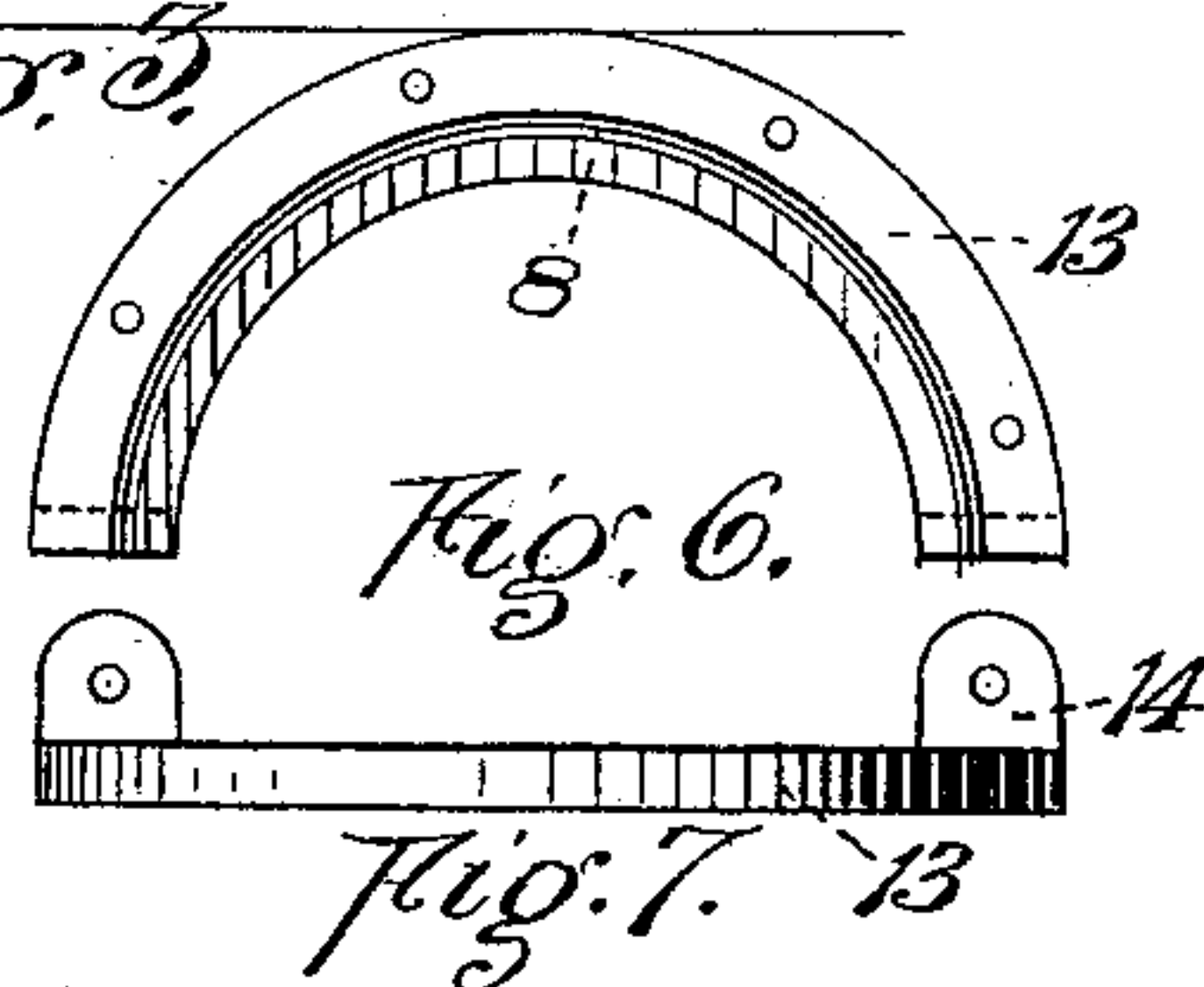
