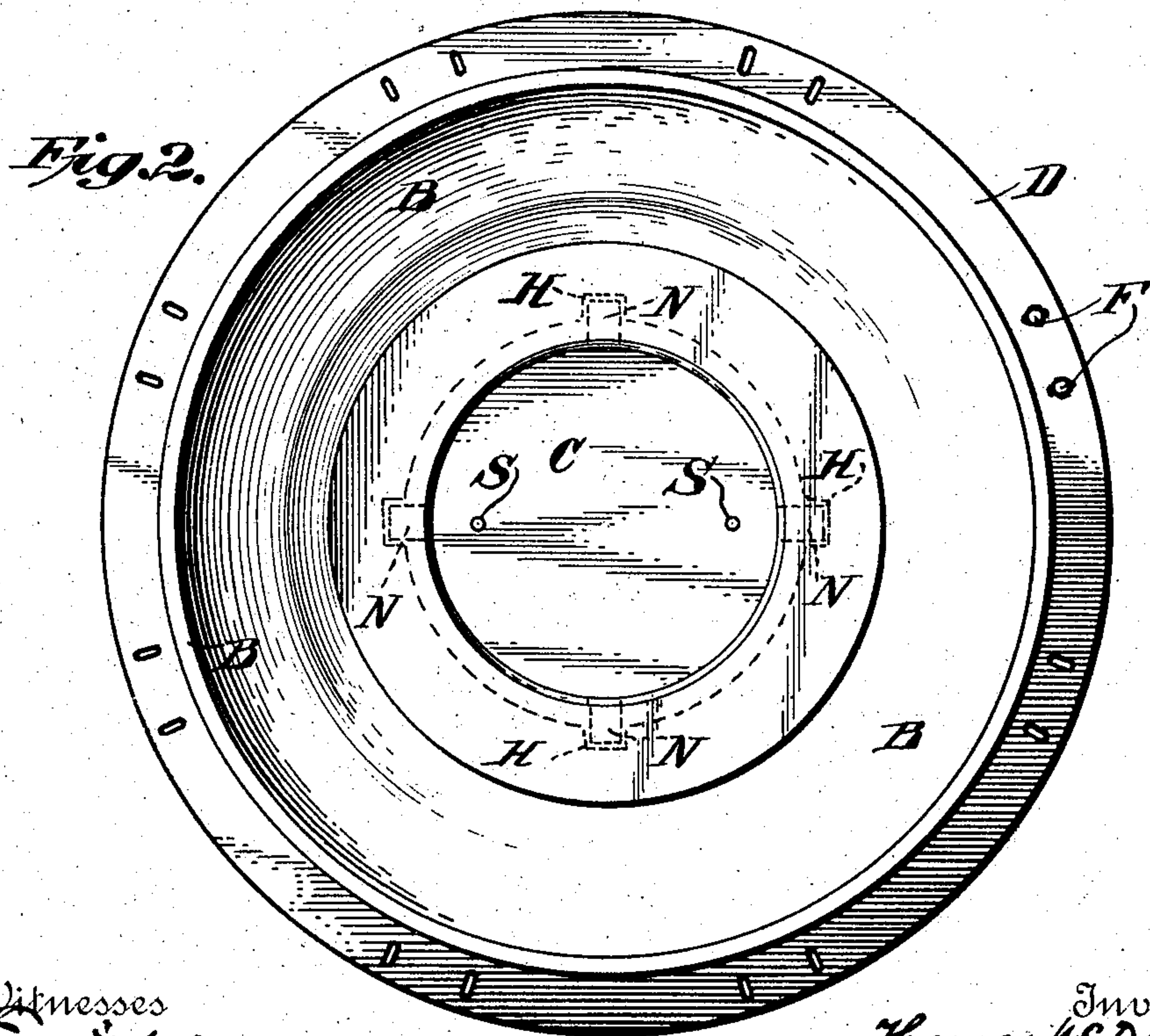
