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R. K. STONE ET AL

2,389,747

ENVELOPE

Filed April 5, 1943

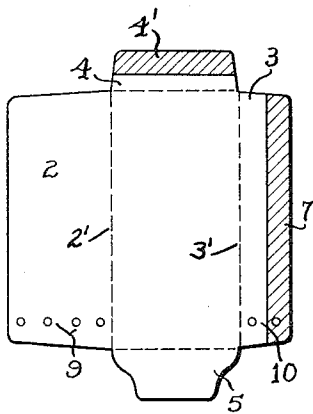


Fig. 1.

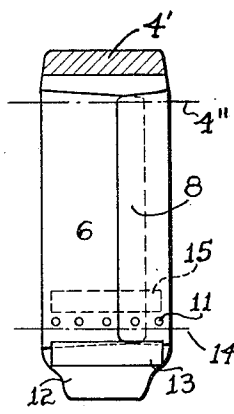


Fig. 2.

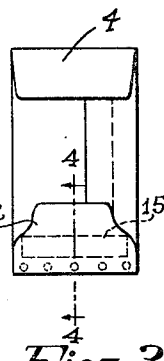


Fig. 3.

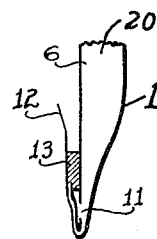


Fig. 4.

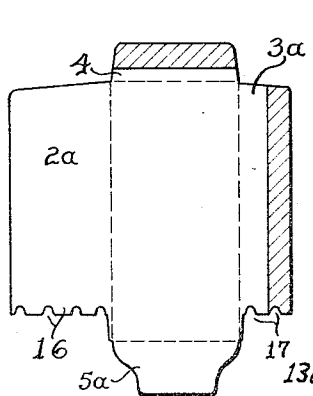


Fig. 5.

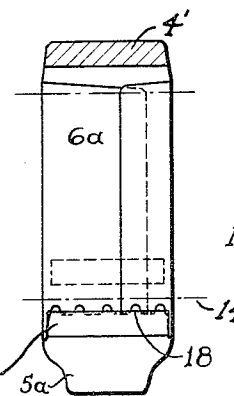


Fig. 6.

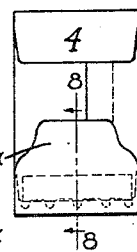


Fig. 7.

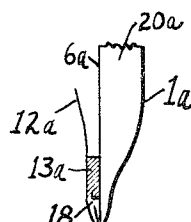


Fig. 8.

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UNITED STATES PATENT OFFICE

2,389,747

ENVELOPE

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Application April 5, 1943, Serial No. 481,796

2 Claims. (Cl. 206—63.2)

The present invention relates to envelopes used as containers for granular or pulverulent materials, and adapted, upon being opened, to serve for the spreading or dusting of such materials—instances of such uses requiring a regulated discharge of the envelope's contents being, for example, the sowing or spreading of seeds, the shaking out of condiments, and the uniform application, by dusting, of medicinal powders, such as sulfanilamide, to wounds, infections, etc.

Envelopes of this character usually provide a plurality of normally-closed apertures arranged to be readily opened up and exposed for the regulated discharge, when desired, of the contained material; in such an envelope, it is essential that adequate protection be afforded against contamination of the contained material, as well as against any appreciable leakage or premature discharge of the same, prior to the user's intentional exposure or opening-up of said apertures; it is also of importance that this act or manipulation by the user, to open up the discharge apertures, be accomplished always with ease and certainty, without leaving any obstruction in the zone of discharge and without requiring such discharge zone to be touched and possibly contaminated by the user's fingers. It has been difficult heretofore to meet these requirements in a unitary envelope structure of simple enough construction to be cheaply and rapidly produced by conventional envelope-making machinery.

Our invention overcomes these and other difficulties by the provision of inexpensive and easily-made envelope structures which satisfy all of the above-mentioned requirements. Other and further objects and advantages of our invention will more fully appear from the following detailed description thereof, taken in connection with the accompanying drawing, in which

Fig. 1 is a plan view of the blank from which an envelope embodying our invention is made.

Fig. 2 shows the initial folding of said blank to form the envelope's back wall, together with means adhesively associated therewith to form the bottom closure.

Fig. 3 is a rear view of the completed envelope, after the same has been filled and sealed.

Fig. 4 is a large scale fragmentary sectional view on the line 4—4 of Fig. 3, with thickness of one part exaggerated.

