Jan. 5, 1937. H. M. PACKER 2,067,016

THERMOMETER HOLDER

Filed Feb. 15, 1935

Fig - 1 -

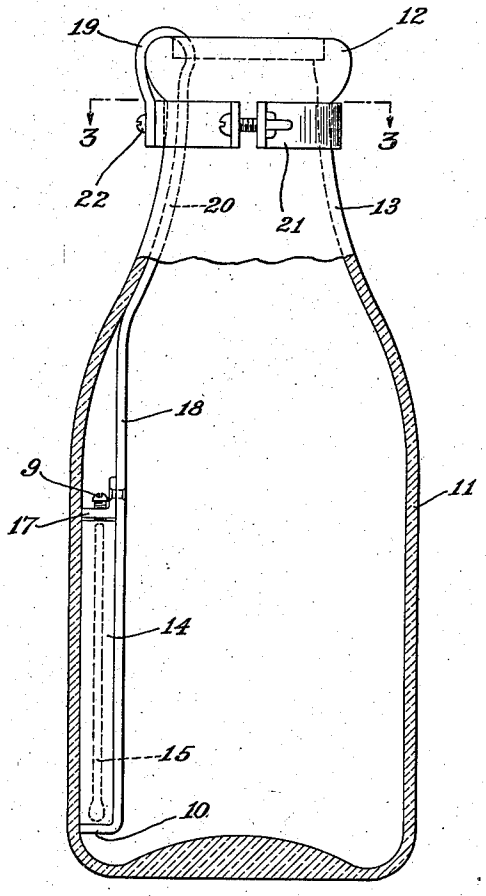


Fig - 2 -

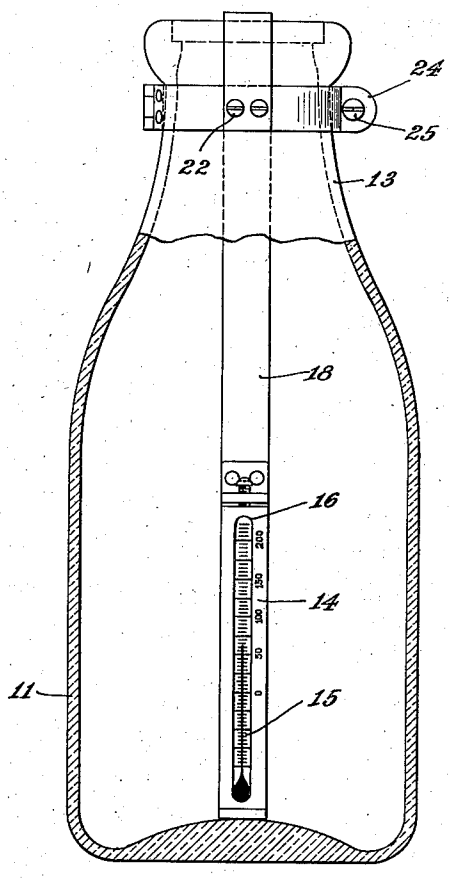
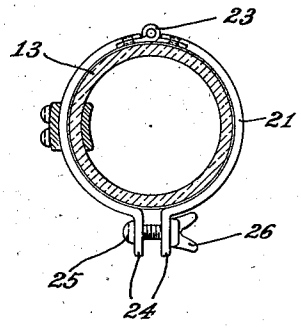


Fig - 3 -



INVENTOR.

Herbert M Packer

BY

Philip Sawyer Rice & Kennedy

ATTORNEYS.

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THERMOMETER HOLDER

Herbert M. Packer, Philadelphia, Pa.

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4 Claims. (Cl. 248—205)

This invention relates to thermometer holders and more particularly to means for holding a thermometer inside a container such as a milk bottle.

The laws or regulations of most States require a high temperature for the water used in washing and sterilizing milk bottles before filling. The usual temperature is around 160° F. with an immersion of at least three minutes.

There are various devices on the market for registering or recording the temperature of the wash water surrounding the bottles but it has been found that such temperature is not a proper criterion or test. It will be apparent that the controlling factor is the temperature inside the bottle. Heretofore, the only method of investigation of conditions that milk control officers have had, has been to take bacteriological samples from inside the bottle after sterilizing. But these tests have shown complete sterilization in only a relatively small percentage of bottles, notwithstanding what appeared to be a proper wash water temperature. It is my belief that this is largely because an insufficient temperature was maintained inside the bottles.

It is an object of the present invention to provide means whereby an inspector can have knowledge of the temperature inside a bottle while the bottle is being washed and sterilized.

More particularly, it is an object of the invention to provide a holder for supporting a thermometer inside a bottle and one that will not interfere with the operation of a washing machine.

