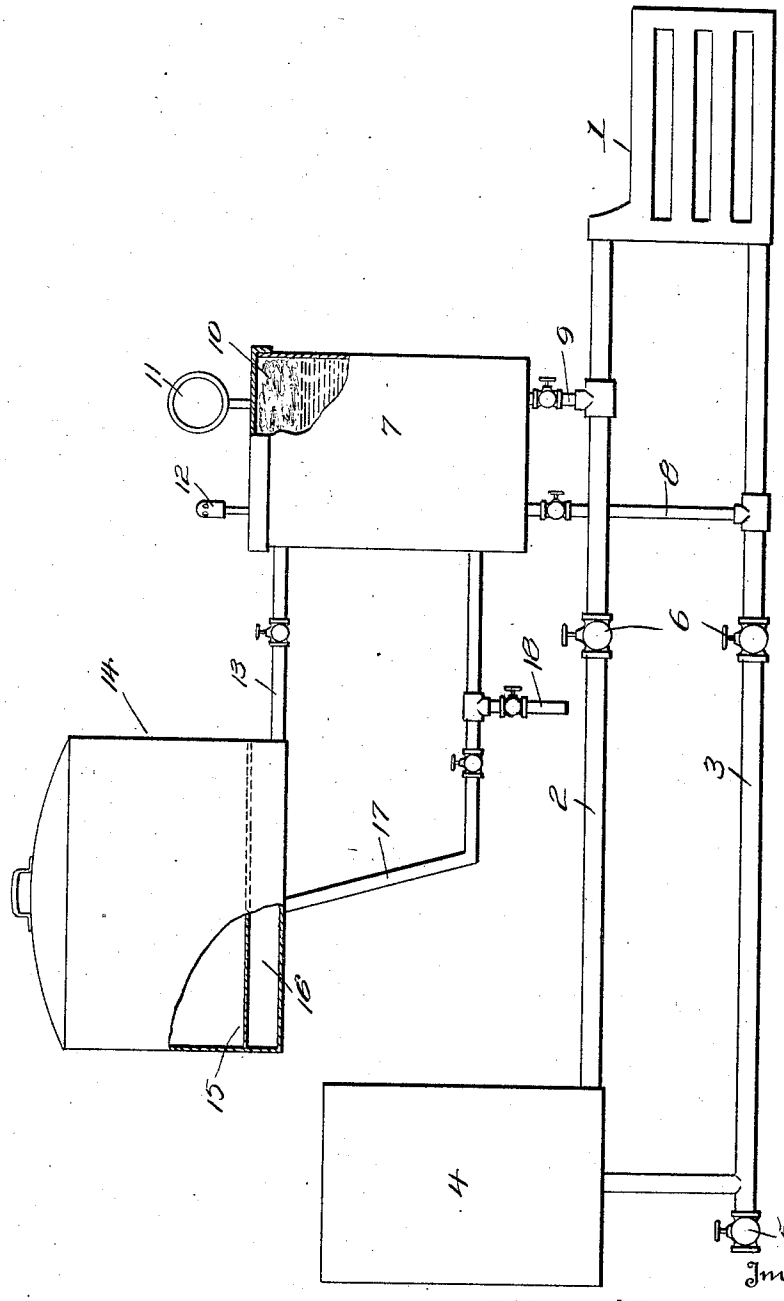
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F. L. MIDDLETON

DOMESTIC STEAM GENERATING APPARATUS

Filed March 4, 1926



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UNITED STATES PATENT OFFICE.

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DOMESTIC STEAM-GENERATING APPARATUS.

Application filed March 4, 1926. Serial No. 92,207.

This invention relates to a novel apparatus designed particularly for domestic use on farms and the like, and it has reference to a structure which is employed for generating steam for heating water in a boiler, in which food and other articles are placed for treatment.

