

(No Model.)

D. M. SMALL.
HOT WATER APPLIANCE.

No. 507,519.

Patented Oct. 24, 1893.

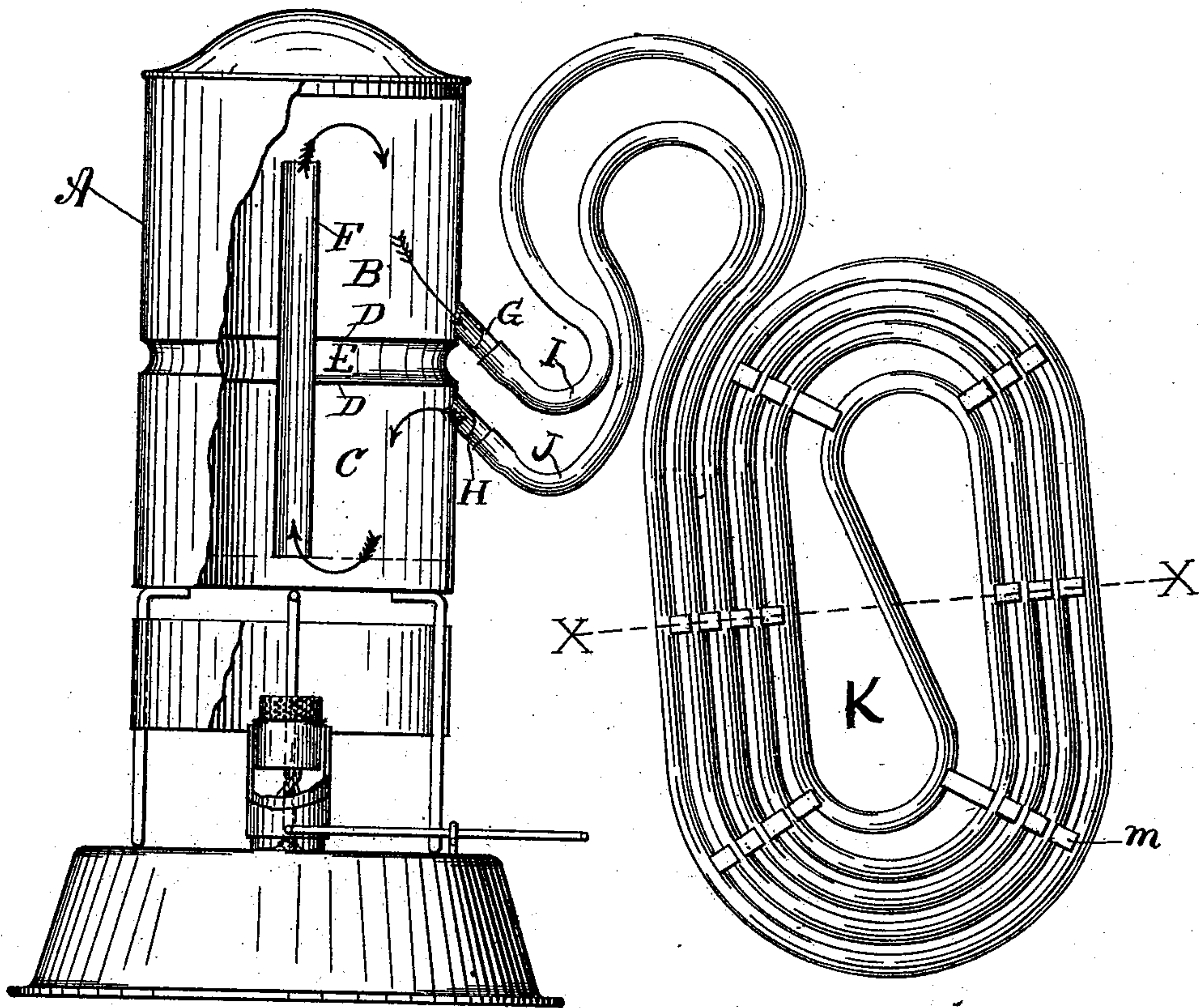


Fig 1.



Fig 2.

Inventor.

Dexter M. Small

Witnesses

George L. Rockwell

William H. Richmond

UNITED STATES PATENT OFFICE.

DEXTER M. SMALL, OF PROVIDENCE, RHODE ISLAND.

HOT-WATER APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 507,519, dated October 24, 1893.

Application filed November 7, 1892. Serial No. 451,193. (No model.)

To all whom it may concern:

Be it known that I, DEXTER M. SMALL, of the city and county of Providence, in the State of Rhode Island, have invented an improvement in devices for making hot applications to the body by means of a circulation of hot water through suitable appliances, of which the following is a specification.

My improvement consists in the particular construction of the reservoir and appliance as hereinafter set forth.

Figure 1 of the accompanying drawings, which form a part of this specification, is a complete view of the reservoir and appliance, broken away in parts to show interior construction. Fig. 2 is an enlarged view of one of the parts.

A is a cylindrical vessel or reservoir having two compartments B and C separated by a partition D (preferably double with an air space E between).

F is a tube extending from near bottom of lower compartment to above center of upper one.

G and H are tubes through which water flows from the upper to lower compartment through appliance K and intermediate flexible tubes I and J. The appliance is made of flexible tubing which may or may not be a continuation of tubes I and J arranged in coils secured together by the little partitions *m* (an enlarged end view of which is shown in Fig. 2) and having both outlet and inlet on same side of appliance, to which they are secured on the medial line *x-x*. By this construction the appliance can be conveniently used on the lungs—the tubes I J passing out through the opening in shirt front which can be kept closed while both ends of the appliance can be under the shirt close to body.

To fill apparatus, remove cover of reservoir and pour water slowly into upper compartment B until the level of the water therein remains a little below top of tube F. It will run down into lower compartment through appliance K as above described, until the level of the water therein reaches lower end of tube F, when no more can run in as there is no other escape for the air above. The

dotted line indicates its level. When heat is applied to this lower compartment, the water therein (the amount being small by reason of its construction) is soon vaporized and enough of it thus forced into upper compartment through tube F to relieve the pressure which is also further relieved by a corresponding amount of cooler water flowing back in through tube H. Soon this supply is forced out as before and the operation continuously repeated. By using a double partition D with air-space between as represented, the action is much quicker than with single partition through which the water in upper compartment rapidly condenses the vapor beneath and thus retards the outflow. Moreover it soon becomes as hot as the water below and is thus so rapidly evaporated as to require frequent attention, which is obviated by above construction.

An additional objection to single partition is, that with it, the temperature in appliance cannot be so well regulated. Even with double partition it is better to have outlet tube G a little above the upper one as represented, so the water from tube F will mix with that below outlet, before passing to appliance.

I claim as my invention—

1. Reservoir A, having upper and lower compartments B and C with a partition D between them and connecting tube F, together with outlet and inlet tubes G and H all constructed and combined so as to operate substantially as described.

2. A flexible appliance K composed of a continuous piece of rubber tubing I J arranged in coils secured to each other by a series of partitions *m* in such manner as to bring the center of the tubing into the center of appliance, with both ends of the tubing (which constitute the outlet and inlet) on one side of it, to which they are secured, as also to each other, at a point midway between the ends of the appliance, substantially as and for the purpose set forth.

DEXTER M. SMALL.

Witnesses:

GEORGE L. ROCKWELL,
WILLIAM H. RICHMOND.