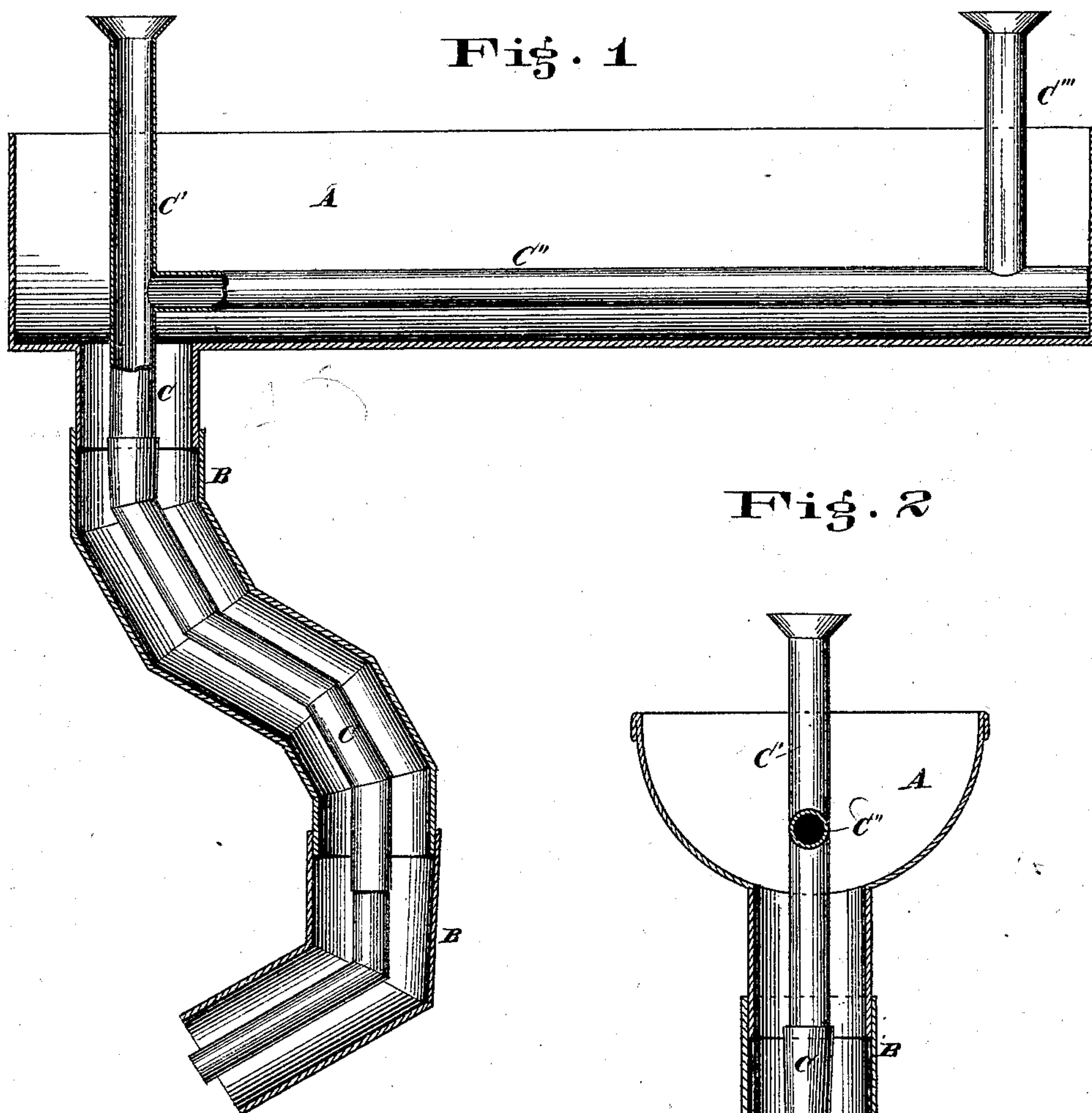


M. WIEAND.
Water-Spout.

No. 222,645.

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UNITED STATES PATENT OFFICE.

MOSES WIEAND, OF EMAUS, PENNSYLVANIA.

IMPROVEMENT IN WATER-SPOUTS.

Specification forming part of Letters Patent No. **222,645**, dated December 16, 1879; application filed April 25, 1879.

