

W. F. MOULTON.
Water-Tubing.

No. 222,935.

Patented Dec. 23, 1879.

Fig. 1.

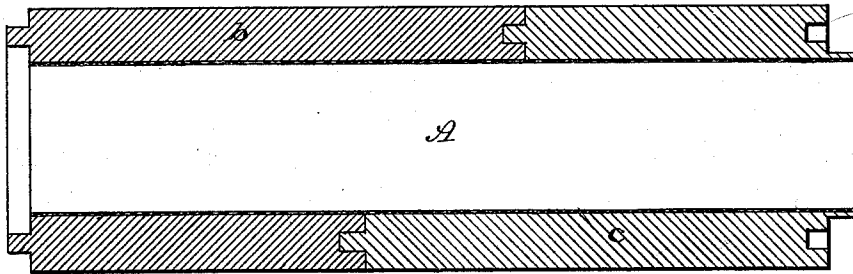


Fig. 2.

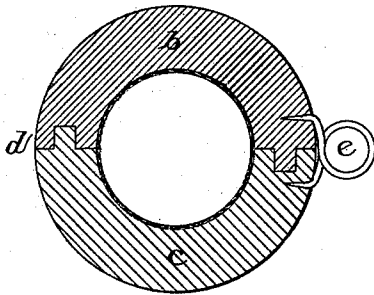


Fig. 3.

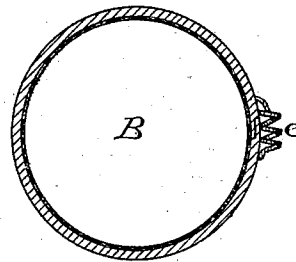
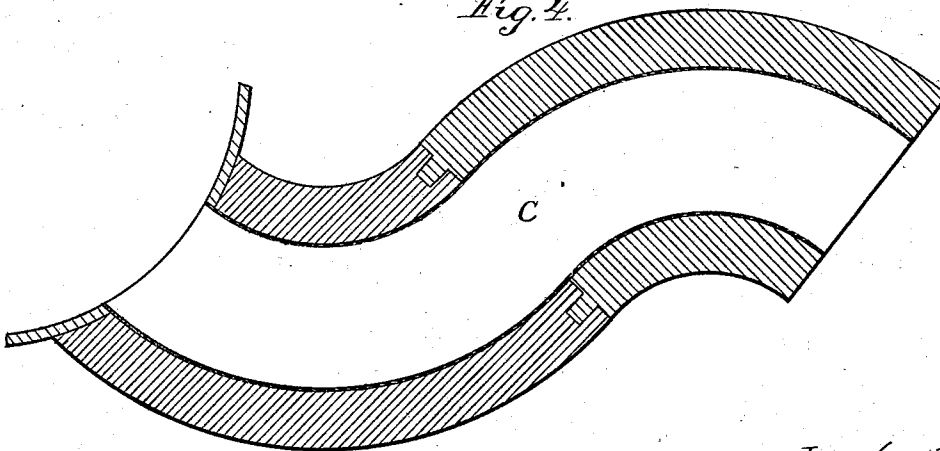


Fig. 4.



Witnesses:

J. W. Garner
W. L. Humes

Inventor:

W. F. Moulton,
per
C. E. Allen, atty

UNITED STATES PATENT OFFICE.

WILLIAM F. MOULTON, OF JERICHO, VERMONT.

IMPROVEMENT IN WATER-TUBING.

Specification forming part of Letters Patent No. **222,935**, dated December 23, 1879; application filed May 17, 1879.

To all whom it may concern:

Be it known that I, WILLIAM F. MOULTON, of Jericho, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Water-Tubing made of a non-conductor material; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The invention relates to an improvement in water-conductors for buildings. It is constructed of a material which shall be a non-conductor of heat and cold, and in such a manner that while it is made to yield without injury to the expansion caused by the congealing of water within it, it readily assumes its original perfect form as soon as this expansive force is removed.

One of the principal modes heretofore adopted to overcome the destructive results of this forcible expansion is to construct the conductor of metal, made water-tight, the requisite elasticity being obtained by corrugating its sides—a plan which is only effectual as long as the capacity of the pipe is not overtaxed. Should this point, however, be reached, the injury occasioned can only be repaired at considerable inconvenience and expense. If wood is used the edges are grooved and tongued to fit together, one side being fastened by cross-bradding, while a spiral-spring clamp is employed to hold or bind the loose joint on the opposite side. If made of paper, I prefer to construct it of one piece, the overlapping edges on the side being held by the spiral-spring clamps.

The interior of the conductor, of whatever material it may be made, I coat with a water-proof composition, while the exterior is kept well painted, to render it impervious to dampness and effectually protect it from the destructive effect of the elements.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figures 1 and 4 are longitudinal sections of

pipes of different shapes. Figs. 2 and 3 are vertical cross-sections of two pipes, showing different forms of springs.

A represents a section of my wooden conductor, the ends as well as the edges of the sides being grooved and tongued, so as to closely fit into the sections corresponding, so that, when complete, a uniform smooth and water-tight passage is made for the water throughout its entire length. The respective edges of the two halves *b* and *c* of the conductor are correspondingly grooved and tongued, so as to perfectly fit each other. Their edges on the side *d* are fastened together by cross-bradding, and their edges at the opposite or loose joint are held together by the spiral-spring clamp *e*. By this arrangement I secure along the side *d* a permanent fastening, the tendency of which is to spring together the edges of the opposite side, while the effect of the spiral-spring clamp *e* is to constantly provide for whatever expansion of the parts the congealing of the water within it demands without injury to the conductor, and as the ice is removed the force of the combined spring on each side serves to immediately bring the edges back into place.

The several sections are perfectly joined together longitudinally by tonguing and grooving their respective ends, their joints being broken.

B is a section of my conductor when made of paper-pulp or composition. Being composed or cast more conveniently in one piece, the necessity of the cross-bradding on one side is obviated. The two edges on the side opposite are made to overlap each other, and are held together by the spiral-spring clamp *e*. To insure a smooth as well as tight connection between the sections I rabbet their corresponding ends.

C is a section of the elbow, the corners or angles of which are made of a curve, to avoid the tendency to clog, to which all elbows of an angular form are more or less liable. They are constructed of the same design as the main conductor.

The interior of the several sections of the conductor is thoroughly coated with a water-

proof composition, which forms a perfectly hard, smooth, and water-tight surface for the passage of the water and to prevent decay.

Thus constructed my invention constitutes a water-conductor which is practically cheap, neat, substantial and reliable, and which meets all the requirements of sudden or excessive changes in temperature and the demands of the most elaborate architecture.

What I claim, and desire to secure by Letters Patent, is—

1. A water-conductor made in halves longitudinally, and having one edge of each half

secured rigidly together, and the other edges held by means of a spring, substantially as shown.

2. A water-conductor having two of its edges united together by means of a spring, *e*, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM F. MOULTON.

Witnesses:

CHARLES E. ALLEN,
FREDCK. L. PERKINS.