No. 873,335. PATENTED DEC. 10, 1907.

G. R. WYMAN.

PAPER BOX.

APPLICATION FILED DEC. 13, 1905.

Fig. 1.

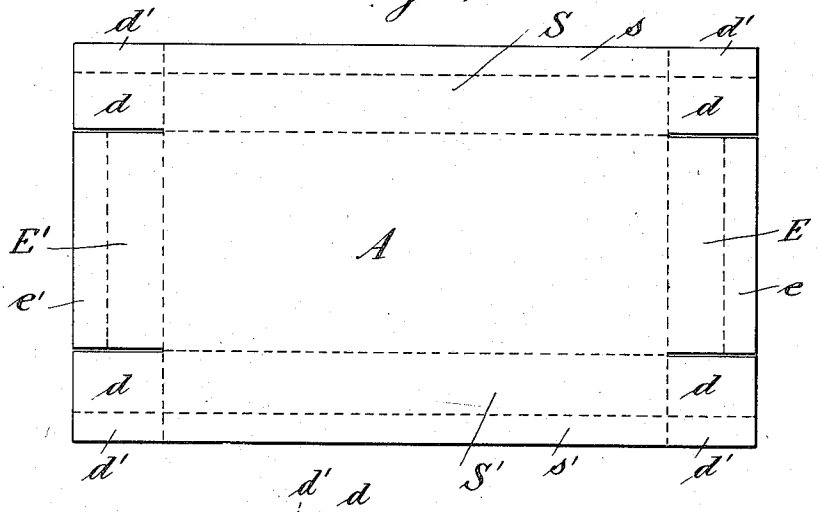


Fig. 2.

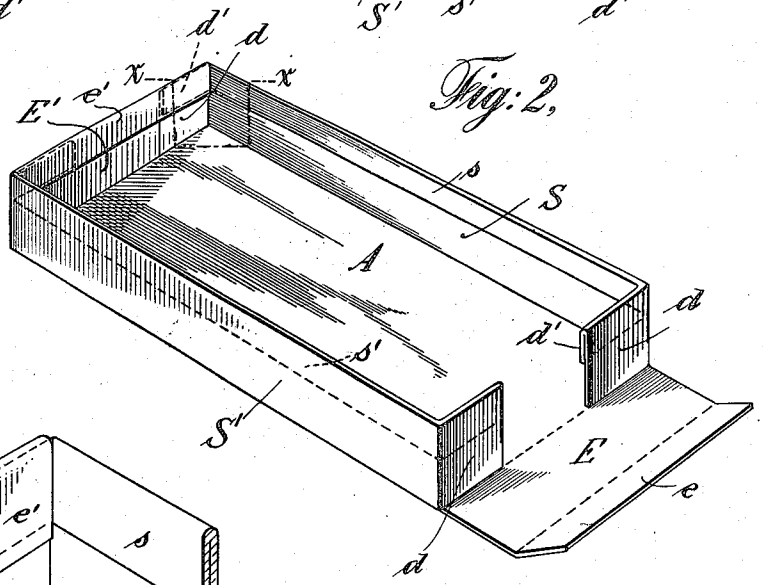
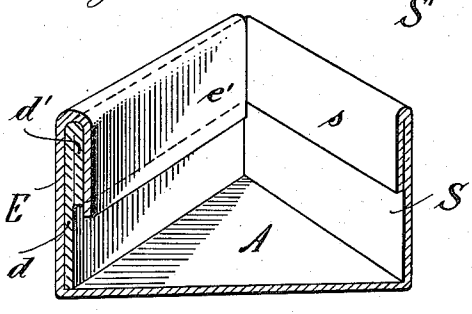


Fig. 3.



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PAPER BOX.

No. 873,335. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed December 13, 1905. Serial No. 291,509.

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 and 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. Fig. 2 is a plan view showing parts of said blank folded and secured in final position and other parts still open to better illustrate the construction. Fig. 3 is a detail on an enlarged scale, showing in perspective the inside of a corner of one of my said boxes, and in section taken on the lines *x*—*x* of Fig. 2, portions of the sides, ends and bottom.

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

Heretofore in constructing paper boxes of thin or comparatively cheap stock, it has proved difficult to impart to the corners of the rim such strength and rigidity as is requisite to successfully withstand the strains incident to ordinary usage. Pressure upon the ends and particularly the sides of the box, or lid, is transmitted and focused upon the said corners, tending to distort or rupture the material, principally in the particular locality mentioned. To strengthen the box at the corners mentioned numerous means have been devised, all of them of an extraneous, and most of them of an externally applied character.

