

A. J. SELZ.
PAPER BOTTLE.

APPLICATION FILED MAR. 28, 1912. RENEWED NOV. 12, 1913.

1,100,448.

Patented June 16, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

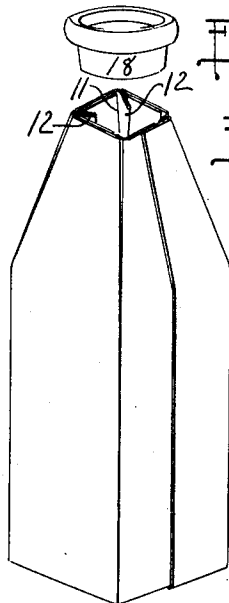
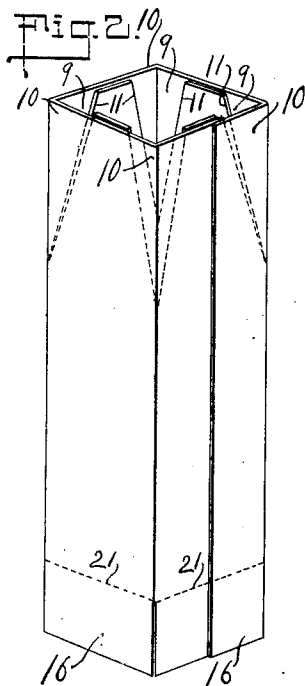
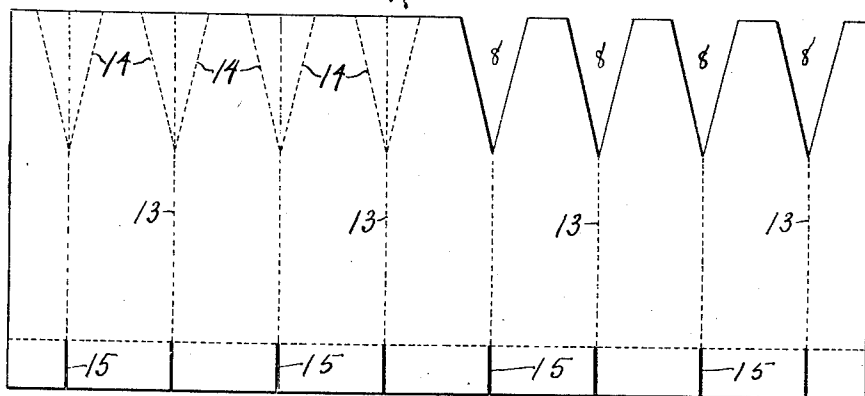


Fig. 4.

Fig. 3.

Fig. 5.

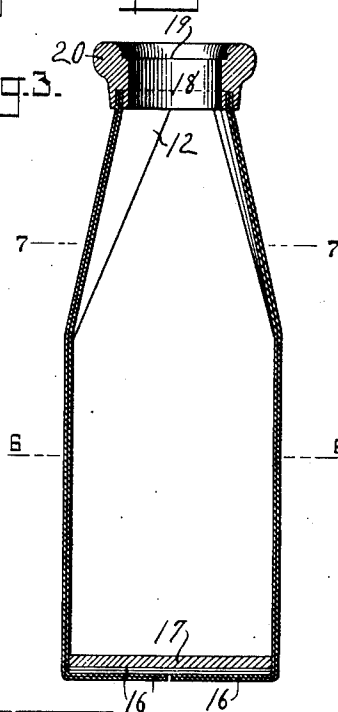


Fig. 6.

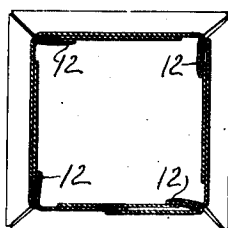
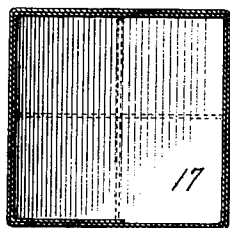


Fig. 7.

WITNESSES
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2 SHEETS—SHEET 2.

Fig. 8.

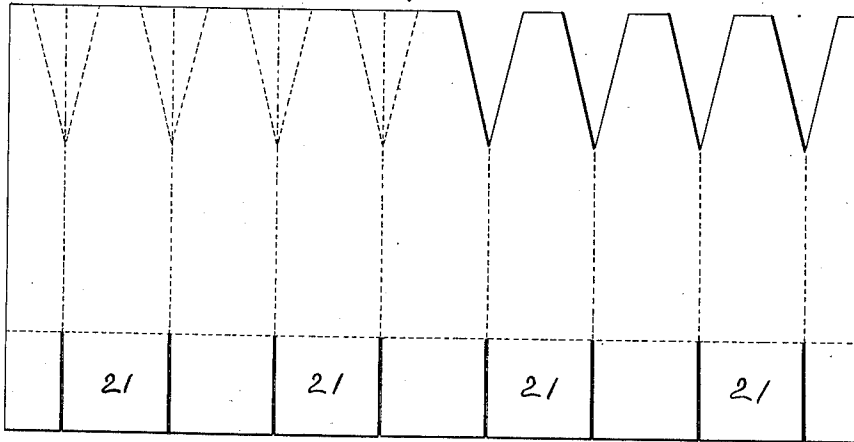


Fig. 9.

