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BOTTLE OR CONTAINER OF PAPER, WOOD PULP, OR THE LIKE

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Fig. 1.

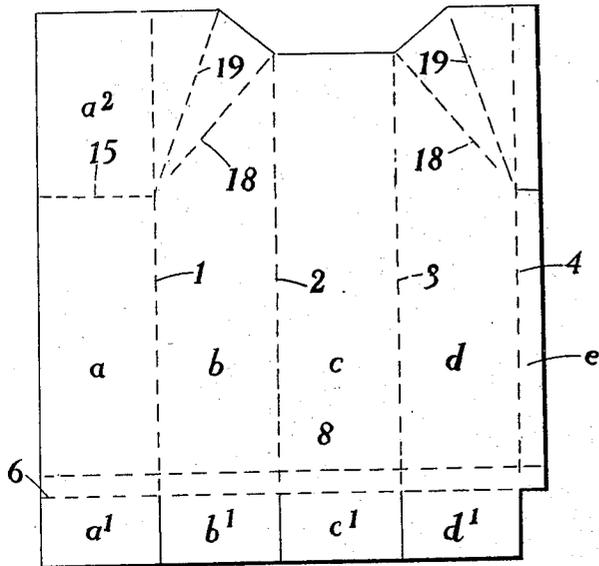


Fig. 3.

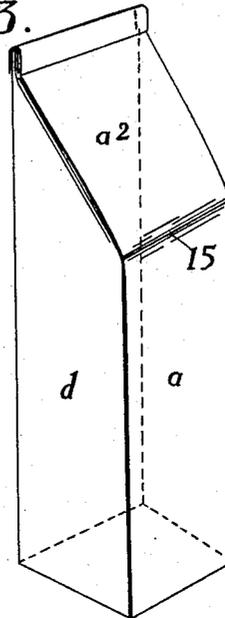


Fig. 4.

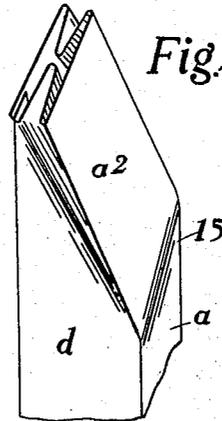


Fig. 2.

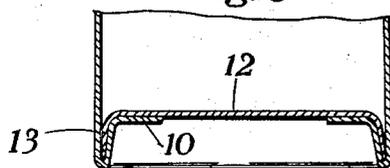
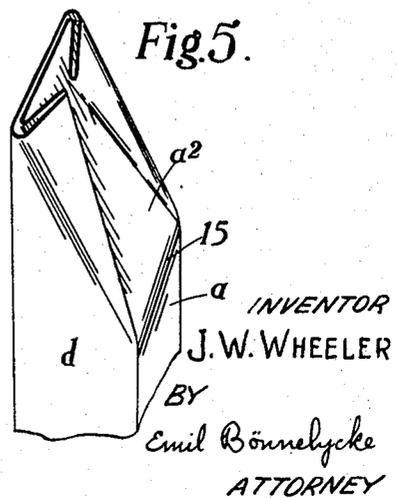


Fig. 5.



# UNITED STATES PATENT OFFICE

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**BOTTLE OR CONTAINER OF PAPER, WOOD  
PULP, OR THE LIKE**

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**Application February 27, 1936, Serial No. 66,107  
In Great Britain February 28, 1935**

**1 Claim. (Cl. 229—37)**

This invention relates to bottles and like containers made from blanks of paper, wood-pulp or like sheet material folded into shape. One important application of the invention is to containers suitable for holding liquids such as milk.

In the usual way of forming such a container, in order to provide a closure, two opposite side portions of the container are brought together for sealing purposes and the intervening side portions are each tucked inwardly such that there is formed a triangular side portion which slopes inwardly beneath the side portions brought together to form the closure, thus providing an inwardly directed recess.

The present invention comprises a bottle or like container formed by folding a blank of paper or like sheet material and closed by bringing two opposite side portions of the container together to form a tapered closure having at least one sloping side, wherein the intervening side portions of triangular formation are caused to lie flush with the edges of the sloping side or sides of the closure.

According to another feature of the invention the excess material of each of said intervening side wall portions is formed as one or more pleats lying alongside the sloping side or sides.

In one form of the container according to the invention one of the two side portions which are brought together is sloped upwardly and towards the other which is substantially upright with respect of the base of the container so that that part of the container forming the closure has somewhat the shape, in cross-section, of a right-angled triangle. The container formed with a closure as aforesaid is in one embodiment provided with a base at or adjacent the lower end of the sloping side or sides. Thus, in this construction the complete container is of triangular form in cross-section and may have the form of a triangular prism.

In another construction of the container there is provided a body part of rectangular cross-section which is surmounted by that part forming the closure as aforesaid.

Instead of a body portion of rectangular cross-section, a body portion of any other shape in cross-section may be employed merging into a rectangle at the lower end of the sloping side or sides. In one construction the body portion is of circular or other curved form in cross-section at the base of the container merging into rectangular shape at the junction with the one or more sloping sides of the tapered closure.

For forming a container as aforesaid with a

rectangular body portion there is preferably employed a blank divided by longitudinal scorings or creasings into a plurality of sections corresponding in width with the width of the side walls of the container or the body portion thereof, and the upper ends of alternate sections are further creased or scored along inclined lines to define the part or parts thereof to be pleated and to leave the remaining part or parts flush with the edges of adjacent sections as the upper ends of the latter sections are brought together to form the closure. The aforesaid pleats may be folded either beneath or above the adjacent section or side of the container.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be more fully described with reference to the accompanying drawing, in which:—

Figure 1 shows one form of blank for providing a container embodying the invention and having a rectangular body portion;

Figure 2 is a sectional view showing one mode of forming the base of a container produced in accordance with the invention;

Figure 3 is a perspective view of a container formed from the blank shown in Figure 1;

Figures 4 and 5 illustrate two alternative methods of closing the mouth of a container formed from the blank shown in Figure 1.

