F. J. ALBRECHT.

STEAMER.

APPLICATION FILED FEB. 3, 1910.

966,980.

Patented Aug. 9, 1910

Fig. 1.

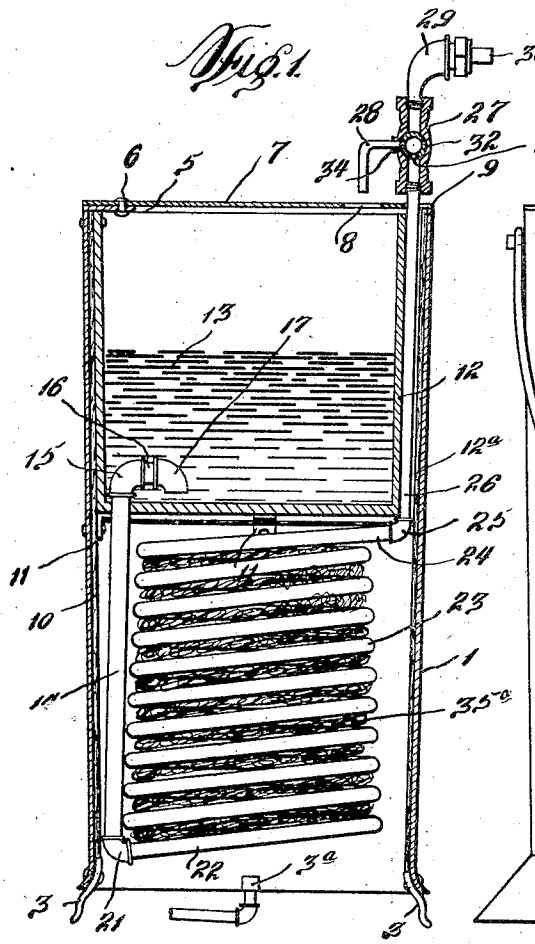

Fig. 2.

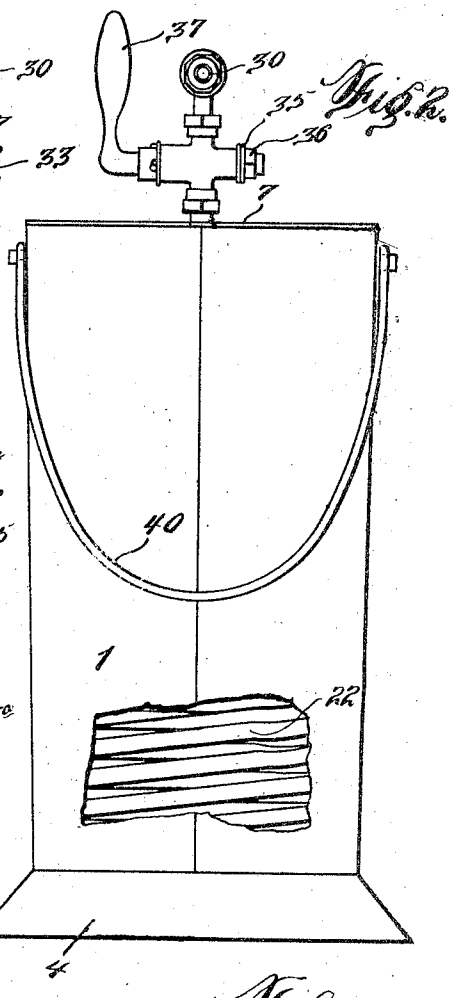

Fig. 3.

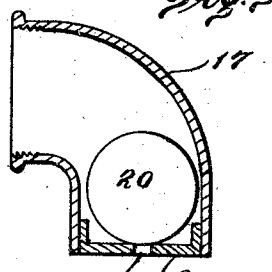

Fig. 4.

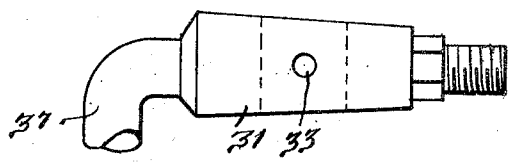

Fig. 5.

Witnesses
David Gunnier
R. H. Butler

Inventor
F. J. Albrecht
By A. C. Evans & Co.
Attorneys

UNITED STATES PATENT OFFICE.

FRANCIS J. ALBRECHT, OF PITTSBURG, PENNSYLVANIA.

STEAMER.

966,980. Specification of Letters Patent. Patented Aug. 9, 1910.

Application filed February 3, 1910. Serial No. 541,876.

To all whom it may concern:

Be it known that I, FRANCIS J. ALBRECHT, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Steamers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to steamers and more particularly to that type of steamer used for generating steam adapted to be injected in a proofing box or oven, during the "raising" of bread and the baking thereof.

The primary object of my invention is to provide a steam-generating apparatus that can be safely and easily operated to quickly produce steam from fresh water, thus avoiding the impurities in steam that is generated from water that has stood for some time, as in large boilers.

Another object of the invention is to provide a portable steamer with a water reservoir positioned to automatically feed water to a coil adapted to be heated by a flame either from a gas burner or from a coal fire.

A further object of the invention is to provide a steamer of the above type with means as will be hereinafter set forth for controlling the supply of water to a steam generating coil.

A further object of the invention is to provide a steamer that is simple in construction, inexpensive to manufacture and highly efficient for the purposes for which it is intended.

