Jan. 15, 1924. 1,480,897

F. B. DE MOTTE

CAN

Filed May 15, 1920

FIG. 1.

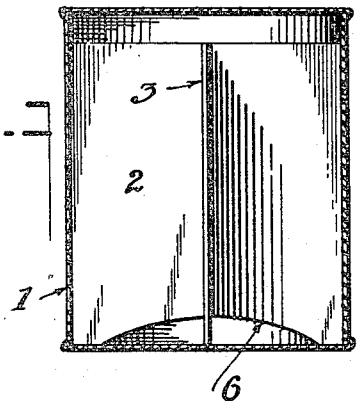


FIG. 2.

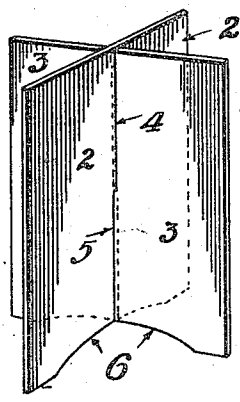


FIG. 3.

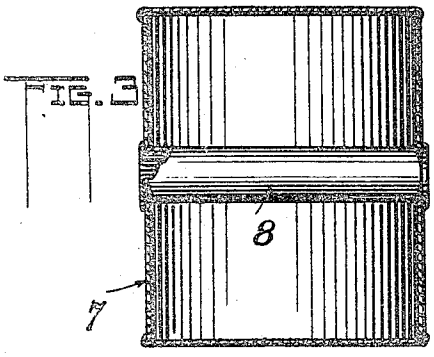


FIG. 4.

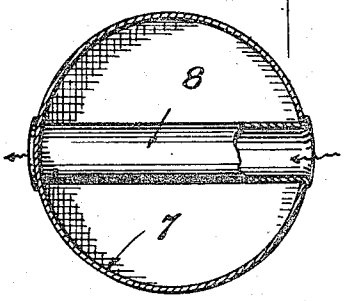


FIG. 5.

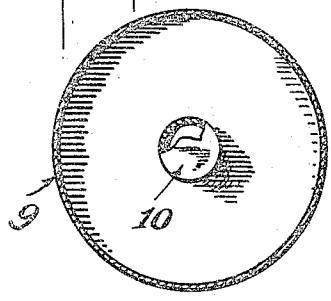
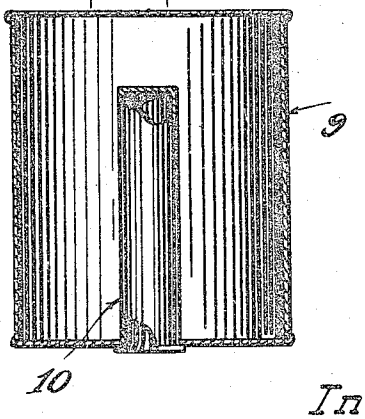


FIG. 6.



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UNITED STATES PATENT OFFICE.

FRANK B. DE MOTTE, OF WARRENSBURG, ILLINOIS.

CAN.

Application filed May 15, 1920. Serial No. 381,740.

To all whom it may concern:

Be it known that I, FRANK B. DE MOTTE, a citizen of the United States, residing at Warrensburg, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Cans; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in sanitary cans, pertaining more particularly to cans in which fruits and vegetables are sealed and afterward subjected to heat for their sterilization.

An object of the invention, therefore, is to provide a conductor of heat for the interior of a can whereby when the can is subjected to the sterilizing process the heat will be conducted from the body of the can to and through the center or middle of the bulk of the contents being treated, greatly reducing the time necessary to sterilize, the flavor of the finished goods being thereby better than when long processing is necessary as when the ordinary form of can is made use of.

Another object is to construct a can of the type named having a conductor of heat incorporated in its make-up, and that forms a part of the can, so that heat will be conducted through the contents of the can, whereby to greatly shorten the time usually necessary to sterilize a given bulk of material.

Still another object of the invention is to construct a tubular conductor of heat opening at one end through the body of the can and extending into the interior of the can by which the heating medium may be introduced into the center of the bulk of the materials under treatment.

In the present day method of sterilizing time required is found to be detrimental to the flavor of the goods under treatment. That is to say, every minute of time that the goods are subjected to heat beyond a certain point tends to affect the flavor to its disadvantage. Therefore, a can whose structure will admit of a comparatively short sterilizing time, but one sufficient to destroy the bacteria of the particular product under treatment, means a far better flavor, which must reflect upon the cost of production of the finished article, as to labor and amount of sterilizing apparatus necessary for handling a given quantity, and the like.

