7586X

P. I. Clute,

Steam-Boiler Furnace,

Patented May 20, 1833.

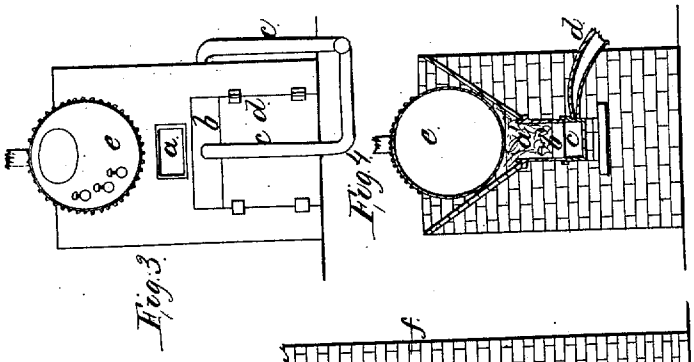


Fig. 3.

Fig. 4.

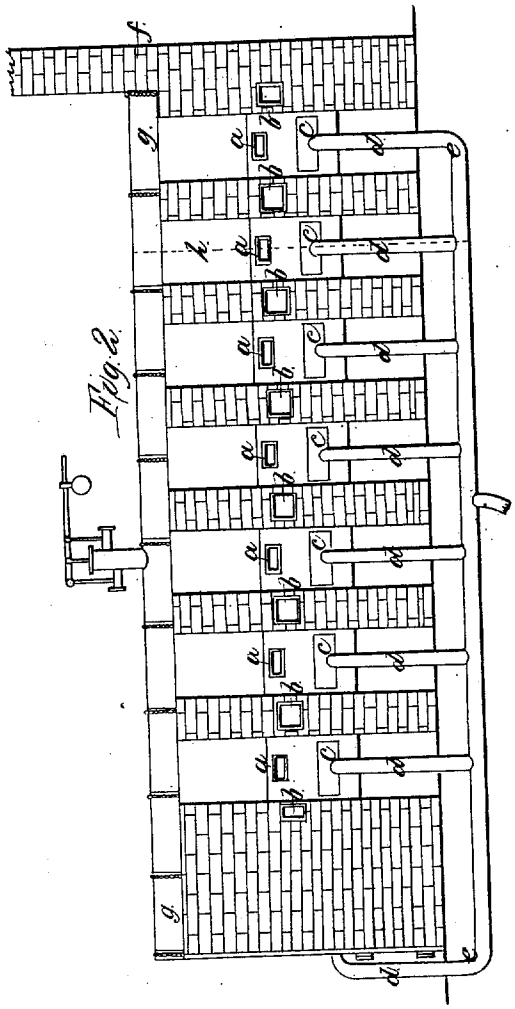


Fig. 2.

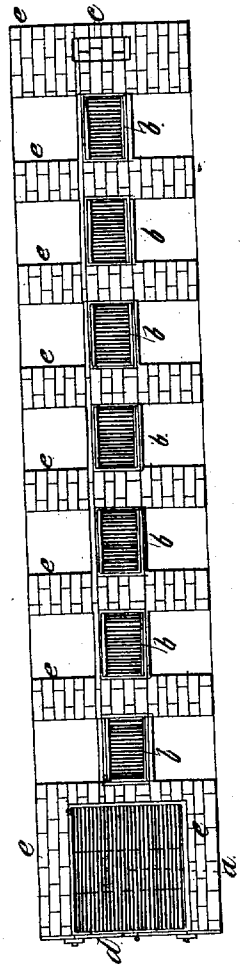


Fig. 1.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

Drawing No. 2 May 20 1853 7586X 257

Peter I Clute of Schenectady New York

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Peter I. Clute himself of his improvement in the process of generating heat for forging malleable iron and generating steam to propel machinery.

Be it known that I Peter I Clute of the City of Schenectady in the County of Schenectady and State of New York have invented a new and useful improvement in the art or process of generating heat for forging malleable iron and of generating steam to propel machinery for the purpose of grinding and polishing iron when manufactured and for the other purposes for which steam power is generally employed

The following is a description of the construction and operation of the furnaces and apparatus to be used in my invention. Where the steam cylinder Boiler or where more than one boiler is designed to be used, a given number of the furnaces of the description herein after set forth are to be erected under the same arranged in the most convenient form to receive as many joints of the boiler as according to the principles herein after laid down may be deemed most expedient as for example in circular form.

The cylinder boiler however I deem best adapted to the contemplated purposes of my invention.

When the cylinder boiler is used the number and size of the furnaces will vary according to the size of the boiler and the quantity of steam required to be raised. The furnaces are to be built in a straight line of uniform width, equidistant and continuous. The boiler to be laid horizontally or lengthways over the tops of the furnaces. There is an aperture at either end of each furnace thro which the coal is shoved on the grate and the fire fed as occasion requires. Under each grate there is a box which I shall designate by the name of receiver beneath receiving the ashes from the blow pipe and the ashes falling through the grate. The receiver may be taken out and cleaned when necessary. Each receiver has at one of its ends an aperture for

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receiving a branch of the blow pipe. There are of course as many branches to the main blow pipe as there are furnaces and the blow pipe is connected with the bellows which is worked by the steam the heat of the furnaces generate. The branch blow pipe enters the receiver about at its centre at a point equidistant from the grate and the bottom of the receiver thus causing the wind in the receiver to circulate equally. There is an aperture near the top of the furnace in front through which to introduce the iron to be heated. This aperture may be closed by a valve when not used.

Let the cylinder Boiler be 20 feet long and two and a half feet in diameter. Then there ought to be about seven furnaces, and the proportions of the different parts of the furnaces &c ought to be as nearly as may be as follows — distance between the grate and the boiler twelve inches — length of grate eighteen inches, width of grate eight inches, width of the furnace to correspond with the size of the grate. The aperture at either end to admit the coal is to be eight inches in width and six inches in height. The receiver eight inches in width and six inches in height, aperture for receiving the blow pipe one inch and an half in diameter aperture through which to heat the iron intended to be worked six inches in width and three inches in height — distance between each grate three eighths of an inch. diameter of blow pipe four inches and diminished to one inch and an half at the entrance in the receiver. The strength of the blast required is equal to that of a blacksmiths fire. The degree of heat may be regulated by valves placed in the blow pipe. I do not claim to have discovered or invented any thing new in the construction of the furnaces abstractly considered or many of the apparatus connected with the Steam Engine, nor can any invention in this be considered an improvement of a machine or instrument heretofore patented nor can it be considered an application of an old instrument or machine to a new purpose. What I claim as new and my own invention may be reduced to the following particulars.

1st The using a number of furnaces to raise steam. 2nd The process of heating the boiler uniformly at many points thus differing from the universal practice which now obtains of heating the boiler at one particular point

3. The employing the steam discharged by the furnaces in drying the bellows connected with them furnaces. 4th The application of the steam-pipe to ignite anthracite coal for raising steam. 5th The using the same fire for the double purpose of raising steam and heating and working malleable Iron. I consider these two last particulars the most important and as in a special manner distinguishing my invention from every other, this apparatus possessing a highly important advantage in that it may be used for manifold purposes, for the manufacture of malleable iron into the different articles usually made by blacksmiths, and edge tools, nails &c, and the steam, now may be applied to grinding and polishing Metals when manufactured, to propelling Boats, dressing stuffs, hammering mills of every description and the other purposes for which steam power is generally employed—

Witnesses
L. H. Boyd
J. H. Yates

Peter J. Clute

Seal.

(1001 Words)

(Granted May 20th 1833)
Trans. Patents