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F. MACCOY

2,084,099

VALVE FOR FEEDING DEVICES

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Fig. 1.

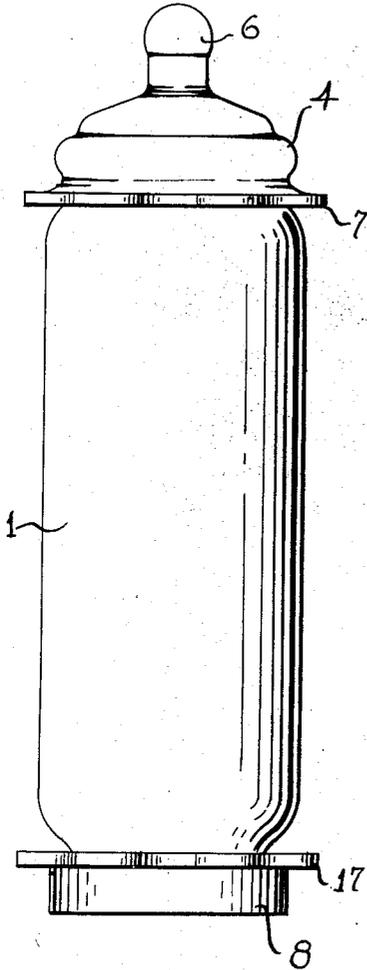


Fig. 3

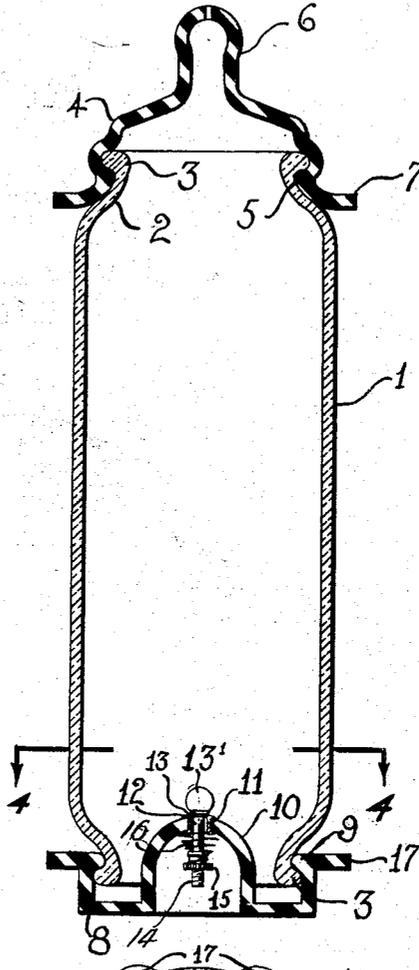


Fig. 2

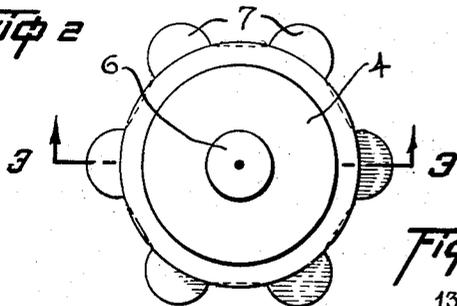


Fig. 4

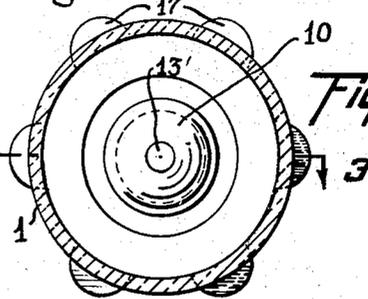


Fig. 5.

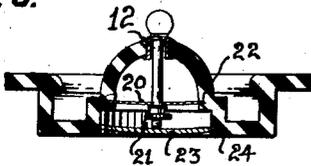


Fig. 6.



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VALVE FOR FEEDING DEVICES

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1 Claim. (Cl. 215-11)

The present invention pertains to a novel feeding device designed particularly for use by infants.

The principal object of the invention is to provide a device of this character which is sanitary in all respects, non-breakable and non-rolling, and which is effective in its operation when filled with emulsified vegetables, as well as milk.

In fulfilling the sanitary requirements, the body or receptacle of the device consists of an open ended tube or cylinder to which are fitted end caps, so that on removal of the caps this member may be thoroughly cleaned by causing a stream of water to flow therethrough and then thoroughly dried by pulling a towel therethrough. Moreover, the caps are entirely reversible so that the inner as well as the outer parts thereof may be exposed directly to a running stream of water.

One of the caps has a nipple or outlet, and the other cap has a check valve which opens on suction at the nipple, thereby providing a vent which facilitates the withdrawal of the contents. The parts of the valve are made of a non-corroding metal for sanitary purposes.

Both caps are provided with parts projecting outwardly beyond the wall of the body or receptacle. Thus, if the device is dropped either or both ends striking the receiving surface will be protected by these members which also prevent the body from striking said surface. The projecting members present a non-circular contour, so that the device cannot roll when laid on its side.

