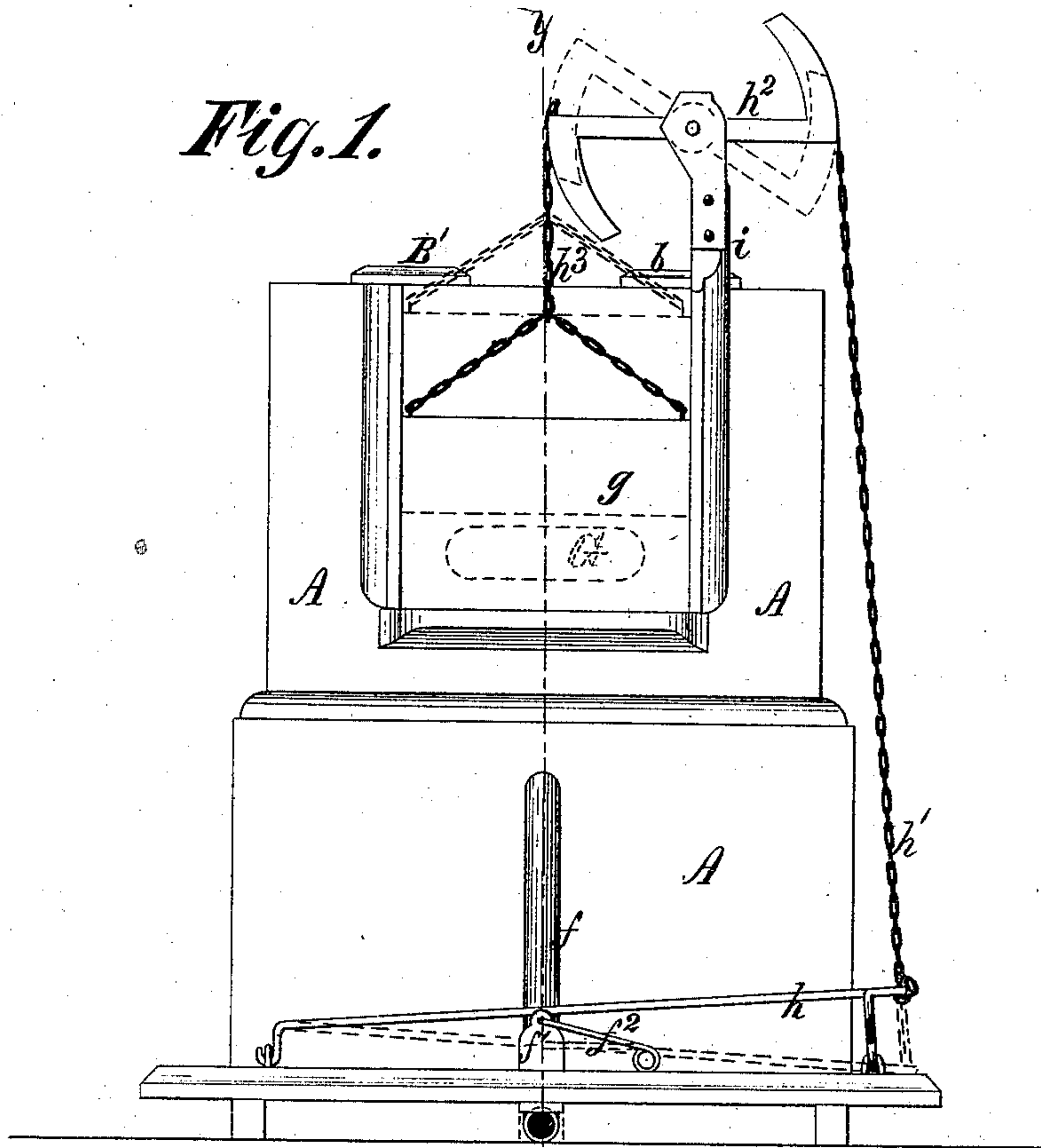
