E. W. LABOMBARDE.

PAPER RECEPTACLE FOR LIQUIDS.

APPLICATION FILED DEC. 20, 1915.

1,365,250. **Patented Jan. 11, 1921.**

2 SHEETS—SHEET 1.

Fig. 1.

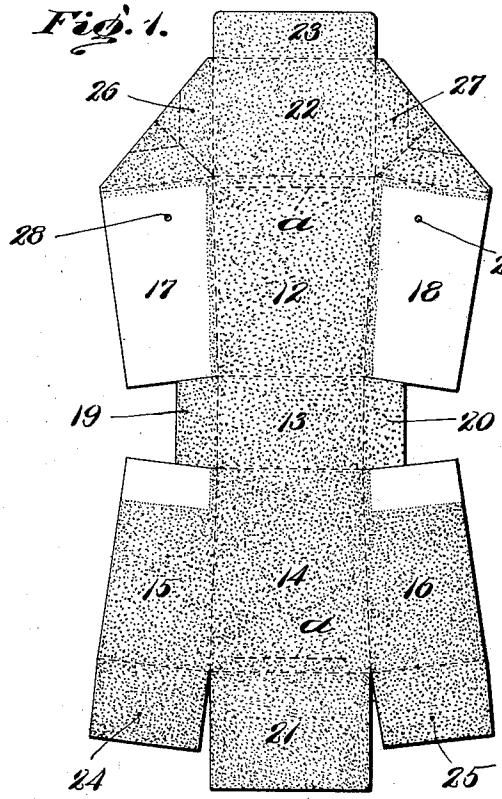


Fig. 2.

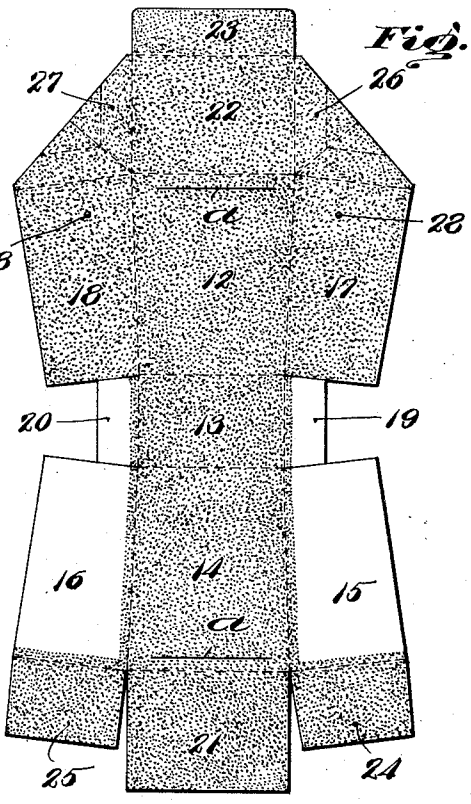


Fig. 4.

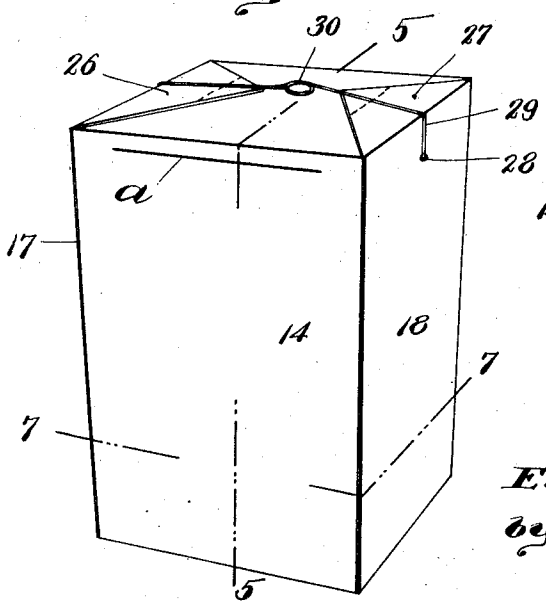
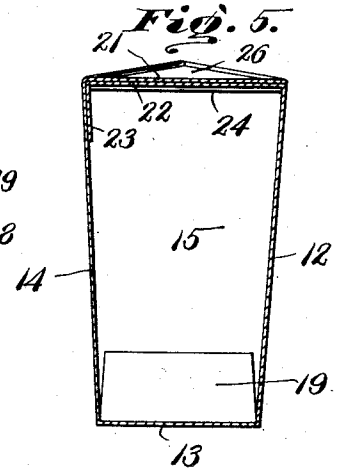


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 3.

