(No Model.)

J. G. BATTELLE.

Shield for Furnaces, &c.

No. 242,250. **Patented May 31, 1881.**

Fig. 1.

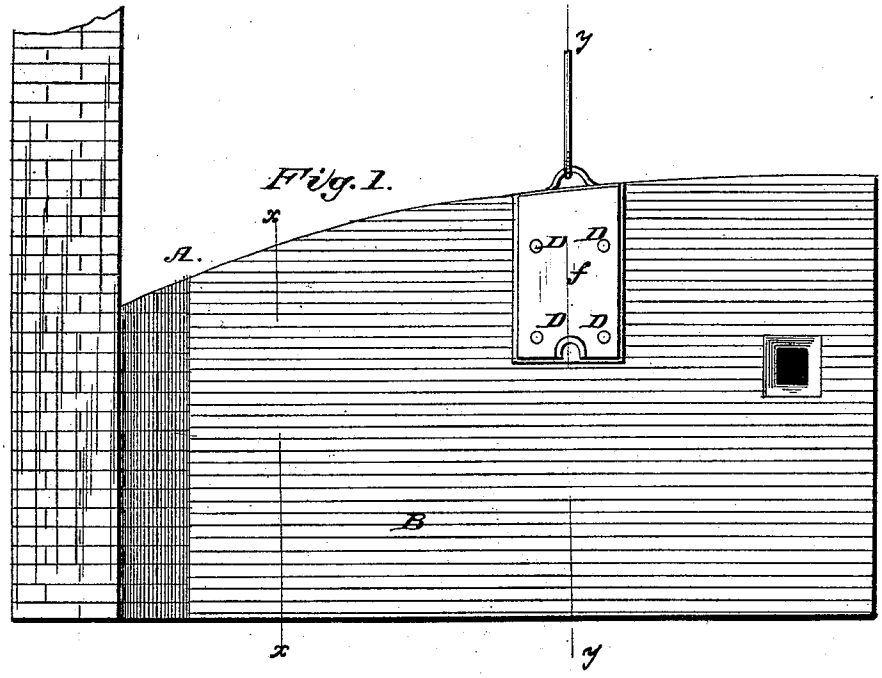


Fig. 2.

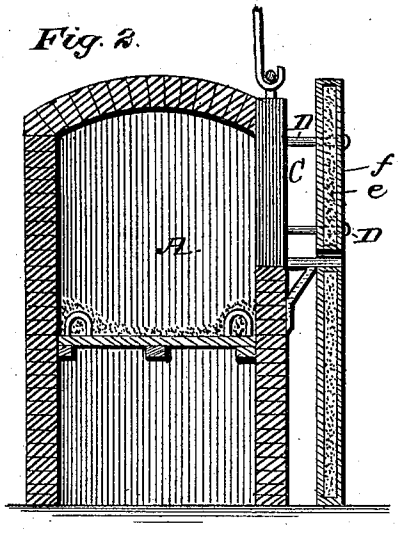
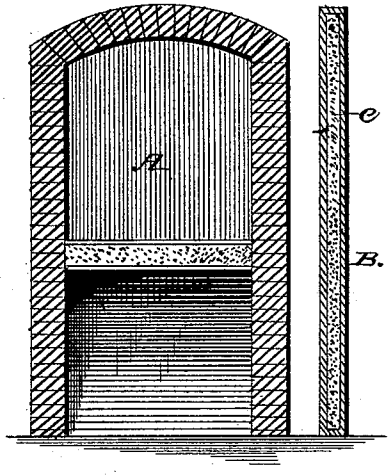


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SHIELD FOR FURNACES, &c.

SPECIFICATION forming part of Letters Patent No. 242,250, dated May 31, 1881.

Application filed September 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. BATTELLE, of Memphis, in the county of Shelby and State of Tennessee, have invented a certain new and useful Improvement in Shields for Furnaces and Furnace-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in shields for furnaces and furnace-doors; and it consists of a furnace-door having a shield attached thereto with air-circulating space between the latter and former.

My invention also consists of a furnace-door having a shield attached thereto, with an air-space between the latter and former, in combination with a shield or casing for the furnace wall or walls, as will hereinafter more fully appear.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, 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 an ordinary heating or puddling furnace furnished with my improvement. Fig. 2 is a vertical section of the same at line *x x* of Fig. 1. Fig. 3 is a vertical section of the same at line *y y* of Fig. 1.

In the accompanying drawings, A represents the furnace, in front of the working side of which is placed a shield, B, of any of the known forms, and may be constructed of iron or oak wood, or by the combination of cotton-seed hulls and a case of sheet metal, or said hulls inclosed between walls of sheet metal, said shield being so arranged with relation to the wall that an air-space will be between said shield and the furnace-wall for the free passage of air. The means for supporting the shield and holding it in a fixed or movable position with relation to the furnace-wall I leave to the judgment and skill of the mechanic.

The door C of the furnace is of the ordinary construction. To the front wall of the door is attached by means of the arms D a shield, *e*, which consists of a case, *f*, of sheet metal filled with cotton-seed hulls; but said shield *e* may be made of iron, oak wood, or other material. The shield *e* moves with the door in the manipulating of it.

The advantage of a shield in combination with the furnace will be apparent when the fact is taken into consideration that the face of the operator is, from necessity in working heating and puddling furnaces, in the manufacture of iron and steel, brought in close proximity with the furnace-door, and the heat reflected or radiated therefrom produces on him a very debilitating effect. The shield *e*, combined with the door, will to a very great degree relieve him from this heat and its depressing influence, and when said shield and door is combined with the ordinary furnace-shield the operator is almost entirely freed from the reflected or radiated heat of the furnace, which is a great consideration in warm weather.

Having thus described my improvement, what I claim is—

1. A furnace-door having a shield attached thereto, with an air-circulating space between the latter and former, substantially as herein described, and for the purpose set forth.

2. A furnace-door having a shield attached thereto, with an air-space between the latter and former, in combination with a shield or casing for the furnace wall or walls, substantially as herein described, and for the purpose set forth.

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