Oct. 19, 1926. 1,603,547

L. E. LA BOMBARD ET AL

METHOD OF MAKING PAPER BOXES

Filed Nov. 23, 1925

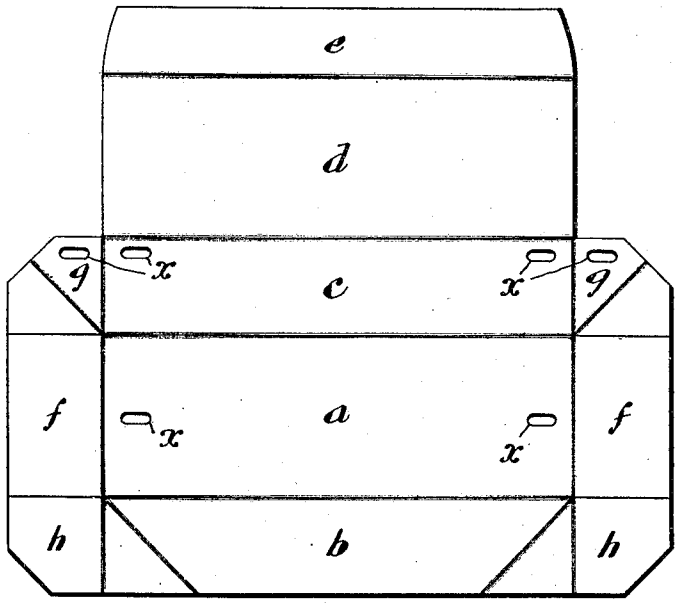


Fig.1.

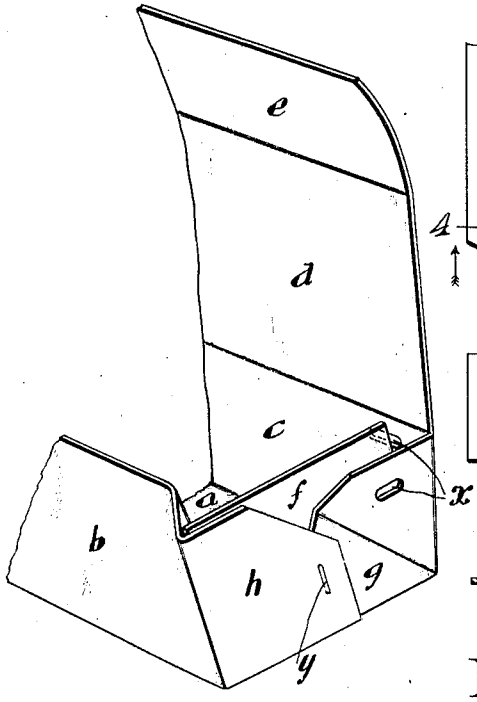


Fig.5.

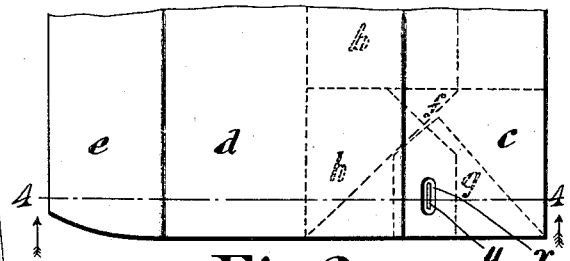


Fig.2.

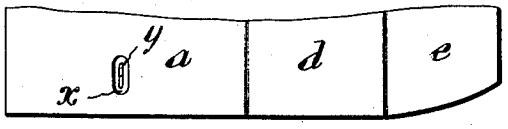


Fig.3.

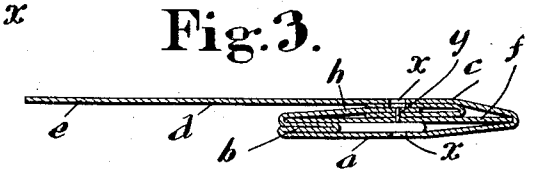


Fig.4.

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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING PAPER BOXES.

