

No. 861,487.

PATENTED JULY 30, 1907.

R. C. VEITCH.

APPARATUS FOR MAKING LININGS OF HOT POTS.

APPLICATION FILED SEPT. 4, 1906.

Fig. 4.

Fig. 3.

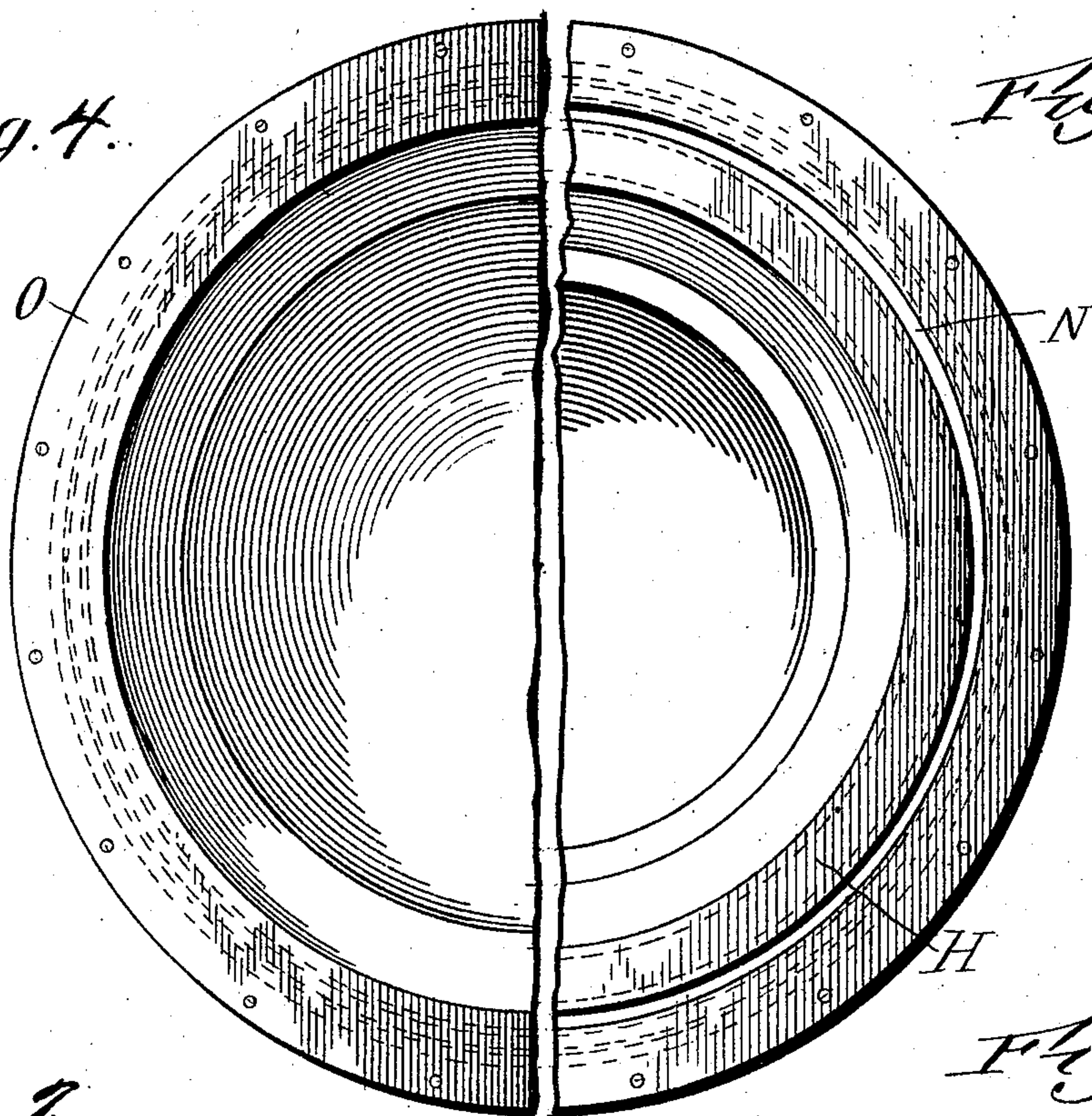
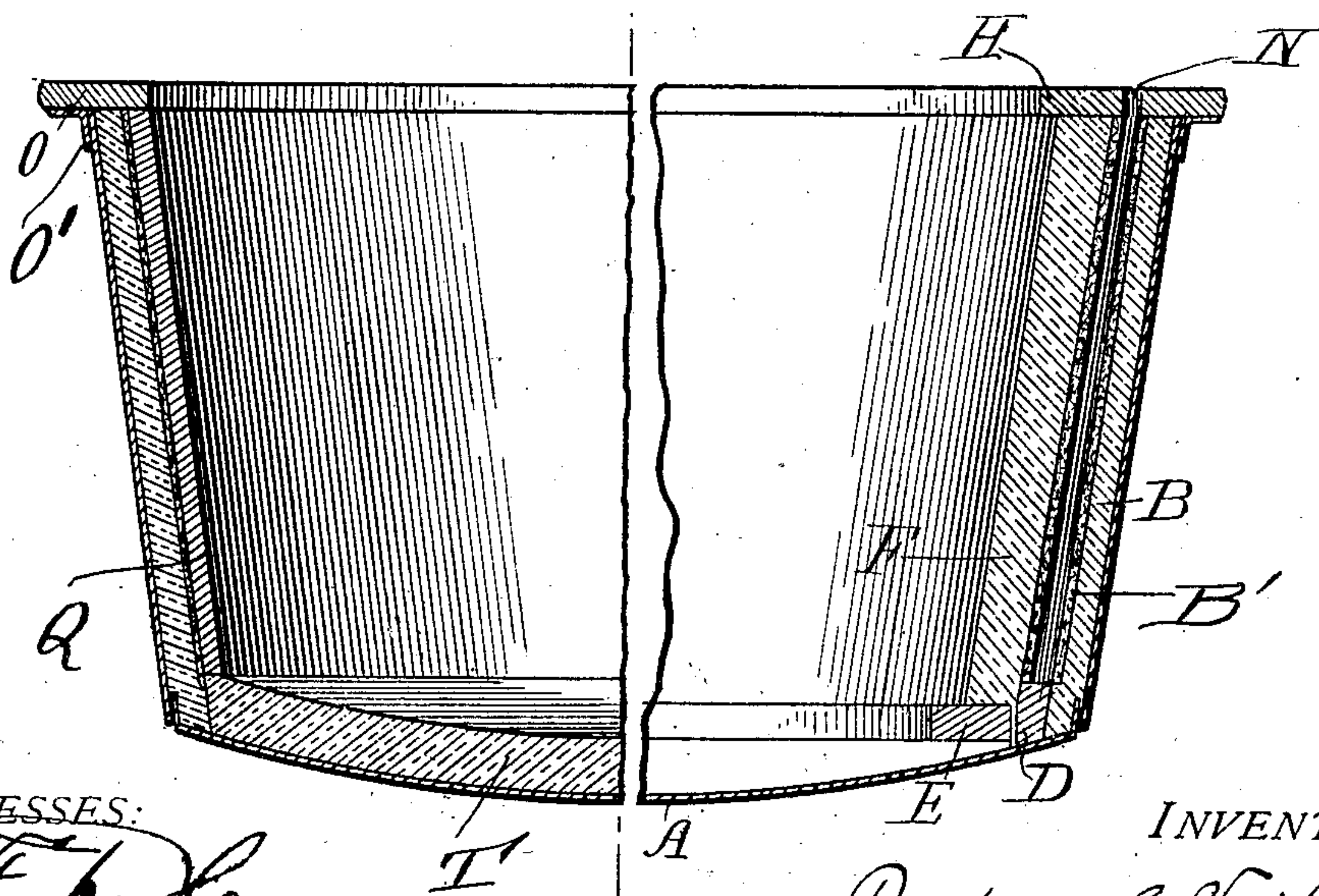


Fig. 2.

Fig. 1.



