

A. & J. REESE.

Improvement in Puddling and Boiling Furnaces.

No. 125,987.

Patented April 23, 1872.

Fig. 1.

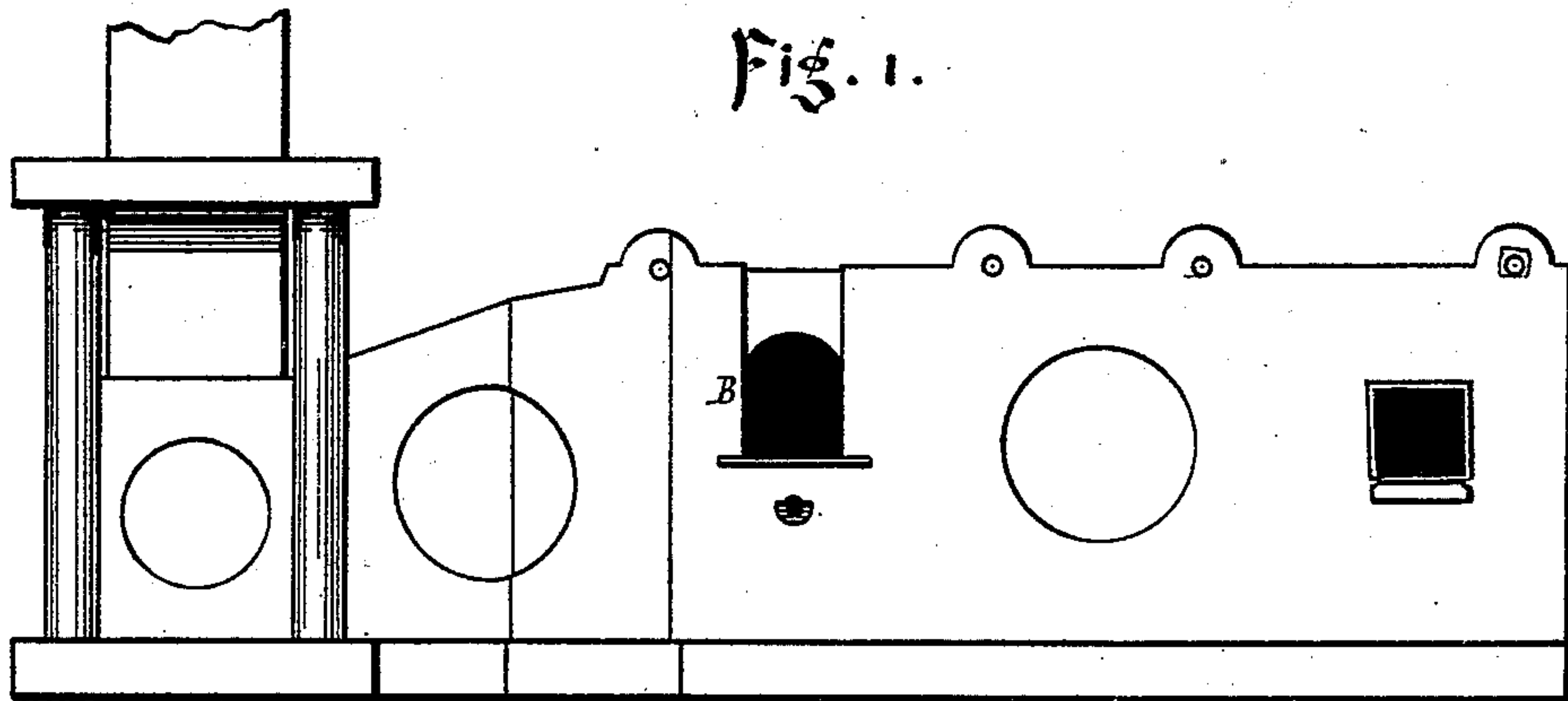


Fig. 2.

