No. 762,929. PATENTED JUNE 21, 1904.

J. A. McCULLOCH.

PIPE JOINT.

APPLICATION FILED NOV. 7, 1902.

NO MODEL.

Fig. 1

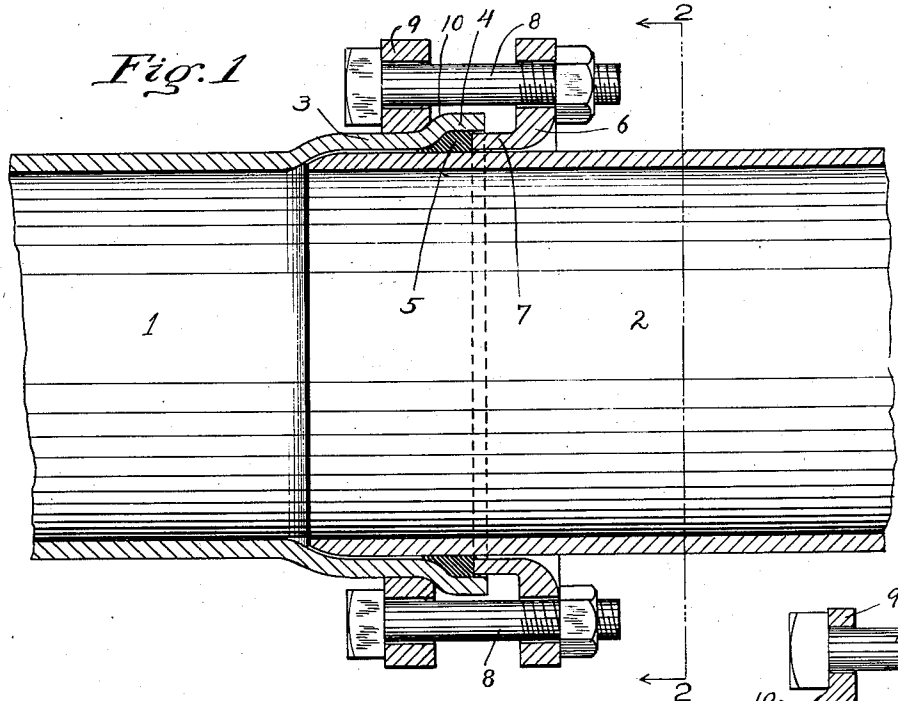
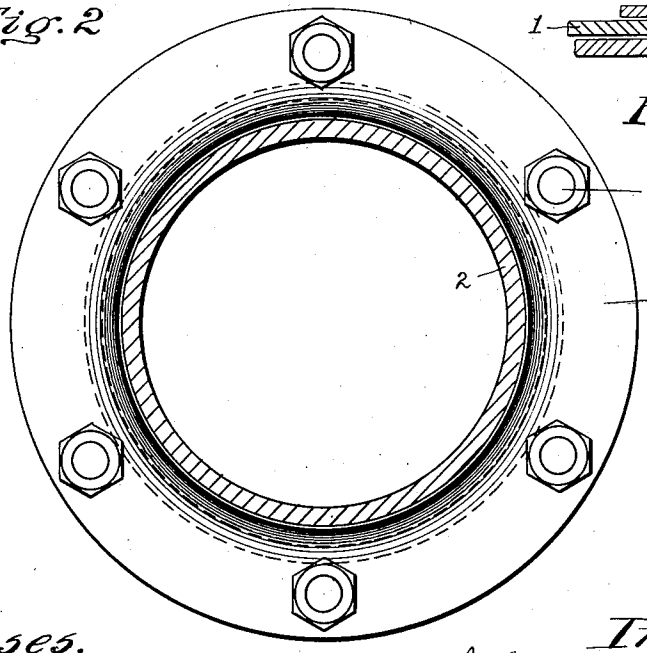


Fig. 2



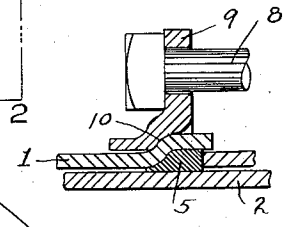


Fig. 3

Witnesses.
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No. 762,929. Patented June 21, 1904.

UNITED STATES PATENT OFFICE.

JOHN A. McCULLOCH, OF McKEESPORT, PENNSYLVANIA, ASSIGNOR TO NATIONAL TUBE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

PIPE-JOINT.

SPECIFICATION forming part of Letters Patent No. 762,929, dated June 21, 1904.

Application filed November 7, 1902. Serial No. 130,463. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. McCULLOCH, a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pipe-Joints; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to pipe-joints, and more especially to joints of large-sized mains constructed of wrought metal; and its object is to produce a joint for pipes of this character, which is simple in construction, cheap to put in place, which can be readily disconnected, and which dispenses with the usual reinforcing-ring used on wrought-metal mains.

The usual manner of forming a joint between the sections of wrought-metal mains is to provide one of said sections at its end with an enlargement or "bowl," as it is called, into which the plain end of an adjacent section fits, and then driving lead or other suitable calking material in the bowl around the plain pipe. In order to reinforce the bowl and prevent the same from splitting, it has been found necessary to provide it with a suitable reinforcing-ring, which usually is shrunk thereupon. The application of this ring to the bowl adds materially to the cost of the pipe.

