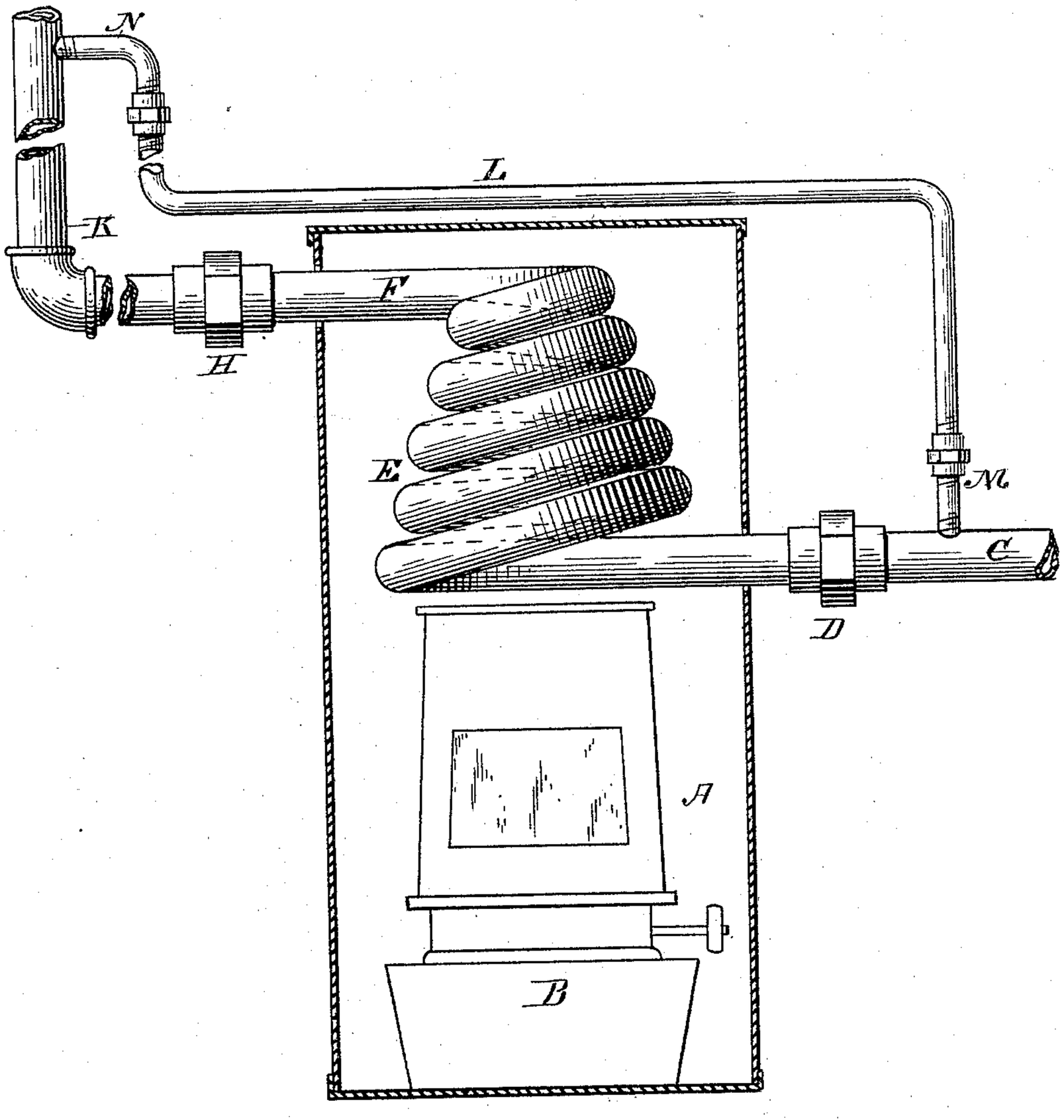
(No Model.)

# J. KRUMSCHEID.

## SERVICE PIPE WATER HEATER.

No. 473,762. Patented Apr. 26, 1892.




WITNESSES
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# UNITED STATES PATENT OFFICE.

JACOB KRUMSCHEID, OF BOSTON, MASSACHUSETTS.

## SERVICE-PIPE WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 473,762, dated April 26, 1892.

Application filed January 19, 1891. Serial No. 378,353. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB KRUMSCHEID, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Service-Pipe Water-Heaters, of which the following, taken in connection with the accompanying drawing, is a specification.

The object of my invention is to combine with the primary service-pipe of a water-supply system a device by which the water that is in such parts of the pipes that are liable to become so cold as to freeze the said water may be kept warm, said device consisting of a heater placed in any convenient position and having within it a portion of the primary pipe arranged to receive heat from the heater and having combined with the same a second or loop pipe, which is connected at one end to the first pipe at a point above the heater and at the other end at a point below the heater and below any point at which water within the pipe would be liable to be frozen. In other words, the loop-pipe joins the primary pipe at points between which the primary pipe could under any circumstances be subjected to a degree of cold sufficient to freeze the contained water. This object I attain by the mechanism shown in the accompanying drawing, in which the figure is a view in elevation showing the construction, arrangement, and connection of my device as applied to a service-pipe at any desired point, the front or door of the inclosing case being omitted, so that the interior parts may be shown.

The case A may be made, substantially as shown, of some suitable metal and provided with a door and suitable ventilating apparatus. Within this case a heating device or heat-generator B is placed. The heat-generator may consist of an oil lamp or stove or of a gas-jet, as may be most convenient.

The heat receiver and communicator consist of a pyramidal coil E of metal pipe, the lower branch of which is connected to the supply-member of the primary service-pipe C by the coupling D, and the upper end F is connected to the delivering member K of the primary service-pipe.

To get the most useful heating effect from the coil E, it is necessary that the water shall have a free circulation through the coil E. To effect this result, I connect an auxiliary pipe L to the supply member C of the service-pipe at M and to the delivery member K of the primary service-pipe at N. By the use of the auxiliary pipe L, I maintain a free circulation of water through the heating-coil E, and am thus enabled to heat and maintain at a temperature much above freezing the water contained in a considerable length of pipe. In use I carry the pipe L before it connects with the primary service-pipe to a point beyond where there is any danger of freezing, and the lower end M is inserted at a point so near the ground, or even in the ground, that there is no danger of freezing.

Without the auxiliary pipe L the water would remain stationary in the coil (unless drawn off) and the heating effect would extend but a short distance from the coil. Thus the more distant parts of the primary service-pipe might be so cold as to freeze the water within them; but with this auxiliary pipe a circulation is maintained through the heater and through all that part of the pipe that is liable to become too cold. Hence there is no danger of freezing.

Instead of using a coil of pipe, as shown in the drawing, a hollow casting of metal may be used.

I claim—

In a water-supply system of a building, the combination of the regular cold-water-supply pipes with a heat-generator B, having a heating-coil E directly connected with the regular service, and a loop-pipe L, so arranged that it shall embrace within its points of junction with the regular cold-water-supply pipes the said heat-generator and such portions of the regular cold-water-supply pipe as would otherwise become so cold as to freeze the contained water, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of January, A. D. 1891.

JACOB KRUMSCHEID.

Witnesses:
ALONZO F. ANDREWS,
WILLIAM EDSON.