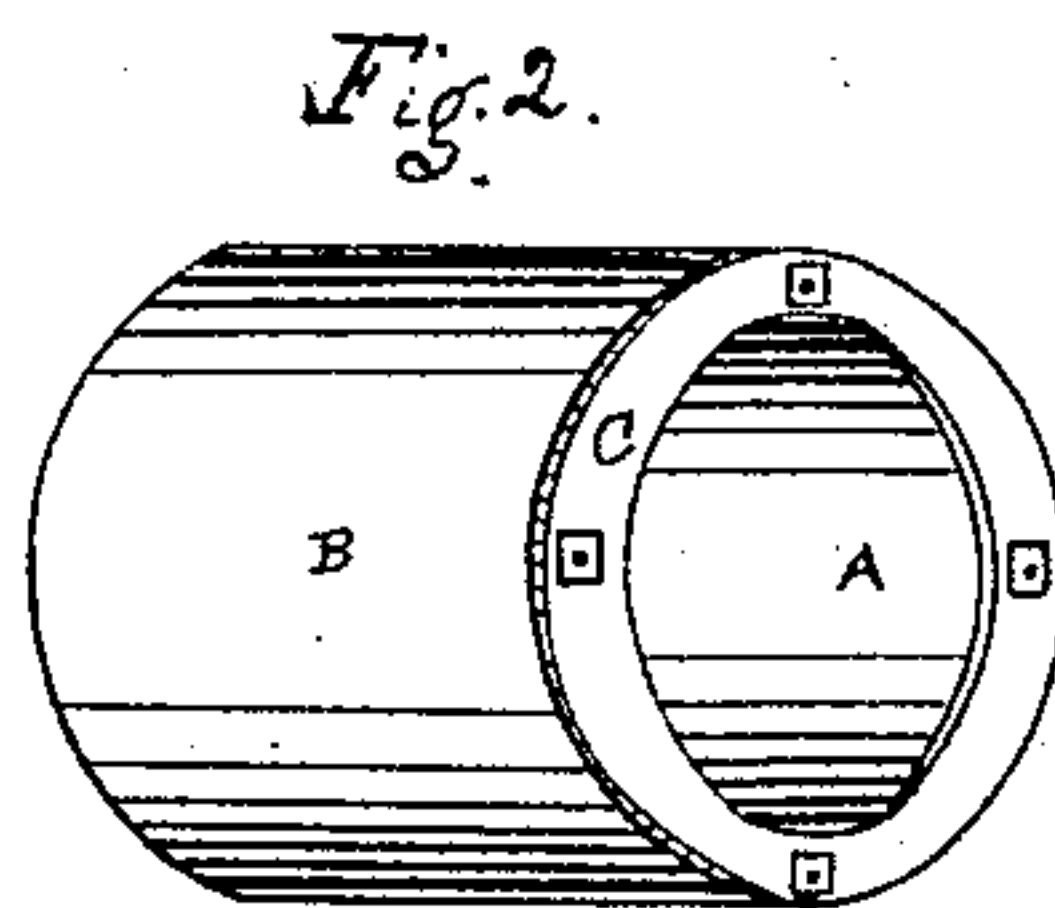
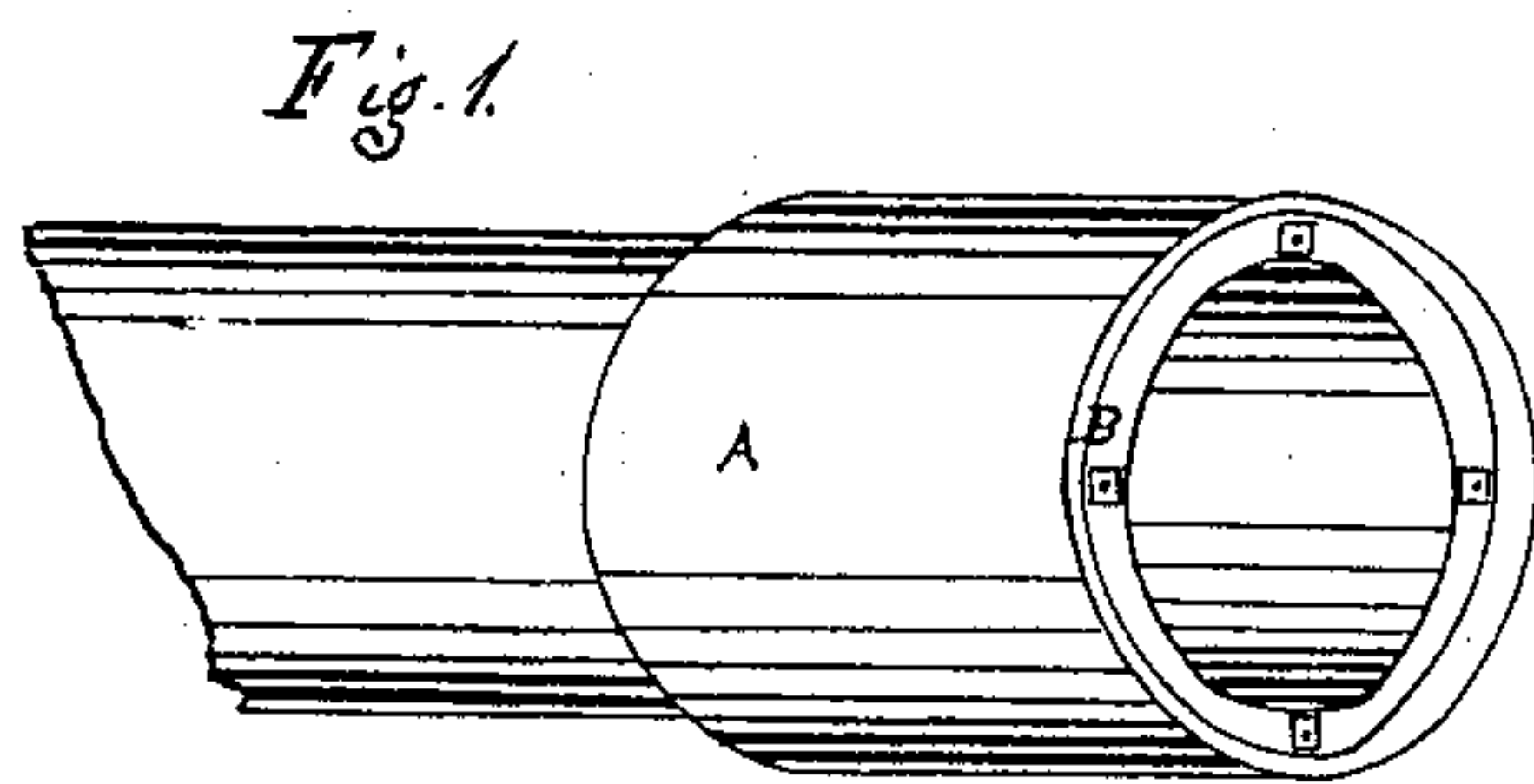


