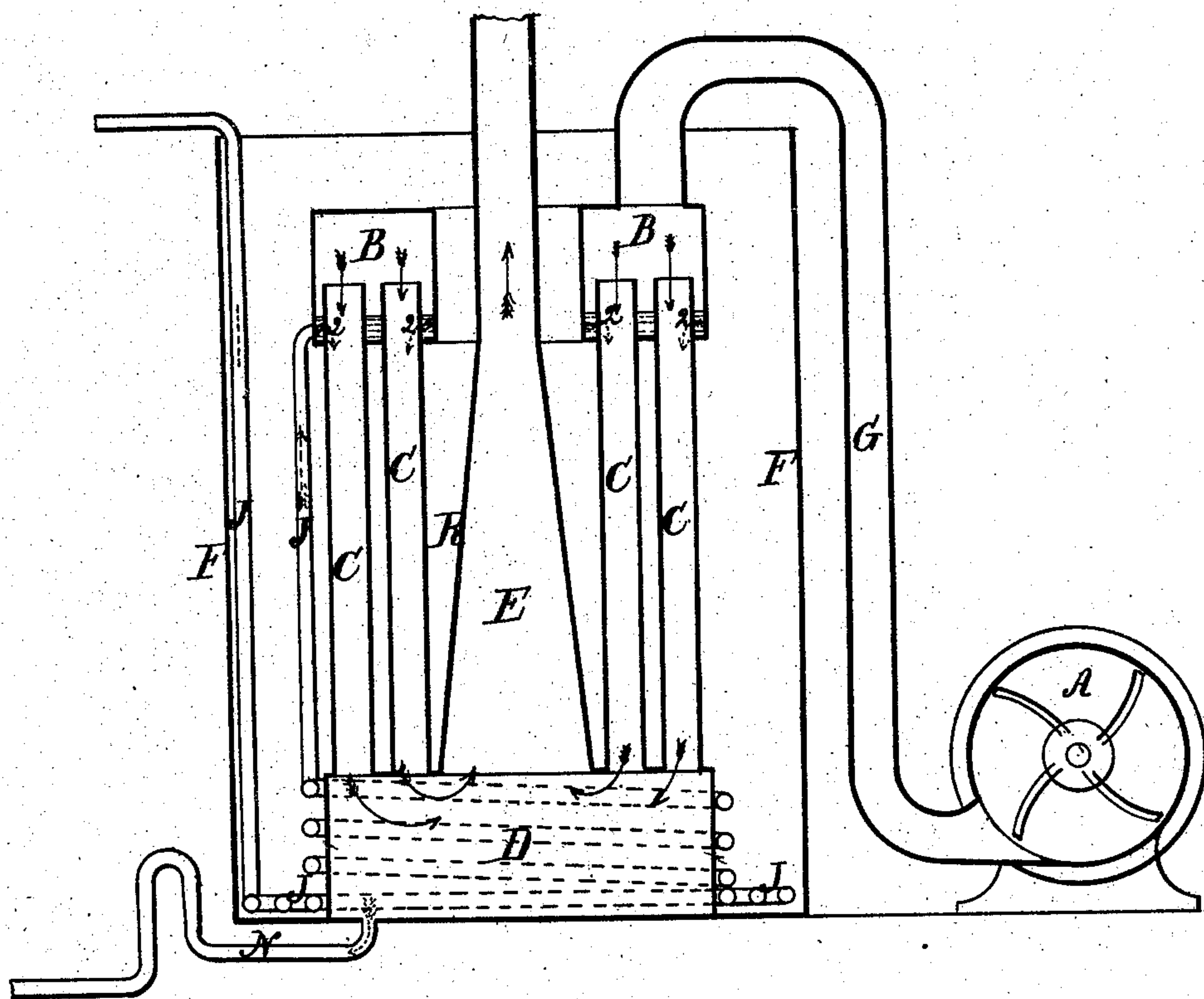


J. J. Schillinger
Cooling & Ventilating App's.
Nº 93,840. Patented Aug. 17, 1869.



Witnesses
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JOHN J. SCHILLINGER, OF NEW YORK, N. Y.

Letters Patent No. 93,840, dated August 17, 1869.

IMPROVED COOLING AND VENTILATING-APPARATUS.

