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3,029,009

DISPENSING CONTAINER AND BLANK THEREFOR

Filed March 27, 1961

2 Sheets-Sheet 1

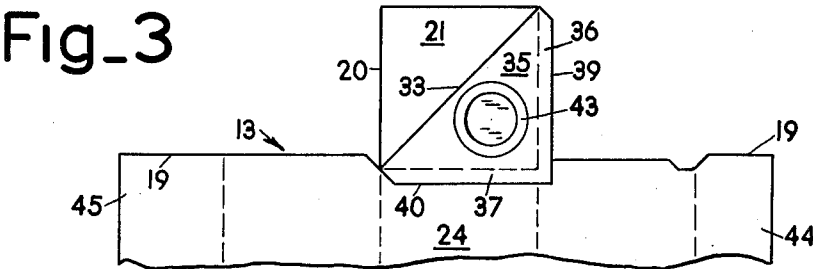
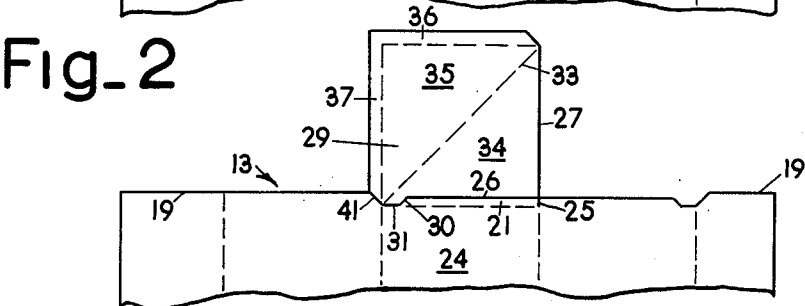
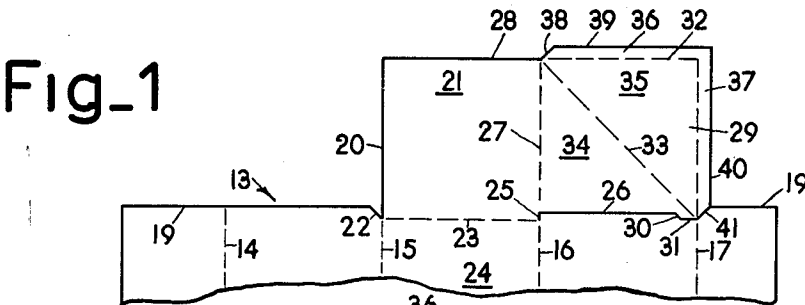
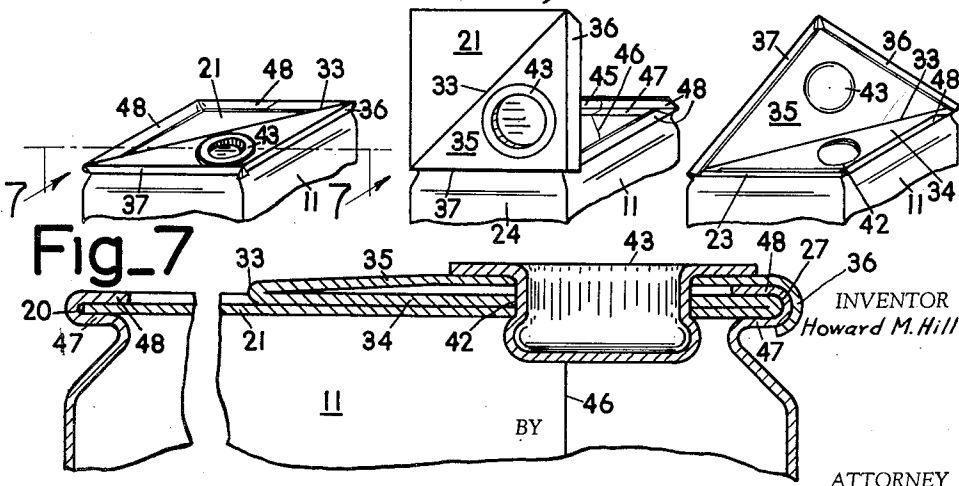


