C. S. BIRD.

PAPER BOX.

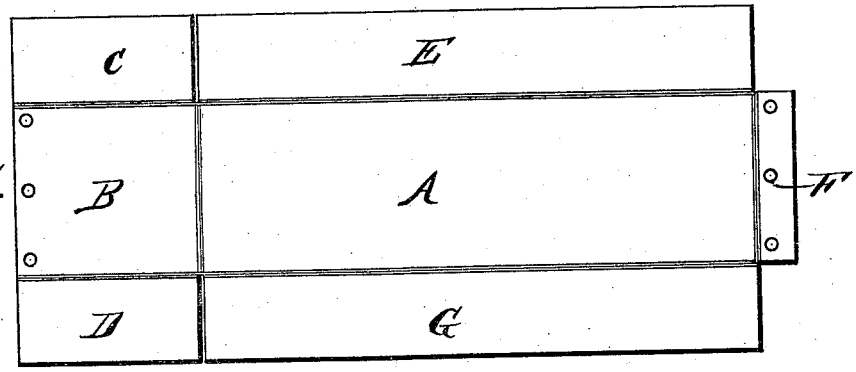
APPLICATION FILED JUNE 4, 1909.

940,782.

Patented Nov. 23, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



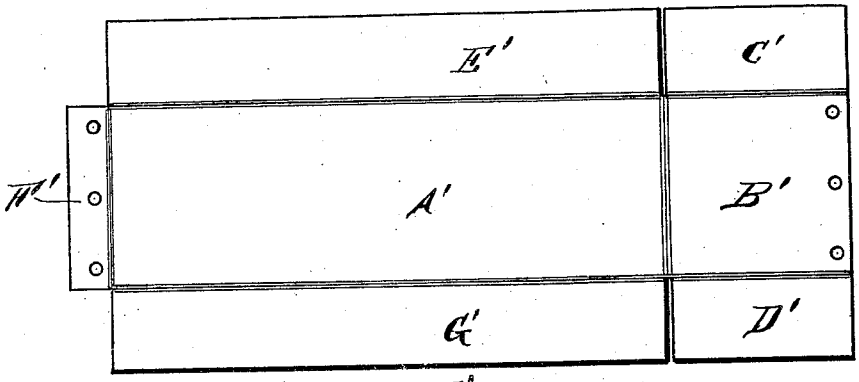
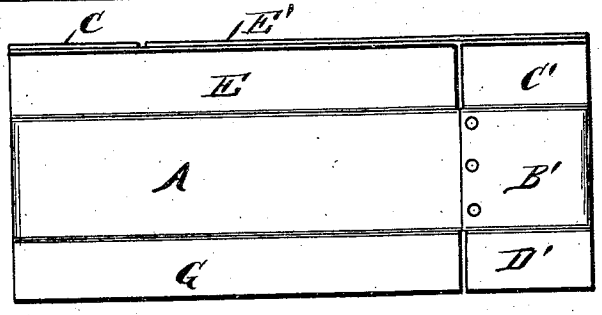


Fig. 2.

Fig. 3



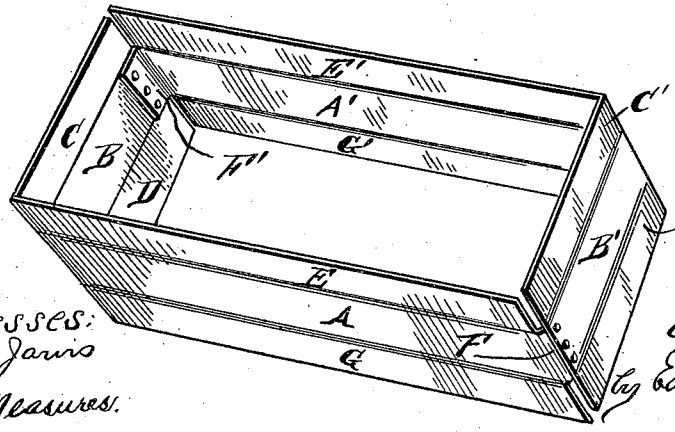


Fig. 4.

Witnesses:
C. A. Jarvis
G. G. Measures.

