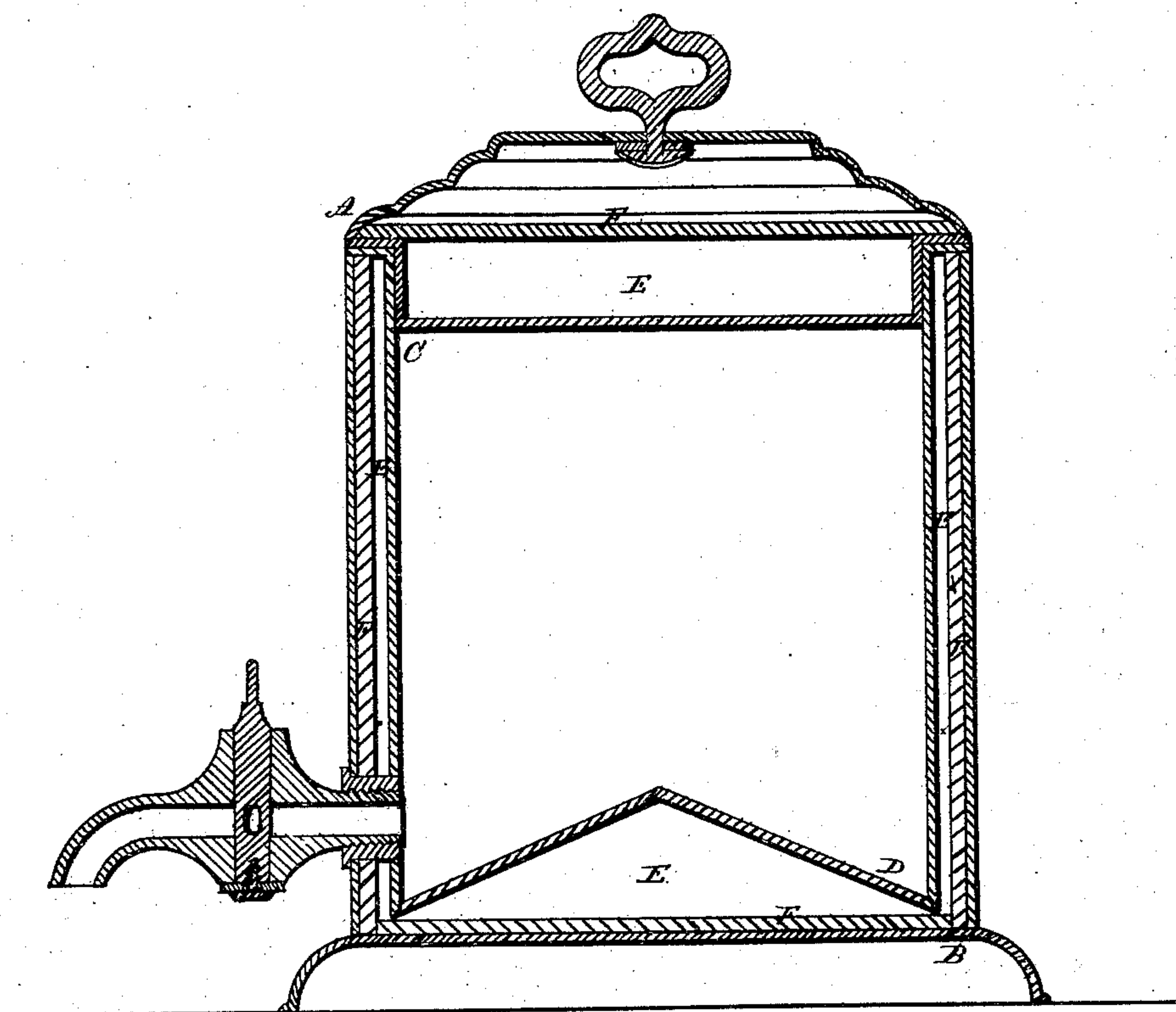


*J. H. Stone,*

*Water Cooler.*

*No. 99,725.*

*Patented Feb. 8. 1870.*



*Witnesses:*

*Benjamin*

*Wm. H. Morrison*

*Inventor, J. H. Stone*



# United States Patent Office.

JOHN H. STONE, OF PHILADELPHIA, PENNSYLVANIA.

