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E. FELIX ET AL

DEVICE FOR BOILING LIQUIDS WITHOUT OVERFLOW

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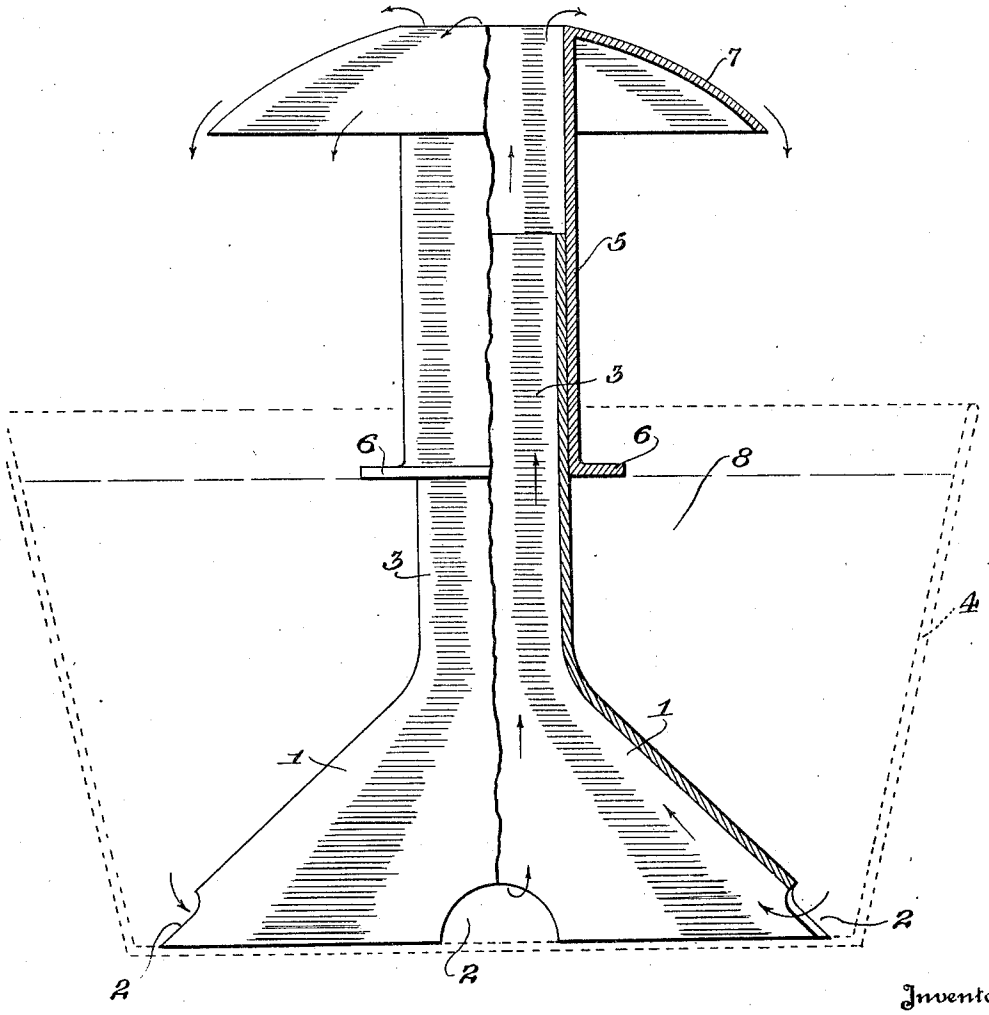

Inventors
Emil Felix and
Jules Fluck.

By Marion & Marion.
Attorney

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EMILE FELIX AND JULES FLUCK, OF LAUSANNE, SWITZERLAND, ASSIGNORS TO BREVEX, SOCIETE ANONYME, OF LAUSANNE, SUISSE.

DEVICE FOR BOILING LIQUIDS WITHOUT OVERFLOW.

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This invention relates to improvements in devices for use in the boiling of liquids, having for its object to provide a device which when placed in a vessel containing a liquid, such as milk, broth or milky soups or the like, will function with the boiling thereof to confine the same to that vessel, preventing the so-called "boiling over" or overflow of the liquid from the vessel with resultant wastage and inconvenience, and by consequence, permitting the liquid to be boiled for a period of time sufficient to effect a thorough sterilization thereof.

It is also an object of the invention to provide a device of the character mentioned adapted to be arranged substantially centrally of a liquid containing vessel, wherein an adjustable discharge means is received upon the outlet portion of the body of the device, the construction of which is such that with disposition of the lower end thereof adjacent the liquid level, that portion of the means extended above the boiling liquid will be of sufficient length to effect a complete spending or exhaustion of the energy in such liquid during its passage therethrough from the bottom of the vessel, the liquid rising through the adjustable means and with exhaustion of the energy therefrom, then overflowing from the upper or discharge end of said means and returning to the vessel.

