

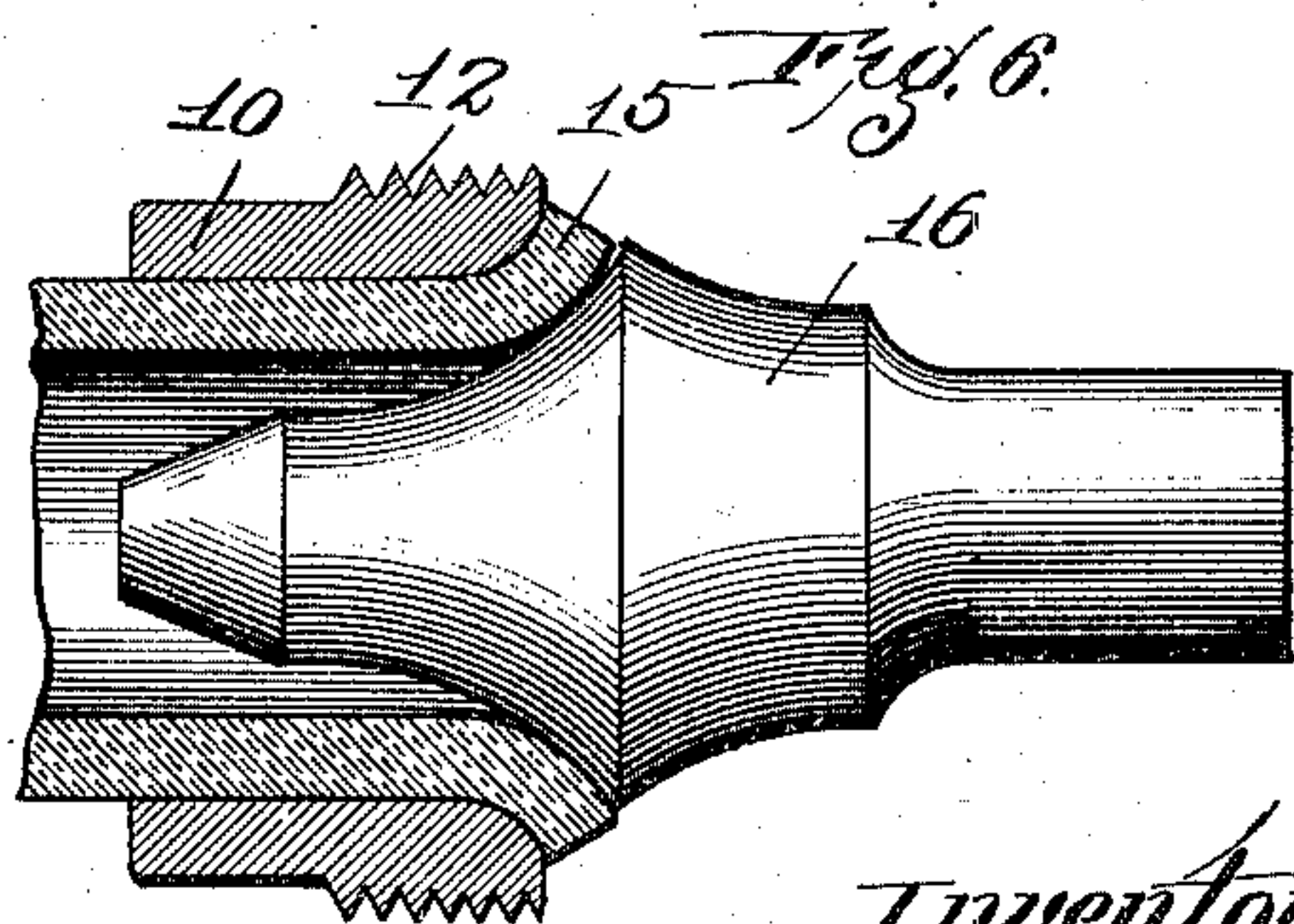
