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MULTIWALL BAG

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Fig. 1.

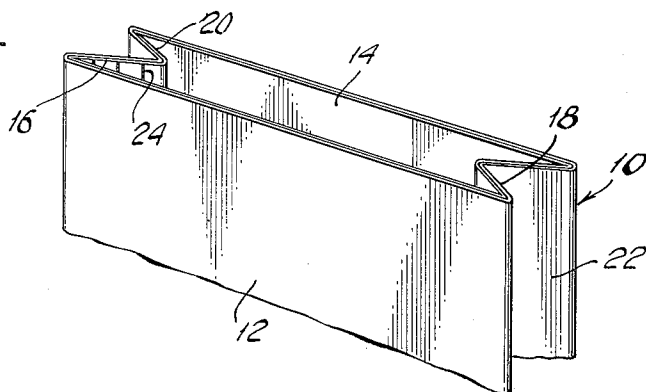


Fig. 2.

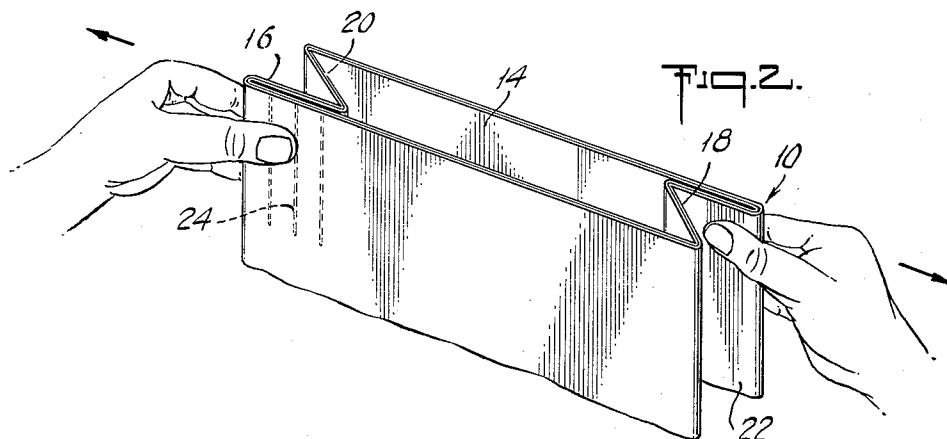


Fig. 3.

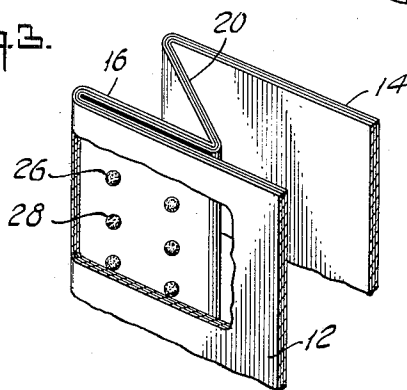
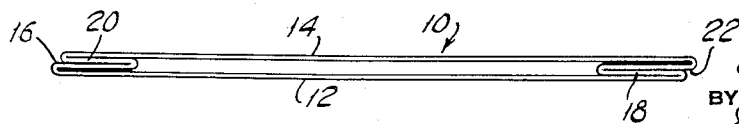


Fig. 4.



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MULTIWALL BAG

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2 Claims. (Cl. 229—55)

This invention relates in general to multiwall paper bags and in particular to a new and useful improvement in the arrangement of the side gusset panels of such bags whereby to greatly simplify their opening and filling and closing after filling.

Heretofore in order to fill bags of this character it was customary for an operator to grasp the tops of the front and rear faces of the bag to separate them, then apply the partly opened bag to the spout of the filling machine and finally shift the position of his hands to the top corners of the bag in order to maintain it on the spout. After filling it was necessary to close the top of the bag over the contents with the top edges together and the gussets intucked and hold them in alignment while the top edge was passed through a stitching machine.

This invention overcomes these disadvantages by providing a simple means for opening the bags with fewer motions and means for maintaining the bag top edges in alignment while sewing them closed. Each of the bag walls or plies is secured to its next adjacent wall, at least in the areas of the gussets in proximity to the top of the bag and one of the gusset panels adjacent is secured to an adjacent wall diagonally opposite and the gusset panel is secured to its adjacent wall along sewing areas near the top of the bag. In order to open a bag so constructed and arranged the gusset panels which are secured to the inner wall are pulled by the operator in opposite directions. The bag is closed in the normal manner, but since the gusset portions are secured as described above, the operator need only introduce the leading gusset in the sewing unit and the trailing edge must follow naturally without its gusset opening up to jam the sewing machine. Thus it is not necessary for the operator to hold the trailing edge for the full time that it takes for the bag to pass through the sewing unit as was necessary with bags of earlier design.