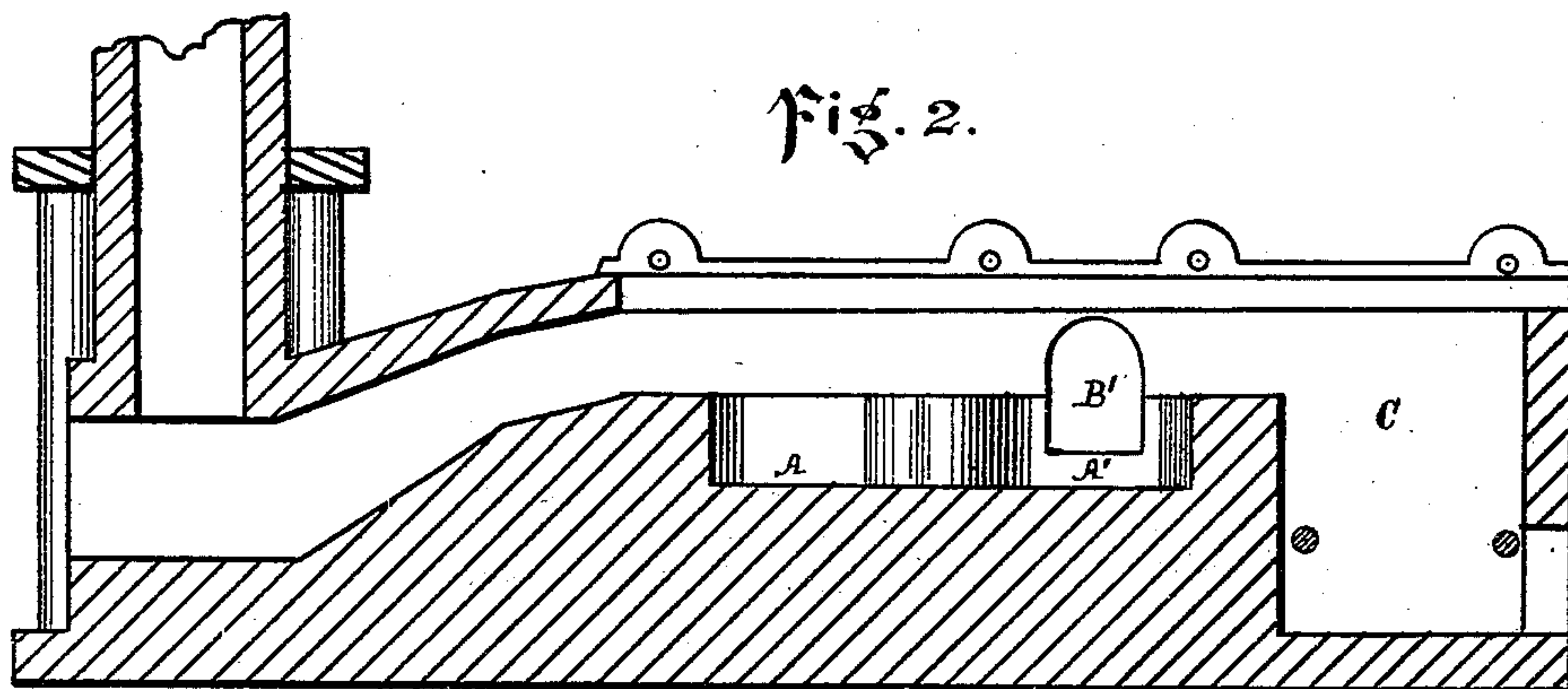
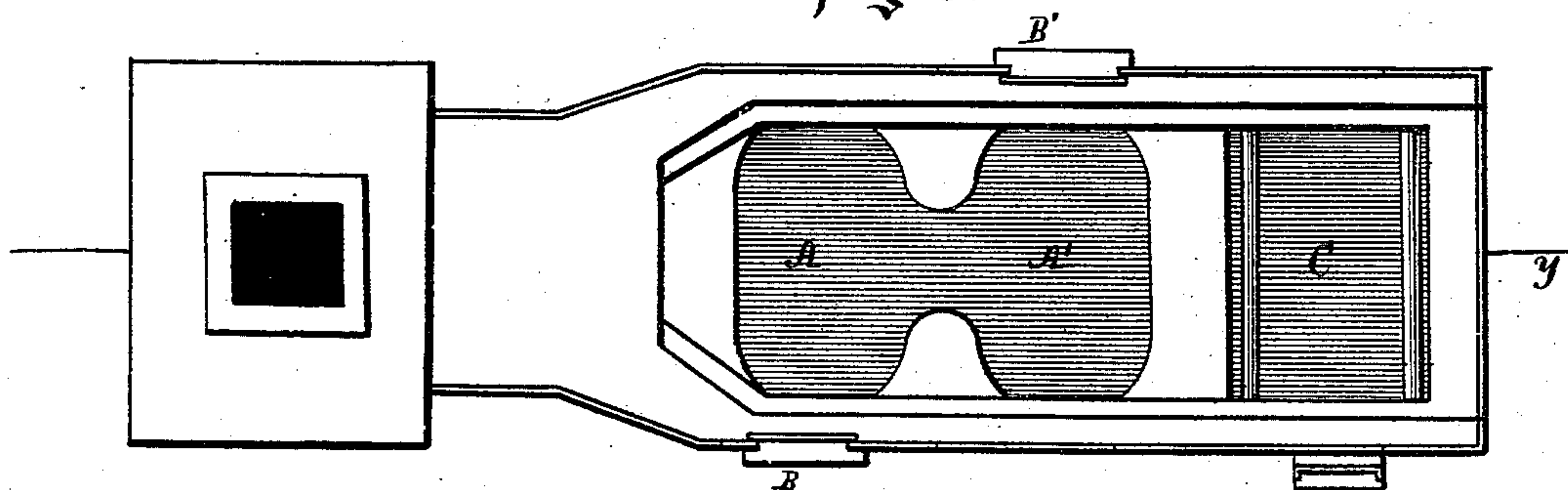