Other objects of the invention will be in part obvious and in part pointed out hereinafter.

In these drawings, we have shown a side elevation of the improved device, a portion of which is broken away and shown in vertical, longitudinal section; the vessel receiving the liquid to be sterilized being shown in dotted lines as is the level of liquid therein.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved device may be stated to comprise a hollow or sheet metal frusto-conical base or body portion designated by the numeral 1, the lower portion of the peripheral surface thereof having one or more ports or openings generally indicated by the numeral 2 formed therein, while the upper or reduced portion of the body 1 is provided with a vertically disposed substantially sylindrical sleeve 3 terminating at a distance above said frusto-conical portion.

With a view toward providing the body portion of the device with means for exhausting the energy from the boiling liquid contained within the vessel 4, whereby to prevent the same from overflowing such vessel, we provide what may be aptly termed as an adjustable discharge and regulating means, the same being in the form of a sleeve or tube like body portion 5 of such cross sectional shape and size as to effect its snug telescopic engagement with the vertically disposed sleeve 3 upon the body or basal portion 1.

The lower portion of the sleeve 5 of the adjustable discharge means is provided with a laterally disposed annular flange 6 while the upper portion thereof is formed with an annular or substantially dome shaped or mushroom flange 7, the free marginal portion of which, as will be noted upon reference to the drawing, is disposed in a plane below the open upper end of said sleeve 5 whereas the inner portion of such flange 7 joins directly with the marginal portion of the open upper end of such sleeve 5.

At this point, it is to be noted that the sleeve 5 of the adjustable discharge means is of a length sufficient to effect a complete exhaustion of energy from that boiling liquid discharge thereinto and flowing through the same from the frusto-conical body portion 1 of the device, so that when such liquid rises to the open upper end of the sleeve 5, the energy previously confined therein will have been expended and by consequence, the liquid minus such energy will then overflow from the open upper end of the sleeve 5 over the substantially dome shaped flange 7 and will return therefrom directly into the vessel 4 without overflow or wastage.

In constructing the discharge means, it is to be understood that the length of the sleeve 5, may at times be required to be of different lengths, depending upon the specific character of the liquid in conjunction with which it is to be used. However, in this connection, it is to be borne in mind that the length of the tube 5 will always be such that with arrangement of the lower end thereof adjacent the liquid level, that portion extending above the liquid level will be of a length sufficient to effect a complete exhaustion of energy confined within the

boiling liquid as the same rises through said tube and then overflows from its open upper end by way of the dome shaped flange 7 back into the vessel 4.

In usage of the improved device, the same is arranged upon the bottom of a vessel such as indicated at 4 herein, being preferably arranged substantially centrally of the vessel for obvious purposes. The adjustable discharge means is now regulated so that the same is positioned upon the sleeve or extension 3 in a manner whereat the annular flange 6 will be adjacent the level of the liquid 8 within said vessel 4. As the boiling point of the liquid is reached, the agitated liquid, which is, of course, heated to a higher degree adjacent the bottom of the vessel 4, will be caused to pass into the hollow frustoconical body portion 1 by way of the ports 2 therein and to then rise through the same and through the sleeve 3 from whence it is discharged into the sleeve 5 of the adjustable discharge means. As hereinbefore stated, this adjustable discharge means has been positioned so that the flange 6 is arranged adjacent the normal liquid level and furthermore, the length of the sleeve 5 thereof is such as to effect a complete exhaustion of the energy confined within the boiling liquid as the same rises therethrough toward the open upper end thereof. Thus, when the liquid has reached the open upper end of the sleeve 5 of the discharge means, its energy will have been spent and by consequence, it will overflow from said open upper end onto the dome shaped flange 7 from whence it will be directly returned to the body of liquid 8 within the vessel 4 without liability of overflowing such vessel and resulting in wastage and inconvenience to a user.

Manifestly, the construction shown is capable of considerable modification, and such modification as is within the scope of our claims, we consider within the spirit of our invention.

We claim:

A device of the character described comprising an enlarged hollow basal and body portion having a plurality of ports formed therein, a vertically disposed sleeve fixedly carried upon the upper portion of said body portion and communicating with the interior thereof, a second sleeve telescopically engaging the upper portion of said first sleeve, a laterally disposed annular flange fixedly carried upon the lower end of said second sleeve, and a substantially dome shaped flange carried upon the upper end of said second sleeve having the free marginal portions thereof disposed at a plane below said open upper end of the second sleeve, the length of said second sleeve being such as to effect a complete exhaustion of that energy confined within boiling liquid discharged thereinto from said first sleeve and rising therethrough, whereby said liquid will overflow the open upper end of the second sleeve and return to the vessel receiving the device.

In witness whereof we have hereunto set our hands.

EMILE FELIX.
JULES FLUCK.