*R. H. S. Thompson.*  
*Preventing Water-Pipes from Bursting.*  
*Nº 75315*      *Patented Mar. 10, 1868*



*Witnesses*

*M. J. Keeler*  
*Geo. S. S. S.*

*Inventor*

*R. H. S. Thompson*  
H

# United States Patent Office.

R. H. SMITH THOMPSON, OF GEORGETOWN, DISTRICT OF COLUMBIA.

*Letters Patent No. 75,315, dated March 10, 1868.*

## IMPROVEMENT IN DEVICES FOR PREVENTING WATER-PIPES FROM BURSTING.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, R. H. SMITH THOMPSON, of Georgetown, in the District of Columbia, have invented a new and improved Mode of Preventing Water-Pipes from Bursting by Freezing; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing a water-pipe at given intervals with a shoulder, giving increased diameter to the pipe. In the receptacle so formed is to be placed a double cylinder, with an air-cushion between the interior cylinder, to be of flexible material, which will give as the pressure increases, and furnish the extra space required by the expansion of the freezing water.

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

I construct my water-pipe of any of the known forms, but increasing the diameter at the end of each section of pipe, as shown at A, fig. 1, in order that it may receive the double cylinder B. This double cylinder I in general make in the following manner. I construct a cylinder of metal, of a diameter nearly equal to the increased diameter at the end of the pipe. Within this I place another cylinder of elastic material, as shown at A, fig. 2. These two cylinders I connect together by a ring, C, fig. 2, at each end of the cylinders, which is bolted or screwed to an inward-projecting flange of the metal cylinder, between which flange and the ring the ends of the elastic cylinder A, fig. 2, are first drawn, being thus clamped securely to the outer metallic cylinder, so as to leave an air-cushion between them. The dimensions of this ring I make such that the diameter of the interior elastic cylinder may be the same as that of the pipe, so as not to interfere with the flow of water through the pipe. When the water begins to freeze, it expands, causing increased pressure outward. This increased pressure is relieved by the stretching of the elastic cylinder A, fig. 2, thus furnishing the extra space required, and preventing the bursting of the pipe.

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

The arrangement at the joints of water-pipes of two concentric cylinders, the interior cylinder to be of elastic material, and thus form an air-cushion, and to operate substantially as described.

R. H. SMITH THOMPSON.

Witnesses:

JNO. S. KIDWELL,

GEO. I. LYELL.