

(No Model.)

J. SCHINNELLER.
GAS CONVEYING CONDUIT.

No. 338,559

Patented Mar. 23, 1886.

Fig. 1

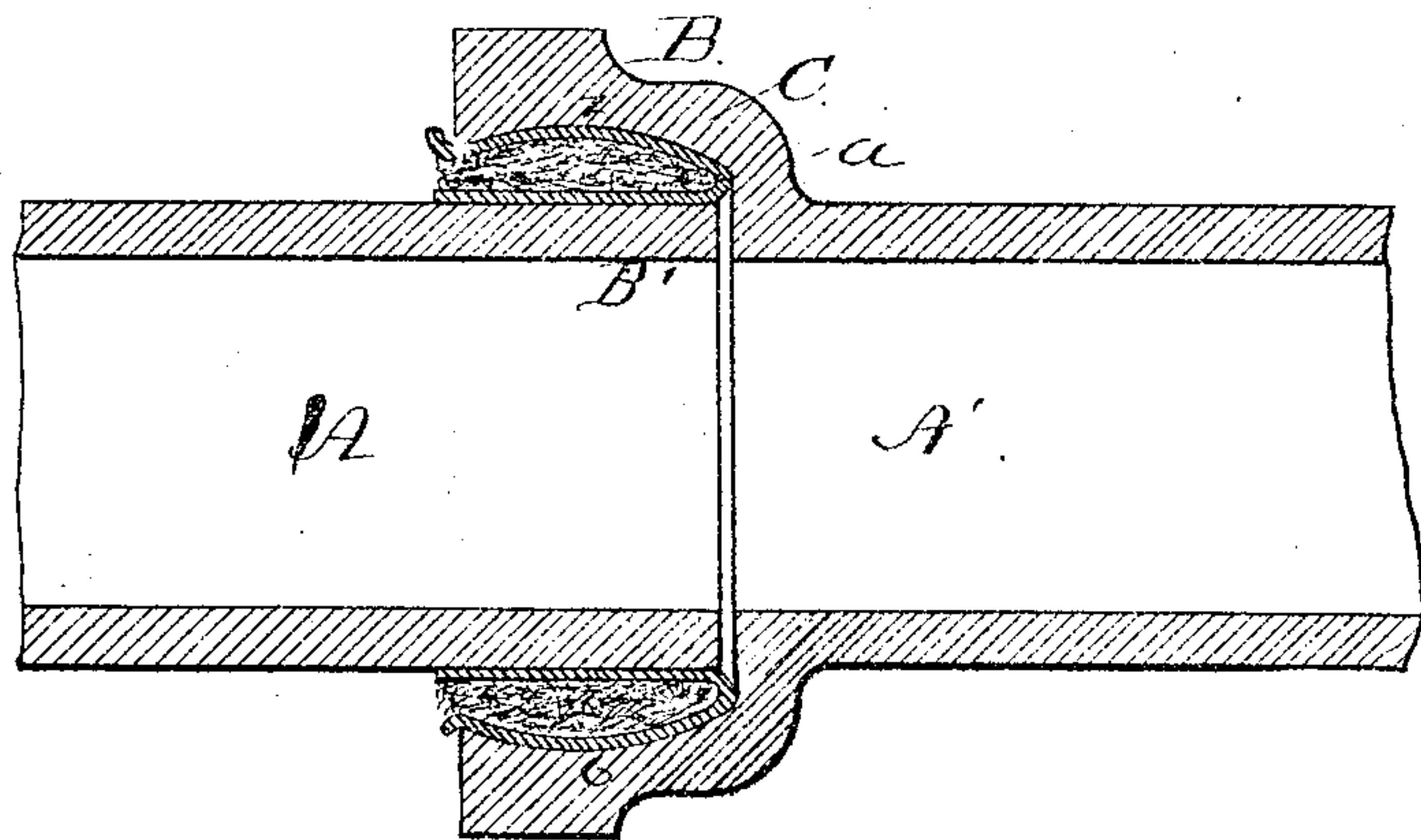


Fig. 3.

