

R. ROSS,
Casting Metal.

101046

PATENTED MAR 22 1870

fig. 1.

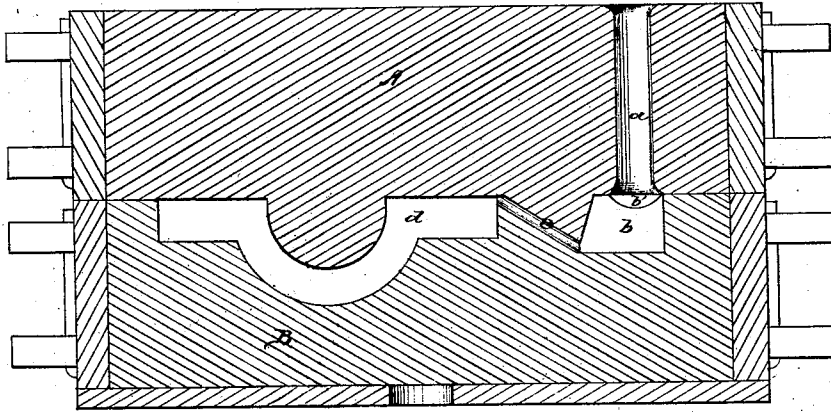
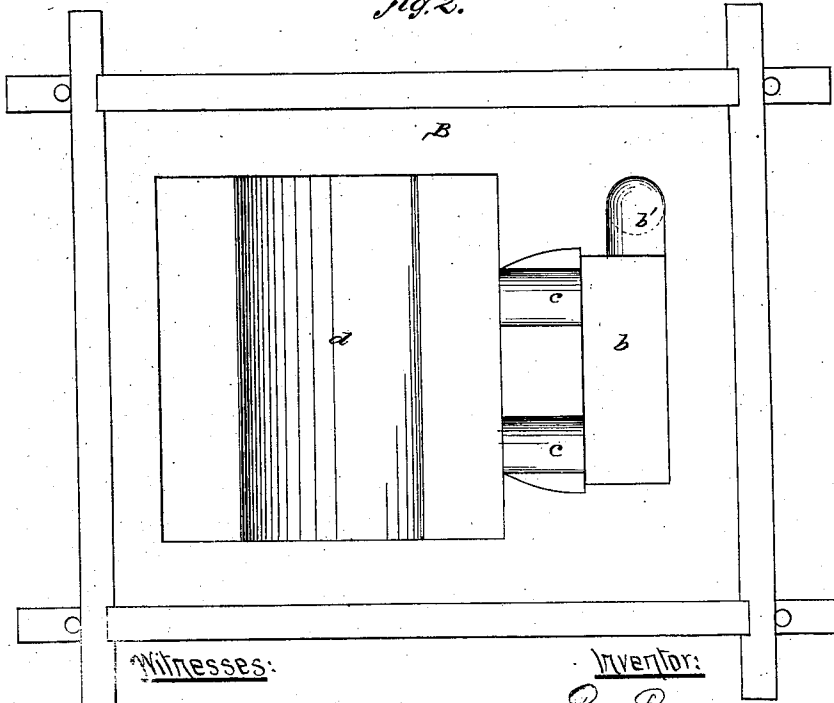


fig. 2.



Witnesses:

Peter Hagnmann

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per *[Signature]*
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UNITED STATES PATENT OFFICE

ROBERT ROSS, OF MIDDLEBURY, ASSIGNOR TO HIMSELF, WYATT W. PIERCE,
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IMPROVEMENT IN CASTING METAL.

Specification forming part of Letters Patent No. 101,046, dated March 22, 1870.

To all whom it may concern:

Be it known that I, ROBERT ROSS, of Middlebury, in the county of Addison and State of Vermont, have invented a new and useful Improvement in Casting Metal; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same.

This invention relates to improvements in casting molten metal, whereby it is designed to provide sounder castings than can be made by the present mode. The invention consists in providing traps in the passages through which the molten metal flows when running into the molds, to take out the dirt and all impurities in the metal which rise to the surface after the molten metal has settled, as herein-after more fully described.

All cast-iron has some impurities, and when melted and allowed to cool the said impurities rise to the top, where they are always found in the castings. Founders use what are called "risers," which are holes or cavities in the cope or top part of the mold, for these impurities to rise up in above the required surface of the casting. The parts of the metal formed in these risers, and which are composed mainly of these impurities, are broken or cut off after the castings are removed from the molds. This plan only partly removes the difficulty, for, by it, to get sound castings, the risers should be as large as the castings, as the said impurities adhere to the top of the mold, and do not flow over the surface of the metal to the risers to any material extent; consequently they take up only a small portion, which rises directly under them.

To obviate these difficulties I propose to form in the sand below and communicating with the sprue, what I term a "stodge" gate, which consists of a cavity or trap carried below the points of entry for the molten metal into the molds, and from the bottom of this

cavity to the said molds I arrange one or more passages or gates leading upward into the said molds.

I will now exemplify my invention by the figures shown in the drawings hereto attached.

Figure 1 represents a cross-section of a mold and flask, and Fig. 2 a plan view of the same.

d is the space in the mold for giving shape to the article. *a* is the sprue-hole, and *b* a chamber through which the molten metal must pass before it enters the chamber *d* through the upward incline *c*.

By this arrangement the metal, on being poured in, will rise in the said cavity to a level with the opening of the passages into the mold before any metal can flow therein, and consequently the "stodge" or light impurities will be retained on the surface of the metal in the said cavity, and only the pure and heavier metal will find its way into the molds.

This improved mode of casting molten metal is applicable to molds of all forms and character.

The said cavities may be of any preferred size or form; they may be best made in an angular direction relatively to the surface of the ground, or the planes of the molds inclining downward, and the gates leading from the bottom should be inclined upward to the molds. The walls of these cavities may be plain or corrugated, as found best.

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

The arrangement, in a mold, of a chamber, *b*, under the sprue-hole, and having an upwardly-inclined channel, *c*, through which the molten metal passes into the shaping-mold *d*, all as shown and described.

ROBERT ROSS.

Witnesses:

H. W. BREWSTER,
JOHN H. SIMMONS.