Nov. 8, 1960 C. ROSANDER 2,959,343

BAG

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FIG. 1.

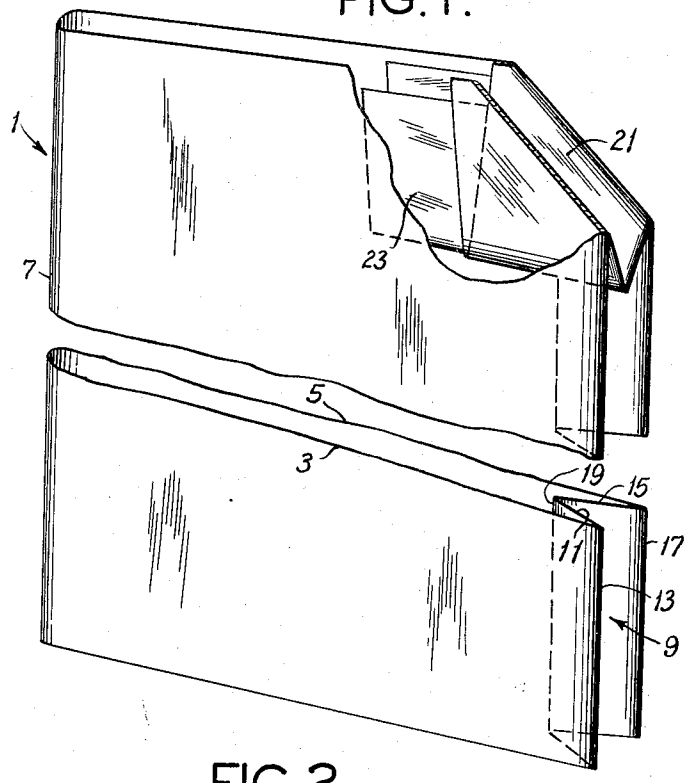
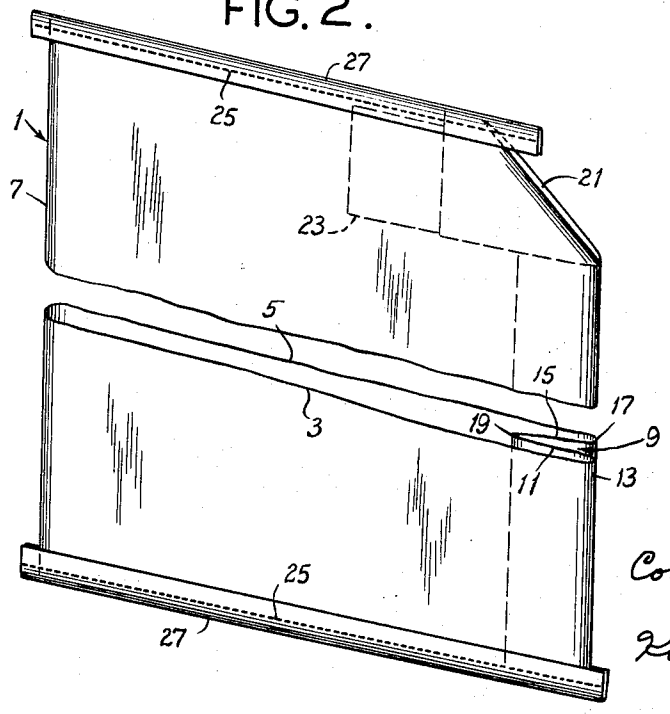


FIG. 2.



Conrad Rosander,
Inventor.
Koenig and Pope,
Attorneys.

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Conrad Rosander, Groton, Mass., assignor to Bemis Bro. Bag Company, St. Louis, Mo., a corporation of Missouri

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This invention relates to bags, and more particularly to multiwall paper valve bags.

Among the several objects of the invention may be noted the provision of an improved construction for sewn multiwall paper valve bags which enables the bags to be made shorter than prior bags of this class for a given capacity; the provision of a construction for sewn multiwall paper valve bags which tends to facilitate the filling of the bags; the provision of a construction for such bags which tends to be stronger than prior double-gusseted sewn multiwall paper valve bags; the provision of a construction for such bags which tends to be easier to sew during manufacture; and the provision of a construction for such bags which is such that the bags may be economically manufactured and closed by means of existing bag machinery. Other objects and features will be in part apparent and in part pointed out hereinafter.