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This invention relates to the production of paper boxes which can be shipped or stored in flat folded condition ready to be opened or set up for use as wanted. Most of such boxes heretofore have been made with adhesive as the means for securing overlapping portions or sections together. And it has been customary to so make boxes which are used to contain eggs.

Owing to the fact that the glued parts are liable to separate when subjected to a damp atmosphere, as when boxes of eggs are in refrigerators, it is desirable to employ metallic fastenings such as wire staples instead of glue.

It has been proposed to fold the box blanks to the approximate form which they will have when the boxes are completed, then partly or wholly set them up, then drive staples through those overlapping sections which require to be connected, and then collapse the boxes to flat condition for storage or shipment. This however is a slow operation and is difficult to perform by machinery. So far as we are aware metallic fastenings have not heretofore been employed to unite overlapped portions during the operation of folding the blanks or after the boxes are completed and while they are in flat folded condition. This because there are other overlapping portions which must not be connected together, with those which are connected together.

The object of our invention is to provide, in an economical manner, paper boxes having metallic fastenings instead of adhesive, and we accomplish this object by successfully applying the fastenings after and while the blanks are completely folded to their final flat form for shipment, without having to partly unfold the blanks to get access to those parts which are to be secured together. In attaining this object we provide the flat blanks with small holes or openings in certain portions thereof which are never secured together, then folding the blanks in such manner that the holes register with each other, and then applying metallic fastenings through those portions which have no holes, in the locations exposed by the said holes.

The folding can be done manually but preferably we employ a machine such as illustrated in Letters Patent No. 1,488,756, issued to us April 1, 1924, Figures 14 to 20 of which illustrate the type of glued box hereinbefore referred to.

The present invention consists in the method of making the box, substantially as hereinafter described and claimed.

Of the accompanying drawings:

Figure 1 is a plan view of one form of blank utilized in carrying out our invention.

Figures 2 and 3 are opposite plan views of one end portion of a similar blank which has been folded flat and the necessary sections secured together by staples.

Figure 4 represents a section on line 4—4 of Figure 2.

Figure 5 is a perspective view of one end of the box in nearly set up condition.

Similar reference characters indicate similar parts or features in all of the views.

Referring first to Figure 1, the blank is cut and creased to provide a bottom section *a*, front and rear wall sections *b*, *c*, a cover section *d* having a tucking flap *e*, and end wall sections *f*, *g*, *h*. The blank is folded in the manner illustrated by the other figures of the drawing, detailed description of the order in which the different sections are folded being unnecessary because said order forms no part of our present invention and is, moreover, well-known.

An important feature of the invention is that holes or slots *x* are provided in certain portions of the blank. These are conveniently made when the blank is died out. They are in such locations of those sections which, when the blank is folded to box form, are not themselves secured together but overlap other intermediate sections which are secured together, in order to expose to the action of the tool or implement which applies staples *y* those un-perforated intermediate sections which are to be secured together. In the illustrated embodiment of the invention, the holes *x* are centrally located in the ends of the bottom section *a*, and in such locations of the sections *c* and *g* that when the blank is folded the holes will be in alinement, or will register, as illustrated by Figures 2, 3 and 4. The other sections *f* and *h* however, and a portion of section *g*, are then between or are overlapped by the portions having the holes, and a staple-applying element and a clinching

element are readily adapted to fasten together those three intermediate sections (Fig. 4).

From the above description and the drawings, it will be understood that the blank, having holes or slots such as illustrated, is so folded that the holes or slots register to permit a stapling tool to get access to intermediate sections to staple them together while the box is in flat folded condition.

When the box is set up for use (Fig. 5) it exposes small holes at the ends of the bottom *a* and the ends of the rear wall section *c*, but in practice they are so small as not to interfere with the utility of the boxes for many purposes such as containing eggs. The holes in the corner sections *g* are internally covered by the sections *f*.

Having now described our invention, we claim:—

The method of making a flat folded box without the employment of adhesive, consisting in forming holes in such locations of some portions of the blank that the holes will be in alinement when the blank is folded, then folding the blank to collapsed condition with other non-apertured portions thereof located between those portions having holes, and then utilizing said holes to gain access to the non-apertured portions to unite the latter by non-adhesive fastenings.

In testimony whereof we have affixed our signatures.

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