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Zackheim et al.

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[54] **DISPENSER CUP HAVING A WELL THEREIN**

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[52] **U.S. Cl.** **222/207,** 222/212

[51] **Int. Cl.** **B65d 37/00**

[58] **Field of Search** 222/540, 211, 212, 213, 222/205, 207, 424.5, 335, 369, 344, 425, 564, 568, 569, 215; 239/499, 524, 509, 512, 494, 497, 498, 502, 505, 474, 482, 483, 568

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[57] **ABSTRACT**

A dispenser cup has an open well therein formed by a continuous tapering side wall and a bottom wall, the cup being adapted for use with a flexible wall container holding liquid. A conduit, integral with the cup, extends between the well and the container and a cap surrounds the well end of the conduit forming at least one recess portion to provide a downward path for the liquid to the well.

5 Claims, 3 Drawing Figures

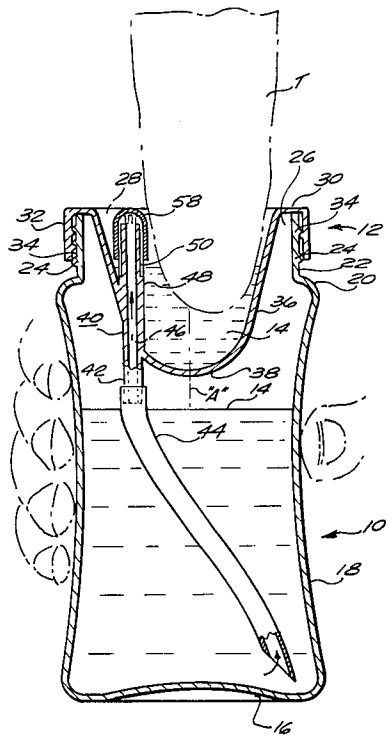


FIG. 1

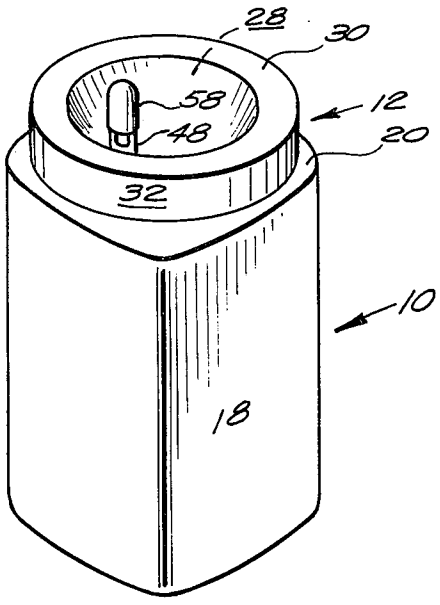
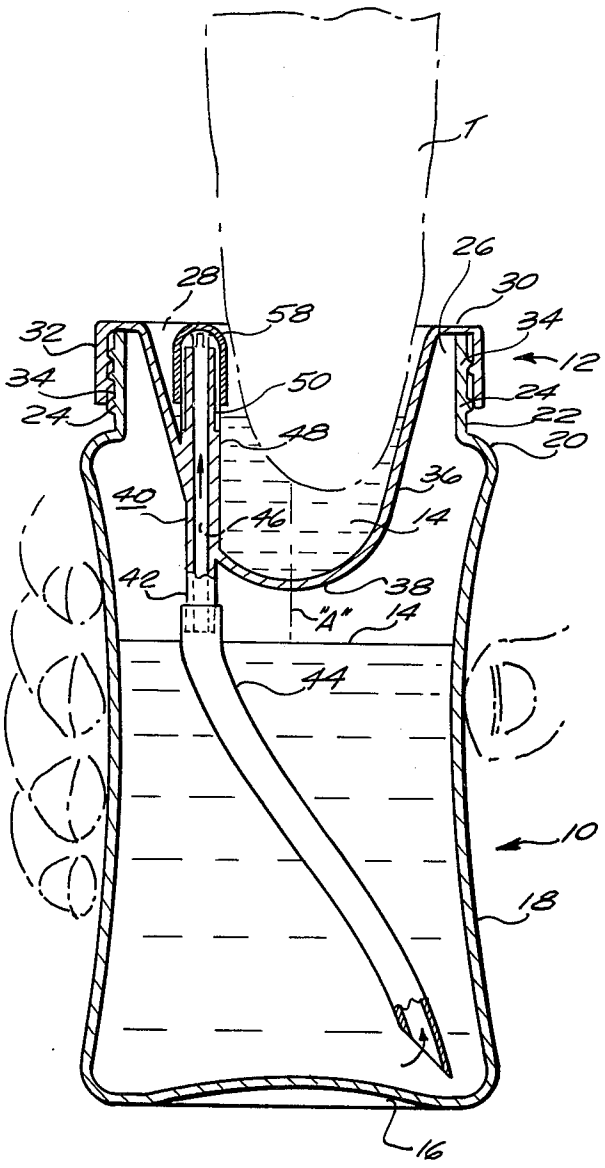


