

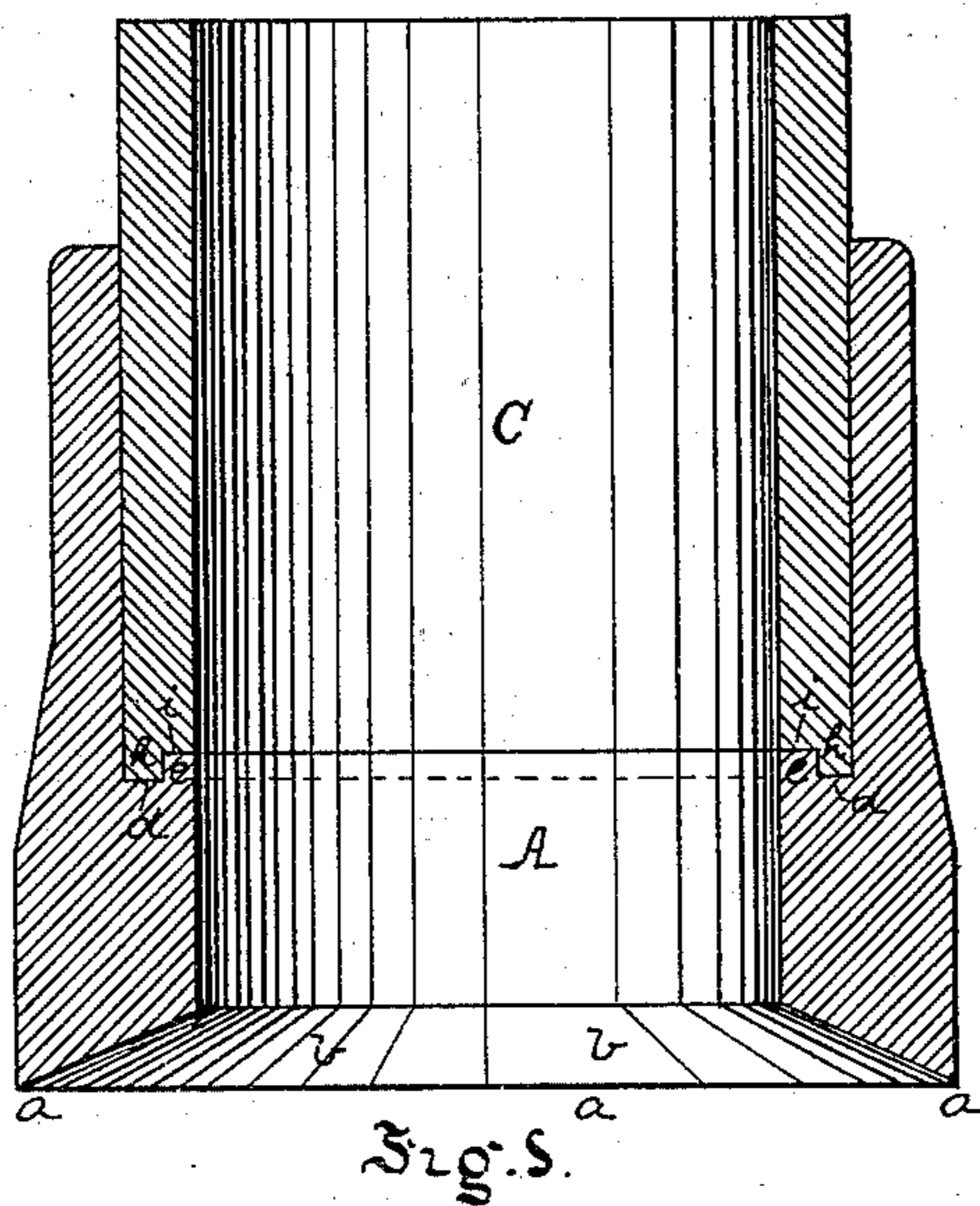
