(No Model.)

A. V. M. SPRAGUE.

WATER STERILIZING APPARATUS.

No. 527,084. Patented Oct. 9, 1894.

FIG. 1.

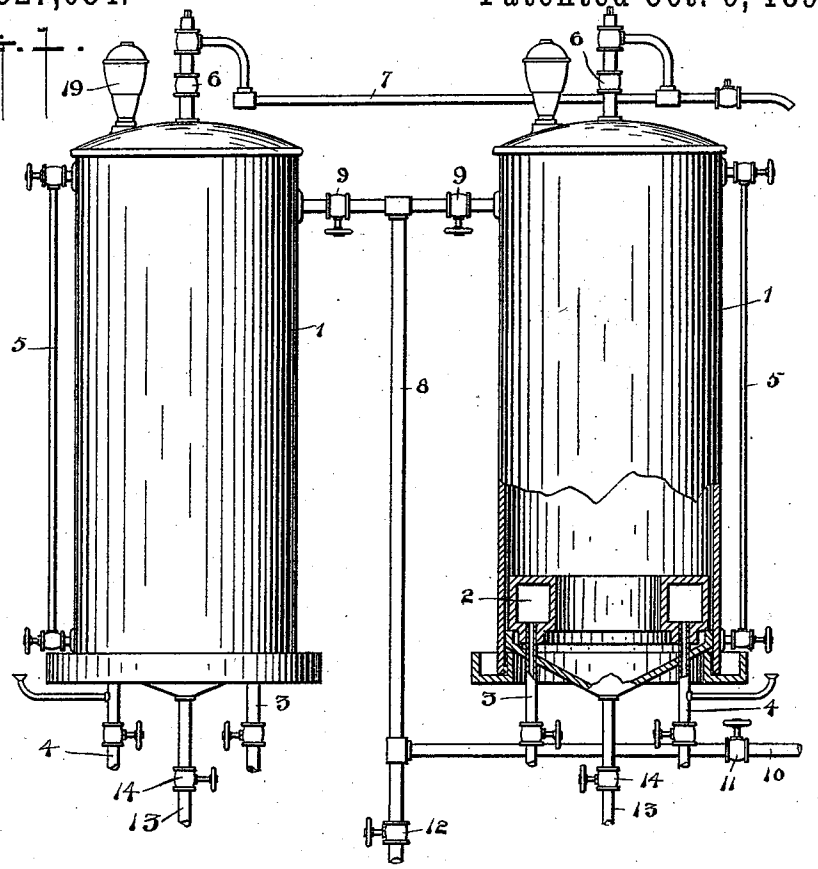
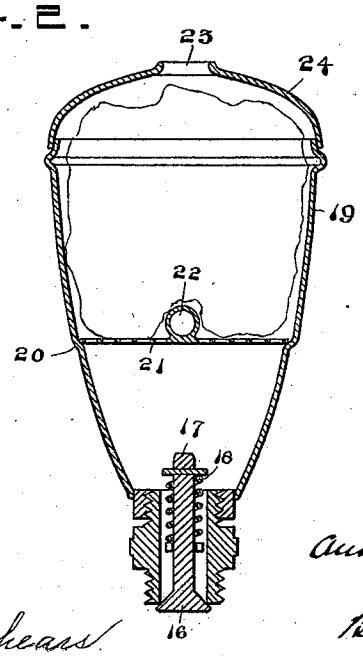


FIG. 2.



Witnesses
Arch. M. Catlin.
Emma G. Brasheears.

Inventor
Austin V. M. Sprague
by
Benj. R. Catlin Attorney

UNITED STATES PATENT OFFICE.

AUSTIN V. M. SPRAGUE, OF ROCHESTER, NEW YORK.

WATER-STERILIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 527,084, dated October 9, 1894.

Application filed March 14, 1893. Renewed December 13, 1893. Serial No. 493,582. (No model.)

To all whom it may concern:

Be it known that I, AUSTIN V. M. SPRAGUE, a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Water-Sterilizing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

The invention relates to apparatus for sterilizing water and for supplying the same as required for use and it has for its object to secure perfect exclusion of germs from the water tanks; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings Figure 1 is a side elevation partly in section of the improved apparatus and Fig. 2 is a section of a combined air valve and filter on an enlarged scale.

Numerals 1 denote two water tanks each of which is provided with a steam drum or radiator 2 having suitable inlet pipes 3 and exhaust pipes 4.

Water gages are denoted by 5 and a safety valve by 6 and an overflow pipe by 7.

The tanks are charged with water near their top through a pipe 8 having branches supplied each with a cock 9. A branch discharge pipe is indicated by 10 and 11 denotes a cock therein. 12 is a cock in the tank charging pipe. The construction is such that when a tank is filled a portion of said charging pipe 8 can be emptied of water and kept empty to prevent pressure from the main or other cause passing a small portion of unsterilized water about a cock with the effect to introduce germs into the tank. In filling a tank cocks 9 and cocks 12 are open and cock 11 closed. The tank being filled cocks 9 and 12 are closed and 11 opened whereupon the filling pipe between cocks 9 and 12 is emptied of water and all danger of fructifying the water in the tank from the inlet pipe avoided. Draw off pipes are indicated by 13, and 14 are cocks in the same. In the apparatus constructed as above set forth it is necessary to provide an air inlet valve. The valve proper is denoted by 16, its stem by 17 and a spring which tends to hold the valve to its seat by 18.

When water is drawn from the tank the tendency to a vacuum in the same opens this valve and air is admitted to supply the place of the water withdrawn. This operation is liable to introduce germs into the tank and to effectually preclude this injurious result an air filter 19 is provided above the air valve. This is, in the present instance, made by continuing upwardly the valve casing to form the enlarged receptacle 19. In the wall of this is formed a shoulder 20 upon which rests a perforated disk 21 provided with a suitable handle 22. The office of the diaphragm is to support the filtering material and keep it from obstructing the valve. A removable cover provided with an air inlet 23 is denoted by 24. Within the case 19 and above the diaphragm 21 is placed an air filtering substance, preferably sterilized cotton. By this means germs are prevented from entering the tank with the air necessarily admitted when water is withdrawn and the store of water is maintained in its sterilized state.

Having thus fully described my invention, what I claim is—

1. In combination in a water sterilizing apparatus, a water inlet pipe and an outlet, said inlet pipe being connected with a pressure main and provided with two cocks, as 9 and 12, and an intermediate draw-off pipe whereby the introduction of germs by leakage is obviated, a heating device to kill germs, and an air filter to prevent the entrance of germs within the tank consisting of cotton or the like, substantially as set forth.

2. The combination of a water sterilizing apparatus with the air filter and valve consisting of a case adapted to be secured in a tank having a valve near one end and a receptacle for filtering material at the other end and a perforation to admit air to pass through the filtering material to the valve, substantially as set forth.

3. The combination of a water sterilizing apparatus with the air filter and valve consisting of a case adapted to be secured in a

tank having a valve near one end and a receptacle for filtering material at the other end and a perforation to admit air to pass through the filtering material to the valve and a perforated diaphragm to prevent the filtering material entering the valve, substantially as set forth.

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

AUSTIN V. M. SPRAGUE.

Witnesses:
F. D. BLACKISTONE,
ARCH. M. CATLIN.