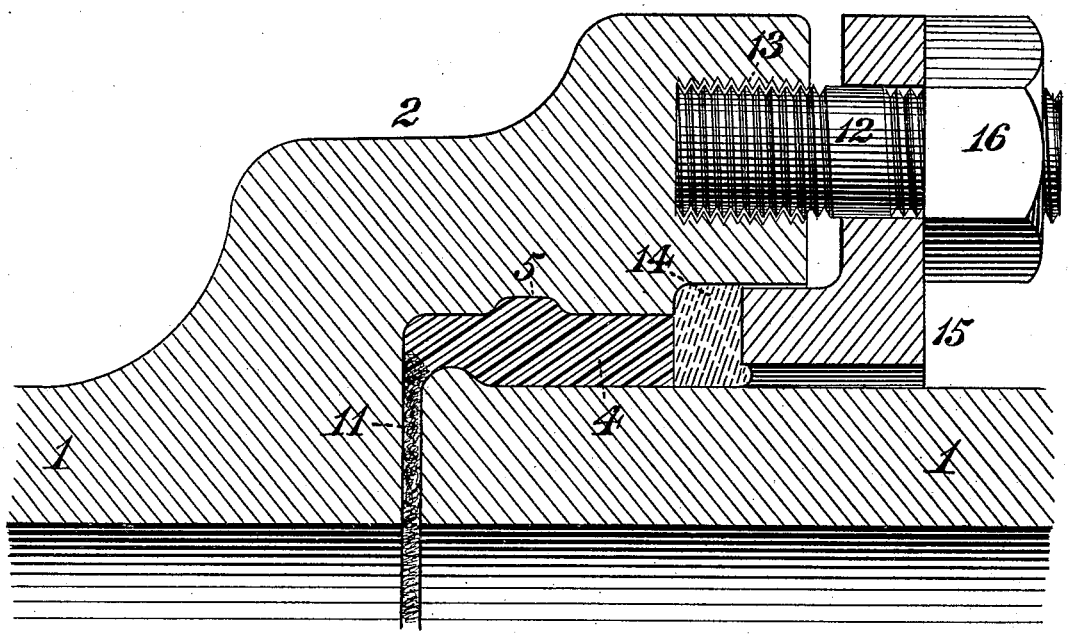
(No Model.) 2 Sheets—Sheet 1.

# G. WESTINGHOUSE, Jr.

## PIPE JOINT FOR GAS MAINS.

No. 342,659. Patented May 25, 1886.

Fig. 1.




Witnesses.
J. Snowden Bell.
C. M. Clarke.

Inventor George Westinghouse Jr
By Attorney George H. Christy

(No Model.) 2 Sheets—Sheet 2.

# G. WESTINGHOUSE, Jr.

## PIPE JOINT FOR GAS MAINS.

No. 342,659. Patented May 25, 1886.

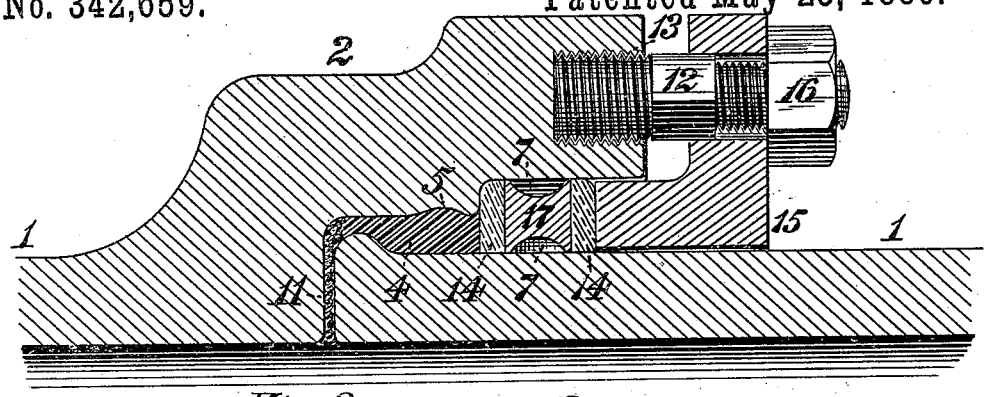



Fig. 2.