With these and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:

Figure 1 is a vertical sectional view of a steamer constructed in accordance with my invention. Fig. 2 is an elevation of the same, partly broken away. Fig. 3 is a vertical sectional view of a gravity valve adapted to form part of the steamer. Fig. 4 is an elevation of a valve plug adapted to regulate the exhaust of steam, and Fig. 5 is a plan of a portion of the shell of the steamer.

In the accompanying drawings the reference numeral 1 denotes a cylindrical metallic shell preferably made of a sheet of metal having the edges thereof overlapped and connected, as at 2. The cylindrical shell has the lower end thereof provided with legs 3 adapted to support the shell in an elevated position above a gas burner 3^a, but when the steamer is to be used in connection with a coal fire, the lower end of the shell 1 is provided with a flaring base 4, as best shown in Fig. 2 of the drawing, adapted to support the shell 1 upon the coals of the fire. The upper end of the shell 1 is provided with an inwardly projecting lug 5 and pivotally connected to said lug by a rivet or pin 6 is a lid 7 adapted to close the upper end of the shell. This lid is provided adjacent to one edge with an opening 8 and with a slot 9, and the object of both will presently appear.

The shell 1 is provided with an interior lining of asbestos 10 or other fireproof material, and said shell intermediate the ends thereof is provided with inwardly projecting brackets 11 adapted to support a tank or reservoir 12 containing water 13. The tank or reservoir 12 is cylindrical and of a less diameter than the shell 1, the tank or reservoir being supported eccentrically within the shell 1 to provide a space 12^a at one side of the shell, between the inner side of the shell and the outer side of the tank or reservoir 12.

Extending into the bottom of the tank or reservoir 12 is a pipe 14 having the upper end thereof provided with an elbow 15 connected by a pipe 16 to an elbow 17, the lower end of said elbow extending into proximity to the bottom of the tank or reservoir 12. In the elbow 17 is mounted a bushing 18 having a central opening 19. Adapted to close this opening is a gravity valve or spherical body 20, the object of which will presently appear. The lower end of the pipe 14 is connected by an elbow 21 to the lower convolution 22 of a coiled tube 23 located in the shell 1, between the lower end of the tank or reservoir 12 and the lower end of the shell. The uppermost convolution 24 of the coil of tubing is connected by an elbow 25 to a stand pipe 26, said pipe extending upwardly between the shell 1 and the tank or reservoir 12. The pipe is adapted to extend through the slot 9 of the lid 7, the slot 9 being disposed at an angle to permit of the lid being swung open without interfering with the stand pipe 26.

Mounted upon the upper end of the stand

pipe 26 is a valve body 27 having a hot water outlet pipe 28 located above the opening 8 of the lid 7, said valve body also having an elbow 29 connecting with a steam outlet pipe 30. In the valve body 27 is a valve plug 31 having ports 32, 33, and 34. The valve plug is retained within the valve body by a washer 35 and a nut 36 at one end of the plug and at the opposite end thereof is provided with a handle or crank 37. The ports 32 and 34 are adapted to establish communication between the stand pipe 26 and the steam outlet pipe 30, while the ports 33 and 34 are adapted to establish communication between the stand pipe 26 and the elbow 29 with the side of the valve plug closing the hot water outlet pipe 28.

When gas is utilized as a heating medium, pieces of wire 35[a] or other heat retaining and conducting material can be placed centrally of the convolutions of the coil of tubing, whereby the heat from the gas burner will be retained and properly disseminated relatively to the coil of tubing. The heat retaining and conducting material can be dispensed with when a coal fire is used.

When the tank or reservoir 12 is filled with water or nearly so, the water raises the gravity valve 20, fills the coil of tubing 23 and assumes a level within the stand pipe 26 corresponding to the level of the water within the tank or reservoir 12. When the coil of tubing is subjected to the action of a flame, either gas or coal, the water within the coil is heated; and as the water boils within the tube a certain quantity of the water will be ejected through the pipe 28 and again enter the reservoir or tank, but as soon as steam is emitted from the pipe 28, the valve is adjusted to close the pipe 28 and allow the steam to pass into the pipe 30. As soon as the steam has been generated the gravity valve 20 will close until the pressure of water within the tank is greater than the pressure of steam within the coil. The valve 20 will then open and allow a quantity of water to enter the coil, and it is through the medium of this valve that the water within the tank is automatically fed to the coil.

The shell 1 is provided with a suitable bail 40, whereby the steamer can be easily carried from one location to another, for instance, from a proofing box to an oven.

I attach considerable importance to the fact that the reservoir or tank 12 can be easily cleaned and from time to time filled with pure water, consequently the steam generated from the water will contain a minimum amount of impurities and thereby prevent the steam from injuring the bread with which it contacts.

While in the drawing there are illustrated the preferred embodiments of my invention, it is to be understood that the structural elements thereof can be varied or changed without departing from the spirit and scope of the invention.

Having now described my invention what I claim as new, is:

A steamer comprising a casing lined with asbestos, an apertured cover for said casing, a tank located in the upper end of said casing, a coil of tubing arranged below said tank and terminating at its lower end in an upwardly-extending stand pipe projecting into said tank, said stand pipe provided with a check valve for controlling the back flow of water from the coils to the tank, the upper end of said tubing provided with a vertical stand pipe located within the casing and projecting beyond the top thereof, a three-way valve mounted upon the end thereof, a return pipe connecting with said valve directing a return of the fluid to said tank through said apertured cover, a steam outlet pipe connected to said valve, and a heating means arranged below said tubing, substantially as described.

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

FRANCIS J. ALBRECHT.

Witnesses:
KARL H. BUTLER,
EVA A. MILNE.