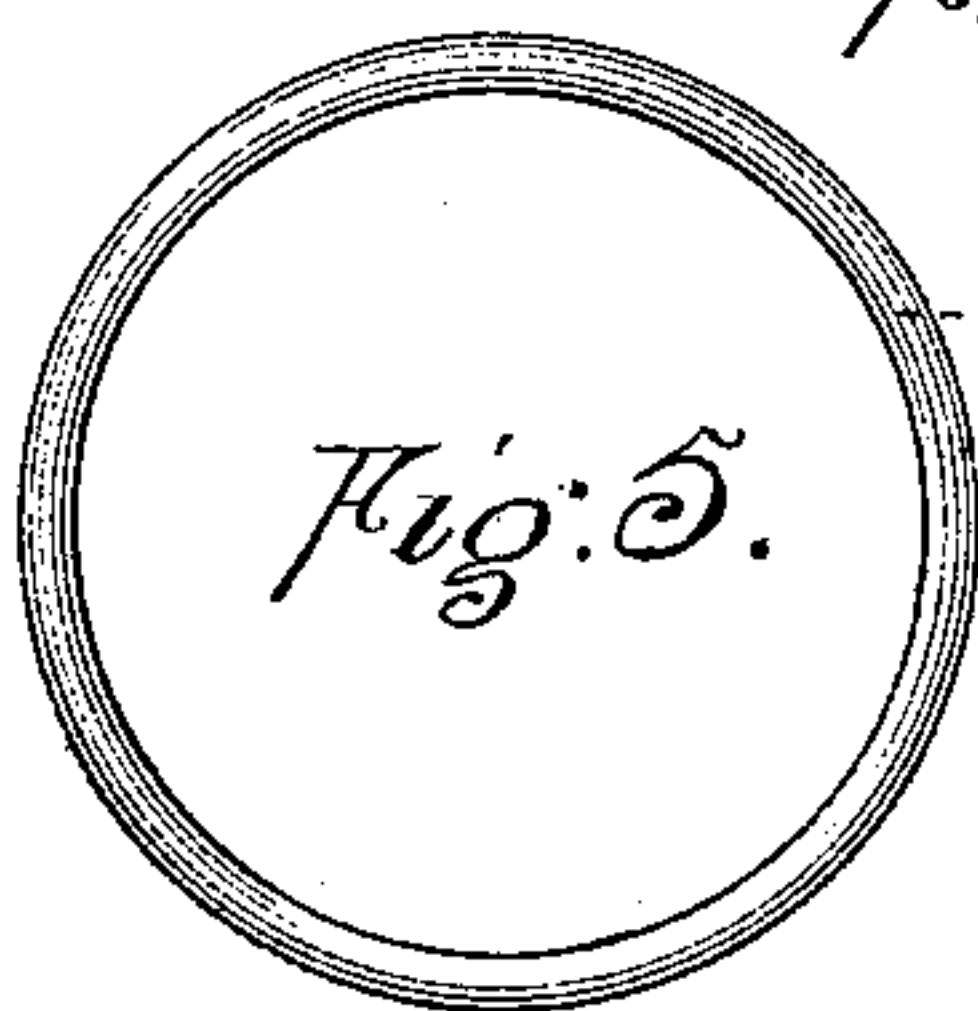
