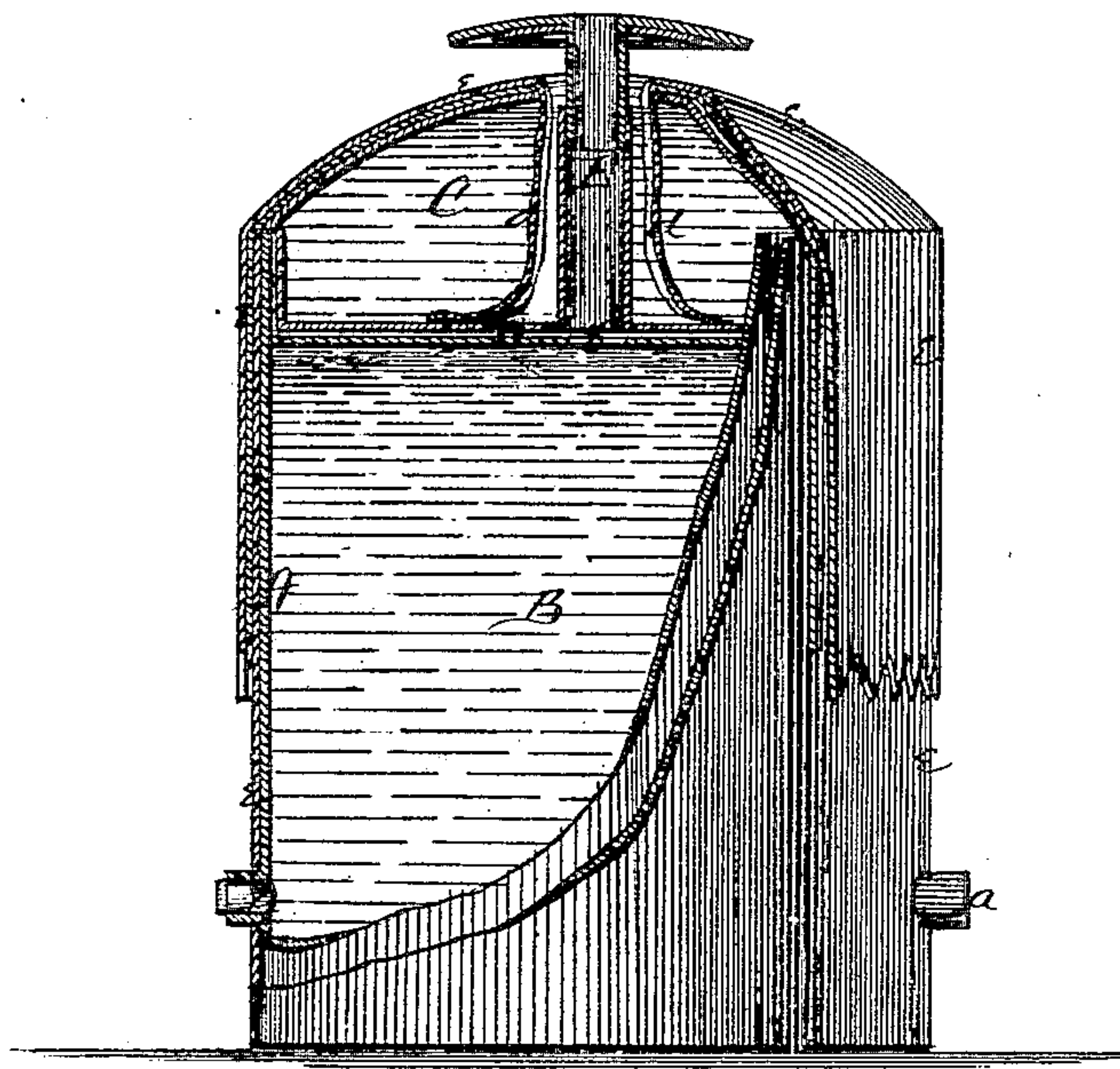


J. Rutter,

Water Cooler.

No. 102,595.

Patented May 3. 1870.



Witnesses:

Harry King.
C. L. Everb.

Inventor:

John Rutter
per
Alexander Mason
Attys

UNITED STATES PATENT OFFICE.

JOHN RUTTER, OF WEST CHESTER, PENNSYLVANIA.

