To form the carton from the blank, the lower blank extension and the flaps a' d' are turned upward on the score y', as indicated in Fig. 2. Then the parts g^2 g^3 are turned upon the parts g g', as shown in Fig. 3. Then the parts f' f^3 are turned upon the parts f f^2 and the flap f^4 gummed to the part g^3, as indicated in Fig. 4. Then the part d is turned upon the part c and the flap d' gummed to the part g^2, as indicated in Fig. 5. Then the part a is turned upon the part b, the flap e being gummed to the part a and the flap a' gummed to the part f' to appear as indicated in Fig. 6. When the carton, collapsed as indicated in Fig. 6, is squeezed in the direction of the arrows in that figure, the folded parts expand or open out, the bottom appearing as shown in Fig. 8.

The part which forms the top of the carton and which is separated from the body portion by the score y is divided by the scores y^2 y^3 and inclined scores y^6 y^7 into the spaces h h' i k k', and tongue l, separated from the part k' by the cut l' through the material. When the top is folded at the scores, as shown in Fig. 9, the parts h h' and k k' form simple bellows sides, presenting a pocket m, into which the tongue l may be passed, as indicated by dotted lines in Fig. 9 and by section in Fig. 10, to close the carton and at the same time hold it against collapsing. At the junction of the scores z^2 z^3 is a perforation n, over which is pasted a piece of thin paper or cloth n', closing the perforation and insuring by its flexibility proper and ready movement of the parts in opening or collapsing the carton.

The blank shown in Fig. 11 has the same form of top as the other blank described; but the bottom necessarily differs therefrom on account of the oblong shape of the carton.

The base is formed by an extension p, having a curved edge p' and a rectangular extension q. The part p is divided by the inclined score indicated into spaces p^2 p^3 and the part q by the inclined score there indicated into spaces q' q^2. To form the carton, the extensions p q and flaps a' c' are turned upon the score y', as shown, for example, in Fig. 12. The parts d q are then turned and the flap c' gummed to the part q', as indicated in Fig. 13. The part a is then turned and the flap a' gummed to the part p^2. The parts are then turned upon the score y^3 to cause the part q to overlie the part p, filling out the base completely, the flap e being gummed to the part a. In collapsing, the part q bends upward or inward on its score and the part p downward or outward to present the external appearance indicated in Fig. 16. The top of the carton, as shown in Fig. 17, is the same as that shown in Fig. 9 and operates in the same way.

The bottom, more especially of the carton shown in Figs. 1 to 10, inclusive, is particularly well adapted for coin-packages or packages intended to hold granular or pulverulent material, and the top when closed is very tight and offers means for readily sealing the package against its being opened without destruction of the package.

What we claim as new, and desire to secure by Letters Patent, is—

1. A collapsible carton folded by pressure at diagonally opposite corners and expanded by pressure at the other corners and having a bottom formed of interfolding parts permanently connected to each other and to the walls of the carton, the folding and unfolding of said parts being controlled by the operations of collapsing and expanding the carton.

2. A collapsible carton folded by pressure at diagonally opposite corners and expanded by pressure at the other corners and having a bottom formed of interfolding parts permanently connected to each other and to the walls of the carton, the folding and unfolding of said parts being controlled by the operations of collapsing and expanding the carton, said bottom having an opening extending across the folding-line between two parts to obtain flexibility, and a covering of flexible material for said opening.

3. A collapsible carton having a bottom formed of interfolding parts permanently connected to each other and to the walls of the carton, the folding and unfolding of said parts being controlled by the operations of collapsing and expanding the carton, said bottom having the perforation n, and a flexible covering for said perforation.

ELLSWORTH E. FLORA.
JULIUS H. HUSTED.

In presence of—
WALTER N. WINBERG,
J. W. DYRENFORTH.

Correction in Letters Patent No. 801,579.

It is hereby certified that Letters Patent No. 801,579, granted October 10, 1905, upon the application of Ellsworth E. Flora and Julius H. Husted, of Chicago, Illinois, for an improvement in "Folding Cartons," was erroneously issued to "Ellsworth E. Flora, Julius H. Husted, Albert F. Bidlas, and John G. Kotrba" as owners of said invention; whereas the said Letters Patent should have been issued to *Julius H. Husted, Albert F. Bidlas, and John G. Kotrba* as owners of the entire interest in said invention, as shown by the assignments of record in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 31st day of October, A. D., 1905.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.

W. M. Morton, Chief Div. 13.

The base is formed by an extension p, having a curved edge p' and a rectangular extension q. The part p is divided by the inclined score indicated into spaces p^2 p^3 and the part q by the inclined score there indicated into spaces q' q^2. To form the carton, the extensions p q and flaps a' c' are turned upon the score y', as shown, for example, in Fig. 12. The parts d q are then turned and the flap c' gummed to the part q', as indicated in Fig. 13. The part a is then turned and the flap a' gummed to the part p^2. The parts are then turned upon the score y^3 to cause the part q to overlie the part p, filling out the base completely, the flap e being gummed to the part a. In collapsing, the part q bends upward or inward on its score and the part p downward or outward to present the external appearance indicated in Fig. 16. The top of the carton, as shown in Fig. 17, is the same as that shown in Fig. 9 and operates in the same way.

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What we claim as new, and desire to secure by Letters Patent, is—

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2. A collapsible carton folded by pressure at diagonally opposite corners and expanded by pressure at the other corners and having a bottom formed of interfolding parts permanently connected to each other and to the walls of the carton, the folding and unfolding of said parts being controlled by the operations of collapsing and expanding the carton, said bottom having an opening extending across the folding-line between two parts to obtain flexibility, and a covering of flexible material for said opening.

3. A collapsible carton having a bottom formed of interfolding parts permanently connected to each other and to the walls of the carton, the folding and unfolding of said parts being controlled by the operations of collapsing and expanding the carton, said bottom having the perforation n, and a flexible covering for said perforation.

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Commissioner of Patents.

W. M. Montgomery
Chief Div. 13.