No. 648,008. Patented Apr. 24, 1900.

W. M. WELLMAN.

FOLDING PAPER BOX.

(Application filed Mar. 5, 1897.)

(No Model.)

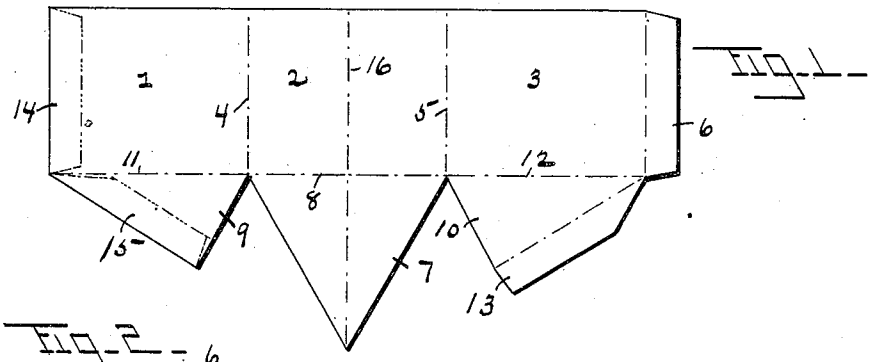

Fig. 1.

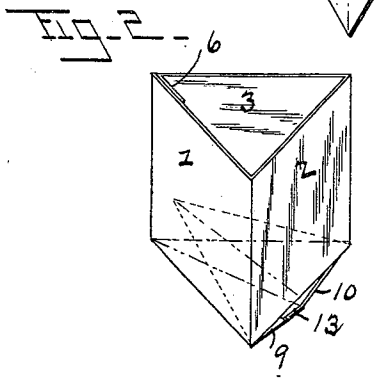

Fig. 2.

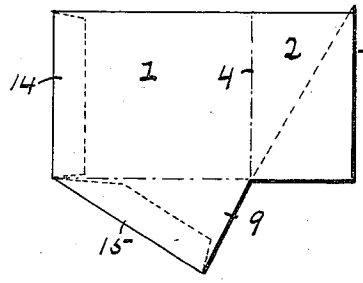

Fig. 3.

Witnesses.
Edwin M. Clark
Leo R. Hammond

Inventor.
W. M. Wellman
By Chapman & Hall
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER M. WELLMAN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE NATIONAL FOLDING BOX AND PAPER COMPANY, OF SAME PLACE.

FOLDING PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 648,008, dated April 24, 1900.

Application filed March 5, 1897. Serial No. 625,952. (No model.)

To all whom it may concern:

Be it known that I, WALTER M. WELLMAN, a citizen of the United States, residing in the city of New Haven, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Folding Paper Boxes, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a view of the blank from which one of my improved boxes, hereinafter described, is formed. Fig. 2 is a perspective view of one form of such box set up in its open or operative position, the inner bottom, however, being still partially raised, as indicated by the dotted lines. Fig. 3 is a view of my said improved box in its folded or inoperative position.

In the drawings similar numerals refer to similar parts.

My invention relates to folding or knock-down paper boxes; and it has for its object to provide a box of that type which shall be in its horizontal cross-section or some part of it triangular instead of rectangular and which shall have a solid and continuous double bottom the members of which are continuation of instead of being glued for support to one or more of the vertical sides of the box, whereby are secured not only superior strength and durability of the bottoms and superior external appearance and economy of material in cutting out blanks for a quantity of such boxes, but also the number of operators formerly required to manufacture such boxes is diminished and the process of manufacture rendered much more economical and effective than formerly.

The blank from which my improved box is formed is composed of the three sides 1, 2, and 3, which in the set-up position become vertical or upright sides of the box and are joined to each other by the two scored fold-lines 4 5, and either one of the two external sides 2 or 3 has at its free end—as, for instance 3, as shown in Fig. 1—a continuation or pasting flap 6, preferably united thereto by a creased line indicated by the dotted line.

7 is the inner bottom piece—in this instance of triangular shape—joined to the bottom of the side 2 by the fold-line 8 and equally divided, as is also the said side 2, by the continuous fold-line 16. The said bottom piece 7 has preferably the dimensions of the entire bottom area of the box, and the two pieces 9 and 10, which are likewise prolongations of the sides 2 and 3 and separated, respectively, from the latter by the fold-lines 11 and 12, are likewise triangular in cross-section and of such size and shape as when united, as hereinafter described, to constitute a cover for the bottom of the box. Either one of the pieces 9 or 10 is also provided with a continuation constituting an overlap 13 for the purposes of union, as hereinafter described, with the other part 9 or 10. This overlap must project from the same continuation or extension of the same vertical side piece as does the overlapping projection 6, hereinbefore described, so that both overlaps 6 and 13 may be on the same side of the blank, for the reason hereinafter noted.

