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T. E. COTY

1,903,286

BAG AND METHOD OF FORMING THE SAME

Filed Aug. 5, 1930

Fig. 1

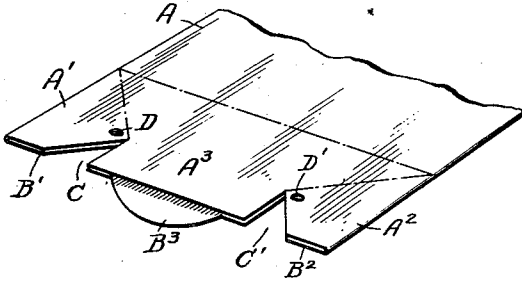


Fig. 2

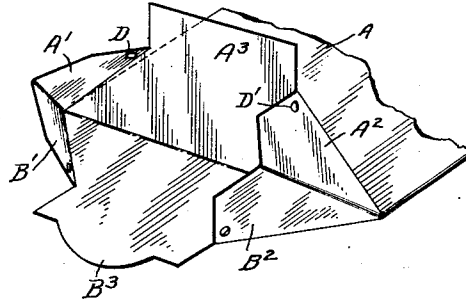


Fig. 3

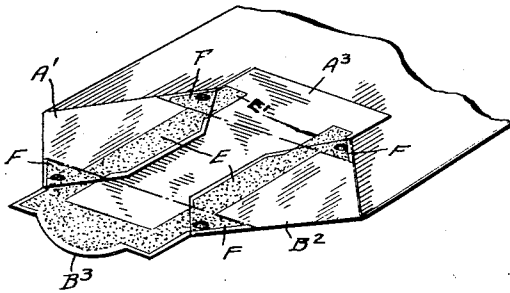


Fig. 4

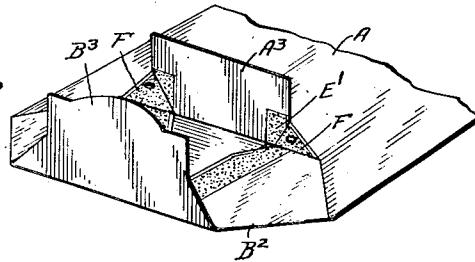
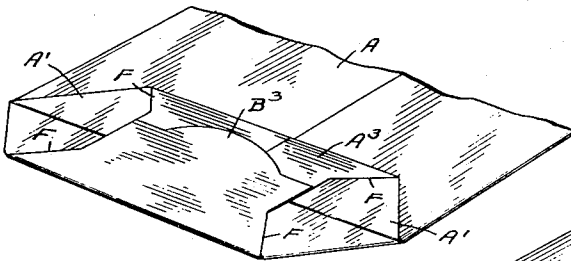
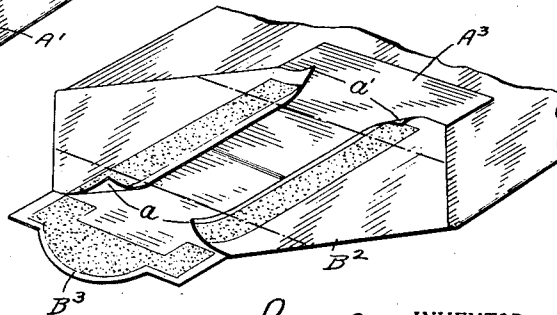


Fig. 5

Fig. 6



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BAG AND METHOD OF FORMING THE SAME

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My present invention relates to the construction of bags, particularly of paper bags, and is described with that fact in mind, although I do not intend to exclude webs formed of other materials from the scope of the claims.

One of the principal difficulties with the present form of closed bottom bag is that fine materials, flour, carbon black, cement, etc., tend to sift out of the bottom of the bag at the seams. This is due in large part to the fact that in ordinary constructions of bag it is not possible to apply paste to the inner side of the folds, where the side folds are folded upon themselves, for reasons which will be apparent as this specification is continued. The slits which are cut in both webs in order to permit the opening of the bag and the turning in of the side folds, are cut usually parallel to the sides of the bag, and as will be observed, when the side folds of the bag are turned over in the folding, their rear faces have no paste applied thereto and tend to form a valve with the webs, into which the soft material penetrates and by wedging action, extends the gap and opens the pasted seam until its splits to a greater or less extent.

It is the object of the present invention to provide a substantially sift-proof bag. When the new bag is properly formed with sufficient overlap in the seams and a good quality of paste, its efficiency is almost, if not quite, one hundred percent, and even at the high speed of operation of the modern bag machines, and the imperfections which inevitably arise in all manufacturing processes, its efficiency is very high and very much greater than that of any other bag with which I am familiar. In one aspect, the improvement consists in cutting away the slits on the sides adjacent to the sides of the bag so that they are formed polygonally; in the present embodiment of the invention, the triangular form is used. The effect of this is that when the end of the bag is opened up in order to apply the paste, the parts which act as a valve in the ordinary bag to which I have referred are cut off, and it is possible to apply the paste so that the side folds are securely fastened in place, the side of the polygon

crossing the end of the upper sheet of the web diagonally, and the fold being pasted both to the upper web and to the lower one at that point, making a secure seal with no loose part generating any wedging action to open it.