IMPROVED WATER-COOLER.

Specification forming part of Letters Patent No. **102,595**, dated May 3, 1870.

To all whom it may concern:

Be it known that I, JOHN RUTTER, of West Chester, in the county of Chester, and in the State of Pennsylvania, have invented certain new and useful Improvements in Water-Coolers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a new and improved cooler of water, milk, and other liquids in reduction of the temperature or cooling of water for drinking or other purposes by means of evaporation.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a section of my cooler.

I construct an unglazed earthen or stoneware vessel or apartment, A, or a vessel of any other material capable of holding water or other liquid, of such capacity and form as may be desired or found most convenient. This vessel or compartment I divide into two sections, B and C, by means of the partition D, the lower section, B, to contain the water or other liquid to be cooled by evaporation. The upper section, C, is to contain the water or other fluid to be evaporated. The lower section is perforated with one or more holes, *a*, near the bottom for a spigot or spigots to draw off the water, milk, or other liquid when required. The division-plate or partition D between the two sections is perforated in the center, which may be used for the introduction of the water, milk, or other fluid into the lower chamber and the insertion of a tube, E, the use of which will be presently described. The upper section or division, C, relatively as to capacity may be only one-tenth (more or less) of that of the lower section, and the opening at the top larger than the aperture in the partition dividing the two sections. Through this opening or mouth is inserted a tin or other metallic tube, E, passing through the partition-plate and closely fitting into the aperture *b* in said plate, so as to prevent the passage of water or other fluid from the upper to the lower

chamber. This tube opens into the lower chamber for another purpose, now to be described. In this tube may be inserted cotton, woolen, or other proper absorbent material, allowing it to extend down within a short distance of the water, milk, or other fluid in the lower chamber. By this means the vapors of evaporation from the liquid in the lower chamber are carried up by absorption, or rather are absorbed by the absorbent material, while the force of capillary attraction carries them to the top of the cooler, discharging them in the material surrounding its surface, thus materially aiding and increasing evaporation from the liquid below, and furnishing a portion of moisture evaporated from the surface of the cooler. This arrangement of absorbent material within the tube is, however, not absolutely necessary, and may be dispensed with at pleasure.

In the mouth or opening in the upper section, C, surrounding the tube E, is inserted the same kind of absorbent material (marked *d d*) quite down to and in the water or other fluid contained in the upper section, which is absorbed and carried up also by the force of capillary attraction to the surface of the cooler, discharging the fluid thus raised in the material *e* surrounding the surface, which is continuous with and preserving an unbroken circuit for the descent of the fluid down all sides of the surface of the vessel. The whole outside of the vessel is covered with this same kind of material, or such other as is adapted for rapid evaporation. It will be observed that by thus uniting the material which conducts the vapor and water or other liquid to the surface of the vessel by the force of absorption and capillary attraction with the material surrounding the whole vessel the whole covering *e* becomes and continues to be moistened. The effect of this operation, in combination with the exudation from a porous unglazed vessel, supplies constant moisture and causes an unbroken and rapid evaporation at the surface, and a consequent reduction of the temperature of the water, milk, &c., in the cooler.

In the hottest season of the year, by this combination, water, milk, and other fluid can be kept at a greatly-reduced temperature, thus dispensing with the use of ice. As a current of air increases evaporation and increased evaporation reduces the temperature of water, it is

desirable to place this automatic cooler in a draft or current of air when convenient to do so. Should the supply of water at any time, by exudation and attraction to the surface, become too great to be carried off, a stopple may be inserted in the tube or opening to lessen it.

In addition to water-coolers and coolers of other liquids constructed and thus operated upon the principles herein described, ice-houses and the receptacles for keeping and preserving ice through the warm seasons of the year may be constructed upon the same general principles, and the waste of ice very much lessened.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a water-cooler, A, the employment of one or more capillary tubes,

E, substantially as and for the purposes set forth.

2. In combination with a cooler, A, the employment of the inner absorbent material, *d d*, communicating with an outer absorbent covering, *e e*, all substantially as set forth.

3. The water-cooler A, divided into compartments B C, and provided with one or more capillary tubes, E, absorbent material *d d*, and absorbent covering *e*, all substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of February, 1870.

JOHN RUTTER.

Witnesses:

ARTHUR N. MARR,
C. L. EVERT.