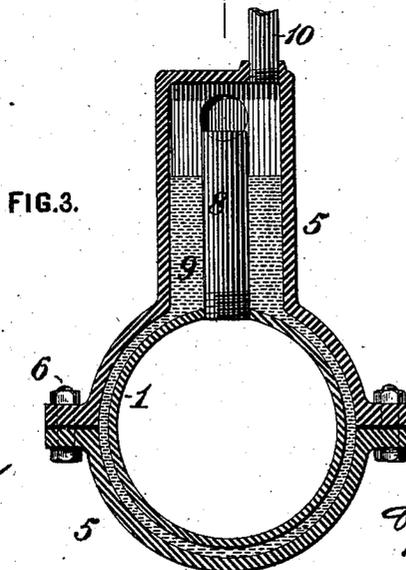
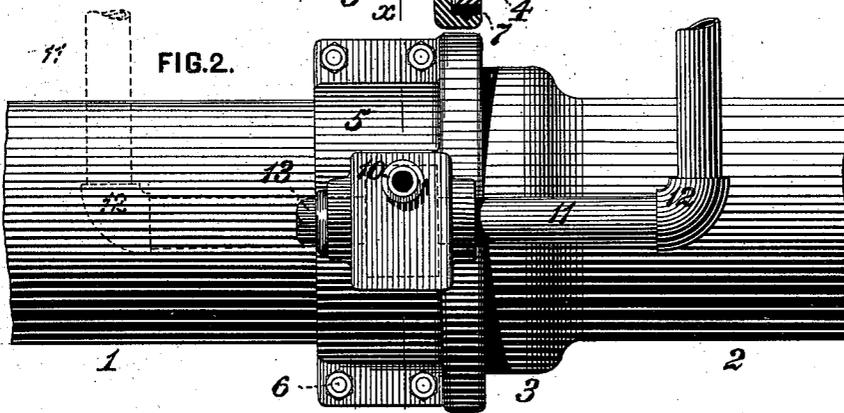
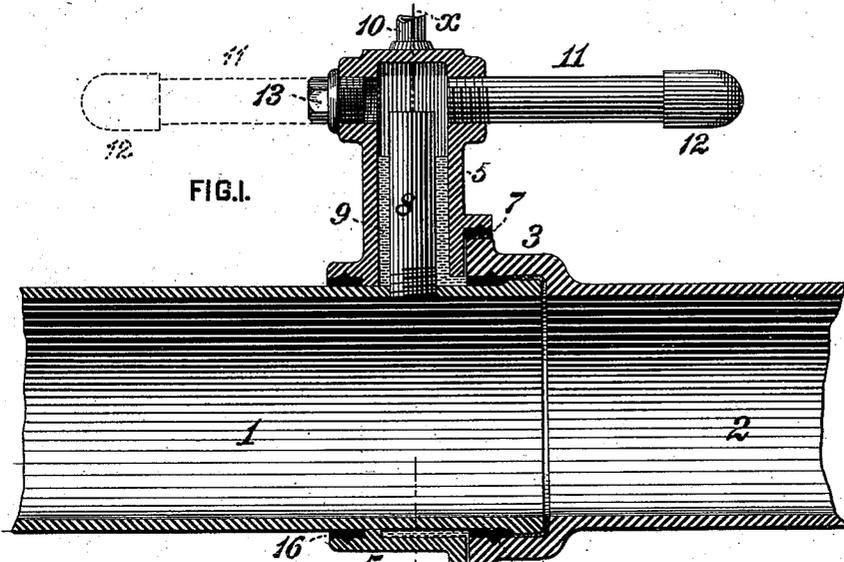


(No Model.)

G. WESTINGHOUSE, Jr.
SERVICE PIPE CONNECTION FOR GAS MAINS.

No. 400,532.

Patented Apr. 2, 1889.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE WESTINGHOUSE, JR., OF PITTSBURG, PENNSYLVANIA.

SERVICE-PIPE CONNECTION FOR GAS-MAINS.

SPECIFICATION forming part of Letters Patent No. 400,532, dated April 2, 1889.

Application filed September 13 1888. Serial No. 285,334. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WESTINGHOUSE, Jr., a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Service-Pipe Connections for Gas-Mains, of which improvement the following is a specification.