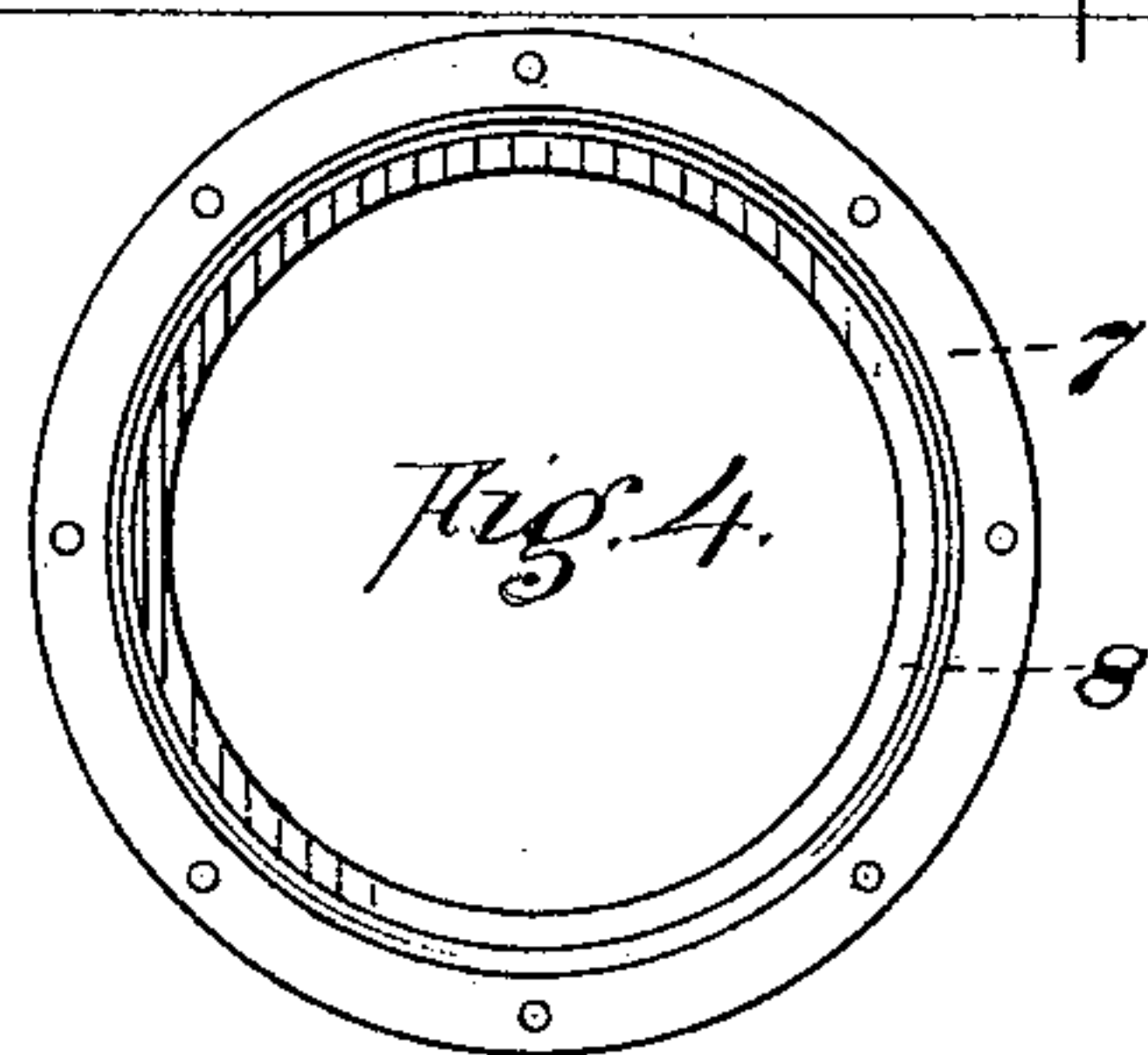
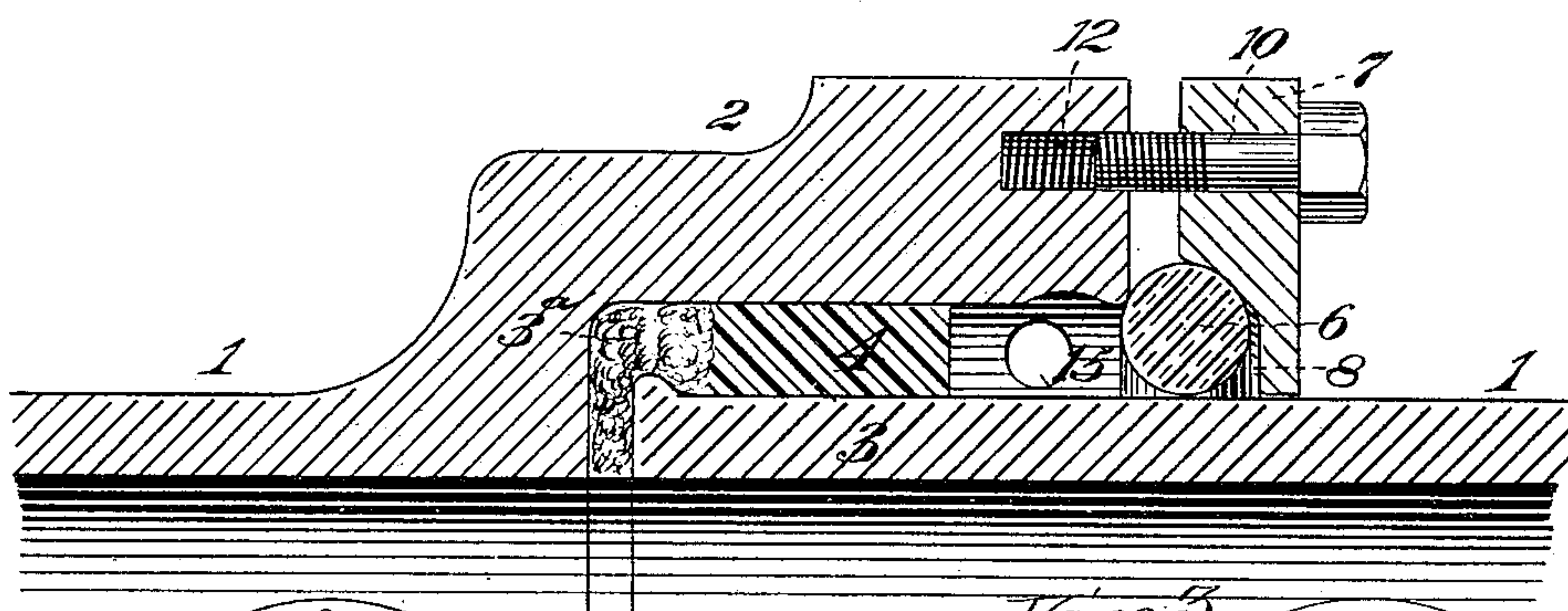
