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C. J. POEPPER
SANITARY-OPENING BAGS

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2 Sheets-Sheet 1

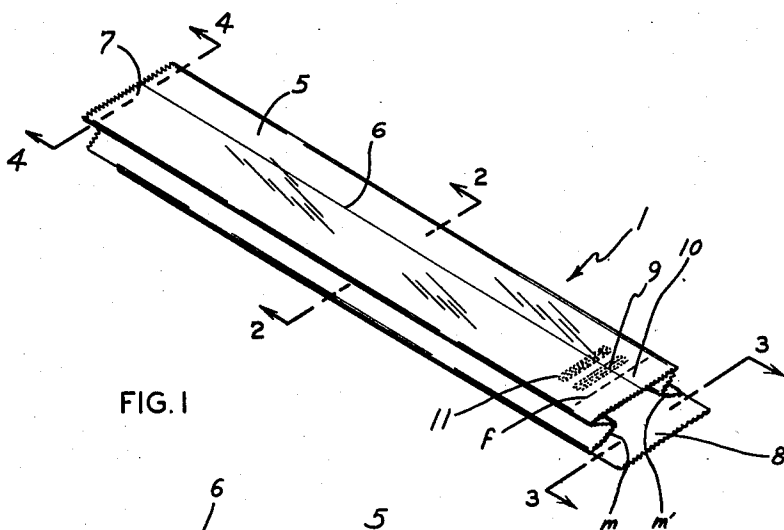


FIG. 1

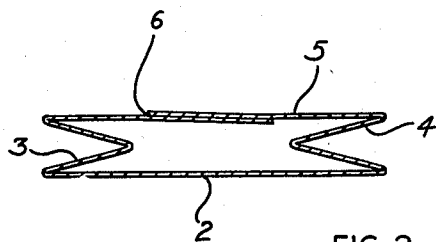


FIG. 2



FIG. 3

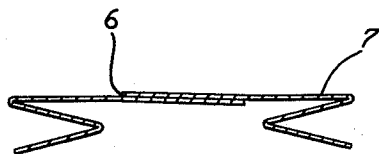


FIG. 4

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FIG. 5

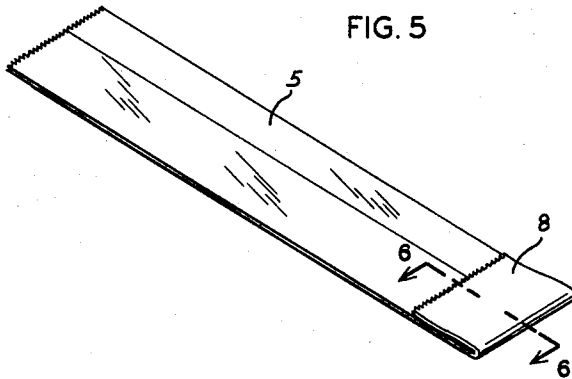


FIG. 7

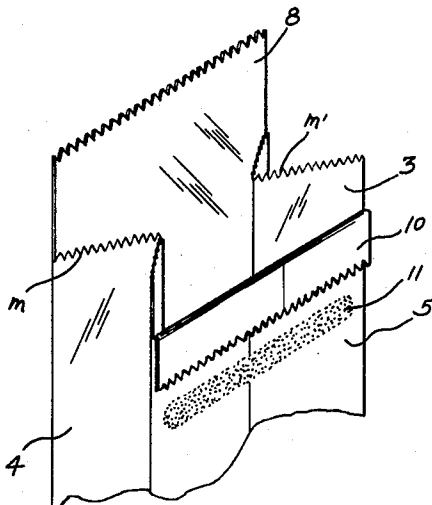
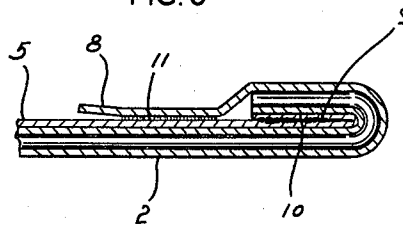


FIG. 6



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SANITARY-OPENING BAGS

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1 Claim. (Cl. 229—66)

This invention relates in general to certain new and useful improvements in paper bags and, more particularly, to a sanitary-opening bag which can be quickly and conveniently opened without touching the contents.

