Sept. 5, 1961 W. W. HAHN ET AL 2,998,911

BAG OPENING DEVICE

Filed Dec. 1, 1958

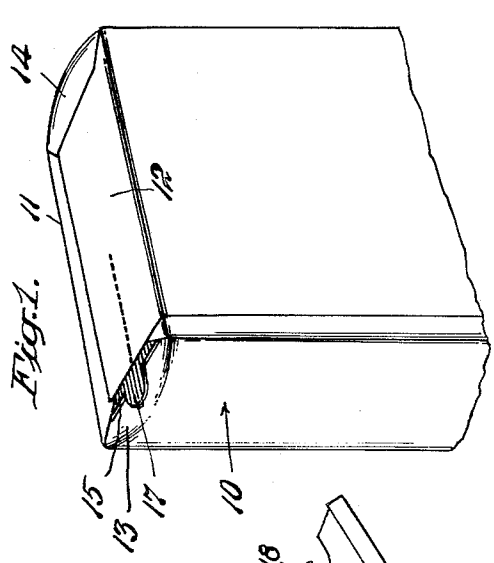

Fig. 1.

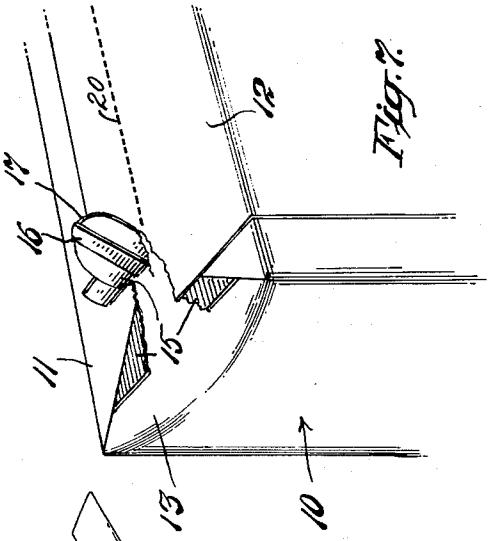

Fig. 7.

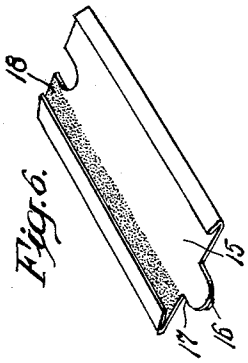

Fig. 6.

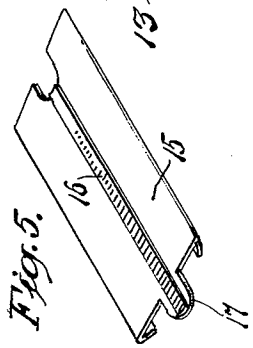

Fig. 5.

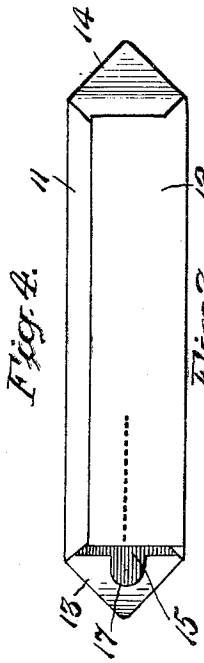

Fig. 4.

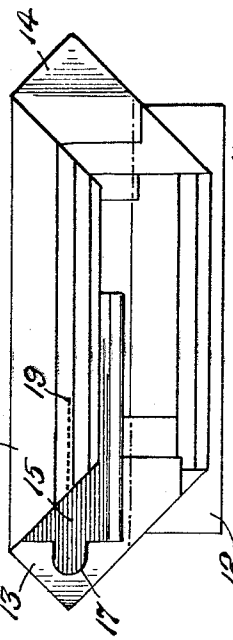

Fig. 3.

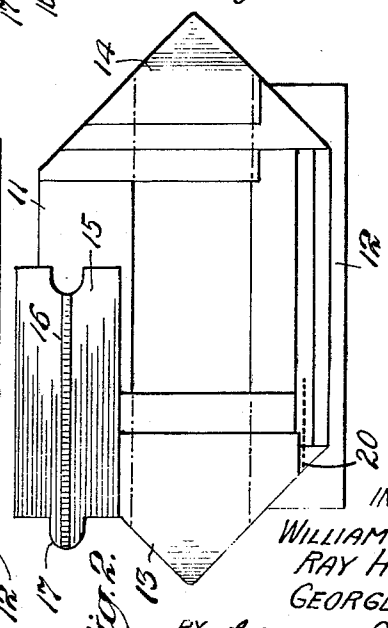

Fig. 2.

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BAG OPENING DEVICE

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2 Claims. (Cl. 229—66)

The present invention relates to improvements in pasted valve bags. More particularly it pertains to a tear tape in the valve corner of a filled bag for quick and easy access to the enclosed contents.

Pasted valve bags are used for the packaging and shipment of pulverulent, granular or other dry flowable materials, such as cement, grain, fertilizer and the like. In such bags one of the corners has the paste omitted over a narrow area which forms an open passageway through which a filling tube may be inserted to fill the bag. After the bag is filled, the tube is withdrawn, and the wall of the passageway is closed by the pressure of the contents of the bag against the valve. When the ultimate user wishes to remove the contents from the bag he must tear or break the bag with a sharp tool. It is an object of the present invention to greatly simplify the removal of the contents from such bags by providing a tear tape for opening the bag at the valve corner.

