J. S. McMURTRIE.

PREVENTING THE FREEZING OF WASTE WATER PIPES.

No. 186,862. Patented Jan. 30, 1877.

Fig. 1

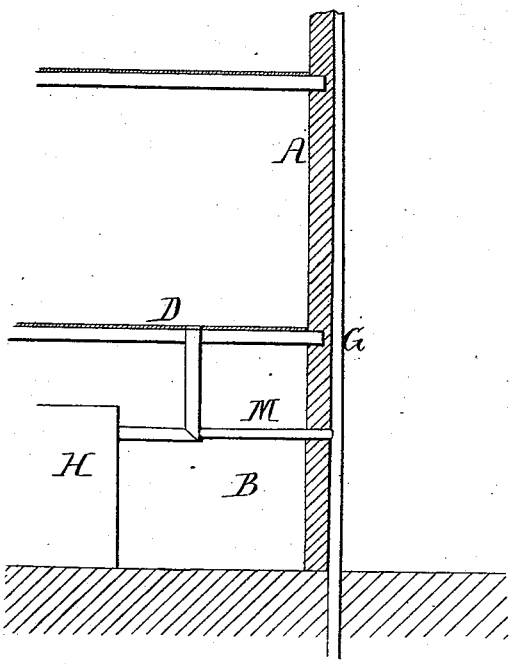
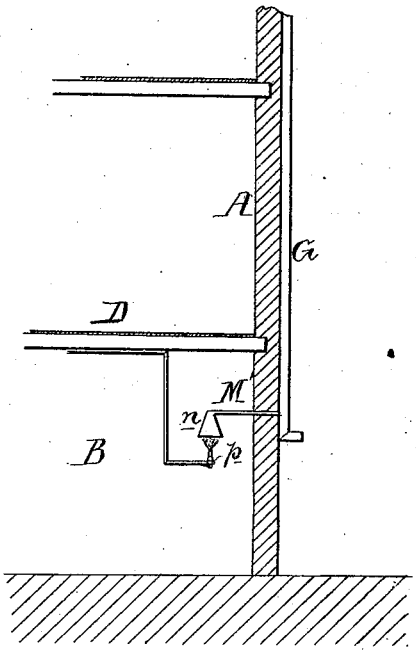


Fig. 2



Witnesses,
John K. Rupertus.
Harry Smith

John S. McMurtrie
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

JOHN S. McMURTRIE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PREVENTING THE FREEZING OF WASTE-WATER PIPES.

Specification forming part of Letters Patent No. **186,862**, dated January 30, 1877; application filed January 10, 1877.

To all whom it may concern:

Be it known that I, JOHN S. McMURTRIE, of Philadelphia, Pennsylvania, have invented an Improvement in Preventing the Freezing of Waste-Water Pipes, of which the following is a specification:

The object of my invention is to prevent the accumulation of ice in and the bursting of waste-water pipes of dwellings and other buildings, by causing heated air or the heated products of combustion, or both, to pass through them, in the manner described hereafter.

Figures 1 and 2 of the accompanying drawing represent vertical sections of parts of a building, showing the application of my invention to the waste-water pipes.

In both views, A represents the wall of a building; B, the cellar; D, the floor above the latter, and G the usual pipe through which the waste-water is carried off from the eaves of the roof. In Fig. 1 this pipe is supposed to communicate, through the usual trap, with a neighboring sewer, and in Fig. 2 the pipe terminates above ground, the water discharged from it passing into the usual gutter at the curb.

In the cellar of the building, Fig. 1, is a heater, H, and between the hot-air pipe of this heater and the waste-water pipe G a communication is made by a tube, M, so that a portion of the heated air shall pass into and upward through the said waste-water pipe, which is thus maintained at such a temperature that no snow or ice can accumulate in it.

When there is no heater in the cellar, as in Fig. 2, the tube M′, connected with the waste-water pipe, may terminate in a flaring mouth, *n*, immediately below which is a gas-jet, *p*, so that the heated products of combustion and air warmed by contact with the flame will enter the tube M′, pass upward through the pipe, and maintain the same at the desired temperature.

A lamp may be used in place of the gas-burner, or the products of combustion from a stove may be directed through the pipe G with the same result. The pipe M′, in this case, should communicate with the waste-water pipe at a point as near the lower end as possible. When this pipe terminates above ground, as shown in Fig. 2, it will be necessary to close, or partially close, the lower end, when the free upward course of the heated air or heated products of combustion is desired, for which purpose I prefer to furnish the lower end of the pipe with a self-closing valve, which will permit the water to escape without admitting any great amount of air. When the pipe G communicates with the sewer, however, through the usual trap, the latter will serve to close the pipe without the aid of a valve.

In some cases the pipe M may be carried up through the waste-water pipe to the top of the same, the valve in this case being also dispensed with.

I claim as my invention—

The mode herein described of preventing the accumulation of ice in the waste-water pipes of dwellings and other buildings—that is to say, by directing heated air or the heated products of combustion, or both, to and through the pipes, as herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN S. McMURTRIE.

Witnesses:

HERMANN MOESSNER,

HARRY SMITH.