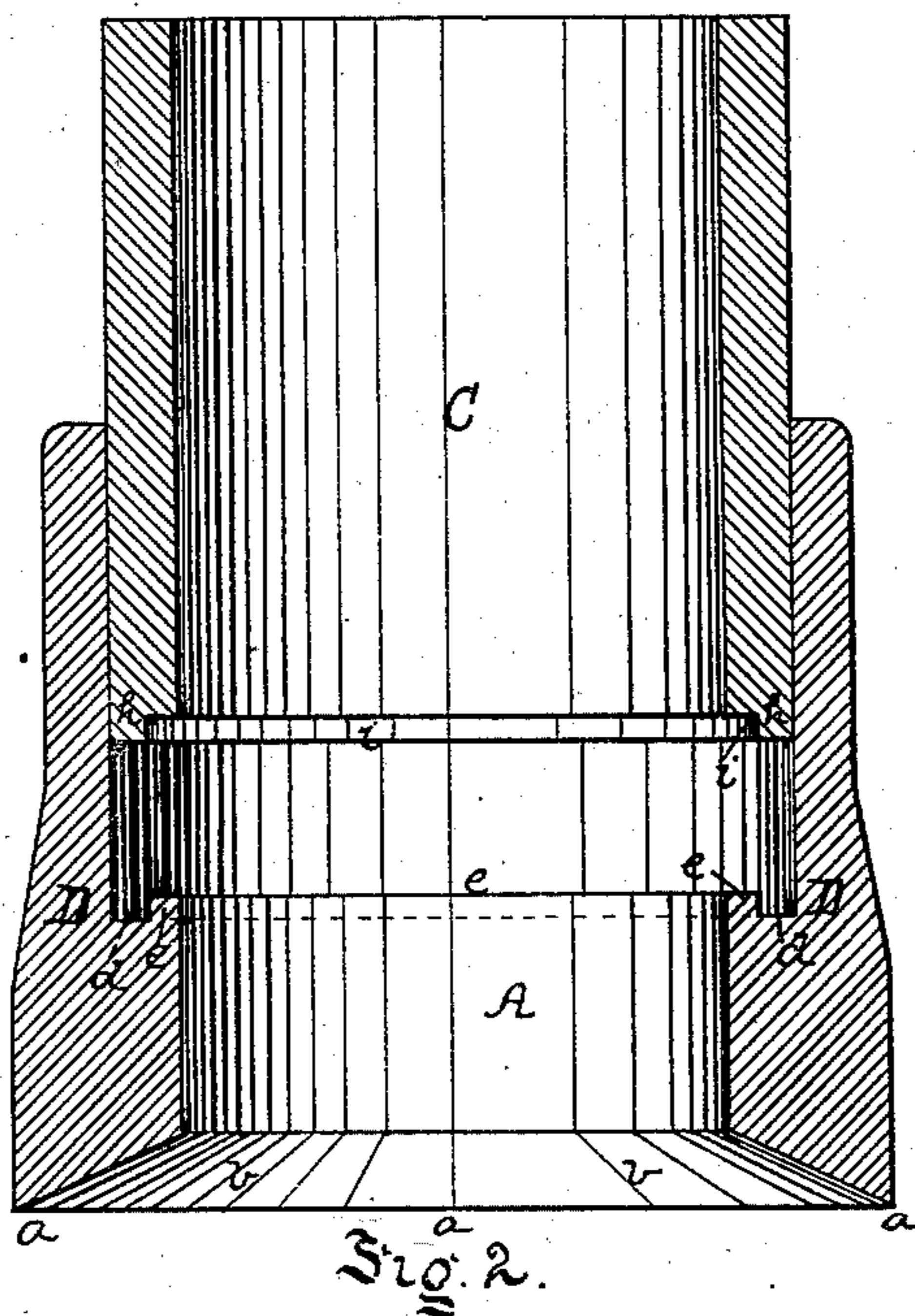
(No Model.)

