

(No Model.)

J. WEBB.  
PUDDLING FURNACE.

No. 315,096.

Patented Apr. 7, 1885.

Fig. 3.

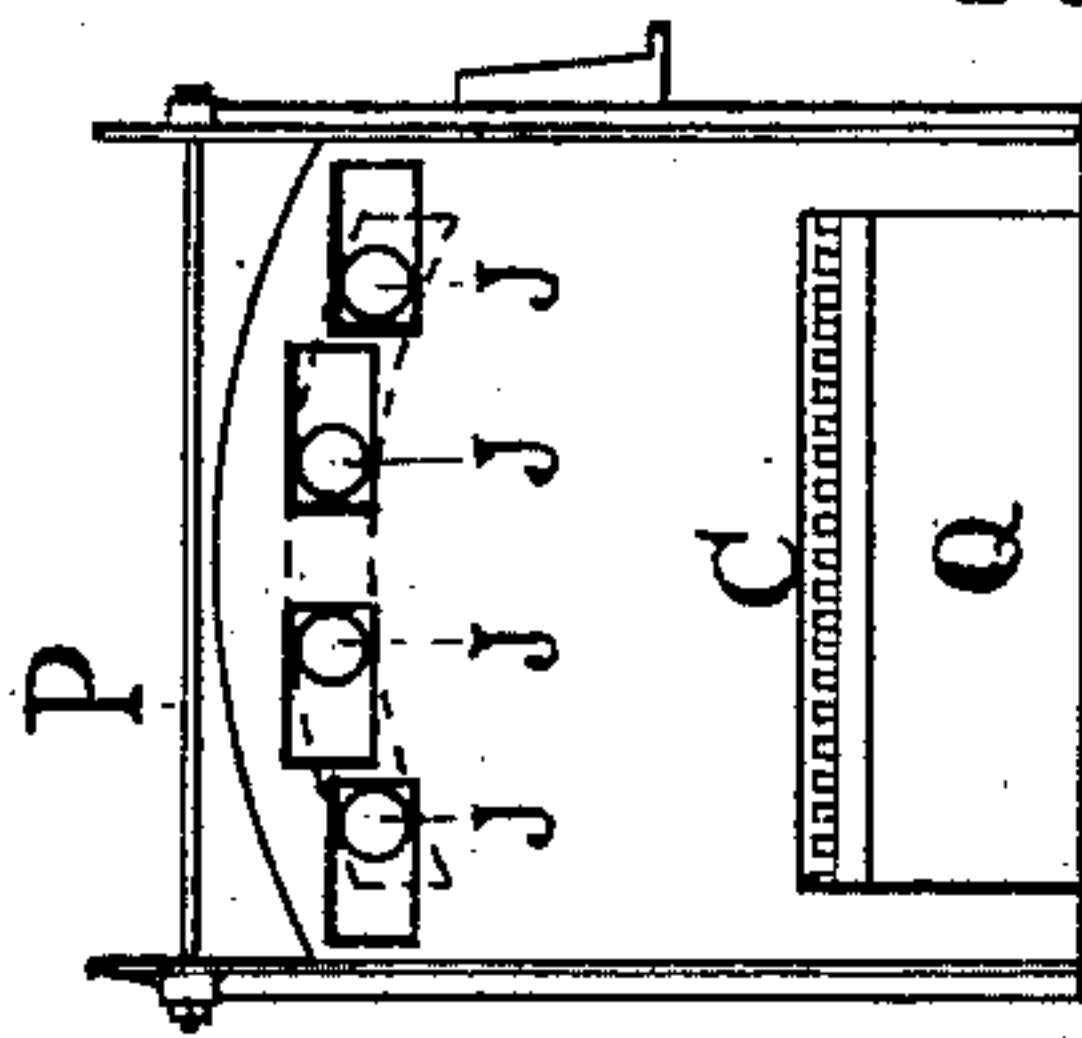


Fig. 1.