Accordingly, it is an object of this invention to provide a gusseted multiwall paper bag in which the walls or plies thereof are secured against relative movement at least in the areas of the gussets, and one of the gusset panels adjacent the front walls is secured thereto, and the gusset panel on the diagonally opposite edge therefrom is secured to the rear walls, each along securing areas near the top edge thereof.

With these and other objects in view, the nature of which will be more apparent, the invention will be more fully understood by reference to the drawings, the accompanying detailed description and the appended claims.

In the drawings,

FIG. 1 is a fragmentary perspective view of the top portion of a gusseted multiwall paper bag constructed in accordance with the invention, showing the bag prior to securing the diagonally opposed gusset panels to front and rear walls;

FIG. 2 is a fragmentary perspective view of the bag shown in FIG. 1 with the diagonally opposed gusset panels secured to the front and rear walls and showing how the bag is opened;

FIG. 3 is a fragmentary perspective view, partly broken away, of a bag corner showing another manner of adhesively securing a gusset panel to one of the bag walls; and

FIG. 4 is a top plan view of the bag.

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Referring to the drawings in detail, the invention as embodied therein comprises a multiwall paper bag generally designated 10 having front walls 12 and rear walls 14 joined at their sides by gusset panels 16 and 18, adjacent the front walls 12, and gusset panels 20 and 22 adjacent the rear walls 14. The walls 12 and 14 and the gusset panels 16, 18, 20 and 22 are formed from two or more plies or layers of paper which are formed by automatic machinery into a gusseted bag tube.

In accordance with the invention each of the plies forming the walls and gussets is secured to the next adjacent one by adhesive applied in sufficient locations to insure that the plies do not move with respect to one another after the bag tube has been formed. The gusset panels 16 and 22 are also provided with bands of adhesive 24 on the inside faces thereof in the proximity of their top edges so that they are adhesively secured to respective front and rear walls as the bag is passed under a pressing roll after the tube and gussets are formed. Thus the top of the completely formed bag as shown in FIG. 2 is arranged with the gusset 16 adhesively secured at its top portion to the front wall 12 and the gusset 22 at the opposite side of the bag secured to the rear wall 14. While the gusset panels 16 and 22 have in this instance been secured to the front wall 12 and the rear wall 14, respectively, it would be possible to secure the gusset panels 18 and 20 to the front wall and rear wall in a similar manner and leave the other gusset panels 16 and 22 free. Either arrangement would work satisfactorily.

The gusset panels 16 and 22 are made wider than the gusset panels 18 and 20 so that when the bag tube is formed the front wall 12 is displaced sideways from the rear wall 14 (see FIG. 4). This displacement of front and rear walls provides an exposed gripping area at the adhesively secured gussets 22 and 16, thereby permitting easy handling when the edges are pulled in opposite directions to open the bag.

In some instances there may be difficulty in the application of adhesive to the gusset panels due to the possibility that the adhesive may clog the forming blades of the tub. In such cases it is desirable to provide perforations 26 on the inside ply of the ply or layer making up the gusset panels and applying adhesive 28 to the next outer adjacent ply of the gusset panels before the bag tube is formed. Thus when the bag tube is passed under presser rolls after forming, the perforations 26 permit the adhesive 28 to contact the bag wall and become adhesively secured thereto without the danger that globs of adhesive will drip over the forming blades (see FIG. 3).

With a bag constructed in accordance with this invention it is a simple matter to open the bag for filling by merely gripping the side edges of the walls and gusset panels which are adhesively secured together at their upper ends and pull them in opposite directions. This causes the bag top to open and permits easy filling in this position. When it is desired to sew the top of the bag closed it is merely necessary to collapse the top of the bag by pushing the free walls and gussets with the walls adhesively secured together in a direction toward one another, and then start the leading edge in the machine and allow the machine to sew through the bag by itself.

It is, of course, to be understood that various details of arrangements and proportions of parts may be modified within the scope of the appended claims.

I claim:

1. An open mouth multiwall bag comprising front walls, rear walls, and two gusset panels at each side, the inside ply of one of said gusset panels being perforated along an area near the top edge thereof, with the next adjacent outer ply of said gusset panel being coated with an adhesive in the same area, said gusset panel being se-

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cured by the adhesive to an adjacent wall, and a diagonally opposite gusset panel being similarly secured to its adjacent wall.

2. An open-mouth multiwall bag comprising front walls, rear walls, and two gusset panels of different width at each side to effect a lateral displacement of the front walls relative to the rear walls, the wider of said gusset panels at one side being secured to its adjacent wall along an area near the top edge thereof and the diagonally opposite wider gusset panel being secured to its adjacent wall along an area near the top edge thereof.

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