

J. H. Eddy

Cupola Furnace,

No 80,537.

Patented Aug. 4, 1868.

Fig 2.

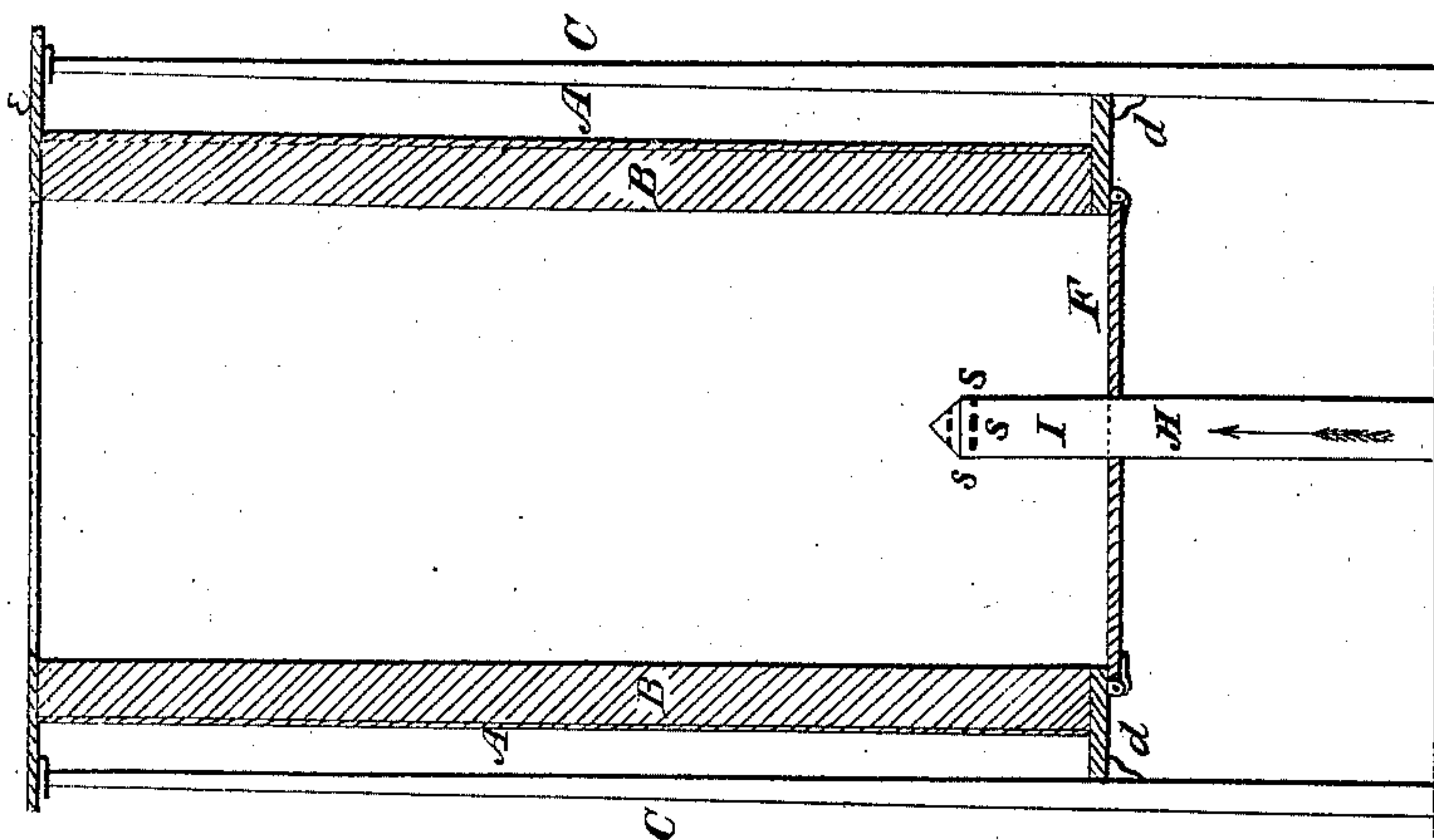


Fig 3.