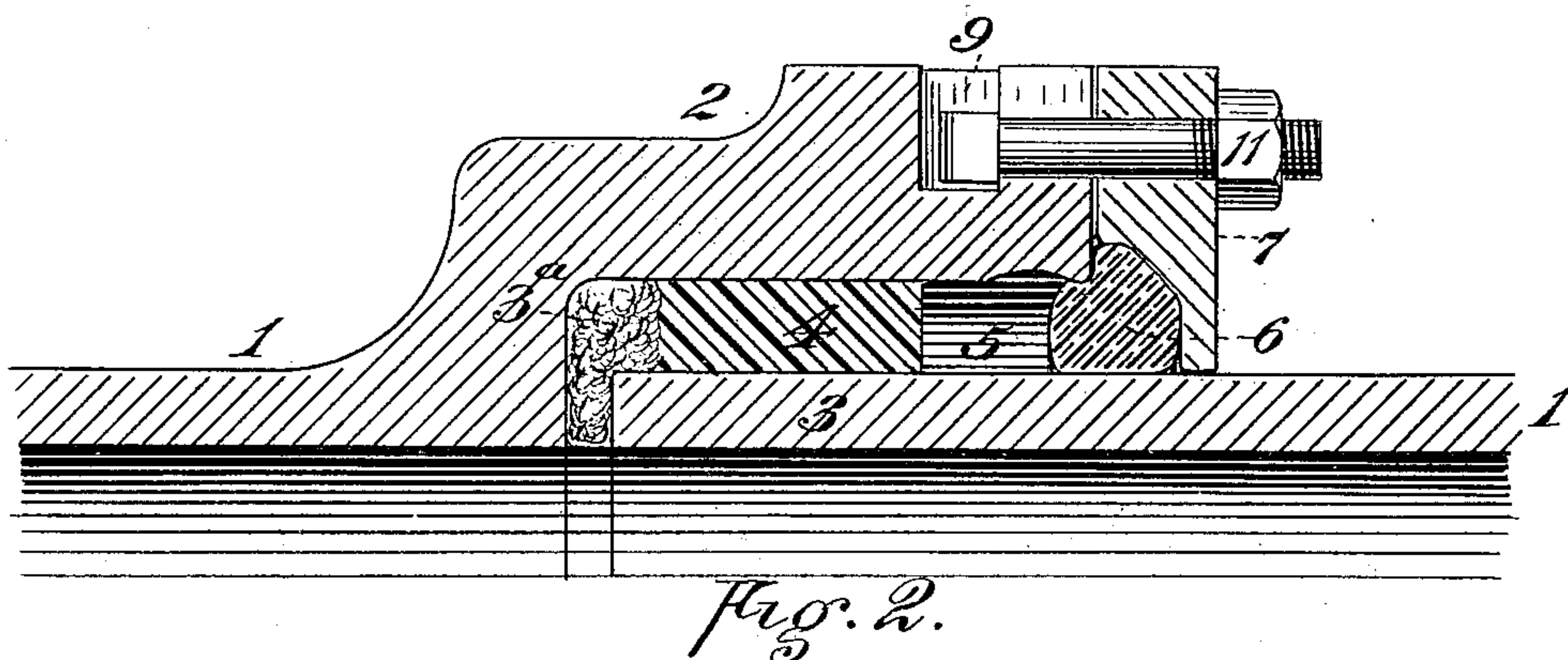
