Jan. 3, 1956 C. V. BRADY ET AL 2,729,387

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FIG. 1.

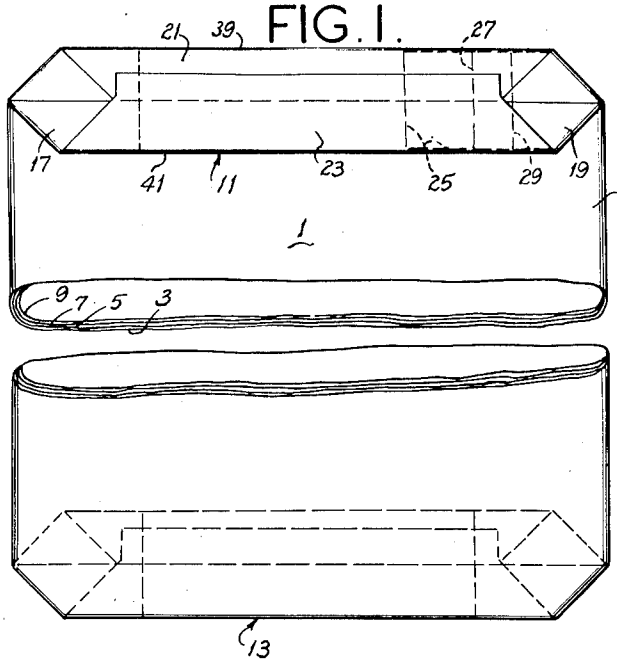


FIG. 2.

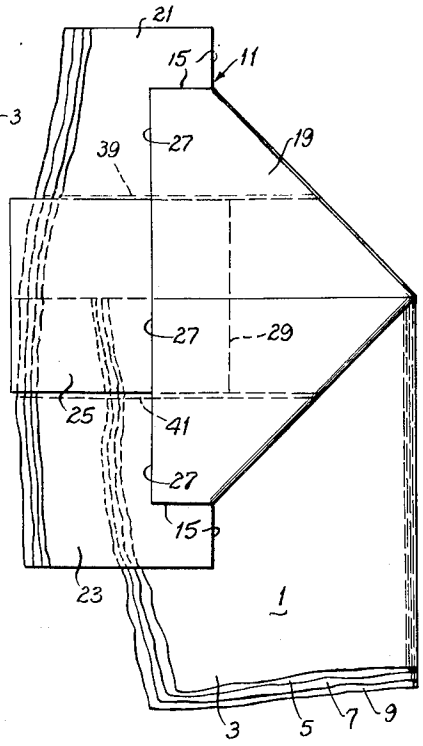
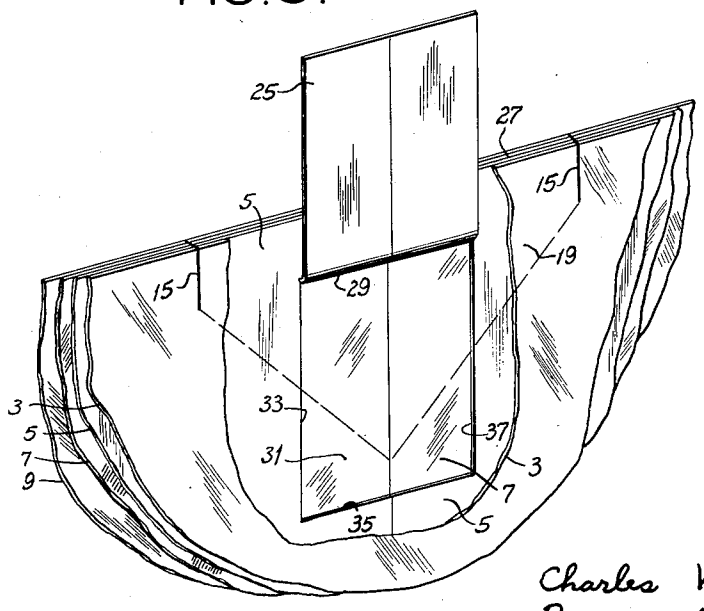


FIG. 3.



Charles V. Brady,
Russell S. Williams,
Inventors.
Koenig and Pope,
Attorneys.

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FIG. 4.