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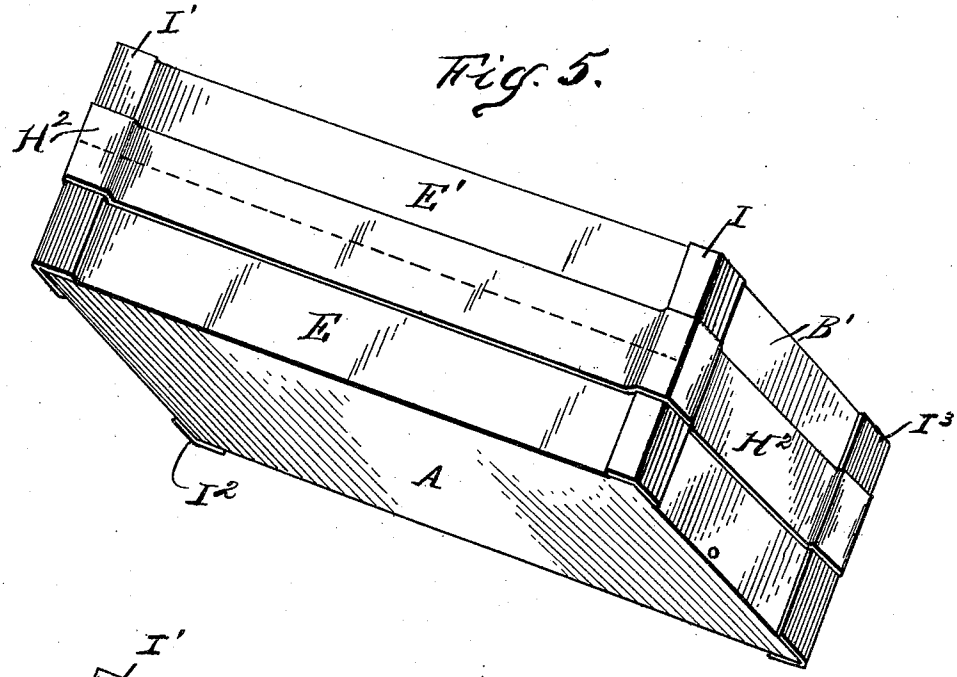
2 SHEETS—SHEET 2.

Fig. 5.



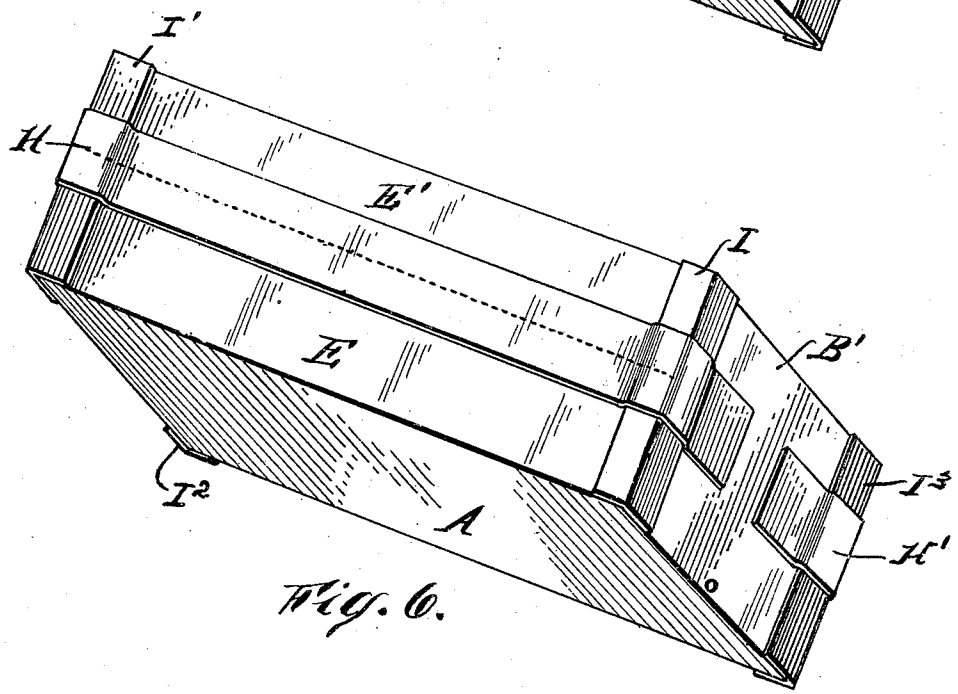


Fig. 6.

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES S. BIRD, OF EAST WALPOLE, MASSACHUSETTS.

PAPER BOX.

940,782. Specification of Letters Patent. Patented Nov. 23, 1909.