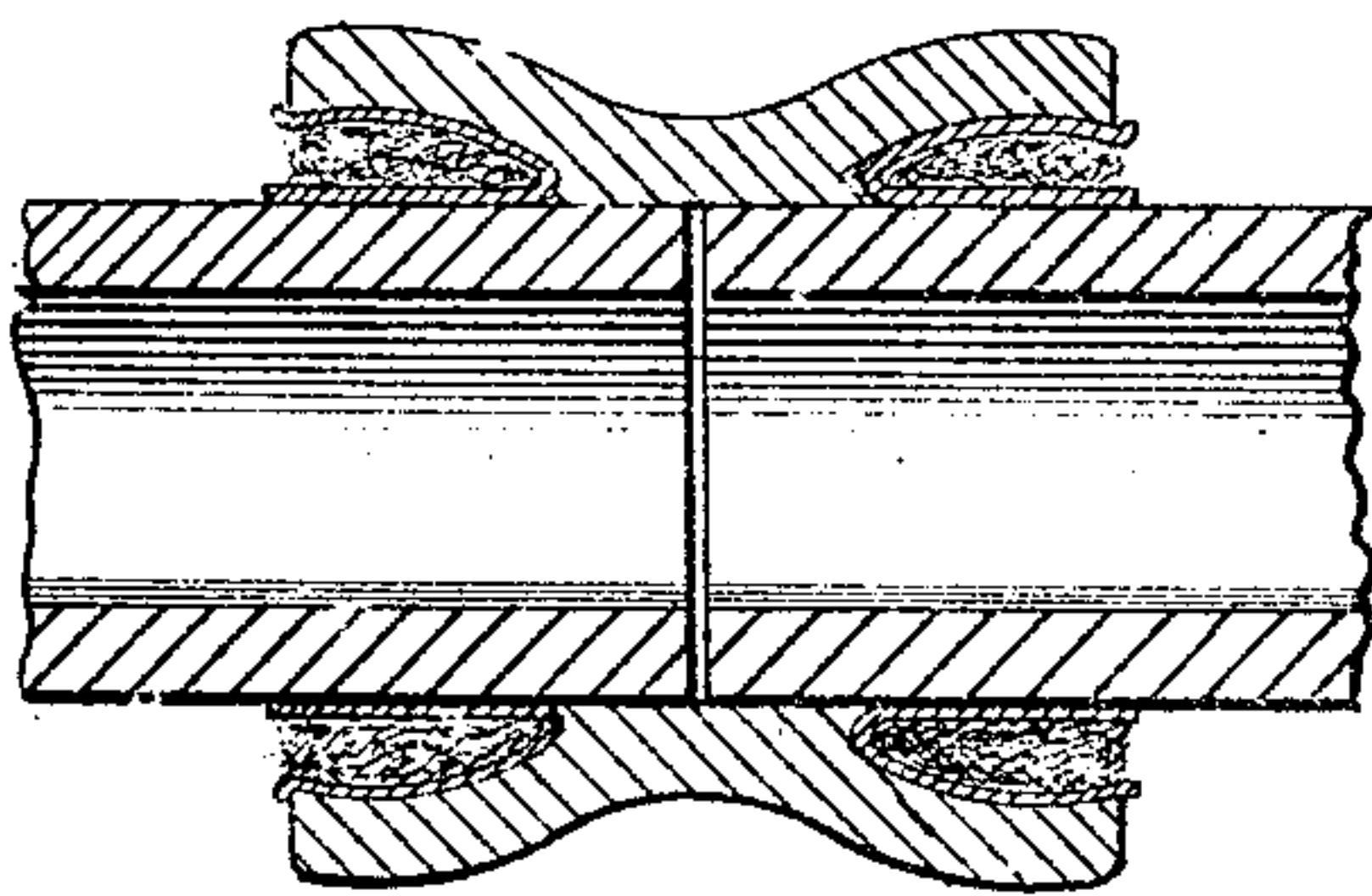
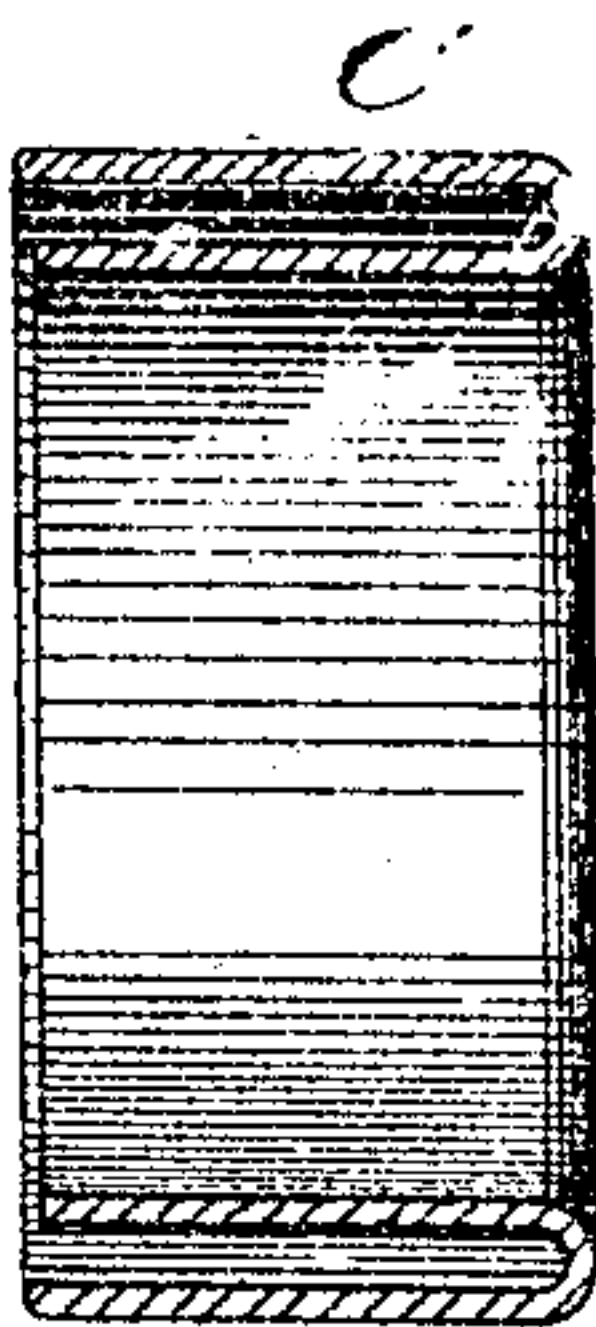


