

# UNITED STATES PATENT OFFICE.

JAMES IRWIN, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE PITTSBURG STEEL CASTING COMPANY, OF SAME PLACE.

## IMPROVEMENT IN COMPOSITIONS FOR REPAIRING CRUCIBLES.

Specification forming part of Letters Patent No. **177,127**, dated May 9, 1876; application filed April 25, 1876.

*To all whom it may concern:*

Be it known that I, JAMES IRWIN, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Composition for Repairing Crucibles; and I do hereby declare the following to be a full, clear, concise, and exact description thereof.

In the operation of renewing partly worn or partly burned out crucibles (in metallurgic operations) various compounds have been employed. After experimenting with different compounds for this purpose I have succeeded in attaining the best results by the use of a mixture of soda-ash, white glass-house sand, old crucibles, and fire-clay. These ingredients are pulverized and mixed in about the following proportions, by measure, viz: soda-ash, two per cent.; sand, two per cent.; old crucibles, ninety-two per cent.; fire-clay, four per cent.

The mixture is wet up with water to a thick fluid or semi-fluid consistency, and the crucibles to be treated are then dipped in till, by one or more dippings, they are coated with the mixture to the depth of about an eighth of an inch, more or less; or the mixture may

be made thicker and plastered on. I also plaster or apply a coating of it to such parts of the inside of the crucible as may be injured by the metal within or its fluxes. The crucibles then, when dry, are ready for use. After being used this coating readily scales or crumbles off, and the operation is repeated till the crucible is entirely burned out or becomes worthless. In this way I add considerably to the life of a crucible at comparatively no expense.

I am aware that the process of renewing old crucibles by dipping, in the manner described, is not new, and I make no claim herein except to my superior compound.

I claim as my invention—

A compound consisting of soda-ash, sand, old crucibles, and fire-clay, compounded with water in about the proportions specified, and for the uses set forth.

In testimony whereof I have hereunto set my hand.

JAMES IRWIN.

Witnesses:

JOHN L. HULL,  
HENRY C. OVER.