L. B. BROWN & J. H. NORRIS.

SHOE FOR DRIVING PIPE OR CASING.

No. 184,497. Patented Nov. 21, 1876.

Fig. 1.

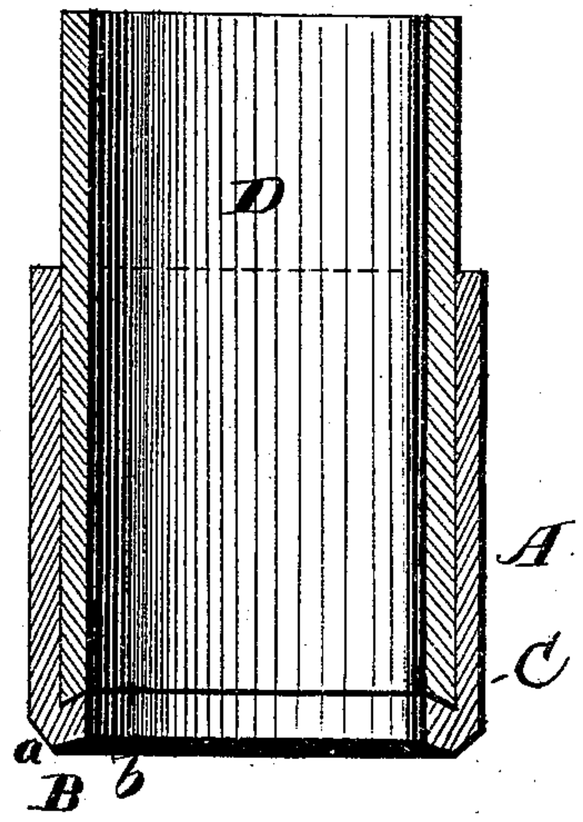
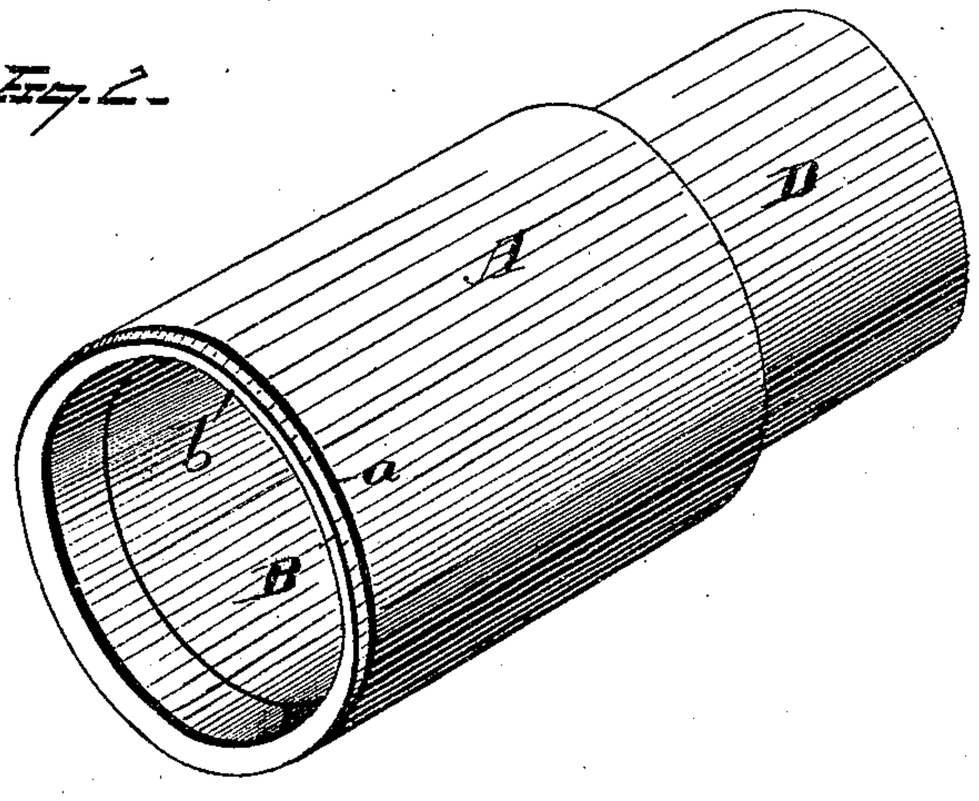


Fig. 2.