Fig. 2



Witnesses

A. A. Moore,
Daniel. L. Hart.

Jacob Schinneller

Inventor

by Connolly Bros.
Attys.

UNITED STATES PATENT OFFICE.

JACOB SCHINNELLER, OF PITTSBURG, PENNSYLVANIA.

GAS-CONVEYING CONDUIT.

SPECIFICATION forming part of Letters Patent No. 338,559, dated March 23, 1886.

Application filed November 21, 1885. Serial No. 183,545. (No model.)

To all whom it may concern:

Be it known that I, JACOB SCHINNELLER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Conduits; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention has relation to the packing and sealing of joints and joint-couplings in gas and other conduits, and has for its object the provision of a novel expedient whereby lead or other suitable packing metal in the form of rings or annular plates may be applied to the annular joint-spaces of the neck and socket couplings, and afterward calked and expanded, so as to produce a perfectly close and flexible joint, which will adapt itself to all movements of the parts, from whatsoever cause produced.

My invention is particularly applicable to pipes and conduits for the conveyance of natural gas, wherein exceptional tightness of the joints is required, and wherein it is necessary to provide for disturbances or movements in the pipe from any cause.

In the employment of lead as a filling material for the bowls or sockets it has been customary to pour in molten lead, and to afterward calk the same around the mouth of the bowl or socket; but with such method of filling it has been found impracticable to entirely fill the space, for the reason that the lead contracts from the bowl or socket, leaving an open seam between the lead and the inner surface of the bowl, which is afterward only partly compensated for by calking the lead at the mouth of the bowl. The result is, therefore, an imperfect joint, and one that if even calked gas-tight at first will not remain so permanently, but will leave gaps and leaks after any expansion, contraction, or sag of the coupled pipes. This result follows on account of the inelastic quality of the lead, which, after being once disturbed, cannot resume its normal position, but must be recalked after every movement of the parts. Again, after the lead hardens, its surface is pitted, even where it impinges upon or comes in contact with the iron, and for this

as well as for other reasons is a defective seal or joint-filling.

My invention contemplates, as a substitute for the lead seal applied to the joint in a molten condition, sheet-lead or other suitable material bent into the form of a ring, and having its walls folded upon each other, so as to provide between them a narrow annular chamber entirely closed at one end by the fold or bend of the sheet from which the ring is made. This double ring is fashioned so as to fit into the space between the bowl or sleeve of one pipe and the neck of the other, and thus constitute a gasket which will entirely and absolutely close the seam or joint formed at the junction of the bowl at its base and the end of the section of pipe inserted therein. The space between the double walls of the ring is calked or filled with oakum or other suitable filling material possessing the requisite elasticity. In calking in such filling the walls of the ring are expanded so as to hug closely to the surface of the pipe and the inner surface of the bowl, thus sealing the intervening seams, while providing for and allowing a movement of the parts without disturbing the utility or efficiency of the seal. The outer edge of the walls of the lead ring may be finally coated or calked, so as to exclude moisture.