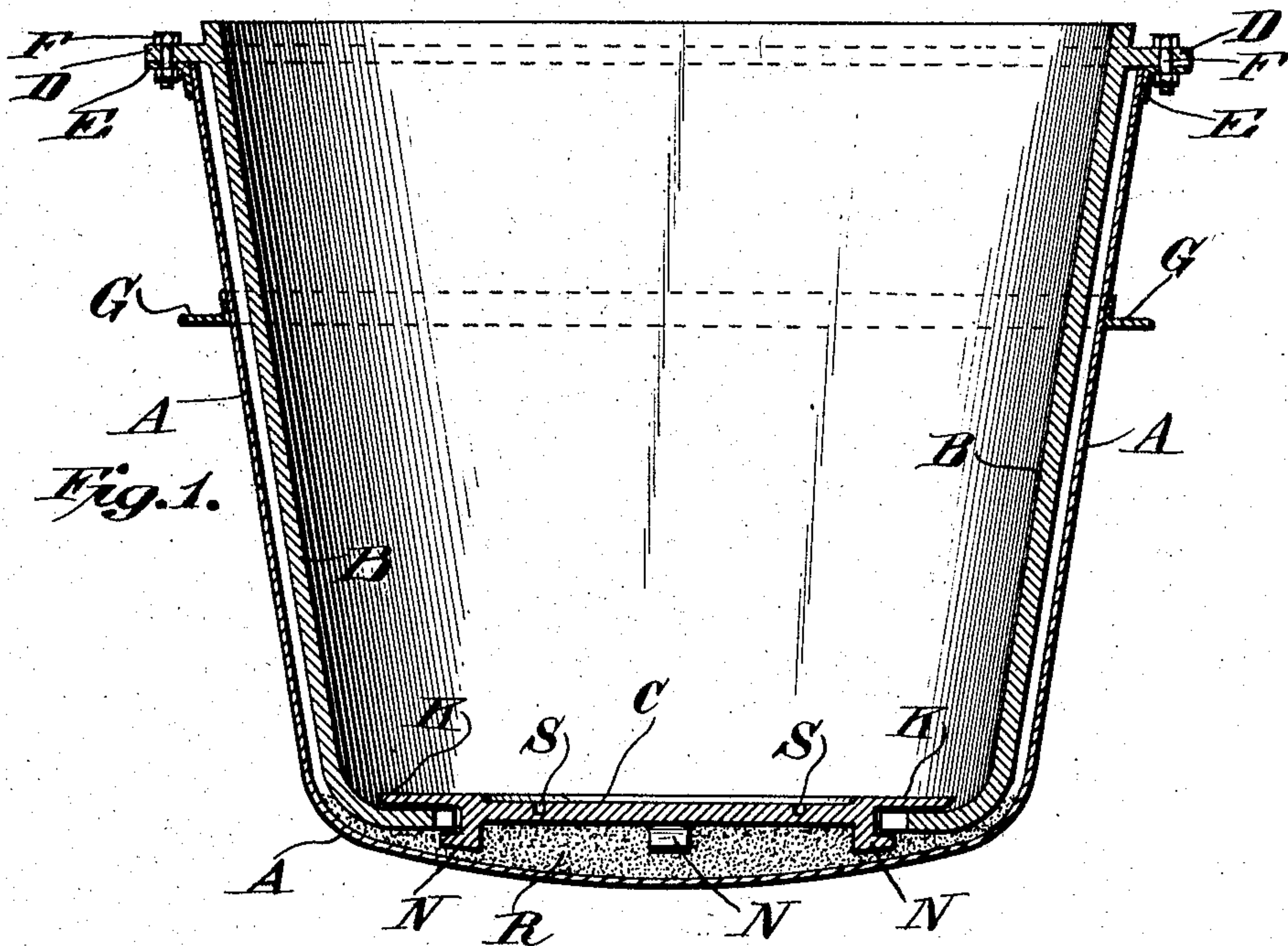


