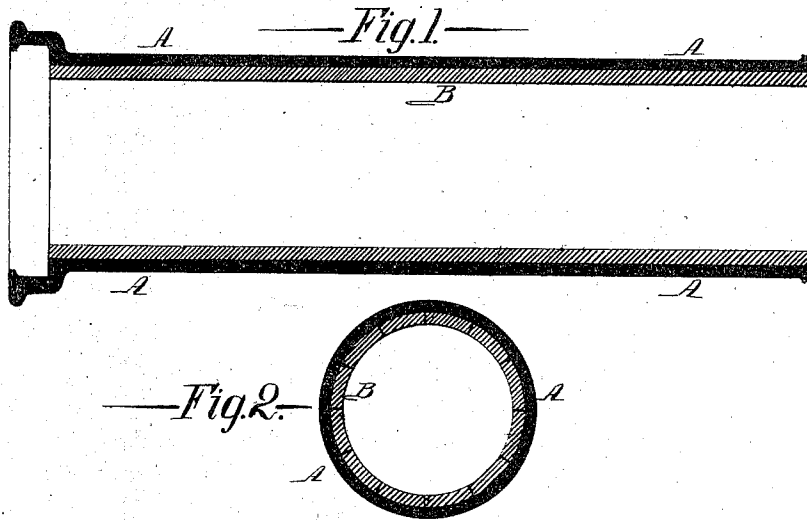


J. F. Ward,

Water Pipe.

No. 107,838.

Patented Sep. 27. 1870.



Witnesses { *Mr. A. Steel.*
John Parker

John F. Ward.
by his atty.
Strover and son

United States Patent Office.

JOHN F. WARD, OF JERSEY CITY, NEW JERSEY.

Letters Patent No. 107,838, dated September 27, 1870.

IMPROVEMENT IN WATER-PIPES.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN F. WARD, of Jersey City, county of Hudson, State of New Jersey, have invented an Attachment to Water-Pipes, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of a water-pipe, having a compressible lining or core of wood, gum, or other suitable material, which will yield, and permit the expansion of the contained water, should the latter become frozen, and thus prevent the bursting of the pipe.

Description of the Accompanying Drawing.

Figure 1 is a sectional view of a length of cast-iron water-pipe, lined with compressible material in accordance with my invention.

Figure 2, a transverse section of the same.

General Description.

The pipe A, represented in figs. 1 and 2, is a section of ordinary cast-iron water-main, and has a lining, B, of wood, gum, or other compressible material, which will yield and permit the free expansion of the contained water, should the latter become frozen, and thus prevent the bursting of the pipe.

When the water becomes thawed in the pipe, the material employed as a lining should be of sufficiently elastic a nature to again assume its original proportions.

If wood be employed, and I prefer to use this material for large pipes on account of its cheapness, it may be fitted to the interior of the pipe in narrow slats, adapted to each other in the same manner as the staves of a barrel, or a tubular length of wood in one piece, may be forced into each section of pipe, or short tubular pieces may be driven into the pipe from its opposite ends.

Claim.

As a new article of manufacture, a wood-lined metal pipe, as set forth.

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

JOHN F. WARD.

Witnesses:

CORNELIUS VAN HORNE,
HENRY TRAPHAGEN.