The blank described is cut out and on its fold-lines scored in any of the well-known ways and out of paper, cardboard, or other desired material. It is assembled for use in the following manner, viz: The inner bottom 7 is bent up on the fold-line 8 until it lies flat against the side 2. The entire blank is then folded over once upon the fold-line 16, being in the position illustrated by Fig. 3, except that in the latter the overlaps are represented as having been finally bent over into final position. The blank having been brought into position last described it will be obvious that both overlaps can be pasted simultaneously by a single movement and immediately turned over and pressed down into final position, so as to be firmly glued to the side piece and bottom piece, respectively, opposite to those from which they project, and that this operation of thus gluing, folding over, and pressing can, owing to the contiguity and similarity of position in the overlaps, be accomplished with great ease and quickness and in substantially one and the same movement and operation. The folding over and pasting of the overlaps into final position being thus accomplished, the box lying flat and collapsed is ready for shipment and storage purposes. When it is desired to use the box, it is readily opened by separating in any con-

venient manner the side 1 from the side 3 and simultaneously pushing down against the outer bottom the inner bottom 7. When the latter is finally forced into its ultimate position against the bottom, it serves effectively to distend the box and cause it to retain its set-up position. The box may be readily collapsed again, if desired, and restored to its flat shape by reversing the operation just described.

Boxes thus constructed possess the advantage of supporting each member of their double bottoms by direct continuous dependence from the upright or vertical sides without intervention of glue or other attachments between such sides and the parts constituting the bottom, the latter being, as will be observed, prolongations or continuations of the sides. The strength and homogeneity of the box are thus greatly enhanced at points where it is most desirable to preserve them as compared with those boxes in which the double bottoms or single bottoms or parts of them are secured to the upright sides by the assistance of overlaps and glue or other extraneous attachments. Besides, as will be apparent, the exterior appearance of the box and its capacity for tightly fitting against adjoining boxes are greatly increased by the absence of any pasted overlap on its exterior surface uniting the bottom or a member of the bottom to an upright side of the box. It is true that in my improved box the outer bottom contains a glued seam caused by uniting the overlap 13 on the member 10 to the member 9 in position indicated by the dotted line at 15; but the pull caused by the weight of the contents of the box upon a seam thus situated in parallelism with the plane of the bottom of the box is much less and can be more readily resisted than in the case of a seam lying in parallelism with one of the upright sides. Thus my method of construction makes a much stronger as well as handsome box of the particular class to which my invention relates. Moreover, the construction of the bottom out of two pieces, as stated, renders it possible to economize material in cutting out a number of these blanks, since the blanks can thus be cut more closely together.

The class of boxes to which my invention relates is frequently used for the carriage of candies, and in such case a number of them are usually packed together in a circular receptacle, the triangular shape of the box lending itself readily to this arrangement. The inner angles of the triangular structures or wedges presented by such a box being united at the common center, it is of importance when the boxes are thus packed together that no external seams shall be present on the upright sides, whereby the parallelism of the abutting upright sides of different boxes may be impaired or destroyed. My improvement lends itself with special utility to this arrangement, as there is no overlap or seam at any part of the upright sides of my box.

I am aware that folding paper boxes have previously been made having three or more vertical substantially-upright sides, so as to constitute, comparatively speaking, triangular-shaped boxes. I am also aware that in certain instances of boxes of this character the said substantially-upright sides have been prolonged, so as to form projections which are folded underneath them to constitute the bottom and which projections are secured by tongues or flaps in the one member engaging in slots or other equivalents in another member, and I therefore do not wish to be understood as claiming either a triangular-shaped box or the projection of the substantially-upright sides of such box so as to form a bottom, it being my intention to limit my patent to a special shape and arrangement of parts, which I have indicated in the foregoing specification, one of the distinctive features of which is the solid or continuous double bottom as distinguished from a bottom one or more members of which are perforated by slots or the like for the purpose of setting up into operative position and another special feature of which is the arrangement and shaping of the parts so that my said special and novel bottom, together with the remainder of the box, may be pasted as required for use in one operation and while lying flat in the knocked-down form of the box.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is the following, viz:

1. An open-topped folding or knockdown paper box or vessel made of a single blank and consisting of combined upright portions or sides and two solid or continuous horizontal bottoms, two of its said upright sides being in planes diverging from each other, from their vertical line of union, at less than a right angle, a prolongation or extension from one of the said upright sides constituting an overlap fastened to the other of said upright sides near their said line of union to constitute a vertical seam there uniting them, said two last-mentioned upright sides having each a triangular projection or extension, one of which extensions is itself provided with a further extension or overlap to be fastened to the other of said last-mentioned extensions along the line of their contact with each other to constitute a horizontal seam uniting them and thus providing an outer bottom for said box, the said outer bottom being provided with a central continuous fold-line, lying in the same plane as the line of union between said two upright sides last mentioned, the remaining upright portion of said vessel being also prolonged into a triangular extension constituting an inner bottom and said last-mentioned prolongation as well as said remaining upright portion being also provided with a central and continuous fold-line lying in the same plane as the said fold-line of the outside bottom, whereby, the said overlap to unite said first-mentioned upright sides and

the overlap to unite said outer bottom, may be brought simultaneously to lie flat in substantially the same plane for pasting, and the seams of the vessel simultaneously pasted while the latter continues in the same collapsed position, substantially as and for the purposes described.

2. An open-topped folding paper box made out of a single blank and consisting of upright portions or sides 1, 2, 3 having respective prolongations 9, 7, 10, said side 3 having a lap-piece 6, and said projection 10 a lap-piece 13, the said parts being separated from each other by creased lines 4, 5, 11, 8, 12, and the middle upright portion 2 and its projection 7, having a continuous creased central line 16, substantially as and for the purposes described.

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

WALTER M. WELLMAN.

Witnesses:

WM. H. CHAPMAN,

GEORGE E. HALL.