

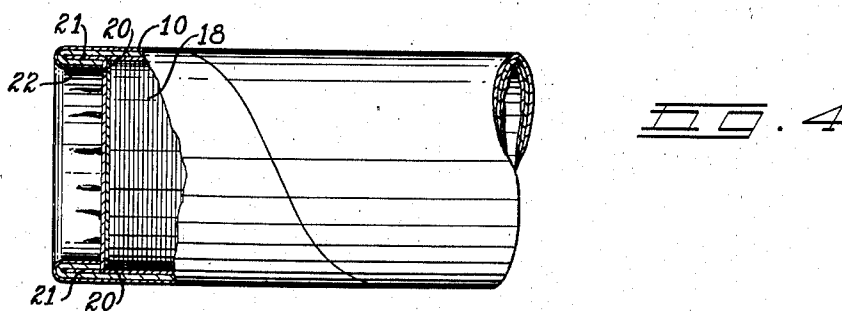
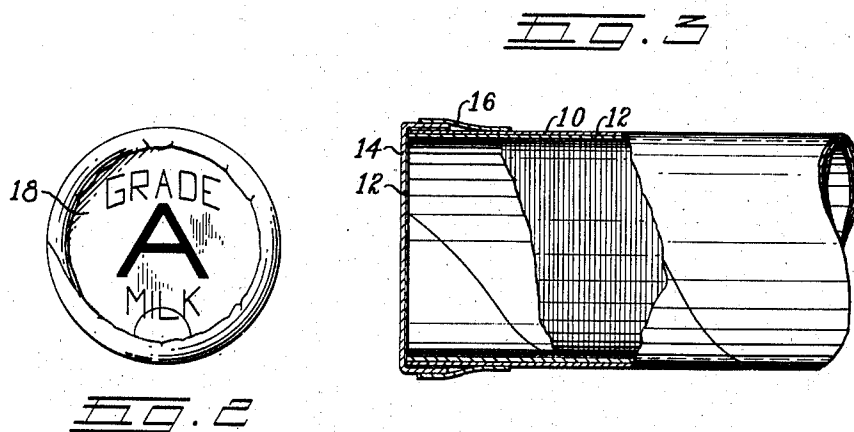
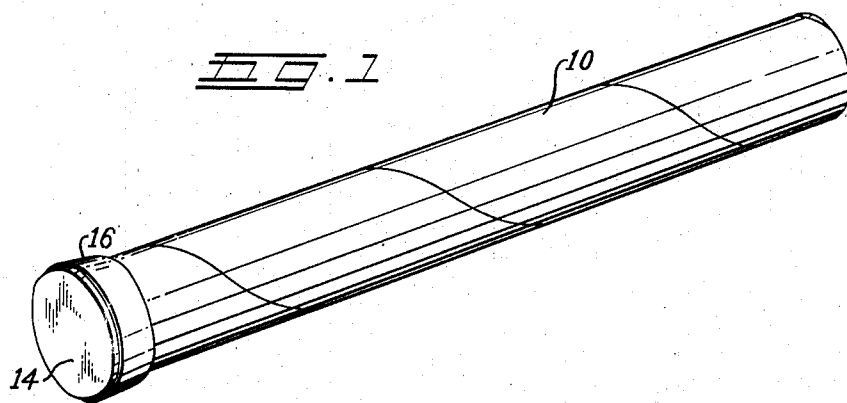
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W. A. DAVIS

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METHOD OF PACKAGING BOTTLE CAPS

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INVENTOR.
WILLIAM A. DAVIS
BY
Parker & Burton
ATTORNEYS.

UNITED STATES PATENT OFFICE

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METHOD OF PACKAGING BOTTLE CAPS

William A. Davis, Hamilton, Ontario, Canada,
assignor to Smith-Lee Company, Oneida, N. Y.

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1 Claim. (Cl. 226—2)

This invention relates to improvements in the method of packaging caps such as waxed paper milk bottle caps within a sanitary tubular container sealed against contamination and moisture.

An object of the invention is to provide such a container wherein milk bottle caps may be packaged for shipment and storage and from which container they may be dispensed for use. The container is of such a character that the caps will be protected against contamination by any sort of foul material and from the collection of bacteria and from moisture.

More particularly the container is provided with a heat sealing moisture resistant wax coating over the inner surface of its side and end walls, which coating protects the caps within the container from contamination and attack of moisture.

A further meritorious feature of my invention is the provision of an improved process or method of packaging bottle caps within a container while the caps are heated whereby the retained heat of the caps when confined within the container will promote the formation of a moisture proof, wax, heat seal coat over the end closures of the container tube and the wall of the tube and therebetween.

