(No Model.)

H. J. CONANT.

WATER COOLER.

No. 470,745. Patented Mar. 15, 1892.

Fig: 1.

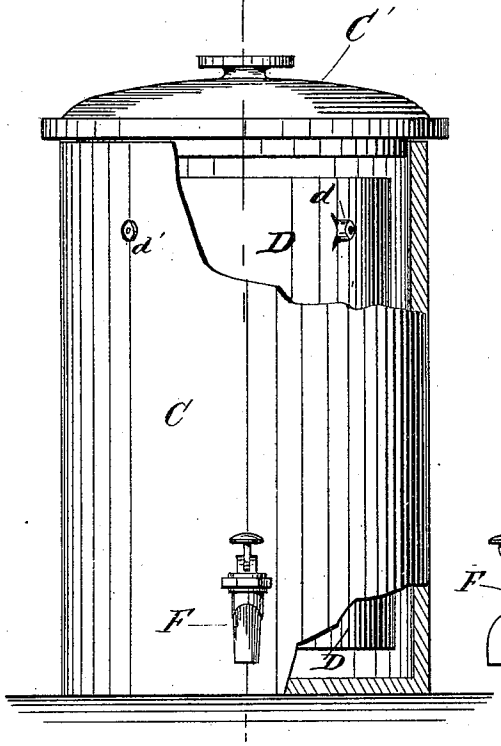


Fig: 2.

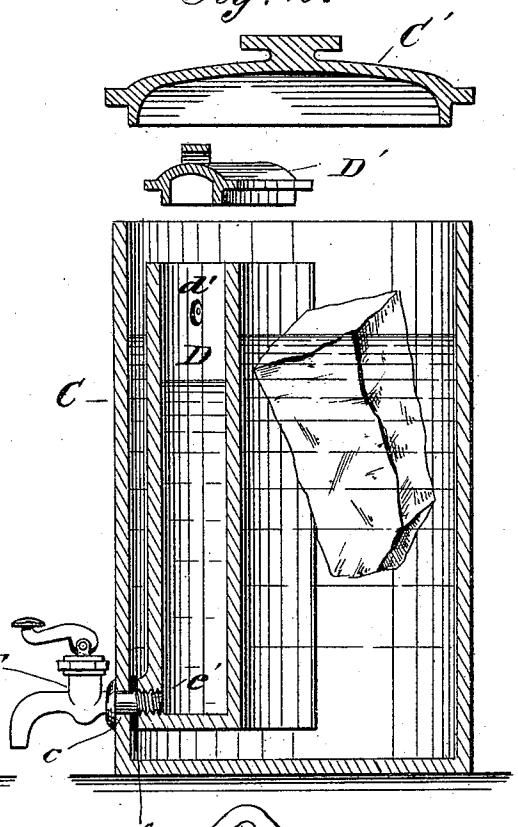


Fig: 3.

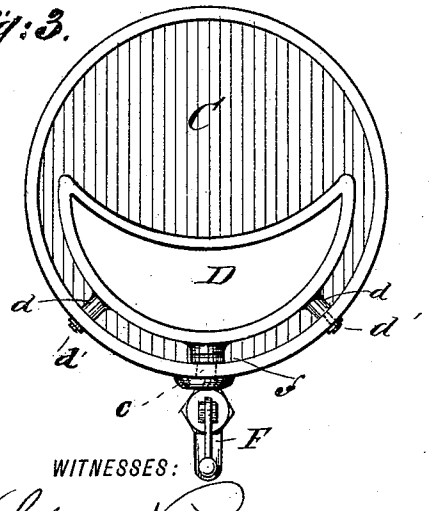
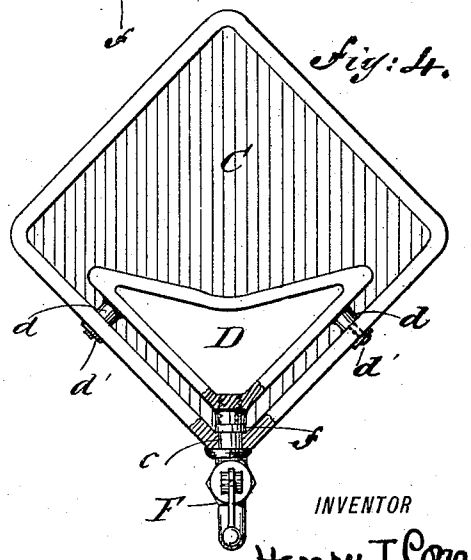


Fig: 4.



WITNESSES:

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WATER-COOLER.

SPECIFICATION forming part of Letters Patent No. 470,745, dated March 15, 1892.

Application filed May 6, 1891. Serial No. 391,743. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. CONANT, a citizen of the United States, and a resident of Watertown, Massachusetts, have invented a new and useful Improvement in Water-Coolers, of which the following is a description, reference being taken to the accompanying drawings, forming part of this specification.

My invention relates to water-coolers, milk-coolers, and similar devices in which it is desired to keep the liquid that is to be cooled from the cooling-fluid, and yet to admit of a quick transfer of heat between the two fluids and to prevent the transmission of heat through the cooler from the circumambient atmosphere, and has for its purpose the production of a simple, inexpensive, economical, and efficient cooler capable of fulfilling these requirements.

