United States Patent

[11] 3,563,371

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[54] **WET TOWEL PACKAGE**
4 Claims, 4 Drawing Figs.

[52] **U.S. Cl.** **206/46**
[51] **Int. Cl.** **B65d 85/00**
[50] **Field of Search** ..... 206/46M, 47; 161/(Vinyl Cellophane Metal Foil)

[56] **References Cited**

UNITED STATES PATENTS

3,129,811	4/1964	Williams	206/46
3,398,826	8/1968	Clancy	206/46

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ABSTRACT: A finely perforated sheet of nonwoven fabric composed of nylon and cotton having a width and length of the order of 8 and 11 inches, respectively, is folded six times into superposed plies that are impregnated with a scented liquid, for example, water and lime fragrance, and enclosed between heat-sealed sheets each of which comprises an innermost layer of vinyl compound, on one side of a layer of aluminum on the other side of which is a coating of polyethylene which has an outer layer of cellophane, the resulting packet being capable of withstanding high temperatures to 420° F. for 20 minutes and low temperatures to 38° F. for 10 minutes.

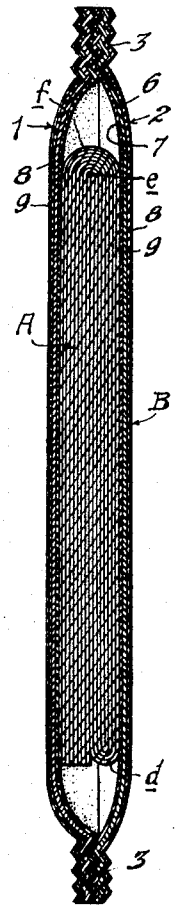


Fig. 1

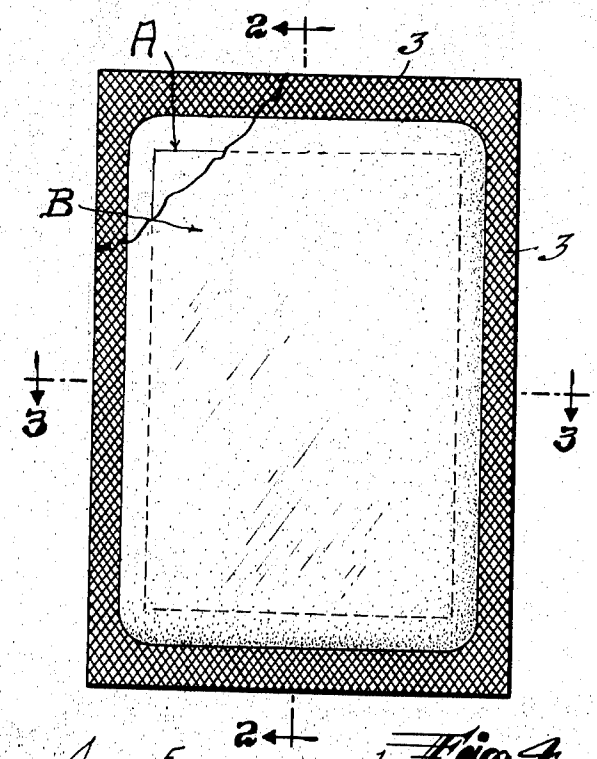


Fig. 2

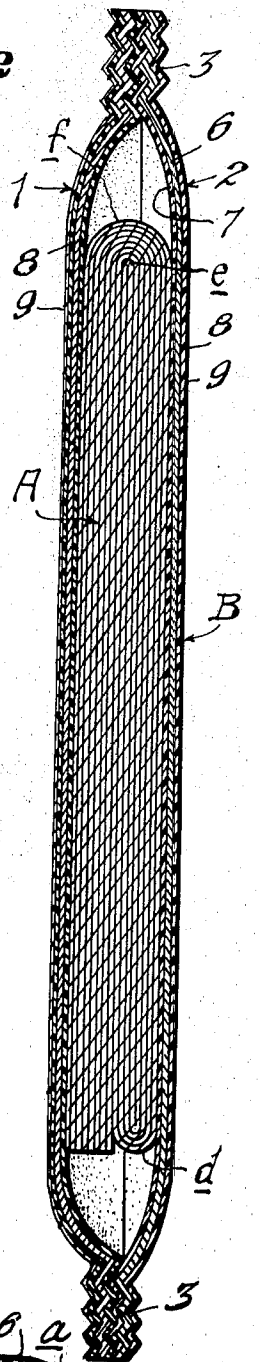


Fig. 4

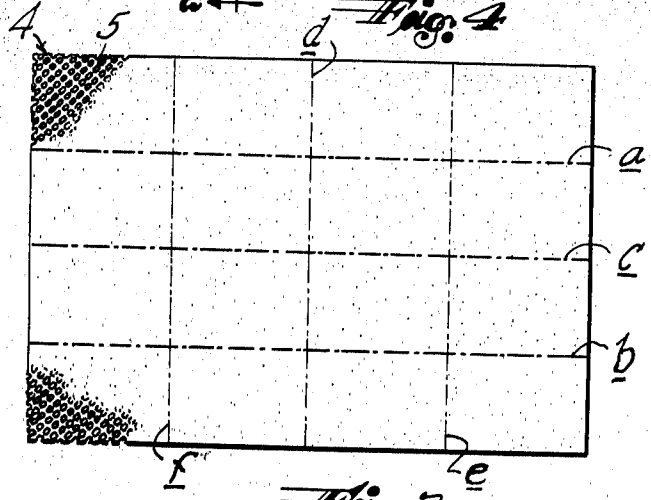
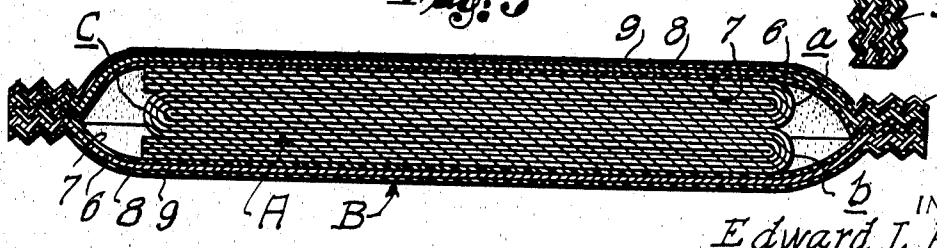


Fig. 3



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WET TOWEL PACKAGE

BACKGROUND OF THE INVENTION

The invention relates to a single use porous liquid impregnated sheet folded and enclosed in a sealed liquid-tight and gastight envelope having flexible walls which can be torn for removal of the folded sheet, of the type disclosed in U.S. Pat. Nos. 3,057,467 and 3,286,435.

The prior art packages do not provide for unfolded sheets of adequate size to serve effectively as a towel or for use of the moist sheets at other than room temperatures.

SUMMARY

One object of the invention is to provide a single use porous sheet of a size adequate to serve as a towel, for example, about 8 by 11 inches folded in a novel manner compactly into a pile of multiple superposed plies of a width and length, respectively, of about 2 and 3 inches, said pile being impregnated with a liquid, preferably water and a scenting substance, and sealed between sheets of packaging material that are liquid-tight and gastight when subjected to temperatures of from about 38° F. to about 420° F. so that the sheet can be used effectively as a hot towel or a cold towel.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a plan view of a package embodying the invention;