Fig_5

Fig_4

Fig_6



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Fig_8

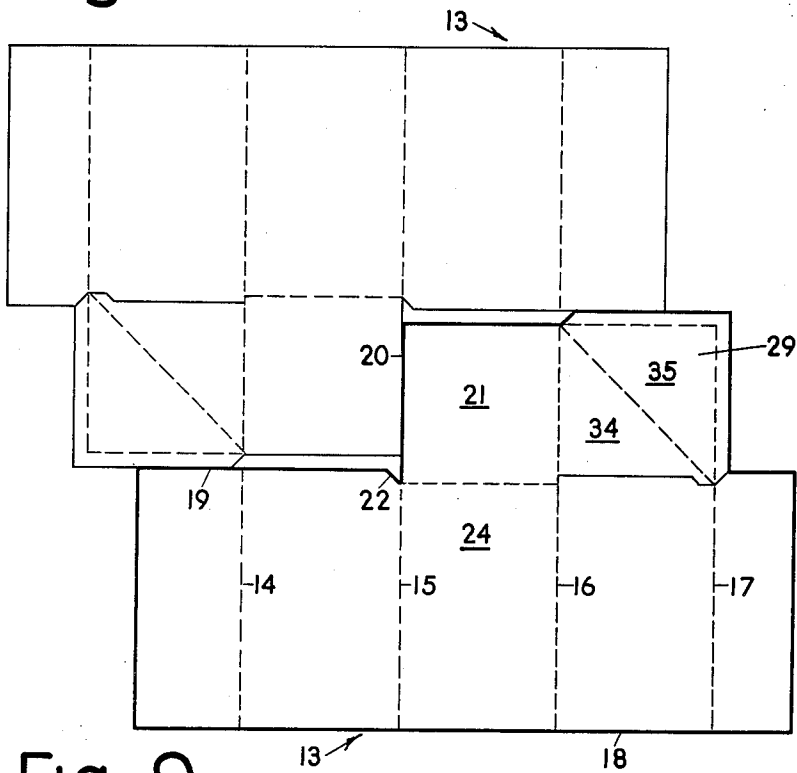
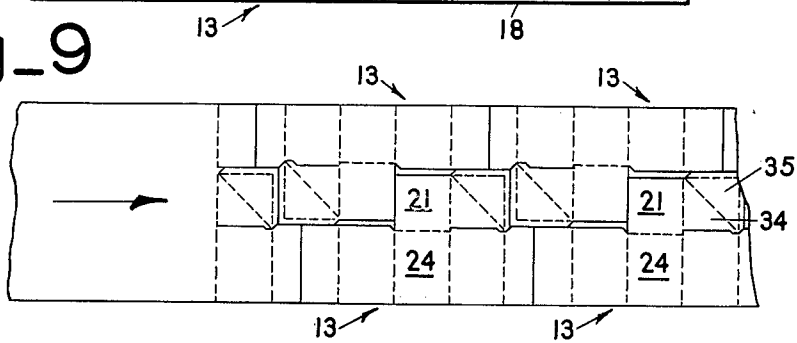


Fig_9



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3,029,009 DISPENSING CONTAINER AND BLANK THEREFOR

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This invention relates to fibre containers for the packaging and delivery of liquids such as milk and the like, and has particular reference to a sanitary container of an improved construction designed to be fabricated in a milk processing plant at high speed.

The invention, in some respects, constitutes an improvement upon the container disclosed in United States Patent 2,920,806, issued to me on January 12, 1960.

An object of this invention is to provide a container having the body, top, and a sanitary shield included in a single blank.

Another object of this invention is to provide a blank for a container for liquids that is well suited to an economical layout for web operation.

A further object of the invention is provision of a sanitary shield that will meet with the requirements of all health officials.

Another object of this invention is to provide a container having a strong end seam joint construction and including the body, top, and a sanitary shield in a single blank of fibrous material.

Another object of the invention is to provide a container blank which includes the container body, top, and sanitary shield and which may be easily and rapidly formed.

Another object of this invention is to provide a container blank of one piece, including the container body, the container top, and a sanitary shield for that portion of the top end of the container at and closely adjacent to the filling and dispensing area, on which the operations of forming a complete container may be partially completed on the flat blank and completed in a filling plant.