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 T. SCHILLINGER, of New York, in the county and State of New York, have invented a new and useful Cooling and Ventilating-Apparatus; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The chemical and physical changes to which the air in closed localities is subjected, either by the respiration and perspiring of a number of people therein congregated, or in consequence of manufacturing-processes of various kinds, have not only a material bearing on the normal state of man's health, but are contributive to his comfort, and in many instances are of the greatest consequence to preserve the product of manufacturing from ruin.

During the hot, summer months, it becomes imperative to secure the purification of the air by ventilation, and to reduce the high range of temperature, so as to make it healthy and agreeable.

With this object in view, a good many contrivances have been resorted to, which, although all more or less useful in some respects, have still proved deficient, being indifferently constructed, too complicated and costly, and unfit for the purpose to be served.

My invention consists in constructing a cooling and ventilating-apparatus in an improved and simplified manner.

For this purpose, I provide two chambers, and connect them by tubes, and around one of the chambers I encircle a coil of pipe, which opens into the other one, a suitable discharge-pipe being provided. The parts may be entirely or partly covered or enclosed within cold water, ice, or other cooling-material, the coil conveying cold water to the tubes, through which it trickles or sprays, so that the blast of air enters one chamber, passes into the spray-tubes into the other chamber, and out at the discharge-pipe, whereby it is subjected to the action of cold, from entrance to exit, over a large surface, which occupies but a small space, as will be hereinafter more fully described.

In the accompanying drawing—

A is a ventilator, whereby a blast or current of air is produced, and passed into a box, B, forming part of the refrigerator R.

This refrigerator consists of a great number of tubes, C, made of thin galvanized sheet-iron or copper, securely fastened to an upper and lower chamber, B and D.

In the upper chamber or box B, these tubes project about two inches, and each tube is made with a small hole, 2, through its side near the bottom of this chamber B.

To the bottom or lower chamber D, a large bell-

shaped pipe, E, is fastened, rising upward, and gradually contracting to its required size.

This apparatus is placed into a chamber or box, F, filled with cold water, ice, or any other suitable cooling-substance, surrounding every part of the apparatus.

Into the box F, a water-pipe, J, is conducted, passing downward to the bottom, and is formed there in a coil, passing several times around the lower chamber D, and then upward again to the chamber B, to which said pipe J is attached near the bottom.

The pipe G from the ventilator A is connected with the upper chamber B.

The air from the ventilator A passes into the upper chamber B, and passes then through the tubes C into the lower chamber D having been deprived of a considerable amount of its temperature while passing through the tubes C, and passes then through the central pipe E, from where it is conducted to the room or place to be cooled and ventilated.

The air, while passing through the tubes C, comes in contact with a small sheet of cold water entering through the holes 2, in the upper part of said pipes C within the chamber B, and receives thereby its required moisture.

The water passing through these tubes C is collected in the lower chamber D, and is carried off through the pipe N attached to the bottom of said chamber D.

It is evident that the air, after thus being exposed to the influence of a considerable quantity of cold water, surrounding the tubes C, through which the air is made to pass, as well as to the influence of the cold water passing through said tubes C, and coming in contact with the air while passing through said tubes, must have attained a degree of coolness answering most purposes.

Should a further reduction of the temperature be desired, ice in larger or smaller quantities will have to be resorted to.

During the hot season, when the outside temperature rises to about 86° Fahrenheit or more, a reduction of from 12° to 18° can generally be effected, even where the water has a temperature of 54° to 68° Fahrenheit.

I am aware that it is not new to cool air by subjecting it to passage through and over cold water, and that spray has been employed to assist in the operation.

I am aware that air has been passed through tubes, or a series of tubes surrounded by water or ice, for the purpose of being cooled thereby, and I do, therefore, not claim this broadly; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The apparatus for the purpose described, consisting of tubes C C, projecting into chamber B, and communicating with chamber D, in connection with a coil, J, for running water, discharge-pipe E, and enclosing-chamber F, whereby the blast enters chamber B, passes through tubes C C, in contact with water trickling through them, thence through the water in cham-

ber D, into the exit E, a large cooling-surface being thereby gained, substantially as and for the purpose described.

JOHN J. SCHILLINGER.

Witnesses:

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