WITNESSES:

*H. F. Korte*  
*A. L. Hough*

INVENTOR

*Richard C. Veitch*  
BY *Franklin H. Hough*  
Attorney



# UNITED STATES PATENT OFFICE.

RICHARD C. VEITCH, OF BESSEMER, ALABAMA.

## APPARATUS FOR MAKING LININGS OF HOT-POTS.

No. 861,487.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed September 4, 1906. Serial No. 333,190.

*To all whom it may concern:*

Be it known that I, RICHARD C. VEITCH, a citizen of the United States, residing at Bessemer, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Apparatus for Making Linings of Hot-Pots; and I 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in apparatus for making solid cast linings for ladles or hot pots, direct from a blast furnace.

Heretofore it has been common in the art to cast the linings for the pots or ladles in sections which are afterward bolted together and placed within the ladle or pot at a considerable expense, but by my improved apparatus for making the linings solid, being cast direct from the blast furnace and at the furnace, a much more durable and satisfactory lining is afforded which may be produced at a greatly reduced cost than by the apparatus commonly employed.

The invention consists further in various details of construction and combinations of parts which will be hereinafter fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view through one-half of a ladle or hot pot, showing the same in readiness to receive the molten metal which is adapted to form the lining therefor. Fig. 2 is a similar view through a one-half section of the pot with the lining cast therein. Fig. 3 is a top plan view of the construction shown in Fig. 1, and Fig. 4 is a top plan view of the construction shown in Fig. 2.

Reference now being had to the details of the drawings by letter, A designates a ladle or hot pot which is made preferably of sheet steel which is to be positioned in a suitable frame, and preferably to be mounted upon a suitable car or truck, whereby the same may be conveniently moved from place to place. A suitable brick-work B is laid up within the ladle and against the circumferential wall thereof, after which a coating of loam B' is placed over the inner surface of said layer of brick. Placed within the ladle and about the lower edge of said layer of brick is a metallic thickness strip D which is a ring of a thickness equal to the thickness which is desired to make the lining of the ladle or pot, and inside of said thickness strip is inserted a ring E, the circumference of which contacts with the inner

periphery of said thickness strip, and upon said ring is built up a core F of brick-work, the outer circumference of said core being coated with a loam, with a space intermediate the two layers of brick equal to the thickness of the thickness strip. After the core has set, suitable hoisting mechanism is applied to said ring, whereby the latter and the core may be raised out of the ladle or pot, and the uneven places in the outer circumference of the core are filled up with loam, and the thickness strip removed from the ladle or pot. This being accomplished, the core and also the brick lining to the pot are thoroughly dried, a lining T of fire-brick placed in the bottom filling the space formerly occupied by the thickness strip, and the core is placed back in the ladle, resting upon said lining to the bottom, with the annular space intervening between the same and the lining to the pot, and in readiness to receive the molten metal which will form the permanent lining Q. After the core has been put back within the ladle or pot, a ring H, with an annular slot N therein, is temporarily held over the top of the core and lining B' with said annular slot N in registration with the annular space intermediate the core F and the coating of loam B', to receive the molten metal which is to form the permanent lining. After the metal has been run direct from the furnace into the groove and set, the core and the ring at the top of the ladle or pot are removed, and a permanent flange O is fastened by bolts to the annular flange O' which is secured to the shell of the ladle or pot, thereby securely holding the lining in place.

From the foregoing, it will be noted that by the provision of the apparatus shown and described, a simple and efficient lining may be conveniently formed within a ladle or hot pot and of a solid piece of metal securely held to the lining of the pot or ladle, and one which may be constructed at much less expense than the ordinary sectional linings which are commonly in use and especially designed for use in receiving molten slag from a furnace and conveying the same to a cinder or slag dump.

What I claim is:—

A ladle for conveying molten slag from furnaces, consisting of a metallic shell, a brickwork lining thereto, a loam coating to said brickwork, a cast metallic lining resting upon the brickwork which forms the bottom of the ladle, bracket arms projecting from the metallic shell, and a ring supported upon the upper edge of the shell, bracket arms and metallic lining, as set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

RICHARD C. VEITCH.

Witnesses:

J. W. BUSH,

J. C. MILLER.