

April 28, 1936.

T. E. COTY

2,038,544

BAG

Filed April 17, 1934

2 Sheets-Sheet 1

*Fig. 1.*

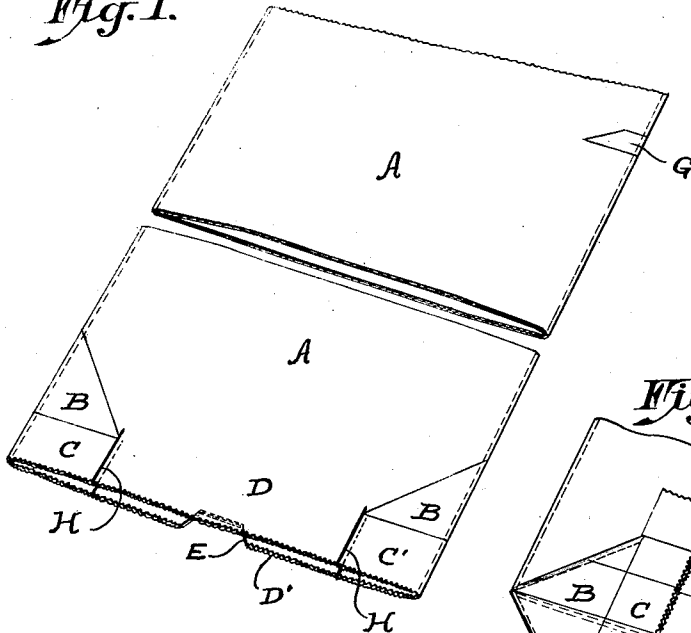


*Fig. 2.*

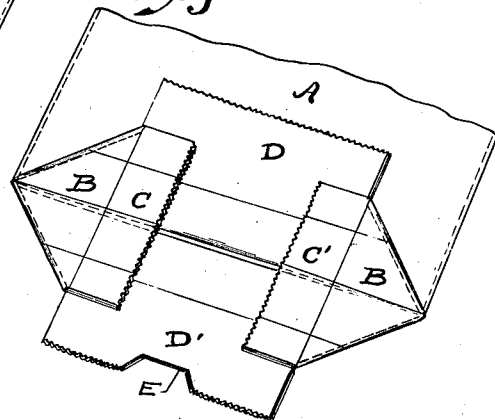


*Fig. 3.*

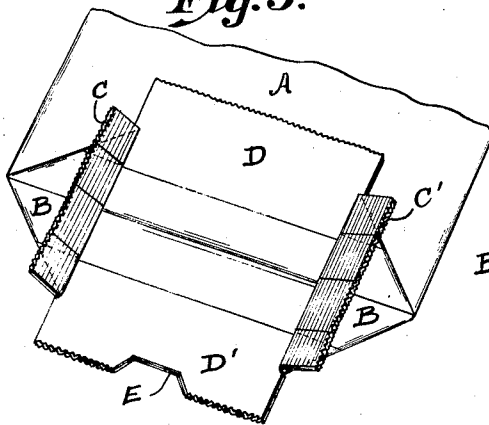
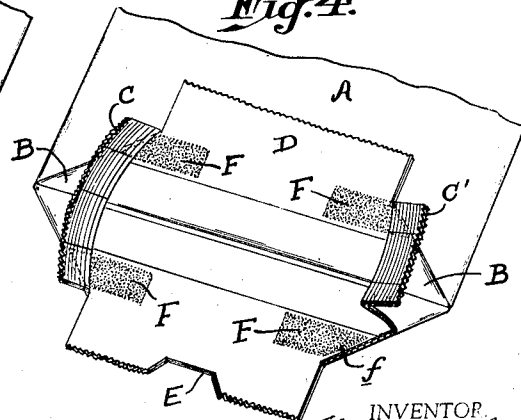