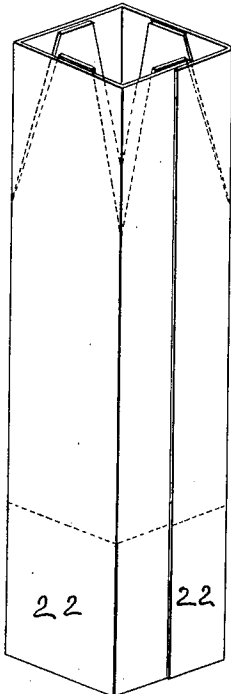


Fig. 10.

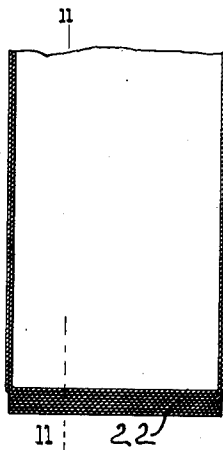


Fig. 11.

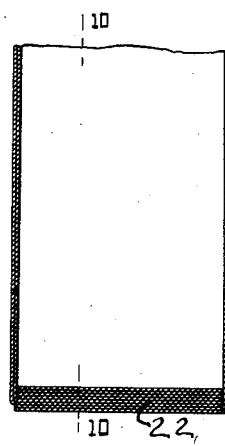


Fig. 12.

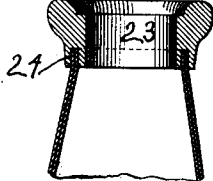


Fig. 13.

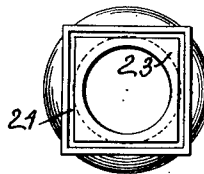
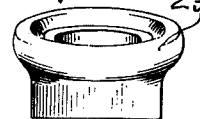


Fig. 14.



WITNESSES

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UNITED STATES PATENT OFFICE.

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PAPER BOTTLE.

1,100,448.

Specification of Letters Patent.

Patented June 16, 1914.

Application filed March 28, 1912. Serial No. 686,881. Renewed November 12, 1913. Serial No. 800,646.

To all whom it may concern:

Be it known that I, ANDREW J. SELZ, a citizen of the United States, and a resident of New Rochelle, in the county of Westchester and State of New York, have made and invented certain new and useful Improvements in Paper Bottles, of which the following is a specification.

My invention relates to paper receptacles designed to contain a liquid, and particularly to paper receptacles designed to be used as milk bottles which will be strong and durable in construction, cheap to manufacture, sanitary, and of such form that they may be assembled to produce a compact package for shipment; a further object thereof is to provide a milk bottle made from a blank of paper, or similar material, first cut in proper form, and then folded and otherwise manipulated as hereinafter more fully explained to form a complete bottle.

My invention includes both the blank from which the bottle may be formed, and the bottle itself produced from the blank, and includes also a particular form of neck formed separate from the bottle and secured thereto, and in which neck provision is made for closing the bottle with either of several types of closing means.

More specifically stated, my invention comprehends a bottle made from paper, the walls of which are made up of two or more layers or thicknesses of material, whereby a much stronger bottle results than has heretofore been the case with bottles formed from a paper blank.

My invention includes in addition, certain features of construction whereby the upper end of the bottle is reduced in size so as to facilitate the attachment thereto of the separable neck; and also includes the particular form of blank from which the latter is produced; all as hereinafter described and claimed, and shown in the accompanying drawing, wherein the preferred form of my invention is illustrated.

In the drawing accompanying and forming a part of this application, Figure 1 is a view showing the blank from which the bottle is made; Fig. 2 is a view showing in perspective the blank folded and the bottle in partially formed condition; Fig. 3 is a view illustrating in perspective the unfinished bottle after further steps have been performed; Fig. 4 is a view showing the neck

of the bottle in perspective; Fig. 5 is a view showing a section of the complete bottle taken upon a vertical central plane; Fig. 6 is a view showing a section of the bottle taken upon a transverse plane indicated by the line 6—6, Fig. 5; Fig. 7 is a view showing a section taken upon a transverse plane indicated by the line 7—7, Fig. 5; Fig. 8 is a view showing a blank from which a slightly modified form of bottle may be made; Fig. 9 is a view showing in perspective the blank illustrated in Fig. 8 folded, and the bottle in a partially formed condition; Fig. 10 is a view showing the lower end of this second form of my improved bottle in section, the view being taken upon a plane indicated by the line 10—10, Fig. 11; Fig. 11 is a similar view showing a section upon a plane indicated by the line 11—11, Fig. 10; Fig. 12 is a view showing a section upon a central vertical plane of the upper end of my bottle equipped with a second form neck; Fig. 13 is a view showing the neck as seen from a position beneath it; and Fig. 14 is a view showing this second form of neck in perspective.