Original application filed May 13, 1909, Serial No. 495,668. Divided and this application filed June 4, 1909. Serial No. 500,116.

To all whom it may concern:

Be it known that I, CHARLES S. BIRD, 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 and Fig. 2 are plan views of pieces of straw-board, card-board, or the like, out of which my improved box is constructed; Fig. 3 is a plan view, slightly on the perspective, showing the two parts illustrated in Figs. 1 and 2, united together and in a flat or "knock-down" position; Fig. 4 is a perspective view of the parts shown in Fig. 3, set up in rectangular form; Figs. 5 and 6 are perspective views of the box with the parts assembled in final position for use and having the longitudinal binding strip or strips affixed thereto, Fig. 5 showing the box with the four transverse strips along the corner edges of the box, together with a single longitudinal strip encircling the box, while Fig. 6 shows the four transverse strips, together with two longitudinal strips.

Similar letters refer to similar parts throughout the several views.

The present application is a division of my application filed May 13th 1909, Serial Number 495,668, this application embracing certain modifications and alternative forms of construction of the inventions shown and claimed in my prior application.

In the construction of folding paper boxes of substantially rectangular form, it has been my experience that the parts assembled together which go to make up the box should preferably have a certain strutting action, that is to say the parts should mutually combine each with the other in order to afford the requisite strength and rigidity to the box, where such boxes are composed, as in my improved box herein described, of material that is easily cracked or broken. It is also necessary and essential that the various parts should be so combined as to be capable of being packed and shipped in a flat or "knock down" condition so as to economize freight charges, and, at the same time, be capable of being set up in final position in a simple and efficient manner when such boxes are to be used by the consumer. It is also of commercial advantage, when large numbers of boxes are to be made and sold, to economize, as far as possible, in the use of the constituent material, to the end that the various parts comprising the box shall be compactly contiguous to one another, so that when the box is cut and scored from a rectangular sheet of straw-board, or cardboard, the waste therefrom is reduced to a minimum.

The object of my invention, therefore, among other things, is to accomplish these desired advantages in the construction of folding paper boxes, and to this end I take two pieces of rectangular strawboard, or cardboard, such as are shown in Figs. 1 and 2, and cut and score same, as illustrated in the figures, the heavy double lines being the cuts, and the light triple lines being the scored parts. I may also combine the two pieces of rectangular strawboard or cardboard, such as are shown in Figs. 1 and 2, into a single elongated piece, which shall constitute in itself the rectangular form of box shown in Fig. 4.

Referring to Figs. 1 and 2, A and A′ constitute the side pieces of my box, provided on either side with extension flaps E, G, E′, G′, respectively, which extension flaps are integral with their respective sides. At one end of A and A′ respectively are the end pieces B, B′, integral with A and A′ respectively, and having integral with themselves the extension flaps C and D, and C′ and D′ respectively. At the opposite end of A and A′ are the binding flaps F, F′, respectively, which, when the box is assembled in position, are bent inwardly and are fastened or secured by eyelets, rivets, or by any other means, such as adhesive, the flap F being, when the box is assembled in position, affixed to the end of the end piece B′, while the flap F′ is affixed to the end of the end piece B, as is clearly illustrated in Fig. 4.

It will be observed that the flaps C, D, E, G, C′, D′, E′, G′, are each of substantially the same length as their contiguous end or side pieces respectively, A, B, A′, B′, and the combined width of the flaps E, G, and E′, G′, is substantially the same as the width of the sides A and A′ respectively.

Having now described the various parts of my improved box, they are now assembled by having the flap F bent substantially at right angles and inwardly and affixed or

otherwise secured to the inner surface of the end piece B′, while the flap F′ is bent substantially at right angles and inwardly and affixed or otherwise secured to the inner surface of the end piece B, as is shown in Fig. 4, where the parts are more clearly shown than in Fig. 3, Fig. 3 representing my improved box when the same is in a flat or "knock down" condition ready for shipment.

In assembling the various parts of my box in final position, the extension flaps C, C′, D, D′, are bent inwardly and at substantially right angles with the end pieces B, B′, whereby they furnish a strutting support to the sides A, A′. Then the extension flaps of the sides E, E′, G, G′, are bent inwardly at substantially right angles with the sides A, A′, and inasmuch as their combined width is that of the length of the end pieces B, B′, their exterior edges will close against each other, so as to form a further strengthening, strutting support for the sides.