Figs. 5, 6 and 7 are views similar to Figs. 1, 2 and 3, respectively, showing a modified form of our invention.

Fig. 8 is a large scale fragmentary sectional view on the line 8—8 of Fig. 7.

Like reference characters refer to like parts in the different figures.

The envelope blank of Fig. 1 includes a rectangular body portion (the area within the broken lines) that provides the envelope's front wall 1, and as projections from said body portion, a pair of opposite side flaps 2 and 3 and a pair of opposite end flaps 4 and 5. The side flaps 2 and 3 are adapted, when folded over on the lines 2', 3', respectively, to overlap each other, for the formation of the envelope's rear wall 6, as shown in Fig. 2—one of said side flaps being gummed along its free edge, as shown at 7, to form with the other side flap the usual rear wall seam 8. This forms the blank into the flattened tubular body shown by Fig. 2, with the unseamed wall having flap extensions 4 and 5 beyond the seamed wall 6. Both side flaps 2 and 3, near their lower edges, are formed with sets of alined perforations 9 and 10 respectively, the spacing and arrangement of such perforations being such that upon folding over of the two flaps, the respective perforations 9 and 10 in their overlapping portions will register with each other, thus to provide the rear wall 6 near its lower end with a single row 11 of perforations.

The next step in the manufacture of our improved envelope from the blank of Fig. 1 is the formation of its bottom closure, by means of a turn-up of the flattened tube material, including the bottom flap 5, this turn-up being folded over and adhesively stuck down so as to cover and to substantially block off said perforations 11, but to make this adhesive connection readily releasable, by the envelope's user, for the complete and unobstructed exposure of said perforations for the delivery, by sifting or shaking therethrough, of the envelope's contents. For this purpose, the edge of the bottom flap 5 is left free and ungummed, to constitute a pull tab 12 by which the flap may be seized and pulled away, to break its adhesion with the envelope's rear wall 6. If such adhesion were of ordinary character, involving a transverse band of glue or gumming directly connecting the opposed surfaces of rear wall 6 and folded-over flap 5, such act of pulling on the latter's tab 12 would scarcely ever obtain a clean and complete separation between the layers of envelope material; instead, such pulling or forcible separation would almost invariably produce irregular tearing of one or both of these layers, with more or less mutilation and shredding of the material, tending in some cases to obstruct the perforations 11 and in other cases to enlarge them unduly. We overcome this difficulty by using for this releasable adhesive connection an

interposed multi-ply or loose-fibered strip or insert 13, of the character set forth in Irrgang Patent No. 1,972,995, dated September 11, 1934; such a strip 13 of blotting paper, or the like, having its opposite surfaces glued to the rear wall 6 and the folded-over flap 5, will, in response to a pull on the tab 12, readily give way and split apart in a substantially central plane throughout its entire length, because its resistance to such splitting is substantially lower than the resistance to tearing or shredding possessed by the envelope material to which it is glued. Thus the flap 5, by a pull on its free tab portion 12, can always be lifted clean and clear to expose the perforations 11.

According to our invention, this multi-ply or loose-fibered strip or insert 13 is so positioned on the flap 5 as to overlap along one edge the extreme lower edge of rear wall 6, thereby uniting the two walls 1 and 6, and substantially closing the bottom of their included pocket 20, Fig. 4; at the same time, said strip 13 is spaced appreciably from the line 14 defining the bottom turn-up or fold-up of tube material including the flap 5—this spacing being necessary in order for said strip, after the turn-up on line 14 has been made, to clear the perforations 11—substantially as indicated by the broken lines 15 in Figs. 2 and 3. Thus the adhesively interposed strip 13, besides functioning as above described to obtain a clean split, without tearing of the envelope material, when the tab 12 is pulled, functions also by its aforesaid slight overlap (Figs. 2 and 4) of the lower edges of side flaps 2, 3, to establish the perforations 11 as the sole exit from the envelope pocket, when the user, by a pull on tab 12, has lifted the flap 5. That is to say, the fact that strip 13 splits substantially centrally of its thickness, leaving approximately one-half of its thickness adhering to the flap 5, maintains the union of the lower edge of rear wall 6 to the front wall 1, and thus prevents any escape of the contained material except through the perforations 11.

