April 5, 1927. 1,623,269

R. R. REILLY

DIED-OUT BLANK FOR RECEPTACLES

Filed July 30, 1924

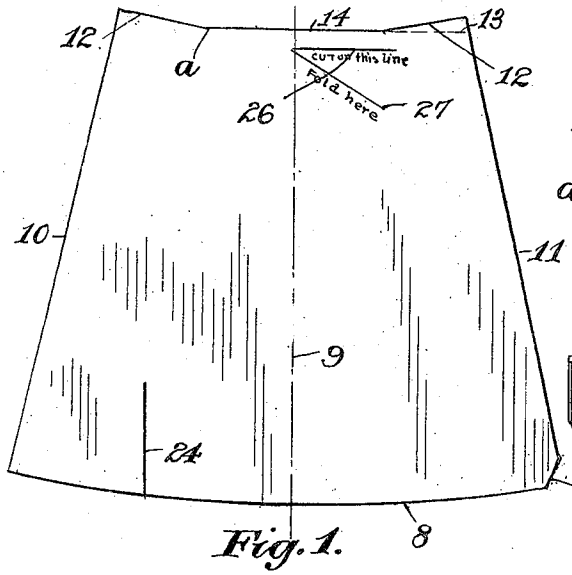



Fig. 1.

Fig. 4.

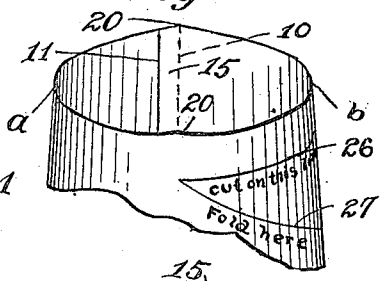






Fig. 5.

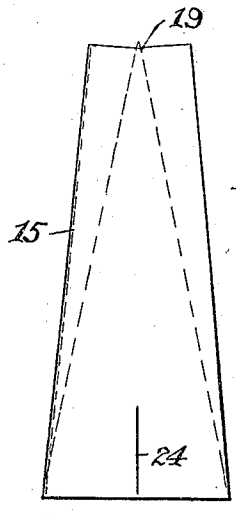



Fig. 2.

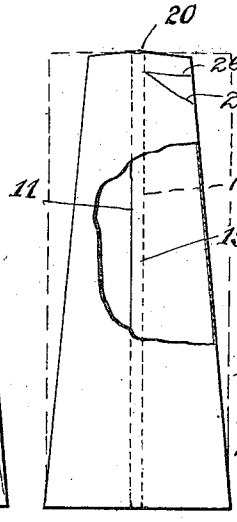



Fig. 3.

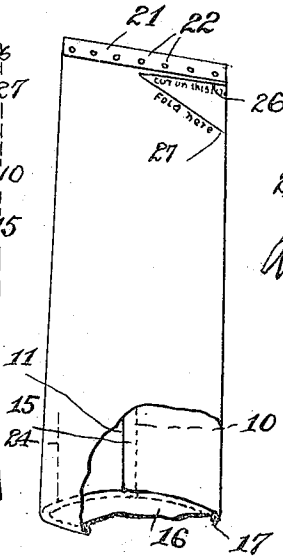



Fig. 6.

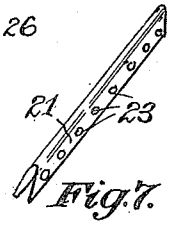



Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## DIED-OUT BLANK FOR RECEPTACLES.

Application filed July 30, 1924. Serial No. 729,034.

This invention relates to died-out blanks for making receptacle bodies, and it is the object of the invention to provide a died-out blank for making bodies of receptacles of truncated cone shape, such for instance as that disclosed in my copending application Serial No. 473,578.