My present invention is an improvement upon that for which Letters Patent of the United States No. 329,405 were granted and issued to Junius A. McCormick, under date of October 27, 1885; and its object is to admit of the convenient attachment of service-pipes for the delivery of gas from a main without involving the necessity of perforating the main therefor, or the liability of injury to the service-pipes or their connections by subsequent variations of level in the main.

To this end my invention, generally stated, consists in the combination, with a pipe-joint, of an inclosing-casing adapted to receive a liquid packing, a supply-pipe leading from the main into said casing, and a service pipe or pipes leading out of said casing. The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a longitudinal central section through a joint of a gas-main embodying my invention; Fig. 2, a plan or top view of the same, and Fig. 3 a vertical transverse section at the line *xx* of Fig. 1.

The joint illustrated is of the bowl-and-spigot type, the beaded end of one pipe-section, 1, entering a bowl or enlargement, 3, on the adjacent end of the next section, 2, and suitable packing, 4, being placed around the section 1 within the bowl. The joint is inclosed by a casing, 5, made in two sections, connected by bolts 6 and forming an annular chamber around the pipe-section 1, and a vertical chamber above and communicating with said annular chamber, the casing forming a receptacle for the reception of a packing of oil, tar, paraffine, or other suitable liquid, which receptacle is closed around the main at one end by the packing 4 of the bowl, and at the other by the wall of the casing 5, the tightness of the joint between the same and the pipe-section 1 at this point being insured by

end packing 16. The joint between the bowl 3 and the opposite end of the casing is made tight by packing 7. A gas-supply pipe, 8, of diameter sufficient to afford the capacity requisite to supply the service-pipes desired leads from the pipe-section 1 to the upper portion of the casing 5, which is filled with liquid packing 9 to a point a short distance below the upper end of the pipe 8, the liquid being supplied to the interior of the casing through a pipe, 10, connected to an opening in the upper end of the casing and closed by a tight removable plug. There being an equilibrium of pressure in the main and in the interior of the casing, the hydraulic seal formed by the liquid packing of the latter will effectually prevent leakage of gas from the main.

In order to admit of the delivery of gas from the main without direct connection thereto or forming openings and joints therein for the purpose, as well as to obviate the objections heretofore experienced by accidental changes of level in the main, as by settling or otherwise, I form an opening in one or both of the end walls of the casing 5 above the level at which the liquid packing thereof is maintained, and connect a service-pipe, 11, to each of said openings, which are preferably threaded to engage corresponding external screw-threads on the service-pipes 11. The latter may extend in line with the main for any desired distance, and through elbows 12 are led off laterally to the points of delivery of the gas. Either or both of the delivery-pipe openings in the casing are closed by temporary plugs 13 when the main is laid and the joint made, if it is not required to make a service-pipe connection or connections at that time.

It will be seen that under the above construction the service-pipes can accommodate themselves to variations in level of the main which may from time to time occur, without liability to breakage or strain or the creation of leakage by reason of the range of adjustment admitted by their screw-connections and by their own elasticity, as also that a material advantage is attained in obviating the necessity of boring the main, as heretofore, for the attachment of service-pipes.

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

1. The combination of two pipe-sections

forming a joint, a casing closed at its ends
around the pipe-sections adjacent to the joint
and forming an annular chamber inclosing
the same, and having a communicating ver-
tical chamber provided with one or more end
openings, and a gas-supply pipe wholly within
said casing and leading directly from the ad-
jacent pipe-section into the upper portion of
said vertical chamber, substantially as set
forth.

2. The combination of two pipe-sections
forming a joint, an inclosing-casing, a liquid
packing or hydraulic seal inclosed in the cas-
ing, a gas-supply pipe wholly within said cas-
ing and leading from one of the pipe-sections
into the casing above the level of the packing,
and a service-pipe leading out of the casing
above the level of the packing, substantially
as set forth.

3. The combination of two pipe-sections
forming a joint, a casing inclosing the joint and
having a vertical extension, said casing being
adapted to contain liquid packing by being
closed at its ends around the pipe-sections ad-
jacent to the joint, a gas-supply pipe leading
directly from one of the pipe-sections into the
upper portion of said vertical extension, and
a service pipe or pipes each connected to an
opening in the upper portion of said vertical
extension in line with the pipe-sections, sub-
stantially as set forth.

In testimony whereof I have hereunto set my
hand.

GEO. WESTINGHOUSE, JR.

Witnesses:

J. SNOWDEN BELL,

R. H. WHITTLESEY.