Aug. 27, 1968 D. CLANCY 3,398,826

NARROW FOLD MOIST TOWELETTE PACKAGE

Original Filed March 31, 1966

FIG. 4

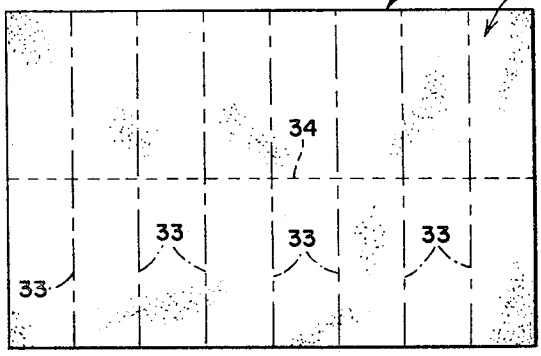




FIG. 5

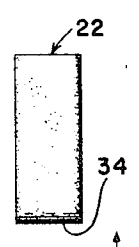


FIG. 6

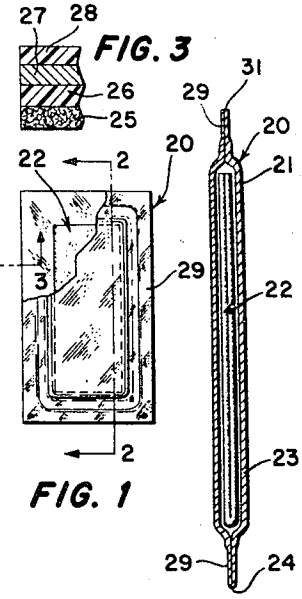


FIG. 3

FIG. 1

FIG. 2

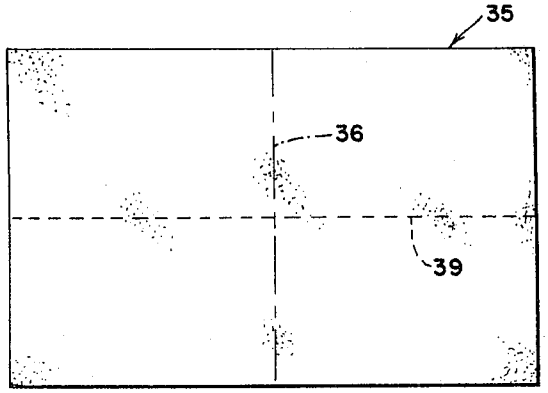


FIG. 7

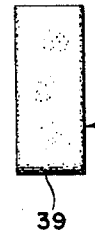


FIG. 11

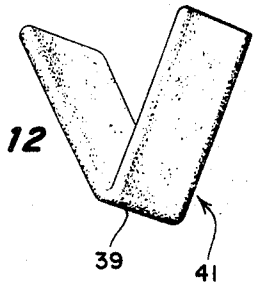


FIG. 12

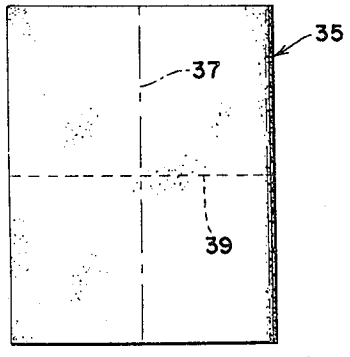


FIG. 8

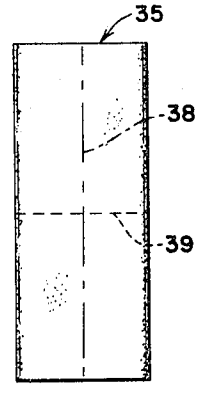


FIG. 9

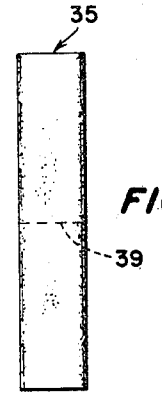


FIG. 10

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NARROW FOLD MOIST TOWELETTE PACKAGE

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Continuation of application Ser. No. 539,067, Mar. 31, 1966. This application Oct. 12, 1966, Ser. No. 586,306
3 Claims. (Cl. 206—46)

ABSTRACT OF THE DISCLOSURE

A compact single use package cleansing unit consisting essentially of a liquid impregnated folded applicator pack enclosed in a sealed tearable gas-tight envelope. The applicator pack is a single flexible sheet of absorbent fibrous material initially accordion folded along a series of parallel fold lines wherein coextensive plies are substantially in directly superposed relationship and subsequentiy folded over upon itself along a medial line at a right angle to the parallel lines to its compact final folded form in which it has a width of approximately an inch and a length of approximately 2½ inches. The gas-tight envelope conforms in size substantially to that of the folded applicator pack.