*Fig. 4.*



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*Fig. 5.*

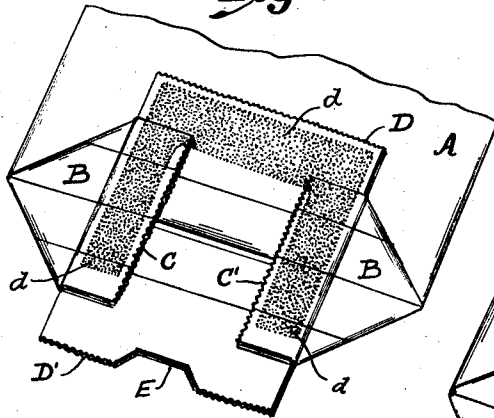


*Fig. 6.*

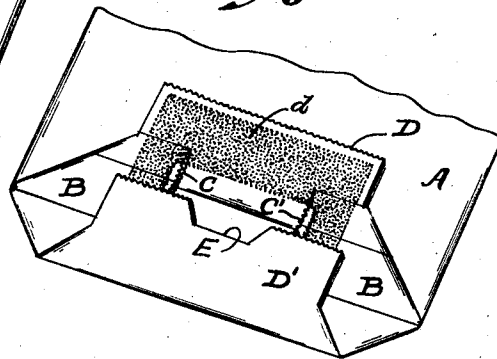


*Fig. 8.*

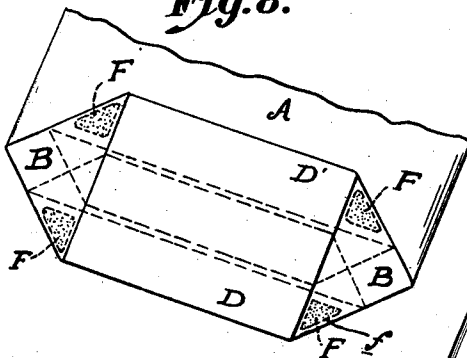
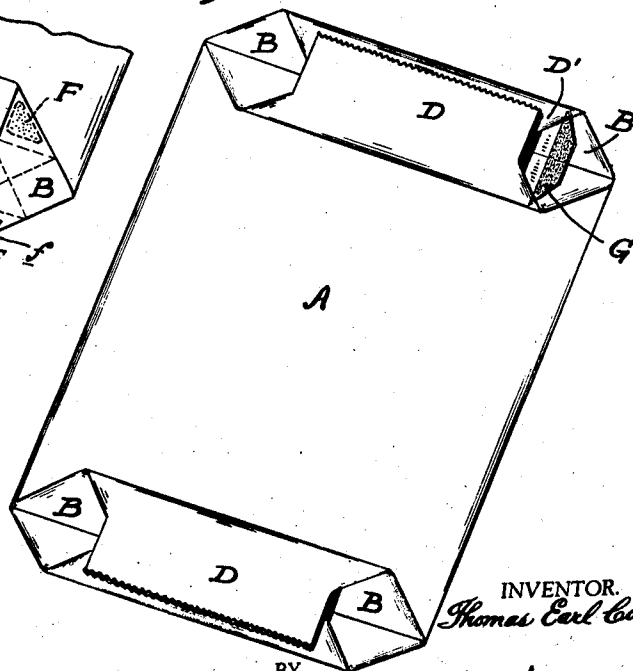


*Fig. 7.*



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## UNITED STATES PATENT OFFICE

2,038,544

BAG

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Application April 17, 1934, Serial No. 721,011

3 Claims. (Cl. 229—59)

My present invention relates to bags, particularly bags having several plies, the folding of which is apt to make the bottom unduly stiff, making it liable to crack open under strain; and has especial reference to securing a tight seal for the closures. I will describe in this specification the steps of manufacture, but I do not in this case claim the improvements in the art of manufacture, as that forms the subject of another application based on the machine for carrying out the process.

Characteristic features of the present application consist in pasting down the side folds to the longitudinal or main folds of the bottom by putting paste under the ends of the side folds in such a way as to close the latter and form a sealing of these folds to the longitudinal folds, closing the bottom of the bag. For this purpose, after the bag-bottom is opened in the bottomer for the purpose of forming the side flaps, I introduce paste on the upper surfaces of the main folds at the places where the side flaps will register with the paste when the side flaps are pressed down to complete the closure in such a way as to seal the latter to the longitudinal flaps or folds. The process will be further described and be more intelligible after description of the figures.

In the drawings:

Figure 1 shows a bag-blank, which is cut off from a multi-wall tube formed in the usual way in a tuber;

Figure 2 shows an initiation of the folds of the bottom by opening the longitudinal flaps and folding over the side flaps upon them;

Figure 3 shows the side flaps partly displaced so that the paste may be applied under them;

Figure 4 shows the bottom bag after the paste has been applied under parts of the side flaps, which are shown turned back; one of such parts is shown broken away to make clear the construction;

Figure 5 shows the side flaps sealed down and paste applied for sealing the longitudinal flaps;

Figure 6 shows the first longitudinal flap folded over;

Figure 7 shows a completed bag, which, in this case, is a valve bag having an arrangement for sealing the valve after the bag is filled; and

Figure 8 shows a form of bag in which the bottom is folded without slits, with the invention applied thereto.