In making receptacles of truncated cone shape of this character a permanent closure in the form of a flanged disk is secured in the larger end of the receptacle and to close and seal the receptacle the open or smaller end is collapsed by squeezing or pinching the opposite wall portions together and securing said end and its collapsed condition by a member, usually of pliable metal, of inverted V-shape engaged over the collapsed end and pressing opposite portions of said member together with the collapsed end of the receptacle interposed and secured in such position by upset portions of the material of said sealing member. The function of the securing member is also to seal the receptacle by retaining the collapsed end of the receptacle in collapsed condition. However, due to inequalities in the top edge developed in the making of the receptacle it was found that said securing and sealing member did not properly seat upon the closed end of the receptacle with the result that the contents of the receptacle would be partially opened to the atmosphere and a consequent deterioration of the contents of the receptacle as well as the leakage.

It is the object of the present invention to overcome the above disadvantages by so constructing and arranging the blank from which the receptacle body is formed so that when the open end of the receptacle is collapsed the edges of the collapsed sides at said end of the receptacle will at all times be in a plane horizontal to the base or bottom of the receptacle whereby the securing and sealing member may be properly seated thereon and retain the collapsed walls in contiguous and tight relation.

In the drawing accompanying and forming a part of this specification, Figure 1 is a plan view of my improved died-out blank.

Figure 2 is a side elevation of a receptacle or container constructed from the blank shown in Figure 1 and showing in dotted lines the position the receptacle wall assumes when collapsed.

Figure 3 is a view looking at the left of Figure 2, partly broken away to show the arrangement of securing the sheet at the longitudinal edges, and showing in dotted lines the position the receptacle wall assumes when interposed.

Figure 4 is a view in perspective of the upper portion and open end of a receptacle constructed from the blank shown in Figure 1.

Figure 5 is a perspective view of the upper portion and open end of the receptacle showing the same in collapsed condition in order to close the same.

Figure 6 is a perspective view of a receptacle constructed from the blank shown in Figure 1 showing the open end collapsed and a closing and sealing member applied thereto, a portion of the lower end being broken away to show the manner of securing a closure or bottom in the end of the receptacle; and

Figure 7 is a perspective view of the sealing member.

Similar characters of reference designate like parts throughout the different views of the drawing.

In carrying out the invention a suitable die is provided to cut out from a sheet or web a blank substantially of quadrilateral form as shown in Figure 1 having an end, to constitute the base of the receptacle or container, of arcuate or curved form, as at 8, the same being in the arc of a circle whose center lies in a line extending vertically to said end and substantially centrally between the termini of said end, as represented at 19.

The opposite sides 10, 11, converge from the base to the top end of the sheet the inclination of said sides being at the same angle. The top or upper end of the sheet extends inward and inclines downward from the sides, as at 12, said inclination being at an acute angle to the horizontal, as represented by the dash line 13, and said inclined portions merging into an intermediate horizontal portion 14, as at *a* and *b*. The horizontal portion is of an extent equal to both the inclined portions 12. To form the receptacle or container the sheet is wrapped or rolled about a horn or mandrel with the side edges in contiguous relation, preferably overlapped, so that the one side edge portion, such as the side 11, will overlap the side edge portion 10 to an extent represented by the dash line 15. By the sheet

so formed a receptacle body of truncated cone shape is produced as shown in Figures 2 and 3, the sheet being retained in rolled condition by a securing member, such as an adhesive strip engaged over the edges 10, 11.

A closure is secured in the larger end to constitute the bottom, which closure consists of a flanged disk 16 (Figure 6) inserted into the end with the flange extending outward with the outer edge in parallel relation to the edge of the receptacle and secured therein by rolling the end portion of the receptacle and flange of the closure disk inwardly, as shown at 17. To facilitate this rolling of the sheet and disk flange together the corner of the sheet at the juncture of the base 8 with the side 11 is cut away on an angular line, as at 18, this cutaway portion commencing approximately at a height equal to the length of the flange of the closure disk 16 and extending laterally of the edge 11 to an extent substantially equal to the lap of said edge portion in relation to the edge portion 10.