Other objects, advantages, and meritorious features of this invention will more fully appear from the following description, appended claim and accompanying drawing, wherein:

Figure 1 is a perspective of a container tube fabricated and filled according to my improved process,

Fig. 2 is an elevation of one end of the tube,

Fig. 3 is a sectional view through the opposite end of the tube, and

Fig. 4 is a sectional view through that end of the tube shown in Fig. 2.

Heretofore milk bottle caps have been packaged for shipment and storage in open end paper tubes. The wall of the tube was crimped inwardly at each end to hold the caps in place therein. When the caps were desired for use one end of the tube was cut off inwardly of the crimped over wall so as to promote free slidable discharge movement of the caps from the tube through the capping machine. Caps so packaged were open to fouling, contamination, moisture, and collection of bacteria thereon prior to their use during shipment and storage.

I propose to provide a tubular container which will keep the caps in a sanitary sterile condition protecting them from deposit of bacteria or other

foul injurious material thereon prior to their use and which will facilitate dispensing of caps from the tube for use. My container tube 10 may be formed of paper rolled up in the conventional spiral manner but I provide a moisture resistant heat sealing wax coating over the inner face of the tube. In the drawing the thickness of this coating 12 has been substantially exaggerated for purposes of disclosure. Actually, such coating would be very thin but sufficient to provide a moisture resistant seal over such inner surface.

A closure cap is provided for each end of the tube. Preferably one of these caps 14 is cup shaped and received externally over its end of the tube as shown in Figs. 1 and 3. This cap is sealed in place. The cap is wax coated at least over its inner surface and preferably wax sealed against the end of the tube. The wax coating on this cap is also indicated by the numeral 12. It, too, is shown in exaggerated thickness. This cap is further sealed in place by gummed tape or preferably a creped paper adhesive band 16 which extends about the cap and tube as shown in Fig. 3. The creping of the paper band permits it to be snugly drawn about the diameter of the cap and about the diameter of the tube though these diameters are different.

Milk bottle caps 18 are disposed within the tube after the caps have been waxed treated and while they are in the heated state. Preferably they are waxed with a paraffin wax compound at a temperature of approximately 240° F. and the impregnated wax is pressed into the caps so as not to leave any excessive wax upon the outer surface of the caps. The same type of wax compound may be used upon the inner surface of the tube and upon the end closures. The end closure for the opposite end of the tube may be cup shaped outwardly and is inserted within such opposite end of the tube as shown in Figs. 2 and 4.

Such end closure 20 is also wax coated and the wax coating may extend over its side wall to seal against the side wall of the tube through such coating is not shown as so extending in Fig. 4. The wax coating of such end closure is also indicated by the numeral 12 and heat seals against the wax coating 12 within the interior of the tube. The side wall of the tube 10 is crimped over inwardly at 22 within the tube over the side wall 21 of the inserted end closure 20 as shown in Fig. 4 holding such end closure in place.

Dairies generally make use of many different kinds of milk bottle caps which are printed to indicate the particular kind of milk within the bottle upon which the cap is used. To readily identify the particular kind of caps within any tube I insert within the cup shaped end closure 20 a single milk bottle cap 18 with its printed side exposed to view. This cap 18 is held in place within the cup 20 by the crimped over side wall 22 of the tube as shown in Figs. 2 and 4.

I prefer to package the milk bottle caps while they are hot from the wax with which they are impregnated so that the retained heat of the packaged caps confined within the tube is sufficient to effect a heat sealing together of the wax coatings of the two end closures with the wax coating over the inner wall of the tube body thereby forming a complete moisture proof wax seal about the contained bottle caps of the tube retaining such caps in a sterile, sanitary condition until used.

The atmosphere in dairies is heavily moisture laden and such moisture will attack the steel wires with which the tabs are sewed to the caps and cause rusting of the wires. Protecting the bottle caps from moisture as herein described prevents attack of the wires by the moisture.

The container tubes are commonly of a size

to hold five hundred caps and when the caps are desired for use in the capping machines the external closure 12 is removed and the caps are readily discharged through such end of the tube. This end of the tube has an internal diameter at the end which equals the internal diameter of the tube body at its mid-section which is not true of the opposite end of the tube where the side wall has been crimped into the tube and the caps are therefore readily discharged from this free end of the tube. The wax coating over the inner face of the tube facilitates movement of the caps down through the tube for discharge therefrom, minimizing the possibility of the caps clogging up within the tube.

What I claim:

That method of packaging bottle caps which comprises the steps of forming a heat-sealable coating over the inner surface of the side wall and the end closure of a container closed at one end, inserting into the container caps heated to a temperature sufficient to melt said coating, and inserting the end closure into the open end of the container, while the caps are still heated, in such manner that its coated surface engages the coating on the side wall of the container, whereby the coatings are fused by the heat of the caps to seal the closure in position.

WILLIAM A. DAVIS.