No. 781,293.

PATENTED JAN. 31, 1905.

T. McDONALD.  
CINDER LADLE.

APPLICATION FILED OCT. 17, 1904.



Witnesses  
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# UNITED STATES PATENT OFFICE.

THOMAS McDONALD, OF YOUNGSTOWN, OHIO.

## CINDER-LADLE.

SPECIFICATION forming part of Letters Patent No. 781,293, dated January 31, 1905.

Application filed October 17, 1904. Serial No. 228,686.

*To all whom it may concern.*

Be it known that I, THOMAS McDONALD, a citizen of the United States, and a resident of Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Cinder-Ladles, fully described and represented in the following specification and the accompanying drawings.

This invention relates to the cast-iron lining, hereinafter specified as the "thimble," with which all modern cinder-car ladles are equipped.

The object of my invention is to obviate a defect which is associated with the use of all previously-known thimbles having removable bottoms. It has been customary to secure the removable bottoms of these thimbles by means of bolts to the ladle proper, the result being that the presence of iron in the cinder soon cuts away the tops of these bolts, which then act as conductors, leading the iron directly to the steel ladle and destroying the same.

My invention consists in securing the removable bottoms without making any connections to the ladle.

The accompanying drawings show the simplest method of accomplishing my aims.

Figure 1 is a vertical cross-section through a cinder-ladle equipped with a cast-iron thimble having a removable bottom, and Fig. 2 is a top plan view of the same embodying my invention.

Referring to Fig. 1, A is the outer shell or ladle proper. B is the cast-iron lining or thimble, the latter being provided with the removable bottom C. The thimble is held in position by having its flange D secured to flange E of ladle by means of bolts F. The flange G serves to support the ladle in a bail. (Not shown.) Recesses H are cut into the circumference of opening in bottom of thimble B. The removable bottom C is supported on the bottom of thimble B by means of flange K. Lugs N on the under side of C coincide with recesses H, and they are so made that when bottom C is being put in place these lugs N readily pass through recesses H. Then turning bottom C to the right or left by means of a spanner fitting into the holes S the bot-

tom C will be securely fastened to the thimble by means of the lugs N and flange K straddling the edge of opening in the bottom of thimble B.

R is a layer of refractory material filling the space between the ladle and the bottom C and serves to protect the ladle A in case the iron in the cinder burns through the removable bottom C.

I do not intend to confine myself to the special details of construction shown, but wish to be understood as asserting, broadly, my claims to originality in securing the removable bottoms of thimbles for cinder-ladles without attaching same to the ladle proper, and it is obvious that this invention may be embodied in widely-varying forms.

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

1. A cinder-ladle or the like consisting of an outer ladle, an inner thimble so supported that its bottom is not in contact with the ladle, the space between bottoms of ladle and thimble packed with a refractory material, a removable bottom for the thimble, and having means not in contact with the outer ladle for securing the removable bottom to the thimble, substantially as described.

2. A cinder-ladle or the like consisting of an outer ladle, an inner thimble so supported that its bottom is not in contact with the ladle, the space between bottoms of ladle and thimble packed with a refractory material, a removable bottom for the thimble, this removable bottom having lugs on the under side fitting into recesses in the bottom of the thimble, said lugs together with the upper part of the bottom forming means for securing the removable bottom to the thimble, substantially as described.

3. A cinder-ladle or the like consisting of an outer ladle, an inner thimble so supported that its bottom is not in contact with the ladle, the space between bottoms of ladle and thimble packed with a refractory material, a removable bottom for the thimble, this removable bottom having lugs on the under side fitting into recesses in the bottom of the thimble, said lugs together with the upper part of the bot-



tom forming means for securing the removable bottom to the thimble by rotating the bottom to the right or left after lugs have passed through above-mentioned recesses, 5 substantially as described.

4. A cinder-ladle or the like consisting of an outer ladle, an inner thimble so supported that its bottom is not in contact with the ladle, the space between the bottoms of the ladle and 10 thimble packed with a refractory material, a removable bottom for the thimble, this removable bottom having lugs fitting into recesses in the bottom of the thimble, said lugs together with the upper part of the bottom 15 forming means for securing the removable bottom to the thimble by rotating said bottom to the right or left after the lugs have passed through above-mentioned recesses; and spanner-holes in the upper side of the removable 20 bottom adapted to receive a spanner by which

to rotate said bottom; substantially as described.

5. A cinder-ladle or the like comprising an inner and outer vessel, a removable bottom in the inner vessel and means not in contact with 25 the outer vessel for securing said removable bottom to the inner vessel.

6. A cinder-ladle or the like comprising an inner and outer vessel, the inner vessel being of cast-iron and having a removable cast-iron 30 bottom; means on said inner vessel and means on said bottom together forming the locking means to hold said bottom in place.

In testimony whereof I have signed this specification in the presence of two subscrib- 35 ing witnesses.

THOMAS McDONALD.

Witnesses:

H. JAMES LITTLE,  
WARREN F. PERRY.