July 9, 1935. F. W. FISCHER 2,007,678

COOKING VESSEL

Filed April 5, 1933

FIG. 1

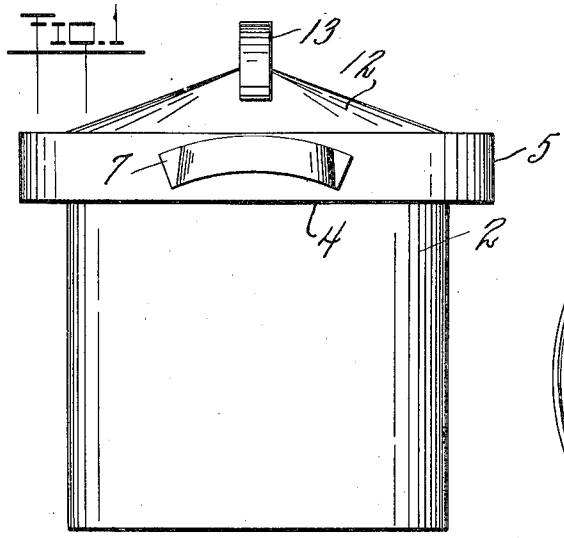


FIG. 2

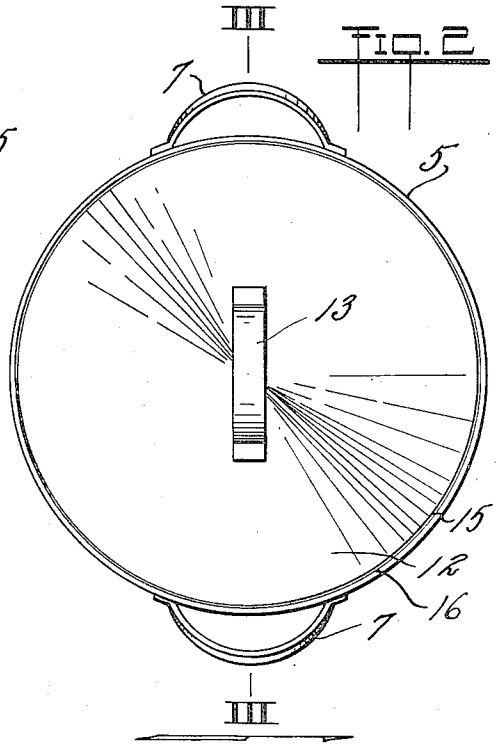
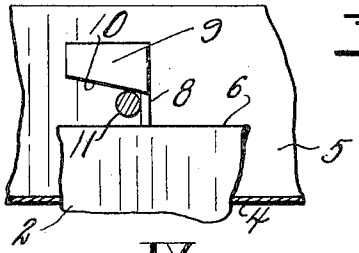