There are a number of articles in common use, such as paper drinking cups which must be packaged in such a manner that the articles are not touched by human hands as the package is opened. For example, paper drinking cups have, heretofore, been packaged in long cardboard boxes with specially constructed bottom walls to facilitate the quick and sanitary removal of the bottom portion of the container without need for touching the contents. The open bottomed container is then conveniently up-ended into a cup dispensing receptacle. In some cases, the box is left in place as an outer protection for the column of paper cups, but more often the box is removed and a long glass tube is lowered over the stack of paper cups to protect them. These paper boxes are expensive and take up considerable storage space in paper cup manufacturing plants prior to being utilized. Similarly, such containers, being of substantially square cross-sectional shape, take up more room in a shipping carton than paper bags. Finally, such cardboard boxes are somewhat more difficult to dispose of than a paper bag or more flexible type of wrapping. Paper bags, however, have, thus far, been unacceptable for packaging paper cups and similar articles of a sanitary nature for the reason that paper bags are somewhat difficult to open when packaged and usually, in tearing open a paper bag, the user cannot avoid touching the contents.

It is, therefore, the primary object of the present invention to provide a paper bag uniquely constructed to afford a sanitary type of closure which can be quickly and conveniently opened without risk of touching the contents.

It is a further object of the present invention to provide a sanitary-opening bag of the type stated in which the closure is structurally strong and secure for shipping and storage purposes, notwithstanding the fact that, when desired, it may be quickly opened in a sanitary manner.

It is an additional object of the present invention to provide a sanitary-opening bag of the type stated which is strong and durable and will protect the contents securely during storage and shipment.

It is also an object of the present invention to provide a sanitary-opening bag of the type stated which is simple and economical in construction, can be stored prior to use in a relatively small amount of space, and, after use, can be rolled up into a compact ball for disposal in a minimum amount of space and with a minimum amount of effort.

With the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combinations of parts presently described and pointed out in the claim.

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In the accompanying drawing—

Fig. 1 is a perspective view of a bag-tube forming a part of the present invention;

Figs. 2, 3, and 4, are transverse sectional views taken along lines 2—2, 3—3, and 4—4, respectively, of Fig. 1;

Fig. 5 is a perspective view of a finished sanitary-opening bag constructed in accordance with and embodying the present invention;

Fig. 6 is a fragmentary sectional view taken along line 6—6 of Fig. 5; and

Fig. 7 is a fragmentary perspective view of the sanitary-opening bag of the present invention in up-side-down position, showing the bottom closure thereof in open position.

Referring now in more detail and by reference characters to the drawing, which illustrates a preferred embodiment of the present invention, 1 designates a bag-tube formed on a conventional bag-tuber. The bag-tube 1 consists of a back wall 2 integrally joined at its longitudinal margins to inwardly folded bellows-type side walls or gussets 3, 4, which are, in turn, integrally joined to a front wall 5, which includes a longitudinal lapped seam 6.

As the bag-tube 1 is severed from the continuous run of tubing formed in the paper bag-tuber, the front wall 5 is shorter at one end than the back wall 2 and projects a corresponding distance beyond the back wall 2 at the other end, substantially as shown in Fig. 1. Consequently, at the latter end of the bag-tube 1, the side walls 3, 4, and front wall 5 project outwardly in exposed position so as to form a three-sided flap 7, which will become the top closure for the finished bag as will presently more fully appear. At the other or first mentioned end, the margins *m*, *m'*, of the side walls 3, 4, are coincident with the transverse margins of the front wall 5 and are thus indented inwardly from the adjacent transverse margin of the back wall 2, so that the latter extends outwardly forming a bottom flap 8. The side walls 3, 4, are then severed from the front wall 5 for a short distance inwardly from the margins *m*, *m'*, to the folding line *f* shown in dotted lines in Fig. 1. It should be understood in this connection that the fold-line *f* is not scored or otherwise marked upon the front wall 5 but is merely shown in dotted lines for convenience of description and is actually a theoretical line around which the severed portion of the front wall 5 is folded back upon itself and glued down with a line of permanent adhesive 9 to form a stay-flap 10 as shown in Figs. 6 and 7. Applied to the top wall 5 inwardly of the glued-down margin of the stay-flap 10 is a transverse line of frangible adhesive 11.