Referring first to Fig. 1 wherein the blank, from which my improved bottle is formed, is shown, the length thereof is two or more times the distance around the bottle, so that when the blank is wound upon a suitable mandrel two or more layers of material will be secured and the wall of the bottle made up of a plurality of layers superposed upon one another, as will be understood from Figs. 5 and 6. One end of the blank is provided with a series of triangular recesses 8, the length of the part of the blank in which the recesses are formed being sufficient to extend at least once around the bottle, so that the inner portion of the layers, which constitute the wall of the bottle, will have a number of internal recesses disposed about the upper end of the partially formed bottle, which recesses are designated by the reference character 9 in Fig. 2. The recesses 8 extend downward into the body of the blank from the upper edge thereof as shown in Fig. 1, the remaining portion of the blank, that is, the portion not provided with recesses, being also of sufficient length to extend at least once around the finished bottle, whereby it will be understood, referring again to Fig. 2, that after the blank has been wound upon a mandrel, or otherwise folded to produce

the unfinished bottle shown in said figure, portions of the outer layers indicated by the reference character 10 will overlies the recesses 9 upon the inner surface of the unfinished bottle.

I have shown the blank as of sufficient length to extend twice around the finished article so as to produce a bottle having walls made up of two thicknesses of material, and, after said blank has been folded or wound upon a mandrel to produce the unfinished bottle shown in Fig. 2, it being understood that the two layers will be secured together by a suitable adhesive, the overlying portions 10 of the outer layer are folded so as to bring adjacent edges 11 of the several recesses 9 adjacent one another. The fold thus formed in the outer layer is carried through the recesses 9 and secured, in the embodiment of my invention illustrated, to the inner surface of the bottle, this operation serving to reduce the size of the upper end thereof, as will be understood. In Fig. 3, two of these folds as yet unsecured to the surface of the bottle, are shown at 12; and Fig. 7 shows the folds as turned down upon and secured as by means of a suitable adhesive, to the inner surface of the upper or reduced portion of the bottle.

The blank shown in Fig. 1 may, particularly if the bottle is to be formed from heavy material or is to be folded by hand, be scored along the lines 13, so that it may be more readily folded; it may also be scored along the inclined lines 14 in order to facilitate the operation of folding in the overlying parts 10, Fig. 2. These scores will, however, be unnecessary in forming bottles of comparatively small size from such material as is ordinarily used in their manufacture, as the blank is ordinarily sufficiently pliable to be properly wound upon the mandrel commonly used in forming the bottle. The blank will ordinarily be provided with a series of slits 15 at its lower end so that the lower portions 16 of the unfinished bottle shown in Fig. 2, may be turned inward to produce a bottom for the bottle, which bottom may be made up of a plurality of thicknesses as shown in Fig. 5, and reinforced by a plate 17 located within the bottle and secured to the intumed portion 16, it being understood that the parts 16 and 17 will be secured together by a suitable adhesive material. The slits 15 may, however, be omitted in the blank, in which case the corners of the partially formed bottle shown in Fig. 2 will be slitted to provide the flaps 16 which are turned inward to form the bottom of the bottle.

From the above it will be appreciated that one essential feature of my invention is a blank made up of two parts, one having a series of triangular recesses extending downward from its upper edge, and the

other being without recesses, each of said parts being of a length sufficient to extend about the bottle; although it will be understood that either of the parts of the blank referred to may extend more than once around the bottle, in which case the body thereof would be made up of more than two layers of material. In either case the recessed portion of the blank provides recesses in the inner surface of the unfinished bottle after the blank has been folded or wound upon a mandrel, through which recesses the overlying layer or layers are carried after having been properly folded, which operation brings adjacent edges of the internal recesses together and contracts the upper end of the bottle. It will also be obvious that while I have illustrated the bottle as having four sides, the number of sides is in fact immaterial, and that the essential principle of my invention may be embodied in a bottle having more or less than four sides, the length of the blank in all cases being a plurality of times the sum of the widths of the several sides of the bottle.

