

J. W. BONTA.
 FURNACE FOR BLANKS.

No. 180,698.

Patented Aug. 8, 1876.

Fig. 1.

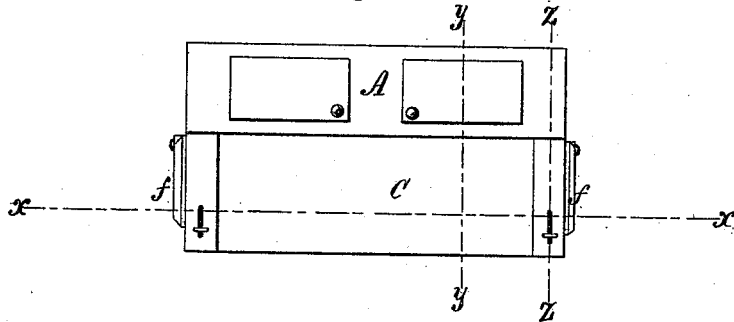


Fig. 2.

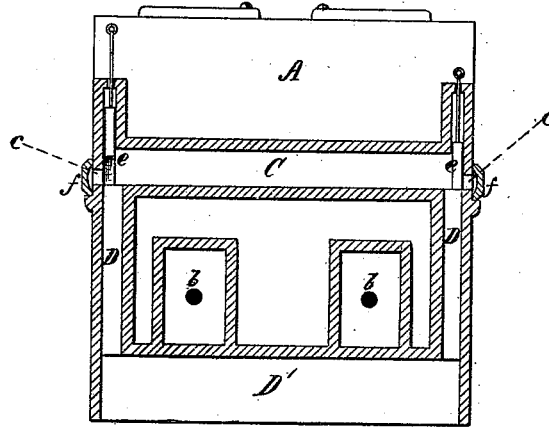


Fig. 3.

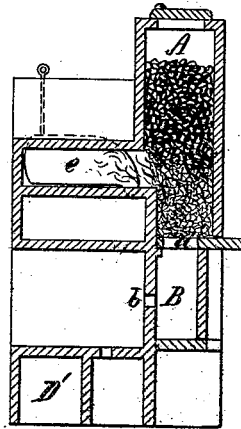
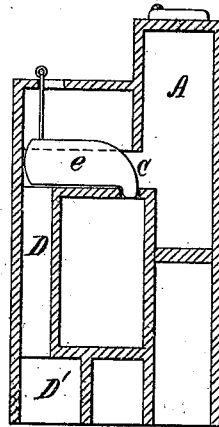


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES W. BONTA, OF NEW BRIGHTON, PENNSYLVANIA.

IMPROVEMENT IN FURNACES FOR BLANKS.

Specification forming part of Letters Patent No. 180,698, dated August 8, 1876; application filed January 22, 1876.

To all whom it may concern:

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

My improvements relate to self-feeding base-burning furnaces for heating blanks.

My invention has two features: first, the arrangement of outlets for the discharge of carbonic-acid gas, or other unflammable products of combustion, from the heating-chamber of the furnace; and, secondly, the arrangement of deflecting-shields, in connection with the doors and openings into the heating-chamber, for the protection of the operator from the flame, which puffs out when the doors are suddenly opened.

The accompanying drawings are as follows: Figure 1 is a top view of a self-feeding base-burning furnace, showing the top of the coal-magazine, the doors for covering the openings therein, the top of the heating-chamber, the links for raising the doors of the heating-chamber, and the upper edges of my deflecting-shields. Fig. 2 is a longitudinal vertical section of the furnace, through the line *xx* on Fig. 1. Fig. 3 is a transverse vertical section through the line *yy* on Fig. 1. Fig. 4 is a transverse vertical section through the line *zz* on Fig. 1.

The drawings represent a base-burning coal-magazine, A, having its bottom composed of grate-bars *a*, arranged over a closed ash-pit, B, provided with openings *b*, for the inlet of blasts of air, by the operation of which the gaseous products of combustion are driven into the lateral heating-chamber C, from the bottom of which they are discharged in a downward direction, through the vertical eduction-passages D, into the chamber D', which is to be connected with a sewer or pipe leading into the open air, as may be most convenient.

The heating-chamber is provided with openings *cc* at the ends, which can be closed by

the inside doors *ee*. On the outer end of the furnace, immediately opposite the openings, are pivoted shields *ff*. A recess is formed on inner side of the shields, for the purpose of laterally deflecting the flame of hot air which puffs out of the opening *c* when the door *e* is raised.

My improved furnace is operated in substantially the same way as the furnace described in my Patent No. 166,335, but by means of my improvements I am enabled to use, if required, a strong blast of air.

By providing outlets for the carbonic-acid gas in the floor of the chamber, and conducting the gases downward, I economize in fuel, and utilize the heat of the furnace to the fullest degree, for the purpose of heating blanks deposited in the heating-chamber. At the instant of opening the door into the heating-chamber to introduce or remove the metal bars or blanks therefrom, there is an outward puff of hot air or flame, which my shield deflects laterally, and which is thus prevented from endangering the safety of a person standing opposite the opening. After the first puff the pressure within the furnace is relieved, and the shield may then be safely raised, allowing access to the heating-chamber.

I claim as my invention in a self-feeding furnace for heating blanks, provided with a base-burning coal-magazine—

1. A closed ash-pit and a blast-pipe for the supply of air, in combination with a lateral heating-chamber, having outlets in its bottom or floor for the discharge of the unconsumed products of combustion in a downward direction, substantially as described.

2. In combination with the opening and inside door of a heating-chamber, the deflecting-shield, for the purpose of laterally deflecting the hot air puffed out of the opening when the door is opened.

JAMES W. BONTA.

Witnesses:

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