FIG. 2



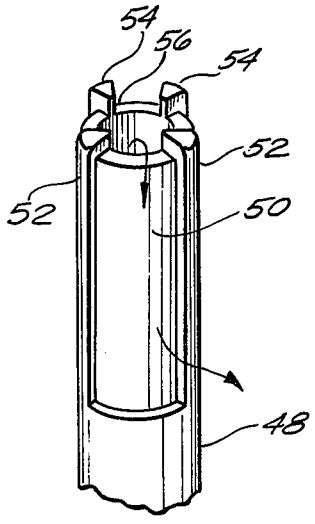


FIG. 3

DISPENSER CUP HAVING A WELL THEREIN

BACKGROUND OF THE INVENTION

This invention relates to dispensers and more particularly dispensers which are adapted to be used with flexible wall containers.

Flexible wall containers with dispensers have been used for many purposes. One use of such containers and dispensers has been in the dairy industry in connection with disease prevention. In that industry one method of disease prevention is carried out by means of teat dipping with a bacterial control solution, particularly for the prevention of mastitis in dairy cows. The dispensers used for such dipping usually have a well in the upper portion of the dispenser and some means for forcing liquid from the container into the well. In order for such a dispenser to work properly it is necessary that several criteria be met. First, the dispenser must be inexpensive to manufacture in order that it may be provided to the user at a minimum of cost; second, the dispenser must be designed to permit the insertion of the teat into the well quickly and easily so that the dipping operation can be carried out efficiently; and, finally, the dispenser must be designed so that the treating solution will not be easily spilled or lost in transferring it from the container to the dispenser.

Accordingly, it is an object of the present invention to meet each of these criteria. Therefore, the present invention provides a dispenser which has the unique construction of providing adequate space for dipping as well as sure means of conducting the liquid from the container into the well portion of the dispenser.

This is carried out by means of a dispenser which is adapted to be substantially molded as a single piece with only a semi-closure cap added to provide the complete dispenser combination. By the present invention liquid is forced by squeeze pressure from the container through a conduit and then it is directed downwardly along the outer portion of the conduit into a well formed with tapered walls. Thus, it will be seen that the present invention provides a simple arrangement whereby the path of the fluid from the container to the well of the dispenser is controlled and precisely directed at all times.

DESCRIPTION OF THE DRAWINGS:

FIG. **1** is a perspective view of the dispenser and container combination of the present invention;

FIG. **2** is a sectional side view of the dispenser and container combination of the present invention showing a teat inserted into the well of the dispenser; and

FIG. **3** is a partially fragmentary perspective view of the upper portion of the conduit of the dispenser of the present invention.

DESCRIPTION OF THE ILLUSTRATED EMBODIMENT:

Referring to the drawings and to FIGS. **1** and **2** in particular, a container **10** is shown in combination with a dispenser **12.** It will be noted that the container **10** which is of the flexible wall type has a low profile. Such a container has an advantage in teat dipping since the container is not cumbersome and it is easily inserted under the udder of a cow to immerse the teat in the dispenser's well.

In the container **10** the dipping liquid **14** is contained and this liquid may be of any desired kind, depending upon the purpose for which it is intended to be used. The container **10** has a bottom wall **16** and flexible side walls **18.** At the upper extent of the side walls **18** a shoulder **20** is provided which connects to the neck **22** of the container. The neck **22** which has a series of threads molded on its outer portion, surrounds a wide, open mouth **26.**

The dispenser **12** which is shown connected to the container **10** in the illustrated embodiment has an open well **28** on its top surface. Surrounding the well **28** is an annular top wall **30** and depending from this top wall **30** is a skirt **32** which has a plurality of threads **34** on its inner surface. The threads **34** on skirt **32** engage the threads **24** on neck **22** of the container. Thus, the dispenser is readily joined and attached to the container.

