

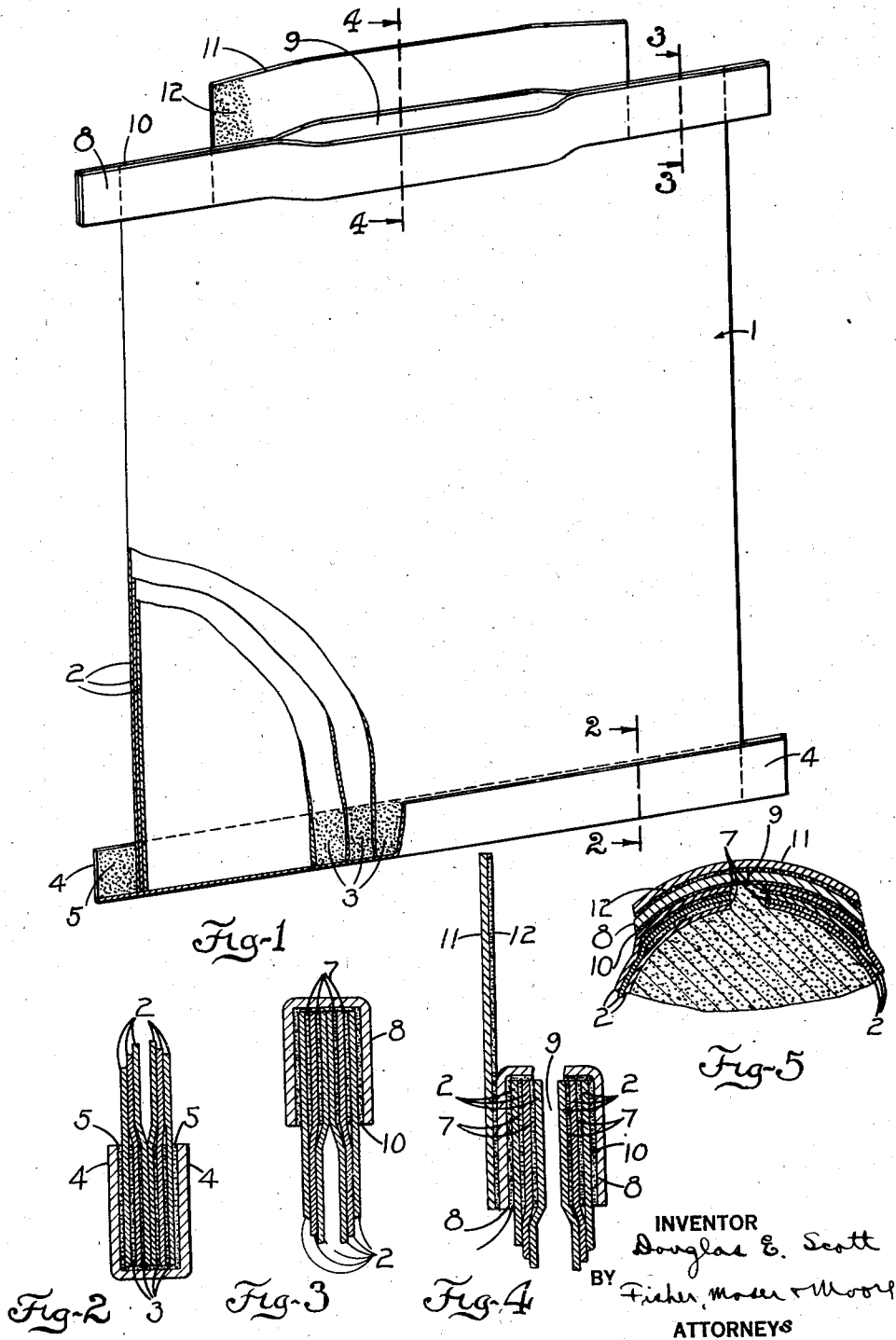
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PAPER BAG

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PAPER BAG

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1 Claim. (Cl. 229-62)

This invention relates to paper bags and to processes of making the same. More particularly the invention relates to multi-ply bags, that is, bags formed of a plurality of layers of material such as paper.

Heretofore, it has been customary to close the ends of paper bags by means of a paper binder strip folded over the ends and secured in place by one or more rows of stitching. These bags have proven objectionable because they would tear at the sewed seam, and considerable leakage occurred along the line of stitching. The passage of moisture to and from the interior of the bag, due to the openings thus caused, constitute a further objection to the use of a sewed seam.