It is a further object of the invention to position the tear tape so that the user can tear open the top of the bag for a portion of the width and then pull out the valve corner to form a pouring spout which facilitates the pouring of the materials from the bag. This also permits use of the bag until the entire contents have been removed.

It is another object of the invention to provide a tear tape which can be embodied in the bag during the manufacturing operation, is simple in design, and operates effectively and satisfactorily to open the bag.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the invention which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

FIGURE 1 is a fragmentary perspective view of the valve end of a filled pasted valve bag embodying the tear tape of the present invention;

FIGURE 2 is a plan view of the valve end of the bag with the end closure flaps open and the tear tape reinforcing strip secured to one of the flaps;

FIGURE 3 is a plan view similar to that of FIGURE 2 with the flap bearing the strip folded into place;

FIGURE 4 is a plan view similar to that of FIGURE 3 with both flaps folded into place;

FIGURE 5 is a perspective view of one side of the tear tape reinforcing strip showing the tape attached thereto;

FIGURE 6 is a perspective view similar to that of FIGURE 5 showing the other side of the strip with the line of paste for securing the strip to the flap; and

FIGURE 7 is a view similar to that of FIGURE 1 showing the tape after it has been torn a short distance.

Referring more particularly to the drawings, there is shown a bag **10** which may be formed from one or more plies of paper, the bag illustrated in FIGURES 1 to 4, inclusive, being composed of four plies. This bag has the usual forms of end flaps folded to form closures at the ends with one corner serving as a valve for filling. In forming the valve corner illustrated herein, the opposite bag walls are spread apart to form end closure flaps **11** and **12** and the opposite edges are folded inwardly to form flaps **13** and **14**, the flap **13** being designed to serve as a valve flap (FIGURE 2).

A tear tape reinforcing strip **15**, shown in FIGURES 5 and 6, is formed of paper or other suitable material. To this strip is attached a length of filament tape **16** or similar material which will cut through the strip and bag material. All of such material is referred to in the specification and claims as "tape." A tab **17** may be provided at the one end of the strip for pulling the tape. A line of paste **18** is applied along one edge of the strip for securing it to the end closure flap **11**. The strip material and applied tape may be in continuous roll form from which the strip or patch is cut in the size and shape shown in FIGURE 5. The folded edges of the strip **15** are not required but do reinforce the folded edges of the flaps **11** and **12** and facilitate the positioning of the strip on the flap **11** during the manufacturing operation.

Such strip **15** is positioned on the end closure flap **11** and secured thereto as shown in FIGURE 2. Paste is applied to the flaps **12** and **14** in conventional manner, the flap **11** is folded over as shown in FIGURE 3, and flap **12** is then folded over the top of flap **11** as shown in FIGURE 4 to complete the closure. The flaps **11** and **12** have been previously perforated along lines **19** and **20** so that the lines of perforation will be superimposed over the tape **16** when the said flaps are folded and secured into the position shown in FIGURE 4. It will be seen that the tear tape reinforcing strip projects interiorly of the bag and is positioned at the top of the valve so that the tab **17** extends outside of the valve and can be easily gripped for pulling the tape. Although the tape is shown as running through the middle of the valve, it may likewise be applied at any other position in the valve opening.

The bag is filled by inserting the filling tube between the valve flap **13** and the tear tape reinforcing strip **15**, which strip is secured beneath the folded end closure flaps **11** and **12**. The tear tape and strip are embodied in the valve corner so that they will in no way interfere with such filling operation.

Although the tear tape illustrated herein is applied to a reinforcing strip or patch to make it possible to insert the tape in the valve during the manufacturing operation, it should be understood that the tape itself may likewise be applied to the conventional valve extension or valve sleeve where such extension or sleeve is formed of an additional piece of material inserted in the valve itself and extends over the top of the valve. Such extension or sleeve may also be provided with a tab for pulling the tape similar to that shown on the strip of FIGURE 5.

When the filled bag is to be opened the user grips the tab and pulls the tape upward. Such tape tears through the reinforcing strip and the lines of perforation in the end closure flaps, thus opening the end of the bag from the valve corner approximately half way across the width of the bag. The valve flap and extension projecting therefrom may then be pulled upward and outward to form a pouring spout for easy pouring of the contents. For most bags the tape will effectively tear through the strip and flaps without the lines of perforation shown and described. However, in bags with a large number of plies of heavy paper, the lines of perforation will facilitate the tearing operation.

Thus it will be apparent that the herein disclosed invention provides a new and useful bag with means for opening it to afford quick and easy access to the contents, which is adapted to provide a pouring spout, and which can be embodied in the bag during manufacture easily and at little extra cost.

Since certain changes may be made in the above article, and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description (or shown in the accompanying drawing) shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A bag comprising a body, one end having closure flaps formed from oppositely infolded portions of the bag wall, a tear tape attached to a longitudinal strip of material, said strip being secured to at least one of the flaps with said tape positioned beneath the strip, said strip and said tape extending from the narrow end of the bag interiorly of the bag, said strip and tear tape being positioned below each of said closure flaps with the flaps in closed position and said strip being spaced away from the longitudinal top folded edges of said closure flap, said strip and closure flaps being folded one upon the other and said strip and closure flaps being adhered together to form the end quick-opening cover for said bag, whereby an outward pull on the tape will sever said strip and said flaps above the tape to provide access to the bag.

2. A bag as claimed in claim 1 wherein said strip and said tape are provided with a pull tab projecting from narrow end of said bag.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,998,911 September 5, 1961

William W. Hahn et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 3, for "strip" read -- tape --; line 5, for "flap" read -- flaps --.

Signed and sealed this 7th day of August 1962.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents