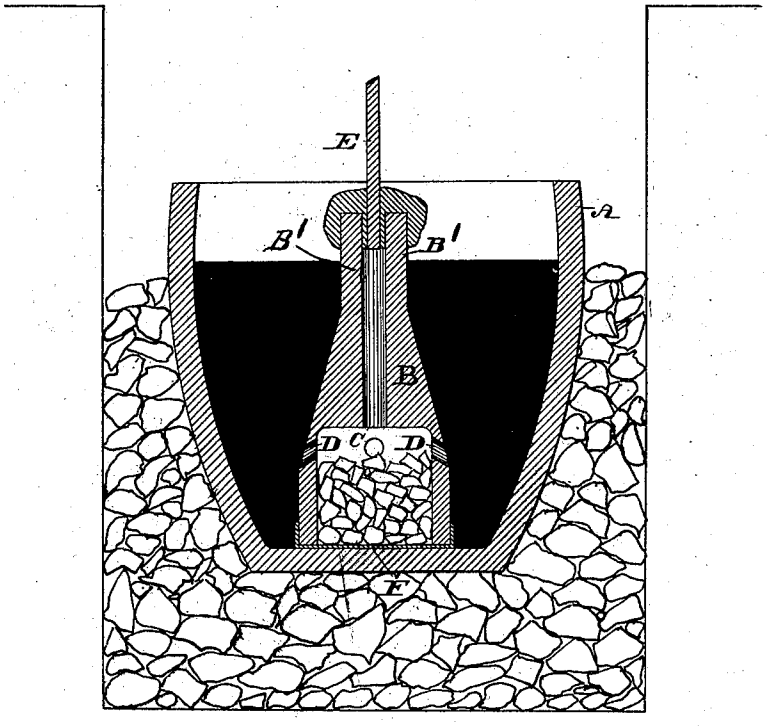
(No Model.)

P. S. REEVES.

HAND CHARGER FOR COMBINING METALS WITH CHEMICALS, MINERALS, &c.

No. 384,075. Patented June 5, 1888.



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PAUL S. REEVES, OF PHILADELPHIA, PENNSYLVANIA.

HAND-CHARGER FOR COMBINING METALS WITH CHEMICALS, MINERALS, &c.

SPECIFICATION forming part of Letters Patent No. 384,075, dated June 5, 1888.

Application filed September 14, 1886. Serial No. 213,473. (No model.)

To all whom it may concern:

Be it known that I, PAUL S. REEVES, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Hand-Chargers for Combining Metals with Chemicals, Minerals, &c., which improvement is fully set forth in the following specification and accompanying drawing, in which the figure is a vertical section of a device for combining metals with other materials embodying my invention, this consisting in the employment of a charger for containing a chemical or chemicals, a mineral or minerals, or other material or materials, the same being adapted to be immersed in metal in a molten state and permit the liberation of the material from the charger and admission of the same into the molten metal, whereby an alloy or mixture of the same with another material or materials may be effected, as will be hereinafter fully described and definitely claimed.

Referring to the drawing, A represents a crucible of any form, size, and substance.

B represents a charger, which is made of fire-clay and black-lead or other suitable material, the same consisting of a hollow or partly-hollow body forming a chamber, C, which is open at the bottom and of greater diameter than the handle portion of the upper part thereof, the said body being perforated in its sides, as at D.

A suitable handle, E, is attached to the hollow neck B′ of the body of the charger, for conveniently applying and removing the charger to and from the crucible, the said handle being fitted in the bore of said neck, and tightly closing it at the top.

The operation is as follows: The chemical, chemicals, mineral, minerals, or other material or materials are introduced into the chamber C, the charger having been inverted to permit such introduction, and the bottom of the chamber now on top is covered or closed by a piece of pasteboard, fabric, or other material, as at F, or in lieu thereof any other suitable cap, in order to prevent improper escape of the contents of the chamber. The charger is now again inverted and introduced into the molten metal in the crucible, whereby the material in the chamber C is subjected to the heating action of the metal, and said material, by its consequent vaporization, ebullition, &c., is directed or driven from the chamber through the openings D into the molten metal in the crucible, and thus made to combine therewith.

If desired, the charger may be made of lead or other material capable of fusing, melting, igniting, &c., when introduced into the molten metal, whereby the contents of the charger are brought into contact with the metal and the union of the metal and material occasioned or effected. As an example, the chemicals used may be phosphorus in connection with a metallic mixture of copper and tin, whereby a bronze alloy is obtained.

I am aware that hand-chargers formed with a chamber and having a filling-tube by which said chamber is filled are old, the same also having perforations or openings in the side; but I am not aware that a charger as herein described and claimed, wherein the upper portion of the body part is narrower than the base, thereby forming a neck which is hollow, is old, the said construction permitting the employment of a larger quantity of chemicals at a single charge, and at the same time, owing to the relative lightness of the upper portion of the device, rendering it less liable to be upset.

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

1. A hand-charger for the purpose named, consisting of a body, B, having a chamber, C, open at the bottom and provided with perforations in its sides, a neck, B′, rising from said body and formed with a bore, and a handle, E, entering said bore and closing the top of said chamber, substantially as described.

2. A hand-charger for the purpose named, consisting of the body B, having a chamber, C, open at the bottom and provided with perforations in its sides, a hollow neck, B′, rising from said body, a handle in said neck, and a cap, F, forming the bottom of said chamber, substantially as described.

PAUL S. REEVES.

Witnesses:
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