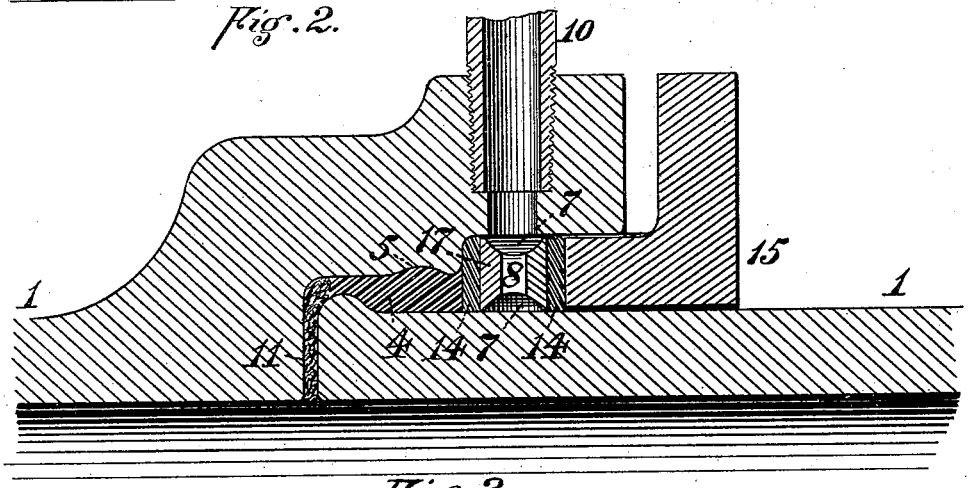



Fig. 3.

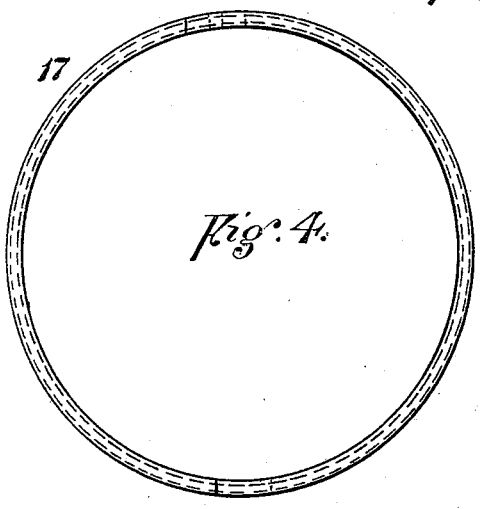



Fig. 4.

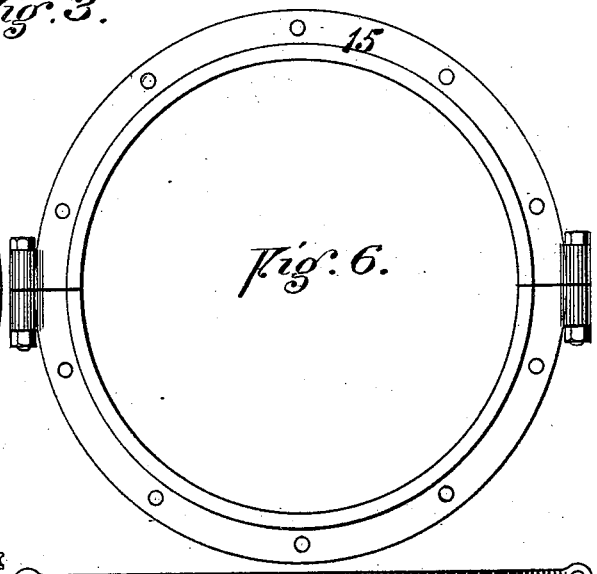



Fig. 6.

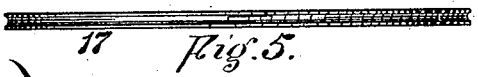



Fig. 5.


Fig. 7.

Witnesses,
J. Thornley Pell.
E. M. Clarke

Inventor George Westinghouse Jr
By Attorney George H. Christy

# UNITED STATES PATENT OFFICE.

GEORGE WESTINGHOUSE, JR., OF PITTSBURG, PENNSYLVANIA.

## PIPE-JOINT FOR GAS-MAINS.

SPECIFICATION forming part of Letters Patent No. 342,659, dated May 25, 1886.

Application filed March 1, 1886. Serial No. 193,557. (No model.)

*To all whom it may concern:*

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

In the accompanying drawings, which make part of this specification, Figure 1 is a longitudinal half-section through a pipe-joint embodying my invention; Figs. 2 and 3, similar sections illustrating the same as provided with a leakage-chamber; Figs. 4 and 5, end and face views, respectively, of the leakage-chamber ring, and Figs. 6 and 7 similar views of the follower.