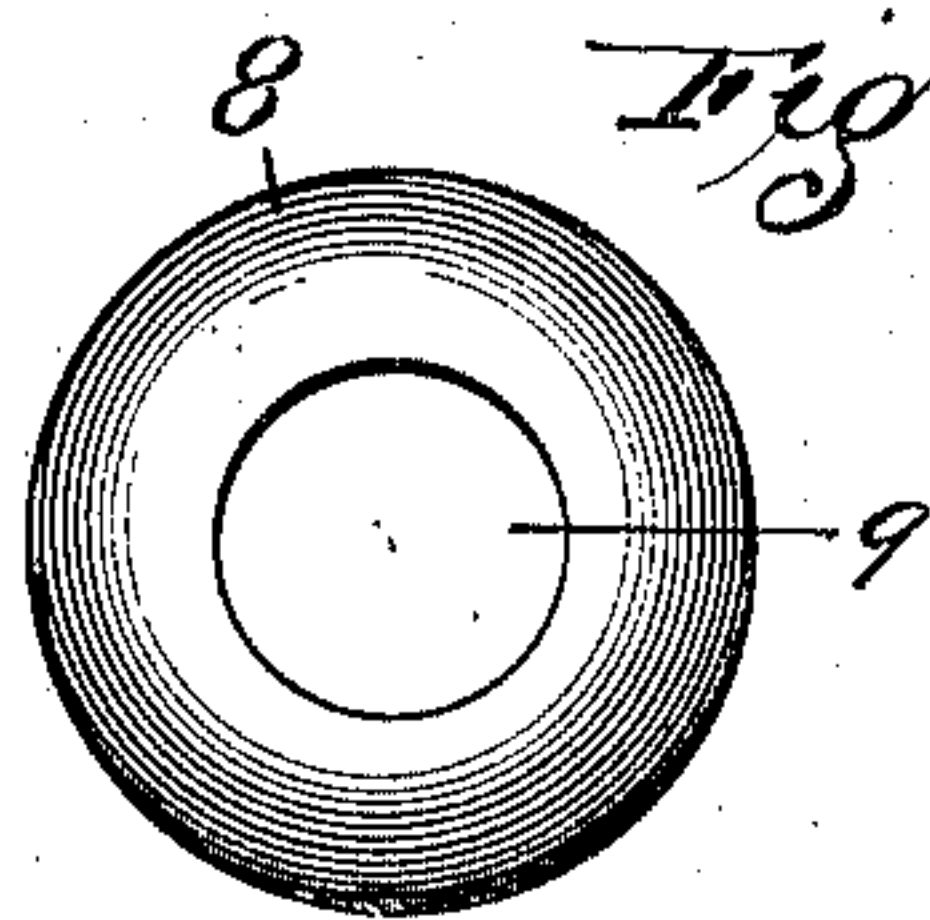