Fig. 3.



Attest:
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UNITED STATES PATENT OFFICE.

ABRAM REESE AND JACOB REESE, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO THEMSELVES AND REESE, GRAFF & CO., OF SAME PLACE.

IMPROVEMENT IN PUDDLING AND BOILING FURNACES.

Specification forming part of Letters Patent No. 125,987, dated April 23, 1872.

To all whom it may concern:

Be it known that we, ABRAM REESE and JACOB REESE, both of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in "Puddling" or "Boiling" Furnaces; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompany drawing and to the letters of reference marked thereon.

In the manufacture of iron by the puddling or boiling process, two forms of furnaces are used, known in the art as the double and single furnace, the former being nearly double the width of the latter, having the doors of the working-chamber arranged directly opposite each other, and requires about double the quantity of fuel. The ordinary double and single furnaces of the present day are substantially the same in form and construction as those in use fifty years ago, and are manipulated in a similar manner.

Our invention relates to an improvement in the "single puddling" or "boiling furnace;" and consists in an elongation of the working-chamber, without increase in size of the fire-chamber or its grate; and also in providing the said working-chamber with two doors, one each side of the furnace, so arranged in position with relation to each other that about one-half of the entire working-chamber of the furnace is between them.

To enable others skilled in the art to make and use our improvement in puddling or boiling furnaces, we will proceed to describe its construction and operation.

In the accompanying drawing, which forms part of our specification, Figure 1 is a side elevation of our improvement in single puddling or boiling furnaces. Fig. 2 is a vertical and longitudinal section of the same at line *y* of Fig. 3. Fig. 3 is a top view of the same, representing the crown of the furnace removed.

Our improved furnace is substantially the same as the ordinary single puddling or boiling furnace, with the exception that the working-chamber A A' is elongated to about dou-

ble the length of that of the ordinary furnace, and is provided with two working-doors, B and B', which are arranged one on each side of the furnace, as indicated in the accompanying drawing. In all other respects the size of the furnace is the same—that is to say, there is no increase in the width of the working-chamber, nor in the size of the fire-chamber C or of its grate.

In operating and manipulating our improved furnace, we charge double the quantity of metal usually charged in the ordinary single furnace, but employ two sets of hands, one set for each of the working-doors B and B', each set of workmen working, balling, drawing, and otherwise manipulating the iron in their portion of the working-chamber. It will readily be observed that the molten metal will find its level and be equally divided between the two sets of workmen.

As the form and size of the single puddling or boiling furnace is known to those skilled in the art of constructing such furnaces, and as the manner of preparing, heating, charging, and working them is well understood by skillful puddlers, we will therefore proceed to set forth some of the advantages of our improvement, which are as follows: First, we utilize the heat and gases which are usually wasted in the ordinary single furnace. Second, we economize in construction and in the wear and tear of the furnace. Third, we are enabled by the use of our improved furnace to puddle or boil double the quantity of iron puddled or boiled in the ordinary single furnace, and accomplish this desirable result without any increased consumption of fuel; therefore, we economise fuel. Fourth, we economise in "fix" and "scrap" for "bottom." All the foregoing advantages we have fully and clearly demonstrated by practical tests at the Fort Pitt iron works, located in Pittsburg, Pennsylvania.

We are aware of the improvement in puddling furnaces, for which a patent was granted to Lewis Scofield and Edward Cooper, April 3, 1849, and wish it clearly understood that we do not claim broadly the elongation

of the working-chamber of a furnace, such as described in said patent.

What we claim, and desire to secure by Letters Patent, is—

A “single puddling” or boiling furnace, having the working-chamber elongated, and with a door on each side so arranged in relation to the working-chamber that about one-half

of the charge, when melted, will be between them as and for the purpose specified.

ABRAM REESE.
JACOB REESE.

Witnesses:

A. C. JOHNSTON,
JAMES J. JOHNSTON.