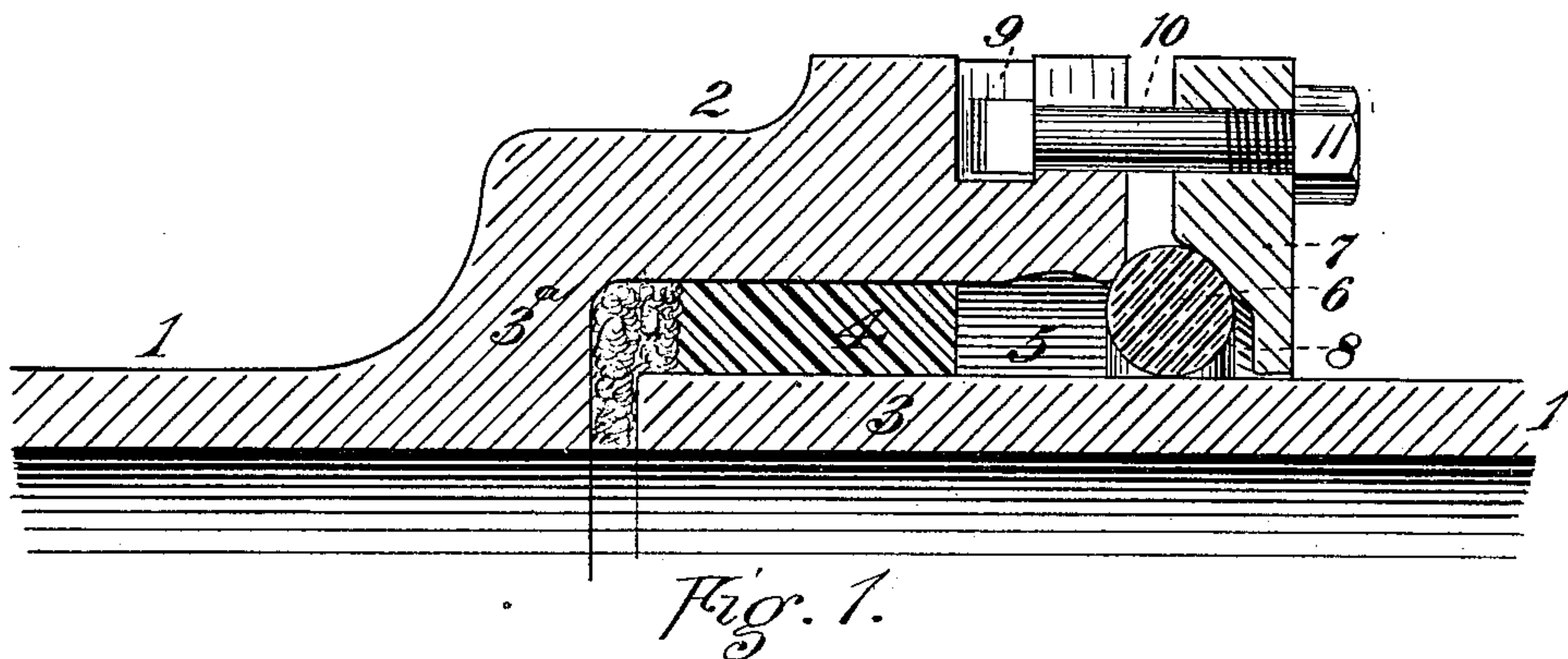


