

J. R. VAN WORMER,  
 PAPER MILK BOTTLE OR OTHER CONTAINER.  
 APPLICATION FILED FEB. 26, 1912.

1,160,677.

Patented Nov. 16, 1915.  
 2 SHEETS—SHEET 1.

Fig. 1.

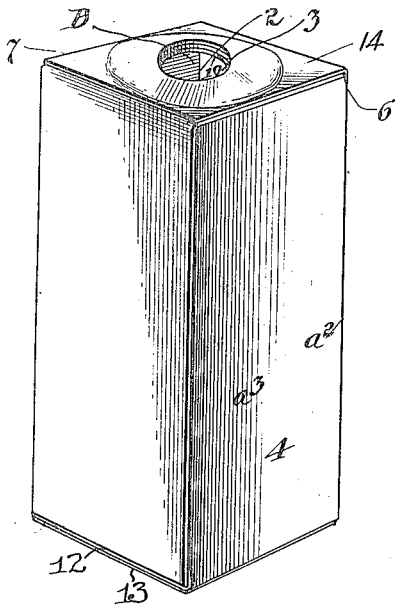


Fig. 2.

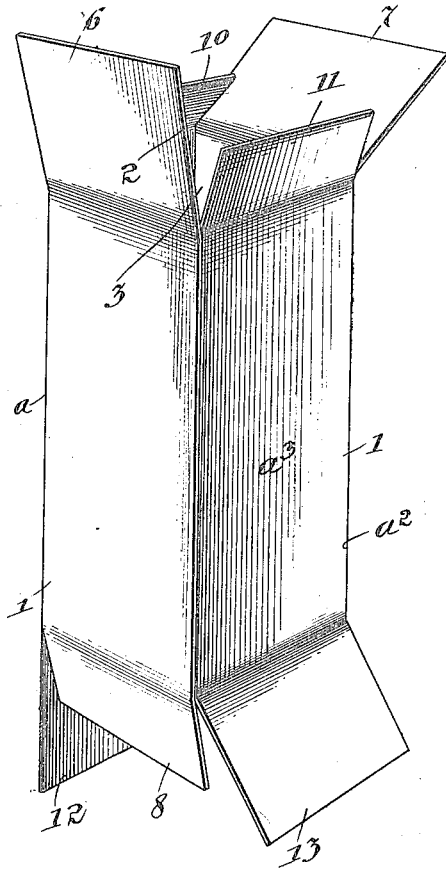
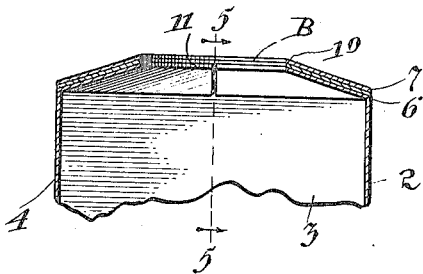


Fig. 3.



