

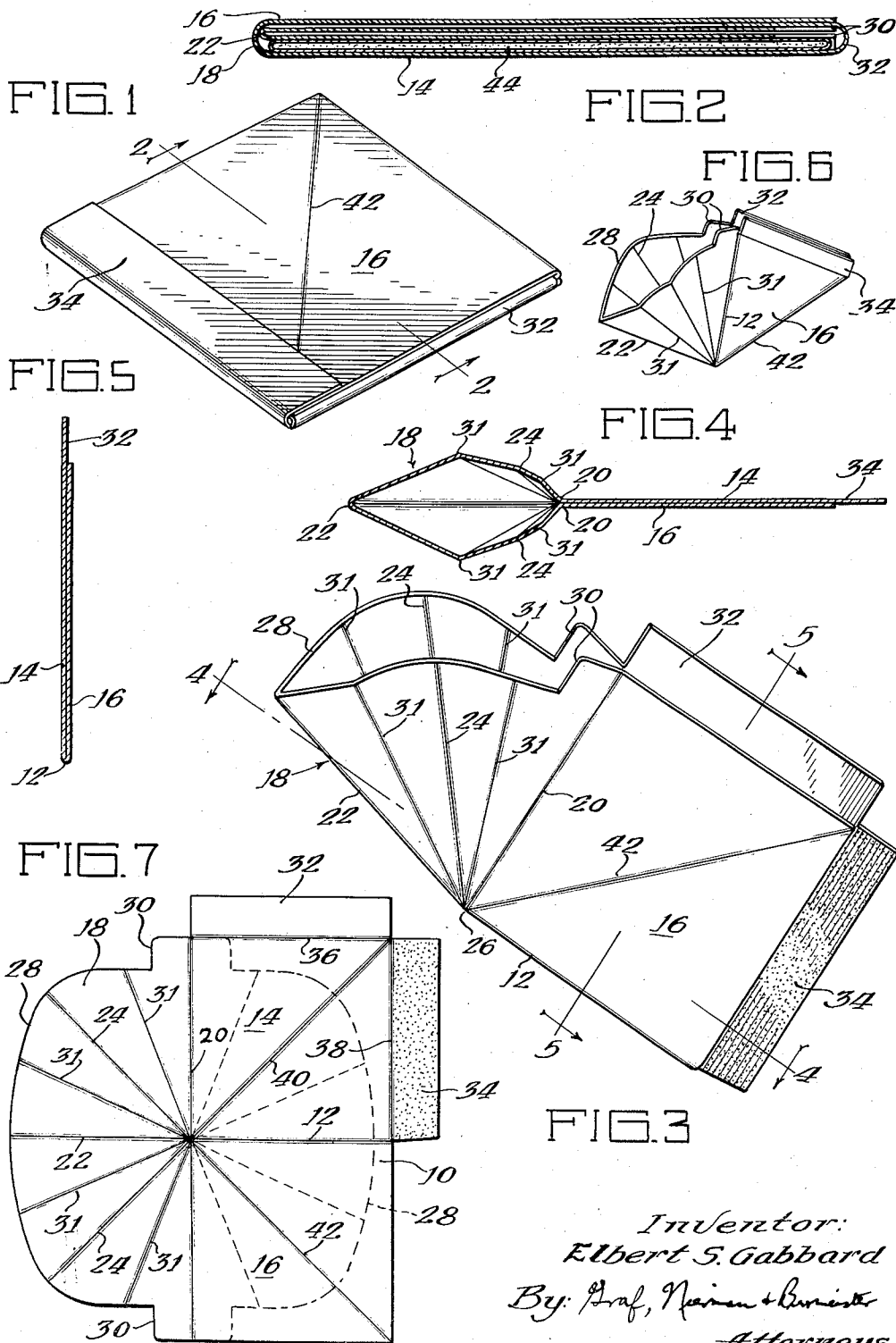
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E. S. GABBARD

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COMBINED PAPER CUP AND PACKAGE

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COMBINED PAPER CUP AND PACKAGE

Elbert S. Gabbard, Park Ridge, Ill., assignor to Goldene Shaw, Cook County, Ill.

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This invention relates to an improved form of package, and more specifically to a combined paper cup and package, particularly for powders and similar water-soluble products which are intended to be used orally in water solution.