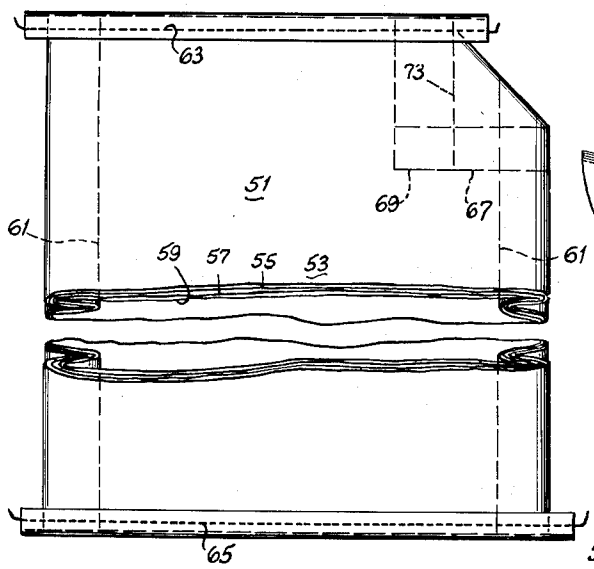


FIG. 5.

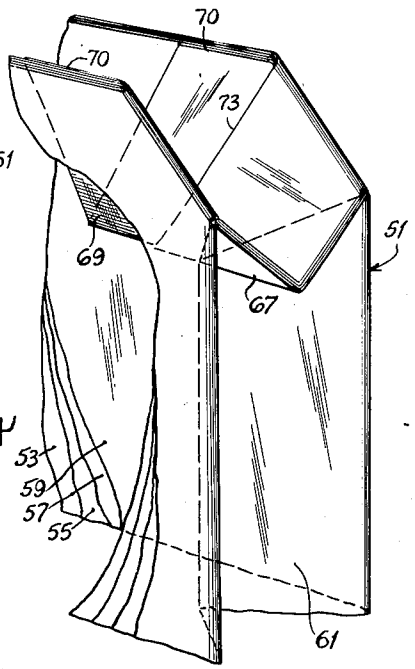
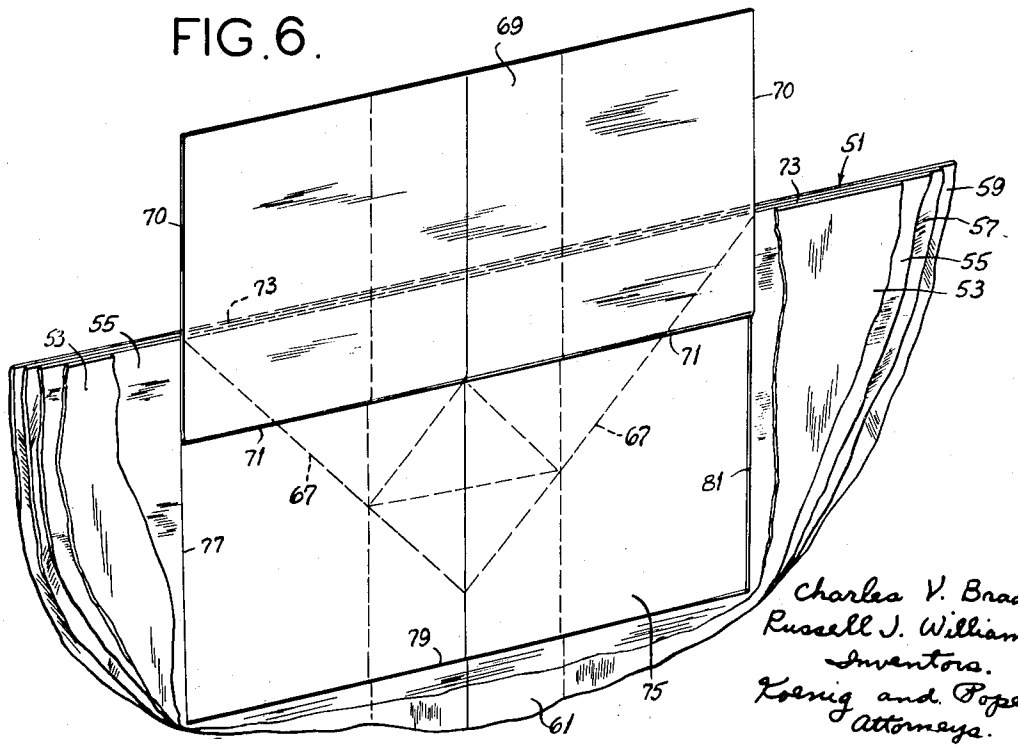


FIG. 6.



