

H. ROSS.
Protecting Furnaces.

No. 83,551.

Patented Oct. 27, 1868.

Fig. 2.

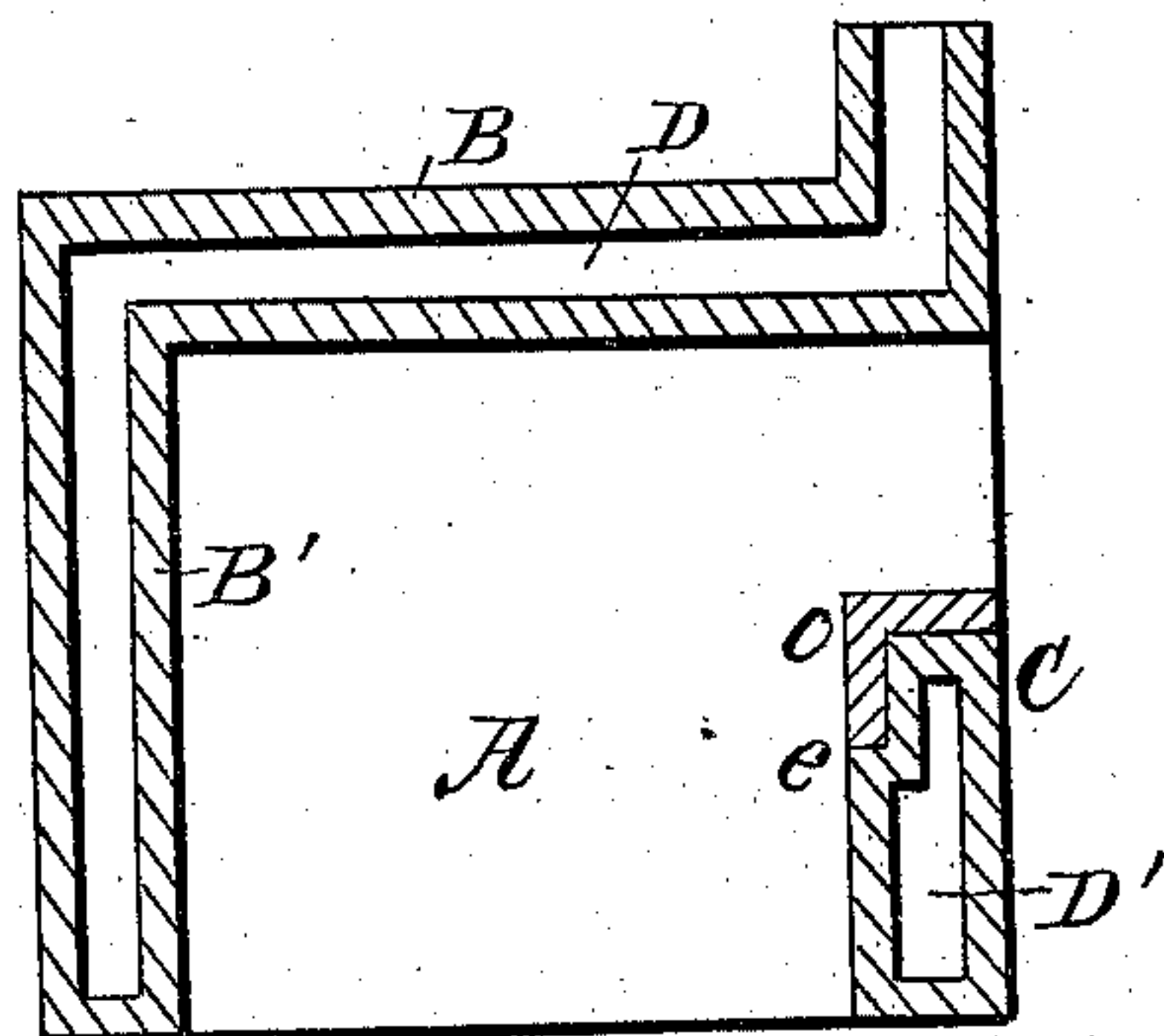


Fig. 3.