FIG. 4



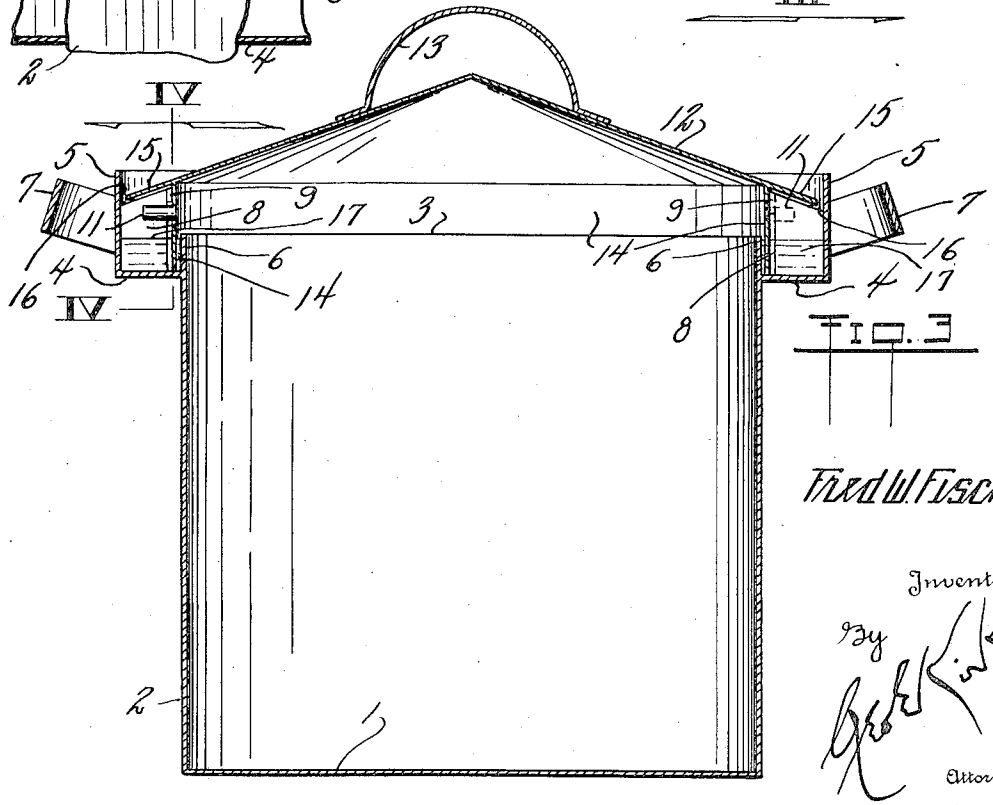


FIG. 3

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UNITED STATES PATENT OFFICE

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COOKING VESSEL

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5 Claims. (Cl. 53—1)

This invention relates to sealing containers.

This invention has utility when incorporated in liquid sealed vessels, especially for substances undergoing heat treatment as the cooking of liquid-containing matter, whether or not such be for food purposes.

Referring to the drawing:

Fig. 1 is a side elevation of an embodiment of the vessel incorporating features of the invention therein;

Fig. 2 is a plan view of the vessel of Fig. 1;

Fig. 3 is a section on the line III—III, Fig. 2; and

Fig. 4 is a detail view on the line IV—IV, Fig. 3.

The container herein is shown as vessel having bottom 1 and side wall 2 upwardly extending to top opening 3. The vessel herein is of cylindrical form. Adjacent this top opening 3, there is outwardly extending portion 4 from which is upwardly extending flange 5 constituting with upward portion 6, of the vessel side wall 2 above the bottom 4, a channel. In the instance shown, this extension portion or annular channel is provided with grips or handles 7 diametrically disposed to permit placing the vessel on a stove or in a receptacle for receiving the temperature control treatment, whether of heat or cold. This flange 5 with the channel is shown as having portions 8 extending toward the flange side 6 and there carrying, short of the extent toward the flange 6 and parallel thereto, portion 9 having wedge side 10 coacting with pin 11 as a bayonet joint.

Each pin 11 is mounted on lid 12 having handle 13 centrally of the top thereof. The lid is shown as conical or upwardly tapering from flange 14 mounting the pins 11. This flange 14 extends down into seating position in this channel. As herein shown, the lid 12 outwardly from the flange 14 has extension 15. By the coaction of the portions 9 with the flange or rim 14, there is centering of the lid 12 as to its portion 15 relatively to the flange 5 in approximating uniform clearance 16.

In practice hereunder, liquid 17 may initially be charged into the channel 5, 4, 6. In the event the treatment be such as to drive off liquid in the container 1, 2, for condensation on the under side of the lid 12, such condensation will run down on this lid 12 and the inner side of the flange or rim 14 outside of the portion 6 and thus accumulate in this channel 5, 4, 6, in providing a liquid seal. The rim 14 is effective for resting or seating against the bottom 4 of the channel in a normal way independent of any special grinding or machine fit, but as so located and even as snugly brought to position by the bayonet joint action of the pins 11 at the cams 10, there is not a liquid tight fit, and accumulation of liquid in a minor clearance region between the rim 14 and the extension 6 may seep through to charge the major clearance portion of the channel 5, 4, 6, outward from the rim 14.

In practice, applicant has experienced that importance resides in the uniform clearance, if there is to be clearance between the channel portion 5 and the outer terminus 15 of the lid.