FIG. **2** is a greatly enlarged fragmentary sectional view on the plane of the line **2–2** of FIG. **1**;

FIG. **3** is a similar view on the plane of the line **3–3** of FIG. **1**; and

FIG. **4** is a plan view on a reduced scale of the porous sheet before the folding thereof, the dot and dash lines indicating the lines of folding of the sheet into a pile comprising multiple plies.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Specifically describing the invention, FIG. **1** shows the normal size of the package which comprises a moistened porous sheet folded into a pile A of superposed plies enclosed in an envelope B which comprises two opposed layers **1** and **2** of packaging material having their edge portions heat sealed and crimped together as indicated at **3** in bounding relation to the folded sheet.

The sheet **4** shown in unfolded condition in FIG. **4** is of adequate size and shape to serve as a towel, and preferably is about 8 inches wide and 11 inches long. The material of the sheet is a nonwoven fabric comprising about 90 percent nylon and about 10 percent cotton, and the sheet is finely perforated by a large number of apertures **5**, for example, about 104 apertures per square inch.

One feature of the invention is the manner of folding the sheet into a multiple plied pile A the length and width of which are preferably 3 inches and 2 inches, respectively. In making the pile of plies, the sheet is first folded along the longitudinal lines *a* and *b* equidistantly from the longitudinal edges of the sheet and inwardly upon the sheet, so that the longitudinal edges of the sheet are coincident with the longitudinal medial line *c*. The sheet is then folded longitudinally along the line *c* after which the partially folded sheet is again folded transversely along the line *d* that is disposed at the middle of the length of the sheet. This fold brings the transverse fold lines *e* and *f* into juxtaposition with each other, whereupon the sheet is finally folded along said juxtaposed lines. The pile A thus completed comprises **16** superposed plies as clearly shown in FIGS. **2** and **3**.