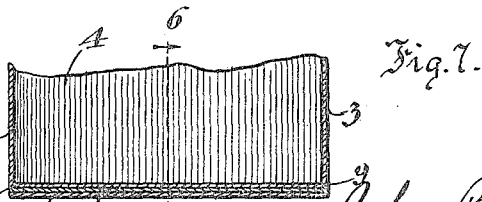
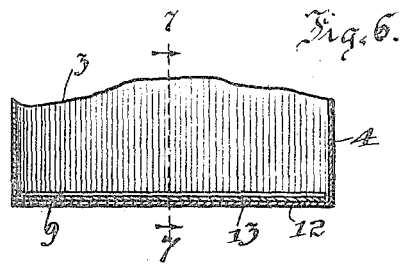
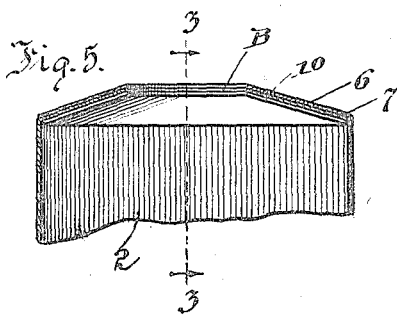
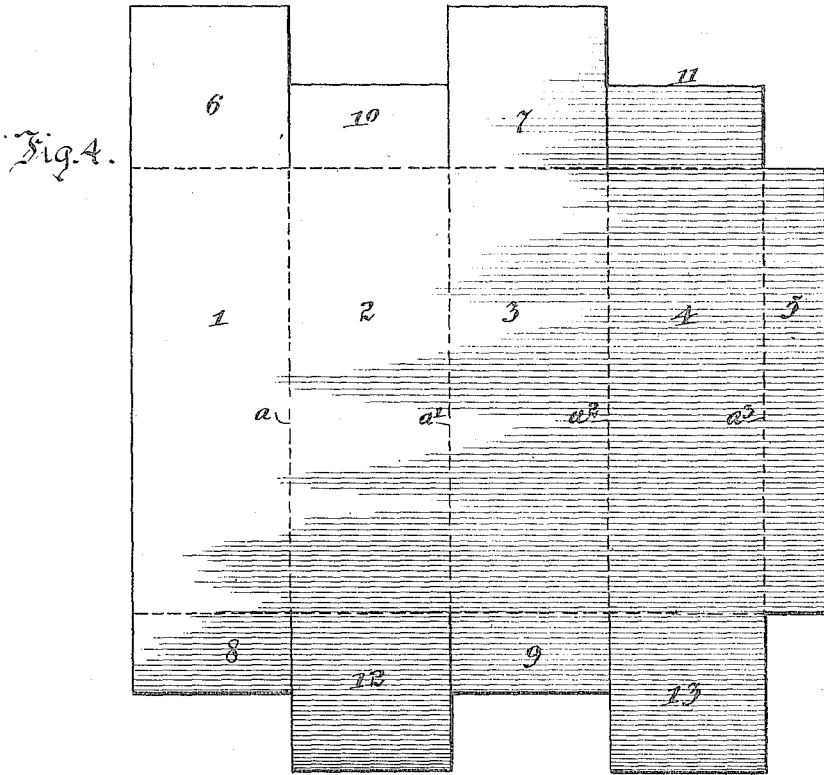
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# UNITED STATES PATENT OFFICE.

JOHN R. VAN WORMER, OF TOLEDO, OHIO, ASSIGNOR TO THE WEIS-VAN WORMER COMPANY, OF MONROE, MICHIGAN, A CORPORATION OF MICHIGAN.

## PAPER MILK-BOTTLE OR OTHER CONTAINER.

1,160,677.

Specification of Letters Patent.

Patented Nov. 16, 1915.

Original application filed December 1, 1911, Serial No. 663,197. Divided and this application filed February 26, 1912. Serial No. 679,832.

*To all whom it may concern:*

Be it known that I, JOHN R. VAN WORMER, a citizen of the United States of America, and resident of Toledo, Lucas county, Ohio, have invented a certain new and useful Improvement in Paper Milk-Bottles or other Containers, of which the following is a specification.

My invention relates to the manufacture of containers in general, but more particularly to containers or receptacles made of paper, and more especially to those that are adapted for use as milk bottles.

This is a division of my pending application, Serial Number 663,197, filed December 1st, 1911.

Generally stated, the object of my invention is to provide a paper bottle, for milk or other liquids, of improved and highly efficient form and construction.

A special object is to provide a construction whereby a practical and efficient method of manufacture may be employed for making said bottle.

Another object is to provide a bottle of this character having a mouth or opening which can be easily and effectively sealed after the bottle is filled with milk or other liquids.

Another object is to provide an arrangement of flaps for the top and bottom walls of the bottle, which will render the same strong and satisfactory in character.

The nature and advantages of my improved bottle will, however, hereinafter more fully appear.

In the accompanying drawings, Figure 1 is a perspective of a paper container or milk bottle of the kind produced by my improved process. Fig. 2 is a perspective of the blank partially folded. Fig. 3 is a detail vertical section of the upper end of the finished bottle on line 3—3 in Fig. 5. Fig. 4 shows the blank spread out flat. Fig. 5 is a section on line 5—5 in Fig. 3. Fig. 6 is a vertical section of the bottom or lower portion of the bottle on line 6—6 in Fig. 7. Fig. 7 is a vertical section on line 7—7 in Fig. 6.

As thus illustrated, the blank A has four parallel score lines  $a$ ,  $a^1$ ,  $a^2$  and  $a^3$  which divide the blank into five sections 1, 2, 3, 4, and 5. The sections 1 and 3 have their ends provided with long and short flaps 6, 7, 8,

and 9 and the sections 2 and 4 have their ends provided with short and long flaps 10, 11, 12 and 13. When folded, the sections 1, 2, 3 and 4 form the sides of the bottle, the narrow section 5 being glued inside of the section 1. The flaps 10 and 11 are folded inward, and the flaps 6 and 7 are then folded upon each other, thus forming a three-ply top for the bottle, the hole B being cut or punched at the same time, or afterward if desired. The flaps 8 and 9 are then folded inward, and the flaps 12 and 13 are then folded upon each other, thus forming a three-ply bottom. Afterward, the bottle thus made is treated inside and out with paraffin or the like.

