

(No Model.)

J. W. DALY.
PIPE COUPLING NIPPLE.

No. 446,511.

Patented Feb. 17, 1891.

Fig. 1.

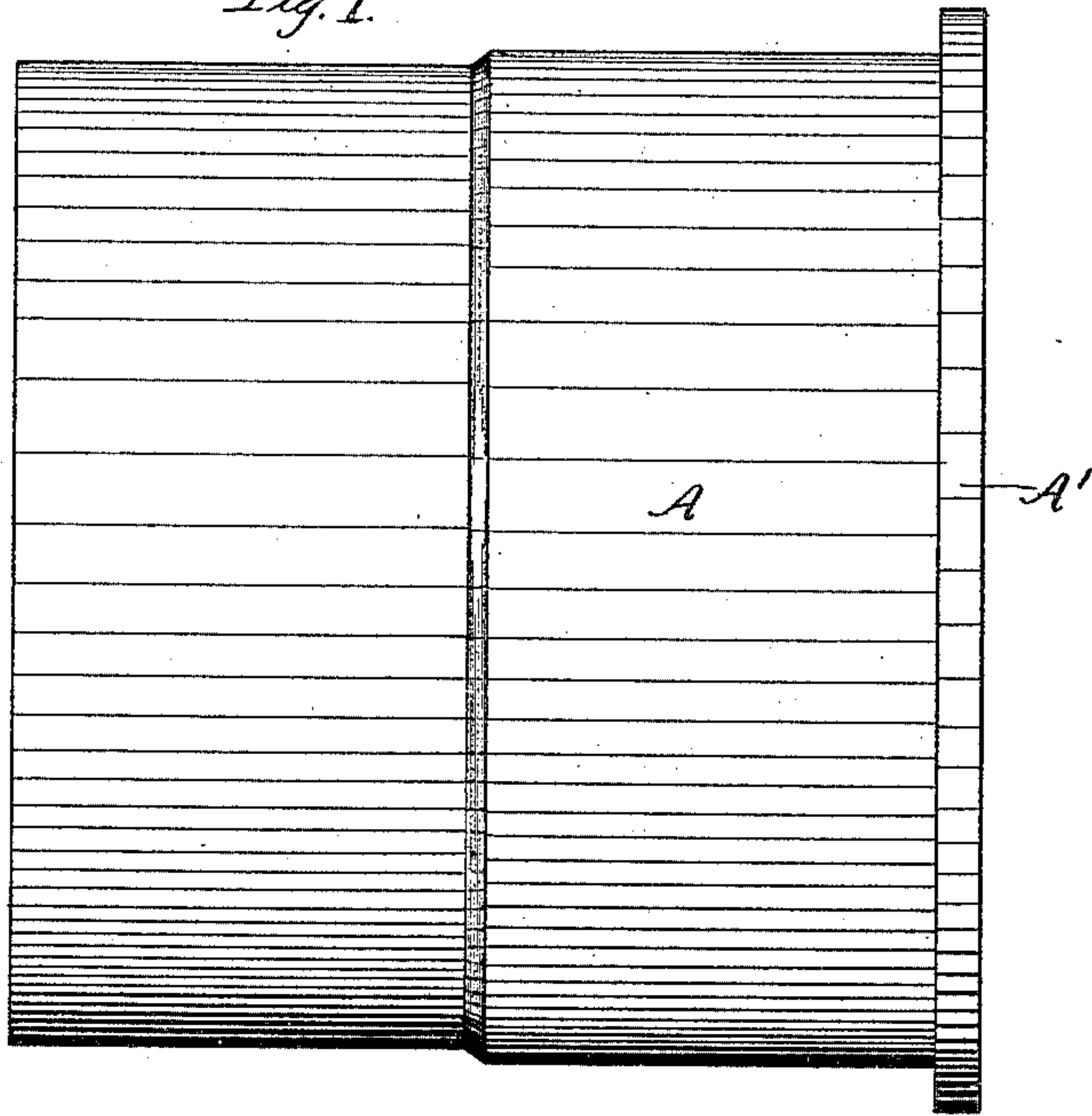
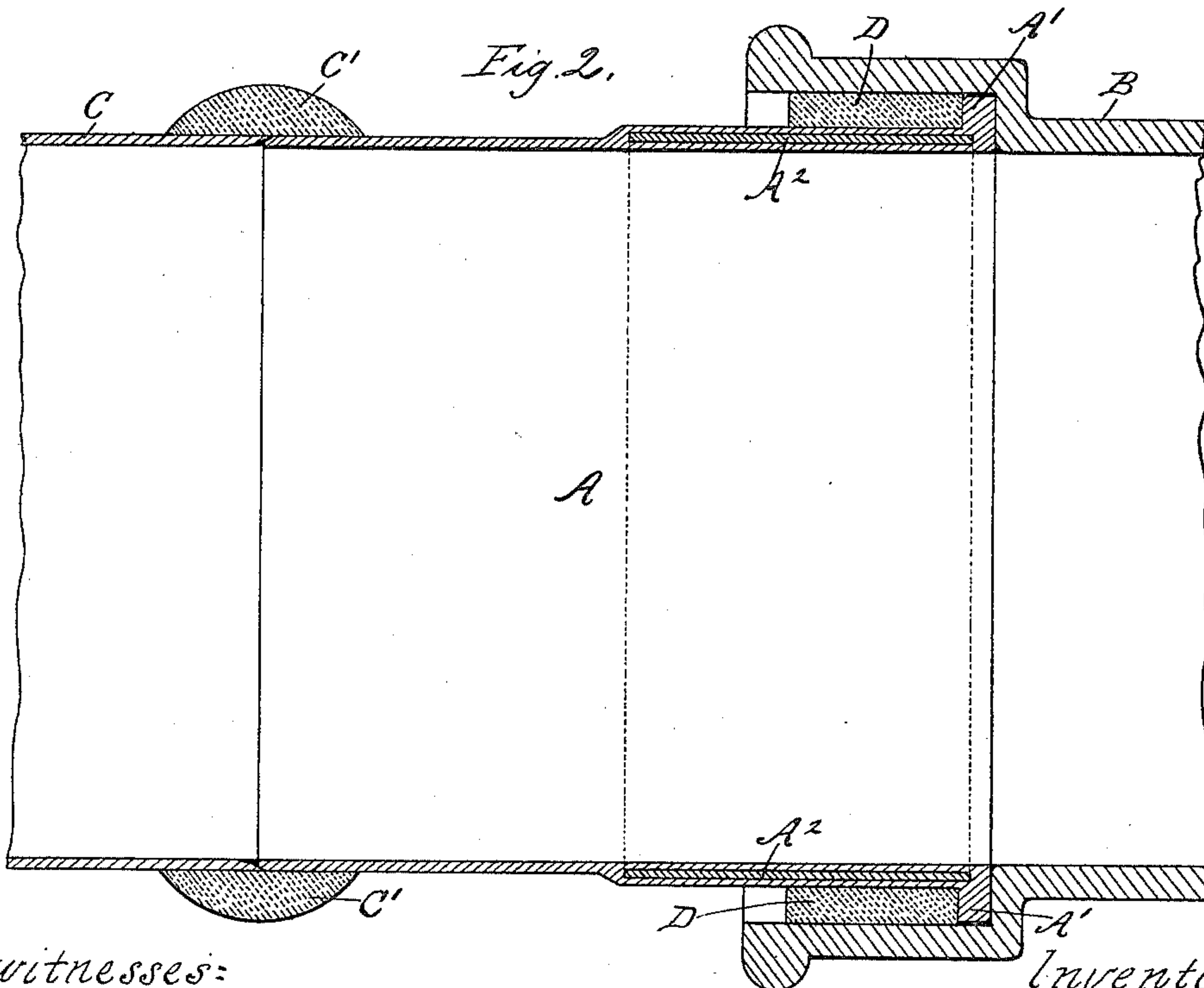