Charles V. Brady,
Russell J. Williams,
Inventors.
Koenig and Pope,
Attorneys.

United States Patent Office 2,729,387 Patented Jan. 3, 1956

2,729,387

BAG

Charles V. Brady, St. Louis, and Russell J. Williams, Richmond Heights, Mo., assignors to Bemis Bro. Bag Company, St. Louis, Mo., a corporation of Missouri

Application April 30, 1953, Serial No. 352,118

9 Claims. (Cl. 229—62.5)

This invention relates to bags, and more particularly to multi-ply bags having a valve with a valve extension.

This invention involves an improvement over the multi-ply valve bags shown in U. S. Patent 2,346,292 and U. S. Reissue Patent 23,230. Each of these patents shows a mutil-ply valve bag which is cut as one of a large number of bags from a continuous bag tube, and which has a valve extension provided as an integral part of one ply by taking material from the next adjacent bag cut from the tube. The result in each case is that every bag has a cut-out in one ply at the end of the bag opposite the valve, which weakens the closure at this end of the bag. The principal object of this invention is the provision of a multi-ply valve bag having a valve extension integral with one of the plies wherein the material for the extension is not taken from another bag so that the bag does not have any weakening cut-out at the end opposite the valve. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings in which several of various possible embodiments of the invention are illustrated,

Fig. 1 is a view in elevation of a multi-ply pasted-closure valve bag of this invention, the central portion of the bag being broken away;

Fig. 2 is a fragmentary view showing the valve corner of the bag as it appears when the bag closure at the valve end of the bag is spread open;

Fig. 3 is a fragmentary perspective showing the valve corner of the bag as it appears when spread completely flat, with certain plies of the bag broken away and shown in section;

Fig. 4 is a view in elevation of a multi-ply stitched-closure valve bag of this invention, the central portion of the bag being broken away;

Fig. 5 is a fragmentary perspective showing the valve corner of the Fig. 4 bag as it appears with the closure at the valve end of the bag omitted, and with the bag walls spread apart; and,

Fig. 6 is a fragmentary perspective showing the valve corner of the Fig. 4 bag as it appears when spread completely flat, with certain plies of the bag broken away and shown in section.

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

Referring to the drawings, Figs. 1–3 illustrate a multi-ply pasted valve bag **1** constructed in accordance with this invention. The bag **1** is illustrated as a flat (ungussetted) four-ply bag, the outer ply being designated **3**, the intermediate ply next to the outer ply being designated **5**, the next intermediate ply being designated **7**, and the inner ply being designated **9**. It will be understood that such bags are conventionally made of kraft paper, and that the invention is applicable to bags made

of such paper or any other suitable bag material. The bag has conventional diamond-fold end closures **11** and **13**, closure **11** appearing as the top closure and **13** as the bottom closure in Fig. 1. It will be understood that the diamond-fold closure is formed in a conventional manner well-known in the art by cutting slits **15** in the ends of a length of bag tubing from which the bag is made, folding in side flaps **17** and **19**, folding over an inner closure flap **21**, and then folding over and pasting down an outer closure flap **23**. The paste pattern is such that the ends of the bag are closed except at the corner at flap **19**, so that this flap forms a valve for insertion of a filling spout, as is well-known in the art. Reference may be made to the above-mentioned U. S. Patent 2,346,292 for a suitable paste pattern.

