S. GRILLEY.

Refining Iron and Steel.

No 644. Patented March 17, 1838.

Fig. 1.

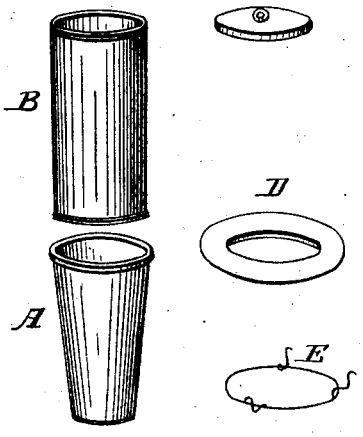
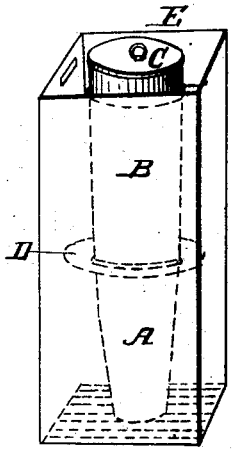


Fig. 2.



Inventor:
Silas Grilley

UNITED STATES PATENT OFFICE.

SILAS GRILLEY, OF WATERBURY, CONNECTICUT.

IMPROVEMENT IN THE FURNACE AND POTS FOR MELTING METALS.

Specification forming part of Letters Patent No. **644**, dated March 17, 1838.

To all whom it may concern:

Be it known that I, SILAS GRILLEY, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Furnace and Pots for Melting Metals for Castings, or for other purposes, by which great saving of metal, of fuel, of time, and of labor is obtained. This I effect by appendages simple in construction, and easily applied to furnaces and pots in common use.

To enable others skilled in the art to make and use my invention and improvement, I describe the construction and operation as follows, viz:

The furnace may be round or square, and of a size suitable for the pots intended to be used, and must be lined with fire-brick or other material indestructible by fire, and having a grate at the bottom; the middle bar of which should have on it an elevated stand about an inch high for the pot to rest upon.

The pots I use may be of any size and for large or small operations, and are in common form, except that they should be made without a projecting lip, and of the materials in common use, or of any other that will stand the fire; and my improvement consists, principally, in placing on the melting-pots a top pot or tube, open at both ends, about one-fourth longer than the bottom pot, in diameter of the size of the lower pot where they join, and a little less at top, having a shoulder with a lip at the bottom to fit, embrace, and rest upon the top of the lower pot, and is made of the same materials as the lower pot.

The object and peculiar use of the top pot or tube is to enable the operator to charge both pots with metal sufficient, when fused, to fill the lower pot as it melts and descends, thus preventing the necessity of opening the furnace to introduce cold metal and the waste often occasioned thereby, and while fuel in the furnace surrounds both pots on the outside all coal may be excluded from the inside of both.

The furnace may be covered with folding doors closing around the upper pot or tube, or it may be held steady in place by a ring around the tube having branches hooked to the sides of the furnace. The top of the tube may be covered with a movable lid to exclude coal when feeding the furnace. My object is to confine the heat and to give easy and direct access to the lower pot for the occasional supply of metal when necessary for compounding or otherwise, without interfering with the fuel, and to prevent the waste of metal by such interference and the loss of time and labor by the usual mode of feeding. After the metal is all fused the top pot or tube may be taken off, and a flaring piece or hopper having an open orifice in the center of the size of the melting-pot, made of the same materials as the pots, and fitted with a lip to the top of the lower pot, and flaring upward nearly to the sides of the furnace, may be placed upon the top of the pot, thereby confining the heat around the pot, and preventing the loss of metal by swashing while stirring the melted mass to mix and amalgamate the metal—a necessary operation and often attended with loss.

For a further illustration I refer to the drawings accompanying this specification as part thereof.

Figure 1, A, represents the melting-pot in common use; B, the upper pot or tube; C, the cover of the tube; D, the flaring piece or hopper; E, the ring, with branches and hooks, to hold the tube steady.

Fig. 2 represents the furnace, exhibiting by dotted lines the several parts connected and in place; but the tube and the hopper are not to be used together.

I claim as my invention and improvement—

1. The upper pot or tube, as described, and its application and uses and for the purposes specified.

2. The flaring piece or hopper, as described, and for the uses and purposes specified.

For these improvements severally, and for each in combination with furnaces and pots for melting in common use, as specified, I solicit Letters Patent, &c.

Dated New Haven, December 16, 1837.

SILAS GRILLEY.

Witnesses:

ISRAEL COE,

SIMEON BALDWIN.