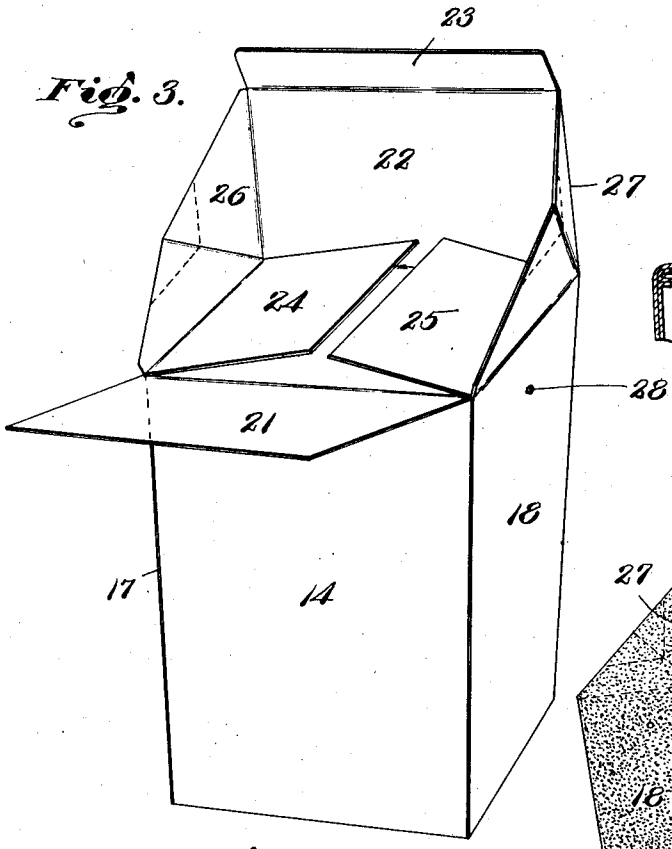


Fig. 8.

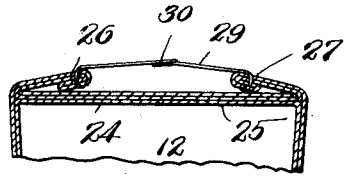


Fig. 9.