The general aims and objects of the invention will best be understood by reference to one particular use thereof, the packaging of powdered mouthwash, one of the many purposes to which the invention may be applied. The package of the invention is of the single-use or "throw-away" type, wherein it is intended that the contents of the package will be used immediately after opening of the package, and the package thereupon thrown away. The packaging of powders, capsules, and analogous products in small envelopes or containers designed to contain just sufficient of the product for one use has become commonplace in a variety of uses of such products, particularly in the supplying of convenience items to patrons of airlines, railroads, hotels, and other enterprises of a more or less public nature, particularly those catering to travellers. Many such convenience items, such as aspirin and tooth-powder, require as an auxiliary for satisfactory use a cup or other container of water. In many locations, such as in washrooms, although satisfactory drinking water is readily available there is not usually present a suitable cup or other container. In the case of mouthwash, an additional complicating factor is the requirement that the powdered product be dissolved in a measured quantity of water in order that the solution be of satisfactory strength. Thus the distribution of powdered mouthwash in single-use packages has heretofore been relatively impractical, since such packages could not conveniently be used even in locations where a suitable drinking container is available, because the making of a mixture of proper strength would require either an auxiliary measuring device for the quantity of water employed or skill on the part of the user in estimating the level to which any particular container must be filled in obtaining the quantity of water specified for use with the fixed quantity of powder. In the present invention, this problem is avoided by incorporating as a part of the package containing the packet of mouthwash a paper cup in which the contents of the packet may be dissolved, thus automatically insuring that the solution will be made in the strength recommended by the manufacturer, without the necessity of experimentation or skill on the part of the user.

The combination paper cup and package of the present invention is so constructed as to minimize the possibility of dust and dirt entering the interior of the portion of the device from which the cup is later formed, during storage and handling. The device of the invention is readily and simply converted from a simple and compact package to a conical paper cup, the cover portion of the package serving as a handle for the cup in this condition of the device.

For understanding of the manner in which the above advantages are obtained, and for observation of the

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advantages of the invention other than those specifically discussed above, reference is made to the single embodiment of the invention shown in the drawing, in which:

Figure 1 is a view in isometric perspective of the combined paper cup and package of the invention in the condition of folding wherein it constitutes a package;

Figure 2 is a sectional view taken along the line 2—2 of Figure 1;

Figure 3 is a view in isometric perspective of the device of Figure 1 in an intermediate folded condition;

Figure 4 is a more or less horizontal sectional view taken along the line 4—4 of Figure 3;

Figure 5 is a more or less vertical sectional view taken along the line 5—5 of Figure 3;

Figure 6 is a small view in isometric perspective of the device in the final folded condition wherein it constitutes a paper cup provided with a handle; and

Figure 7 is a plan view of the blank from which the device is formed.

As will be seen from the drawing, the device of the invention, as shown in Figure 1, is, in the condition wherein it is employed as a package, a compact flat rectangular (square in the present instance) enclosure, and in its condition as a paper cup (Figure 6), it assumes a conical configuration provided with a triangular handle. Prior to describing the simple refolding operation involved in this conversion, there will first be described the flat blank shown in Figure 7, from which the device in its various folded states is formed. As shown in Figure 7, the blank, of cardboard or other similar material, consists generally of a rectangular cover portion 10, which is divided by a suitable score line 12, serving as a folding guide, into upper and lower rectangles 14 and 16 (the terms "upper" and "lower" referring to the position of Figure 7). In the illustrated embodiment, the rectangular cover portion 10 is of a height twice its width, so that the upper and lower portions 14 and 16 are square.

Integral with one edge of the rectangular cover portion 10 is a cup portion 18, a scored folding line 20 being inscribed upon the blank along this edge of the rectangular cover portion 10, and thus separating the cover and cup portions 10 and 18. A score line 22 on the cup portion 18 constitutes an extension of the score line 12, the extended score line thus formed being perpendicular to the score line 20. Extending radially from the intersection 26 of the edge score line 20 and the transverse score lines 12 and 22 are additional score lines 24 on the cup portion 18, approximately bisecting the angles between the mutually perpendicular score lines. The outer edge 28 of the cup portion 18 forms a convex curve, more or less semicircular, symmetrical with respect to the score line 22, which lies on the center line of the cup portion 18. The ends of the curved outer edge 28 are slightly offset inwardly at 30 from the outer ends of the upper and lower portions 14 and 16 of the rectangular cover portion 10.

It will be seen that folding of the rectangular cover portion 10 along the score line 12 to place the upper and lower portions 14 and 16 in mutual abutment will, because of the presence of the score lines 24, form the cup portion 18 into a more or less conical cup. Were the score lines 24 absent, the folding thus described would merely double up the cup portion along its score line 22, but the presence of the score lines 24 distributes the bending force applied on the cup portion by grasping of the portions 14 and 16 in such a manner as to form an open container. Additional score lines 31 are provided, approximately bisecting the angles between the score lines 24 and the respective score lines 20 and 22, thus extending the distribution of the bending further, to form a cone of more circular cross-section, as shown in Figure 3. (It

is to be noted that the cross-section of the cone is distorted in the sectional view of Figure 4 because of the angle at which this section was taken.)

The edges of the upper portion 14 of the rectangular cover portion 10 are provided with flaps 32 and 34, separated therefrom by score lines 36 and 38, the face of the flap 34 being coated with a suitable adhesive. Additionally, diagonal score lines 40 and 42 extend across the portions 14 and 16 from the intersection 26, for purposes to be described below.

