

Fisher & Norris,

Casting Ingots.

N^o 8,871.

Patented Apr. 13, 1852.

Fig. 2.

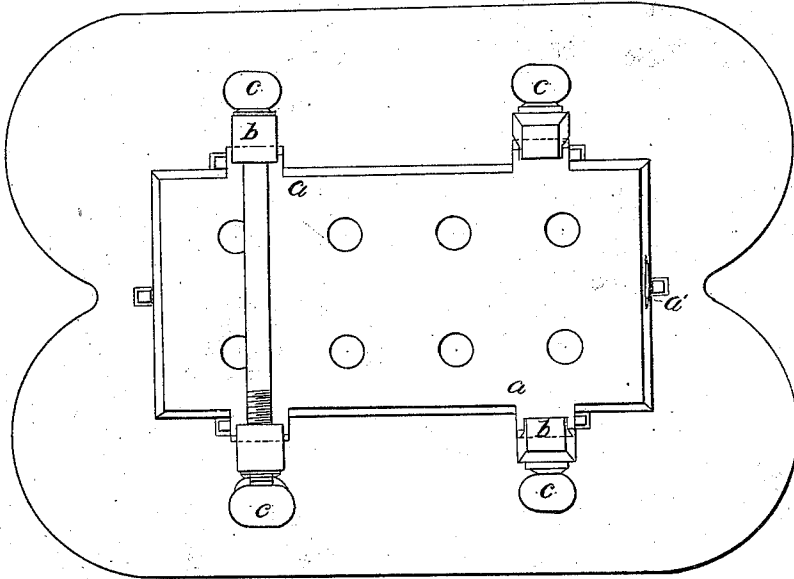
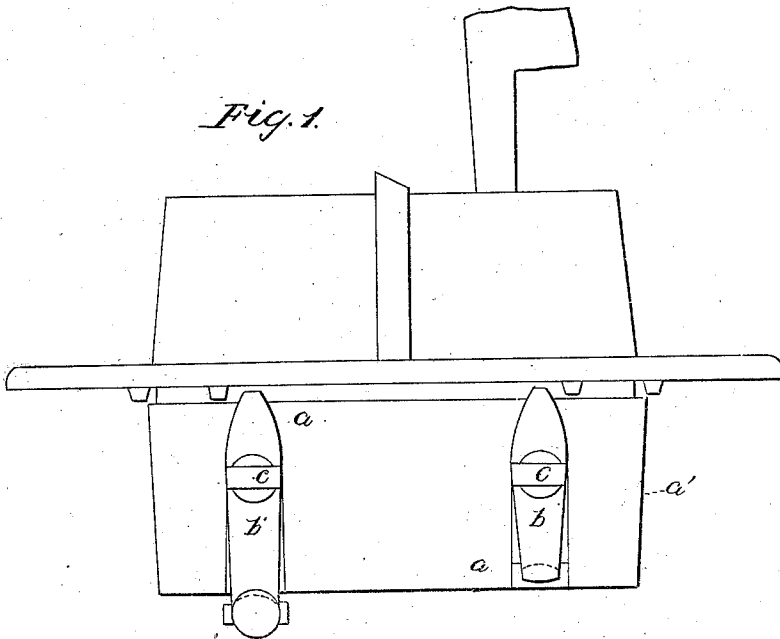


Fig. 1.



UNITED STATES PATENT OFFICE.

MARK FISHER AND JNO. H. NORRIS, OF TRENTON, NEW JERSEY.

IMPROVEMENT IN THE METHOD OF WELDING STEEL, &c., TO CAST-IRON.

Specification forming part of Letters Patent No. 8,871, dated April 13, 1852.

To all whom it may concern:

Be it known that we, MARK FISHER and J. H. NORRIS, of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Welding Cast-Iron to Steel or Wrought-Iron; and we do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the usual manner of making, modifying, and using the same.

The said Mark Fisher and Wm. Martin, Jr., (since deceased,) did obtain Letters Patent of the United States for an "Improved manufacture of cast-iron articles with steel or wrought-iron faces," upon which the present is an improvement in the particulars herein fully set forth.

The prominent feature of the above-named Letters Patent was to form a cavity under the steel, or on the side opposite to that where the casting was to be attached or welded, into which melted iron was to be poured, to heat the steel properly at or about the time of casting, to insure a more perfect weld. We now propose to employ a metal box, as shown at *a*, to form said cavity, the top of which the steel to be welded just fits, said box being placed with the steel in the lower flask before the article is molded, and molded in as a part thereof. The interior of this metal box is covered to a proper thickness with a coat of loam, to protect it from the heat of the melted iron poured into it to heat the steel, and has an opening, *a'*, in one side of the sprue-hole. The box serves to retain the steel in place during the process of heating and casting.

We have found in casting long or broad articles with a plate of steel large enough to cover them that the steel was apt to warp so as to occasion serious inconvenience, to obviate which difficulty we bring into use the second part of our improvement, which consists of proper clamps, *b' b*, affixed properly to the sides of the metal box, when used, and when not to a proper frame that serves as a substitute therefor. These clamps have their upper ends hooked, and take into indentations made by a center-punch in the edge of the steel plate. They are set up with proper screws, *c c*, and when two sets only are used one of these may be made to have a lateral motion to allow for the expansion of the steel. If more than two sets are used, all but one set may be made movable, for the above-named purpose. These clamps hold down the steel to its place and prevent its warping when highly heated on one side by running the iron into the cavity under the steel, and enables us to insure a good casting and perfect weld when the article to be cast is poured upon the other side.

Having thus fully described our improved apparatus for the manufacture of articles of cast-iron with steel or wrought-iron welded thereto, what we claim as our invention, and desire to secure by Letters Patent, is—

1. The metal box or frame for sustaining the steel in place, and forming the cell below it.
2. Securing the steel in place by means of the clamps, in the manner above described.

M. FISHER.
JOHN H. NORRIS.

Witnesses:
SAML. EVANS,
O. H. BOND.