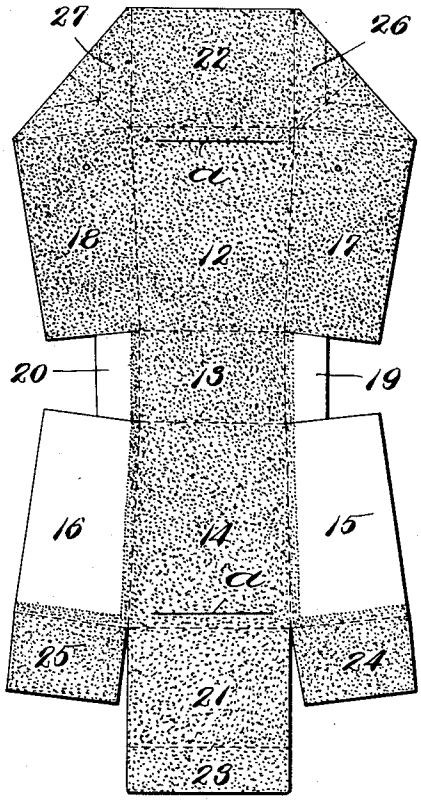


Fig. 6

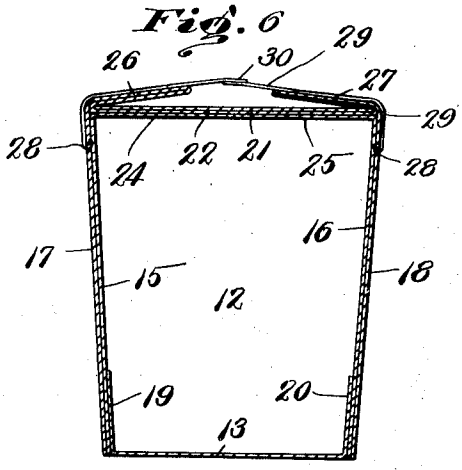
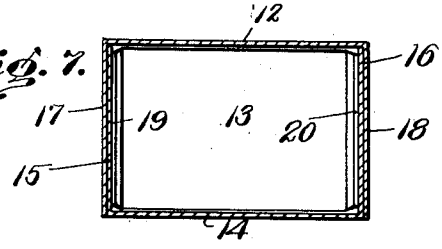


Fig. 7.



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UNITED STATES PATENT OFFICE.

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PAPER RECEPTABLE FOR LIQUIDS.

1,365,250. Specification of Letters Patent. Patented Jan. 11, 1921.

Application filed December 20, 1915. Serial No. 67,758.

To all whom it may concern:

Be it known that I, ELIE W. LABOMBARDE, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Paper Receptacles for Liquids, of which the following is a specification.

This invention relates to paper vessels or boxes to contain liquids such as milk, molasses, or vinegar, or partly liquid substances such as oysters and pickles, and has particular reference to the manufacture of such vessels from flat blanks.

One of the objects of my invention is to provide liquid containers economically made from flat blanks so formed, folded and treated as to be capable of retaining liquid, without leaking, for such length of time as to render the containers practical for the sale and delivery of milk.

Another object is to provide vessels of this character which may be laid on their sides without leaking.

Another object is to provide such vessels with clips or clasps which not only hold the tops closed but may be utilized as handles for carrying the vessels.

Another object is to provide such vessels which may be filled with definite quantities of liquid without requiring previous measuring, and which will enable the customer to see at a glance, when he opens the top, if he is getting what he pays for.

To these ends, the invention consists in the improvements which I shall now proceed to describe and claim.

Of the accompanying drawings:

Figures 1 and 2 are plan views of one form of paper blank suitable for making the liquid container or vessel, said figures illustrating opposite surfaces of the blank and being shaded to illustrate what portions have been treated with water-proofing material, such as paraffin.

Fig. 3 is a perspective view of the blank folded up to container form, and the top partly open.

Fig. 4 is a perspective view of the container or vessel closed.

Fig. 5 represents a section on line 5—5 of Fig. 4.

Fig. 6 represents a section at a right angle to Fig. 5.

Fig. 7 is a section on line 7—7 of Fig. 4.

Fig. 8 is a detail view illustrating a different folding of the top.

Fig. 9 is a plan view of a slightly different shape of blank.

Similar reference characters indicate similar parts or features in all of the views.

Referring first to Figs 1 and 2, the dotted lines indicate creasing to facilitate the folding of the blank to the condition illustrated in Figs. 3, 4, 5 and 6. The said dotted lines divide the blank into portions or sections 12, 13, 14, of which the member 13 forms the bottom and the members 12 and 14 form two of the sides when folded and stood up as indicated in Fig. 4. The wings 15, 16, 17, 18, 19 and 20, when the blank is folded up, overlap, and are secured together by a suitable adhesive, the operation being by a suitable machine which may be of the general type explained in my U. S. Patent 1,161,227, granted November 23, 1915. I will state here, however, that for the purposes of this present vessel, I prefer that the small wings 19, 20, shall be inside, as shown in Figs. 5 and 6 instead of between the large side wings as in the boxes folded by the machine of that patent.

