(No Model.)

E. W. HICKMAN.

COOLING SHIELD FOR PUDDLING FURNACES.

No. 298,203. Patented May 6, 1884.

Fig. 1.

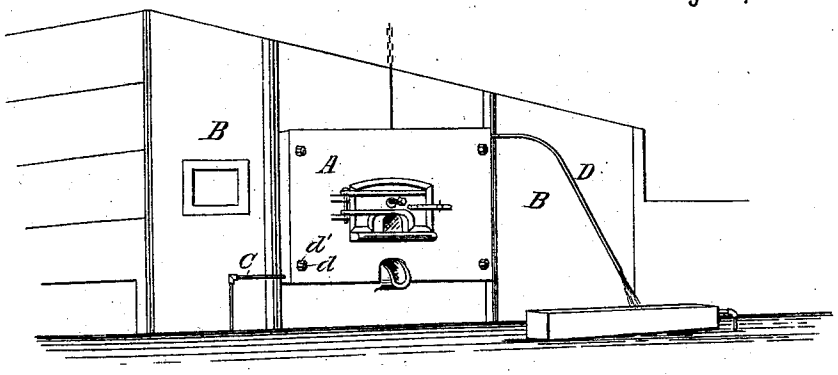


Fig. 2.

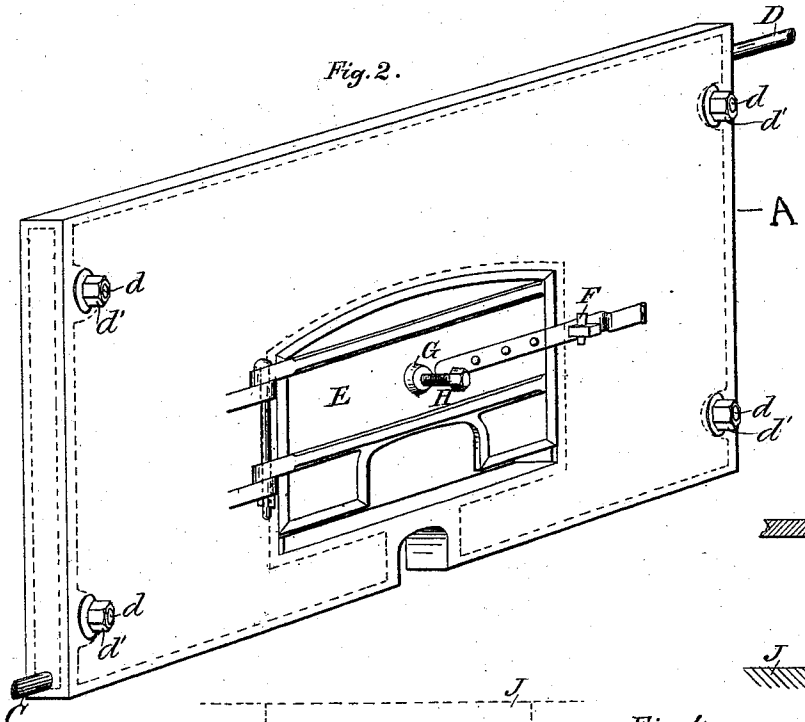


Fig. 3.

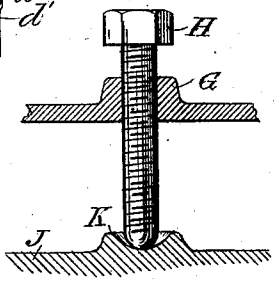
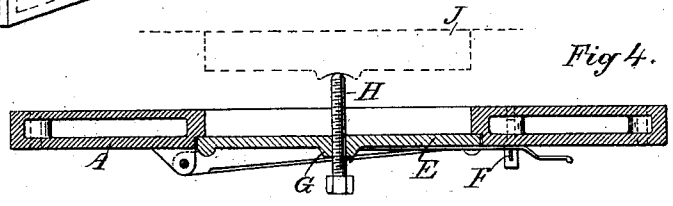


Fig 4.



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UNITED STATES PATENT OFFICE.

EDWIN W. HICKMAN, OF BAY VIEW, WISCONSIN.

COOLING-SHIELD FOR PUDDLING-FURNACES.

SPECIFICATION forming part of Letters Patent No. 298,203, dated May 6, 1884.

Application filed August 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWIN WILLIS HICKMAN, of Bay View, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Cooling-Shields for Puddling and Heating Furnaces or for any Surface of Heat, of which the following is a specification.

My invention relates to shields for furnace-doors, and will be fully described hereinafter.

In the drawings, Figure 1 is a perspective view of a portion of a furnace with my shield in place. Fig. 2 is an enlarged perspective view of my shield. Fig. 3 is a detail, and Fig. 4 is a longitudinal section, of my shield.

A is the shield, and B is the furnace. The shield A is made hollow, with closed ends and edges, and with a pipe, C, entering it at one lower corner, and another pipe, D, leading out of it at or near the corner diagonally opposite that in which the pipe C enters, and near its center the shield has an opening that is closed by a door, E. This door is hinged on one side, and on the other has an ordinary hasp that engages with a staple on the shield, and is secured thereon by a pin, F. The door is re-enforced near its center at G, and through this re-enforce is a screw-threaded opening, through which a threaded bolt, H, is passed, that its inner end may take into a concaved re-enforce, K, on the furnace-door J. The shield is notched on its under side to accommodate the spout from the furnace. The pipe C may lead from either a water-main or cold-air blast, as it is immaterial whether cold water or air be used, and the air or water is forced from pipe C through the shield and out through pipe D, thus keeping up a constant circulation, by which the heat from the furnace is carried off. The shield A is secured to vertical ribs on the front of the furnace by rods *d* and nuts *d'*, with sufficient space between the shield and furnace for the furnace-door J to travel in. When the furnace-door has been dropped down, so as to cover its port, it is locked in place by closing the door E and securing it in place by pin F, and then screwing bolt H in against re-enforce K on the furnace-door.

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

1. In a hollow shield for furnaces, a door provided with a screw-bolt for screwing the furnace-door to its seat when closed, substantially as described.

2. The shield-door and mechanism for securing it when closed, in combination with a screw-bolt, H, and furnace-door, as set forth.

3. A hollow shield adapted for containing air or water in circulation, and having a door for giving access to the furnace-door, in combination with a brace for pressing the furnace-door tightly in place when the shield-door is closed, as set forth.

EDWIN W. HICKMAN.

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