P. PATTERSON.

Shoe for Driving Pipes and Casing.

No. 241,712.

Patented May 17, 1881.



Witnessed. J. J. Hay
J. R. Caribson

Inventory. Peter Patterson

By Attorney. James L. Ray

UNITED STATES PATENT OFFICE.

PETER PATTERSON, OF MCKEESPORT, PENNSYLVANIA, ASSIGNOR TO THE NATIONAL TUBE WORKS COMPANY, OF SAME PLACE, AND OF BOSTON, MASSACHUSETTS, AND RICHARD E. TOWNSEND, OF BRADFORD, PA.

SHOE FOR DRIVING PIPE AND CASING.

SPECIFICATION forming part of Letters Patent No. 241,712, dated May 17, 1881.

Application filed February 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, PETER PATTERSON, of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Shoes for Driving Pipes and Casings; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of my improved shoe and a short section of pipe. Fig. 2 is a like view, the pipe being raised from its seat in the shoe.

Like letters of reference indicate like parts in each.

My invention relates to certain improvements in the construction of the drive-shoes used on the end of the large pipe or tubing of oil and other Artesian wells, which is driven down through the stratum of earth to the rock to prevent the caving of the earth during the drilling of the well. These shoes are generally formed of cast-steel, and are screwed or brazed on the end of the lower section of pipe, and serve to force their way through the earth which passes into the pipe and is removed by the proper tools. Where the end of the pipe is square and fits into a square seat in the shoe difficulty has been experienced on account of the liability of the pipe to "telescope" by the force of the blows in driving it, so that it slips off its square seat and is driven by the subsequent blows through the drive-shoe. To overcome this a wedge-shaped joint has been employed between the pipe and shoe, but the tapered end of the pipe is liable to slip in its seat and does not carry the full force of the blow to the shoe, and the wedge-shaped base of the pipe is often stove up or broken by the blows in driving.

The object of my invention is to form such an efficient joint between the pipe and shoe that all liability to telescope shall be overcome, and the full force of the blows in driving shall be carried to the shoe.

It consists in forming around the inner edge of the annular seat in the shoe an angular lip or ring, and cutting out the inner edge of the end of the pipe to form a corresponding recess

in which the lip fits, this lip serving to hold the pipe in its place within the shoe and prevent its being driven off its seat and telescoping in the shoe.

To enable others skilled in the art to make and use my invention, I will describe its construction and manner of use.

The drive-shoe A is tubular in shape and is generally formed of cast-steel, as it is necessarily subject to greater jars or strains than cast-iron is adapted to bear, and yet must preserve its sharp edge, which would be worn off a wrought-iron shoe. The lower edge of the shoe is inwardly tapered, so as to form an annular edge, *a*, around the outer rim and a taper or bevel, *b*, toward the interior, which serves to force the earth into the interior of the shoe and pipe from which it is removed as the pipe is driven farther into the ground.

C is the lower section of pipe or tubing, to which the drive-shoe is secured, the pipe fitting down into the top of the shoe, the tubular opening at the top of the shoe being enlarged for its reception, so that when the pipe is secured in place the interior of the casing and shoe-base will be about flush with each other.

The shoe A is provided with the annular seat D for the reception of the pipe, and around the inner edge of the seat is the angular lip or ring *e*, extending above the seat so as to form the back of the seat into an angular recess, *d*, back of the ring. The base of the pipe C is made to correspond in form to the seat in the shoe, its inner edge being cut out to form an annular recess, in which the ring *e* fits, and an annular angular tongue, *h*, which fits into the recess *d* back of the ring *e*. The end of the pipe thus fits down into the seat in the shoe, its angular tongue being seated in the recess back of the angular ring in the shoe, and is held in place thereby, so that it is prevented from being driven over the edge of the shoe-seat by the blows in driving and telescoping, as has frequently happened when the usual square seat is used. The pipe is secured in the drive-shoe by shrinking, brazing, screwing, or riveting, as desired, so as to form a secure joint between them, and when so connected the lip or ring on the shoe-seat holds the base

of the pipe securely in place and overcomes all tendency to telescope. As the faces of the lips and recesses in both pipe and shoe are square and fit closely together, the force of the
5 blow on the top of the pipe is carried directly to the shoe, and there is no liability of the edge slipping in the shoe-seat and being worn off by its movement on the seat, as where a wedge-shaped joint is employed.

10 What I claim as my invention, and desire to secure by Letters Patent, is—
In combination with the drive-shoe having

the annular seat formed of an angular ring, *e*, and recess *d*, the pipe provided with a correspondingly-shaped annular recess, *i*, and tongue 15 *h*, substantially as and for the purposes set forth.

In testimony whereof I, the said PETER PATTERSON, have hereunto set my hand.

PETER PATTERSON.

Witnesses:

JAMES I. KAY,
F. G. KAY.