

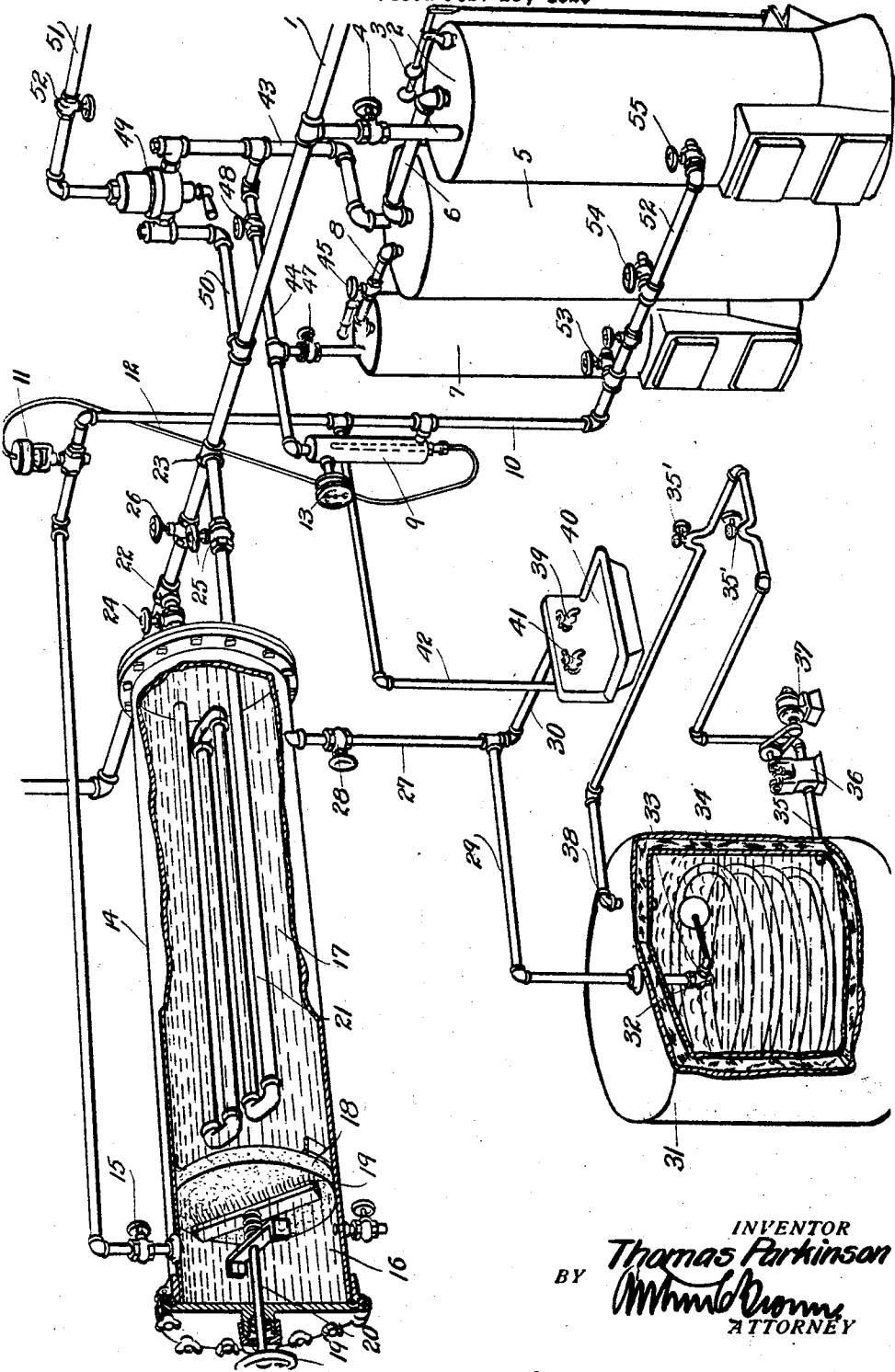
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T. PARKINSON

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WATER DISTRIBUTION SYSTEM

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UNITED STATES PATENT OFFICE.

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WATER-DISTRIBUTION SYSTEM.

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To all whom it may concern:

Be it known that I, THOMAS PARKINSON, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Water-Distribution Systems; and I do 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 appertains to make and use the same, reference being had to the accompanying drawing, and to the figures of reference marked thereon; which form a part of this specification.

This invention relates to a water distributing system and it is particularly adapted although not necessarily restricted to hospitals.

The primary object of the invention is to provide a distributing system in which the service water may be sterilized and delivered at the taps or faucets at determined temperatures. Means is provided whereby the sterilized water may be filtered, its temperature reduced, and the water delivered at certain taps at a determined temperature and at certain others taps at lower temperature. Means is provided for delivering sterilized hot water with the water from the service pipe through a mixing valve and means is provided for delivering the sterile water to the filter at determined temperatures.

The system is so arranged that the temperature control will be automatic and the supply of relatively cool water for drinking purposes may be automatically controlled.

The peculiar construction of the invention as well as the preferred arrangement will be clearly apparent by reference to the following description in connection with the accompanying drawing, in which—

The figure is a diagrammatic view of a system constructed in accordance with my invention.

Referring now to the drawings by numerals of reference:

1 designates the service pipe which may be connected to the usual city supply. The service pipe discharges into a boiler or sterilizer 2 through a branch pipe 3 equipped with a valve 4. The sterilizer 2 discharges into an accumulator tank 5 through a pipe 6 and it, in turn, is shown

as discharging into a second sterilizer 7 through a pipe 8.

