W. J. HALLEFAS.

FEED APPARATUS FOR HOT-AIR FURNACES.

No. 185,745. Patented Dec. 26, 1876.

Fig. 1.

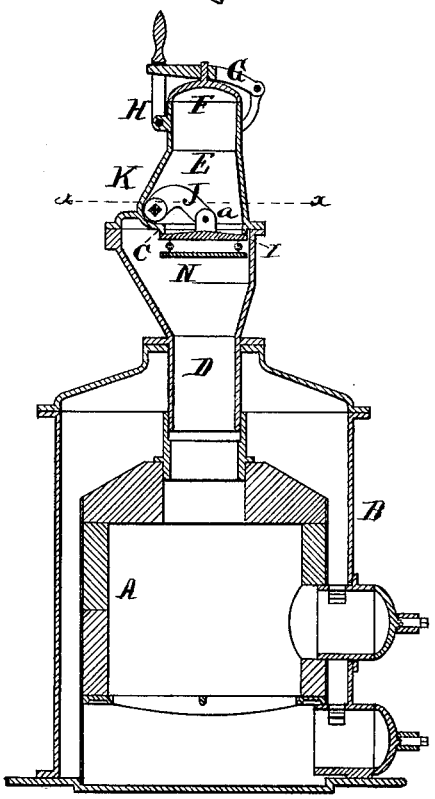
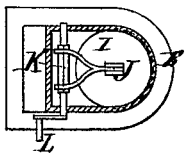


Fig. 2.



Witnesses.

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WILLIAM J. HALLEFAS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN FEED APPARATUS FOR HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **185,745**, dated December 26, 1876; application filed December 6, 1876.

To all whom it may concern:

Be it known that I, WILLIAM J. HALLEFAS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Feed Apparatus for Hot-Air Furnaces, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical central section of a hot-air furnace containing my improvement. Fig. 2 is a cross-section thereof in the plane of the line *x x*, Fig. 1.

Similar letters indicate corresponding parts.

My invention relates to improvements in apparatus for feeding fuel to hot-air furnaces, and particularly that class of apparatus embodying a fuel-reservoir, and a valve, which forms a communication between the said reservoir and the combustion-chamber of the furnace.

My invention consists in a novel arrangement of the feed-door or its connections, whereby the latter are shielded from the action of the products of combustion of the furnace. The feed-door is made to open downward, and it is suspended from an arm, which is attached to a rock-shaft, while the arm, as well as the shaft, is arranged above the feed-door in the fuel-reservoir of the apparatus in such a manner that by rotating the shaft the feed-door may be opened or closed, and when the door is closed the products of combustion are prevented from entering the fuel-reservoir, whereby the connections of the door, consisting of the arm and the rock-shaft, are shielded from the injurious action of said products.

In the drawing, the letter A designates a furnace, which has a jacket, B, placed around it, so as to prevent radiation of heat.

From the furnace A extends a flue, D, through the top of the jacket B, and this flue is connected to a reservoir, E, in any suitable manner. The reservoir E is surmounted by a lid, F, which is arranged to be fastened by a lever, G, and arm H, the lid being affixed to the lever, so as to partake of its motion. The reservoir E is intended for the reception of fuel, such as coal or wood, and between it and the furnace-flue D is interposed a valve, I. This valve I serves to control the supply of fuel to the furnace A, and it has a lug, *a*, secured or formed on it, by which it is pivoted to, and suspended from one end of, an arm, J, which is mounted on a rock-shaft, K. The arm J and the rock-shaft are located above the valve I in the reservoir, and the rock-shaft has a crank, L, mounted on it, exterior of the reservoir, by which it may be rotated. A seat is formed for the valve I by a flange, C, on the lower end or edge of the reservoir E.

By rotating the shaft K in the proper direction the valve I may be lowered and opened, whereupon if the reservoir E contains fuel the same is allowed to issue from the reservoir through the flue D into the combustion-chamber of the furnace A.

The valve I may be closed by returning the shaft, and the valve being made to close upward the pressure of the products of combustion from the furnace A assists in keeping the valve closed, while, at the same time, none of the said products are permitted to enter the reservoir E, and thus the arm J and rock-shaft K are shielded from the action thereof.

The rock-shaft K may be rotated by the crank L, and to permit of holding the crank in a fixed position I intend to combine with it a locking device of suitable construction.

The valve I has a protecting-plate, N, suspended from the under side, as shown in Fig. 1, for the purpose of shielding it from the products of combustion arising from the furnace.

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

The combination, with a hot-air furnace, of a feed apparatus, consisting of the reservoir E, valve I, arm J, and rock-shaft K, the arm and the rock-shaft being situated above the valve, and the whole being adapted to operate substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 4th day of December, 1876.

WM. J. HALLEFAS. [L. S.]

Witnesses:

W. HAUFF,

CHAS. WAHLERS.