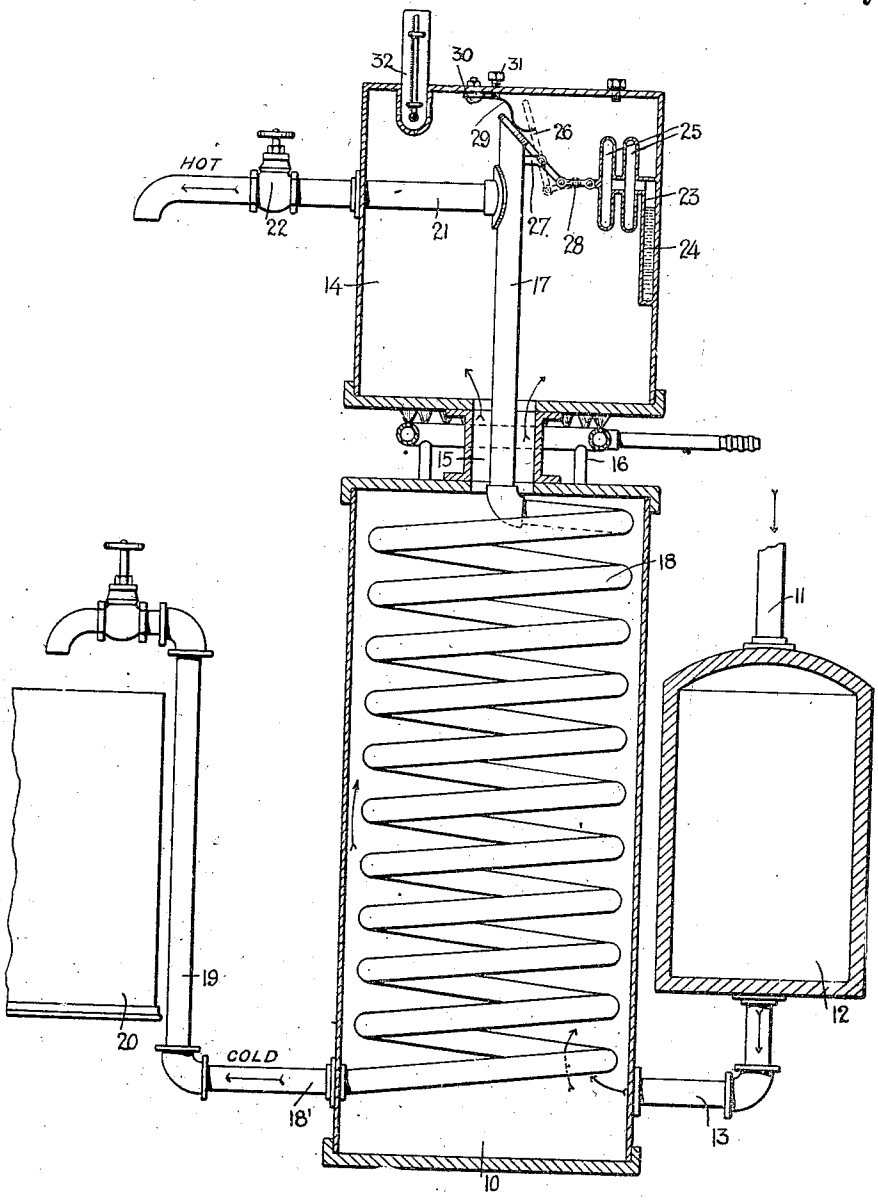
L. VIGER.

AUTOMATIC WATER STERILIZER.

APPLICATION FILED JAN. 21, 1913.

1,067,695.

Patented July 15, 1913



WITNESSES

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UNITED STATES PATENT OFFICE.

LOUIS VIGER, OF NEW YORK, N. Y.

AUTOMATIC WATER-STERILIZER.

1,067,695. Specification of Letters Patent. Patented July 15, 1913.

Application filed January 21, 1913. Serial No. 743,260.

To all whom it may concern:

Be it known that I, LOUIS VIGER, a citizen of France, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Automatic Water-Sterilizer, of which the following is a full, clear, and exact description.

This invention relates to apparatus for treating liquids, especially water for drinking or cooking purposes, and has particular reference to a means of the class indicated whereby water may be sterilized or purified in a reliable manner without detracting from it its natural properties with respect to its proper pleasant taste.

Among the objects of this invention, stated more specifically, is to provide an apparatus which is adapted to receive water from a city main or other ordinary source of supply, first filtering it under direct pressure of such supply, then boiling the water in a closed vessel in order to preserve its pleasant taste, and the provision of means for delivering the water either hot or cold, the cooling being effected by the incoming water.

A further object of this invention is to provide a means to regulate the operation of delivering water by means which are adjustable to suit the various requirements as will hereinafter be more fully set forth.