Extending from the sections 14 and 12 are flaps 21, 22 respectively, which are to form members of the top closure of the vessel, one of said flaps, as the flap 22, having a narrow tucking flap 23; and extending from the wings 15, 16 are flaps 24, 25, respectively, which also form members of the top closure. The upper ends of wings 17, 18, are connected to flap 22, by triangular foldable sections 26, 27, which are creased as indicated by dotted lines in Figs. 1 and 2, to enable them to be folded as hereinafter described. The wings 17, 18, have small holes 28 near their junction with the sections 26, 27, for a purpose to be described.

In carrying out my invention, the paper is coated with a suitable water-proofing material such as paraffin, preferably before it is folded to form a vessel or container, although some features of my invention are equally as useful if the water-proofing is effected after the blank is folded. Figs. 1 and 2 especially illustrate how the blank will be water-proofed before it is folded. The paraffin or equivalent is applied to both surfaces of the blank, but not to the entire area of either surface. That is, the portions which, when the blank is folded up, are to overlap and be secured together by glue, are left uncoated. The shading in Figs. 1 and 2 is to indicate the water-proofed portions

and the un-shaded areas are those which are left un-coated. Glue will not adhere to paraffined paper, and therefore, in carrying out my invention, I prefer to leave un-paraffined those areas to which glue is to be applied in order to keep the vessel in the form shown in Figs. 4 and 6 when the blank has been converted to that form. When the blank is so converted, the surfaces of the wings 19, 20 which appear in Fig. 2 are in contact with the small untreated areas of the wings 15, 16 which appear in Fig. 1, and the un-treated areas of wings 15, 16 which appear in Fig. 2 are in contact with the untreated areas of wings 17, 18, which appear in Fig. 1, these un-treated areas being adhesively secured together. Thus it will be seen that two side walls of the vessel (12, 14) are each of a single thickness, with both surfaces and the crease lines fully coated, while the other two side walls of the vessel comprise the overlapping wings 15, 16, 17, 18, 19 and 20 (see Fig. 6) which have uncoated areas glued together but also have coated areas that effectually prevent the paper from being affected by contained liquid. By comparing Figs. 1 and 2, it will be seen that the water-proof coating effectually protects all creased lines.

It is to be understood that in applying the water-proofing material to the blank it is done in such manner as not to penetrate entirely through the paper. If it did, the glue would not cause the overlapping portions to adhere. The said material is applied only as a coating, being allowed to cool and set before getting into the paper to any such extent as to present any of the material at those surfaces which must be left un-treated to hold the glue.

It is, of course, essential that if the vessel is to contain liquid for any length of time, especially if liable to be laid on one side, it can be effectually sealed by a closure. When the blank has been folded as described, it will be substantially as illustrated in Fig. 3, but the flaps 24, 25, will be standing substantially upright. After it is filled, the said flaps are laid down to the plane of the top of the side walls. Said flaps are of such size and proportion that they meet (see Fig. 6) and practically close the top of the vessel.

When the receptacle is converted from the condition shown in Fig. 3 toward and to the condition shown in Fig. 6, the first closing movement of the flap 22 bows the sections 26, 27, outwardly until each is nearly doubled. Then as the lip 23 is tucked in as described, the folding of flap 22 down flat first completely doubles the sections 26, 27 and then draws them first to upright position and then somewhat inward toward each other. As the flap 21 has been, in the mean time, folded on top of flap 22, the said folded triangular sections will readily retain somewhat the position indicated in Fig. 6, even without the employment of any clip to hold them there.

The reverse of this operation opens the vessel. The flap 21 aids in properly folding the triangular sections toward each other because it furnishes two edges over which said sections are bent and turned down. To hold the vessel with its flaps in closed, and effectually sealing, position, a clip or handle may be employed, the same consisting of a wire 29 having hooked ends to engage the sockets formed by the holes 28. As said holes are formed only in those flaps which are the outer-most ones of the double-thick walls, no leakage can occur through said holes. To facilitate the attachment, or removal, of the clip, and insure its remaining in position, it is preferably bent at one or more intermediate points 30, to form a spring or springs whereby the clip is resiliently extensible. The clip not only holds the triangular folds down to keep the vessel sealed, but it may be used as a handle. It will now be understood that the blank as shown in Figs. 1, 2 and 9, comprises a strip of paper scored to provide a bottom section 13, and two side-wall sections 12, 14, each of which has a pair of wings (19 and 20, or 15 and 16, or 17 and 18) extending laterally therefrom. The wings 15, 16, of the side wall section 14 have flaps 24, 25, which form members of the top closure (see Figs. 3 and 6), the wings 19, 20, reinforce the bottom and aid in preventing bottom leakage through the overlapped joints, the flaps 21, 22, at the ends of the strip, coact with the flaps 24, 25 in making a liquid-tight top closure, and the triangular sections 26, 27, which connect the wings 17, 18, with the flap 22 will, when folded toward each other across the several overlapped flaps 21, 22, 24, 25, retain those flaps in relative positions to effectually seal the triple-thick top of the receptacle.