As will be understood by persons familiar with the paper bag trade, any conventional glue or adhesive may be used as the permanent adhesive. The frangible or so-called "break-away" adhesive is one in which the cohesive strength is regulated so that it is slightly less than the tensile strength of the paper. Adhesives of this type can be formulated by making a combination of various amounts of fillers, such as talc, aluminum silicate, calcium carbonate, slate powder, dolomite, and the like with a relatively smaller amount of adhesive film forming agent, such as dextrine, alkaline casein, animal glue, polyvinyl alcohol, or polyvinyl acetate. One specific form of frangible adhesive found to be very satisfactory for use in the present invention, consists of an aqueous mixture of a highly converted dextrin and a tackifying additive, such as the dark colored resin M.P. 234°–239° F.) extracted from rosin gum or a similar naval stores product. This frangible adhesive will, when applied wet, dry to a secure and strong film which has the unique property of fracturing or releasing under a

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sharply applied pull or impact. For purposes of the present invention, a mixture of approximately 30% dextrin and 10% tackifying agent has been found to produce a film having the desirable amount of tensile strength and the proper degree of brittleness.

By way of illustration and not as limitations, the following are examples of "frangible" adhesives which have been found to be effective for the purposes of the present invention.

I

	Parts
H ₂ O -----	100
Talc -----	100
Polyvinyl acetate emulsion (55% solids) -----	10

II

Corn dextrin -----	20
CaCO ₃ (finely ground) -----	100
H ₂ O -----	100

III

Polyvinyl alcohol (granular, high viscosity type) --	30
Al ₂ SiO ₃ -----	80
H ₂ O -----	100

The polyvinyl alcohol is first cooled in the water until fully in suspension and the silicate is then added.

IV

	Parts
H ₂ O -----	100
Bone glue (20 gm. type) -----	10
Dolomite -----	100

V

H ₂ O -----	16
Polyvinyl alcohol (solid medium viscosity type) ---	4
40% vinsol emulsion (i.e. resin extracted from rosin gum M.P. 234°-239° aforesaid) -----	40

In the foregoing examples all parts are "parts by weight."

The bottom flap 8 is folded over onto the front wall 5 around a fold-line *f* and is sealed down by the line of frangible adhesive 11, which, thereupon, dries very quickly and forms a completed so-called "sanitary-opening" bag, as shown in Fig. 5.

In use, the bag is filled from the top and, when filled, the flap 7 is folded over or rolled several times upon itself and glued or stapled in any conventional or desired manner.

Thereafter, when it is necessary to open the bag for removal of a stack of paper cups or similar sanitary merchandise, the free portion of the bottom flap 8 beyond the line of frangible adhesive 11 may be manually gripped and snapped outwardly with a sharp pull. The frangible adhesive 11 will immediately give way, releas-

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ing the flap 7 and permitting the bottom of the bag to be pulled wide open. The turned-back portion of the front wall 5, however, is secured by a line of permanent adhesive 9 and will, therefore, remain in folded-back position. Consequently, the side walls 3, 4, will swing away from the turned-back portion of the front wall 5 to provide a somewhat step-like bottom opening, as shown in Fig. 7. This allows one face of the paper cup or other sanitary contents to be exposed for ready insertion in a receptacle, while the other portions of the bag which extend beyond the turned-over portion of the front wall 5 will serve as a three-sided protective cover, making it possible for the bottom paper cup or other sanitary article to be guided into place within the receptacle (not shown) without being touched by the human hand.

It will, of course, be apparent that many other types of sanitary articles other than paper cups may be packaged within the bag and that the present invention is not, in any sense, limited merely to the packaging of paper cups.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the sanitary-opening bags may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

A sanitary-opening bag consisting of an elongated paper-tube having normally flat parallel front and back walls connected along their longitudinal margins by bellows pinched side-walls, the back wall projecting at one end beyond the transverse end-margin of the front wall in the provision of a bottom flap, said front wall also being severed from the side walls along both of its longitudinal margins for a short distance inwardly from the transverse end-margin in the provision of a stay-flap, said stay-flap being folded back upon the front wall and permanently secured by adhesive thereto, said bottom flap being longer than, and folded back over, the stay-flap and secured to the front wall inwardly of the inner end of the folded-back stay-flap by a film of frangible adhesive which will break apart in response to a sharp pull on the bottom flap.

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