In the accompanying drawings, in which one of various possible embodiments of the invention is illustrated,

Fig. 1 is a perspective view of a bag tube prior to closing the ends thereof to complete a valve bag of this invention, the tube being shown slightly spread open and with parts broken away; and

Fig. 2 is a view in elevation of a completed valve bag, parts being broken away.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Sewn multiwall paper bags, both valve bags and open-mouth bags, are usually provided with gussets at both sides for the purpose of making them square up better when filled than a flat bag, i.e., a bag without any gussets. As to valve bags, there is a further purpose in providing gussets, namely, to provide a satisfactory valve formation. I have found that by making sewn multiwall paper valve bags with only one gusset, the valve being provided at one of the gusset corners, it is possible to reduce the length of the bag over that of a standard double-gusset valve bag for the same capacity. For example, an 80 pound single-gusset fertilizer valve bag of this invention may be made about one inch shorter than a standard 80 pound double-gusset valve bag. I have also found that by making sewn multiwall valve bags with only one gusset, the valve being provided at one of the gusset corners, the bags tend to be easier to fill with certain materials than the standard double-gusset bags. This may have as its explanation the reason that the single-gusset valve bag opens up wider in the region opposite the valve than the double-gusset bag, since it does not have any gusset opposite the valve to fill out as in the case of the double-gusset bag, and this tends to avoid clogging of the filling spout used to fill the bag.

It will be understood that valve bags are sewn closed at both ends during the manufacture thereof; and by making them with only one gusset, sewing operations during manufacture may also be facilitated if the ungusseted or flat side is fed first into the sewing machine or machines.

Also, the single-gusset bag of this invention, having only a single crease at its ungusseted side, has fewer creases than the double-gusset bag. Creases introduce weakness. With fewer creases, the single-gusset bag may be less likely to burst than the double-gusset bag. Despite the fact that the bags of this invention have only one gusset, I have found that they square up when filled almost as well as a double-gusset bag; in any event, they square up in a satisfactory manner.

Referring to Figs. 1 and 2 of the drawings, a valve bag of this invention is shown to comprise a multiwall paper bag tube **1** having a front wall **3** and a back wall **5**. These walls are integrally joined along one side edge of the bag by a single fold **7**. At the other side of the bag, the walls are joined by a gusset **9** which includes a first gusset panel **11** integrally joined to the front wall at a first fold **13**, and a second gusset panel **15** integrally joined to the back wall at a second fold **17**, the panels **11** and **15** lying between walls **3** and **5** and integrally joined together at a third fold **19**. Thus, the bag has a gusset only at one side (gusset **9** at the right side as illustrated), and is flat at its other side. It will be understood that bag tubes **1** may be segmented from continuous single-gusset tubing, the latter being formed on a conventional tuber adapted for forming a single gusset in the tubing instead of two gussets.

The bag has a tucked-in valve flap **21** at one of the gusset corners (the upper right corner, as shown). A valve sleeve **23** projects from the valve flap into the bag. The formation of the valve flap is conventional, and the sleeve may be of any suitable known type. The ends of the bag tube are closed by stitching, each end closure including a stitched seam **25** extending across the bag securing together the front and back walls of the bag, and also including a paper tape **27** folded around the respective end of the bag and caught by the stitching.

From the above, it will be seen that the bag has only the one gusset **9**, with the valve constituted by flap **21** at a corner of the bag at one end of the gusset. When material such as fertilizer is delivered into the bag through a filling spout extending through the valve, the portions of the front and back walls of the bag at the other side of the bag from the valve, being joined only by the single fold **7**, spread apart more readily than if they were joined by a gusset. This tends to make it easier for the material to flow out of the spout into the bag and thus tends to avoid clogging of the spout. It has been found possible to make the single-gusset valve bag shorter than a double-gusset bag for the same capacity, and this saves paper. At the side opposite gusset **9**, the bag has only the one fold or crease **7**, instead of three creases as are present in a double-gusset bag, and thus two potential lines of weakness are eliminated.

It will also be understood that in the operation of sewing the seams **25** of the bag of the invention, the flat sides of the bag may be fed first through the sewing machines, and this tends to facilitate this operation, since there are in effect only two wall thicknesses to enter under the presser feet of the machines as distinguished from four thicknesses where a gusset side needs to be entered.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A multiwall paper valve bag having a front wall

and a back wall, said walls being integrally joined along one side edge of the bag by a single fold and said walls being joined at the other side of the bag by a gusset which includes a first gusset panel integrally joined to the front wall at a first fold, a second gusset panel integrally joined to the back wall at a second fold, and said panels lying between the walls and being integrally joined together at a third fold, and a valve at a corner of the bag at one end of said gusset.

2. A multiwall paper valve bag having a front wall and a back wall, said walls being integrally joined along one side edge of the bag by a single fold and said walls being joined at the other side of the bag by a gusset which includes a first gusset panel integrally joined to the front wall at a first fold, a second gusset panel integrally joined to the back wall at a second fold, and said panels lying between the walls and being integrally joined together at a third fold, and a valve at a corner of the bag at one end of said gusset, and the ends of the bag being closed by lines of stitching extending across the bag.

3. A multiwall paper valve bag having a front wall and a back wall, said walls being integrally joined along one side edge of the bag by a single fold and said walls being joined at the other side of the bag by a gusset which includes a first gusset panel integrally joined to the front wall at a first fold, a second gusset panel integrally joined to the back wall at a second fold, and said panels lying between the walls and being integrally joined together at a third fold, and a valve at a corner of the bag at one end of said gusset, said valve comprising a tucked-in valve flap at said corner and a valve sleeve projecting from the flap, and the ends of the bag being closed by lines of stitching extending across the bag.

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