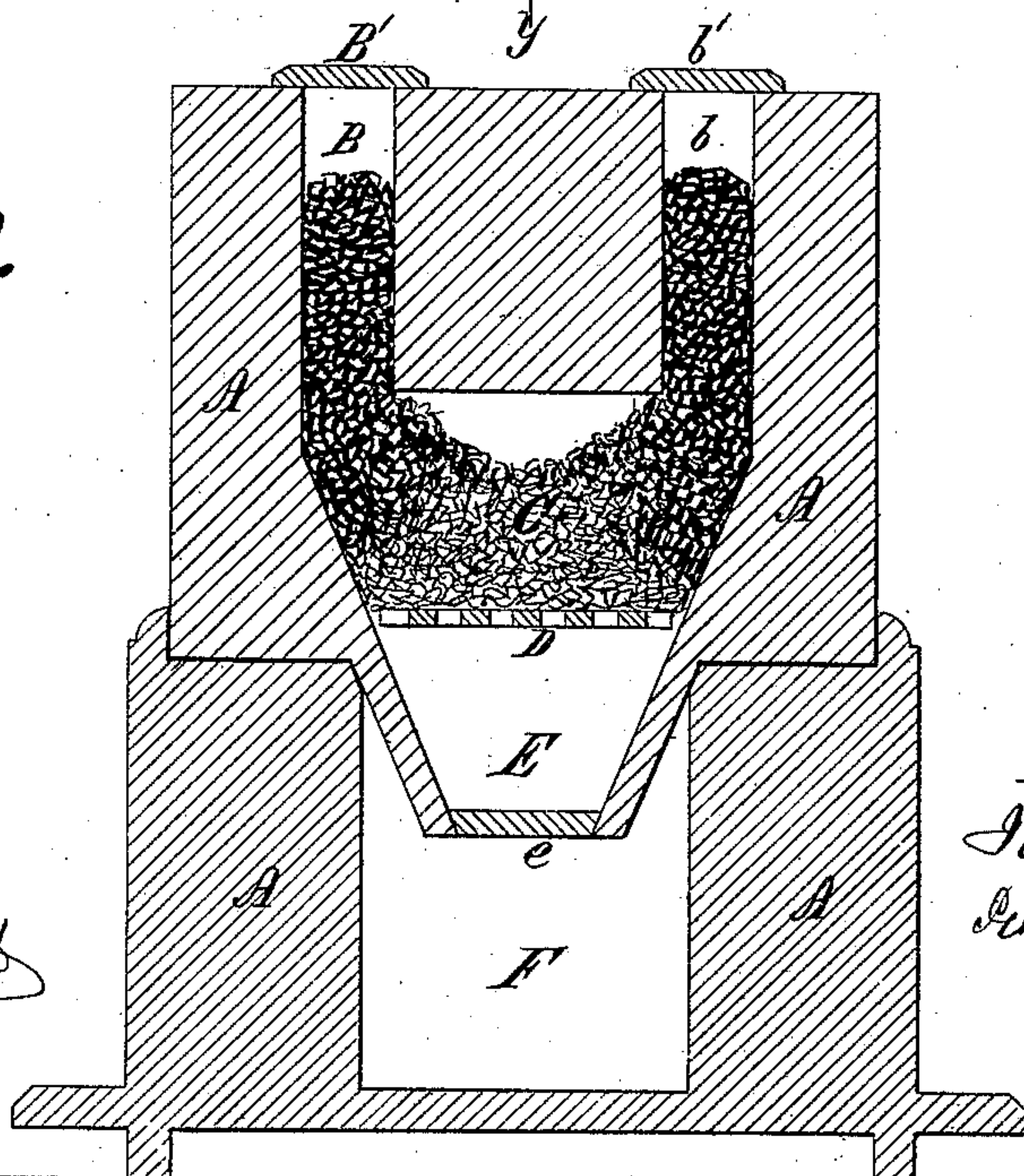


