ABSTRACT

A device for holding an indicator card at a position near the geometric center of a sealed pilot can containing food or the like for sterilization thereof, thus providing a record of the time-temperature effect at the center of the contents of the can, to which said can has been subjected in the processing for cooking and/or heat sterilization thereof.
1
CENTER-OF-CAN HOLDER FOR A TELL-TALE INDICATOR CARD

BACKGROUND OF THE INVENTION

This invention relates to a device for removably holding a color-change indicator card centered inside a sealed "tin" pilot can, which indicator card registers the time-temperature effects which have occurred inside said sealed can filled with a food product or the like, as the cans are passed through processing equipment for cooking and/or sterilizing the food product.

In the canning industry, various kinds of ovens, retorts, autoclaves and the like are commonly used, both for treating batches of sealed cans in baskets or trays, and for processing sealed cans by continuous movement through zones of different temperatures and for selected times either by rolling the cans circumferentially along guided paths if the same are cylindrical in shape, or by horizontal transport on belt conveyors or the like, of cans of any shape.

Among various means for checking the heat effects to which the cans have been subjected, it has long been customary to dispose, adjacent the cans, one or more color-change indicator cards having thereon tell-tale spots or lines or other marks of special ink compositions which permanently change in color, for comparison with the known color changes as to time and temperature effect for the proper cooking and/or sterilization of the contents of the cans. These color indicator cards are usually attached to the baskets, trays or other containers holding a batch of cans, or to the transporting part of a conveyor, or sometimes cards are merely laid on the cans. These cards are subject to loss or injury or destruction during the processing, and therefore will fail to give the required information about the conditions of treatment to which the sealed cans and contents have actually been subjected. Furthermore, indicator cards placed outside the cans may not tell what the heat effect has been within the contents of a can.

SUMMARY OF THE INVENTION

One object of the invention is to provide a card holder which may be included and sealed in a pilot can with its normal food content, and therefore will record the actual heat conditions to which the contents of the can have been subjected. Another object is to provide a card holder which holds an indicator card in the geometric center of the contents of a sealed can so that the temperature indication is for the contents of the can at the center thereof. Another object is to provide a card holder for the above purposes which is readily adapted for use in cans of different dimensions. A further object is to provide a holder of the kind set forth which may be re-used.

These and other objects are attained by our invention which is more fully described in the following description of preferred forms, reference being made to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view, with parts broken away, showing a sealed can with a preferred form of card holder, and indicator card positioned diagonally within the can and its content of food;

FIG. 2 is a front elevational view of a preferred form of the card holder;

FIG. 3 is a front elevational view of a preferred form of the card holder;

FIG. 4 is a perspective view of a form of card holder for rectangular cans; and

FIG. 5 is a top plan view of the same.

DESCRIPTION OF A PREFERRED EMBODIMENT

In the drawings showing a preferred form of the invention, an indicator card cage or mounting device 12 is formed consisting of a pair of horizontally disposed flat loops of wire, an upper loop 13 and a lower loop 14, spaced apart for a distance less than the length of an indicator card 15 to be held therein, the loop being attached at corresponding positions to a vertical spacing wire member 16 which extends between said loops, and including retainer loops 17 and 18 attached to the opposite sides of said flat loops 13 and 14 respectively, these being arranged to retain the indicator card 15 in said flat loops 13 and 14. The indicator card may be bent enough to allow its upper edge and its lower edge respectively to enter the upper and lower horizontal loops 13 and 14. A positioning rod 20 is attached lengthwise to the spacing wire member 16, the rod being of selected length to extend equidistant above and below the retainer loops 17 and 18, this spacing wire member 16 being of such length that in use its ends abut respectively the opposite end members 21 and 22 of the can 11, at the intersection of said end members with the cylinder wall 23 of the can. The cage 12 is held in diagonal position within the can, with the printed color-change indicator portion of the card disposed at the approximate geometrical center of the can.

The attachment of the wire parts of the holder device may be by any suitable means such as soldering, brazing, welding, or twisting.

The length of the positioning rod 20 may be selected to properly fit diagonally within cans of varying sizes, thus the color-change mark on the card will be geometrically centered within the contents of the can.

In FIG. 3 there is shown an alternative form of the positioning means which consists of a pair of positioning rods 20A and 20B which may be joined at the top, thus forming an inverted V-shaped means in which the two free ends will make spaced apart contacts with the bottom of the can, and the joined upper ends of the rods 20A and 20B will contact the top of the can.

In FIGS. 4 and 5, there is shown an alternative form of the invention, particularly adapted for use in rectangular cans, although not limited thereto. The card holding cage means is similar to the previously described forms of the invention, except that wire end loops 24 and 25 are attached to the small ends of the flat loops 13 and 14 of the cage means, these end loops spacing the card cage 12 both laterally and vertically within the can.

After the test can containing the card holder immersed in the can contents has been processed along with other cans, the test or pilot can may be opened and the indicator card removed and cleaned, and retained as a record of the heat treatment as measured at the center of the pilot can and representative of neighboring cans. The card holder may be cleaned and reused in another pilot can.

The card mounting devices may be fabricated from sheet metal or synthetic plastic material of a kind which
will retain its rigid form during the heat processing of the cans.

The designation "pilot" can is herein and in the claims used to mean a sealed can having the food content similar to other sealed cans being processed and in addition containing the card holder of this invention and a color-change indicator card to register the heat treatment conditions at the center of the can.

We claim:

1. A re-usable holder for supporting a color-change indicator card within a sealed can containing a food product or the like during heat processing to cook and/or sterilize said product comprising a wire cage adapted to hold an indicator card and wire positioning means attached to said cage, said positioning means extending above and below said cage and being adapted to position said mounting device within a sealed can containing said food product so that the indicator card is in the approximate center portion of said can.

2. The device defined in claim 1 in which said cage including wire loops which engage opposed edge portions of said card.

3. The device defined in claim 1 in which the positioning means consists of a stiff spacing wire attached to said card mounting cage and extending above and below said cage to position said card both vertically and laterally within said can.

4. The device defined in claim 3, in which the positioning means consists of a plurality of spacing wires attached to said card mounting cage.

5. A re-usable holder for positioning a color-change indicator card within a sealed pilot can containing a food product or the like during heat processing to cook and/or sterilize said product comprising

   1. a card cage comprising
      a. a pair of parallel flat loops of wire disposed in spaced-apart relation and adapted to receive opposed edges of a card;
      b. a spacing wire attached to each of said loops at right angles thereto;
      c. wire retainer loops attached to the opposite sides of each of said flat loops, said retainer loops extending respectively above and below said spaced-apart loops, and being adapted to removably position an indicator card within said flat loops;

2. and a stiff positioning means attached lengthwise to said cage and extending beyond said retainer loops, said stiff positioning means being adapted to position said card cage within a can containing said food product at approximately its geometric center.

6. A re-usable holder for positioning a color-change indicator card within a sealed pilot can containing a food product or the like during heat processing to cook and/or sterilize said product comprising

   1. a card cage comprising
      a. a pair of parallel flat loops of wire disposed in spaced-apart relation and adapted to receive opposed edges of a card;
      b. a spacing wire attached to each of said loops at right angles thereto;
      c. wire retainer loops attached to the opposite sides of each of said flat loops, said retainer loops extending respectively above and below said spaced-apart loops, and being adapted to removably position an indicator card within said flat loops;

2. and a stiff wire frame attached at the ends of said flat loops of wire, said frame extending laterally to position said cage within said can at approximately its geometric center.