The object of my present invention is to more efficiently and economically than heretofore fortify the box, or lid, in the respect mentioned, and to accomplish this by means integral with the remainder of the box and so shaped, treated and disposed as to be concealed within the conventionally appearing outer surfaces of the box. I attain this object as follows, viz: Figs. 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 into final position, the dotted lines representing the scored lines and the solid lines the cuts. The said blank thus comprises a bottom portion A, side members S, S′, having reinforcing strips *s*, *s*′, and end pieces E, E′, having flaps *e*, *e*′. It will be observed that each side has, integral therewith and connected by a line of creased stock, at each end thereof an extension *d*, which side extension has also integral therewith, and connected by a line of creased stock a reinforcing strip *d*′, which latter is also integral with the reinforcing strips *s*, *s*′ and likewise connected with the latter by a line of creased material.

The blank having been constructed as aforesaid is bent up and made into a box as follows. The reinforcing strips *s*, *s*′, together with their integral reinforcing projections *d*′ are bent upwardly and inwardly on the creased line between them and the sides S, S′, and side extensions *d*, *d*, until said reinforcing strips are brought down flatly into contact with the said sides and their extensions as shown for instance in Fig. 2. In this position the said reinforcing strips are preferably permanently secured to the said sides and extensions by paste or other adhesive, thus imparting to the rim of said sides and of their said extensions a double thickness of material, each of said thicknesses being so secured to place with relation to each other as to substantially prohibit any lateral movement between the parts.

The side extensions *d*, together with their reinforcing strips *d*′ permanently secured thereto as aforesaid, are next bent inwardly until disposed rectangularly to the sides, as shown for instance in Figs. 2 and 3. Then the ends E, E′, are turned up outside of and against, and secured by adhesive or otherwise to, the said turned in side extensions *d*. The flaps *e*, *e*′, are then bent inwardly and downwardly over the said extensions, and likewise secured to their said reinforcing strips *d*′, and in some cases also to *d* by adhesive or other equivalent means. The box, or cover, as the case may be, is thus completed.

It will be observed that at the rim and for a substantial distance downwardly therefrom at the corners of the box, there is thus provided a double thickness of material, each member of which is prohibited, at all points, from moving relatively to the other, the said result being accomplished in part by the integral character or unity of the said side extensions with their respective reinforcing strips, and also additionally by the adhesive by which the two contacting surfaces of these two members are united.

The fold connection between the parts *d* and *d*′ adds greatly to the strength, efficiency and unity of their combination provided the

two parts referred to are thoroughly united by adhesive or other means so as to preclude all movement relatively to each other, and this particularly along the creased lines of material uniting them with their respective sides, and which constitute the external angle or lines of the corners of the box. It is possible, however, to dispense, though with somewhat inferior results, with the use of adhesive to secure to each other the mutually contacting surfaces of the parts *d* and *d'*, reliance for stiffness and strength being had alone upon the integral character of the two elements mentioned together with their additional fortification by pasting thereto respectively of the said ends and flaps.

As aforesaid, the form of construction described is applicable, with equal advantage, to either a box proper or to a lid or cover. In the case of a lid of moderate depth, I prefer to make the said reinforcing strips of the same width as their respective sides or side extensions, as this imparts a better finish and appearance to the interior of the cover, but the same relation between the parts is not requisite in all boxes, and in that case, as shown in the drawings, the reinforcing strips may, to save stock, 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, viz: a bottom portion A, bent-up sides S, S', having inwardly-bent reinforcing strips, *s*, *s'*, integral therewith and secured thereto 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, 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*; also end-pieces E, E', integral with and rectangularly disposed to said bottom portion A, and secured by adhesive to said turned-in extensions *d*, *d*, *d*, *d*, and having inwardly and downwardly turned 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 a single board bent into contact with, and secured to, itself, and, at its ends, of two folds of single board, towit, an inner fold thereof bent into contact with, and secured to, itself and an outer fold bent over into contact with, and secured to, said inner fold, whereby the said sides and ends including their said constituent members are by reason of their aforesaid folds and connections, precluded from movement relatively to each other.

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, viz: a bottom portion A, bent-up sides S, S', having inwardly bent reinforcing strips *s*, *s'*, integral therewith and secured thereto, 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, 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*; also end pieces E, E', integral with and rectangularly disposed to said bottom portion A, and secured to said turned-in extensions *d*, *d*, *d*, *d*, and having inwardly and downwardly turned flaps *e*, *e'*, likewise secured 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 a single board bent into contact with, and secured to, itself and, at its ends, of two folds of said single board, towit, an inner fold thereof bent into contact with, and secured to, itself, and an outer fold bent over into contact with, and secured to, said inner fold, whereby the said sides and ends including their said constituent members are by reason of their aforesaid folds and connections, precluded from movement relatively to each other.

GEORGE R. WYMAN.

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