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VALVE BAG

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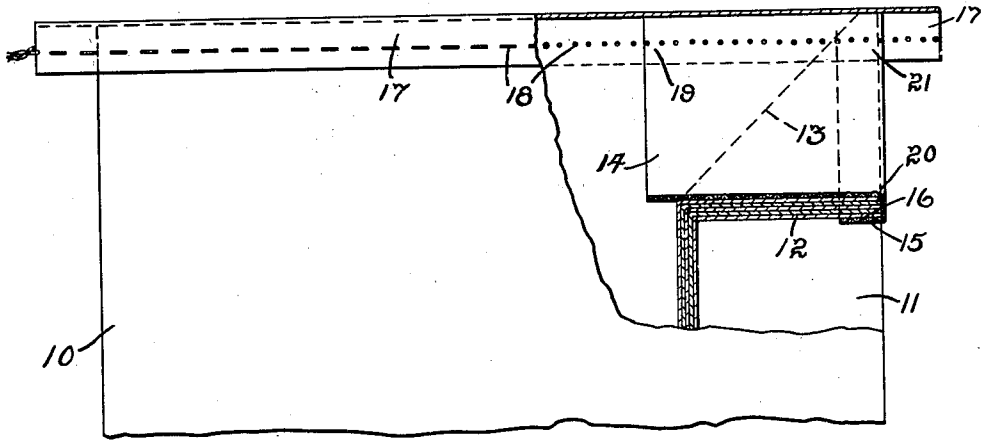


Fig. 1.

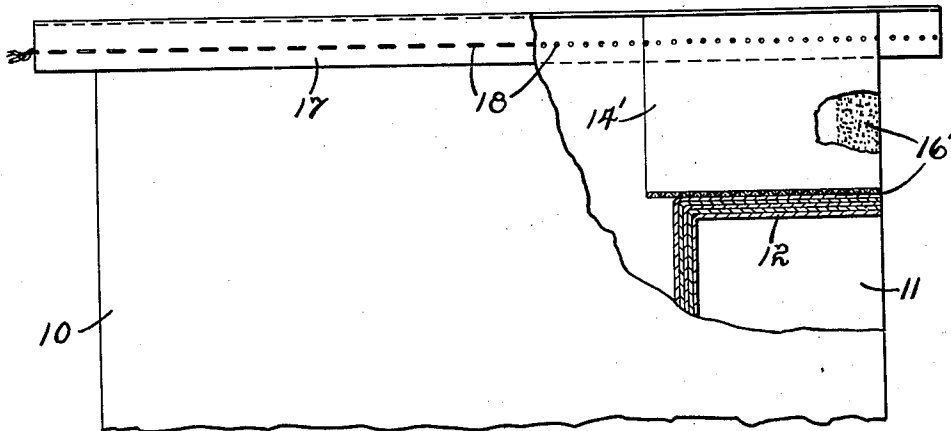


Fig. 2.

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VALVE BAG

Application filed June 30, 1928. Serial No. 289,344.

This invention relates to valve bags and more specifically to a gusseted valve bag having a supplemental flap attached for forming the valve. Details of the invention will appear as the description proceeds.

In the accompanying drawings forming a part of this specification, Figure 1 is a view of an end of a bag partly broken away to show the construction of the valve forming one embodiment of this invention; Fig. 2 is a similar view showing a slightly different embodiment of the invention.

In the construction shown, there is indicated one end of a tubular bag body 10 having a gusset fold 11 in its side. The end of the apex of the gusset fold is bent downward and outward, as shown at 12, the sides of the gusset fold being folded along diagonal lines on the two sides from the apex of the gusset fold to the corner of the bag where the edges of the gusset fold reach the end of the bag. One of these fold lines is indicated on Fig. 1 by dotted line 13. Preferably this fold line is at 45° so that the edge of the gusset fold which originally lay even with the end of the bag is folded down to lie even with the edge of the bag as clearly appears in Fig. 1.

In order to form a valve flap, a sheet of flexible material 14 is applied to the bent down portion of the gusset fold. In the form shown in Fig. 1, the end 15 of the sheet 14 is bent over the outer edge of the folded down portion 12 and is adhered thereto where it contacts the outer side of the bag wall at 16.