*Letters Patent No. 99,725, dated February 8, 1870.*

## IMPROVED WATER-COOLER.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN H. STONE, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Water-Coolers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The water-coolers in common use are each provided with an hermetically-sealed air space between the interior, or ice-vessel, and the exterior, or enclosing-case, for the purpose of preventing the otherwise rapid transmission of heat from the surrounding atmosphere to the contents of the said interior vessel; and this result is attained, in a greater or lesser degree, in proportion to the thickness of the enclosed stratum of air and the perfection of the sealing; but, nevertheless, the stratum of confined air, being in direct contact with the inner side of the exterior case, the contact surface of the said stratum necessarily, and in a very few moments, attains to nearly the same temperature, becomes lighter, rises, and gives place to cooler portions of the confined air, and so on, the warmed portions of the stratum constantly intermingling with the cooler portions, the temperature of the whole stratum eventually becomes equal with that of the external atmosphere, the ice in the interior vessel at the same time gradually yielding to the predominating temperature of the said atmosphere. Besides, when the exterior casing is made of sheet-metal, as is generally the fact in water-coolers, the comparatively cool condition of the stratum of confined air around and in direct contact with the ice-vessel is rapidly imparted to the thin metal of the said exterior case, and, consequently, the moisture in the comparatively warm atmosphere is rapidly condensed upon and runs down the outside surface of the vessel in a very copious, and therefore objectionable, degree.

The object of my improvement is to remedy these objectionable results in water coolers, by retarding, in a more effectual manner, the transmission of heat and cold between the exterior and the interior of the same; and

My invention consists in the employment of a stratum of felt, thick paper, or their equivalent, poor conductors of heat, in direct contact with either the interior surface of the exterior case or the exterior surface of the interior vessel, in combination with the usual stratum of confined air between the said case and the said interior vessel, substantially as hereinafter set forth and described.

Referring to the drawing, which represents a vertical central section of an improved water-cooler—

A B is the exterior case;

C D, the interior vessel;

E, the usual air-space; and

F, the stratum of felt or thick paper between the air-space and the exterior case.

The exterior case, A B, and the interior vessel, C D, are made of sheet-metal, and connected together at their upper ends with the hermetically-sealed air space E, between them, in the usual manner; but, before the said space E is closed, the stratum of felt or paper F is inserted, so that it will fit firmly in close contact with the whole inner surface of the case A B.

In like manner, the bottom and the lid or cover of the vessel are each fitted with a stratum of felt or paper, F, substantially as represented in the drawing.

Felt and paper being each very poor conductors of heat or cold, and the stratum of either being in close contact with the sheet-metal which bounds one side of the air space E, the transmission of heat from the surrounding atmosphere to the air-space will be greatly retarded; and for the same reason, the transmission of cold from the same stratum of confined air to the exterior sheet-metal casing A B, will be retarded, and the condensation of the moisture in the atmosphere proportionately diminished, and, in most cases, entirely prevented.

When the exterior case is made of wood, the condensation of moisture does not occur; but the advantage arising from the employment of the felt or paper, in retarding the transmission of heat from the surrounding atmosphere to the air-space is of very great importance in the economizing of the ice in the containing vessel.

Having thus fully described my improvement,

What I claim as new therein, of my invention, and desire to secure by Letters Patent, is confined to the following—

A sheet-metal water-cooler, having a stratum, F, of felt, paper, or other like porous material, in direct contact with the inner side surfaces of the exterior vessel, and leaving the space E, for confined air, between the said stratum F and the exterior surface of the inner vessel D C, as and for the purpose hereinbefore set forth.

J. H. STONE.

Witnesses:

BENJ. MORISON,

WM. H. MORISON.