The flap or valve **19** (which includes four plies of material) has a single-ply valve extension **25** which extends inward from the inner edge **27** of valve **19** (this edge **27** being a portion of the edge of the bag at its valve end). In accordance with this invention the extension **25** is constituted by a tongue-like portion of the ply **5** integrally joined to the ply **5** on a juncture line **29** extending adjacent and generally parallel to the edge **27** of valve **19**. As shown in Fig. 3, this tongue-like portion is severed from the ply **5** on that side of the line **29** away from the edge **27** of the valve **19**. It is longer than the distance from the edge **27** of the valve **19** to the line **29**, and is folded back substantially on line **29** to project beyond the edge **27**. While this leaves an opening **31** in the ply **5**, this is of no consequence since ply **5** is an intermediate ply. As herein illustrated, the tongue-like portion or extension **25** is formed by severing the ply **5** on lines **33**, **35** and **37** forming three sides of a generally rectangular area, and the extension is of generally rectangular outline. As shown, the width of the rectangle is made slightly less than the width of the closure **11** (i. e., the spacing of the fold lines **39** and **41** for the flaps **21** and **23**) and hence the width of the extension **25** approximates the width of the closure. It will be understood that the extension may be made of other widths and may be made of suitable outline other than rectangular.

It will be observed that with the above-described valve extension construction, the end edges of all the plies are coincident throughout the extent of the valve corner. This makes it possible to segment individual bags from a continuous tube by severing all plies in a line completely across the tube, thereby avoiding taking material for the valve extension of any one bag from another bag. Thus, the bag of this invention does not have any weakening cut-out at the bottom end opposite the valve. While the invention is herein illustrated with relation to a bag having four plies, it will be understood that it is applicable to bags having plies in number other than four.

Figs. 4–6 illustrate a multi-ply sewn valve bag **51** constructed in accordance with this invention. The bag is illustrated as a gussetted four-ply bag, the outer ply being designated **53**, the intermediate ply next to the outer ply being designated **55**, the next intermediate ply being designated **57**, and the inner ply being designated **59**. It will be understood that such bags are conventionally made of kraft paper, and the bag **51** may be made of such paper or any other suitable material. The gusset sides of the bag are designated **61**. The bag has conventional sewn closures **63** and **65** of the folded tape and stitched type, closure **63** appearing as the top closure and **65** as the bottom closure in Fig. 1. The bag has a folded-in or tucked-in valve **67** at one corner of the top closure, and a single-ply valve extension **69**.

The extension **69** is formed in a manner similar to that shown in Fig. 3, but is made as wide as the width of the mouth edge of the tucked-in valve **67** so that its side edges

70 are generally coincident with the end edge of the finished bag, whereby the margins of the extension are caught in the stitching of the closure 63 (see Fig. 4). More particularly, the extension 69 is constituted by a tongue-like portion of the ply 55 integrally joined to the ply 55 on a juncture line 71 extending adjacent and generally parallel to the edge 73 of the valve 67 (this edge being a portion of the edge of the bag at its valve end). As shown in Fig. 6, this tongue-like portion 69 is severed from the ply 55 on that side of the line 71 away from the edge 73 of the valve. It is longer than the distance from the edge 73 to the line 71, and is folded back substantially on the line 71 to project beyond the edge 73. While this leaves an opening 75 in the ply 55, this is of no consequence since ply 55 is an intermediate ply.

As shown, the tongue-like portion or extension 69 is formed by severing the ply 55 on lines 77, 79 and 81 forming three sides of a generally rectangular area, and the extension is of generally rectangular outline. The width of the rectangle is made to correspond to the extent of the edge of the triangular portion which is tucked in to form the valve. It will be seen that the extension 69 thus comprises a portion of the material of ply 55 taken from the gusset and from the front and back walls of ply 55 on opposite sides of the gusset. As in the case of the bag shown in Figs. 1–3, there is no weakening cut-out at the end opposite the valve.

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.

We claim:

1. A multi-ply bag having a folded-in valve at one corner thereof and a valve extension formed from one of the plies of the bag extending from the valve, said extension being constituted by a tongue-like portion of said one ply integrally joined to said one ply on a line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from the said one ply on that side of said line away from the edge of the valve, being longer than the distance from the edge of the valve to said line, and being folded back substantially on said line thereby to project beyond the edge of the valve.

2. A multi-ply bag having at least three plies, a folded-in valve at one corner thereof, and a valve extension formed from an intermediate ply extending from the valve, said extension being constituted by a tongue-like portion of said intermediate ply integrally joined to said intermediate ply on a line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from the said intermediate ply on that side of said line away from the edge of the valve, being longer than the distance from the edge of the valve to said line, and being folded back substantially on said line thereby to project beyond the edge of the valve.

