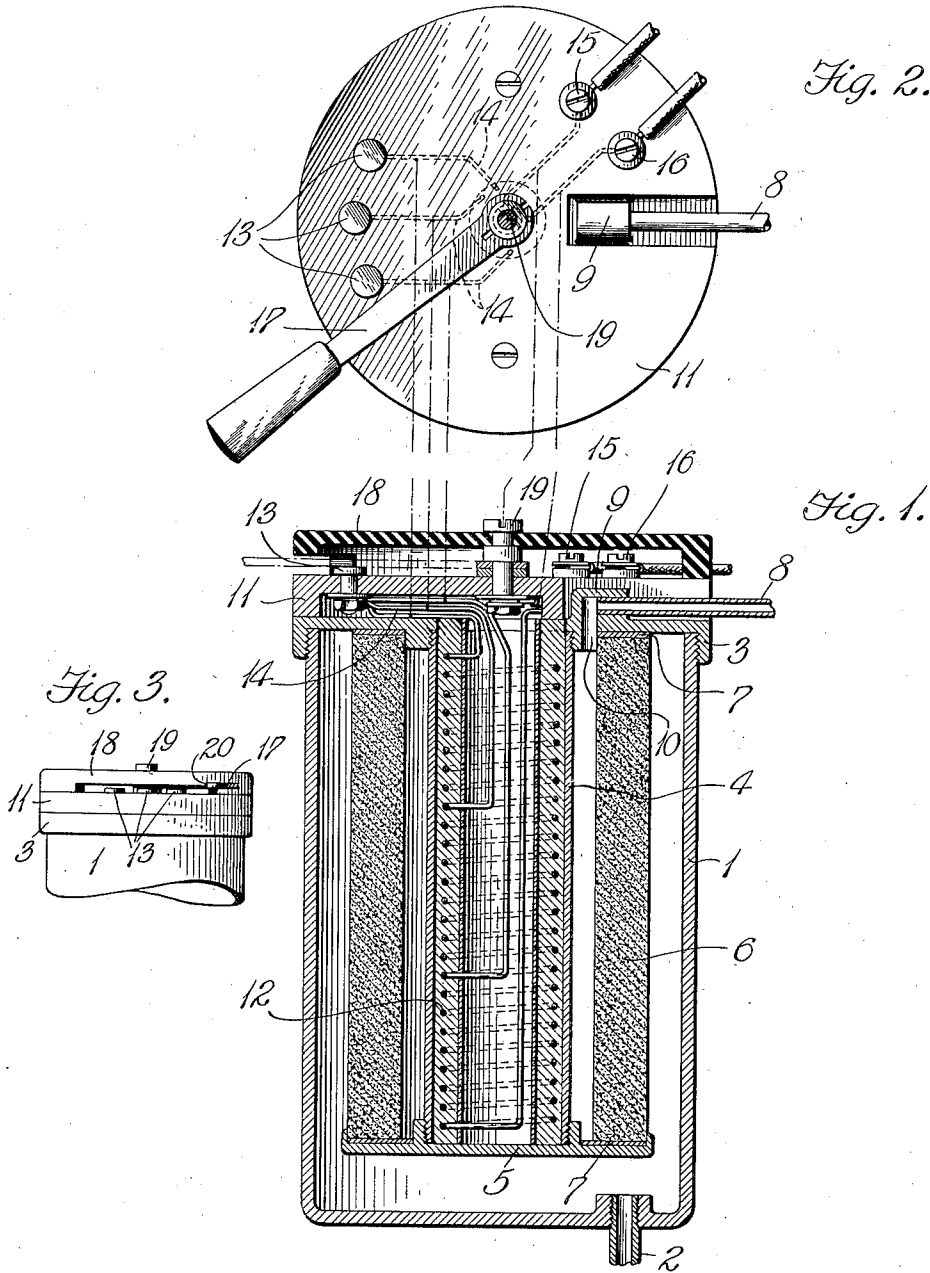


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DENTAL WATER FILTER AND HEATER.
APPLICATION FILED MAY 8, 1913.

1,075,978.

Patented Oct. 14, 1913.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES JOERIN, JR., AND ALBERT E. JOERIN, OF DETROIT, MICHIGAN.

DENTAL WATER FILTER AND HEATER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CHARLES JOERIN, JR., and ALBERT E. JOERIN, citizens of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Dental Water Filters and Heaters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a combination filter and heater for providing a supply of water for use in dental offices, hospitals and the like, and to an arrangement thereof whereby the water may be heated to a greater or less extent, the whole being under the control of the user.