The principal object of the present invention is to overcome the foregoing objections present in prior bags and to provide a strong substantially air tight and liquid-tight seam.

Other objects and advantages of the invention will be apparent as the description is considered in connection with the accompanying drawing, in which:

Figure 1 is a side view, partly broken away, of a bag embodying the present invention;

Figure 2 is a section on the line 2-2 of Figure 1;

Figure 3 is a section on the line 3-3 of Figure 1;

Figure 4 is a section on the line 4-4 of Figure 1; and

Figure 5 is a fragmentary sectional view of a filled bag.

Referring more particularly to the drawing 1 denotes a bag comprising a plurality of nested paper tubes 2, one or more of the plies or tubes of which may be of specially treated or coated paper, in the present instance, three plies or tubes being illustrated, but it will be understood that the number of plies employed will depend somewhat upon the weight and nature of the material with which the bags are to be filled.

The lower end of the bag 1 is closed by pasting the adjacent lower end edges together with a flexible water proof and air tight cement, such as rubber compound or the like. Thus all three tubes are flexibly connected to each other by a relatively narrow film of adhesive 3. After the lower end of the bag has been closed in this manner a reinforcing fabric strip 4 is applied thereto. The inner face of this fabric strip is coated with a layer or film 5, of flexible water proof and air tight paste or cement, such as the rubberized adhesive 3, used to secure the adjacent edges of the tubes directly to each other, and the

strip is then bent or folded over the lower end of the bag and the whole subjected to pressure. If desirable adhesive 5 may be applied to the lower outer marginal edge of the outermost fabric tube 2, in addition to that applied to the inner face of the strip 4.

The mouth of the bag 1 is closed in much the same manner as the lower end except that the former is partially closed before filling and the filling opening is closed by an additional reinforcing fabric strip. All but the innermost tube 2 are secured together along their upper inner adjacent edges by narrow layers of flexible water and air proof paste 7 similar to adhesive 3, the edges of the innermost tube being left unsealed to permit of the bag being filled through a central filling opening, hereinafter described. A reinforcing fabric strip 8, formed with a centrally and longitudinally disposed slit 9, is then folded over the top of the bag and cemented to the outer faces of the outermost tube by adhesive 10, having the same properties as adhesive 3. The tubes 2 and the reinforcing strip 8 are then tightly sealed by the application of pressure. The slit 9, forms a centrally disposed filling opening equal in length to about one half of the width of the bag, which opening is closed after filling operations, by means of a relatively short reinforcing fabric strip 11, coated on its inner face with a film of cement 12, identical with the previously described adhesive 3. The fabric sealing strip 11 may have one fold thereof attached to one side face of the reinforcing fabric strip 8, as shown in the drawing, or the strip 11 may be shipped separate from the bag. In the latter case the layer of adhesive 12 could either be applied at the factory or by the user. Where applied at the factory it would merely be necessary for the user to apply a solvent to the film of paste during sealing operations.

From the foregoing it will be noted that the filling end of the bag is greatly reinforced by the strip 8 and flexible layers of paste between the strip and the outer face of the outermost tube and between adjacent edges of the tubes, thus providing a seam capable of withstanding strains and stresses incidental to filling operations. Also that when the bag has been filled and the fabric reinforcing strip 11 placed over the filling slit or opening 9, a further reinforcing effect is attained. The strip 11 is much shorter than the strip 8, and need only be of a length to completely cover the filling opening and to extend at its ends sufficiently far beyond the extremities of the open-

ing to insure a tight seal under all handling conditions.

Having thus described my invention:

What I claim is:

- 5 A multi-ply bag comprising a series of nested tubes having their lower ends secured together by means of an adhesive, a fabric reinforcing and sealing strip folded over said cemented lower edges and cemented thereto and to the outer
- 10 faces of the outermost tube, and the upper ends of the tubes being connected together by cement, a fabric reinforcing and sealing strip cemented to the outer faces of upper end of the outermost tube and folded over and cemented to the edges

of the tubes and having a filling slit in said folded edge opposite the abutting inner faces of the inner tube, and a fabric closure strip cemented to one side face of the last-mentioned fabric reinforcing and sealing strip and having an adhesive 5 on its inner upper face whereby after the bag is filled the closure strip is drawn over the edges of the reinforcing and closing strip drawing the faces of the inner tube together and also drawing the edges of the filling slit together and cemented 10 to the edge and opposite side faces of the reinforcing and closing strip tightly holding the edges of the slit together and sealing the same.

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