The substantially rectangular blank shown in Figure 1 is creased or scored along four longitudinal lines 1, 2, 3 and 4 disposed parallel with the side edges of the blank so that when the latter is folded along these lines the sections *a*, *b*, *c*, *d* and *e* thus provided form the sides of a hollow rectangular body, part of which one side wall is formed by one of the outermost sections *a*, overlapped by the other outermost section *e*, such overlapping section being preferably slightly shorter than the others as shown.

At the end of the blank corresponding to the base of the container, a horizontal score or crease 6 is preferably formed so that it is coincident with the lowermost edge of the overlapping section *e* and, if desired, the portions of the sections *a*, *b*, *c* and *d* disposed below the crease 6 may be cut along the portions of the dividing lines 1, 2 and 3 separating them so as to form four integral tab portions *a*<sup>1</sup>, *b*<sup>1</sup>, *c*<sup>1</sup> and *d*<sup>1</sup>. Such tab portions may be folded inwardly through a right-angle either separately or as a whole to form the base of the container. Alternatively, the above-mentioned tab portions may be formed so that when they are folded inwardly they are adapted to cooperate with each other to form a

horizontal ledge around the inside of the body side walls and, if desired, such ledge may be provided with an inwardly stepped portion. For instance, the blank may be provided with a second horizontal score or crease 8 disposed a short distance above and parallel with the score or crease 6 so that, when folding the blank to form the base, the portions of the sections disposed between the lines 6 and 8 can be folded back so as to lie against the inner surfaces of the body side walls whilst the tab portions  $a^1$ ,  $b^1$ ,  $c^1$ , and  $d^1$  are folded about the crease 6 so as to lie at right-angles to the body side walls and to form a horizontal ledge 10 as shown in Figure 2. The base may be completed, or strengthened if folded up, by a separate blank 12 which corresponds in shape and dimensions with the cross-section of the base of the body and which is secured to the said ledge. The base-forming blank 12 is preferably provided with narrow downwardly extending marginal edges 13 which are inserted in position between the inner surfaces of those portions of the sections which are disposed between the lines 6 and 8 and the adjacent lower ends of the inner surfaces of the body side walls to form a recessed base for the container as is shown in Figure 2.

At the upper end of the blank shown in Figure 1, one of the sections, for example, the section  $a$ , is provided with a horizontal crease 15 disposed in such position as to define the upper end of the aforesaid body part and to permit the rectangular portion  $a^2$  disposed above the line 15 to be folded about such line towards the opposite section  $c$  to form the mouth-closing portion of the container as is shown in Figures 3, 4 and 5. It will be observed that the section  $c$  is somewhat shorter than its opposite section  $a$  and that the upper portion thereof is upright with respect to the base of the container.

The intervening sections  $b$  and  $d$  are each creased or scored along an inclined line 18 extending from the end of the adjacent horizontal scoring 15 to the upper edge of the section  $c$  so that the portions immediately below these lines define the right-angled triangular side portions of the container surmounting, in this instance, the rectangular parts of the side walls of the container. The remaining V-shaped or triangular portions disposed above the lines 18 are scored or creased along inclined lines to enable the same to be folded under or over the rectangular portion  $a^2$  as the latter is folded inwardly to form the inclined side wall of the closure. For instance, each of the said V-shaped portions may be creased or scored along a line 19 bisecting the angle of the V so as to enable these portions to be pleated or doubled upon themselves as shown in Figures 4 and 5. In the former figure, the pleats are folded inwardly or under the portion

$a^2$  whilst, in the other figure, they are shown folded outwardly or over the portion  $a^2$ .

Instead of providing a body portion of rectangular form for the container, the body portion may be of any other shape in cross-section.

It is preferable, in many cases, to form the body of tapering shape so that the containers, when empty, may be nested one within another in order to economize space in storage and transport.

The bottle or container is usually composed of a paper which is proofed, either before or after being formed, by wax or any other convenient agent and, if desired, heat may be applied to certain parts of the mouth-closing section for the purpose of providing a leak-proof seal or a metal clip may be employed. Also, in some instances, the pleat-forming portions may be formed of thinner paper than the remaining portions of the blank and these portions may be provided with a lining of thinner paper which covers the inside of the remainder of the blank and is exposed in the region of such portions so that the same are defined by the thinner paper. Also, for some purposes, the container may be formed throughout of a paper or the like having a metallic or other form of lining.

It will be appreciated that, in instances in which the containers are required to be nested when empty, the blank will be formed so that the sides thereof and so that the longitudinal scorings 1, 2, 3 and 4 converge downwardly.

From the foregoing it will be appreciated that the invention provides an improved bottle or container of paper, wood-pulp or the like in which one or both sides of the container are sloped inwardly and the intervening triangular side wall portions are brought out flush with the edges of the sloping side or sides so that the container presents a neat and attractive appearance and is free from any internal constrictions or projections which might cause churning of the liquid content which, in the case of milk, is objectionable.

Having thus described my invention what I claim as new therein and desire to secure by Letters Patent is:—

A container for holding liquids, semi-liquids, powders and the like formed by folding a blank of sheet material, said container having a tapered closure formed by bringing two opposite side portions together so that one is sloping whilst the other is substantially upright, intervening side portions of triangular formation lying flush with the edges of the portions brought together and pleats lying alongside the tapered portion.

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