July 11, 1933. C. L. CLAFF 1,917,496

PAPER BOX AND METHOD OF MAKING THE SAME

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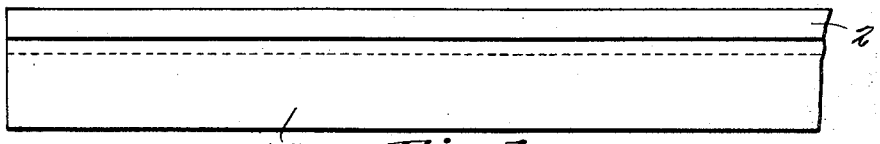


Fig. 1.

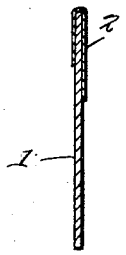


Fig. 2.

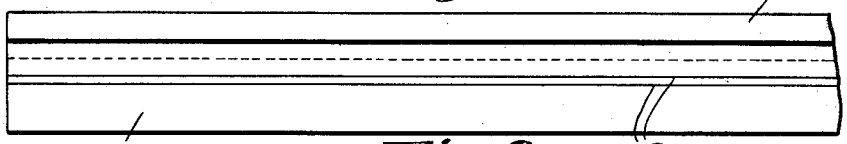


Fig. 3.

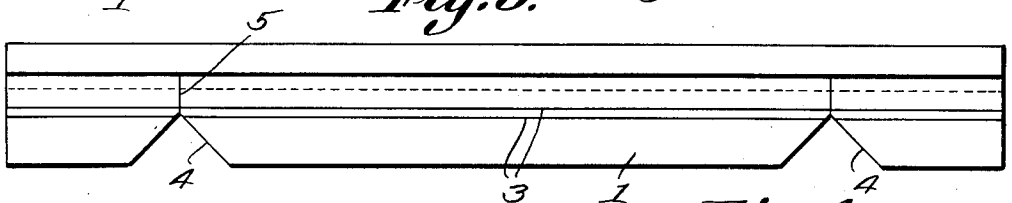


Fig. 4.

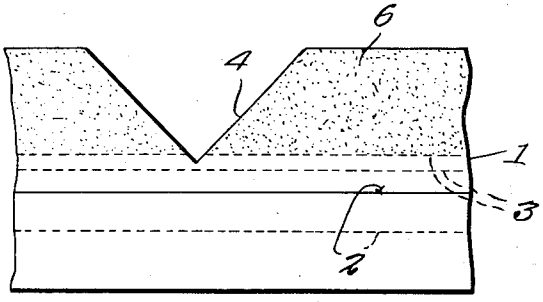


Fig. 5.

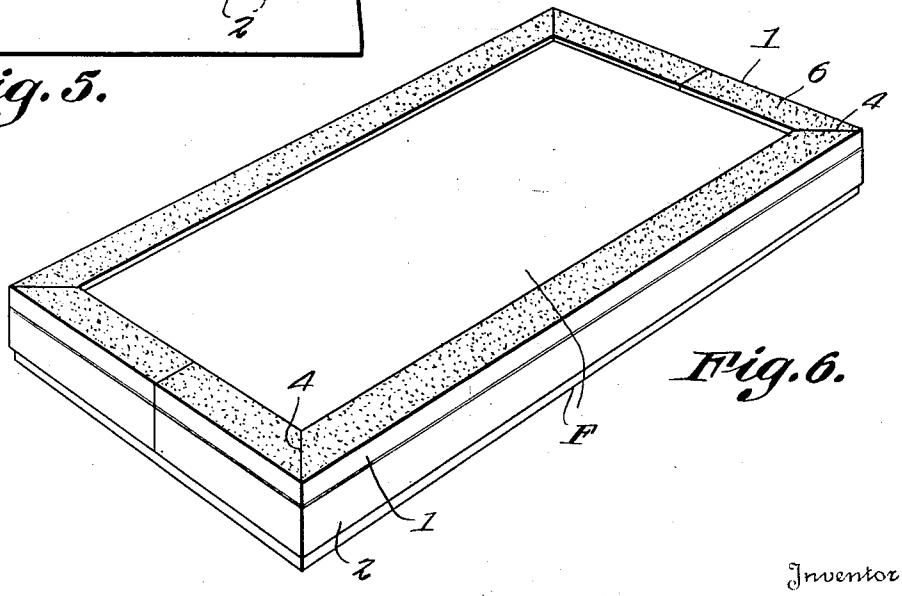


Fig. 6.