WITNESSES

Ed. J. Stottingham

H. O. McCleary

INVENTOR

Lester B. Brown

Josiah H. Norris.

By Leggett and Leggett

ATTORNEY

UNITED STATES PATENT OFFICE.

LESTER B. BROWN AND JOSIAH H. NORRIS, OF BRADFORD, PENNSYLVANIA.

IMPROVEMENT IN SHOES FOR DRIVING PIPES OR CASINGS.

Specification forming part of Letters Patent No. **184,497**, dated November 21, 1876; application filed October 11, 1876.

To all whom it may concern:

Be it known that we, LESTER B. BROWN and JOSIAH H. NORRIS, of borough of Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Shoes for Driving-Pipes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to shoes for driving pipe or casing, and is designed in its construction to cause the earth to be partly forced out relative to the exterior side of the shoe, and thus reduce the quantity of dirt accumulating in the interior of the pipe. It is further intended to join the shoe to the lower section of the driving-pipe in such a manner as may not tend to weaken same at this point, and secure a firm union of the two at the same time.

Our improvements consist, first, in providing the driving end of the shoe with a central annular projecting edge, formed by beveling on either side of the center from the same, respectively inward and outward, at an angle to the length of the shoe; second, in uniting the shoe and the lower section of the pipe or casing with a wedge-shaped joint and shrinking or brazing the two together.

Referring to the drawings, Figure 1 is a longitudinal section representing our invention, and Fig. 2 is a perspective view of same.

A is the shoe, of suitable size and bore, the driving or foremost end of which is constructed with the annular central projecting ridge or edge B. From this cutting-edge, circling the lower extremity of the shoe, and which stands out from the remaining part of same, are two beveled or chamfered edges *a b*, inclining, respectively, inward and outward at an angle approximately forty-five degrees, more or less, and which form said central ridge B. The lower interior end of the shoe is constructed with an annular shoulder, C, having a sloping incut, so as to form a wedge-shaped joint with the correspondingly cut lower end of the pipe-section D. This section D represents the lowest, or that division of the pipe or casing which is secured to and follows the forcing-shoe in its progressive action. It is chamfered inward and upward from its outer lower periphery, so as to obtain a bevel the counterpart of that formed on the interior shoulder of the shoe. A tight union of the pipe-section and the shoe is thus made, and one which insures a progressive binding force between the two as they are driven together. For further security and additional strengthening of the joint, the two pieces are subjected to a shrinking process by hydraulic pressure; or they may, instead of same, be brazed together. Thus their connection is fully secured, so that the two may be firmly united for the purpose, and by such a construction we avoid weakening the parts by a cut thread and screw engagement, which lessens the sectional dimensions of both pipe and shoe at just the points where they require full strength.

By making the beveled central ridge on the lower edge of the shoe, it is apparent that the dirt displaced is in part crowded out against the wall of the bore forming part of same, and hence less earth gathers within the pipe to be removed therefrom.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A shoe for driving pipe or casing, whose working edge is provided with a double-beveled face, substantially as and for the purpose described.

2. A driving-shoe having its lower end constructed with an annular central projecting ridge, substantially as and for the purpose described.

3. The combination of a driving pipe and shoe, the two connected by a wedge-shaped joint and shrunk or brazed together, substantially as and for the purpose described.

LESTER B. BROWN.
JOSIAH H. NORRIS.

Witnesses:
G. A. BERRY,
W. R. WEARN.