From a sheet of the form as described a receptacle body is produced in which the bottom or base is in a substantially horizontal plane while the upper edge when viewed from one side, as in Figure 2, will incline downwardly from opposite sides and merge substantially centrally of the receptacle, as at 19. When viewing the receptacle from the side in another position, as from the left of Figure 2, the top edge will incline upwardly from opposite sides and merge substantially centrally of the receptacle, as at 20. In effect as shown in Figure 4 the opposite edge portions will incline upwardly from the points *a*, *b* representative of where the inclined portions 12 of the top of the sheet merge with the horizontal portion 14, and merge substantially centrally of the receptacle.

To close the receptacle so formed, as shown in Figures 2, 3 and 6, the upper and open end is collapsed; that is, the upper wall portions are squeezed or pinched together the wall portion with the overlapped edge and the opposite wall portion being moved relative to each other, as shown in dotted lines in Figures 2 and 3, and as viewed in Figure 2 the central portion 19 of the upper edge will be moved upward longitudinally of the receptacle while the opposite side portions will move downwardly thus causing the meeting edges of the opposite wall portions to extend in a substantially horizontal plane and parallel with the bottom or base of the receptacle, and in such condition the sealing member 21 (Figure 7) of pliable sheet metal is engaged over the top and will seat against the top edges and as the opposite portions of said member are pinched together press the opposite wall portions of the receptacle firmly together, the sealing member being retained in position upon the receptacle by upsetting portions of the metal of said member, as at 22, and forcing said upset portions through the material of the receptacle and into perforations 23 in the opposite portion of the sealing member.

When the open end of the receptacle is collapsed as viewed in Figure 3 the central portion will be moved slightly downward longitudinally of the receptacle wall while the lateral portions are moved upward and the upper portion of the receptacle spread as shown in dotted lines in said figure thereby positioning the upper edge of the receptacle in a substantially horizontal plane.

Receptacles of this character are used as milk containers to which the milk is supplied by filling machines and from which machines they are transferred to a conveyer to be presented to means to collapse the open ends and apply the sealing member 21 thereto. To properly position the receptacle upon the conveyer so that they will be presented in correct position to the seal applying means the sheet is arranged with an indice in the form of a vertical line 24 positioned in predetermined relation to the side 10 of the sheet so that when the receptacle is formed from said sheet said indice will be substantially axially of the receptacle as shown in Figure 2.

The sheet furthermore is arranged with a horizontal line 26 adjacent the top, which line is arranged just below the edge of the sealing member 21 when the receptacle is filled and sealed as indicated in Figure 6, and there is arranged adjacent said line the phrase "cut on this line" to indicate that in order to remove the contents of the receptacle the top portion of the receptacle should be severed or cut on the line 26. The sheet is also arranged with an indice line 27 extending downward at an angle to and from the line 26 with the words "fold here" printed adjacent to said line which is to indicate that the receptacle is to be folded on said line to close the receptacle after the receptacle has been opened by removing the sealing member and a portion of the contents only has been used.

Having thus described my invention I claim:

1. As an article of manufacture a receptacle blank of quadrilateral form having one end of arcuate shape the center of the curve of which lies in a line extending vertically to said end, with opposite sides converging from said curved end, and the opposite end of the blank having an intermediate portion extending in a horizontal plane with opposite end portions extending outward from and at an obtuse angle to the horizontal portion and terminating at the sides.

2. As an article of manufacture a blank

for making a receptacle body of truncated cone form, comprising a died-out sheet having opposite sides inclined from the base end toward the top end in a direction toward each other and at the same angle with the base in the arc of a circle whose center lies in a line extending vertically to the base and centrally between the sides of the sheet, and the top end extending inward and downward from the sides and merging in an intermediate horizontal portion, said horizontal portion being of an extent equal to both of the inclined portions.

Signed at New York city, in the county of New York and State of New York this 22nd day of July, 1924.

RODOLPHE R. REILLY.