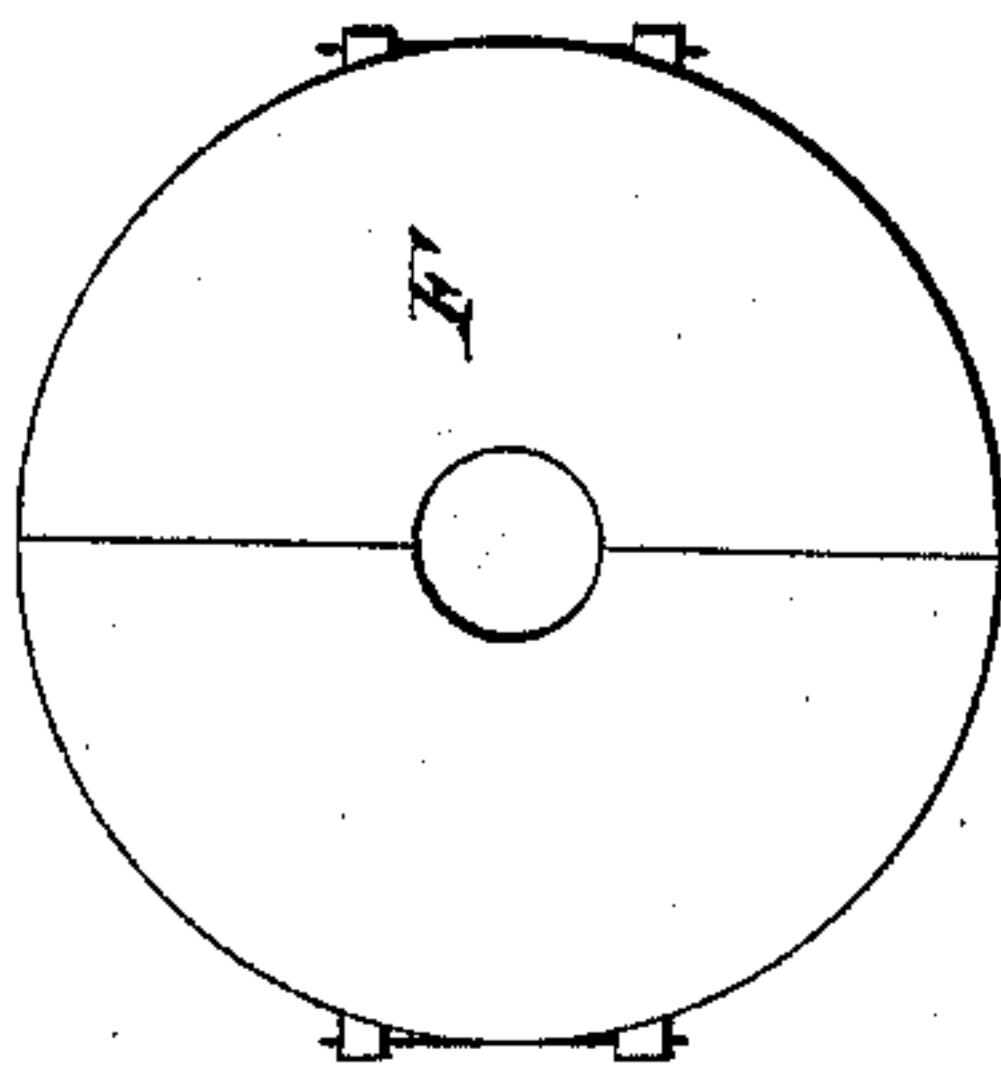
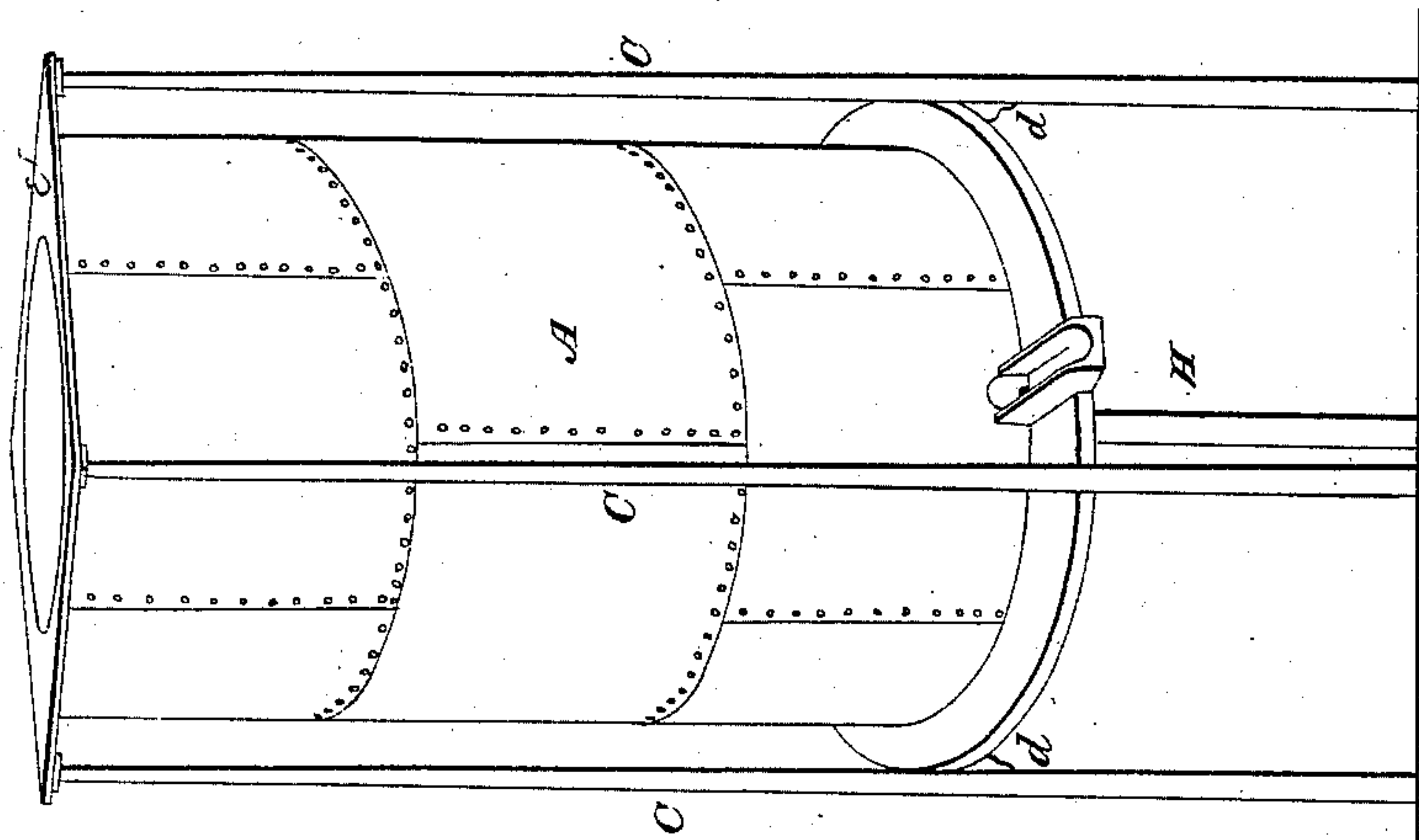