In case such extension flaps should not meet and close against each other, or should overlap, the strutting action would be largely, if not wholly, lost, but such construction would still be within the scope of my invention. However it is obvious that increased strength and rigidity are attained by employing the strutting action hereinbefore described. I then take strips of strong paper or cloth I, I′, I^2, I^3, shown in Figs. 5 and 6, and paste or otherwise secure same to the corner edges of the box, thereby holding together the extension flaps E, E′, and G, G′, which form the top and bottom of my box.

When it is desired to form a box such as is shown in Fig. 5, I paste or otherwise secure a single strip of strong paper or cloth, shown in Fig. 5 by H^2, which shall encircle the entire box longitudinally, thus closing and holding securely in position the extension flaps E, E′, and G, G′.

An alternative form of construction is such as is shown in Fig. 6, where I use two longitudinal binding strips H, H′, in combination with the transverse binding strips, which alone were the subject matter of my invention, now claimed in my pending application, Serial No. 434,872, filed May 25th 1908. These transverse strips, together with the longitudinal strip or strips, afford a convenient and secure method of holding the extension flaps of the sides in position, and, at the same time, when it is desired to open the box, they can be readily cut or torn away.

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

1. A rectangular folding paper box, comprising end and side pieces having extension flaps having their combined width substantially the same as the width of said side and end pieces, turned in extension flaps integral with the sides and bent in and secured to the adjacent end pieces, transverse binding strips secured to the corner edges of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides in position so as to form the top and bottom of the box, substantially as described.

2. In a rectangular folding paper box, the combination of two rectangular side pieces and two rectangular end pieces, one end piece and one side piece being integral with each other and the four being secured to each other, extension flaps adapted to fold inwardly at substantially right angles with said sides and said end pieces, transverse binding strips secured to the corner edges of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides in position so as to form the top and bottom of the box, substantially as described.

3. In a rectangular folding paper box, the combination of two rectangular side pieces and rectangular end pieces, all of said pieces being integral and secured to each other, extension flaps adapted to fold inwardly at substantially right angles with said sides and said end pieces, transverse binding strips secured to the corner edges of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides in position so as to form the top and bottom of the box, substantially as described.

4. A rectangular folding paper box, comprising end and side pieces having extension flaps having their combined width substantially the same as the width of said side and end pieces, turned in extension flaps integral with the sides and bent in and secured to their adjacent end pieces, four transverse binding strips secured along the four transverse edges of the top and bottom of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides in position so as to form the top and bottom of the box, substantially as described.

5. In a rectangular folding paper box, the combination of two rectangular side pieces and two rectangular end pieces, one end piece and one side piece being integral with each other and the four being secured to each other, extension flaps adapted to fold inwardly at substantially right angles with said sides and said end pieces, four transverse binding strips secured along the four transverse edges of the top and bottom of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides in position so as to form the top

and bottom of the box, substantially as described.

6. In a rectangular folding paper box, the combination of two rectangular side pieces and two rectangular end pieces, all of said pieces being integral and secured to each other, extension flaps adapted to fold inwardly at substantially right angles with said sides and said end pieces, four transverse binding strips secured along the four transverse edges of the top and bottom of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides in position so as to form the top and bottom of the box, substantially as described.

7. In a rectangular folding paper box, the combination of a side piece A and end piece B integral with each other, and a side piece A′ and an end piece B′ likewise integral with each other, the sides A and A′ having integral with themselves respectively the extension flaps E and G and E′ and G′, such extension flaps being substantially one-half the width of the sides A, A′, end flaps F, F′, integral with A and A′, adapted to be bent inwardly at substantially right angles and secured to the ends of the end pieces B′, B, respectively, transverse binding strips I, I′, I^2, I^3, secured to the corner edges of the box and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides E, E′, G, G′, in position so as to form the top and bottom of the box respectively, substantially as described.

8. In a rectangular folding paper box, the combination of the side piece A and end piece B, and the side piece A′ and the end piece B′ all integral with each other and secured to each other, the sides A, A′, having integral with themselves respectively the extension flaps E, G, and E′, G′, such extension flaps being substantially one-half the width of the sides A, A′, transverse binding strips I, I′, I^2, I^3, secured to the corner edges of the box, and binding means extending longitudinally about the box, all of said strips being adapted to hold the extension flaps of the sides E, E′, G, G′, in position so as to form the top and bottom of the box respectively, substantially as described.

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Witnesses:
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ELMER H. BARTLETT.