Numerous other objects and advantages of the invention may be apparent as it is better understood from the following description which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

FIGURE 1 is a plan view of the blank from which the container is made with the lower end of the blank broken away;

FIGURE 2 is a plan view of the blank of FIGURE 1 after a first folding and gluing operation to partially complete the top closure, with the lower end of the blank broken away;

FIGURE 3 is a plan view of the blank of FIGURE 2 after another folding operation, a piercing operation for the filling and dispensing opening and after the plug has been glued in place, with the lower end of the blank broken away;

FIGURE 4 is a perspective view of the upper end of the container made from the blank of FIGURE 3 with the top closure member standing vertically over one body panel, with the lower end of the container broken away;

FIGURE 5 is a perspective view of the top of the completed container with the lower end broken away;

FIGURE 6 is a perspective view of the upper end of the container with the sanitary shield hinged back to expose the filling and dispensing opening, with the lower end of the container broken away;

FIGURE 7 is an enlarged vertical section taken substantially along a plane indicated by the lines 7-7 in FIGURE 5 with parts broken away;

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FIGURE 8 is a plan view of two of the blanks of FIGURE 1 nested for web operation with a minimum of scrap;

FIGURE 9 is a plan view to a smaller scale of a series of blanks of FIGURE 8 nested and in a web showing no scrap between blanks in the direction of web travel.

As a preferred embodiment of the instant invention FIGURES 1 to 9 inclusive of the drawings illustrate a container of rectangular cross-section comprising a fibre body 11 of tubular construction having four sidewalls closed at its upper end with an integral flat fibre filling and dispensing top closure 12. The bottom end of the container may be closed in any suitable manner.

The blank 13 (FIGS. 1, 8, and 9) is preferably cut from a web for reasons of economy and as may be seen from FIGURES 8 and 9 this is readily accomplished with a minimum of waste. Blank 13 is scored for folding, preferably at the same time it is cut, with four vertical score lines 14, 15, 16, and 17. Score line 14 extends from the lower edge 18 of blank 13 (FIG. 8) to upper edge 19. Score line 15 is a co-extensive with cut edge 20 of top closure member 21 and extends from the lower edge 18 of blank 13 to the intersection of cut edge 20 and angular edge 22 which defines one edge of a notch and connects edge 19 with edge 20. Vertical score line 16 extends from lower edge 18 of blank 13 upwardly to horizontal score line 23 which extends from vertical score line 15 to vertical score line 16 and forms the connection between panel 24 of body blank 13 and top closure member 21. A short vertical cut line 25 co-extensive with score line 16 extends vertically from horizontal score line 23 to horizontal cut edge 26. Vertical score line 27 co-extensive with cut edge 25 and score line 16 extends upwardly from horizontal cut edge 26 to horizontal cut edge 28 and forms a line of fold between top closure member 21 and auxiliary top closure member 29. Horizontal cut edge 26 joins short angular cut 30 which in turn joins short horizontal cut 31 which intersects vertical score line 17. Vertical score line 17 extends from lower edge 18 (FIG. 8) upwardly to intersect one end of score line 32 which is coextensive with cut edge 28 (FIG. 1). Angular score line 33 extends from the intersection of score line 27 with score line 32, diagonally to the intersection of short horizontal cut 31 and vertical score line 17 and divides substantially rectangular auxiliary closure member 29 into two substantially triangular areas 34 and 35. At the two edges of auxiliary closure member 29 nearest the outer corner, lips 36 and 37 are defined by angular cut edge 38, horizontal cut edge 39, vertical cut edge 40, short angular cut 41, vertical score line 17 extended, and horizontal score line 32. A second notch in the upper edge 19 of blank 13 is defined by cut 41 angularly connecting edge 19 and horizontal cut 31 and angular cut 30 joining with horizontal cut 26 which has a spaced relationship with edge 19. This notch just defined and the first notch described at angular cut edge 22 cooperate at final assembly to receive the corners of triangular shield 35 which becomes an overhanging sanitary protective shield as in FIGURES 5, 6 and 7.

Having described the blank used in making the container we shall now describe the method and steps performed in completing the top end. In FIGURE 2, auxiliary closure member 29 of substantially rectangular shape has been folded about vertical score line 27 until diagonal score line 33 coincides with and overlies the diagonal of top closure member 21, and diagonal cut 41 coincides with diagonal cut 22. At this time triangular interconnecting member 34 of auxiliary closure member 29 is adhesively attached to the corresponding area of top closure member 21. The area 35 of auxiliary top closure member 29 is then hinged about score line 33

until area 35 is in close contact with area 34 but is not adhesively attached (FIG. 3). I prefer at this time to perforate hole 42 through all three parts of the top closure 34, 35, and 21 to insure perfect register of all holes and I also prefer to attach plug 43 to area 35 of auxiliary top closure member 29 at this time.