2 Sheets—Sheet 1.

No. 364,947.

Patented June 14, 1887.



Witnesses.
Samuel Wolcott
C. M. Clarke.

Inventor Frank Moore
By Attorney George H. Christy

(No Model.)

2 Sheets—Sheet 2.

F. MOORE.
PIPE JOINT FOR GAS MAINS.

No. 364,947.

Patented June 14, 1887.

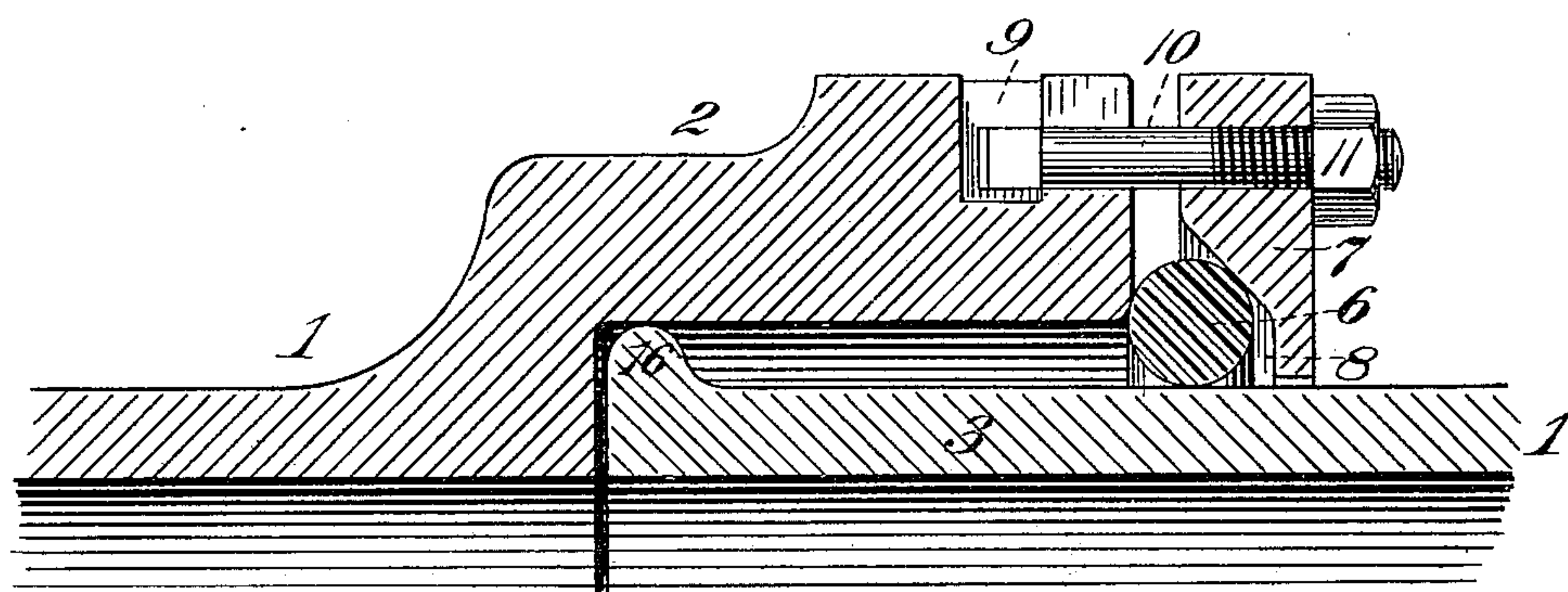


Fig. 8.

Witnesses.

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UNITED STATES PATENT OFFICE.

FRANK MOORE, OF PITTSBURG, PENNSYLVANIA.

PIPE-JOINT FOR GAS-MAINS.

SPECIFICATION forming part of Letters Patent No. 364,947, dated June 14, 1887.

Application filed November 21, 1885. Serial No. 183,466. (No model.)

To all whom it may concern:

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

In the accompanying drawings, which make part of this specification, Figure 1 is a sectional view of my improved joint, showing the relative positions of the parts prior to the closing up of the ring-follower. Fig. 2 is a similar view showing the parts closed together. Fig. 3 is a similar view showing the manner of applying my invention to usual constructions of bowl and spigot pipes. Fig. 4 is a view in elevation of the follower-ring, showing the inner face of the same. Fig. 5 is a view in elevation of the packing-ring. Figs. 6 and 7 are elevation and edge views of a modification of the follower-ring. Fig. 8 is a sectional view of a modified form of my improved joint.

The object of my invention is to provide means easily applicable to the ordinary form of bowl and spigot pipe-joints to prevent the escape of gas or other fluids conducted in such pipes, and at the same time to permit of an angular movement or arrangement of one or more of the pipe-sections as regards the adjacent sections, thereby providing for the preservation of tight joints during the irregular setting of a pipe-line or the laying of the same over irregular ground; and, further, to provide a vented chamber for the collection and escape of any fluid that may leak into the joint.