The well **28** has an inwardly tapered side wall **36** which joins with a concave bottom wall **38.** Integrally molded into the dispenser **12** and extending through the side wall **36** is a conduit **40.** The conduit **40** in the illustrated embodiment is aligned substantially vertically with, but eccentrically of, the center longitudinal axis "A" of the well **28.**

The conduit **40** extends from the inner portion of the container **10** and into the well **28.** The lower conduit portion **42** extending into the container **10** has connected to it a flexible tube **44** which is of sufficient length to be adjacent to the bottom wall **16.**

A continuous bore is provided through the conduit **40.**

As shown in FIG. **3** the upper conduit portion **48** has a plurality of recess portions **50** formed on its outer surface and these recessed portions are bounded by a plurality of ribs **52.** The rib ends **54** extend beyond the top **56** of the remainder of the upper portion **48.** Finally a cap **58** is fitted over the upper portion **48** and embraces the ribs **52.** The rib ends **54** space the cap **58** above the top **56,** thus, completing a path for the liquid **14** from the interior of the container **10** into the well **28** of the dispenser. This path is through the flexible tube **44** into the bore **46** of conduit **40,** over the top **56** and between the ribs **52,** the upward travel of the liquid being limited by the upper portion of the cap **58.** Because of the particular construction of the conduit **40** and the cap **58,** the liquid which is pumped by outside pressure against the flexible walls **18** moves upwardly and then it is deflected downwardly insuring that it will be deposited into the well **28.**

In actual operation by merely squeezing the walls **18** any desired quantity of a liquid **14** can be placed in the well **28** along the circuitous path which has been described.

It will be seen that the present invention provides a simple dispenser with a sure means of directing the liquid into the well where it can be used, as shown in the illustrated embodiment for teat dipping.

The flexible wall container may be made of any suitable plastic material such as polyethylene. The dispenser may also be made of any desired plastic material but preferably it is of a rigid or at least a semi-rigid construction.

What is claimed:

1. A dispensing device adapted for use with a flexible wall container having a wide mouth, defined by an upper edge portion of the container, and a quantity of liquid therein, said device comprising:

a. a cup having an open well formed therein extending into the interior of said container through said

wide mouth and an annular top wall surrounding said well and located above the upper edge of the container;

b. said cup including a skirt depending from the annular top wall and adapted to be connected to said container, said skirt surrounding and being spaced from an adjacent portion of said well to receive the container's wide mouth in the space therebetween;

c. said well having a continuous inwardly tapered side wall extending from said annular top wall into the wide mouth of the container about the longitudinal axis of the cup and a concave bottom wall defining the bottom of the well, said tapered side wall and said bottom wall being dimensioned to receive a cow's teat therein;

d. said cup further including a conduit formed integral with said side wall and having an upper end extending into the well and a lower end extending into the container, said conduit having a bore therethrough and being located in said well eccentrically of and generally parallel to the longitudinal axis of the cup thereby providing an enlarged open area of the well adapted to receive the cow's teat;

e. a cap surrounding the upper end of the conduit extending into the well; and

f. at least one recess portion formed between said cap and the exterior surrounded end of the conduit, whereby a path is formed for the liquid in the container forced therefrom by squeeze pressure, said path being through the conduit bore into the formed recess and then downwardly into the dispenser well.

2. A dispenser cup as defined in claim **1,** wherein the cap has a continuous side wall surrounding a plurality of recesses formed in the end portion of the conduit.

3. A dispenser cup as defined in claim **2,** wherein the recesses are further formed by a plurality of ribs on the outer surface of the end portion of the conduit and said ribs extend further than the remainder of the end portion whereby the cap is spaced therefrom, providing a plurality of entry paths into the well for the liquid from the container.

4. A dispenser cup as defined in claim **3** and further including a flexible tube attached to the portion of the conduit in the container, said tube extending into the liquid in the container.

5. A dispenser cup as defined in claim **4** wherein the skirt has thread portions formed thereon adapted to connect with mating threads on the wide mouth of the container.

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