With these general objects and others in view, the invention consists in the features, combinations, details of construction and arrangement of parts that will first be described in connection with the accompanying drawing and then more particularly pointed out.

In the drawing,—

Figure 1 is a view partly in elevation and partly in vertical section of a bottle having mounted therein a thermometer holder constructed in accordance with the invention;

Figure 2 is a similar view taken at a different angle;

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Referring to the drawing, while the invention is applicable to various kinds of containers, it is here illustrated in connection with an ordinary glass milk bottle. The bottle 11 has a curved rim or lip 12 and a sloping neck 13.

The drawing shows a thermometer 15 carried by a suitable casing 14 having an elongated opening 16 in one face. Similar openings may be provided in other faces if desired.

The invention includes means for suspending the thermometer case inside the bottle and preferably in a position close to the inner surface thereof. Although capable of various constructions, in that here shown as an example, a strap 18 of spring brass or other suitable material has its lower end turned outwardly to form a flange or ledge 10. Spaced from flange 10 is an upper flange 17 formed by an angle piece secured to the strap 18. The thermometer casing 14 is supported in the angle formed by strap 18 and flange 10 and is removably secured in place by means of a set screw 9 carried by upper flange 17. It will be noted that the casing is inserted in the support so that its open face 16 is next to the inner surface of the bottle, that being the location where temperature conditions are most important.

The upper end of strap 18, in the embodiment here shown as an example, is in the form of a hook 19 adapted to take over the lip 12 of the bottle to suspend the support from the bottle mouth. Below the hook 19, the strap 18 is bent to conform substantially to the configuration of the bottle neck 13, as at 20.

The invention in its entirety includes releasable means for securing the support in position. As here shown as an example, the outer end of hook 19 is attached to a split-ring clamp 21, by screws 22 or other suitable means. The two sections of the clamp are hinged together, as at 23. Diametrically opposite the hinge, the respective ring sections have lugs 24 formed with holes for the passage of a bolt 25. On the end of the latter is a wing nut 26 for tightening up the clamp.

To use the device described, a thermometer unit being in place on strap 18, the strap is lowered into the bottle until hook 19 takes over the bottle lip to suspend the device therefrom. It will be seen that hook 19 constitutes a convenient finger grip for manipulating the device. Then the previously opened clamping collar is closed about the bottle neck and is tightened up to secure the hanger element in position. In this position, the strap is drawn over toward the side of the bottle. The upper part of the strap hugs the bottle neck and the lower part holds the thermometer casing close to the side of the bottle. As a result, the supporting device is so positioned that it does not interfere materially with the entrance of wash water or cleaning implements and the thermometer is located close to the inner surface of the

bottle where it is desired to test temperature conditions. The bottle is now run through the washing apparatus or otherwise subjected to a washing and sterilizing operation. The thermometer will ordinarily be sufficiently visible through the bottle to enable an inspector to read the temperature inside the bottle while washing is going on. If a maximum registering type of thermometer is used, a reading may also be taken after removal of the device or at other desired times, and the maximum temperature attained can be determined regardless of the temperature at the time of the reading.

Removal is accomplished by releasing and opening the clamping collar, whereupon the entire device may be lifted out, the hook 19 serving as a handle if desired.

What is claimed is:

1. In combination, a hook-shaped element for suspending a thermometer casing inside a bottle, a split and hinged clamping collar secured to the outer end of said hook and adapted to embrace the bottle neck, and means for releasably tightening said collar to secure the suspending element in position.

2. In combination, a strap of spring material having associated therewith upper and lower shoulders for receiving therebetween a thermometer casing, the upper end of the strap being hook-shaped to suspend the strap inside a bottle from the lip thereof, the intermediate portion of the strap being bent to conform substantially to the configuration of the bottle neck, a split and hinged clamping collar secured to the outer end of said hook and adapted to embrace the bottle neck, and means for releasably tightening up said collar.

3. In combination, a strap of spring material having a flange adjacent its lower end providing a shoulder for receiving a thermometer casing, an adjustable element on the strap providing an upper shoulder for engaging the upper end of such casing, the upper end of the strap being hook-shaped to suspend the strap inside a bottle from the lip thereof, and means for securing the strap in position.

4. In a device of the character described, and in combination, a metal strap having a hook-shaped upper end, whereby the strap may be suspended inside a bottle from the lip thereof, the intermediate portion of the strap being bent to conform substantially to the configuration of the bottle neck, a split and hinged clamping collar secured to the outer end of said hook and adapted to embrace the bottle neck, and means associated with the lower portion of said strap for holding a thermometer casing.

HERBERT M. PACKER.