From the sterilizer 7 the water is discharged into a thermostatic chamber 9 and into a pipe 10. The pipe 10 has a thermostatic valve 11, which is under the control of the thermostat in the chamber 9 through the tube 12. Therefore, the valve 11 will open only when the temperature of the water from the sterilizer 7 is raised high enough to operate the thermostat.

The thermostat casing may also be provided with a temperature gauge 13.

When the valve 11 is opened by reason of the fact that the temperature of the water discharging from the sterilizer 7 is high enough, it may pass into a drum or casing 14 provided the valve 15 is open. The casing or drum 14 is divided into two compartments 16 and 17 by a filter bed 18, which is shown as a disk of filtering material. The filter chamber 16 is shown as having a rotary brush 19 therein which can be turned by a hand wheel 19 on the rod 20 so that the face of the filter bed 18 can be cleaned.

The water passes through the filter bed into the cooling chamber 17 of the casing 14. The water is cooled therein by a coil of pipe 21, which has its ends connected to the service pipe 1 at 22 and 23, there being valves 24 and 25 near the inlet ends and the discharge ends of the coil and between the connections 22 and 23 in the pipe 1 is a valve 26. Therefore, if the valve 26 is closed and the valves 24 and 25 are opened, the service water will bypass into one end of the coil and out the other, causing a circulation of water at service water temperature through the coil, thereby reducing the temperature of the water in the cooling chamber 17. The water at a temperature lower than that which leaves the sterilizer is discharged from the cooling chamber 17 into a pipe 27 having a valve 28 therein. The temperature of the water delivered from the cooler 17 will be that of the city main. The pipe 27 has two branches 29 and 30. The branch 29 leads into a cooling tank 31 and its discharge end 32 is provided with a float valve 33 whereby the level of the water in the cooling tank 31 may be maintained at a given height.

The cooling tank is preferably insulated

and within it is a cooling coil 34, which may be part of a refrigerating system so that the water in the cooling tank 31 will be maintained at a relatively low temperature suitable for drinking.

The tank 31 has a discharge port which communicates with a pipe 35 in which is a pump 36, driven by a motor 37. One end of the pipe discharges back into the tank 31 through the ported connection 38. In the pipe 35 are drinking founts 35' which may be provided with the usual valves, the drinking founts being of conventional construction. The pipe 35 may lead to various parts of the building so that available drinking water may be provided.

The branch 30 of the pipe 27 is connected to a faucet or tap 39, preferably discharging into a sink 40, which may be suitably supported, as will be well understood. The sink is provided with a hot water tap 41 which receives hot water directly from any of the sterilizers 2, 5 or 7 through the medium of the pipe 10.

The number of sterilizers may be varied. Indeed, while I prefer to pass the water through three sterilizers as a factor of safety, I may by-pass the sterilizer 7 by leading the water from the sterilizer 5 through the pipe 43 into the thermostat chamber 9 by means of a pipe 44. In that event, the valves 45 and 47 will be closed. If the water is flowed from the sterilizer 5 directly into the thermostat chamber 9 and into the pipe 42, the valve 48 in pipe 44 will be opened.

The pipe 43 may also connect to a mixing valve casing 49, which is also connected to the service pipe 1 through the pipe 50. Therefore, cold water from the service pipe 1 may enter the mixing valve casing 49 and hot water from the sterilizer 5 may enter the mixing valve casing 49 and the mixed waters may be discharged through a pipe 51 with a valve 52 therein so that water may be furnished at a proper temperature for showers, tub baths and for other purposes.

If the valve 11 is closed, the water which enters the thermostat casing 9 cannot enter the filtering chamber 16 but it will pass through pipe 10 into the manifold 52 having valves 53, 54 and 55 therein so that the water issuing from the sterilizers will be fed back into the sterilizer tanks. This will usually take place when the furnaces for the sterilizer are first started and that the water can be circulated through the sterilizers to raise

the temperature sufficiently high before the water is fed to the service taps.

Where the device is used in hospitals, the sink 40 will constitute a wash stand for surgeons, physicians and nurses whereby sterile water can be furnished from the tap 39.

Assuming all the parts to be assembled, the water is fed from the service pipes to the sterilizer or sterilizers dependent upon the number of sterilizers used. Then when the temperature of the water is high enough, the valve 11 will automatically open, permitting water to enter the filter chamber and pass through the filter into the cooling chamber 17; then into the pipe 27 to the cooling tank 31 or to the tap 41. The temperature of the water in the tank 31 is maintained at a low temperature by the coil 34 and the water from the tank 31 will be circulated by means of the pump 36. The water from the sterilizer or sterilizers, as the case may be, may also be fed direct to the tap 41 or it may be fed to the mixing valve chamber 49, which is in communication with the service pipe, and then passed to the pipe 51.

The system is very simple and is well adapted for the purpose intended.

What I claim and desire to secure by Letters-Patent is:

1. In combination with a water service pipe, water sterilizing means having valved connection with the pipe, a tank, valved connections between the tank and said sterilizing means, and a coil in the tank having valved connection with the water service pipe.

2. In a water distribution system, in combination, a water service pipe, water sterilizing means connected to the service pipe, a tank into which the sterilizing means discharges, a filter bed dividing the tank into a filtering chamber and a cooling chamber, a cooling coil in the cooling chamber connected to the service pipe, a valved water outlet pipe leading from the cooling chamber, an accumulating chamber into which the last-named pipe discharges, a float valve in the accumulating chamber controlled by the level of the water therein to vary the effective port area of the last-named pipe, a distributing pipe having its ends connected to the accumulating chamber, valved outlets in the distributing pipe, and a water circulating pump in the pipe.

In testimony whereof I affix my signature.
THOMAS PARKINSON.