In the drawings, A is the body of the bag, which as shown, is creased at the end from which the closure is to be formed so as to form the side flaps B, B, made with the usual diamond fold and

having parts C, C, which are to be sealed down. The longitudinal or main flaps of the bottom are lettered D, D<sup>1</sup>, and one of them is notched at E where the thumb tab is formed in the usual way on the other end of the blank. This tab is not shown. The closure in this form of bag has slits at H, H, delimiting the flaps from one another preparatory to the opening of the bottom and the forming of the folds.

Figure 2 shows the bottom opened for the application of paste for sealing.

In Figure 3, the bottom is shown with the parts C, C<sup>1</sup>, partly turned back; it will be understood that in practice this step (as also in Figure 4) embraces lifting the side flap enough for the insertion of suitably formed paste-pads, the actual turning back of the side flaps to the extent here shown not being necessary.

Figure 4 shows the parts C, C<sup>1</sup> turned back so that the paste, as shown at F, F, may be applied between the side flaps and the main flaps of the bag; the pad which applies the paste is shaped and located so that the paste does not extend to the creases forming the axes on which the main flaps D, D, turn. The paste is also shown cut off to conform to the diagonal fold of the side flaps B, B, as shown under the cutaway flap at f.

In Figure 5 the parts C, C<sup>1</sup>, have been restored to the position which they occupy when the bag is completed, whereupon a paste-pad applies the paste d, as shown, to the flap D, but not to the flap D<sup>1</sup>.

In Figure 6, flap D<sup>1</sup> has been turned over so that the paste d seals it in position, while in Figure 7 the bag is shown with the bottom completed.

The folding and sealing of the valve-end is done in the same way as the bottom, and does not require description. It will be observed that a flap G is cut at one end of one of the layers of the blank A; this is for the purpose of sealing the valve-end after the bag has been filled, and is more particularly described and claimed in my parallel pending application, Serial Number 696,704, filed November 4th, 1933.

Figure 8 shows a form of bag in which the slits H, H, are not used, so that the parts C, C<sup>1</sup> of the side folds are not present. The invention is equally applicable to and efficacious in this form of closure.

It is essential to a proper closure that no paste shall reach the plies of the bag which in folding appear to form parts of the bottom, but which when the bag is opened for filling are seen to be in truth parts of the side walls. If the paste

reaches these, after it dries the bottom cannot open properly, and would be torn in filling, ruining the bag and wasting the contents. All this is avoided by so locating and shaping the pad 5 which applies the paste to the upper surface of the longitudinal or main folds and below the side folds as shown at F, f in Figure 4, so that the paste does not pass the transverse creases forming the axes on which the folds D, D<sup>1</sup> turn. 10 The cutaway at f is also shaped and located to fit the crease of the side folds.

It will be seen that the overlapping of the main folds and side folds to form a closure, either of the bottom of the bag or the valve-end thereof, 15 and the application of the paste to the surface of the main folds adjacent to that of the side folds (called herein for convenience the upper surface of the main folds) at the places over which the side folds will be positioned when they 20 are pressed down to complete the closure, acts to exclude the contents of the bag from between the adjacent surfaces of the folds by sealing the corners of the side folds to the main folds, so that there is no wedging action to separate them 25 by the weight of the cement or other contents of the bag after the latter is filled.

What I claim is:

1. In a bag, main folds extending longitudinally of the bag to form part of the closure thereof,

transverse creases determining the axes of flexure of the main folds, side folds resting in part upon the main folds, and paste applied between the side folds and main folds, the paste limited in area so as not to cross the transverse creases 5 of the main folds.

2. In a bag, main folds extending longitudinally of the bag to form part of the closure, side folds resting in part upon the main folds for completing the closure, slits in the web delimiting the 10 folds, transverse creases in the web forming axes upon which the folds turn for folding to form the closure, and paste between the parts of the side folds resting upon the main folds and the said main folds to seal the folds together and 15 substantially prevent entrance of the bag-contents between the folds, the paste not extending to the parts of the side walls of the bag upon which the folds are pressed in forming the bottom, as described. 20

3. In a bag, main folds and side folds for forming a closure, creases in the web for determining the lines of the folds, and paste between the main and side folds, the paste not extending past the 25 creases to the parts of the side-walls of the bag against which the folds are pressed in forming the bottom.

THOMAS EARL COTY.