The object of my invention is to provide a joint for wrought-metal pipes and means wherein the reinforcing-ring around the bowl can be dispensed with or, more strictly speaking, making one of the parts of the pipe-joint take the place of this reinforcing-ring.

In the accompanying drawings, Figure 1 is a longitudinal section through my improved joint. Fig. 2 is a transverse section on the line 2 2, Fig. 1; and Fig. 3 is a detail of a modification.

The two sections of the pipe or main are shown at 1 and 2, respectively. The latter is or may be plain or of the same diameter to its end, while the former is enlarged at its end to form the bowl 3, into which the end of the section 2 fits. The bowl 3 is further enlarged at its end to form an interior annular chamber 4, surrounding the pipe-section 2, and in which a ring or mass of packing material 5, which is compressible, is placed. This packing material is compressed and held in place by a follower-ring 6, which encircles the pipe-section 2 and preferably is provided with the annular projections 7, which enters the chamber 4 and presses the packing material 5 firmly into the space between the enlargement of the bowl and the pipe-section 2.

The follower-ring 6 may be forced toward the bowl 3 by various means. I have shown for this purpose a series of bolts 8, which pass through holes in the outwardly-projecting flange of the ring 6 and through corresponding holes in a clamping-ring 9, which encircles the bowl 3. This clamping-ring 9 rests against and preferably is fashioned to fit and reinforce the shoulder 10, which is formed by the expansion of the outer end of the bowl to form the chamber 4. By merely tightening the nuts on the bolts 8 the follower-ring 6 will be drawn toward the bowl to firmly compress the packing material 5. The ring 9, it will be observed, encircles the bowl 3 near its outer end and approximately over the point where the pressure of the packing material 5 is greatest. As a consequence, it acts also as a reinforcing-ring for the bowl to such an extent that the usual reinforcing-ring, which is shrunk around the end of the bowl to keep the same from splitting, can be dispensed with.

For certain uses when it is desired to compress the packing very severely the clamping-ring is fashioned to conform to the exterior of the bowl for a greater distance than its thickness, as by forming a collar 9^a, Fig. 3, on its inner edge, which collar has its inner surface shaped to conform to the contour of the bowl.

It will be observed that my improved joint is simple in construction and can be readily put in place and again detached. The clamping-ring 9 takes the place of the ordinary reinforcing-ring employed with wrought-iron or steel mains, so that the pipe-sections can be more cheaply manufactured than with the old form of joint, it merely being necessary to

expand one end of each pipe-section to form the bowl 3 and chamber 4.

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

1. In a pipe-joint, the combination of a pipe-section enlarged at its end to form a bowl, a plain-ended pipe fitting in said bowl, said bowl being enlarged at its outer end to provide an inner annular recess and an external beveled shoulder, a packing of compressible material in said annular recess and surrounding the plain-ended pipe, a clamping-ring encircling the bowl and engaging the external beveled shoulder and being of a size to extend opposite the packing in the recess, a follower-ring encircling the plain-ended pipe and bearing against the packing, and means for connecting said follower-ring to the clamping-ring.

2. In a pipe-joint, the combination of a pipe-section enlarged at its end to form a bowl, a plain-ended pipe fitting in said bowl, said bowl being enlarged at its outer end to provide an internal and an external beveled shoulder, a packing of compressible material in the enlarged end of said bowl and bearing against the internally-beveled shoulder, a clamping-ring encircling the bowl and engaging the external beveled shoulder, said clamping-ring being beveled to conform to said shoulder and of a size to extend opposite the packing in the enlarged end of the bowl, a follower-ring encircling the plain-ended pipe and bearing against the packing, and means for connecting said follower-ring to the clamping-ring.

3. In a pipe-joint, the combination of a pipe end having two enlargements, one for the insertion of the next pipe end and the other enlargement for the reception of the packing, the second enlargement forming an internally and externally beveled shoulder; a packing arranged in the recess formed by the second enlargement against the internally-beveled shoulder; a gland arranged in engagement with the packing, the end of the gland in engagement with the packing being of less diameter than the packing-recess; a clamping-ring arranged on the externally-beveled shoulder, said clamping-ring being provided with a bevel to conform to the beveled shoulder of the enlargement, and of a size to bring the said clamping-ring opposite the body of the packing in the recess; and means connecting the gland and clamping-ring.

4. In a pipe-joint, the combination of a wrought pipe end having two enlargements, one for the insertion of the next pipe end, and the other enlargement for the reception of the packing, the second enlargement forming an externally and internally beveled shoulder; the said enlargements being of a thickness to comprise the amount of metal in the length of the pipe equal to the enlargements; a packing arranged in the recess formed by the second enlargement against the internally-beveled shoulder; a gland arranged in engagement with the packing, the end of the gland in engagement with the packing being of less diameter than the packing-recess; a clamping-ring arranged on the externally-beveled shoulder, said clamping-ring being provided with a bevel to conform to the beveled shoulder of the enlargement, and of a size to bring the said clamping-ring opposite the body of the packing in the recess; and means connecting the gland and clamping-ring.

In testimony whereof I, the said JOHN A. MCCULLOCH, have hereunto set my hand.

JOHN A. MCCULLOCH.

Witnesses:
JOHN A. CAUGHEY,
O. BISTRUP.