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PAPER BOX AND METHOD OF MAKING THE SAME

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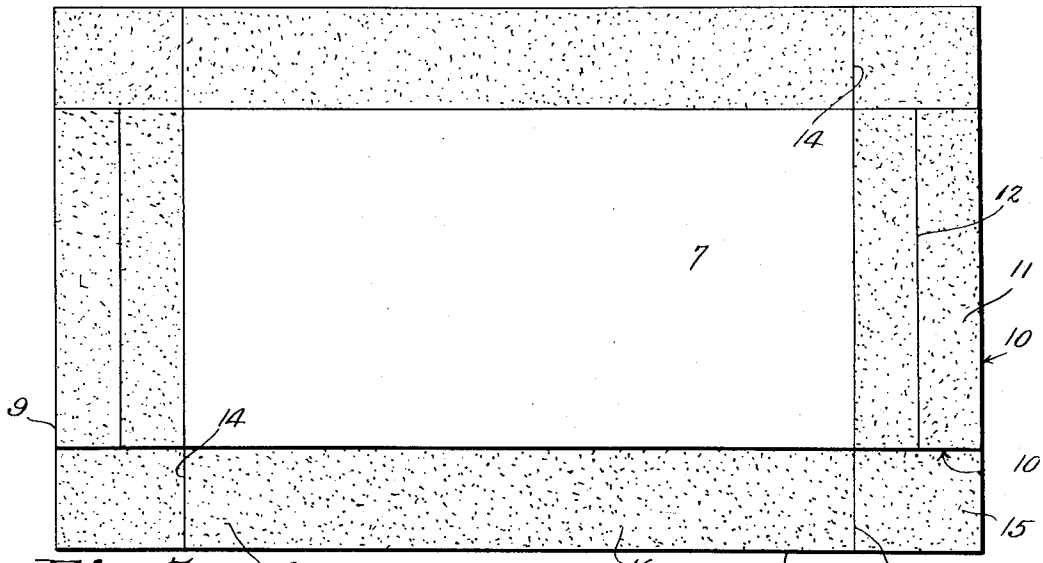


Fig. 7.

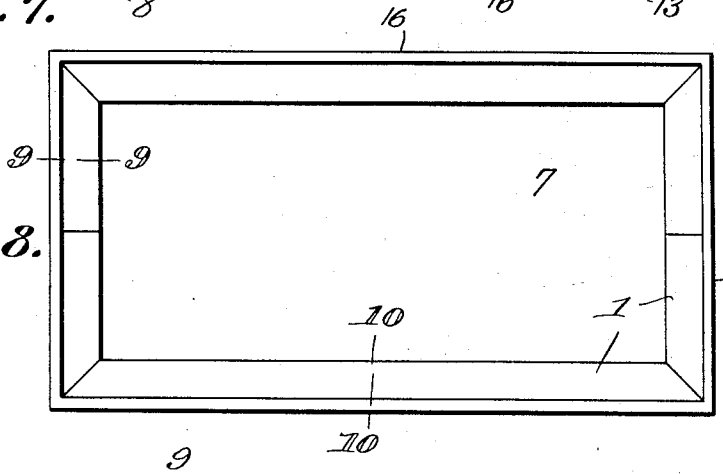


Fig. 8.

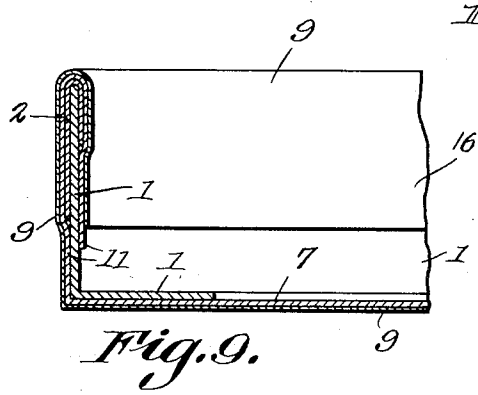


Fig. 9.

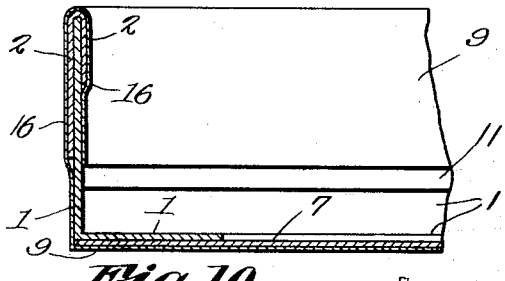


Fig. 10.

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UNITED STATES PATENT OFFICE

CLARENCE LLOYD CLAFF, OF RANDOLPH, MASSACHUSETTS

PAPER BOX AND METHOD OF MAKING THE SAME

Application filed April 18, 1932. Serial No. 606,007.

This invention relates to paper or cardboard boxes and to a method of making the same.

It is an object of the invention to provide a box which is stronger than those ordinarily produced from paper or cardboard blanks.

It is another object to simplify the method of producing the box.

A still further object is to provide a box the material of which can be readily shaped from sections removed from strip material supplied in roll form, so that it becomes possible to produce the device with relatively simple automatic machinery.

With the foregoing and other objects in view which will appear as the invention proceeds, the invention resides in certain novel details of construction and in the steps of the method hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of the parts and in the method disclosed within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:

Figure 1 is a plan view of a portion of a side strip to which has been applied a reinforcing tape.

Figure 2 is an enlarged section taken transversely therethrough.

Figure 3 is a view similar to Figure 1 showing the strips scored.

Figure 4 is a view of the strip after it has been notched and scored preparatory to being bent to form side and end portions of a container.

Figure 5 is an enlarged view of a portion of the strip showing that side thereof opposite to the one illustrated in Figure 4, the adhesive being illustrated thereon.