I believe this method of forming bags to be broadly new, and have tested it severely without failure.

The accompanying drawing shows embodiments of my invention. Therein Figure 1 shows the end of a blank after cutting the slits; Figure 2 shows the bottom partly opened; Figure 3 shows the blank after the end is opened and the paste applied; Figure 4 when the flaps are turned up by the creasers; Figure 5 shows the end of the bag after the folds are pressed in place; and Figure 6 shows a common form of bag-end in process of manufacture, with the defect referred to somewhat exaggerated to make it clearly apparent.

I will describe Figure 6 first, in order to point out this defect. A^3 is the back-flap formed on the upper sheet of the tube; B^3 is the thumb-tab formed on the lower sheet. At a, a^1 , are shown the corners of the side-folds, which open slightly when pulverulent material sifts in and by the wedging action of its weight forces open one or more seams and sifts out.

The method of preventing this is shown in Figures 1 to 5. The construction illustrated is so simple as to be self-explanatory. A is the upper sheet of the blank as it comes from the tuber; $A^1 A^2$ are the parts of sheet A used in the side folds; $B^1 B^2$ are the corresponding parts of the lower sheet; C, C^1 are polygonal notches, in this case triangular, which pass through both sheets, taking the place of the usual slits; one side of each notch is preferably parallel with the edge of the blank, and the hypotenuse of the triangle is substantially normal to the line between the upper angle of the notch and the side of the blank at the crease, as shown in Figure 1; but other polygons might be used, provided the line crosses the creases joining the upper and lower sheets of the web to the side-folds at such an angle as to close the bag securely, as presently explained.

Referring now particularly to Figures 3 and 4, it will be seen that the paste-pad is so shaped that instead of the ordinary U-shaped application shown in Figure 6, I apply paste also to the flap A³ at the parts E¹ where the corners α , α^1 of Figure 6 have been cut away to expose the flap. At the corners of the side-folds A¹ B² also; extending out to the diagonal edges of the flaps, as indicated at F, F, paste is applied, as well as at the usual places, E. Perforations D, D¹, see Figures 1 and 2, permit paste to pass to the under side of the web.

By this method of construction it will be seen that the wedging action of the contents upon the corners of the closure is entirely avoided; the corners themselves being cut away, they cannot curl up to form a pocket; and the mouth of the sac formed by the corners of the fold at F, F, is so securely sealed by my method that no sifting occurs. The limit of endurance of these bags is not the strain of the contents upon the seams, but the strength of the material.

What is claimed as new is:

1. As a new article of manufacture, a bag formed from a tube in which the cuts made by the slitters of the bag-machine are polygonal, so that the corners of the side flaps are cut off, the lines of the cuts crossing the creaser lines of the bag-bottom at an angle other than a right angle, the paste extending substantially to the outer edges of the side flaps on the portions thereof which are folded upon themselves, sealing the corners of the bag-bottom.

2. A bag tube having both the plys at that end from which the bag bottom is to be formed provided with a pair of spaced apart incisions forming between them cooperating bottom flaps, the outer edge of each incision being inclined outwardly so that when the opposite creased portions of the tube end are folded toward each other in the formation of the bag bottom the said inclined edges will extend diagonally across the line of fold of the flaps for the purpose specified.

3. A bag formed from a flat tube having both of its plys at that end from which the bag bottom is to be formed provided with a pair of spaced apart incisions forming between them cooperating bottom flaps, zones of adhesive extending transversely across the outer face of each flap, the outer edge of each incision being inclined outwardly so that when the opposite creased portions of the tube end are folded toward each other in the formation of the bag bottom the said inclined edges at each side of the bottom will extend diagonally across the said zones of adhesive and at an angle to the lines of fold of the flaps for the purpose specified.

4. A bag tube having the plys at one end from which the bag bottom is to be formed provided with a pair of spaced apart substan-

tially V-shaped notches forming between them cooperating bottom flaps, one edge of each notch being inclined outwardly so that when the opposite creased portions of the tube end are folded toward each other in the formation of the bag bottom, the said inclined edges will extend diagonally across the line of fold of the flaps to provide a sift-proof seal between the cooperating flaps at the bottom of the bag.

5. A bag formed from a flat tube having both of its plys at that end from which the bag bottom is to be formed provided with a pair of spaced apart substantially V-shaped notches forming between them cooperating bottom flaps, lines of adhesive on the outer face of each flap and extending onto the two opposed companion flaps, one edge of each of said notches being inclined outwardly so that when the opposite creased portions of the tube end are folded toward each other in the formation of the bag bottom, the said inclined edges at each side of the bottom will extend diagonally across the said lines of adhesive and at an angle to the lines of fold of the flaps, for the purpose specified.

Signed at Watertown, in the county of Jefferson and State of New York, this 31st day of July, A. D. 1930.

THOMAS EARL COTY.