J. W. BONTA.  
FURNACE FOR HEATING BLANKS.  
No. 182,059. Patented Sept. 12, 1876.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*Edw. Payson*

*Geo. H. Matt*

*Inventor:*

*James W. Bonta*  
*Per Edw. C. Quincy*  
*Atty.*

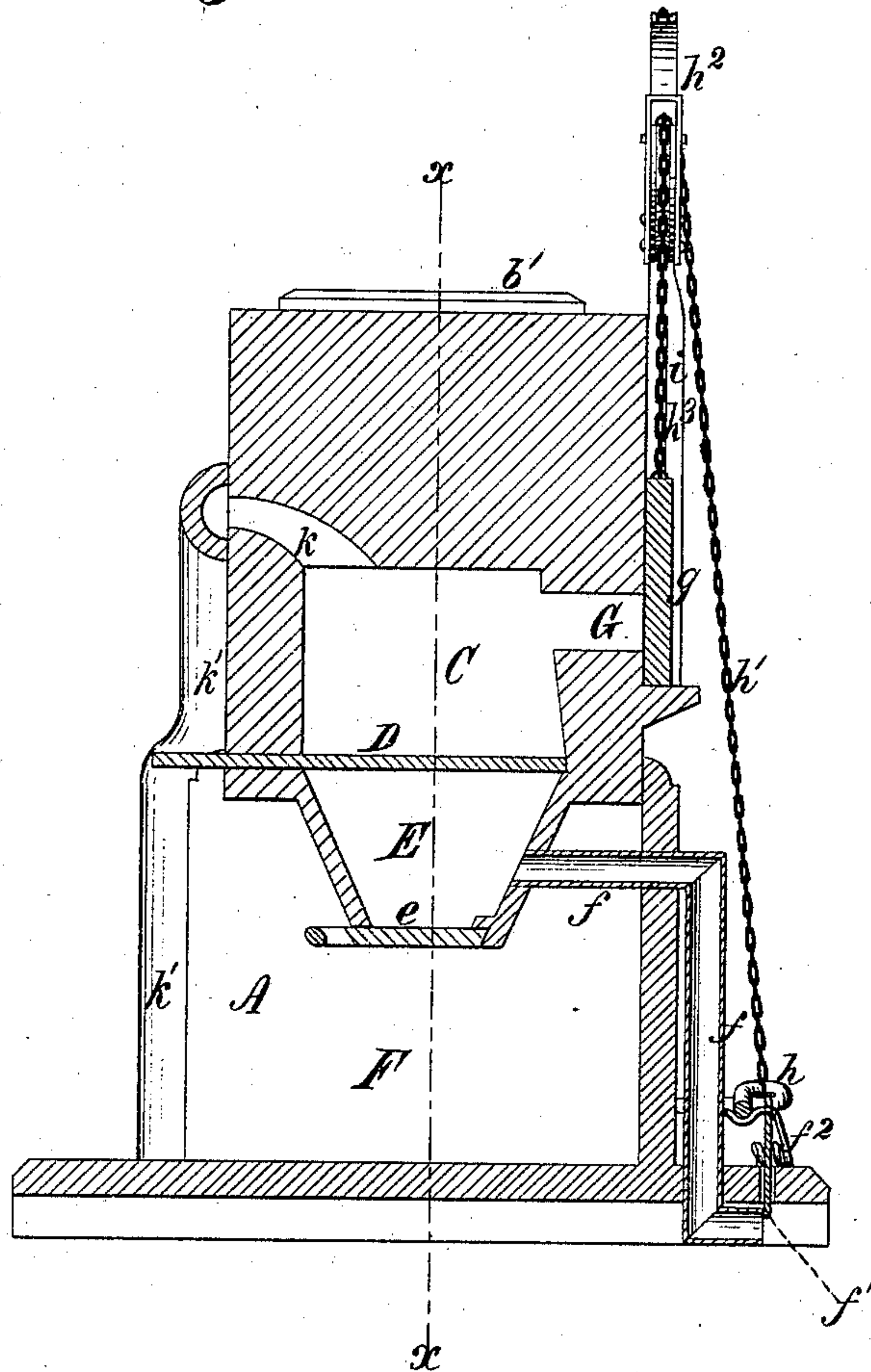
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Patented Sept. 12, 1876.

*Fig. 3.*



*Witnesses:*

*Edw<sup>d</sup> Payson*

*Geo. H. Miatt*

*Inventor:*

*James W. Bonta*

*Per Edw. E. Quincy  
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# UNITED STATES PATENT OFFICE

JAMES W. BONTA, OF NEW BRIGHTON, PENNSYLVANIA, ASSIGNOR TO  
BONTA FURNACE COMPANY, OF HARTFORD, CONNECTICUT.