The invention consists in the matters hereinafter set forth and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view in longitudinal section of a combined heater and filter that embodies features of the invention; Fig. 2 is a plan view thereof with the cap removed to give clear view for the heating connections. Fig. 3 is a view in detail showing notch for holding the switch lever in open position.

As shown herein an exterior casing 1 of appropriate material and design has an inlet tube or supply pipe 2 in its base. Preferably the casing is cylindrical and is provided with a removable cap 3 from which the tubular member 4 depends in substantially concentric relation with the casing. A base plate 5 closes the lower end of the tubular member 4 and acts as a support or clamp for a cylindrical filter 6, of porous stone or like suitable material. Gaskets 7 clamped between the ends of the filter and the cap 3 and base 5 prevent leakage. Preferably the interior diameter of the filter is such as to leave a quite narrow annular space between the tube 4 and inner face of the filter 6. An outlet pipe 8 is secured to a boss 9 on the cap 3 in communication with the duct 10 that opens into this space. An insulating plate 11 of porcelain or like suitable material rests on the cap as a support for a resistance coil or like electric heating member indicated diagrammatically at 12. Terminal switch points 13 in the plate 11 are so connected by leads 14 or the like to the resistance coil or heating member that more or less of the resistance coil or the like may be thrown in series with a binding post 15

through a switch bar 17, to provide a greater or less heated area in the filter. A companion binding post 16 in the plate is connected with the other limb of the resistance coil. An outer cover 18 of hard rubber or other like suitable material is removably secured over the plate 11, preferably by a stud 19 that may also conveniently serve the purpose of a pivot pin for the switch lever 17. If desired, the switch lever may be arranged to interlock with a notch 20 to hold it in open position.

In operation, water is filtered through the stone into the narrow annular space around the tube in which the heating means is housed so that a very large proportion of the water comes in contact with the radiating surface and is therefore readily raised to the desired temperature by appropriate manipulation of the heating switch. A continuous stream of water may be drawn from the filter if desired, that is filtered thoroughly and heated to the desired temperature, without especial effort or attention on the part of the user, thereby making the device particularly adaptable for dentists, doctors and hospitals.

Obviously, changes in the details of construction may be made without departing from the spirit of our invention and we do not care to limit ourselves to any particular form of arrangement of parts.

We claim as our invention:—

1. A water heater and filter comprising an outer casing, a cap removably secured thereon, a filter member suspended from the cap and having a cylindrical bore, electrically heated means detachably secured in the bore of the filter member and an outlet pipe from the space between the heating means and the inner face of the filter, a switch controlling the supply of electricity to the heater, an insulating plate carrying the terminals and the switch of the heater and a cover detachably secured over the terminals and switch by a member of the switch.

2. A water heater and filter comprising an outer cylindrical casing, a cap removably secured thereon, a tubular filter member suspended from the cap and closed at its lower end, electrically operated heating means secured in the filter and adapted to form therewith a narrow annular space between the outer radiating wall of the heating means and the inner face of the filter, an outlet pipe in the cap leading from the said

annular space, means for controlling the electrical heating means mounted in insulated relation on the cap, and a cover shielding the controlling means that is secured
5 over the cap by a member of said controlling means.

3. A water heater and filter comprising an outer cylindrical casing having an inlet pipe in its base, a cap removably secured on
10 the upper end of the casing, a radiating tube depending from the cap, a base plate detachably secured on the lower end of the radiating member, a tubular filter member clamped between the cap and the base plate
15 in concentric relation to the tubular member, electrical heating means contained in the tubular member, insulating plate secured on the cap, and a switch on the insulating plate controlling the electrical heating means
20 a pivot pin for the switch and a cover detachably secured on the cap by the pivot pin.

4. A water heater and filter comprising an outer cylindrical casing having an inlet pipe

in its base, a cap removably secured on the
25 upper end of the casing, a radiating tube depending from the cap, an electrically heated resistance member secured in the tube, a base plate detachably secured on the
30 lower end of the radiating member, a tubular filter member clamped between the cap and the base plate in concentric relation to the tubular member, a controlling switch mounted in the insulating plate and electrically
35 connected to the heating means, terminals for the heating means mounted in the plate a removable cover over the switch and terminals with which the switch is adapted
40 to interlock when in open position and a pivot pin for the switch that secures the cover in position.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES JOERIN, JR.
ALBERT E. JOERIN.

Witnesses:

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