3. A multi-ply bag having at least three plies, a folded-in valve at one corner thereof, and a valve extension formed from an intermediate ply extending from the valve, said extension being constituted by a generally rectangular tongue-like portion of said intermediate ply integrally joined to said intermediate ply on a juncture line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from said intermediate ply on that side of said juncture line away from the edge of the valve, said extension accordingly being of rectangular outline and being longer than the distance from the edge of the valve to said juncture line, and being folded back substantially on said juncture line thereby to project beyond the edge of the valve, and thereby leaving a generally rectangular opening in said intermediate ply.

4. A multi-ply pasted-closure bag having a valve at one corner thereof and a valve extension formed from one of the plies of the bag extending from the valve, said extension being constituted by a tongue-like portion of said one ply integrally joined to said one ply on a line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from the said one ply on that side of said line away from the edge of the valve, being longer than the distance from the edge of the valve to said line, and being folded back substantially on said line thereby to project beyond the edge of the valve, the width of said tongue-like portion corresponding to the width of the pasted closure.

5. A multi-ply pasted-closure bag having at least three plies, a tucked-in valve at one corner thereof, and a valve extension formed from an intermediate ply extending from the valve, said extension being constituted by a tongue-like portion of said intermediate ply integrally joined to said intermediate ply on a line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from the said intermediate ply on that side of said line away from the edge of the valve, being longer than the distance from the edge of the valve to said line, and being folded back substantially on said line thereby to project beyond the edge of the valve, the width of said tongue-like portion corresponding to the width of the pasted closure.

6. A multi-ply pasted-closure bag having at least three plies, a tucked-in valve at one corner thereof, and a valve extension formed from an intermediate ply extending from the valve, said extension being constituted by a generally rectangular tongue-like portion of said intermediate ply integrally joined to said intermediate ply on a juncture line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from said intermediate ply on that side of said juncture line away from the edge of the valve, said extension accordingly being of rectangular outline and being longer than the distance from the edge of the valve to said juncture line, and being folded back substantially on said juncture line thereby to project beyond the edge of the valve, and thereby leaving a generally rectangular opening in said intermediate ply, the width of said tongue-like portion corresponding to the width of the pasted closure.

7. A multi-ply stitched-closure bag having a tucked-in valve at one corner thereof and a valve extension formed from one of the plies of the bag extending from the valve, said extension being constituted by a tongue-like portion of said one ply integrally joined to said one ply on a line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from the said one ply on that side of said line away from the edge of the valve, being longer than the distance from the edge of the valve to said line, and being folded back substantially on said line thereby to project beyond the edge of the valve, the width of the extension corresponding to the extent of the mouth edge portion of the valve and the side margins of the extension being caught in the stitching of the closure.

8. A multi-ply stitched-closure bag having at least three plies, a tucked-in valve at one corner thereof, and a valve extension formed from an intermediate ply extending from the valve, said extension being constituted by a tongue-like portion of said intermediate ply integrally joined to said intermediate ply on a line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from the said intermediate ply on that side of said line away from the edge of the valve, being longer than the distance from the edge of the valve to said line, and being folded back substantially on said line thereby to project beyond the edge of the valve, the width of the extension corresponding to the extent of the mouth edge portion of the valve and

the side margins of the extension being caught in the stitching of the closure.

9. A multi-ply stitched-closure bag having at least three plies, a tucked-in valve at one corner thereof, and a valve extension formed from an intermediate ply extending from the valve, said extension being constituted by a generally rectangular tongue-like portion of said intermediate ply integrally joined to said intermediate ply on a juncture line extending adjacent and generally parallel to the edge of the valve, said tongue-like portion being severed from said intermediate ply on that side of said juncture line away from the edge of the valve, said extension accordingly being of rectangular outline and being longer than the distance from the edge of the valve to said juncture line, and being folded back substantially

on said juncture line thereby to project beyond the edge of the valve, and thereby leaving a generally rectangular opening in said intermediate ply, the width of the extension corresponding to the extent of the edge portion of the valve and the side margins of the extension being caught in the stitching of the closure.

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