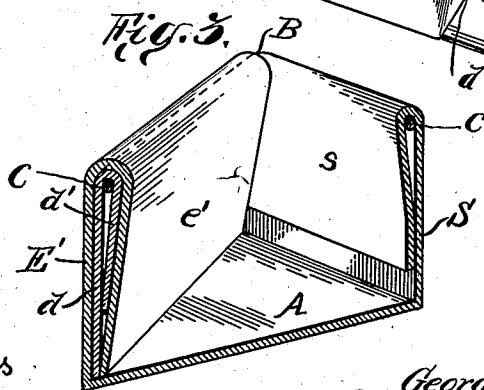
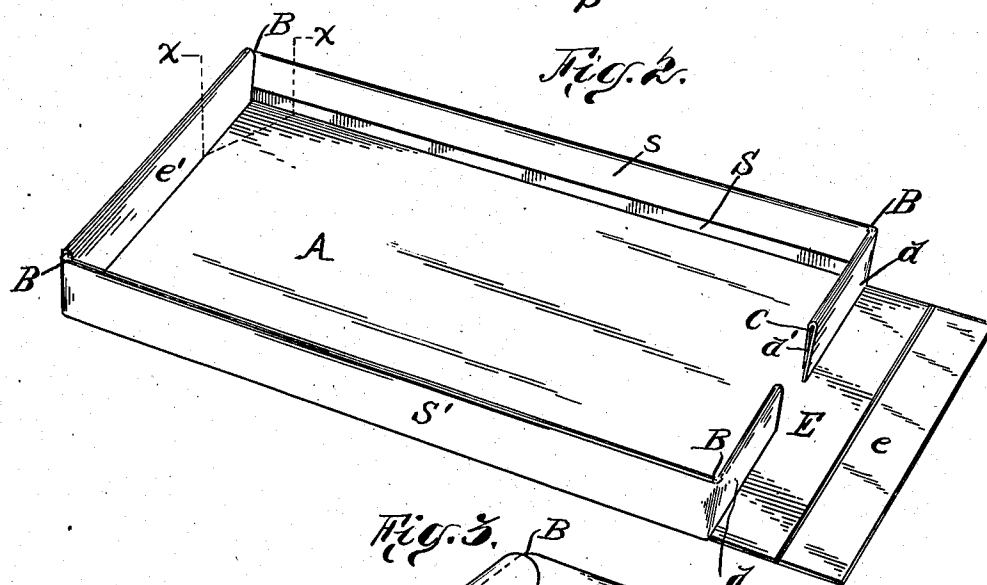
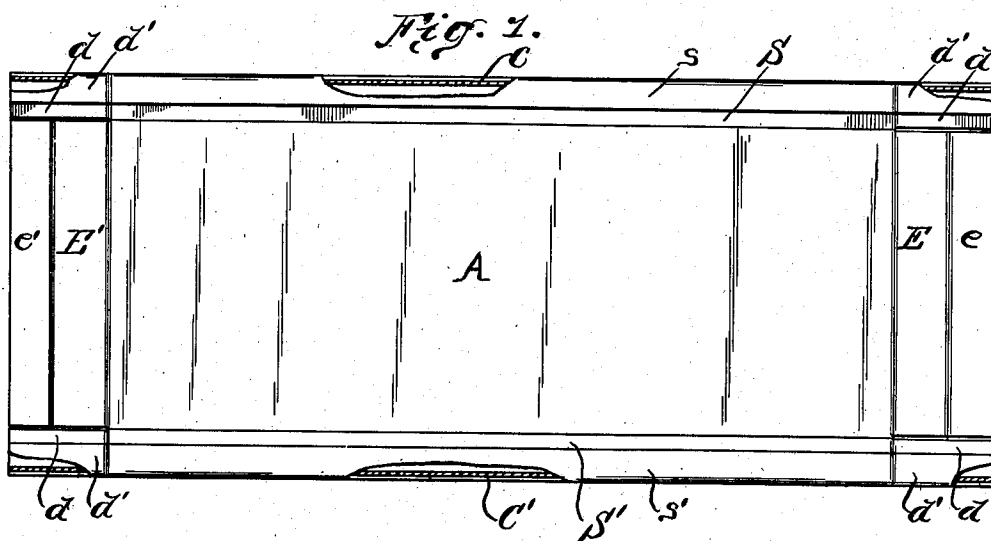


G. R. WYMAN.
PAPER BOX.
APPLICATION FILED MAR. 18, 1908.

900,904.

Patented Oct. 13, 1908.



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UNITED STATES PATENT OFFICE.

GEORGE R. WYMAN, OF EAST WALPOLE, MASSACHUSETTS, ASSIGNOR TO CHARLES S. BIRD, DOING BUSINESS UNDER THE NAME AND STYLE OF F. W. BIRD & SON, OF EAST WALPOLE, MASSACHUSETTS.

PAPER BOX.

No. 900,904.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed March 18, 1908. Serial No. 421,817.