To these ends my invention consists in the apparatus and its several parts constructed, arranged, combined, and operated substantially in the manner hereinafter described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a front elevation, partly broken away, of a preferred form of my cooler. Fig. 2 is a vertical cross-section on a plane passing through the faucet of my cooler from front to rear. Fig. 3 is a plan of my cooler with the top or cover removed, and Fig. 4 is a similar plan of a modified form of my cooler.

Like letters of reference indicate like parts.

Briefly stated, my cooler consists of an outer reservoir of heat-insulating material, an inner reservoir placed within, but separated by a space from and secured to the walls of the outer reservoir, and means for securing the parts into position. The inner reservoir is placed eccentrically within the outer reservoir and is of such shape, as shown in the figures, that it leaves an elongated or elliptical chamber for the ice or other cooling materials. The inner reservoir being made of heat-conducting material, readily transmits the heat from the fluid to be cooled to the cooling substance or fluid.

In the drawings, C designates the outer reservoir of my cooler, and C′ the cover. These may be formed of suitably-treated pulp or of any other non-conducting material. In Figs. 1, 2, and 3 I have shown this reservoir circular—that is to say, cylindrical in form—which is the form I most prefer. In Fig. 4 I have shown it rectangular. Within this outer reservoir C, I place my inner reservoir D, of conducting material, such as iron and preferably porcelain-lined. This inner reservoir is placed eccentrically within the outer reservoir and is secured in position near to but not touching the sides and bottom of the outer reservoir.

I prefer to form my inner reservoir crescent-shaped in horizontal section, as indicated in Fig. 3. One of the curved surfaces will then be parallel and concentric with the adjacent inner surface of the outer reservoir, while the other curved surface on the outside of the inner reservoir will be concave, and therefore form, with the opposing inner surface of the outer reservoir, an elongated and approximately elliptical chamber for the reception of ice or other cooling material. The inner reservoir may, if desired, be closed by a suitable cover D′, though this is usually unnecessary.

I support my inner reservoir in position at three points. Two of these are formed by annular projections or lugs *d* at either side of the upper end of the inner reservoir, which bear against the inner surface of the outer reservoir and are secured thereto by the rivets or like devices *d′*, which run through from the outside of my cooler into or through lugs *d*. The third support is formed by the faucet F, which is a screw-faucet, passing through an opening *c* in the outer reservoir and onto a threaded lug *c′* near the bottom of the inner reservoir. The opening in this lug *c′* forms the outlet for the inner reservoir. By placing an annular elastic washer or packing-ring *f* about the faucet between the two reservoirs and by screwing up the faucet I am enabled to pack the junctions of the faucet with both openings *c c′*, and at the same time secure a firm support for the base of the inner reservoir. It will be seen that the bottom of the inner reservoir does not come in contact with the bottom of the outer reservoir. This feature I consider of great importance, as it avoids the direct transmission of heat from the body upon which my cooler may be

placed through the bottom of the outer reservoir, and thence by direct contact into the inner reservoir.

In Fig. 4 I have shown an inner reservoir of angular shape to conform to the jar within which it is placed in a way similar to that of my crescent jar or reservoir and circular outer jar or reservoir C.

I am aware that it is old in coolers and in calorimeters to place one jar within another, separated therefrom by an annular space. I am also aware that non-conducting rests have been placed under the inner jar or reservoir to form supports therefor. I am, however, aware of no cooler or like apparatus in which an inner jar is arranged to allow complete circulation of the cooling-fluid around and under the inner reservoir and to provide an elongated chamber for the ice; nor am I aware that the supports for such inner chamber have ever been arranged according to my invention. By my invention I am enabled to make a cooler very much more compact, and at the same time efficient, than has been before produced, while for ease of operation and simplicity of parts my faucet arrangement, and, indeed, the whole cooler, is unequaled.

Having now set forth my invention and how it may be constructed and used, I claim and desire to secure by Letters Patent of the United States the following:

1. In a cooler or like apparatus, an outer reservoir provided with an opening or orifice *c*, an inner reservoir secured eccentrically within the said outer reservoir and of crescent-shaped cross-section, and a faucet or outlet for the said inner reservoir projecting through the said orifice *c*, substantially as and for the purposes set forth.

2. In a cooler or like apparatus, an outer reservoir for containing cooling-fluids and an inner reservoir of substantially crescent-shaped cross-section secured within the said outer reservoir at such position that the fluid may flow freely around it and a space be provided on the concave side of the inner reservoir for blocks of ice or other material, substantially as and for the purposes set forth.

3. In a cooler or like apparatus, an outer reservoir of non-conducting material and of circular form provided with an orifice *c*, an inner reservoir placed eccentrically within the said outer reservoir of conducting material and formed crescent-shaped in cross-section, the bottoms of the said reservoirs being entirely separated from each other, a screw-faucet for the inner reservoir projecting through the said orifice *c*, screwing into the said inner reservoir and adapted to draw the said reservoirs together, an interposed packing-ring *f*, and rivets and lugs *d d'* for securing the upper part of the said reservoirs together, substantially as and for the purposes set forth.

In testimony of the foregoing I have hereunto set my hand this 1st day of May, 1891.

HENRY J. CONANT.

Witnesses:

FRANK W. THURSTON,

W. E. MANSFIELD.