My invention relates to pipe-joints of the bowl-and-spigot type, and its object is to provide effective means for closely compressing suitable packing between the connected pipe-sections.

To this end my invention, generally stated, consists in a pipe-section having a series of sheet-metal female screws cast into its bowl for the reception of follower-bolts, and in the combination of a pipe-section having a bowl end, a spigot or plain-ended pipe-section fitting therein, a follower inclosing the spigot end and bearing against packing inserted in the bowl, and a series of clamping-bolts connecting the bowl and follower.

The improvement claimed is hereinafter fully set forth.

In the practice of my invention I provide the bowl or socket 2, of a cast-iron pipe-section, 1, with a series of clamping-bolts, 12, for the attachment of a follower or packing-clamp, to be presently described. The bolts 12 project longitudinally from the end face of the bowl 2, and are connected thereto by being engaged with female screws 13, of thin sheet metal, which are fixed in the bowl in the casting of the pipe-section, each of said screws forming the end of a core, which is properly set in the mold, the metal being cast around and adhering to them when solidified. The spigot end of the adjacent pipe-section 1 is inserted into the bowl in the usual manner, and hemp or other packing, 11, may be placed between its end face and the shoulder of the bowl, and a ring of lead or other soft-metal packing, 4, is run around the spigot end at and near the shoulder of the bowl and between a retaining recess or groove, 5, therein and the spigot end, and is properly calked on its outer face.

The lead packing may be conveniently applied by being poured on the spigot end of the pipe-section before being laid in the trench in which it is to be used.

The joint is completed and made tight by a packing-ring, 14, of rubber or other equivalent material, which is inserted in the bowl exterior to the soft-metal packing 4, and is compressed against the same by a follower or packing-clamp, 15, of annular form, which encircles the spigot end and fits within the bowl, so as to bear against the outer face of the packing-ring 14, against which it is brought to a tight bearing by nuts 16, engaging the clamping-bolts 12. It will be obvious that, if preferred, the bolts 12 may be provided with fixed heads in lieu of nuts, and engage the female-screws in the manner of tap-bolts.

The follower may be made either in a single piece or in two separate sections connected by bolts, as shown in Figs. 6 and 7, and in the former case its inside diameter must be sufficiently great to enable it to pass freely over the bead of the spigot end. The employment of the follower enables any desired degree of compression to be exerted upon the packing, and the follower being readily removable, the packing can be readily inserted, withdrawn, and renewed, as required.

Figs. 2 and 3 illustrate a construction in which the packing-ring 14 is divided into an inner and an outer section, separated by an interposed chambering-ring or distance-piece, 17, of metal, which may be grooved or recessed on its internal and external faces, so as to form chambers or receptacles 7 within the joint, which serve to receive and intercept any fluid tending to leak from the main, as in my Letters Patent Nos. 318,840, 319,364, 319,365, and 331,596, and in an application filed by me of even date herewith. The chambers 7, on the inside and outside of the ring, are connected by one or more openings, 8, and the outer chamber may be provided with a suitable vent or escape pipe, 10.

I claim herein as my invention—

1. The combination of a pipe-section having a bowl or socket end and a series of thin metal

female screws cast into the bowl and adapted to engage a series of clamping or follower bolts, substantially as set forth.

2. The combination of a pipe-section having a bowl or socket end, a plain or spigot ended pipe-section fitting into said bowl, a packing-ring of compressible material, and a chambering-ring or distance-piece, each fitting in the bowl around the spigot, a follower or packing clamp encircling the spigot end exterior to said packing-ring and chambering-ring, and a series of clamping-bolts connecting the follower to the bowl, substantially as set forth.

3. The combination of a pipe-section having a bowl or socket end, a plain or spigot ended pipe-section fitting into said bowl, a ring of soft-metal packing inclosing the spigot end adjacent to the shoulder of the bowl, a packing-ring of rubber or analogous compressible material fitting in the bowl exterior to the soft-metal packing, a follower or packing clamp bearing against said compressible packing-ring, and a series of clamping-bolts connecting the follower to the bowl, substantially as set forth.

In testimony whereof I have hereunto set my hand.

GEO. WESTINGHOUSE, JR.

Witnesses:
J. SNOWDEN BELL,
R. H. WHITTLESEY.