The pipe-sections 1 are provided at one end with an enlarged mouth or bowl, 2, for the reception of the spigot end 3 of the adjoining section of pipe, as clearly shown. The space between the end of the spigot and bowl is carefully packed with oakum, as shown at 3^a, said oakum being held in place by the lead packing 4, which may or may not be calked in between the spigot and bowl. This lead packing extends only a short distance along the spigot end, thereby leaving an opening or chamber, 5, between the bowl and spigot, the mouth of this opening or chamber being closed by a rubber or elastic ring or gasket, 6, arranged around the spigot end and against the end of the bowl

2. This ring or gasket, which is made of a thickness greater than the distance between the spigot and the inner wall of the bowl, is forced and held up against the bowl by the follower-ring 7, which is undercut on its inner face, forming a recess, 8, for the reception of a portion of the ring or gasket. This recess should be made of a height somewhat greater than the distance between the spigot end and the inner wall of the bowl, or at least of a height equal to the thickness of the gasket 6. In the outer surface of the bowl are formed T-shaped recesses 9 for the reception of the heads of the bolts 10, whose threaded ends project through suitable holes formed in the follower-rings, which are forced up against the end of the bowl by the nuts 11 on the bolts. As the packing ring or gasket is larger than the opening between the bowl and spigot, only part thereof will be forced into said opening, so much thereof as projects above the lower corner of the bowl being pressed directly against the end of the bowl, thus causing the packing-ring to bear not only against the inside of the bowl, but also against its end, forming a double seal around the inner corner of bowl. As the upper wall of the recess 8 inclines inwardly and downwardly, the packing-ring will be forced down against the spigot, thus forming a comparatively broad seal at its bearing-point on the spigot.