It will be understood that the upper end flap 4 is the conventional final closure or seal for the envelope pocket, said flap after completion of the envelope as above described being left open and unfolded until the desired amount of pulverulent or granular material has been introduced into the pocket through its open upper end; thereupon the flap 4 is folded over and permanently adhered to the rear wall 6 by its gummed edge 4'—the line 4'' of such fold, defined if desired by transverse scoring of the envelope walls, being preferably positioned to include the upper edges of said walls, thereby to make the closed package, Fig. 3, leak-proof at its upper corners.

In the form of our invention shown by Figs. 5-8 inclusive, the side flaps 2a and 3a, instead of being perforated, are formed along their lower edges with notches 16 and 17 respectively, the spacing and arrangement of such notches being such that upon folding over of the two flaps to form the rear wall 6a, the respective notches 16 and 17 in the overlapping portions of said flaps will register with each other, thus to provide said rear wall 6a along its lower edge with a single row 18 of notches.

The bottom closure of this envelope, by folding over and sticking down the end flap 5a against the rear wall 6a, is made readily and cleanly releasable in the same manner as above described for the envelope of Figs. 1-4 inclusive, namely, by the employment of a multi-ply or loose-fibered strip 13a interposed between wall 6a and the bottom turn-up, and glued to each of said parts.

Thus the bottom closure made by folding on the line 14a, Fig. 6, provides an adhesive connection across substantially the full width of the envelope; nevertheless this connection by a pull on the free tab portion 12a of flap 5a can be readily and cleanly broken or released, without mutilation or tearing of the envelope material.

In this form of our invention, the multi-ply or loose-fibered strip 13a is applied and adhered as before, to unite the front and rear walls 1a and 6a, and to close the bottom of their included pocket 20a. The overlap of said strip with the notched lower edge of rear wall 6a is very slight, being to a depth appreciably less than the depth of the notches 18, the effect of this being to transform said notches into a row of perforations extending across the extreme bottom of the envelope pocket, beyond the line of bottom fold 14a. When the bottom closure, by a pull on tab 12a, is released, the notches are still preserved as perforations, because the strip 13a splits substantially centrally of its thickness, leaving approximately one-half of its thickness adhering to both walls and in overlapping relation to the edge portions between the notches 18; thus it is impossible for any of the envelope's contained material to escape from pocket 20a except through the gaps or openings formed at the bottom of the pocket by the partial overlapping of the notches 18 by the strip 13a.

We claim:

1. As a new article of manufacture, an envelope adapted for shaking or sifting discharge of contained pulverulent or granular materials, said envelope being made from a blank having a rectangular body portion, opposite integral side flaps, an integral bottom flap, and an integral top or closure flap, the side flaps being folded toward each other and adhesively connected at their overlapping edges to form in conjunction with said body portion a flattened tubular body, the latter being folded transversely near its lower end, to provide a bottom turn-up which includes said bottom flap, the side flap material having a transverse row of cuts, adjacent said transverse fold, for the discharge of contained material when said bottom turn-up is released, said bottom turn-up also including a transverse insert of multi-ply or loose-fibered material overlapping the side flaps' lower edges and adhered thereto and to the adjacent inner surface of said tubular body, the other side of said insert being adhered above said transverse fold to the external surface of said tubular body, to hold said turn-up in stuck-down position, with said bottom flap left substantially free and unadhered to provide a pull tab for the release of said turn-up by the splitting-apart of said insert substantially centrally of its thickness, thereby maintaining said insert's substantial closure of the lower extremity of said tubular body and exposing said cuts as the only means of discharge therefrom.

2. As a new article of manufacture, an envelope adapted for shaking or sifting discharge of contained pulverulent or granular materials, said envelope being made from a blank having a rectangular body portion, opposite integral side flaps, an integral bottom flap, and an integral top or closure flap, the side flaps being folded toward each other and adhesively connected at their overlapping edges to form in conjunction with said body portion a flattened tubular body, the latter being folded transversely near its lower end, to provide a bottom turn-up which includes said bottom flap, the side flaps' lower edges included in said

bottom turn-up presenting a row of notches, said bottom turn-up also including a transverse insert of multi-ply or loose-fibred material partially covering said notches and adhered to intervening lower edge portions and to the adjacent inner surface of said tubular body, the other side of said insert being adhered above said transverse fold to the external surface of said tubular body, to hold said turn-up in stuck-down position, with said bottom flap left substantially free and unad- 10

5 hered to provide a pull tab for the release of said turn-up by the splitting-apart of said insert substantially centrally of its thickness, thereby maintaining said insert's substantial closure of the lower extremity of said tubular body and exposing the uncovered portions of said notches as the only means of discharge therefrom.

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