A. N. RANKIN.

Protecting Water Pipes from Freezing.

No. 167,195. Patented Aug. 31, 1875.

Fig. 1.

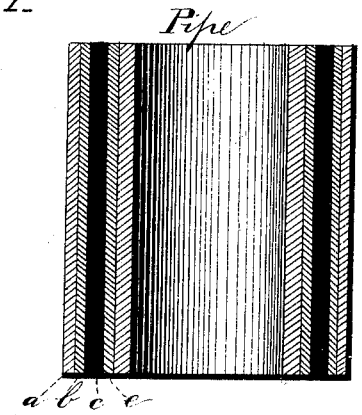
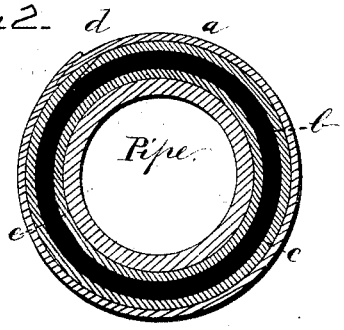


Fig. 2.



WITNESSES

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IMPROVEMENT IN PROTECTING WATER-PIPES FROM FREEZING.

Specification forming part of Letters Patent No. **167,195**, dated August 31, 1875; application filed June 3, 1874.

CASE B.

To all whom it may concern:

Be it known that I, ANDREW N. RANKIN, of the village of Nyack, county of Rockland, in the State of New York, have invented what I call a Water-Pipe Protection from Freezing.

The object of my invention is to protect water-pipes from the action of the atmospheric air, so as to prevent the water in said pipes from freezing.

The following description, taken in connection with the accompanying drawing, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said invention, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to secure by Letters Patent.

The present invention consists in properly protecting water-pipes from the action of the atmospheric air, so as to keep the water therein from freezing. To do so I wrap the water-pipe with one or more thicknesses of good, sound paper, one edge of the paper to be prepared with gum-tragacanth or other suitable adhesive substance. Apply such gummed edge of the paper to the surface of the pipe; then wrap the paper about the pipe, and secure the other edge to the part of the wrapping, with which it comes in contact by some good adhesive or sticking material. Then prepare some sheet-zinc or other equally good metal, or compound of metals, by lining the same with good, sound paper, fastened with proper adhesive substance, starting the paper a short distance from the edge of the zinc or other outside covering out of the way of the joint which is to be made, and allowing the other edge of the paper to extend over the edge of the zinc an equal distance with such extension of the paper, well covered with adhesive matter, so that, when the joint is formed, such extended edge of paper will lap over the joint, and, adhering to the other side of the zinc, will exclude the passage of air through the joint of the zinc or other suitable outside covering. After lining the zinc with paper, as already described, I apply felt to the inside of the paper lining of the zinc, in the same manner as has been described, about the paper lining, and lapping over the joint of the outside protection, the felt to be of suitable thickness to fill up the space between the paper surrounding the water-pipe and the paper lining of the zinc or other suitable material. The two edges of the zinc are drawn together, and securely cemented or soldered together.

The foregoing is applicable only to pipes conveying or containing cold water; but for pipes containing hot water I fill up the space between the water-pipe, say, an inch, or more or less, according to exposure, on all sides with ground gypsum, called also plaster-of-paris. This will answer also for water-pipes containing cold water, but is not as effective as the first described, which is for that reason preferred. The faucets are covered also with sheet-zinc or other suitable material, and the space filled with gypsum which has first been ground to powder; for if the water should not freeze in the pipe, but should freeze in the faucet, it could not be drawn from the pipe when frozen in the faucet.

Figure 1 is a horizontal section; Fig. 2 is a vertical section.

In the accompanying plate of drawings, *a* represents the outer piece of sheet-zinc or other suitable material. *b* represents the paper lining for the zinc. *c* represents the felt lining. *d* represents the joining of the edges of the zinc or other suitable material; and *e* represents the paper wrapping surrounding the water-pipe.

I claim as my invention—

1. The method of protecting water-pipes, or rendering them impervious to atmospheric action, consisting in enveloping or covering the pipe, first with a layer of paper, then felt, then again with paper, and inclosing the whole in a zinc case, substantially as and for the purposes described.

2. The material or coating for rendering water-pipes impervious to the action of the atmosphere, consisting of one or more envelopes of paper, intermediate filling of felt, and inclosing metallic case, arranged and applied substantially in the manner herein shown and described.

ANDREW N. RANKIN.

Witnesses:
J. W. SPEAKES, Jr.,
J. MCKENNEY.