## IMPROVEMENT IN FURNACES FOR HEATING BLANKS.

Specification forming part of Letters Patent No. **182,059**, dated September 12, 1876; application filed April 5, 1876.

*To all whom it may concern:*

Be it known that I, JAMES W. BONTA, of New Brighton, Pennsylvania, have invented a certain Improvement in Furnaces for Heating Blanks, of which the following is a specification:

My invention relates to base-burning magazine-furnaces, in which the coal is partially coked before it reaches that part of the furnace in which objects are placed to be heated; and my invention consists in establishing, in suitable proximity, two coal-magazines, from which coal, after being partially coked, is discharged into a central chamber, wherein the objects to be heated are placed. This chamber has an outlet at the back for the escape of the unflammable products of combustion, and an opening in its front wall for allowing access to the interior of the chamber. The opening in front is provided with a tight-fitting sliding door, which can be raised by depressing a foot-lever, and the foot-lever also operates a valve in a pipe, through which air is injected into a closed ash-pit, situated immediately beneath the central chamber, and separated therefrom by movable grate-bars.

The accompanying drawings are as follows: Figure 1 is a front elevation of the furnace. Fig. 2 is a longitudinal vertical section through the line *x x* on Fig. 3. Fig. 3 is a transverse vertical section through the line *y y* on Fig. 1.

In the drawings, A represents the brick walls of the furnace. The coal-magazines B *b* are closed at their tops by the movable covers B' *b'*. The coal after partial coking is discharged by its own gravity into the central chamber C, at the base of which are the movable grate-bars D, by which the central chamber is separated from the ash-pit E. The ash-pit has a movable tight-fitting bottom, *e*, separating it from the dead-air chamber F, into which ashes are dropped when the furnace is cleaned. The ash-pit is provided with an injection-pipe, *f*, which is to be connected with a blower, for the purpose of forcing air into the ash-pit, and supplying the necessary amount of oxygen to the furnace.

The air-blast pipe is provided with a slide-valve, *f*<sup>1</sup>, which is affixed to the end of the spring *f*<sup>2</sup>. The spring *f*<sup>2</sup> tends to hold the valve *f*<sup>1</sup> open.

Objects to be heated are introduced into the central chamber through the opening G in the front wall after raising the tight-fitting vertically-sliding door *g*, which is then allowed to fall by its own weight. The door *g* is raised by depressing the foot-lever *h*, which is connected by the chain *h*<sup>1</sup> to the upper outer end of the rocker *h*<sup>2</sup>, while another chain, *h*<sup>3</sup>, connects the opposite end of the rocker to the door.

The rocker is pivoted upon the vertical standard *i*. The ends of the rocker are bent concentrically in opposite directions, and grooved to engage the chains.

When the foot-lever *h* is depressed it catches the upper end of the spring *f*<sup>2</sup> and pushes down the valve *f*<sup>1</sup>, so that when the door *g* is opened the blast is shut off from the furnace.

When the door G is closed, and the furnace is in operation, the air injected into the ash-pit forces it way upward through the grate-bars, and supplies the necessary amount of oxygen to the fuel.

The unflammable gaseous products of combustion are discharged from the central chamber through the outlet *k*, and from thence downward through the vertical flue *k'* to a sewer or any other convenient point.

I claim as my invention—

1. In a furnace for heating blanks, a heating-chamber provided with an outlet for the escape of the unflammable products of combustion, and an opening or mouth for allowing access to its interior, provided with a movable door, and a closed ash-pit, provided with a pipe for the injection of air, in combination with two vertical chambers or magazines, closed at the top by movable covers, for containing coal and discharging the same, after partial coking, into the opposite sides of the heating-chamber, substantially as shown and described.

2. A sliding door for closing the mouth of an opening through which access is had to the interior of the heating-chamber of a fur-

nace, for the purpose of introducing blanks to be heated, and mechanism for raising such door, in combination with an air-blast pipe, and with a valve arranged in such air-blast pipe, the whole constructed and operating substantially in the manner described, whereby, when the door is raised, the blast is shut

off from the furnace by the closing of the valve.

JAMES W. BONTA.

Witnesses:

MILLARD FARR,  
EDWD. PAYSON.