Fig 1.



WITNESSES;

C. H. Fitts.
Levi S. Talbot

INVENTOR,

John H. Eddy

United States Patent Office.

JOHN H. EDDY, OF TAUNTON, MASSACHUSETTS.

Letters Patent No. 80,537, dated August 4, 1868.

IMPROVEMENT IN CUPOLA-FURNACES.

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, JOHN H. EDDY, of Taunton, in the county of Bristol, and State of Massachusetts, have invented a new and useful Improvement in Cupola-Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a cupola-furnace, with the improvement attached.

Figure 2, a sectional view of the interior of the furnace, and

Figure 3 the bottom.

A represents the shell or exterior; B, the lining; C C C, the columns, supporting the furnace at *d*, and a plate for the support of the chimney at *e*. F shows the bottom; H, the wind-pipe; I, the wind-chamber, within the furnace; and *s s s*, small holes for the escape of the blast.

The nature of my invention consists in introducing the blast into the furnace at its centre, and not at its sides, as in the methods heretofore used.

I construct my furnace in any of the known forms, with the usual appendages of such furnaces, except that I do not apply thereto the tuyeres and sight-holes generally used. From whatever apparatus may be used to furnish the blast, I lead a pipe to the ground or floor, directly under the centre of the furnace, and from this point it passes up in a direct line (as shown at H) to the interior of the furnace, and upon its upper end, within the furnace, is placed the air or wind-chamber I. This air-chamber may be made of fire-brick, but, for convenience, it is preferable that it be made of iron, and coated upon its exterior with fire-clay. The bottom is in two parts, as shown in fig. 3, hinged to the furnace at its outer sides, and is secured in its place, in the usual manner, by means of a stake or prop, which, as usual, is knocked away when it is desired to "drop the bottom" at the close of the blast.

By the use of the blast as commonly introduced, (viz, into the sides of the furnace,) it is found that the greatest heat is at the outer sides of the mass of coal and iron within the furnace, and oftentimes there is a core or portion in the centre that is never heated to the melting-point. This is entirely remedied by the improvement herein described. It has also been found, by actual experiments, that quite a large per cent. in the amount of coal required to melt a given quantity of iron is saved by introducing the blast into the centre of the furnace, as here shown.

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

1. The air-chamber I, when used in connection with cupola-furnaces, as above described, and,
2. The introduction of the blast into cupola-furnaces, at the centre thereof, whether the same is accomplished in the precise method herein described, or by any other means substantially the same.

JOHN H. EDDY.

Witnesses:

C. H. TITUS,

LEML. T. TALBOT.