In case it is desired to apply my improved joint to such pipes as are not specially prepared therefor by having the T-shaped recesses 9 formed therein, threaded holes 12 are formed in the ends of the bowl, as shown in Fig. 3, ordinary threaded bolts being used to draw the follower-ring to place.

Where it is desired to form the joints, as above described, in a line of pipe previously laid, it being inconvenient or impracticable to withdraw the spigot from the bowl in order to slip the gasket and follower-ring over the end, I propose to employ a split gasket and a sectional follower-ring, 9, such as shown in Figs. 6 and 7, the sections 13 of such ring being provided with perforated lugs 14 at their ends for the purpose of securing them together around the spigot.

The bowl is provided with a hole, 15, in which an escape-pipe can be inserted for the

purpose of conveying away any gas which may escape into the chamber 5 to a place of safety.

It is a prominent characteristic of my invention that the packing-ring is, by reason of the relative inner diameter of the bowl and the outer diameter and thickness of the packing, caused to wrap or fold around the inner corner of the end of the bowl, and by reason of the inclined wall of the recess in the follower-ring is given a broad firm bearing on the spigot.

Any suitable packing may be employed to seal the joint between the bowl and the end of the spigot in lieu of the oakum and lead, as above described.

The lead packing serves not only to hold the oakum in place, but also to retain the spigot centrally within the bowl. The lead and oakum, however, may be omitted, if desired, the spigot in such case being centrally supported by the rim or annular projection 16, formed in the spigot end of the pipe, as shown in Fig. 8.

In case of unequal settling of the pipe-sections and the consequent twisting or distorting of the pipe-joints, the elastic gasket will accommodate itself to the changes of position of adjoining sections and preserve the joint intact as against any leakage.

I am aware that pipe-sections have been formed with an enlargement at one end, the contracted mouth of said enlargement being provided with an inwardly-projecting flange, flexible joints being formed in connection with such a pipe-section by inserting the end of a plain pipe-section into the enlargement, the joint between the two being packed by a rubber gasket surrounding the plain pipe-section and compressed between the flanged end of the enlargement and a follower-ring.

I claim herein as my invention—

1. The combination of two pipe-sections, respectively provided at their adjacent ends with a bowl and spigot, with an elastic packing ring or gasket and a follower-ring having a recess in its inner face, the upper wall of said recess being inclined, and the gasket being of such dimensions as regards the inner diameter of the bowl and the outer diameter of the spigot as to fold around the inner corner of the bowl and spread along the spigot when compressed between the end of the bowl and the follower-ring, substantially as set forth.

2. A pipe-section having a bowl, in combination with a pipe-section having a spigot end fitting within said bowl, a ring arranged around the end of the spigot end and interposed between the spigot end and the inner wall of the bowl, an elastic packing ring or gasket, and a follower-ring arranged to compress the packing-ring against the end of the bowl, substantially as set forth.

3. The combination of a pipe-section having a bowl or socket at one end, a plain or spigot ended pipe-section fitting within the bowl, an elastic packing-ring, a follower-ring arranged to compress the elastic ring against the bowl end, and a suitable packing arranged to seal the joint between the bowl and the end of the spigot, said packing and packing-ring being arranged to form a chamber within the bowl, substantially as set forth.

In testimony whereof I have hereunto set my hand.

FRANK MOORE.

Witnesses:

DARWIN S. WOLCOTT,
R. H. WHITTLESEY.