W. D. Richardson,

Pipe Coupling,

No. 80,667, Patented Aug. 4, 1868.

Fig: 1.

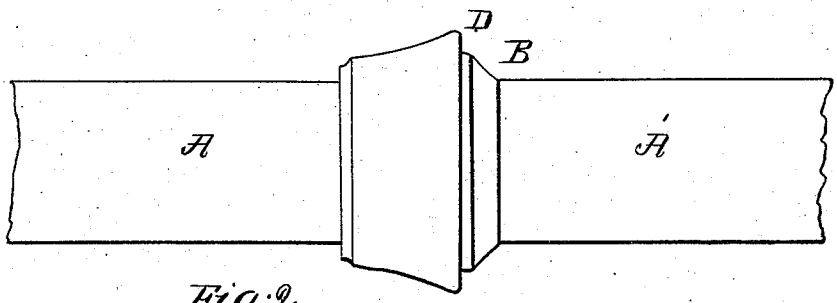


Fig: 2.

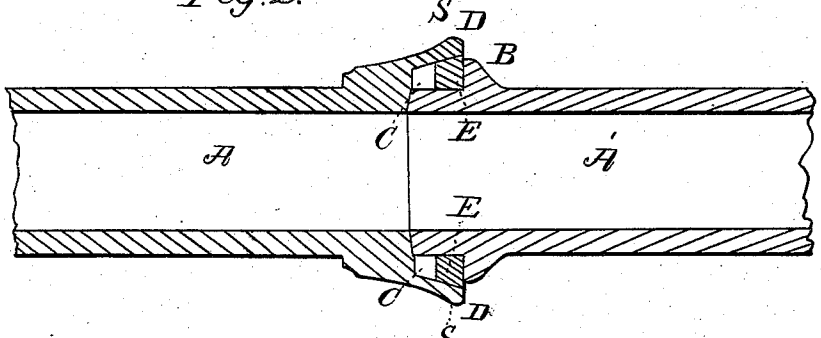
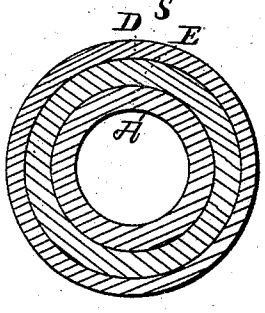


Fig: 3.



Witnesses:

C. C. Livings

W. C. Dey.

Inventor:

W. D. Richardson

by his attorney F. P. Stetson

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United States Patent Office.

WILLIAM D. RICHARDSON, OF SPRINGFIELD, ILLINOIS.

Letters Patent No. 80,667, *dated August* 4, 1868.

IMPROVEMENT IN LEAD-PIPE CONNECTIONS.

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, WILLIAM D. RICHARDSON, of Springfield, in the county of Sangamon, in the State of Illinois, have invented certain new and useful Improvements in Joints for Pipes; and I do hereby declare that the following is a full and exact description thereof.

I will first describe what I consider the best means of carrying out my invention, and will afterwards designate the point which I believe to be new therein.

The accompanying drawings form a part of this specification.

Figure 1 is a side view.

Figure 2 is a central section.

Figure 3 is a cross-section on the line S S, in fig. 2.

Similar letters of reference indicate like parts in all the figures.

A A′ are portions of pipes, B is a flange on the male part, and C is a corresponding flange, having a lip, D, which projects as represented, and forms the female part or end of one of the lengths of pipe. The lip D is flared a little, as represented.

E is a ring, of lead, cast or otherwise formed, of such size as to slip readily over the end of the male part. Its periphery is tapered to correspond to the interior of the lip D of the female part, and its greatest diameter is a little greater than that of the flange B.

These rings may be made of any desired thickness or length, but I have represented about the length which I prefer for general practice.

The joint is made by crowding the two sections of the pipe A A′ together with great force, by means of a hydraulic press, or other efficient means, the lead ring having been previously introduced in the manner represented. The parts are so proportioned that before the iron comes firmly together, the lead will be compressed tightly within the interior of the part E, and will have been thereby compressed by reason of the plastic character of cold lead, and made to assume a smaller diameter than that in which it was originally formed.

The iron may be left in its naturally rough state, and, by reason of the great force applied, the lead will be moulded very accurately to all the inequalities. A tight and very permanent joint is formed by this means, without the trouble of melting lead at the spot, and without risk of flowing quantities of lead into the interior of the pipe.

I make the lead ring E a little shorter than the space in the joint, so that there remains a cavity, C′, extending around the joint at the extreme end of the part A′. This allows the pipes to be bent or set a little out of line, either at the time they are laid or by subsequent settling or other disturbance, without occasioning any fracture or leakage. The flange B, on the male part A′, serves to press the packing E forcibly home, and also to prevent its starting out in the least after the joint is made.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

I claim the improved pipe-joint herein described, the lead E being compressed within the flaring lip D, by compressing the lengths of pipe forcibly together, and a space, C′, being left around the extreme end of the male part, to allow the parts to be set at a slight angle without difficulty, all substantially as and for the purposes herein set forth.

WILLIAM D. RICHARDSON.

Witnesses:

L. E. RICHARDSON,

F. RICHARDSON.