To all whom it may concern:

Be it known that I, GEORGE R. WYMAN, a citizen of the United States, and a resident of East Walpole, in the county of Norfolk, State of Massachusetts, have invented certain new and useful Improvements in Paper Boxes, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a blank of cardboard cut and scored for my said improved box, and showing the reinforcing strips cut away to illustrate the reinforcing cords along the edges. Fig. 2 is a plan view showing parts of the said blank folded and secured in final position with the other parts at one end still open to better illustrate the construction. Fig. 3 is a detail, on an enlarged scale, showing in perspective an inside corner of one of my said boxes, and in section taken on the line $x-x$ of Fig. 2.

My invention is as applicable to the lid, or top of the box, as to its body or box proper.

Heretofore in constructing folding paper boxes of thin, or comparatively cheap stock, it has proved difficult to impart to the corners of the rim the requisite strength and rigidity to withstand the strains incident to ordinary usage. In boxes of this type, it is necessary that they should be shipped flat to the user or consumer, inasmuch as there is a great saving in cost of shipment where such boxes are not "set up" until they reach the factory where they are to be used. In this class of boxes, pressure upon the ends and sides of the box or lid is concentrated upon the corners, tending to distort or break the material.

To strengthen the box or lid at the corners, numerous means have been devised, all of them of an extraneous, and most of them of an externally applied character. In U. S. Letters Patent No. 873,335, dated Dec. 10, 1907, I disclosed a form of folding paper box of rectangular shape, constructed of a single piece of board, whereby its corners were greatly fortified in an economical and efficient manner by means integral with the remainder of the box, which means were so combined and disposed as to present the conventionally appearing outside surface of the ordinary set up box or lid. It has been the experience with my improved box or lid, as shown and described in my said Patent No. 873,335, that the tendency to tear or break

the material at the corners is not completely obviated by the form shown in my said Letters Patent.

The object of my present invention is, among other things, to combine with the form of box shown in my earlier patent, a reinforcing cord or string, inserted along the inner crease of the edge or rim of the box or lid, while the same, after having been cut and scored by the box-making machine from the roll of paper material, is having the double reinforcing strip along the side pasted, glued, or otherwise secured to such side, as is shown in Fig. 1. I attain this object in the following manner.

Figures 1 and 2 show an integral blank of heavy paper, card, straw or other paper board or the like, cut and scored in the usual way for bending and folding in finally operative position, the triple lines showing the scored portions, and the heavy double lines the cuts. Such piece of board comprises a bottom piece A with side members S, S', provided with folded over reinforcing strips s, s' , end pieces E, E', having extension flaps e, e' , respectively adapted to fold over the extension pieces of the sides and on the inside of the box or lid, and there to be glued or otherwise secured in final position.

As shown more particularly in Fig. 1, the side members S, S', have at their ends turned-in extensions d, d, d, d , integral therewith and each of said turned-in extensions having integral therewith reinforcing strips d', d', d', d' , which are integral with the reinforcing strips s, s' . Such turned-in extensions are scored so as to be adapted to be bent inwardly at right angles to their respective sides, as shown more particularly in Fig. 2. The blank having been thus scored and folded, a reinforcing cord C, is inserted along the inner creases formed by the side S with its extension flaps d, d , and the reinforcing strip integral therewith s, d' , and in like manner the cord C' is inserted along the inner crease on the opposite side as shown in Fig. 1, and then such reinforcing strips s, s', d', d' , are securely glued or otherwise secured to their respective contiguous side members; then the side members S, S', are bent up at right angles with the bottom A, and then the extension pieces d , with their extension flaps, are bent in at right angles with the sides, and have their lower surfaces contacting along the bottom of the box or lid. Then the end

pieces E, E', are turned up outside of, against, and securely glued or otherwise affixed to the said turned in extensions *d*. The extension flaps *e*, *e'*, respectively of the ends E, E', are then bent over and down on the inside of the box or lid, and are likewise secured to the said extension flaps *d'*, and also, in some cases, to *d*, by glue or other equivalent means. The box, or lid, as the case may be is thus completed, having secured within itself between the sides and ends along the edge thereof reinforcing cords or strings, which successfully prevent any tear or rupture of the material at the corners B, B, B, B, which experience has revealed are particularly subject to greater strains and tensions than the ordinary card or straw board is able to withstand.

The fold connections, as shown in Fig. 3, sufficiently provide, through the four-fold thickness of material, sufficient strength at the ends, and the double fold of material along the sides successfully withstands any bulging strains outwardly from within the box, and by my reinforcing cord or string along the edges of the sides around the corners and partially within the end rims of my box or lid provide such strength and rigidity as has not been heretofore attained in boxes of this character.

The form of construction shown and described herein can be applied either to a box or to a lid or cover with equal advantage and with equal stiffness and strength. Where a box of considerable depth is desired, the reinforcing strips, in order to save stock, may not necessarily extend on the inside of the box completely to the bottom, but may be made materially narrower than the sides without disadvantage.