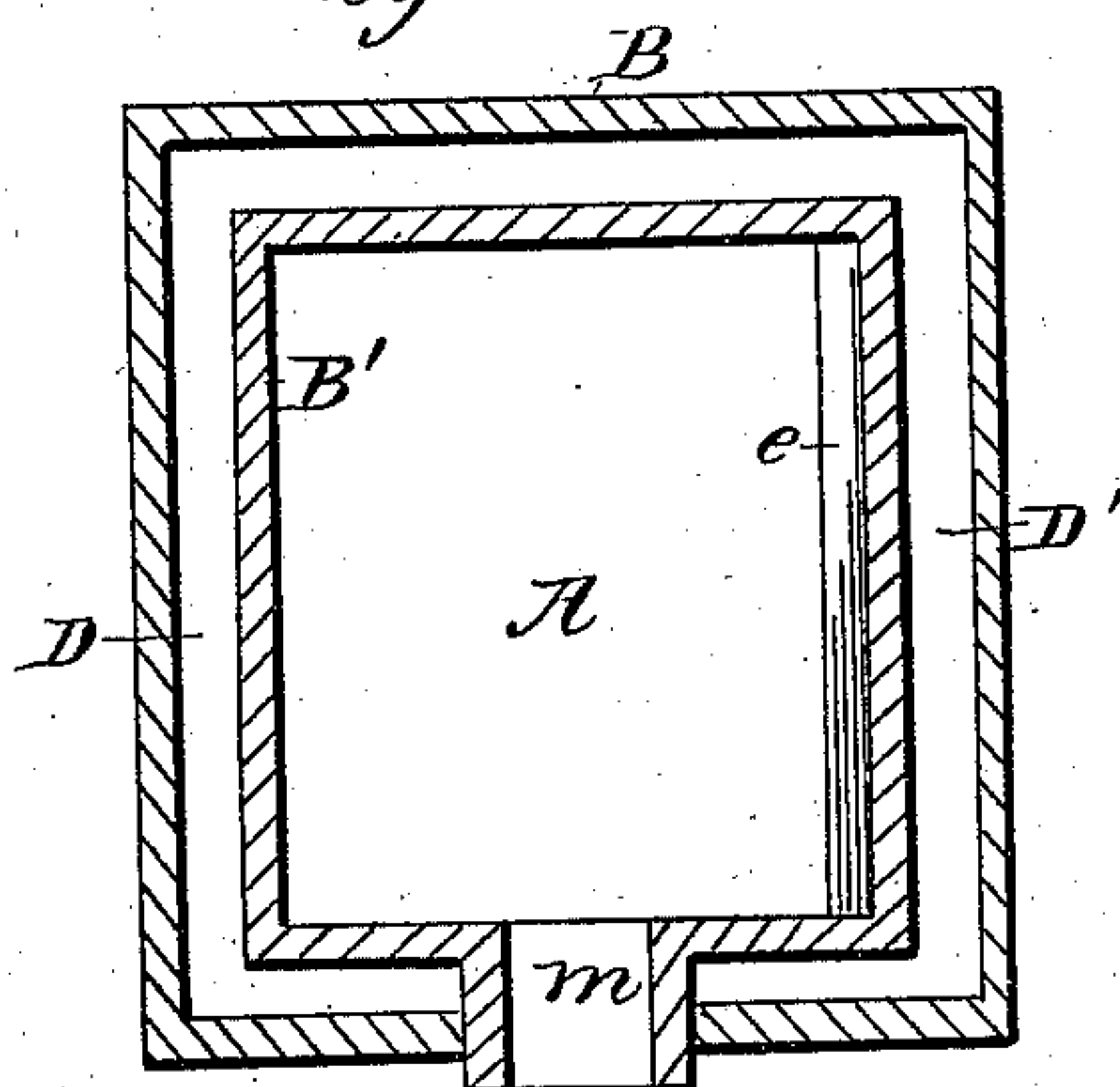
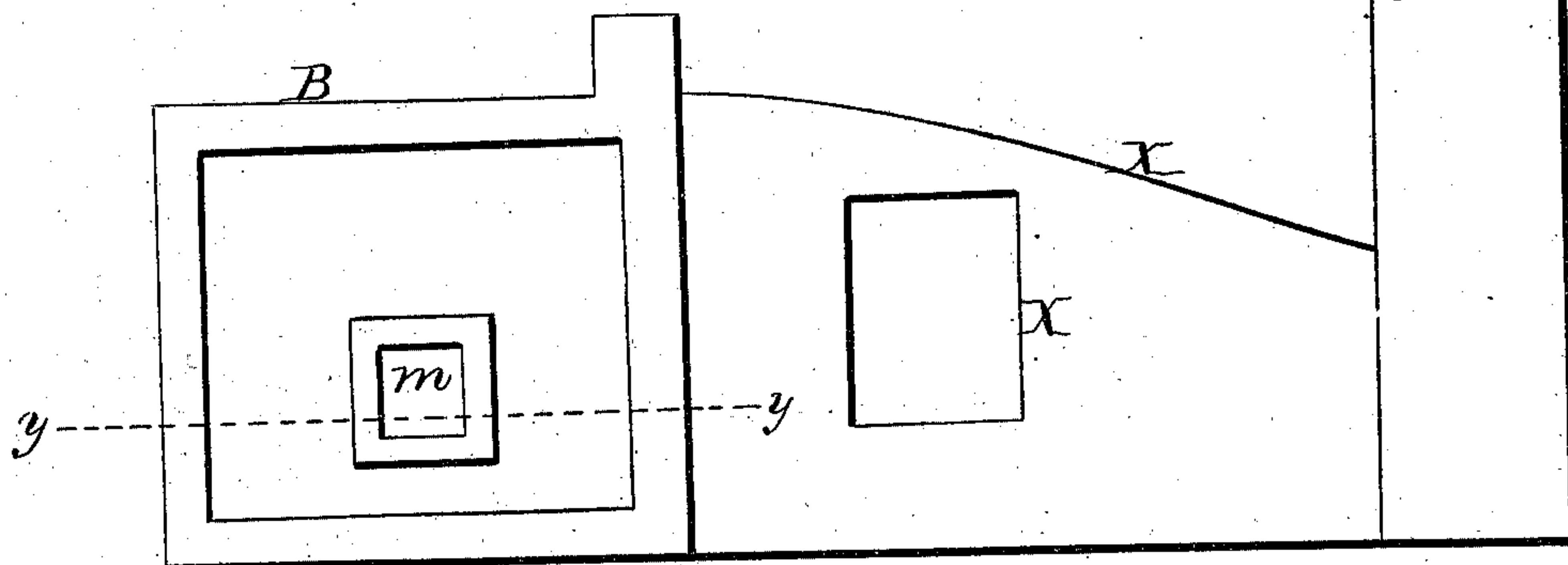