As indicated in Fig. 8, the triangular portions may be double folded, and a clip 29 with hooked ends, engaged therewith, the double folding providing a strong connection for the hooked ends of the clip, which thus engages several thicknesses of the paper, but without permitting leakage.

When my improved receptacle or containers are to be used for the sale and delivery of milk or other liquids that are to be furnished in measured quantities it is desirable to provide them with scale marks or capacity indicators for several reasons especially to enable accurate quantities of the liquid to be poured in without previous use of a separate measuring vessel, and still avoid liability of so filling a receptacle as to result in bursting if the liquid freezes. Supposing that the container is to hold a

quart of milk, the blank will then be made of such size that when folded up as shown in Figs. 3 and 4, its capacity will be somewhat greater than a quart so that it may contain a quart and still provide a space above the milk to avoid liability of the paper being burst open at any point if the contents should freeze. The blank is provided with a capacity indicator which may consist of a printed line *a* on section 12 or section 14, or on each of them, on such portion thereof that when the blank is folded up, the line or lines will be just below the top of the vessel as shown in Fig. 4. As the blanks are usually formed by dies that insure uniformity, and as the printing of the indicator or line *a* can be applied at the same time, or even later, with accuracy, the said mark can be relied upon to measure the milk or other liquid accurately. While the mark might be made by creasing the paper, I prefer to print it and, of course, before paraffining the blank. Printing does not in the least weaken the paper, and a printed line is more readily seen than a creased line. The lines are printed only on those surfaces of the blanks which are outside when folded up. If printed on the inside, the vessel would be less sanitary as the ink might contaminate the milk. The paraffining of the blank renders the paper sufficiently translucent so that the line or lines *a* show through and can be seen from the inside when the top of the vessel is open, thus enabling the dealer to fill the vessel with the required amount of milk, without previous measuring in another vessel, and enabling him to determine how much is to be left at the top to prevent bursting from freezing. It also enables the purchaser, when he opens the vessel, to compare the level of the milk with the scale mark or marks and know if he is getting the full unit of measure which he pays for. The paraffining, it is to be understood, does not render the paper sufficiently translucent to enable the height or level of the contents to be seen from the outside; hence the proper height or level is ascertained by comparing the level of the liquid, while the top of the vessel is open, with the indication or shadow of the mark transmitted through from the outside. The mark or marks are placed on those portions of the blank which, when folded up, constitute sides or walls of single thickness, in order to be visible through as described. If placed on any of the portions 15, 16, 17 or 18, they would not serve the purposes described unless in very strong light, because those portions are overlapped and hence the walls there are of double thickness. Of course the mark *a* may have, adjacent to it, a suitable printed legend, such as "1 pint" or "1 quart."

So far as concerns some features of my invention, I do not limit myself to paraffining the blanks, leaving un-coated those portions which are to be glued together, because if plain or un-treated blanks are folded up in the same manner as already described and with the flaps 15, 16, 17, 18, glued together, they may be then dipped in water-proofing material and drained, and thus be suitable for containing liquid. This method of production however is more expensive in time and machinery employed, than the one which I have hereinbefore described.

A particular advantage possessed by my improved vessel or liquid container is that it may be laid on one side (especially if that side formed by the wall 12 is underneath) with little or no liability of leaking. This enables the vessels which are tapering in form, to be so laid or packed in a crate in alternating arrangement, that there will be no waste space between them.

