

Nov. 25, 1924.

1,516,802

D. E. WELLMAN ET AL

LIQUID OUTLET PIPE

Filed Feb. 14, 1923

Fig. 1

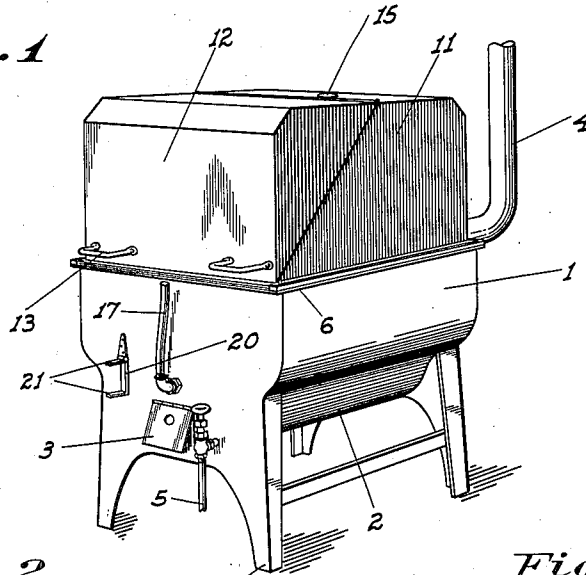


Fig. 2

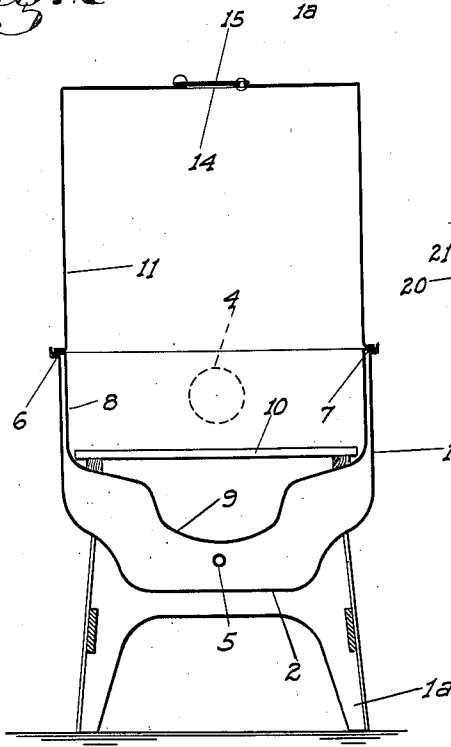


Fig. 3

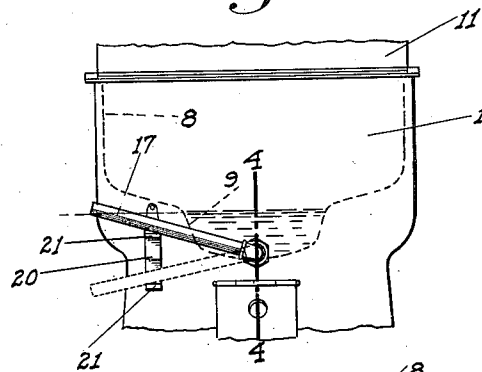
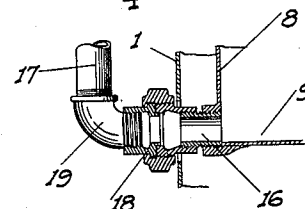


Fig. 4



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LIQUID-OUTLET PIPE.

Application filed February 14, 1923. Serial No. 618,906.

To all whom it may concern:

Be it known that we, DAVID E. WELLMAN and HUBERT J. WELLMAN, citizens of the United States, residing at Modesto, county of Stanislaus, State of California, have invented certain new and useful Improvements in Liquid-Outlet Pipes; and we do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in sterilizing machines or apparatus, and especially to a type particularly intended for use in dairies, to sterilize the various utensils, containers, etc. used in the business.

One of the principal objects of our invention is to provide a sterilizer so constructed that the fire or source of heat used during the sterilizing operation will not cause the walls of the container member or tank of the sterilizer to buckle or crack under the unavoidable expansion and contraction, thereby insuring long life to the tank.

Another object is to form the tank that it will hold a large number of utensils, while at the same time the water to be heated and turned into steam is contained in a relatively small area, thereby insuring quick results after the fire has been lighted.

A further object is to provide a novel form of water-drain device without using valves or faucets, by means of which the water may be held in the tank to a height sufficient to wash the utensils prior to sterilizing; a certain amount of the water may then be run out to a desired level; and finally drained out entirely, the drain member then serving as an air vent useful in drying the sterilized utensils prior to removing them from the machine.

A fourth object of the invention is to construct the device as a whole so that it is very easy to disassemble the parts for repairing and the like.

A further object of the invention is to produce a simple and inexpensive device, and yet one which will be exceedingly effective

for the purposes for which it is designed.

These objects we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Fig. 1 is a perspective view of the sterilizer.

Fig. 2 is a cross section thereof.

Fig. 3 is a fragmentary end view of the same.