Cross-reference to related applications

This application is a continuation of my copending application Ser. No. 539,067 which was filed Mar. 31, 1966, now abandoned and which is a continuation of my application Ser. No. 287,983 filed June 14, 1963, now abandoned, for Narrow Fold Moist Towelette Package.

This invention relates to the individual packaging of single use moist towelettes, and is particularly concerned with special narrow fold packages which are compact and offer marked advantages for handling in automatic package forming machinery, and from which the towelettes are extracted in condition for use by a simple spreading operation.

It has been proposed as in United States Patent to Williams No. 3,057,467 issued Oct. 9, 1962 to package individual folded towelettes premoistened and enclosed in air tight envelopes. The present invention provides an improved more compact narrow fold towelette package, that may be packed and carried in smaller spaces and is better suited to handling in automatic molding and inserting machinery.

The major object of the present invention is to provide a novel package containing a moist towelette that has been multiple folded in a special manner which is peculiarly adapted to automatic machinery and provides a more compact package better suited to customer usage.

A more specific object of the invention is to provide a novel narrow fold moist towelette package wherein a relatively tough flexible sheet of absorbent paper or like fibrous material is multiple folded along a plurality of parallel lines and then finally folded over on a midline at right angles to said parallel lines for ready thrusting into an envelope to be sealed around it. Pursuant to this object the towelette is preferably accordion folded, although other narrow folds may be used as will appear in the detailed description.

Further objects of the invention will appear as the description proceeds in connection with the appended claims and the annexed drawings wherein:

FIGURE 1 is a plan view of a package according to a preferred embodiment of the invention partially broken away to show the narrow fold applicator;

FIGURE 2 is a section on line 2—2 of FIGURE 1;

FIGURE 3 is a frgamentary section on line 3—3 of

FIGURE 1 exaggeratedly showing the laminations of the envelope wall;

FIGURE 4 is a plan view of the towelette sheet before accordion folding, showing the eventual parallel folds in dot-dash lines and the midline fold at right angles thereto in dotted lines;

FIGURE 5 is a side elevation showing the accordion folded sheet in partially spread condition;

FIGURE 6 is an elevation of the narrow fold applicator ready for insertion into the package envelope of FIGURE 1;

FIGURE 7 is a plan view of a towelette adapted for another form of narrow fold according to the invention;

FIGURES 8–10 are plan views showing successive first, second and third folds of the towelette along parallel lines;

FIGURE 11 is a plan view of the towelette finally folded on its midline at a right angle to the parallel folds and ready for insertion into the envelope; and

FIGURE 12 is a perspective view showing the finally folded towelette of FIGURE 11 in partially open condition.

The invention comprises a sealed package **20** consisting essentially of an outer liquid and gas impervious tearable enevlope **21** and a moistened narrow fold towelette applicator **22** enclosed within the envelope.

The envelope preferably consists of a single laminated sheet **23** folded about a medial portion **24** (FIGURE 2) but alternative constructions, e.g. two sheets heat sealed together, may be used if desired. The laminated sheet advantageously comprises (FIGURE 3) an outer sheet of paper or the like **25**, an outer thin flexible layer **26** of some gas impervious thermoplastic material such as polyethylene, a flexible sheet **27** of metal foil such as aluminum foil and an inner thin flexible layer **28** of some gas impervious thermoplastic material such as polyethylene which may be the same as layer **26**. For some impregnating liquids a laminated sheet of paper and heat sealable plastic suffices.

The sheets and layers **25–28** are coextensive, and a function of layer **26** is to intimately surface bond the paper sheet **25** to the foil sheet **27** over their coextensive areas. This is usually accomplished by spraying layer **26** over the inner surface of paper sheet **25**, appyling the foil sheet **27** and subjecting the sandwich to uniform heat and pressure, as by passing it through heated rollers. The inner layer **28** is then sprayed onto the inner surface of foil sheet **27**. The foregoing may be accomplished while the sheets **25** and **27** are long webs, with the final laminated structure being severed into envelope size.

In the package the envelope is heat sealed entirely around its inner periphrey in a continuous rectangular band indicated at **29**, so that all of the coextensive edge areas of polyethylene layer **28** are integrally fused together at band **29** and in effect the narrow fold applicator to be described is wholly contained within a continuous impervious plastic enclosure. It will be noted that the heat seal band **29** extends along the fold **24**, because even though the paper and foil are integral at that region the bending operation may open tiny apertures in the foil and a heat seal insures against leakage.

The paper **25** is usually printed on its outer side prior to envelope forming, although some printing may be done at almost any stage.