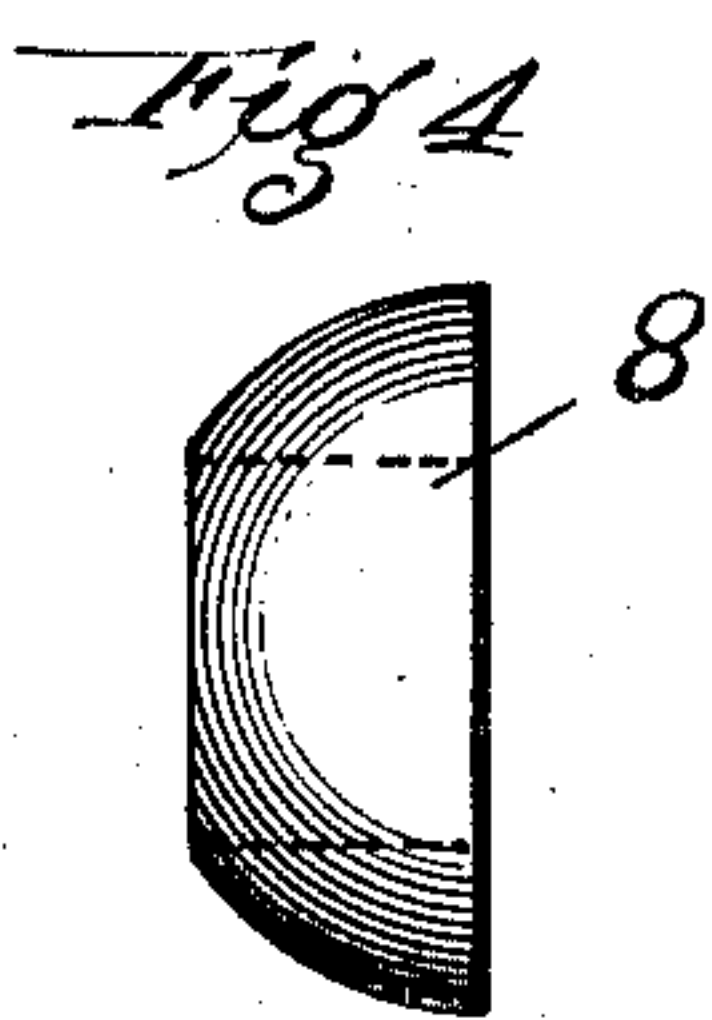
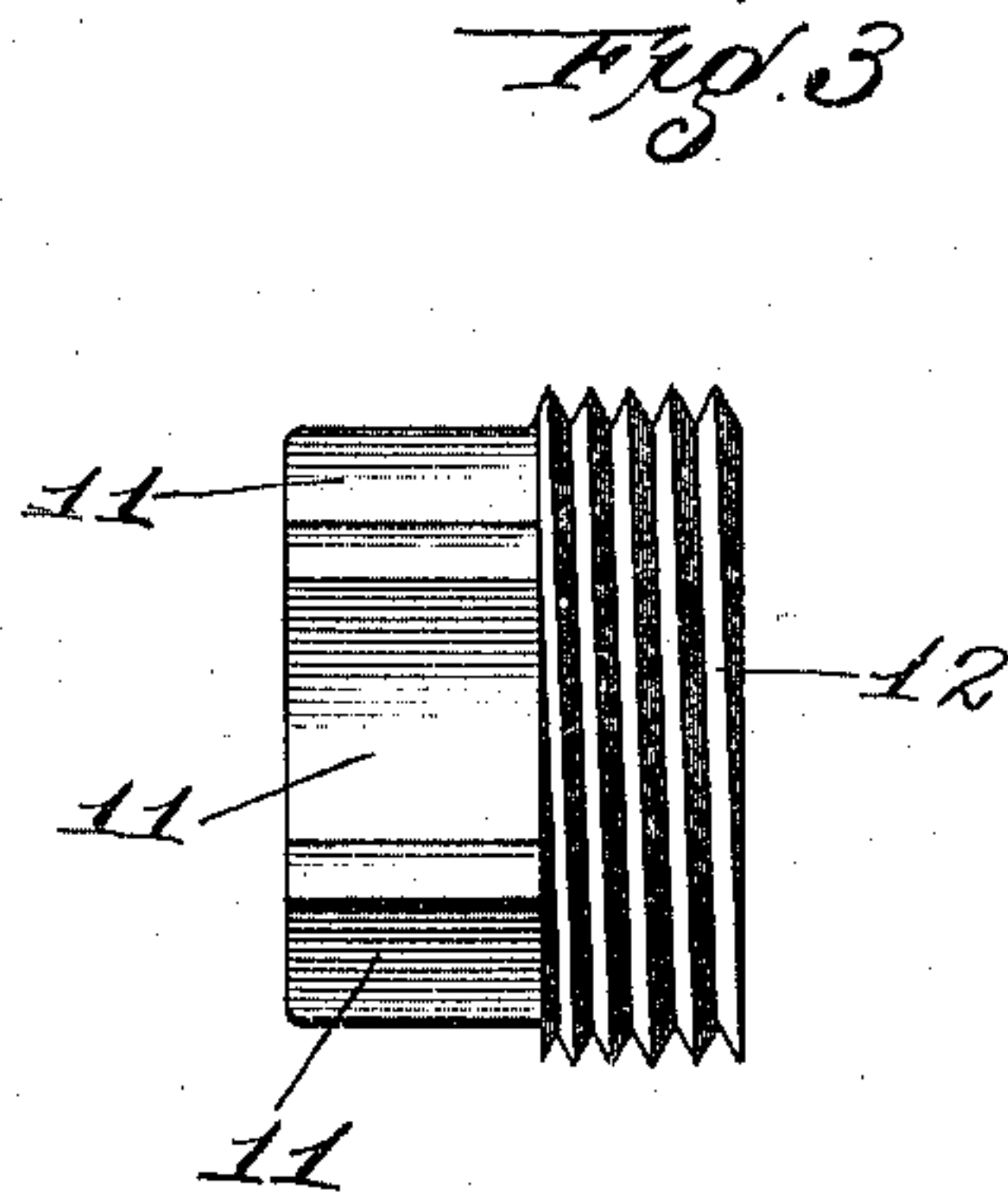