The invention is fully disclosed by way of example in the following description and in the accompanying drawing, in which—

Figure 1 is an elevation of the device;

Fig. 2 is a top plan view thereof;

Fig. 3 is a longitudinal section on the line 3-3 of Figure 2;

Fig. 4 is a cross section on the line 4-4 of Figure 3;

Fig. 5 is a detail cross section of a modified valve structure; and

Fig. 6 is a detail section of a modified construction.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

In Figures 1 and 3 the device is shown as having a body consisting of a substantially cylindrical member or tube 1, preferably of glass, having both ends open. At each end is formed a restricted neck 2 at the end of which is an

outward rib or flange 3 for engagement by a closure member as will presently appear.

The upper end of the body or receptacle 1 is equipped with a cap 4 formed at its lower edge with an inner bead 5 which engages beneath the flange 3. In the center of the cap is formed an upstanding nipple 6 which constitutes the outlet of the device. The lower edge of the cap is formed with a circular series of spaced ears 7 or other irregularities extending outwardly beyond the wall of the member 1 as clearly illustrated in Figures 1 and 3.

To the other or lower end of the body 1 is also applied a cap 8, the attachment being made by means of an inner rib 9 on the cap engaging behind the flange 3 in the same manner as described in connection with the cap 4. The lower cap however has a dome 10 extending into the end of the body 1 and fitted at its center with a sleeve 11 which defines an air vent and a valve seat as will presently appear.

In the sleeve is slidably mounted a valve consisting of a stem 12 having at its upper end a valve head 13 disposed at the inner side of the dome and adapted to open on inward movement. The valve head has a spherical surface co-operating with the upper end of the sleeve 11 which constitutes the valve seat. Over the head is formed a ball weight 13' of greater radius than the seating surface of the head 13. The lower end of the stem is threaded at 14 to receive an adjustable nut 15, and between the nut and the dome the stem is surrounded by a light wire spring 16 which tends to hold the valve head on its seat. The cap 8 is also formed with outwardly extending ears 17 or other irregularities projecting beyond the wall of the body 1, preferably to the same extent as the members 7.

The valve is adjusted to open under the influence of a slight amount of suction at the nipple 6. Obviously, when the feeding device stands on its lower end, the valve is closed by the weight 13' and the action of the spring 16, the tension of which may be adjusted by means of the nut 15 to yield to the suction at the nipple 6 in use.

The weight 13' is overbalanced by the spring 16 to only such a degree, so that a slight amount of suction at the nipple 6, when the device is tilted, will cause the valve to open. On the other hand, when the feeding device stands on its bottom, the weight 13' combines with the spring 16 in the closing of the valve. In a tilted position of the device, with the weighted end of the stem 12 at a lower level than the other end, the weight and spring opposed one another,

and the resultant effect is the opening of the valve under the action of the weight and suction.

In Figure 5 is illustrated a modified form of valve wherein the stem 12 is normally drawn to closed position by means of a flat spring 20 penetrated by the stem above the nut 21 and having its ends anchored in the wall of the dome as indicated by the numeral 22. It will be apparent that the tension of the spring 20 is adjustable by means of the nut 21. In either embodiment of the invention it is preferred to provide a guard 23 across the base of the dome. This guard is in the nature of a flat strip parallel to the member 20 and having its ends embedded in the wall of the dome as indicated by the numeral 24. This guard prevents the infant from meddling with the valve.

The use of the device and the various advantages thereof will now be described. It is filled with the food, which may be milk or vegetables in a finely mashed state, on removal of the cap 4. The action of the valve when under suction and also when the device is not in use has already been described, and it will be understood that the opening of the valve when the device is in use provides a venting means facilitating the withdrawal of the contents. Due to the open ended character of the member 1, the same may be thoroughly washed by the flow of a stream of water therethrough when both caps are removed. Such thorough cleansing is not possible in the case of a bottle having one closed end and forming corners which are not readily reached by the washing fluid. In like manner the cylinder or tube 1 is easily dried by passing a towel therethrough, thus reaching all points thereof.

The device is rendered non-breakable by reason of the lugs 7 and 17 projecting outwardly from the caps at both ends, so that when the device is dropped, the lugs and not the glass part will strike the receiving surface. The lugs also prevent the device from rolling when laid on a flat surface, and it will be understood in this connection that these members may be of any character which imparts a non-circular character to the projecting body.

In the interest of cleanliness, the valve parts are made of a non-corroding material. Also, both caps are entirely reversible so that all inner parts as well as the outer parts thereof may readily be exposed directly to the cleansing fluid.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention, as indicated by the appended claim.

What I claim is:

A valve for a feeding device comprising a body formed with a vertical vent and a valve seat at the upper end of the vent, a valve stem extending through said vent and having a diameter less than that of the vent whereby it may shift laterally with respect thereto, a valve head on the upper end of said stem, resilient means engaging said stem to normally hold said valve head in engagement with said seat, and a weight connected to said head and adapted to move the same laterally and longitudinally to displace said head from said seat when said body is inverted.

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