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METHOD FOR THE MANUFACTURE OF CONTAINERS

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Fig. 1.

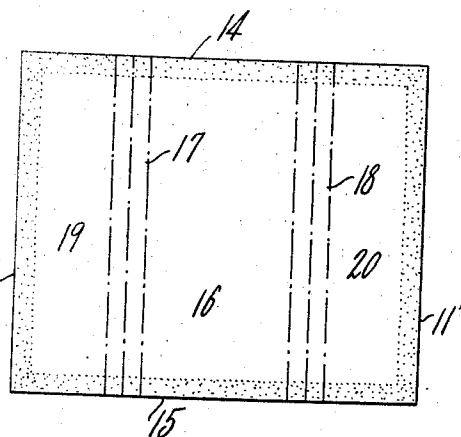
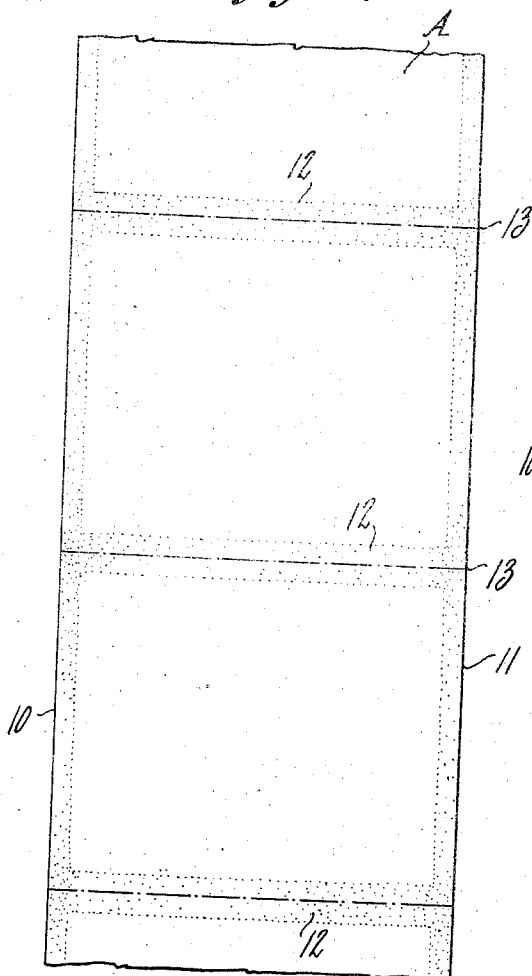


Fig. 2.

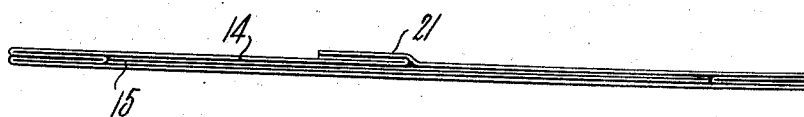


Fig. 3.

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METHOD FOR THE MANUFACTURE OF
CONTAINERS

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4 Claims. (Cl. 93—35)

This invention relates to the manufacture of bags, boxes or similar containers and more particularly to an improved bag or container which is fluid and liquid tight. More particularly my invention relates to an improved method for the manufacture of bags and similar container in which the material from which the bag or container is made is preprinted in such a manner that the seams and joints thereof will be liquid and fluid tight.

One difficulty in forming a fluid or a fluid and liquid-tight bag is that it has heretofore been impossible to form the seams and joints thereof fluid and liquid tight. Attempts have been made with some measure of success to form a liquid-tight bottom, but unless the bag itself throughout is liquid and fluid tight, the formation of a fluid and liquid-tight bottom becomes of little avail. The failure to construct a satisfactory fluid and liquid-tight container has in a large part been caused by the methods employed in forming the seams of the bag as the material from which the bag is constructed is converted into bag form.

Accordingly one of the chief objects of this invention is to provide an improved method of preprinting on the material from which the bag is made. Predetermined lines of adhesive are applied prior to bag formation which, when brought into operative relation, will result in the formation of liquid and fluid-tight seams. Other objects of this invention will become more apparent from a reading of the following specification taken in connection with the attached drawing in which like numerals indicate like parts and in which

Fig. 1 is a top plan view of a section of a web of material from which bags may be formed showing the manner in which the lines of adhesive are preprinted thereon;

Fig. 2 is a detailed view of a bag blank prior to its formation into a tube and showing the invention as applied to the construction of a gusseted bag; and

Fig. 3 is an end view of a bag made in accordance with the present invention after the end has been sealed.

Referring now to the drawing and more particularly to Fig. 1, there is shown the manner in which the material of the bag may be preprinted. Adhesive preferably, although not necessarily thermoplastic in nature, is printed, by means of suitable printing rolls to which adhesive is supplied in any known manner on one surface of the web of material from which the bags are to be formed. As will be noted a continuous line of

adhesive 10 is applied to the web of material designated generally by the letter A along one marginal edge of the web and a similar line of adhesive 11 is applied to the other marginal edge of the web. Bands of adhesive 12 are applied to the web at spaced intervals and connect the marginal lines of adhesive 10 and 11. These bands of adhesive are substantially twice the width of the bands of adhesive 10 and 11 since when the web is cut into bag lengths across the web along the dotted lines 13, each blank will be provided with longitudinal lines of adhesive 10' and 11' running along the margins of the web and lines of adhesive 14 and 15 extending across the blank at the end edges thereof. Each bag blank will be provided with lines of adhesive substantially square or rectangular in outline.