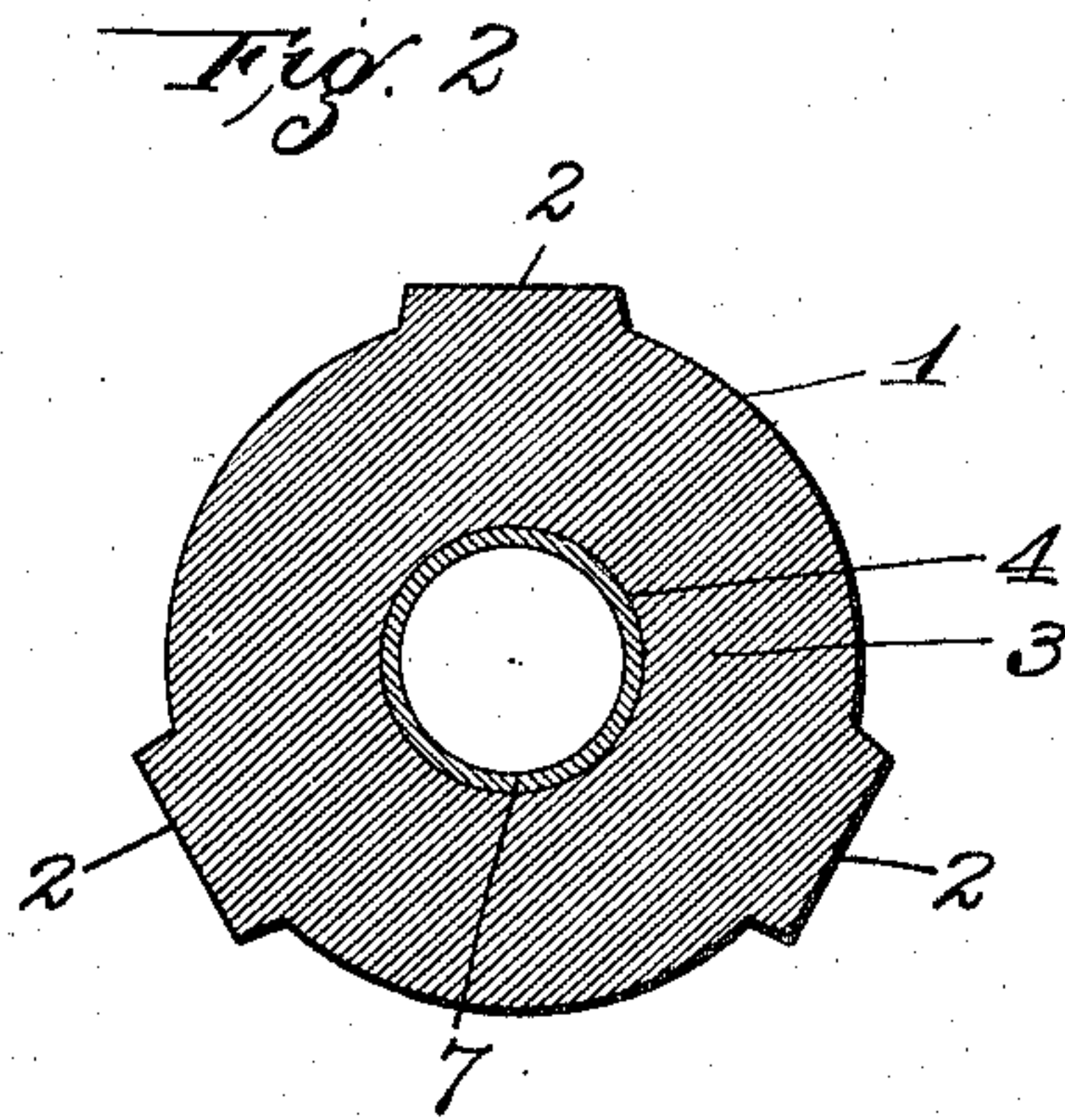