Briefly, the invention comprises a water heating unit which is located in a fire bed in a furnace, fire place or other suitable source of heat, together with means for supplying water thereto, and means for conducting water therefrom and confining it in a tank to be generated into steam, the steam being conducted from the steam space in the tank to a steam space in the boiler, in which said foods are to be placed.

The features and advantages derived from this association of details will become apparent from the following description and drawings.

In the accompanying drawing, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

The figure represents an elevational and sectional view of the complete system showing the relative elevations and locations of parts.

Referring to the drawings in detail, the reference character 1 designates generally what may be referred to as a water heating unit. It is simply in the form of a substantially rectangular frame and connecting bars, all of the bars of which are hollow to facilitate the circulation of water therethrough. A pair of spaced parallel supply pipes 2 and 3 are connected with this member 1, and these pipes are in turn connected with a supply tank or container 4. At 5 is an appropriate drain valve, by means of which the entire system can be drained of water. Additional valves 6 are located in the pipes 2 and 3, for controlling the circulation of water therethrough. Disposed at the approximate elevation shown, is a steam generating receptacle 7, connected with the pipes 2 and 3, by valve passages 8 and 9. At this time, I would direct attention to the fact that the bottom of the supply tank 4 is on a plane above the circulating unit 1, to at all times maintain the water therein, and the top of the tank terminates at a point to the top of the approximate water level in the receptacle 7. This water level line terminates below the top of the receptacle to provide a steam generating space therein. Carried by the top of this receptacle is an appropriate conventional gage 11, and a safety steam escape device 12. Leading from the steam space 10 is a horizontal valved pipe 13, which is connected with the bottom of the boiler 14. The boiler is provided with a false bottom 15, forming a steam space 16 at its bottom. Leading downwardly from this steam space and connected with the receptacle 7 is what may be referred to as a valve by-pass 17, with which an auxiliary drain pipe 18 preferably is connected. This auxiliary drain pipe is, of course, provided with a valve.

With the valves 6 and parts 2 and 3 opened, water is allowed to circulate through these pipes, through the heading unit 1 and tank 4, thus permitting it to be initially heated. Additional water placed in tank 4, serves to bring the receptacle 7 to the approximate level indicated. It is of course necessary to open the valves in the pipes 8 and 9 to accomplish this result. If desired, the valves 6 may now be closed and the water allowed to circulate only about or through the pipes 8, 9, 2 and 3, unit 1, and receptacle 7. The steam built up in the space 10 is expanded and passed through the pipe 13 when the valve in the latter is opened and then into the steam space 16 of the boiler, serving to heat water, which is adapted to be placed in the boiler. The condensed steam drains downwardly through the by-pass 17, back into the receptacle 7, or it may be conducted by the pipe 18 into another part of the system. The pipe 18, however, is primarily intended to lead to a suitable source of deposit, and constitutes a means whereby the upper portion of the system is completely drained. Under this arrangement, the upper portion can be drained independently of the lower portion or the complete system can be drained through the valve 5 in the lower portion. A consideration of the description in connection with the drawings will suffice to enable persons skilled in the art to which the invention relates to obtain a clear understanding of the same, and to observe the advantages and features of a device of this kind. Therefore, a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that various changes in the size, shape, and arrangement of parts

may be resorted to, without departing from the spirit of the invention and the scope of the appended claim.

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

A domestic fluid circulating system of the class described comprising a generating unit adapted to be disposed in a fire bed, supply and circulating pipes connected with said unit, a supply tank connected with said pipes and having its bottom disposed on a plane slightly above a predetermined portion of said unit, a steam accumulator disposed adjacent to and above said unit, valved pipes connecting said accumulator with said first named pipes, valves in said first named pipes, a boiler having its bottom arranged on a plane substantially even with the top of said steam accumulator, a false bottom in said boiler dividing the same into upper and lower compartments, and valved pipes connected with said accumulator and with said boiler and communicating with said lower compartment.

In testimony whereof I affix my signature.

FRANK L. MIDDLETON.