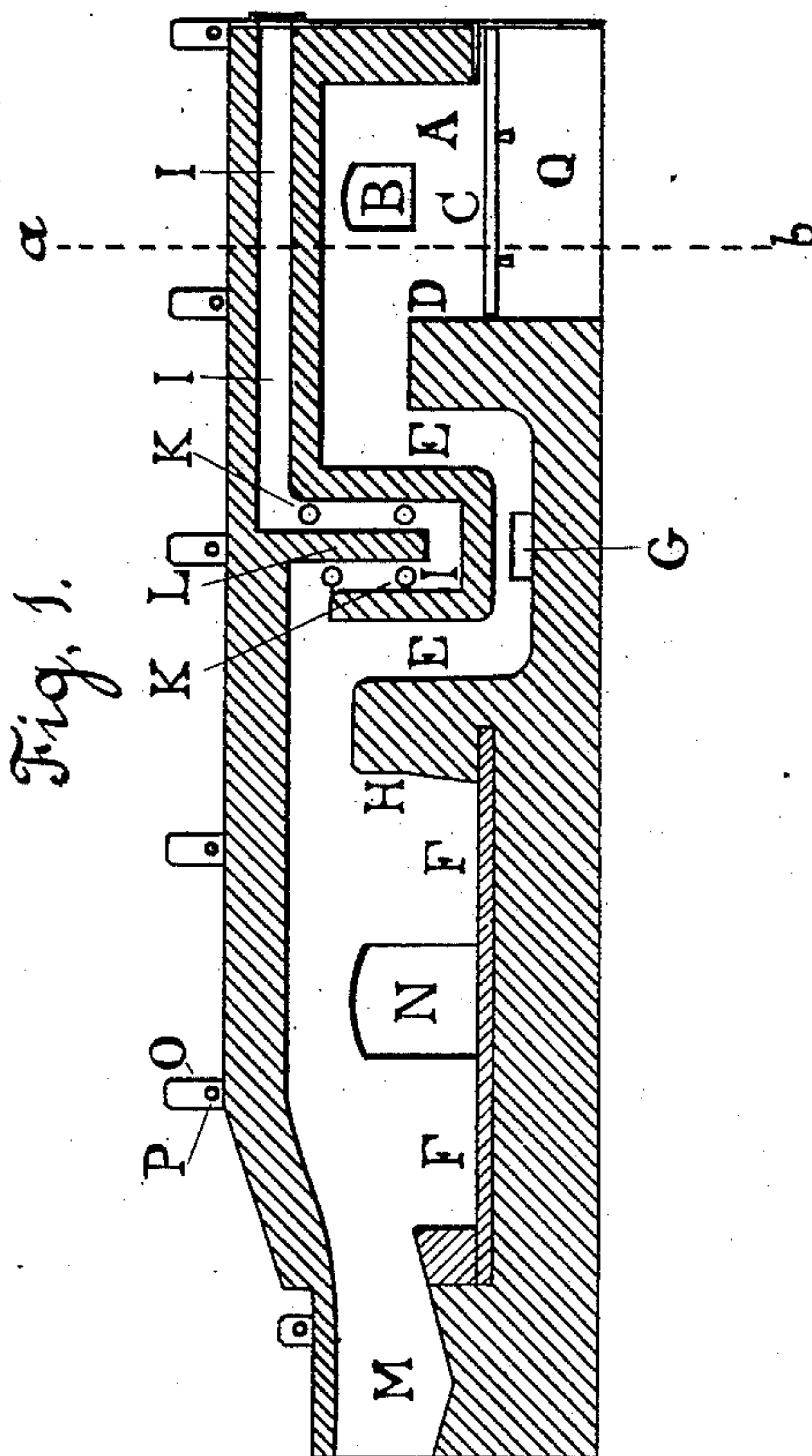
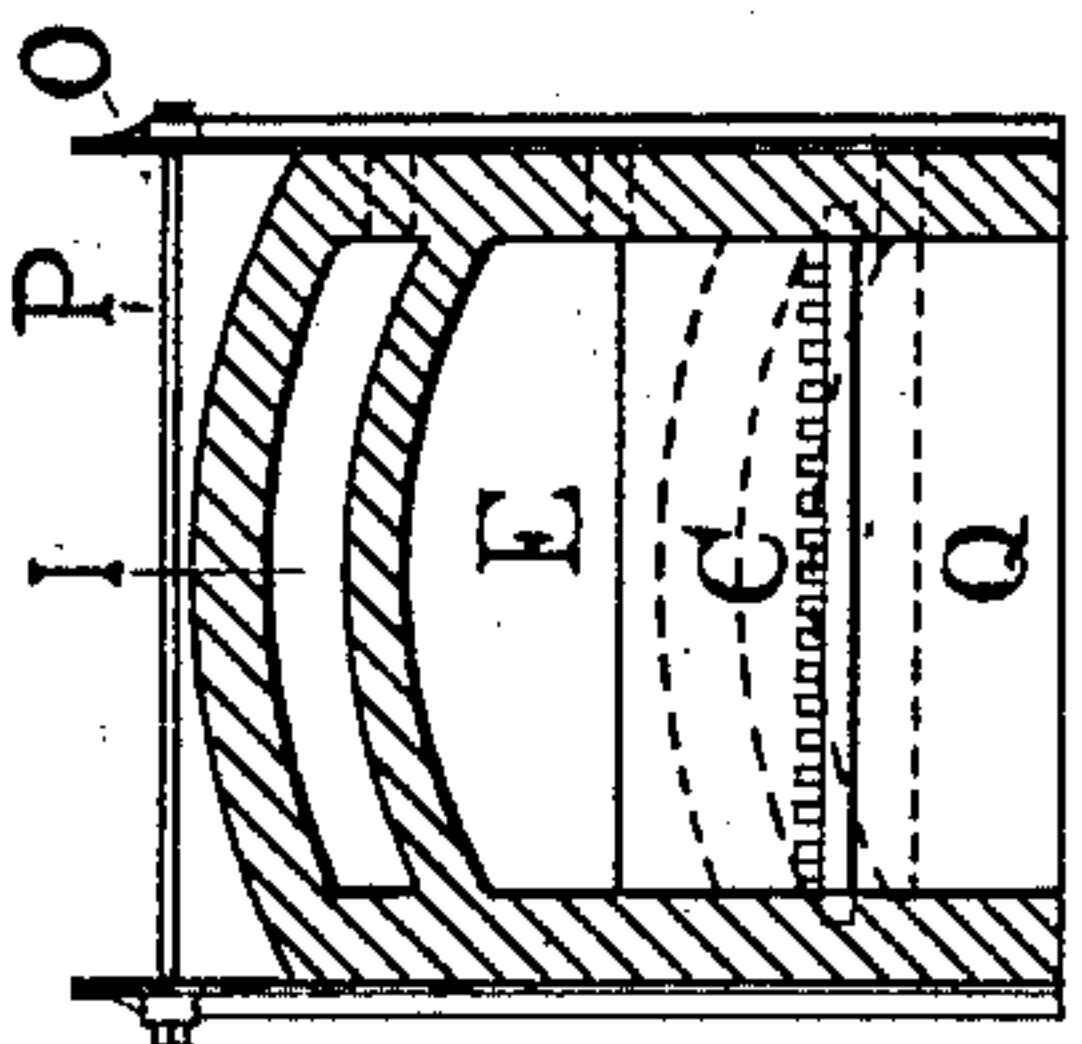