A joint sealed according to my invention has the advantage of being comparatively inexpensive, as it requires less lead and less labor than when the lead is poured in a molten condition.

The double-walled rings are ready for application, and may be entirely finished before put in place around the pipe.

My invention accordingly consists, first, and broadly, in the combination, with two adjacent sections of pipe or conduit and a coupling bowl, socket, or sleeve, of a joint-filling formed by a ring or belt of lead or other material having double-folded walls; secondly, in the combination, with two sections of pipe or conduit and a coupling bowl, socket, or sleeve, of a double-walled folded ring or belt located between the bowl or sleeve and the included pipe, and a filling of oakum or other suitable elastic material packed into the space between the walls of the ring.

Referring to the accompanying drawings, Figure 1 is a longitudinal sectional view of two sections of coupled pipe to which my improved seal is applied, and Fig. 2 a sectional view of the double ring before insertion. Fig. 3 is a sectional view of a modification.

A A' designate the two sections of pipe or conduit, on one of which is shown the bowl or socket B, adapted for the reception of the end or the neck B' of the adjacent section.

Instead of forming the sections with bowls, I may employ separate collars or sleeves, as my improved sealing-ring may be inserted between the collar and the surface of the included tube, as between the bowl and the tube.

For the purposes of my invention the usual bead on the end of the section A (as formed on cast pipe) is omitted, and the inner surface of the bowl is preferably made with a slight concavity, as shown at *b*, to afford an adequate purchase to the outer wall of the packing-ring. The circle including the concave surfaces may be struck or described from the center of the pipe, in which case the joint will approximate a ball-and-socket coupling.

C designates the ring, which is made of a sheet of lead of suitable thickness and area, folded over at or about its middle part by stamping; or it may be cast in a mold, so as to be of a U shape in cross-section. In applying this ring to the pipes it is first slipped into the bowl and the spigot end of the pipe then inserted into the ring, the bend *a* of the ring seating itself at the base of the bowl, and the outer edges of the ring-walls slightly projecting beyond the mouth of the bowl. Oakum or other suitable material is then packed tightly into the space between the ring-walls, as shown at *d*, and the walls expanded throughout their entire depth, the walls adapting themselves to the curvature or other surface conformation of the bowl and tube, and both walls closely hugging the surfaces against which they impinge, and entirely closing and sealing the space from the mouth of the bowl to its base.

In the ordinary method of calking it is impracticable, if not impossible, to calk the lead the full depth of the bowl.

It will be seen that the double-walled ring produces a close and permanent seal throughout the depth of the bowl or sleeve, and that no leakage can possibly take place at any point. Unlike the seal produced by pouring in molten lead, the ring-walls cover the surface of the entire cavity of the bowl and included pipe, and are solid and homogeneous throughout.

The object of the elastic filling between the walls of the ring is to provide for any movement of the coupled parts. This filling will yield and maintain a tight joint in all positions of the sections. Where lead is used, as in the ordinary joint, its inelasticity prevents it from adapting itself to all the movements of the pipe, occasioned by sagging or otherwise; hence every movement of the pipe has a tendency to break the seal and open the joint. This is obviated, where the ring is used, by the elastic material calked in between the walls thereof.

If desired, the sections may be provided with flanges or collars, against which the edge of the inner wall of the ring will abut.

Having described my invention, what I claim is—
as new, and desire to secure by Letters Patent,

1. In a conduit for the conveyance of gas, or fluids, the combination, with the section A', provided with the bowl B, and the section A, having a spigot end fitting within said bowl and separated therefrom by an annular space, of the joint seal or packing consisting of a ring or belt of lead having double walls, both said walls being of substantially equal length and extending from the mouth to the base of said bowl, and including between them an elastic filling or packing, substantially as shown and described.

2. In a conduit for the conveyance of gas or fluids, the combination, with the spigot-section A and the double-folded ring or packing C, of the section A', having the bowl B', whose interior surface is made concave on the arc of a circle described from the center of the bowl, whereby said bowl and packing form a ball-and-socket joint, substantially as described.

3. In a conduit for the conveyance of gas or fluids, the combination, with the connected sections, of a coupling sleeve or bowl and the double-walled packing-ring, said sleeve or bowl having a cavity of increased or enlarged diameter between its mouth and base, and said double-walled ring being expanded to conform to the shape of said cavity, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of November, 1885.

JACOB SCHINNELLER.

Witnesses:

LOUIS MOESER,
IG. STAUFFER.