The sheet is impregnated with a suitable liquid at any suitable time and in any suitable manner, but preferably prior to or during the folding of the sheet. A liquid such as a mixture of water and a scenting substance, for example, lime fragrance has been found to be satisfactory. The lime portion is preferably .08 percent expressed from the fresh peel of citrus limen and contains 1–A Pinine, B Pinine, Camphene Y, and Turpentine.

As hereinbefore indicated, the invention contemplates a package that is capable of withstanding temperatures of the order of 420° F. for periods up to 20 minutes to provide a hot towel, and which will withstand low temperatures of the order of 40° F. for periods of from 5 to 10 minutes to serve as a cold towel. It is therefore necessary that the envelope, the sheet itself and the liquid shall withstand such temperatures and that the envelope be liquid-tight and gastight to prevent the escape of the moisture from the folded sheet.

Preferably the layers of packaging material **1** and **2** comprise sheets **6** of metal foil, preferably aluminum the inner sides of which have a layer **7** of a vinyl compound that is inert to the liquid and the metal and is also heat-sealable. The opposite side of the metal layer has a coating **8** of polyethylene and over the polyethylene layer is applied a layer **9** of cellophane. The polyethylene constitutes a bonding agent between the cellophane and the aluminum and adds stability to the package, while the cellophane is resistant to water vapor, and prevents the escape of the liquid through the aluminum which ordinarily is not impervious to water. The cellophane also reinforces the aluminum which has an inherent relatively poor mechanical strength.

It is, of course, important that the sheet **4** be thin and formed of liquid absorbent material, and which can be moistened and folded without structural or chemical deterioration. The sheet should also have adequate strength when moistened to serve as a towel or wiper and yet be sufficiently soft to prevent any harm to the skin during use. A suitable material has been found in what is known as Chicopee **0**AK 650–2926 nonwoven fabric.

The invention thus provides a single use porous sheet of a size adequate to serve as a towel and folded into a compact pile of superposed plies, the pile being moistened preferably by a mixture of water and a scenting substance and sealed between sheets of packaging material each of which comprises a plurality of layers of material such that the package is liquid-tight and gastight when subjected to temperatures of from 38° F. to about 420° F., so that the sheet when removed from the envelope and unfolded can be used either as a hot towel or as a cold towel, depending upon whether the package is heated or chilled prior to use. The packaging layers **1** and **2** are easily tearable to permit removal of the folded sheet from the envelope.

I claim:

1. A wet towel package comprising a sheet of finely perforated nonwoven fabric composed of 90 percent nylon and 10 percent cotton which has its longitudinal edge portions folded in toward each other and meeting on the longitudinal median of the sheet along which the sheet is again folded, said sheet thus folded having a fold along the transverse median thereof so that the end edges are coincident with each other, said folded sheet having another transverse fold between said end edges and the last-mentioned fold, thereby providing a pile of coextensive plies, said pile being enclosed in a tearable liquid-tight and gastight envelope including two sheets of packaging material at opposite sides of said pile having marginal portions heat-sealed together in bounding relation to said pile, each sheet including an inner layer of a heat-sealable vinyl compound on one side of a layer of aluminum foil on the other side of which is a coating of polyethylene on the outer side of which is a layer of cellophane, said pile of plies being impregnated with a cleansing liquid, said package being capable of withstanding for several minutes any temperature from about 38° to 420° F. so as to serve either as a hot towel or as a cold towel depending upon the temperature to which it is heated.

2. A wet towel package as defined in claim 1 wherein said sheet when unfolded is of a length and width of the order of 11 and 8 inches, respectively, and the coextensive plies of said pile have a width and length of the order of 2 inches and 3 inches, respectively.

3. A wet towel package as defined in claim 1 wherein said sheet when unfolded is of a length and width of the order of 11 and 8 inches, respectively, and the coextensive plies of said

pile have a width and length of the order of 2 inches and 3 inches, respectively, and wherein said cleansing liquid comprises a mixture of water and lime scenting substance.

4. A wet towel package comprising a sheet of finely perforated nonwoven fabric composed of 90 percent nylon and 10 percent cotton which has been folded into a pile of superposed coextensive plies and impregnated with a cleansing liquid, said pile being sealed in a tearable liquid-tight and gastight envelope whose walls comprise an inner layer of a heat-sealable vinyl compound on one side of a layer of aluminum foil on the other side of which is a coating of polyethylene on the outer side of which is a layer of cellophane, said pile of plies being impregnated with a cleansing liquid, said package being capable of withstanding for several minutes any temperature from about 38° to 420° F. so as to serve either as a hot towel or as a cold towel depending upon the temperature to which it is heated.