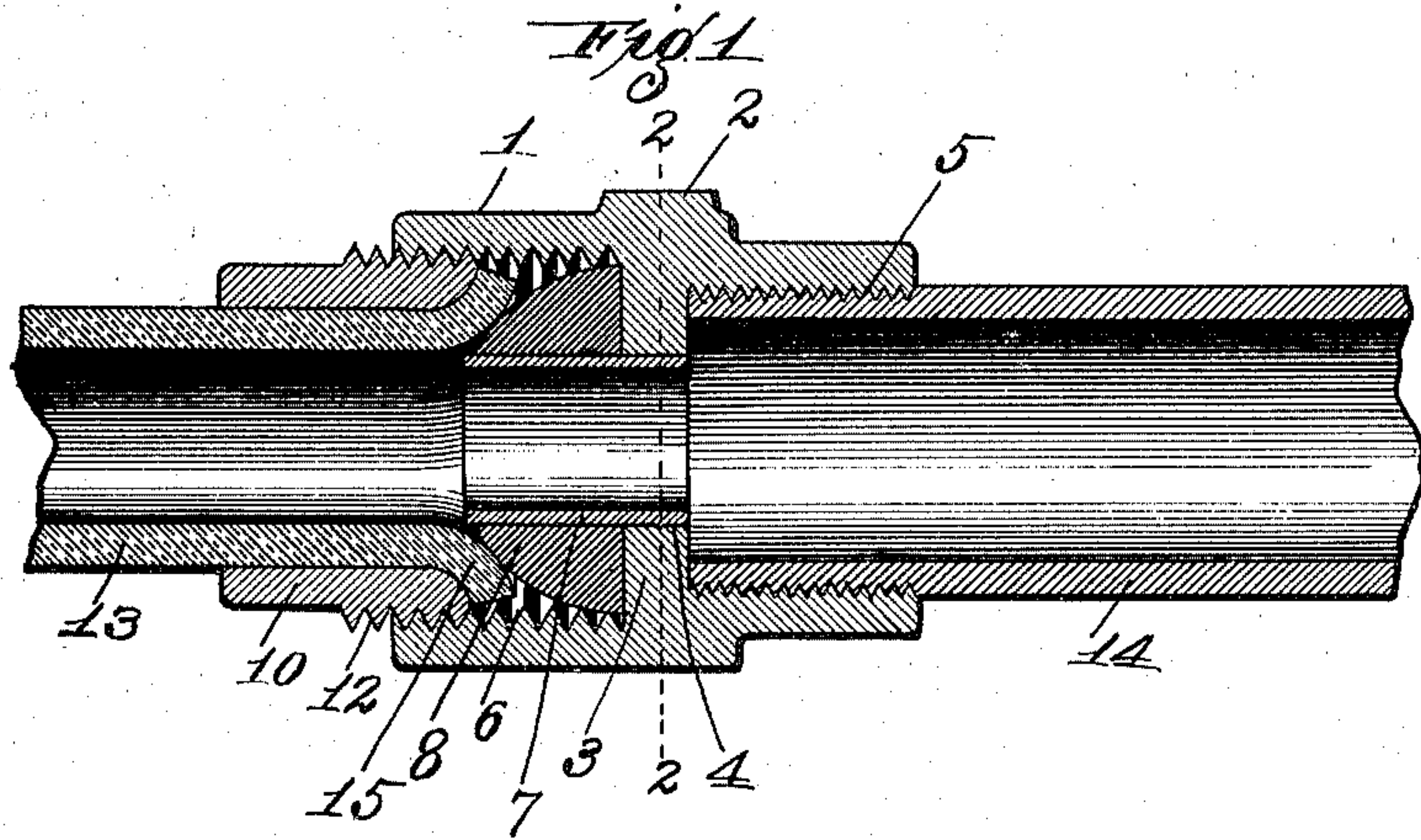
(No Model.)