In this way I am enabled to produce a square paper container having a small or restricted mouth and adapted for use as a milk bottle. As the mouth or opening is comparatively small, it is practical and possible to seal it effectively, in any suitable manner, after the bottle has been filled with milk or other liquid. Thus a perfect and inexpensive bottle is made from a single paper blank.

The form of the blank shown economizes the paper, as there is less waste when the blank is cut with the long flaps at one edge opposite the short flaps at the other edge. In fact, the cutting of the flaps, in the manner shown, does not produce any waste at all. Also, it is practical to cut blanks of this kind by machinery.

As shown, the top and bottom are each formed by three layers glued or pasted together, whereby each end wall of the bottle is three-ply in thickness throughout the area thereof. The punching or cutting of the mouth of the bottle in any suitable manner, after the top is made, produces an opening with a clean and true edge, which is important in the subsequent sealing of the bottle.

As shown, the top having the hole B is pressed upward to make it convex, the circular edge of the convex portion being in the plane of the flat surface of the top. With this formation there is a flat portion between each corner of the bottle and the circular edge of said raised top portion. This can be done at the time the flaps are glued together, or at the time the punching is

done, or at some other time. But the crown thus given the top makes it stiffer and better and more satisfactory in use.

By raising the top of the bottle around the centrally located opening B, it is obvious that the said opening is not only brought into position to more satisfactorily form a round pouring opening for the bottle, when the contents is discharged in this manner, but also that the top of the bottle is strengthened to resist downward pressure thereon. The outwardly convex and inwardly concave section surrounding said opening B is preferably as large as the space will afford, so that the edges of this section extend to the upper edges of the sides of the bottle, whereby the small flat sections 14 are separated from each other and confined to the corners of the bottle. But as stated, the outer edges of the raised section practically rest on the upper edges of the side walls of the bottle, whereby the top of the latter is better adapted to resist downward pressure thereon. The top is perfectly smooth and slopes away from the hole or mouth with a surface which will not catch any liquid or material during the filling operation, and which can be wiped clean. Thus a thoroughly sanitary container is provided.

What I claim as my invention is:

1. A paper bottle comprising a rectangular body having flat sides, a flat bottom, and a top wall provided with a round hole forming the mouth of the bottle, the said top having a raised section of which said hole is the center, said section being externally convex and internally concave, whereby said hole may serve as a round pouring opening for said bottle, and said top having corner portions disposed in a horizontal plane intersecting the outer and lower circular edge of said section.

2. A paper bottle comprising a rectangular body having flat sides, a flat bottom, and a top wall provided with a round hole forming the mouth of the bottle, the said top having a raised section of which said hole is the center, said section extending to the

upper edges of the sides and being externally convex and internally concave, whereby said top is stiffened and said hole may serve as a round pouring opening for said bottle, and said top having corner portions disposed in the horizontal plane of the outer and lower circular edge of said section, said top comprising a plurality of superimposed layers of sheet material, each layer being coextensive with the area of said top, and the uppermost layer of the top being of one piece to provide an unbroken outer surface and edge around said hole.

3. A paper bottle comprising a rectangular body having flat sides, a flat bottom, and a top wall provided with a round hole forming the mouth of the bottle, the said top having a raised section of which said hole is the center, said section being externally convex and internally concave, whereby said hole may serve as a round pouring opening for said bottle and said top having corner portions disposed in a horizontal plane intersecting the outer and lower circular edge of said section, the top and bottom being each composed of three layers of sheet material, each layer being integral with the sides and coextensive with the area of the top or bottom, and the uppermost layer of the top being of one piece to provide an unbroken outer surface and edge around said hole.

4. A paper bottle blank comprising four parallel sections of uniform length, separated at their side edges by fold lines, and long and short flaps for the ends of said sections, the short flaps of one end being opposite the long flaps of the other end, the short flaps alternating with the long flaps at each side of the blank, each long flap being coextensive with the top or bottom of the bottle, and each short flap being one half the area of said top or bottom.

Signed by me at Monroe, Monroe county, Michigan, this 19th day of Feb., 1912.

JOHN VAN WORMER.

Witnesses:

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