Fig. 2.



Witnesses  
J. T. Newbery.  
J. M. Leary

Inventor  
Job Webb  
per. Geo. Parry  
Atty

# UNITED STATES PATENT OFFICE.

JOB WEBB, OF ALAMEDA COUNTY, CALIFORNIA.

## PUDDLING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 315,096, dated April 7, 1885.

Application filed June 21, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOB WEBB, of Alameda county, State of California, have invented an Improved Puddling-Furnace for Iron Manufacturers, of which the following is a specification.

My invention relates to the addition to such furnaces of a peculiarly-constructed air-flue, which admits heated air to the iron-puddling chamber at the point where the heat and flames from the fire-chamber enters it.

The invention has for its object, first, to aid combustion and intensify the heat by supplying oxygen to the fire as it enters the puddling-chamber; second, to provide for the air as it is admitted being heated to as high a temperature as possible, so as not to reduce that of the fire at the point of intermingling.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal sectional elevation taken through the center line. Fig. 2 is a cross-sectional elevation taken through the line *a b*, Fig. 1. Fig. 3 is a front view.

In all the figures of the drawings like letters of reference represent like parts.

A is the fire-place, B being the opening through which the fuel is fed.

C are grates.

D is the bridge-wall of the fire-chamber.

E is the fire-flue leading to the puddling or iron chamber F.

G is an opening covered with a door, through which the fire-flue may be periodically cleaned.

H is the bridge-wall in the fire-end of the puddling-chamber.

I is the air-flue, which passes over the roof or arch of the fire-chamber. It is supplied with air from in front through a series of holes,

J, which are fitted with suitable slides to open and close the apertures, so as to regulate the quantity of air admitted.

K are side holes, which may also be covered with slides, so that they may be left open or closed, as found desirable.

L is a hanging wall, which deflects the air-flue from the roof of fire-chamber down the back of the rear wall of this chamber to rise again between the hanging wall and the rear wall forming the continuation of the fire-flue, thus extending the air-flue a greater distance than if it projected directly into the iron-chamber, and causing the air to absorb heat from the back wall of the fire-chamber and front wall of the iron-chamber.

M is the neck of the furnace, leading to the smoke stack, which, for the purposes of this description, is not necessary to show.

N is the charging and puddling door of the iron-chamber. O O are the iron braces, which, being connected by bolts P, bind the outer walls of the furnace together.

Q is the ash-pit.

The operation of my furnace is, in general, similar to others; but I have the advantage of absorbing a large amount of heat which would otherwise radiate and dissipate itself from the roof to the furnace, and of carrying the same through the mediumship of air in the flue I into the puddling-chamber, while at the same time a properly-regulated supply of oxygen is given to assist combustion and intensify the heat at the entrance of the said chamber.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

In a puddling-furnace, the air-flue I, having hanging wall L therein, arranged so that the said flue will pass first over the roof of the fire-chamber A, then down at the back of the rear wall thereof and between that wall and the hanging wall, then under the hanging wall, and finally up between the hanging wall and the rear wall of the fire-flue, and over the top of this wall into the puddling-chamber, the said air-flue having suitable air-inlet holes, substantially as herein described.

JOB WEBB.

Witnesses:

GEORGE PARDY,  
F. T. NEWBERY.