As indicated above, folding of the rectangular cover portion 10 along the score line 12 produces the general configuration shown in Figure 3, wherein it will be seen that the cup formed by the cup portion 18 in this manner has the cover portion 10 secured thereto in a manner somewhat resembling a handle. However, as will further be seen in Figure 3, when the cup is erect with the folds made as thus far described, the fold at 12 runs downwardly and outwardly from the vertex of the cone at 26. Since there is no adhesive or other leak-proofing provided, use of the cup in the condition shown in Figure 3, although possible, is not desirable. Accordingly, in folding the blank of Figure 7 to its ultimate condition for use as a cup, as shown in Figure 6, a final fold is made along the diagonal score lines 40 and 42, thus forming the cover portion 10 into a triangular handle, this last folding operation serving both to eliminate the downward inclination of the lower edge of the "handle" from the vertex of the upright cone, and also, by reason of the fact that the handle now consists of four thicknesses, rather than two, and that the area of finger pressure is now a larger portion of the interface between the portions 14 and 16, to make the cup sufficiently liquid-tight so that there is no problem in holding liquids in the cup without leakage for the relatively short periods for which the cup is designed for use.

Returning now to Figure 7, it has been seen that the cup with annexed handle is formed by making the first fold of the blank of Figure 7 along the score line 12. Consider now the effect of making the first fold of the blank of Figure 7 along the score line 20. In this case the cup portion 18 is folded flat against the cover portion 10. As shown by the dotted line in Figure 7, the edge or rim 28 of the cup portion lies well within the area of the cover portion 10, both because of the provision of the offset 30 and because the maximum width of the cup portion 18 is less than the width of the rectangular portion 10, the score line 22 thus being shorter than the score line 12. When the second fold is made along the score lines 12 and 22, both the cover portion 10 and the cup portion 18 are folded in two and remain flat. If, before these folding operations, a suitable envelope or packet of powder is placed on the portion 14, the making of the folds along the score line 20 and then along the abutting score lines 12 and 22 produces a flat rectangular package, which is closed by tucking in of the flap 32 and bending over of the flap 34, which adheres to the outer surface of the portion 16 by reason of the adhesive mentioned above. The ultimate package structure thus formed is shown in Figures 1 and 2, an envelope of powder being indicated in the latter figure at 44.

The mode of employment of the device will now be obvious. The blank of Figure 7 is, in the packaging operation, employed to enclose the packaged object, such as the envelope of powder 44, in the manner described above. When the powder or other object enclosed within the package is to be used, the flap 34 is opened by the user and the device unfolded, the contents being removed. Thereupon, to place the package in condition for use as a drinking cup, folds are made along the scoring 12 and along the scorings 40 and 42, which are automatically in juxtaposition, thus producing the handled cup of Figure 6.

It will be noted that in the package condition of Figures 1 and 2, the interior and lip or rim of the cup are well protected from contamination by dirt or dust which may be encountered in handling or extended storage. By the provision of the flap 32, it is assured that the single edge of the package which remains open exposes to possible dirt contamination only that part of the cup portion 18 which will ultimately constitute the apex of the cone, i.e., the lower outer surface of the cup.

It will be obvious to those skilled in the art, after careful perusal of the above description and examination of the annexed drawing, that many changes can be made without departing from the teachings of the invention, which may be incorporated in structures substantially differing in appearance from that herein illustrated and described. Accordingly, the scope of the invention shall not be deemed to be limited by the particular embodiment shown in the drawing, but shall be determined by the annexed claims.

What is claimed is:

1. A combined paper cup and packaged product comprising a rectangular cover portion folded double to form an enclosure, a cup portion integrally formed with the cover portion from a single flat sheet and having one edge common with a doubled edge of the cover portion and an opposite edge forming a convex curve symmetrical with respect to the fold-line of the cover portion, the cup portion extending substantially the entire width of the cover portion and being wholly folded into the cover portion along the common edge and folded double within the cover portion along said fold-line, and a product comprising an envelope containing a soluble substance within the enclosure thus formed, constructed and arranged so that upon opening of the package and unfolding of the cup portion, the cup portion may be formed into a substantially conical cup having the cover portion as a handle, and the contents of the envelope may be dissolved in the cup.

2. A combined paper cup and packaged product comprising a cover portion symmetrical with respect to its center-line and folded double along its center-line to form an enclosure, a cup portion integrally formed with the cover portion from a single flat sheet and having one edge common with a doubled edge of the cover portion and an opposite edge forming a convex curve symmetrical with respect to its center-line, the cup portion extending substantially the entire width of the cover portion and being wholly folded into the cover portion along the common edge and folded double within the cover portion along its center-line, and a product comprising an envelope containing a soluble substance within the enclosure thus formed, constructed and arranged so that upon opening of the package and unfolding of the cup portion, the cup portion may be formed into a substantially conical cup having the cover portion as a handle, and the contents of the envelope may be dissolved in the cup.

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