Figure 6 is a perspective view of the frame of the box made up of two assembled strips such as shown in Figure 4.

Figure 7 is a plan view, the inner surface of the top panel and the projecting portions of its cover sheet.

Figure 8 is a plan view of the completed box showing the inside thereof.

Figure 9 is an enlarged section on line 9—9, Figure 8.

Figure 10 is an enlarged section on line 10—10, Figure 8.

The improvement constituting the present invention can be embodied in a paper or cardboard box or in the lid thereof and it is to be understood that the term "box" herein used is to apply to either the body portion or the cover of a box.

In constructing the device a strip of cardboard or the like of requisite width and strength and which has been indicated at 1, is reinforced by applying to one longitudinal edge a gummed tape or strip 2 which is folded over said edge as shown in Figures 1 and 2. Thereafter the strip is formed with longitudinal scores 3. Angular notches 4 are subsequently cut into that edge of the strip remote from the reinforcing tape 2, these notches extending to the nearest score 3 and transverse scores 5 are provided in the strip and extend from the innermost portions of the notches. These transverse scores 5 are spaced apart a distance equal to the length of the box and are spaced inwardly from the respective ends of the strip 1 a distance equal to one-half the width of the box. It is to be understood, of course, that the strip is to be cut into lengths equal to the length of one side and one end of the box. A film of adhesive indicated at 6 is applied along the strip 1 between the notches 4. The foregoing steps complete the formation of the frame members of the box, two of them being provided. These frame members are duplicates.

The stop of the box consists of a panel 7 of cardboard or the like which is of the same width as the box to be produced. This panel can be formed from a roll of strip material and has applied to one face the adhesive-coated surface 8 of a sheet of paper 9 which is of sufficient size to extend laterally from each side of panel 7 a distance greater than one-half the width of strip 1. The covering 9 and the panel 7 are of a length equal to the length of the box and four times the width of strip 1. A film of adhesive is applied

to the extended end portion 10 of panel 7 as shown at 11.

These extended end portions 10 are scored longitudinally at 12 and the projecting side portions 13 of the covering material are slit transversely at 14 so that the distance between the slits will be equal to the length of the box and the uncoated portion of the panel 7. Thus tabs 15 will be formed by the paper covering beyond the ends of the projecting portions 10 of panel 7.

With the completion of the structure illustrated in Figure 7 the box is readily assembled. Two of the strips 1 which are shaped as shown in Figure 4, are applied to opposite sides of a form F which is of the length and width of the box to be produced. Each strip is then bent along its transverse scores 5 at the adjacent corners of the form F so that the end portions of each strip will extend half across the adjacent ends of the form. Those portions of the strip 1 between the notches 4 are then folded downwardly onto the form so that the gummed surfaces 6 will be uppermost. With the parts thus held by any suitable means the panel 7 is applied to the gummed faces 6 so as to completely cover them. The strips 1 thus joined by panel 7 are removed from the form and the projecting ends 10 of panel 7 are folded downwardly upon the outer surfaces of the ends of the formed frame and then inwardly and upwardly onto the inner surfaces of said ends, the film of adhesive 11 causes the parts to adhere. The projecting side portions 16 of the covering material 9 are then folded downwardly onto the outer surfaces of the side portions of the frame after which the longitudinal edge portions thereof are folded inwardly and upwardly onto the inner surface of the sides. The tabs 15 are folded back onto the adjacent parts of the box during the folding operation. Thus the resultant box will be entirely covered on its outer surfaces with the material 9 and will be greatly reinforced at its corners and along the edges of the top panel so as to withstand rough handling. The resultant box is superior to similar structures heretofore produced because of its strength and rigidity, its simplicity, and the ease with which it can be manufactured.

What is claimed is:

1. A cardboard box including opposed strips of material bent to provide the sides and ends of a box frame, said strips having edge portions extending toward each other, a top panel overlying and affixed to said inwardly extended portions and having projecting ends folded downwardly and inwardly relative to the end portions of the frame to straddle said portions and hold them assembled, said end portions and the folded portions of the panel being joined by an adhesive, and a covering material affixed to the panel and foldable with the ends thereof, said covering material having projecting side portions foldable downwardly and inwardly onto the outer and inner surfaces of the side of the frame and affixed thereto.

2. The method of producing a box which includes the step of folding a reinforcing tape about one longitudinal edge of a length of material, cutting said length to form strips of uniform lengths, notching and scoring the strips to facilitate the transverse and longitudinal bending thereof, placing the strips in opposed positions and folding them about a form to provide the sides and ends of a box frame, portions of the strips being folded inwardly onto the form, applying a sheet of covering material to a length of panel material with portions projecting laterally from the panel material, affixing the length of panel material to inwardly extended portions of the strips thereby to hold the strips assembled when removed from the frame, subsequently folding the ends of the panel material onto and affixing them to the outer and inner surfaces of the respective ends of the frame, and finally folding the projecting portions of the covering material onto and affixing them to the outer and inner surfaces of the sides of the frame.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

CLARENCE LLOYD CLAFF.