J. B. DOCKERY.

COMBINATION SOFT AND HARD METAL PIPE COUPLING.

No. 582,137.

Patented May 4, 1897.



Attest  
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Attys



# UNITED STATES PATENT OFFICE.

JOSEPH B. DOCKERY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF  
TO J. GILMAN CHOUTEAU, OF SAME PLACE.

## COMBINATION SOFT AND HARD METAL PIPE COUPLING.

SPECIFICATION forming part of Letters Patent No. 582,137, dated May 4, 1897.

Application filed August 12, 1895. Serial No. 559,039. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH B. DOCKERY, of the city of St. Louis, State of Missouri, have invented certain new and useful Improve-  
5 ments in a Combination Soft and Hard Metal Pipe Coupling, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

10 My invention relates to a combination soft and hard metal pipe coupling; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

15 My present invention is supplementary to and should be read in connection with my invention shown in United States Letters Patent No. 549,902, dated November 19, 1895, and filed concurrently herewith.

20 In the patent above cited I show and claim means of forming an air and water tight joint between the meeting ends of soft-metal or lead pipe. In my present invention I show means of forming an air and water tight joint  
25 between iron and lead pipe.

In the drawings, Figure 1 is a longitudinal sectional view of the meeting ends of hard and soft metal pipe, the same being joined by my improved coupling. Fig. 2 is a cross-sectional view taken approximately on the indicated line 2 2 of Fig. 1. Fig. 3 is a side elevation of the male part of my improved coupling. Fig. 4 is a side elevation of the packing-ring or washer of which I make use in  
30 carrying out my invention. Fig. 5 is a front elevation thereof. Fig. 6 is a view illustrating the means employed to flare the end of a soft-metal pipe that is to be joined by my improved coupling to a hard-metal pipe.

40 Referring by numerals to the accompanying drawings, 1 indicates the female part of the coupling, the same being of tubular form and provided on its exterior, at a point intermediate its ends, with a series of faces 2, on which a wrench or like tool may be located.  
45 Arranged within the female part 1 at a point intermediate its ends is a diaphragm 3, in which is formed a centrally-arranged aperture 4. The interior of the female part 1 to  
50 one side of the diaphragm 3 is screw-threaded, as indicated by 5, and the interior of the female

part 1 on the opposite side of the diaphragm 3 is screw-threaded, as indicated by 6, said screw-threaded interior being slightly larger in diameter than is the opposite screw-thread-  
55 ed interior 5. Located in the centrally-arranged aperture 4 and extending a portion of the way through that end of the female part in which the screw-threads 6 are located is a tube 7, and arranged upon said protruding  
60 end of the tube 7 is a flexible packing-ring 8, the same comprising a hemispherical body of material having a centrally-arranged aperture 9 therein.

10 indicates the male part of the coupling, 65 the same being in the form of a tube, the outer exterior end being provided with a series of faces 11, on which may be located a wrench or like tool. The remaining exterior portion of this male part of the coupling is screw-  
70 threaded, as indicated by the numeral 12, said screw-threaded portion being of such a size as that it may be readily located in the screw-threaded interior 6 of the female part 1 of the coupling.

13 indicates the soft-metal and 14 the hard-  
75 metal pipe. The end of the hard-metal pipe 14 is exteriorly screw-threaded and arranged to be located in the screw-threaded end 5 of the female part 1 of the coupling. The end  
80 of the soft-metal pipe 13 is curved outwardly, as indicated by 15, this being done by a specially-formed tool 16.

Previous to effecting a coupling by my improved means the male part 10 is located 85 upon the end of the soft-metal pipe 13 in such a manner as that the end of said soft-metal pipe 13 protrudes a slight distance above said male part 10. The stem of the tool 16 is now located within the protruding end of the soft-  
90 metal pipe 13 and by the repeated blows of a hammer upon the upper end of the tool the end of the pipe 13 will be flared outwardly to conform with the curved inner edge of the end of said male part 10. After the end of  
95 the hard-metal pipe has been located in the screw-threaded interior 5 of the female part 1 and the male part 10 has been located upon the end of the soft-metal pipe 13 and the end of said soft-metal pipe has been flared the  
100 male part 10 is started into the screw-threaded interior 6 of the female part 1. By means of



a wrench or like tool located upon the faces 11 of said male part the same is passed into the screw-threaded interior 6 until the flared end 15 of the soft-metal pipe 13 is very tightly engaged upon the exterior of the hemispherical packing-ring 8, thus forming a perfectly air and water tight joint between said flared end and packing.

By locating an integral diaphragm within the female part of the coupling and arranging the tube 7 within said diaphragm the flexible packing is prevented from collapsing or being forced together when the male part 10 is tightened within the female part 1.

A pipe-coupling constructed in accordance with the foregoing description is inexpensive, saves much time, labor, and expense in joining the meeting ends of pipe, may be readily applied for use, and is a very simple, durable, and efficient coupling for the ends of hard and soft metal pipe.

I claim—

The within-described means of forming an air and water tight joint between the meet-

ing ends of iron and lead pipe, which means consists of the female member 1, the diaphragm 3 centrally arranged within said member and having the aperture 4 centrally located within said diaphragm, one end of said member 1 being screw-threaded and designed to receive the screw-threaded end of the iron pipe and the opposite end of said member 1 being screw-threaded and designed to receive the male part 10 of the coupling, the tube 7 located in said aperture 4 and extending into the end of said male member 10 and the flexible packing-ring 8 located upon said protruding end of said tube 7, the coupling being designed to receive the flared end of the lead pipe around said tube 7 and press it against said packing-ring by the operation of said male member 10.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH B. DOCKERY.

Witnesses:

EDWARD E. LONGAN,  
MAUD GRIFFIN.