The blank or web of material during its passage through the tube forming mechanism of a conventional bag machine is folded so as to provide a front wall 16, reentrant folds 17 and 18 forming gussets of the bag and a rear wall formed by sections 19 and 20 of the blank. In accordance with standard bag making practices the tube is formed by overlapping the longitudinal marginal edges of the web. However, in accordance with my present invention the marginal edges of the web are not overlapped, but on the contrary the blank is so formed into a tube as to bring the marginal lines of adhesive 10' and 11' into contact with each other. If the adhesive employed be non-thermoplastic in nature, the seam formed by bringing the lines of adhesive into contact is secured in a conventional manner, namely, by the use of one or more pressure rolls. If, however, the adhesive employed be of a thermoplastic nature, heat and pressure will be applied to the contacting lines of adhesive so as to cause a flow and a consequent adhesion of the two lines of adhesive.

The bottom of the bag is readily formed by applying, if a thermoplastic adhesive be used, heat and pressure to the band of adhesive 12 before the web is severed into bag lengths and an inspection of Fig. 3 showing the sealed end of the bag will reveal the fact that there is a continuous seal formed by the line of adhesive 15 which extends throughout the end of the bag and since the longitudinal seam 21 is formed by bringing the lines of adhesive 10' and 11' carried along the marginal edges of the blank, the band of adhesive along the bottom of the bag is in effect a continuation of the longitudinal seam 21 so that at no place in the bottom and longitudinal seam of the bag is there an absence of adhesive. If, however,

the longitudinal seam had been formed in a conventional seam, that is, by overlapping the marginal longitudinal edges of the web; there would be no continuous line of adhesive from the bottom of the bag through and into the longitudinal seam of the bag. After the bag has been formed and filled with the desired material it may be readily sealed by adhering together the adhesive 14' carried in the blank along the top edges thereof and being present in the bag throughout the inner periphery of the top of the bag. Again when the walls and gussets within the top area of the bag are secured together, there will be present a continuous area of adhesive extending through the closure of the bag into and through the longitudinal seam of the bag, and in and throughout the bottom of the bag.

The above method of constructing a bag becomes of even greater importance when a liquidproof material is used in forming the bag. As in this case the adhesive will also be liquid proof in character. If as in the construction above described there is a continuous band of adhesive joining the top closure and bottom of the bag, it follows that a liquid and fluid-type bag is formed because if the longitudinal seam were formed by overlapping the marginal edges of the web of material, the liquid-proof coating of the material would not be in contact throughout the seam and the danger of leakage through the seam either through wicking or ineffective sealing would be great.

It will be appreciated by those skilled in the art that the principles of my present invention may be employed in the manufacture of all types of bags whether of the flat, square or automatic opening type. Many modifications and variations in construction and arrangement may be made without in any way departing from the spirit or scope of my present invention, as defined in the appended claims which are to be broadly construed.

I claim:

1. In a method for the manufacture of bags and the like, the steps which comprise printing a band of liquidproof adhesive along each of the longitudinal marginal edges of a single side of a web of liquidproof, flexible material and other bands of liquidproof adhesive in spaced relation transversely of the same side of said web, folding the web to bring the first named bands of adhesive into face to face contact, forming a bond therebetween, thereby forming a tube, and so severing said tube as to provide a plurality of bag blanks open at their ends, and having a continuous band of adhesive located at one of said ends.

2. In a method for the manufacture of bags

and the like, the steps which comprise printing a band of liquidproof adhesive along each of the longitudinal marginal edges of a single side of a web of liquidproof, flexible material and other bands of liquidproof adhesive in spaced relation transversely of the same side of said web, folding the web to bring the first named bands of adhesive into face to face contact, forming a bond therebetween, thereby forming a tube, and severing said tube through each of said transverse bands of adhesive to provide a plurality of open ended bag blanks carrying bands of adhesive adjacent their open ends and on the inner periphery thereof.

3. In a method for the manufacture of bags and the like, the steps which comprise printing a band of liquidproof adhesive along each of the longitudinal marginal edges of a single side of a web of liquidproof, flexible material and other bands of liquidproof adhesive in spaced relation transversely of the same side of said web, folding the web to bring the first named bands of adhesive into face to face contact, forming a bond therebetween, thereby forming a tube, severing said tube through each of said transverse bands of adhesive to provide a plurality of open ended bag blanks carrying bands of adhesive adjacent their open ends and on the inner periphery thereof, and thereafter bonding the adhesive at one of the open ends of each blank to form a bag.

4. In a method for the manufacture of bags the steps which comprise: providing a continuous web of flexible fluidproof material; treating a single side thereof by applying thereto continuous bands of fluidproof adhesive along each of the longitudinal edges of said single side and, at intervals, joining said longitudinal bands by lateral bands of fluidproof adhesive to outline consecutive areas on the same single side, each such area being bordered by the aforesaid longitudinal bands of adhesive and by a pair of said lateral bands of adhesive; folding said web so as to bring the longitudinal bands of adhesive into mutually contacting relation and causing adhesion between said bands to form a longitudinally sealed but transversely open, continuous tube having said lateral bands of adhesive on the inner surface thereof; forming tubular blanks by severing said continuous tube along lines so located as to leave a portion, at least, of each transverse band of adhesive on each side of such line; and closing one end of each blank by treating the same, in the area of that portion of the transverse band remaining at such end of such blank, to cause the adhesive material of said portion of said transverse band to form a seal transversely of the blank.

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