I do not limit myself to having the tucking flap 23 extend from section 22. It may extend from section 21 as indicated in Fig. 9. Such formation however, necessitates a different order of folding down the members of the top closure. If the vessel is formed from a blank having the shape shown in Fig. 9, the flap 21 must be folded onto flaps 24, 25, before the flap 22 is folded down.

I also do not limit myself to so treating the blanks as to leave the un-coated areas as large as indicated in Figs. 1 and 2. It is only essential that such areas shall be of a size to permit the use of an adhesive on sufficient space to cause the overlapping side members to be properly secured together.

Having now described my invention, I claim:

1. A paper blank for making a receptacle to contain liquid without leaking, said blank having portions adapted to be overlapped and adhesively secured together when the blank is converted to receptacle form, the blank being coated with water-proof material, excepting one face of those portions which are to contact with each other and be adhesively connected, the other faces of said portions being coated with water-proof material.

2. A paper blank comprising body sections, wings, and closing flaps and having creased lines to facilitate folding the blank to form a liquid receptacle, said blank being coated with water-proof material, surface areas of the wings being left uncoated to enable those portions to be adhesively secured together when overlapped, the surface areas opposite those which are uncoated being coated with water-proof material, the water-proof coating including all creased lines.

3. A paper blank for making a receptacle to contain liquid without leaking, said blank having portions adapted to be overlapped

and adhesively secured together when the blank is converted to receptacle form, the blank being coated with water-proof material, excepting the surface areas which are to be adhesively connected, the un-treated areas of one face of the blank being on different portions of the blank from the un-treated areas of the other face.

4. A water-proofed paper blank both surfaces having un-treated areas adapted to be overlapped and adhesively connected, the surfaces opposite the un-treated areas being water-proof.

5. A paper container for the transportation of liquid, said container comprising a creased and folded blank having top flaps for closing it tightly and having a capacity slightly greater than a known unit of measure, the outer surface of the container having an indicator located to denote that unit of measure, the material of the container being treated with water-proofing material and rendered translucent thereby to enable the indicator to be seen from the inside, said indicator being near the top of the container but sufficiently below said top to provide a space between the closing means and the liquid at the level of the indicator to eliminate liability of bursting the container due to freezing of the contents.

6. A device of the character described, comprising a paper receptacle treated with water-proofing material and rendered translucent thereby, and having overlapping portions forming walls of double thickness leaving one or more of the side walls of single thickness, the top of the receptacle having means for closing it tightly, a permanent capacity indicator being borne by the outer surface of a wall of single thickness near the top thereof, said indicator being visible from the inside when the receptacle is open.

7. A blank for a paper receptacle, comprising a strip of paper creased to provide a bottom section and two side wall sections and two top-closing flaps, each having an area equal to the top of the receptacle, each of the side wall sections and the bottom section having a pair of wings extending laterally therefrom, each of the wings of one side wall section having a top-closing flap equal to one half of the top of the receptacle, and the wings of the other side wall section being connected with one of the first-mentioned top-closing flaps by triangular sections adapted to be folded toward each other when the blank is made into a receptacle and the latter is closed, to retain the four overlapped flaps in three-layer relative positions to seal the top of the receptacle.

8. A receptacle of the character described, comprising a single piece of paper folded to present a bottom section, two side walls each of a single thickness, two side walls each of two overlying members adhesively connected, a three-layer complete top closure of overlying members, and triangular sections folded toward each other above said three-layer members.

9. A receptacle of the character described, comprising a single piece of paper folded to present a bottom section, two side walls each of a single thickness, two side walls each of two overlying members adhesively connected, the outer members of the last-mentioned walls having perforations, the inner ends of which are closed by the inner members of said walls, overlying top members to close the receptacle, and a clip having bent ends to engage the shallow sockets formed by said perforations, said clip being formed to bear upon and retain said top members in folded positions.

In testimony whereof I have affixed my signature.

ELIE W. LABOMBARDE.