

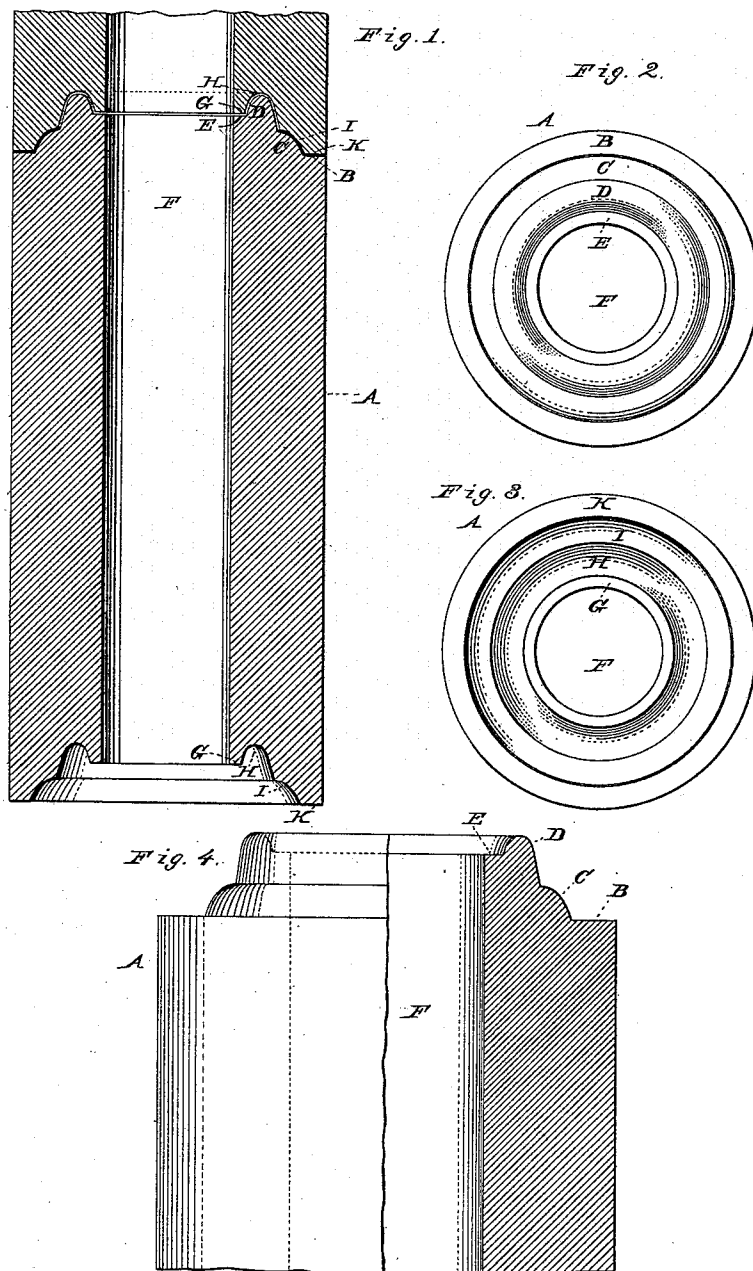
(No Model.)

M. WILLIAMS & S. W. VAUGHEN.

JOINT FOR THE BRICKS OF LADLE RODS.

No. 349,265.

Patented Sept. 14, 1886.



WITNESSES

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UNITED STATES PATENT OFFICE.

MORGAN WILLIAMS AND SAMUEL WINFIELD VAUGHEN, OF JOHNSTOWN, PA.

JOINT FOR THE BRICKS OF LADLE-RODS.

SPECIFICATION forming part of Letters Patent No. 349,265, dated September 14, 1886.

Application filed July 19, 1886. Serial No. 208,509. (No model.)

To all whom it may concern:

Be it known that we, MORGAN WILLIAMS and SAMUEL WINFIELD VAUGHEN, citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Joints for Covering Bricks of Ladle-Rods; and we do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of this invention, and is a vertical section. Fig. 2 is a plan view of the convex end of the brick. Fig. 3 is a plan view of the concave end of the brick. Fig. 4 is a detail view.

Our invention relates to joints for the sleeve or covering-brick for the iron rod used in stopping the pouring opening in ladles for molten steel or iron; and it consists in the construction of parts, as hereinafter described, and pointed out in the claim.

In this class of joints as heretofore constructed there has been considerable trouble experienced from the fact that, owing to their shape, the molten steel or iron will get through to the rod, thereby burning it, and causing great expense and trouble as well as delay in repairing and replacing the rods.

The object of our invention is to obviate these defects by constructing the joints of the bricks, so that they will hold the mixture used for binding or cementing the joint in place, and will present so much surface to the molten steel or iron that may enter the joint that said molten steel or iron will solidify before it can pass all of the obstructions placed in its course, and will therefore do no harm to the rod.

Referring by letter to the accompanying drawings, A designates one section of the sleeve or covering-brick, which is provided at one end with an annular shoulder, B, from which rises an integral convex bead, C, and from this

bead C rises or extends an integral ring or bead, D, which is convex on its outer face, which terminates in a plain integral inwardly-projecting shoulder, E, which terminates at the axial bore F of the brick, the shoulder B and beads C and D forming the male portion of the joint when two sleeves or bricks are united on the rod. At its opposite end the section A is provided with an interior shoulder, G, which is designed to abut against the interior shoulder, E, of an adjoining section of sleeve, and surrounding this shoulder G is an annular groove, H, for the reception of the bead or ring D of the next sleeve, and next to this, nearer the end of the sleeve or brick A, is a concave portion, I, which is designed to receive the integral ring or bead, D, of an adjoining section of sleeve, the outer face or end of the sleeve or brick at K being plain or bounded by the straight line, which permits this portion K to match or meet the shoulder B of the next section of sleeve, the cement used at the joint, however, intervening to render the joint practically tight, to prevent the influx of the molten steel or iron. The ladle-rod passes through the axial bores of the sleeves, and is by them protected from the molten steel or iron, as the case may be.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

A sleeve or brick section for ladle-rods, said sleeve being provided on one end with the male portion of a joint, comprising the shoulder B, the convex bead C, the ring or bead D, and the shoulder E, and provided on the other end with the female portion of the joint, comprising the shoulder G, the groove H, the concave portion I, and the plain portion K, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

MORGAN WILLIAMS.

SAMUEL WINFIELD VAUGHEN.

Witnesses:

JNO. S. TITTLE,

JOHN JAMES.