I provide the unfinished bottle shown in Fig. 3 with a neck 18 formed separate from the body and which neck has a groove in its lower end into which the upper end of the reduced portion of the bottle enters, after having been properly shaped. This neck may appropriately be made from wood or pulp, and will be secured to the body of the bottle by means of a suitable cementing material. The neck is provided with an inwardly extending ledge 19 adjacent its upper end so that the bottle may be closed by means of a paper or other disk, and also with an outwardly projecting flange 20 so that a metal cap may be placed over the upper end of the neck and the lower edges thereof crimped beneath the flange to hold it in place, the bottle thus being adapted to be closed by either a disk or a cap.

In Fig. 8 I have shown a blank having a series of triangular recesses extending throughout a part of the length of the blank, the total length of the same being sufficient to extend a plurality of times around the finished bottle so as to provide a wall made up of a plurality of thicknesses of material, the same as hereinbefore described. The blank is folded and the outer layer or layers folded to form a bottle the upper end of which is reduced in size as hereinbefore explained, so that detailed explanation as to these features is not here repeated.

The portions 21 of the blank from which the bottom of the bottle is formed are, however, lengthened to such an extent that each extends entirely across the lower end of the bottle as shown in Figs. 10 and 11, so that when the lower ends 22 of the partially formed bottle shown in Fig. 9 are

folded inward and secured together by means of a suitable adhesive, a bottom having eight thicknesses of material is procured, thus rendering the auxiliary or reinforcing plate 17 unnecessary, each layer of material of the sides being continued across the entire bottom thereof. The lower end of the blank may be divided by slits to form separate panels as shown in Fig. 8, or an unslitted blank may be first wound upon a mandrel to form an unfinished bottle and the corners thereof then slitted to provide separate bottom flaps, as hereinbefore explained.

The separate neck 23 shown in Figs. 12 to 14 is provided with an inwardly extending ledge and with an outwardly projecting flange, so that the bottle may be closed by either a disk or cap as hereinbefore explained. The lower end of the neck where it joins with the body of the bottle is, however, made square and is provided with a similarly shaped groove 24, so that the reduced upper end of the body does not have to be shaped into circular form in order to secure the neck to the bottle. The bottle after having been completed will preferably be coated throughout its exterior and interior surfaces with a suitable water-proof material, such, for example, as paraffin, to thereby produce a bottle impervious to moisture.

From the above it will be appreciated that my improved bottle will be exceedingly strong because of the fact that the walls comprise a plurality of thicknesses of material. It will be also seen that in the preferred form of my invention illustrated, the folds produced in reducing the size of the upper end of the bottle are located upon the inner surface thereof, so that projections upon the outer surface of the bottle are avoided, and that the bottle considered as a whole is simple in construction, and may be produced at a minimum cost.

What I claim is:—

1. A blank the length of which is a plurality of times the distance around the bottle to be formed therefrom, the upper portion of one end of said blank throughout a length sufficient to extend around the finished bottle having a series of triangular recesses, the part of said blank not provided with recesses being also of a length sufficient to extend around the finished bottle.

2. A blank adapted to be folded to form

a bottle having a number of sides, and the length of which is a plurality of times the sum of the widths of the sides of the bottle to be made therefrom, so that the blank may be folded to provide a bottle the sides of which are made up of a plurality of layers, the upper portion of one end of said blank throughout a length sufficient to extend around the finished bottle having a series of triangular recesses corresponding in number with the number of sides of the finished bottle, the part of said blank not provided with recesses being also of a length sufficient to extend around the finished bottle.

3. A bottle formed from a suitable blank and the wall of which is made up of a plurality of layers, a part of said layers being cut away to provide a series of triangular recesses upon the inner surface of the unfinished bottle and disposed about the upper end thereof, and the remaining layers being folded to bring adjacent edges of the recesses together, the folds thus formed being secured in place upon the surface of the bottle adjacent its upper end.

4. A bottle formed from a suitable blank and the wall of which is made up of a plurality of layers, a part of said layers being cut away to provide a series of triangular recesses upon the inner surface of the unfinished bottle and disposed about the upper end thereof, and the remaining layers being folded to bring adjacent edges of the recesses together, the folds thus formed being forced through the recesses aforesaid and secured in place upon the inner surface of the bottle adjacent its upper end.

5. A bottle formed from a suitable blank and having a contracted upper end and the wall of which bottle is made up of a plurality of layers; said bottle having a series of folds formed in and adjacent the upper edge of a part of said layers, and which folds extend between adjacent edges of openings formed in the remaining portion of said layers; said folds being secured to the wall of the bottle adjacent its upper end.

Signed at New York, borough of Manhattan, in the county of New York and State of New York, this 27th day of March, A. D. 1912.

ANDREW J. SELZ.

Witnesses:

A. V. WALSH,
H. M. WHITE.