

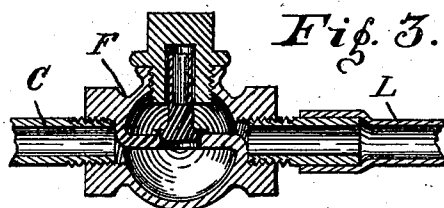
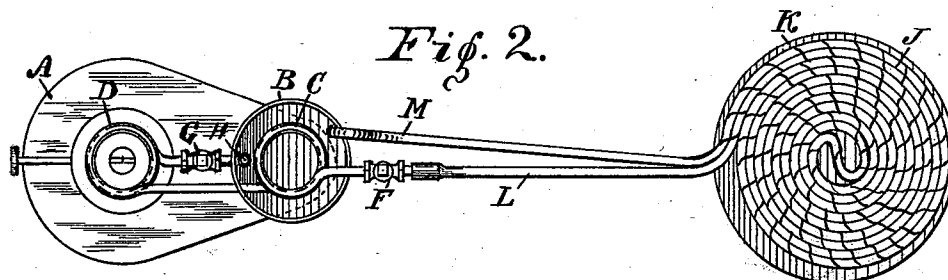
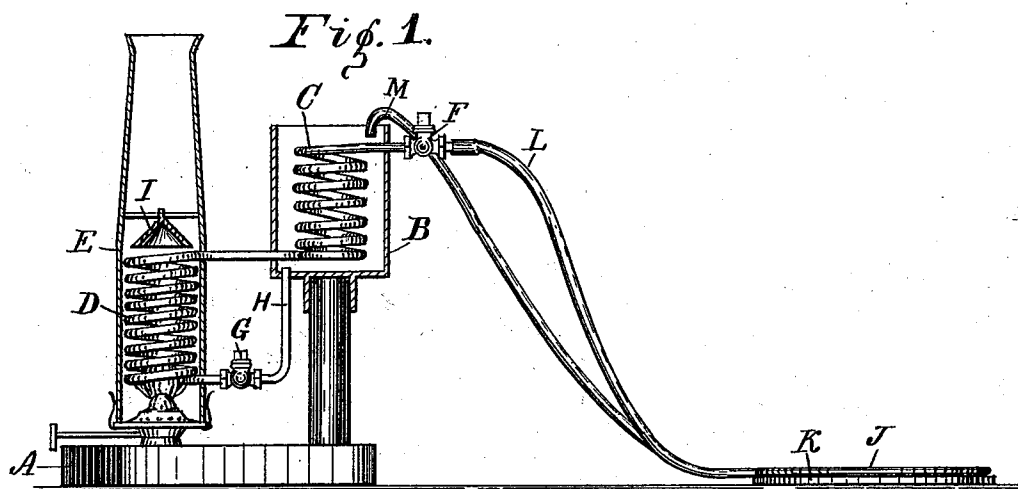
(No Model.)

R. H. KERSEY.

APPARATUS FOR HEATING AND CIRCULATING HOT WATER.

No. 511,436.

Patented Dec. 26, 1893.



WITNESSES:

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ROBERT H. KERSEY, OF LEBANON, INDIANA.

APPARATUS FOR HEATING AND CIRCULATING HOT WATER.

SPECIFICATION forming part of Letters Patent No. 511,436, dated December 26, 1893.

Application filed February 17, 1893. Serial No. 462,683. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. KERSEY, a citizen of the United States, residing at Lebanon, in the county of Boone and State of Indiana, have invented a new and useful Improvement in Apparatus for Heating and Circulating Hot Water, of which the following is a specification.

My invention relates to an improved apparatus for heating and circulating hot-water, whereby heat may be applied to portions of the human body for medicinal purposes.

The object of my improvement is to cause a positive circulation of hot water through a tubular-pad, whereby heat may be continuously applied to the human body, at any desired point.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation of the pad and the apparatus for heating the same, a portion being shown in section. Fig. 2 is a plan of the same, having the chimney removed. Fig. 3 represents a central vertical section, on a larger scale, of one of the check-valves.

In the drawings, A, indicates a coal-oil lamp.

B, indicates a water reservoir mounted upon a vertical standard which is erected adjacent to or upon the lamp.

C, is a coiled pipe mounted within the reservoir.

D, is a second coil of pipe, formed from a continuation of the same pipe forming coil C, and arranged within the chimney, E, of the lamp A. The free end of the pipe forming the coil C, extends over the side of the reservoir and is provided with a check-valve F, which opens outward, or away from the coil. The other end of said pipe which forms the coil D, is provided with a check-valve, G, opening inward, or toward the coil D, and is connected by a vertical pipe H, with the interior of the reservoir, at the bottom.

The interior of the chimney is provided above the coil D, with a deflector, I, for the purpose of confining the heat from the lamp as much as may be about the coil D.

The pad, J, is formed by doubling a piece of rubber tubing upon itself, and then forming a flat coil of the height of the doubled tubing, which coil, for the purpose of keeping

it in shape, is stitched to a circular piece of flexible material, K.

The free ends, L, and M, of the tubing, are connected, respectively, with the pipe extending from the upper part of the coil C, and with the reservoir, the end L of the tube being slipped over the end of the pipe, and the end M, being turned into the reservoir at the top.

The operation of my device is as follows:

Reservoir B, is filled with water, the water passing down pipe H and flowing freely through check-valve G, until coils D and C are also filled, and flowing out through check-valve F and filling the pad J. Lamp A being now lighted, coil D acts as a steam-generator, and coil C acts as a steam-condenser. A portion of the water in coil C, becoming vaporized, passes into coil D, and the pressure forces a portion of the water contained in coil C, out through the tube L; the steam being prevented from passing into pipe H by the check-valve G. The steam condensing in the lower part of coil C a partial vacuum is formed, and the water passing out from the upper part of the coil being prevented from returning by the check-valve F; and the lower part of the coil being connected with coil D, a portion of the water in the reservoir flows through pipe H and check-valve G into coil D until an equilibrium is established. This operation being repeated indefinitely, the water displaced from pad J, flows through tube M into the reservoir. An intermittent positive circulation being thus established from the reservoir through coils D and C and the pad J, back to the reservoir, the heat carried by the water is imparted to the tubing of which the pad is formed, and the pad, being applied to any desired part of the body, may be maintained at any desired temperature by regulating the flame of the lamp A. Care must be taken not to turn the flame of the lamp so high as to fill both of the coils and the pad with steam, as in that case the circulation is very much impaired, or stopped altogether.

I claim as my invention—

1. In an apparatus for heating and circulating water, the reservoir, the steam generator connected with said reservoir, the condensing-coil mounted in the reservoir and connected with said steam generator, the check-valve

mounted on the pipe leading from the condensing-coil and opening outward, and the check-valve arranged between the reservoir and the steam generator so as to open toward the generator, all combined and arranged to co-operate substantially as set forth.

2. The reservoir, the steam-generator connected with said reservoir, the condensing-coil mounted in said reservoir and connected with said steam-generator, the tubular pad connected with said condensing-coil, the check-valve arranged between said pad and the con-

densing-coil so as to open toward the pad, the check-valve arranged between the reservoir and the steam-generator so as to open toward the generator, and the lamp arranged so as to heat the generator, all combined and arranged to co-operate substantially as and for the purpose set forth.

ROBERT H. KERSEY.

Witnesses:

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