What I claim as new and desire to secure by Letters Patent is the following, viz:—

1. A rectangular folding paper box or lid consisting of a single piece of board, cut, scored, folded and secured, to comprise the following members constituting the said box or lid, viz: a bottom piece having bent up sides integral with said bottom at substantially right angles to said bottom, turned in side extensions integral with said sides and having their lower edges contacting along said bottom, said turned in side extensions being at substantially right angles to said sides and also to said bottom, reinforcing strips integral with said sides and said turned in side extensions formed by a single fold of said sides and extensions folded over and secured to said sides and said extensions, two flexible cords each extending along and glued to the inner crease of said folds formed by the said reinforcing strips, adapted to preclude against vertical rupture the edges of the rim and corners of said box or lid, end pieces integral with said bottom and at substantially right angles thereto and having

extension flaps adapted to fold over and be secured to the said turned in extensions on the inner side of the box or lid, whereby the said sides and ends including their constituent members are so combined as to preclude movement relatively to each other and likewise to contain within the inner crease of the rim and each of the corners of the box or lid flexible reinforcing cords extending continuously along said rim, around the corners, and into the end folds of the box or lid.

2. A rectangular folding paper box or lid consisting of a single piece of board, cut, scored, folded and secured, to comprise the following members constituting said box or lid, viz: a bottom piece A, bent up sides S, S', integral with said bottom and at substantially right angles thereto, and having inwardly bent reinforcing strips *s*, *s'*, integral therewith and secured to said sides by adhesive, turned in side extensions *d*, *d*, *d*, *d*, integral with said sides and rectangularly disposed thereto and having the lower edges thereof contacting with said bottom and at substantially right angles thereto, turned in reinforcing strips *d'*, *d'*, *d'*, *d'*, integral with said reinforcing strips *s*, *s'*, and integral with and secured by adhesive to said side extensions *d*, *d*, *d*, *d*, two flexible cords C, C', each extending along and glued to the inner crease of said folds formed by the said reinforcing strips *s*, *s'*, *d'*, adapted to preclude against vertical rupture the edges of the rim and corners of said box or lid; also end pieces E, E', integral with and rectangularly disposed to said bottom A and secured by adhesive to said turned in side extensions *d*, *d*, *d*, *d*, and having inwardly and downwardly turned extension flaps *e*, *e'*, likewise secured by adhesive to said inwardly bent reinforcing strips *d'*, *d'*, *d'*, *d'*, whereby the rim of said box or lid along its sides and at its corners is composed of a fold of single board bent into contact with and secured to itself and having secured in the inner crease of said fold a flexible cord, and, at its ends, of two folds of single board, to wit, an inner fold thereof bent into contact with and secured to itself, and an inner fold bent over on the inner side of said box or lid into contact with and secured to said inner fold having said flexible cord secured in the inner crease of said inner fold, whereby the said sides and ends, including their constituent members, are so combined by reason of their aforesaid folds and connections as to preclude movement relatively to each other and likewise to contain within the inner crease of the rim and at each of the corners of the box or lid flexible reinforcing cords extending continuously along said rim, around the corners, and into the end folds of the box or lid.

3. A rectangular folding paper box or lid consisting of a single piece of board, cut, scored, folded and secured, to comprise the

following members constituting said box or
 lid, viz: a bottom piece A, bent up sides S, S',
 integral with said bottom and at substan-
 tially right angles thereto, and having in-
 5 wardly bent reinforcing strips s, s' , integral
 therewith and secured to said sides, turned
 in side extensions d, d, d, d , integral with said
 sides and rectangularly disposed thereto and
 having the lower edges thereof contacting
 10 with said bottom and at substantially right
 angles thereto, turned in reinforcing strips $d',$
 d', d', d' , integral with said reinforcing strips
 s, s' , and integral with and secured to said
 side extensions d, d, d, d , two flexible cords
 15 C, C', each extending along and glued to the
 inner crease of said folds formed by the said
 reinforcing strips s, s', d' , adapted to preclude
 against vertical rupture the edges of the rim
 and corners of said box or lid; also end pieces
 20 E, E', integral with and rectangularly dis-
 posed to said bottom A and secured to said
 turned in side extensions d, d, d, d , and hav-
 ing inwardly and downwardly turned exten-
 sion flaps e, e' , likewise secured to said in-
 25 wardly bent reinforcing strips d', d', d', d' ,

whereby the rim of said box or lid along its
 sides and at its corners is composed of a fold
 of single board bent into contact with and se-
 cured to itself and having secured in the in-
 ner crease of said folds a flexible cord, and, at 30
 its ends, of two folds of single board, towit,
 an inner fold thereof bent into contact with
 and secured to itself, and an inner fold bent
 over on the inner side of said box or lid into
 contact with and secured to said inner fold 35
 having said flexible cord secured in the inner
 crease of said inner fold, whereby the said
 sides and ends, including their constituent
 members, are so combined by reason of their
 aforesaid folds and connections as to preclude 40
 movement relatively to each other, and like-
 wise to contain within the inner crease of the
 rim and at each of the corners of the box or
 lid flexible reinforcing cords extending con-
 tinuously along said rim, around the corners, 45
 and into the end folds of the box or lid.

GEORGE R. WYMAN.

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