In the form disclosed, the end of the bag is closed by folding thereover a reinforcing tape 17 which is sewed to the bag by an end closing seam 18. This seam passes through the edges of sheet 14.

The construction shown in Fig. 2 is similar to that shown in Fig. 1, except that the edge of the valve sheet 14' is not bent over the edge of the bent down portion of the bag wall, but is adhered thereto along line 16'.

In forming valves in bags having gusseted folds, it has been customary to cut the valve with an extension at the valve corner and then fold the end of the gusset first outward and then inward in the manner disclosed in the patent to Bates, Door and Dancker, No.

1,682,107, issued August 28, 1928. By inserting the valve sheet 14, the necessity of cutting the tube with an extension at the valve corner is avoided. This results in a simplification of the cutting operation as well as in a saving of paper. The invention is particularly adapted for a paper bag formed of a plurality of layers of paper, such as illustrated in the drawings, but is also adapted to single wall paper bags if desired. Sheet 14 or 14' is preferably of more flexible material than the walls of the bag. It may be of flexible paper, such as crepe paper, but preferably is of cloth. The flexibility of the sheet causes it to close the valve completely and securely.

Ordinarily, it is preferable to sew the valve sheet into the seam as disclosed. It will be readily understood that when the bag is filled and the gusset fold is spread apart and straightened out along the body of the bag, the upper end of the gusset fold, where the walls of the bag are held together by the seam might project outward to such an extent that there would be a considerable discharge spout if it were not for sheet 14. The distance between the inner corner 19 of sheet 14 where it is caught in the seam and the middle outer portion 20 where it is attached to the apex of the gusset fold is greater than that between corner 19 and corners 21 where the outer upper corners of the flap are caught in the seam, because the distance from 19 to 20 is along a diagonal line. However, this difference is not nearly so great as the distance between 21 and 20 and, therefore, when the sheet is caught in the end of the bag at corner 19 it prevents the bag walls along the gusset fold from projecting outward as far as they otherwise might and, therefore, reduces the opening at the corner of the bag which must be closed by the valve flap.

While preferred forms of construction have been disclosed quite specifically, it will be understood that various departures may be made from the precise form shown and described within the terms of the appended claims.

What is claimed is:

1. A valve bag comprising a body portion cut square across its end and having a

- gusset fold in its side, the apex of the fold being folded downward and outward at one end, and a sheet of material having one end attached to the end of the gusset fold where it is folded outward and having its other end extending inward. 70
2. A valve bag comprising a body portion cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end, a sheet of material having one end attached to the end of the gusset fold where it is folded outward and having its other end extending inward, and a seam sewed across the end of said body portion and through the edges of said sheet. 75
3. A valve bag comprising a body portion cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end, and a sheet of material having one end attached to the end of the gusset fold which is folded outward and having its other end extending inward, the sheet being free from the wall of the bag throughout the greater portion of its length on the side farthest from the end of the bag. 80
4. A valve bag comprising a body portion of comparatively stiff material and cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end, and a sheet of comparatively flexible material having one end attached to the outwardly folded portion of the gusset fold and having its other end extending inwardly. 85
5. A valve bag comprising a body portion of paper and cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end, and a sheet of cloth having one end attached to the outwardly folded portion of the gusset fold and having its other end extending inwardly. 90
6. A valve bag comprising a body portion formed from a plurality of layers of paper and cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end and a sheet of material having one end folded over the edges of the bag walls where they are bent outward and downward, and attached to said walls, the other end of the sheet extending inward. 95
7. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 100
8. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 105
9. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 110
10. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 115
11. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 120
12. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 125
13. A valve bag comprising a body portion of paper cut square across its end and having a gusset fold in its side, the apex of the fold being folded downward and outward at one end so that said apex is perpendicular to its original position and the edges forming the end of the gusset fold lie substantially even with the edges of said gusset fold, a sheet having one end attached to the edge of the downwardly folded portion of the gusset fold and having its other end extending inward. 130

inward, and a seam sewed across the end of the bag and through the edges of said sheet.
In testimony whereof I have hereunto signed my name to this specification.

CARL G. KRONMILLER. 70