To all whom it may concern:

Be it known that I, MOSES WIEAND, of Emaus, Lehigh county, State of Pennsylvania, have invented certain new and useful Improvements in Water-Spouts; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part hereof.

The nature of my invention will be fully set forth in the accompanying specification and claims.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the drawings, Figure 1 is a longitudinal view of the trough at the eaves of the house to which my device is attached, also showing a vertical sectional view of the whole water-spout with my supplemental pipe within it; Fig. 2, a cross-sectional view of the same.

A is the trough, set at the edge of the roof to be freed from water; B, the main water-spout leading from the trough to the ground; C, my supplemental pipe in the interior of the main pipe B; C', a cylinder opening above and communicating with pipe C; C'', a cylinder communicating with the pipe C', which is set in the trough A, and unites at one extremity with pipe C.

The object of my device is to free water-spouts and other conductors from ice.

I prefer to keep the upper openings of cylinders C' and C'' closed with caps or stoppers, so as to prevent snow or rain from entering them. All the water is caught in the trough or gutter A, and flows off through conductor B in the ordinary way. The pipe C is kept free throughout its whole length. If the conductor B, or rather the water in it, becomes frozen at any point so as to obstruct the free flow of water through it, I simply pour hot water into the opening of cylinder C', which, in its passage down through pipe C, heats the latter. This results in melting the ice from around pipe C, thus opening a passage for the water resting above the point which has been frozen. If the freezing has also occurred in gutter A, I pour hot water into cylinder C'',

which passes through pipe C' into pipe C, thus heating pipe C' and melting the ice surrounding it in the gutter A.

The cylinders C' and C'' may be so constructed as to terminate in an upper room of the building to which the spouting is attached, so as to avoid the necessity and danger of the operative going to the roof to operate them. These cylinders may also be attached to the hot-water spout of the hydrant, if there be such upon the premises where they are used. Hot air from an air-pump could also be used.

My device will be useful not only in rain-water and other ordinary conductors or drains, but also in the water-pipes of hydrants, and, in short, to all water-conductors. In case it is applied to hydrants it would be advisable to carry the lower end of pipe C through the side of the main conducting-pipe, so as to allow the hot water a free traverse through the pipe. Both ends (C' and the lower end) being outside, hot water in sufficient quantity can be forced through to melt the ice.

It will readily be seen that, though more expensive than what I have shown, the pipe C could be used as the main water-conductor, and the outer envelope, B, as the hot-air or hot-water conductor or pipe, in which case the ice in pipe C would be thawed out or melted from all sides at once. This, however, would be suggested by my device, and I consider it an equivalent method.

One great advantage of my device is, that the water used in melting the ice passes down and out of the pipe. I know that steam has been used for this purpose before, it having been passed up through the pipe; but it was liable to condense and freeze in its passage, and even if it did not freeze, there was no provision made heretofore for the water of condensation to escape and flow away from the pipe.

Patents have heretofore been taken out for passing up hot air or steam either through or around a water-spout by means of a small interior tube or an outer enveloping-tube, the first forming an interior hot chamber and the latter an annular hot chamber; but in these cases the hot-air or steam conductor was only

adapted to allow heated currents to rise, while no provision was made for pouring a heated current down the pipe, and thence to the ground outside; and, besides, those old devices were not capable of successful general application. Steam is not produced in ordinary dwellings and country-houses in such quantity as would serve to melt the ice by passing up the hot-air or steam conductor when the spout is frozen up, and in a very tall house the hot air arising from the lower story would be so much cooled by the adjoining ice and cold water before it had passed up one-third of the distance in its narrow conductor as to be practically useless as a melting agent for the balance of the length of frozen pipe. By my device these difficulties are overcome. Hot water can be produced in almost any necessary quantity in any house, wherever located. It can be run down the

hot-water conductor in a continuous and rapid stream, and will completely remove the ice in a short time. It takes longer to cool than the air; and therefore an apparatus adapted to use it has many advantages over other methods, particularly when it is arranged like the old hot-air process, to melt the ice in the trough as well as in the spout, thus saving the front and walls of the house from overflowing water.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the open trough A, with its outlet-pipe B, pipe C, with its inlet C', and pipe C'', with its inlet C''', substantially as and for the purposes described.

MOSES WIEAND.

Witnesses:

HENRY V. BUCKLEY,
A. WEED.