The partially completed blank of FIGURE 3 is preferably wrapped about a rectangular mandrel with edge 44 overlapping edge 45 to form an adhesively secured lapped side seam 46 (FIGS. 4 and 7). In the further preparation of the upper end of the body 11 (FIG. 4) to receive top closure member 21, the upper edge of the body 11 is necked inwardly then outwardly producing a peripheral flat horizontal ledge 47 on all four edges of the body (FIGS. 4 and 7) at the level of score line 23 (FIG. 1) which defines one edge of top closure member 21 and also is the line of joinder between panel 24 of blank 13 and top closure member 21. In the same necking operation top closure member retaining flanges 48 are set in an upright position at the outer edges of peripheral ledge 47 on three sides. All the inner surfaces of peripheral ledge 47 and the inner surfaces of top closure member retaining flanges 48 are coated with adhesive.

In the next operation (FIG. 5) top closure member 21 is hinged about score line 23 and brought to rest on peripheral ledge 47. While this operation is performed triangular sanitary shield 35 is hinged about score line 33 to occupy a position perpendicular to end closure member 21. At this point the corners of triangular sanitary shield 35 extend through notches at the two corners of body 11 described above so that top closure member retaining flanges 48 may be sealed into position over top closure member 21 on two edges and over the double thickness created along edge 27 by folding area 34 and gluing it to one half of top closure member 21 on a third edge. Immediately following this sealing operation triangular sanitary shield 35 is hinged about score line 33 until plug 43 enters filling and dispensing opening 42, at which time lips 36 and 37 are lightly formed under peripheral flat horizontal ledge 47.

To fill the container, triangular sanitary shield 35 (FIG. 6) is hinged about score line 33 withdrawing plug 43 from filling and dispensing opening 42 permitting introduction of a tube into the opening and a liquid product through the tube. The tube is then withdrawn, the shield with plug is hinged back to closed position, lips 36 and 37 are clinched under ledges 47, and plug 43 is expanded at its lower end to hold it tightly in engagement with top closure member 21 (FIG. 7).

To dispense the contents of the container lips 36 and 37 (FIG. 5) are grasped between thumb and forefinger and folded back. Continued pressure in an upward direction withdraws plug 43 and exposes dispensing opening 42 through which the contents of the container may be poured (FIG. 6).

It is thought that the invention and most of its advantages will be understood from the foregoing description and drawings and it will be apparent that changes may be made in the construction and arrangement of the parts without departing from the spirit and scope of the invention, the form hereinbefore described being a preferred embodiment thereof.

I claim:

1. A container for liquids comprising a tubular fibre

body having four sidewalls terminating at its upper end on three sides in a necked-in area and short top closure member retaining flanges, the fourth side terminating in a necked-in area and an integral top closure member with a substantially triangular sanitary shield attached thereto by an integral substantially triangular interconnecting member, said triangular interconnecting member folded about an edge common to said top closure member and adhesively attached thereto in a substantially triangular area defined by a diagonal of said top closure member and two edges thereof, a filling and dispensing opening in said top closure and said interconnecting member within the triangular area, said triangular sanitary shield integrally hinged to said triangular interconnecting member along the hypotenuse and folded back over said filling and dispensing opening, two lips of said triangular sanitary shield overhanging said top closure member and one of said top closure member retaining flanges and folded thereunder and a plug carried by said triangular sanitary shield closing said filling and dispensing opening.

2. A blank of foldable material adapted to be formed into a container of square cross section, said blank comprising a major area substantially rectangular in configuration scored vertically in four lines dividing said major area into three wall panel forming areas and two narrow areas, said two narrow areas designed to overlap and form a fourth wall panel when in folded condition, surmounting one of said three wall panel forming areas and integrally hinged thereto in a score line having spaced relationship with and parallel to the upper edge of said major area providing a narrow top closure retaining flange forming area at the upper end of each free wall panel forming area a substantially square top closure member equal in width to one of said three side wall panel forming areas, and integrally hinged to said top closure member in a score line co-extensive with one of said four vertical score lines in said major area an auxiliary top closure member substantially rectangular in configuration and of substantially the size of said top closure member and separated from said major area by a substantially horizontal cut providing a narrow top closure retaining flange forming area and a notch at the upper edge of one of said wall panel forming areas, said auxiliary top closure member divided by a diagonal score line into a substantially triangular interconnecting member and a substantially triangular sanitary shield forming member, an opening in said top closure member and an opening in said triangular interconnecting member and an opening in said sanitary shield forming member positioned to register when said top closure member and said triangular interconnecting member and said sanitary shield forming member are in folded three layer juxtaposed position, and two narrow lip forming panels on the shorter edges of said triangular sanitary shield forming member.

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