The foregoing and other objects of the invention will hereinafter be more fully described and claimed and illustrated in the drawing forming a part of this specification in which like characters of reference indicate corresponding parts in the view which shows a vertical section of the apparatus.

Referring more particularly to the illustration, I show an apparatus including a cooler 10 adapted to receive water from a source of supply through the pipe 11, the water being delivered therefrom under normal pressure of the water supply into and through the filter 12 of any approved construction. The filtered water passes through a pipe 13 into the cooler adjacent its bottom.

To the upper end of the cooler is connected a boiler 14, the water having free passage upwardly through the cooler and thence into the bottom of the boiler through a neck 15. Means in the nature of a burner 16 is used to heat the boiler and its contents, the burner being located between the boiler and the top of the cooler and preferably surrounding said neck.

My purpose is to so arrange the device as to apply heat to the boiler and thereby raise the temperature of the water which fills the boiler to approximately 230 degrees F., whereby any disease germs or bacteria will certainly be killed, but because of the fact that the vessel is closed there will be no decomposition and accompanying precipitation of carbonate of lime which would tend to render the water insipid.

I provide at 17 a discharge pipe for the sterilized water. The lower end of the pipe is connected to a coil 18 lying within and extending throughout the length of the cooler 10, its lower end 18' emerging from the cooler adjacent its bottom preferably opposite the inlet 13. A pipe 19 which may be considered as an extension of the coil, conveys the sterilized and cooled water upward and is intended to deliver the same into any suitable reservoir or receptacle 20, the pipe 19 being normally open for this purpose. In order, however, to deliver hot water directly from the delivery pipe 17, I connect thereto, near its top, an auxiliary discharge pipe 21 which leads out through the side of the boiler and is fitted with a spigot 22 which is normally maintained closed.

At any suitable place and preferably within the boiler is arranged means to temporarily control the passage of water into and through the apparatus according to the character or amount of heat applied to the boiler. This means I have shown in this instance as comprising a thermostat 23 comprising a portion of volatile liquid 24 and provided with one or more expansible disks 25. When the desired temperature is reached in the boiler, the body of hot water surrounding the thermostat will heat the liquid 24, the vapor or steam from the latter expanding the disks 25, causing the valve 26 to open and allow the passage of the water from the boiler into and through the discharge pipe 17. Said valve is shown as pivoted to a support 27 and has a link connection 28 with one of the thermostat disks. The construction and arrangement of the valve 26 and the thermostatic means for operating it are such that under ordinary or normal conditions the valve is held closed by the normal water supply pressure in connection with the expansible disks. In other words, the

valve is presumed to be held closed except when the water in the boiler is hot enough to justify its delivery therefrom in accordance with the intended operation of the apparatus. Any suitable means, however, may be employed auxiliary to the valve and thermostat to variably control the opening of the valve so that the water may be heated to a higher temperature than previously contemplated before the valve will open. As a suitable illustration of such auxiliary means, I show a spring 29 connected at 30 to the inside of the boiler and having its loose end bearing upon the side of the valve opposite the mouth of the pipe 17 and tending to maintain the valve closed. By application of force to the spring as it bears upon the valve, as by a set screw 31, the tendency for the thermostat to open the valve will be retarded with the obvious result that the water will be heated to a higher temperature before it will be discharged automatically. A thermometer 32 may be used in connection with the boiler to indicate the temperature of the water.

The several parts of the invention may be made of any suitable materials, and the relative sizes and proportions, as well as the general design of the apparatus, may be varied to a certain extent without departing from the spirit of the invention hereinafter claimed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a device of the character set forth, the combination of a cooler adapted to receive water from a water supply, a boiler connected to the upper portion of the cooler and adapted to receive water therefrom, means to apply heat to the boiler, a thermostat within the boiler operative in accordance with the heat applied to the water surrounding the same, a pipe adapted to discharge sterilized water from the boiler, a valve within the boiler guarding the inlet to said pipe, and means also within the boiler connecting the thermostat to said valve, substantially as set forth.

2. In a water sterilizer, the combination of a cooler, a boiler above the same, a neck connecting the boiler and the cooler through which the water passes into the boiler, means surrounding said neck serving to apply heat to the boiler, a pipe adapted to discharge water from the boiler, said pipe having its receiving end within and adjacent the upper portion of the boiler and extending thence downwardly through said neck and through the cooler, a valve normally holding said receiving end of the delivery pipe closed, a thermostat within the boiler serving to open said valve, a spring acting upon said valve resisting the action of the thermostat, and means controllable from the outside of the boiler to vary the force of said spring within the boiler.

In testimony whereof I have signed my name this is specification in the presence of two subscribing witnesses.

LOUIS VIGER.

Witnesses:
JOHN NIENS,
R. I. DULONG.