Fig. 2.



witnesses:

Frank C. Curtis
John T. Booth.

Inventor:

James W. Daly.
by Geo. Ambrosier
Atty.

UNITED STATES PATENT OFFICE.

JAMES W. DALY, OF TROY, NEW YORK.

PIPE-COUPLING NIPPLE.

SPECIFICATION forming part of Letters Patent No. 446,511, dated February 17, 1891.

Application filed September 15, 1890. Serial No. 364,940. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. DALY, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Pipe-Coupling Nipples, of which the following is a specification.

My invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in side elevation of my improved pipe-coupling nipple. Fig. 2 is a central longitudinal section showing a piece of lead pipe coupled to a piece of iron pipe by means of my improved nipple.

A is the nipple, B the iron pipe, and C the lead pipe. To couple the lead and iron pipes together the end of the nipple having the flange A' is inserted in the enlarged or faucet end of the iron pipe and a tight joint made therein by running the lead D while in a molten state into the enlarged opening around the nipple and compacting it with a cold-chisel and hammer in the usual manner. The other end of the nipple is soldered to the lead pipe, as by the solder C', extending around the joint.

My improved nipple is especially adapted for use in connection with iron soil-pipes demanding joints that will not permit the escape of the foul gases contained therein, requiring the joints to be leaded by running and compacting the lead, as above described.

If the nipple was formed of lead alone or other thin sheet metal, it would not have sufficient strength to resist the impacting force necessary to form a tight joint. I therefore provide a metallic sleeve or ferrule A², which is inclosed outside and inside by the lead forming the shell of the nipple.

The nipple is preferably formed by casting the lead portions about the metallic sleeve, so as to wholly inclose the sleeve within the

leaden nipple-walls. The metallic sleeve is preferably made of iron with a tinned surface and of sufficient strength to resist the impacting force employed in forming the joint.

I am aware that leaded nipples have been formed by casting or pressing a lead ferrule or sleeve upon an iron sleeve, leaving the iron exposed to the action of the salts and acids passing through the pipes, which soon destroyed such sleeve, causing the joint to leak. I am also aware that lead pipes have been coupled to iron pipes by sliding a sleeve or ferrule of comparatively hard laminated or rolled metal over the end of the lead pipe, expanding the projecting end of the pipe, and securing the expanded end in the enlarged end of an iron pipe by forming a run and impacted lead joint between the ferrule and the flange of the enlarged iron pipe; but whether the sleeve of hard metal was within or without the pipe or nipple of lead or soft metal the tightness of the joint depended upon the continued impact of the hard and soft metals.

It is well known that the expansion and contraction of soft metals due to changes in temperature is much greater than that of hard metals. Most soil-pipes are subjected to frequent changes in temperature, receiving hot water from the bath-tub and cold water from the closet, and foul gases soon find their way through such couplings. By having the sleeve of iron or other hard metal wholly inclosed by the lead or soft metal forming the nipple, as I have shown it in my improved nipple, there is no possibility for the gases to get between the two metals, nor for any corroding influence to act upon the inclosed sleeve, and the parts will co-operate to maintain a perfect gas-tight joint. I am thus able to cheaply produce a durable nipple by which a gas-tight joint can be made between a lead and an iron pipe.

By first covering the surface of the iron sleeve A² with a coating of tin the lead which is cast upon the sleeve to form the nipple will unite and adhere firmly to it and give the nipple all the advantage of a single solid piece of metal sufficiently stiff to resist the impacting force employed in forming a leaded joint

and impervious to gases without making the shell of the nipple so thick as to render it cumbersome and expensive to manufacture.

What I claim as new, and desire to secure
5 by Letters Patent, is—

1. As an improved article of manufacture,
a coupling-nipple consisting of a sleeve of com-
paratively hard metal inclosed within the
nipple-shell, formed of soft metal, cast upon
10 such sleeve, substantially as described.

2. A coupling-nipple consisting of a metal-

lic sleeve having a tinned surface inclosed
within the nipple-shell, formed of soft metal,
cast upon such sleeve, substantially as de-
scribed.

In testimony whereof I have hereunto set my
hand this 11th day of September, 1890. 15

JAMES W. DALY.

Witnesses:

GEO. A. MOSHER,

W. H. HOLLISTER, Jr.