Fig. 4 is an enlarged fragmentary section on the line 4—4 of Fig. 3.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the outer container or shell, preferably rectangular in shape, supported on legs 1^a, and formed longitudinally along its bottom with a depression or trough 2 to serve as a firebox, which projects with a door 3 at one end, there being a flue 4 at the opposite and upper end of the shell. An oil burner pipe indicated at 5 projects into the trough 2 if an oil-burning system is used, or such other heating device may be installed as may be found suitable.

Around the upper edge of the shell 1 is a rim 6, serving as a support for the flange 7, on the upper edge of the tank or inner container 8, shaped similarly to the shell but space therefrom all around, especially at the bottom.

The bottom of the tank has a longitudinal trough 9, of an area sufficient to contain enough water for steam-generation for sterilizing purposes. The bottom of this trough is curved transversely, and all corners are rounded, so that any contraction and expansion, due to the intense and localized heat when steam is being generated, is taken up in the curved surfaces, without any buckling of the tank being had and without the use of stiffening members or braces of any sort.

By making the tank or container rectangular or oblong, the maximum number of

utensils may be placed in the area available.

A removable grate 10, preferably of wood, rests on the bottom of the tank above the trough 9, and hence above the level of the water during the sterilizing process.

A removable cover 11 for the tank and projecting thereabove, rests on the flange 7 of said tank. This cover is preferably made in two unequal sections, split transversely on an angle, said sections being hinged together along the top of the cover, and the smaller section 12 serving as a lid which may be raised without removing the entire cover, handles 13 being provided on said lid 12 for the purpose.

An air vent, 14, normally closed by a plate 15 turnable to uncover or open said vent, is provided in the cover.

At one end of the tank-trough 9 is a horizontal outlet or drain 16 while outside the shell is a pipe 17 substantially parallel to the end wall of the shell. This pipe is turnable in a vertical plane while being permanently connected to the outlet 16 by reason of a ground-joint union 18 therebetween, the pipe 17 of course having a right angle bend or elbow 19, adjacent the union to bring it into horizontal alinement with the outlet.

When projecting vertically upward, the pipe 17 is of such a length that the tank 8 may be filled without overflowing through the pipe.

Hinged at its upper end onto the end of the shell 1 is a plate 20 having a pair of vertically spaced and horizontal arms or lugs 21, positioned to either at a time support the pipe 17, and forming a sort of double bracket. The upper lug is positioned so that when the pipe 17 is resting thereon, the water in the tank may drain to the level of the top of the trough 9, and below the grate 10.

The height of the lower lug 21 is such that when the pipe is resting thereon, all the water is drained from said trough 9.

In operation, the utensils to be sterilized are placed in the tank to rest on the grate, by raising the lid 12. The tank is then filled with water, the pipe 17 being raised to its uppermost position, and the fire is started to heat the water to wash the utensils.

When this is done, the pipe 17 is lowered to rest on the upper lug 21, and the water will then drain out of the tank down to the desired level and no more. The remaining water, of comparatively small volume but large surface, is then used in the generation of steam for sterilizing the utensils, this steaming being allowed to take place for the necessary period of time.

This done, the fire is turned out, and the pipe is lowered to rest on the lower lug 21, this being done by first raising the plate

20 on its hinge, thereby moving the upper lug 21 out of the path of movement of the pipe 17 and allowing the latter to descend onto the lower lug 21, thus the water may be drained as described; or held at the different levels, without the use of valves.

The water then drained, the vent 15 is opened, allowing the remaining steam to escape, which causes a draft of air to pass into the tank through the pipe 17, which causes the utensils to be very quickly dried, especially if the exterior air is dry.

When it is desired to remove the tank from the shell, the cover 11 is first removed, and the union 18 uncoupled. By then slipping the portion of the union which is secured to the tank inwardly of the shell, by moving said tank lengthwise the necessary distance, the tank can then be easily lifted up and out of the shell.

From the foregoing description it will be readily seen that we have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having now particularly described our invention what we claim as new and useful and desire to secure by Letters Patent is:

1. A drain structure for water tanks comprising a drain pipe open at its outer end mounted for rotative movement in a vertical plane and connected to the tank at the bottom thereof, vertically spaced stops mounted in the path of movement of the pipe, and means for moving the upper stop out of the way of the pipe to enable the latter to be moved downwardly into engagement with a lower stop.

2. The combination with a tank, of a liquid outlet pipe swivelled on the outside of the tank and communicating with the interior thereof, and means for maintaining an arbitrary maximum and minimum fluid content within the tank, such means including spaced lugs mounted on and projecting from the outside of the tank and adapted to support the swivelled pipe, the lugs being so disposed as to allow the liquid to flow from the tank only to the arbitrary maximum and minimum levels determined by the positions of the lugs relative to the top of the tank.

3. The combination with a tank, of a liquid outlet pipe swivelled on the outside of the tank and communicating with the interior thereof, and means for maintaining an arbitrary maximum and minimum fluid content within the tank, such means including a bracket hinged to the outside of the

tank and movable at right angles to the swivel movement of said pipe, and a pair of vertically spaced lugs on and projecting from the bracket; the latter being movable
5 to allow the pipe to rest on either lug to allow the fluid to flow from the tank only to the arbitrary levels as determined by

the positions of the lugs relative to the top of the tank.

In testimony whereof we affix our signatures. 10

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