Jan. 30, 1923. 1,443,920.

A. H. LEVY.

METAL REFINING APPARATUS.

FILED MAR. 15, 1922.

Fig. 1.

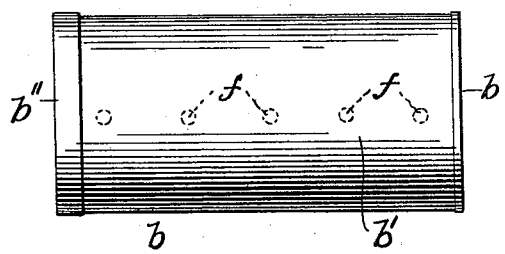


Fig. 2.

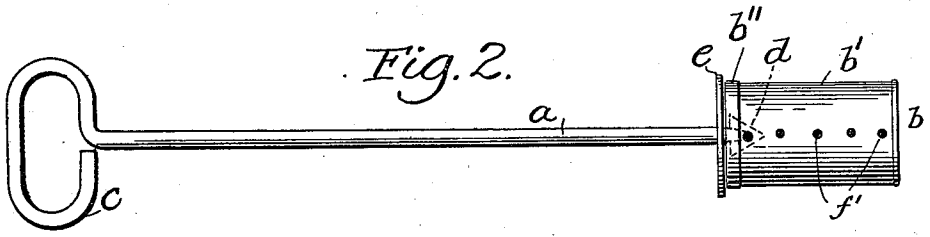


Fig. 3.

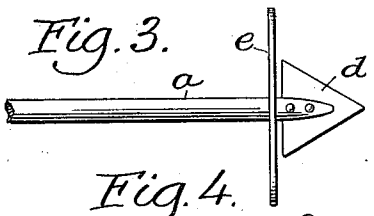


Fig. 4.

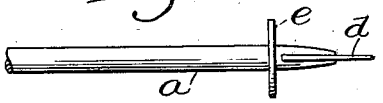


Fig. 5.

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UNITED STATES PATENT OFFICE.

ABRAHAM HOYT LEVY, OF NEW YORK, N. Y.

METAL-REFINING APPARATUS.

Application filed March 15, 1922. Serial No. 543,986.

To all whom it may concern:

Be it known that I, ABRAHAM HOYT LEVY, a citizen of the United States of America, residing at the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Metal-Refining Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in metal-refining apparatus, and particularly to improvements in means for holding a flux-container beneath the molten metal in a melting pot. The apparatus hereinafter described is particularly adapted for use in cases where the metal to be refined is treated in lots of small quantity. Heretofore, when metal (e. g., type-metal) was to be freed from impurities and thereby cleansed, a flux was wrapped up in a newspaper and the package thus formed was tied to a skimmer or to a broom-handle. The dirty metal having been melted in a melting-pot, the broom-handle, with the package of flux secured to one of its ends, was thrust into the molten metal so as to carry the package of flux to near the bottom of the pot.

In the drawings illustrating the principle of this invention and the best mode now known to me of applying that principle, Fig. 1 shows the cartridge in elevation; Fig. 2 illustrates the cartridge impaled on the spearlike point of the bar; Figs. 3 and 4 are details illustrating the pointed end of the bar; and Fig. 5 is a sectional view of the melting pot, showing the cartridge immersed in the molten metal.

The improved apparatus includes a bar *a* by means of which the flux-container *b* may be carried and manipulated. One end of the bar *a* is formed with a handhold *c*, while its other end is provided with a sharp point *d*, so that the bar *a* may be used after the manner of a spear. A short distance from the spear-point *d*, the bar *a* is provided with a collar, flange or washer *e*. The flux-container *b*, known in this art as a cartridge, is marked with vertical series *f* of dots designed to indicate the points at which a punch is to be thrust through the wall *b'* of the container so as to form therein perforations *f'* through which the molten metal *h'* may enter the cartridge and the flux may find egress therefrom, so that an intimate mixture of the flux and the molten metal takes place. The cartridge *b* is provided with a top or closure *b''* of comparatively soft material that may be easily pierced.

The smelter jabs or thrusts the spear-point *d* of the bar *a* through the readily perforable top *b'* of the cartridge *b*, whereby the latter is impaled or spitted on the sharp point *d* of the bar *a*. He also forms holes *f'* in the wall of the cartridge *b* at the points indicated by the dots *f*. He then passes the pointed end *d* of the bar *a*, with the cartridge *b* impaled thereon, into the molten metal *h'* and forces the cartridge *b* down through the same to the bottom of the melting pot *h*, where the cartridge is held until the cleansing of the metal is completed. The collar *e* prevents the cartridge *b* from working up along the bar *a*.

Instead of providing the bar *a* with the triangular point *d*, the bar *a* may be pointed after the manner of an ordinary pike.

I claim:

1. A metal-refining apparatus including a flux-containing cartridge; and a bar upon which the same is impaled and held below the surface of the molten metal that is to be cleansed.

2. A metal-refining apparatus including a flux-containing cartridge having a wall made of readily perforable material; and a bar upon the sharpened end of which the cartridge is impaled and held immersed in the molten metal that is to be cleansed.

3. A metal-refining apparatus including a flux-containing cartridge having a wall made of readily-perforable material and marked with means for indicating points at which holes are to be formed therein for the egress of the flux; and a bar upon the sharpened end of which the cartridge is impaled and held immersed in the molten metal that is to be cleansed.

Signed at the borough of Brooklyn, in the city of New York, county of Kings and State of New York, this 14th day of March, 1922, in the presence of the two undersigned witnesses.

A. HOYT LEVY.

Witnesses:
PETER J. KIERNAN,
OSCAR K. CROSS.