Fig. 1.



Witnesses.

James F. Johnston
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HENDERSON ROSS, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 83,551, dated October 27, 1868; antedated September 30, 1868.

IMPROVEMENT IN FURNACES FOR THE MANUFACTURE OF IRON, AND FOR OTHER PURPOSES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, HENDERSON ROSS, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Furnaces Used in the Manufacture of Iron and Steel; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in constructing the walls of the fire-chambers of furnaces of iron, and so arranged as to form a water-chamber around and over the fire-chamber of the furnaces.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification—

Figure 1 is a side elevation of my improvement in furnaces.

Figure 2 is a longitudinal and vertical section of the same.

Figure 3 is a transverse section of my improvement, when cut through at line *y* of fig. 1.

In the drawings, A represents the fire-chamber. B and B' represent the walls, which are made of iron. C represents the bridge-wall, which is provided with an offset, marked *e*, for holding brick, as indicated by the lines *o*. D represents the water-chamber between the walls B and B'.

The bridge-wall C is made of iron, and provided with

a water-chamber, D', which is connected with the water-chamber D. The chambers D and D' must be provided with suitable pipes, for supplying them with cold water, and discharge-pipes, for carrying off the heated water. The red lines, marked *x*, are used for the purpose of representing the relation of my improved fire-chamber to the balance of the furnace, which may be constructed in the usual manner, and of the ordinary material. *m* represents the fire-door.

The ash-pit and foundation of the furnace may be constructed of brick or stone, and the metallic fire-chamber set and arranged thereon in proper position.

The advantages of my improvement consist in providing a durable and efficient fire-chamber for furnaces, which will always retain the same size and form, which is a very important thing, when connected with furnaces used in the manufacture of iron and steel.

Now, I wish it clearly understood that I do not claim, broadly, surrounding furnace-walls with water, for that is well known; but

What I do claim as of my invention is—

So constructing the fire-chamber of furnaces used in the manufacture of iron and steel, that the interior walls of said chamber shall consist of iron, which are surrounded with water, substantially as herein described, and for the purpose set forth.

HENDERSON ROSS.

Witnesses:

A. C. JOHNSTON,
JAMES J. JOHNSTON.