The appended drawing illustrates several ways of constructing cans by which to provide for the conductance of heat through the mass of material to be treated, it being understood that other ways of constructing a can or in making use of a conductor are open to use since I do not wish to confine myself to what is shown or described herein.

Fig. 1 is a longitudinal section of a can showing one form of heat conductor therein.

Fig. 2 shows the form of heat conductor of Fig. 1, in perspective.

Fig. 3 is a longitudinal section of a can and another type of heat conductor.

Fig. 4 is a transverse section of the same.

Fig. 5 is a transverse section of a can showing a slightly modified form of can and its conductor, and

Fig. 6 is a longitudinal section of the same.

In Fig. 1 the can is represented by the numeral 1, being of the usual proportions and when filled and sealed at both ends as shown, is ready for the usual sterilizing process carried out in any of the approved ways, one of which is that of placing the filled cans in a steam retort where they are kept until the temperature of the goods at the center of the can reaches a point where all bacteria will be destroyed. Corn of average consistency, for example, requires about 70 minutes for a temperature of 250 degrees to complete sterilization, other classes of goods varying in the time required for their treatment.

As stated earlier herein, the subjection of the goods to this treatment for too long a time detracts from the flavor thereof whereas when treated for a much less time experience has shown that the flavor of the goods is retained in a marked degree.

The use of a conductor for heat extending through and outside the can is therefore highly important since the time of treatment can be reduced practically one half and the flavor of the sterilized goods is found to be better for that reason.

In Figs. 1 and 2 is shown a form of conductor for introduction into the can which may be retained by friction, or by soldering

or like means. It consists, in the present instance, of two pieces of metal 2, 3, each of a width to fit snugly in the can against its side walls, Figure 1, each piece being slit midway its width for about one-half its length as 4, 5 to permit them to slide upon one another forming a cross as shown. At one of their ends the pieces are preferably recessed at 6 whereby as they rest upon one of the end walls of the can 1 the contents of said can may readily circulate, and at their other ends the pieces are spaced from the wall of the can at that end.

The edges of the pieces abut against the side walls of the can so that heat applied to the latter will be conducted through the said pieces into the interior of the contents.

In Figs. 3 and 4, the can is denoted by 7 sealed at both ends as before. Extending laterally through the same is a tube 8 which may be closed at its ends and soldered or otherwise connected to the walls of the can. Preferably, however, the tube is open for the circulation therethrough of the heating medium.

Figs. 5 and 6 show a slightly different form of the can structure wherein 9 is the can and 10 a tubular portion disposed centrally thereof opening at one end through one end of said can and soldered or otherwise attached thereto so as to make a tight joint. The opposite end of the said tubular portion is closed and terminates in spaced relation to the end of the can.

The heating medium may by this structure also be carried into the center of the contents of the can to the extent, at least, that it can impart heat to the tubular part described.

The reduction of the time of treatment due to such structures as described, or their equivalents, and the consequent improvement in flavor, has been demonstrated as constituting an important step in the canning industry.

I claim:

1. A metallic shipping and sterilizing can for packaging foods having an opening for the reception of the material to be sterilized, a closure for said opening permanently and hermetically sealed to said can, and a metallic conductor of heat within said can in contact with the material of the wall of said can and extending inwardly within the can, and constituting a transmitter of heat.

2. A metallic shipping and sterilizing can for packaging foods having an opening for the reception of the material to be sterilized, a closure for said opening permanently and hermetically sealed to said can, a tubular conductor extending through the wall of the can into the interior through the material packed therein, the walls of said tubular conductor being sealed into the can wall hermetically and adapted to convey the heat of the sterilizing medium into the body of the material.

3. A metallic shipping and sterilizing can for packaging foods having an opening for the reception of the material to be sterilized, a closure for said opening permanently and hermetically sealed to said can, and a tubular conductor extending through one of the walls of the can, sealed interiorly, said conductor opening at one end through said wall and flanged at that end, said flange lying upon the outer surface of the wall and hermetically sealed thereupon.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. DE MOTTE.

Witnesses:
FLOYD A. KUPPLER,
M. R. WILLARD.