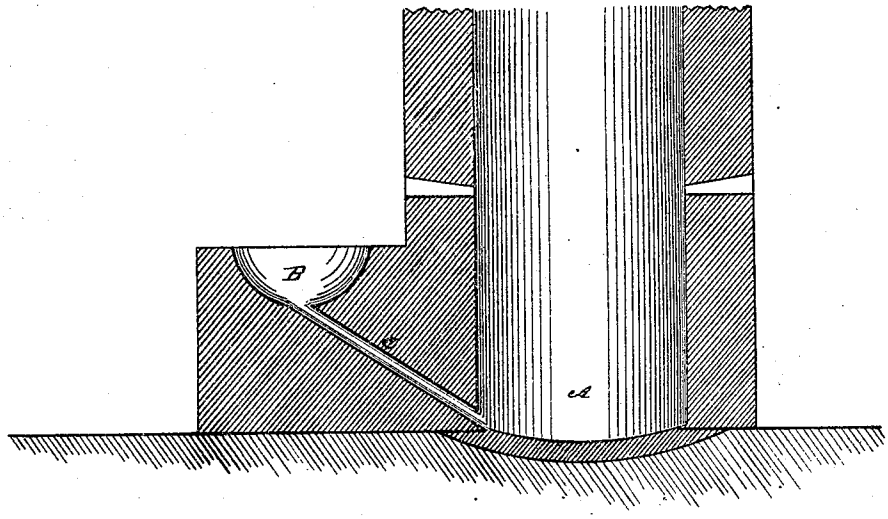
Winfield S. Keyes and Albert Arents.

Imp.t in Method of withdrawing molten metals from smelting furnaces.

No. 121,385. Patented Nov. 28, 1871.



Witnesses:
Wm. S. Thornton
A. Barnes

Inventors.
Winfield Scott Keyes.
Albert Arents
By their Attorneys.
Wastern & Lamb.

UNITED STATES PATENT OFFICE.

WINFIELD SCOTT KEYES AND ALBERT ARENTS, OF EUREKA, NEVADA.

IMPROVEMENT IN FURNACES FOR SMELTING LEAD AND OTHER ORES.

Specification forming part of Letters Patent No. 121,385, dated November 28, 1871.

To all whom it may concern:

Be it known that we, WINFIELD SCOTT KEYES and ALBERT ARENTS, both of the town of Eureka, in the county of Lander and State of Nevada, have invented a new and Improved Method of Tapping or Withdrawing Molten Metals from Smelting Furnaces; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing forming a part of this specification, and to the letters of reference marked thereon.

The object of this invention is to provide a novel, simple, and improved method of tapping or withdrawing lead and other metals, when in a molten state, from the bottom of a smelting furnace, so that the metal may be obtained therefrom in a clean state; and also, that the formation of hard matters or incrustations on the sides and bottom of the furnace may be avoided. The nature of this invention consists in the use or employment of a basin of suitable dimensions, located a short distance from one side of the furnace and at a suitable elevation above the bottom of the furnace, which said basin is connected with the furnace by means of a tube which extends from the bottom of the basin to the bottom of the furnace. As the molten metal fills the lower part of the furnace it rises to the same level in the tube until it reaches the basin, from whence it may be removed as clean metal.

To enable others skilled in the art to make and use our invention, we will proceed more particularly to describe the same.

The figure represents a sectional elevation of a portion of a smelting-furnace with our improvements.

A represents the furnace, which may be of ordinary or common construction. B is a basin of suitable dimensions, located at the top of an extension built on one side of the furnace and at a suitable elevation above the bottom of the furnace. This basin may be constructed of any material suitable for receiving and holding the molten metal. Extending from the bottom of the basin B to the bottom of the furnace A, through the above-mentioned extension, is a tube, C, which connects the basin with the furnace, and which may be made of iron, clay, or other material suitable for the purpose.

The metal as it melts falls to the bottom of the furnace, and as the surface of the molten metal rises within the furnace it rises to the same level in the tube C until it reaches the basin B, from which it may be removed with a ladle.

The advantages of this invention are obvious, as by this means the metal is tapped or withdrawn from the furnace free from impurities; and it will also be seen that the difficulties arising from the formation of hard matter or incrustations on the bottom and sides of the furnace, occasioned by the usual method of drawing off a large quantity of molten metal at one time, are obviated.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

The method of tapping or withdrawing molten lead or other metals from a smelting-furnace by means of the basin B and tube or connection C, in combination with the furnace, substantially as shown and described.

WINFIELD SCOTT KEYES.
ALBERT ARENTS.

Witnesses:
L. FETMER,
J. VITTELSHACK.

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