When the substance to be treated be such as steam or water, steam is driven off, condenses to form water, or the charge in the channel is water for water sealing; with the building up of temperature so that the lid 12 is warm and tendency to increase the temperature in the water-sealed channel with the minor clearance, say less than $\frac{1}{32}$ of an inch as between the portion 15 and the flange 5, tendency to boil or blow arises. With this clearance greater than $\frac{1}{32}$ of an inch, there is tendency to sputter. Applicant has found there is a critical condition approximating about $\frac{1}{32}$ of an inch for tinned sheet iron vessels as herein disclosed, wherein the sputtering is avoided and blowing does not occur. Applicant attributes this critical condition to heat conductivity of the walls adjacent the clearance being sufficient to compensate the tendency to boil for condensing the steam to remain in the channel.

Accordingly, there is produced herein a vessel approaching cooking conditions under slight pressure, and thereby effective for retaining vapors, should the escape thereof be objectionable, while in certain branches of cooking for food purposes, there is value in retaining these volatiles as food values. This is simply accomplished in a practical, substantial vessel which is readily accessible by merely slight reverse turning to release the bayonet joint, and then lifting the lid clear of the container.

It is a convenience for operating the device of cylindrical form and involving the bayonet type joint herein disclosed, to have the handle 13 in alignment on the diameter between the bayonet joint pins 11. This enables the operator, notwithstanding the pins are shrouded by the overhang 15, to readily locate such at the bayonet joint, and the joint proper may conveniently be in the location of the grips 7. The device may be one of tinned black iron, aluminum, copper, or other suitable material according to the substances to be treated, whether foods or other materials. Furthermore, this sealing joint may be adopted even in devices of a contour depart-

ing from cylindrical form. When of elongated form, there may be hinges along one side as oval or rectangular. In such instances, the sealing joint may be in the clearance region away from the hinged side. Furthermore, the contour may be polygonal or even square. In some instances the effective snug fitting independent of the water seal may be even of a major extent and be limited even to an end portion. There is thus a safeguard against blow off while trapped against vapor escape.

In the event the operation be one of temperature increase with the resultant condensation collection, such may be conserved with the contents to be automatically supplied in a major portion back with the contents of the container, due to the drop in temperature as well as resultant reduction in pressure in the container, thus creating a suction action for drawing the liquid of the liquid seal back into the container.

What is claimed and it is desired to secure by Letters Patent is:

1. A container having an opening, there being an effective channel adjacent said opening, and a lid having a dependent rim at said channel in proximity to the inner side for minor clearance, said lid having spacing for uniform clearance as to the channel's outer side and thereby leaving said channel outside of the lid as an upwardly open trough.

2. A container having an opening, there being an effective channel adjacent said opening, and a lid seated in said channel with an annular exposure of the channel thereabout, said lid being located in proximity to at least one side of said channel, and having other regions spaced and thereby adapted for holding condensation of trapped liquid in the channel.

3. A container having an opening, there being an effective channel adjacent said opening, and a lid having a rim seated in said channel, there being a lid portion from the rim adapted to provide a condensation receiving portion directed to drain into said channel on one side of the rim, said lid being in proximity to one side of the channel adapted to provide seepage clearance, on the opposite side said rim being spaced for channel top exposure.

4. A container having an opening, there being an effective channel adjacent said opening, and a lid having a rim seated in said channel between the sides of the channel with clearance inside and outside of the rim as to the channel, said lid having from said rim an upwardly tapering portion adapted to drain to the inside clearance, said rim as in the channel providing therepast communication from said inside clearance to said outside clearance.

5. A container having an opening, and a lid for the opening, said lid on its under side tapered upwardly, there being means providing an effective liquid seal joint between the lid and container from which joint said taper portion of the lid extends, said joint including a channel portion of the container and a rim portion of the lid interfitting, with inside proximity for minor clearance of the rim, to receive drainage from the lid taper inside, and outside spacing providing major clearance, there being communication past said rim in the channel with said inside clearance, said outside clearance providing an upwardly open trough.

FRED W. FISCHER.