In making the package, the envelope is first heat sealed at the bottom and usually also on the opposite sides, leaving the top **31** and optionally the sides open. The folded towelette **22** is then thrust through open envelope top **31** into the interior position shown in FIGURE 1. If the sides have not previously been sealed this is done next, the liquid is squirted into the package, and the heat seal band **29** completed across the top.

It is a major feature of the present invention to provide a special narrow fold flat applicator **22**, which enables a narrow convenient size package particularly suitable for women's purses, dispensing machines and packaging in general.

This applicator is made from a liquid absorbent material such as unwoven fabric or any thin tough liquid absorbent paper which will retain a fold, will not deteriorate structurally or chemically when moistened with a liquid cleanser or during use as an applicator, is soft enough not to scratch or harm the skin during wiping, and will not drain in the package. The sheet **32** may be made for example of the wet strength paper disclosed in said Williams patent.

The liquid employed to moisten the towelette may be any suitable compound such as a cleansing liquid not harmful to human skin, eyes or the like and for example may be the mixture of detergent, cleansing agent, humectant, astringent, olfactory stimulant, drying or evaporating agent and carrier disclosed in said Williams patent. In using the unfolded applicator this liquid will dry or evaporate during or so soon after wiping that no further drying as by a separate towel is required.

In the preferred embodiment of FIGURES 1–6, the absorbent material while dry is first accordion folded along substantially equally spaced parallel lines **33**. The usual absorbent towelette when unfolded is about five by eight inches, thus being large enough to serve for washing the skin when unfolded, so that by providing seven alternate folds (FIGURE 5) a narrow accordion folded strip about one inch wide and five inches long is first formed, and when this strip is folded over once at the longitudinal dash midline **34** of FIGURE 4 the rectangular narrow fold towelette is ready for insertion into the envelope. This narrow fold towelette is generally rectangular and about 1" x 2½" in size, with sixteen ply thickness of sheet material, and is particularly suitable for automatic machinery, the closed side of the fold **34** being located at the bottom so that an insertion blade in automatic machinery may descend into the open side and thrust it through envelope opening **31**.

Referring to FIGURES 7–12 an alternate narrow fold towelette is disclosed. Here the absorbent paper or the like is first folded on medial dot-dash line **36** to the two ply condition of FIGURE 8, then on the parallel dot-dash medial line **37** to the four ply condition of FIGURE 9, and then on the parallel medial dot-dash line **38** to the eight ply condition of FIGURE 10.

At this point (FIGURE 10) there exists a narrow multiple fold strip about 1" x 5", which is then folded about medial dash line **39** at a right angle to lines **36, 37** and **38** to produce the final narrow fold towelette **41** ready for insertion into an envelope such as that at **21**, there to be moistened prior to heat sealing of the envelope.

The rectangular sixteen ply thickness towelette of FIGURES 7–10 has the same physical characteristics as that of FIGURES 1–6, and is similarly moistened.

In both embodiments of the invention the envelope **21** is torn along one edge to open the package for removing, unfolding and using the moist applicator **22** or **41**. The impregnating liquid, as disclosed in said patent, is sufficiently volatile to evaporate during and/or immediately after wiping the applicator along the skin, whereby the user is cleansed, cooled and refreshed. The used applicator is discarded.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by Letters Patent is:

1. A compact single use packaged cleansing unit consisting essentially of a folded applicator pack of liquid absorbent material impregnated with a volatile liquid and separably enclosed in a sealed tearable gas-tight rectangular envelope, said applicator pack being a single flexible sheet of fibrous material which in fully unfolded condition is large enough to serve for wiping a surface, said sheet being initially accordion folded along a series of parallel fold lines into a long narrow substantially flat folded strip wherein coextensive plies approximately one inch wide are substantially in directly superposed relationship, said strip being subsequently folded over upon itself along a medial line at a right angle to said parallel lines to the compact final form of pack present in said envelope, said pack in its final folded condition having a width of approximately an inch and a length of approximately 2½ inches, said envelope conforming in size substantially to that of said folded pack and comprising an opposed pair of laminated, coextensive sheet side sections each having an outer paper sheet defining an outer surface of said envelope, an inner flexible sheet of metal foil coextensive with and intimately full surface-bonded to said paper sheet, and a thin flexible layer of gas impervious thermoplastic material applied over the inner surface of said metal foil sheet and defining an inner surface of said envelope, the flexible layers of said sheet sections being integrally fused together along a marginal band to seal said envelope in its final form.

2. The packaged unit defined in claim **1**, wherein said sheet is successively double folded upon itself along parallel medial lines into said narrow strip.

3. The packaged unit defined in claim **1**, wherein said envelope is formed from a single laminated sheet folded onto itself along a medial line to define said opposed, laminated sheet sections, with said medial fold line of said strip being adjacent to the medial fold line of said single laminated sheet.

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