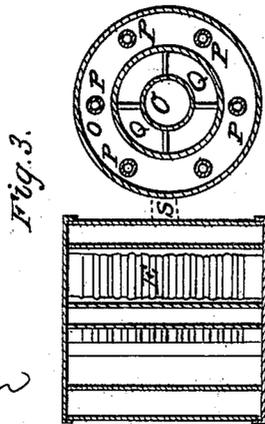
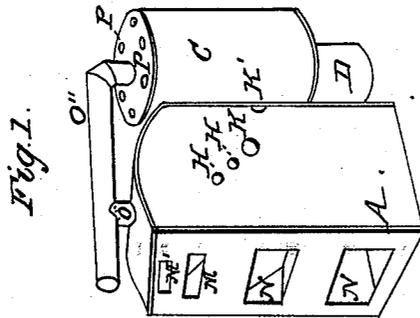
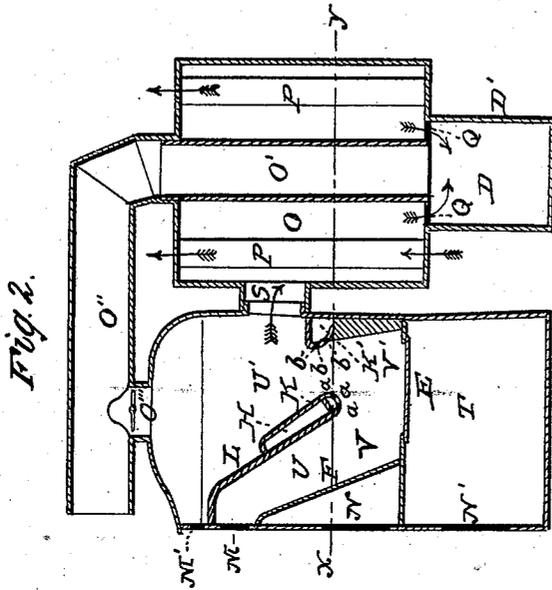


S. PIERCE.
Base-Burning Stove.

No. 80,007.

Patented July 14, 1868.



Witnesses

Frank G. Parker
Abner Berry

Inventor

Samuel Pierce

United States Patent Office.

SAMUEL PIERCE, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 80,007, dated July 14, 1868.

IMPROVEMENT IN BASE-BURNING STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL PIERCE, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Furnaces; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in arranging the several parts of a furnace so as to adapt it to the combustion of bituminous fuel; said arrangement and construction of parts being such that they cannot clearly be understood without an examination of drawings and specification.

In the drawings—

Figure 1 is a perspective view of my improved furnace.

Figure 2 is a vertical section of the same.

Figure 3 is a horizontal section on the line $x y$, fig. 2.

I construct my furnace as follows:

A B is the furnace proper, in which the ash-pit, fire-pot, coal-receptacle, and combustion-chamber are enclosed. C D is a radiating-drum, through which the heated products of combustion circulate, and have time to yield their heat to the air flowing around the drum C and through the tubes P P, &c.

E, figs. 2 and 3, represent the grate, above which the fire-pot V V' is placed. The upper part of the fire-pot is divided into two compartments, U U', by the partition L H K, fig. 2, so that the coal, which is supplied at M, will not be consumed in U V above K, complete combustion taking place in V', between the air-ducts K K' and immediately above that point.

The chamber H, the walls of which form the partition between the fire-chamber U' and the coal-receptacle U, is made water-tight, and is connected at H H, fig. 1, to supply and return-pipes, leading to a conveniently-located cistern, so that it can be filled with water, which will prevent its being excessively heated and thus destroyed.

K is an air-duct, connected immediately to the water-tank, and thus kept comparatively cool.

$a a$, fig. 2, represent a series of perforations made in the air-duct K, through which air is supplied to support combustion.

K' is an air-duct, similar to K, and provided with perforations $b b b$.

N is a chamber or recess, which may be used as an oven, if desired. T, fig. 2, is the ash-pit, having a door, N'. O'', figs. 1 and 2, represents the direct draught, leading from the combustion-chamber into the flue, and is provided with a suitable damper, to be used only when kindling the fire.

S, figs. 2 and 3, represents the draught from the combustion-chamber into the radiating-drum. The heated products of combustion pass into the drum, and, circulating around the pipes P P, pass down through the openings Q Q, figs. 2 and 3, into the lower drum D, whence they pass through the pipe O' O'' to the chimney. The drum D, fig. 2, forming the lower part of the radiating-drum, serves, aside from its use as a radiator, as a receptacle for the deposit of any ashes, dust, &c., that may be brought over from the furnace by the draught. D' is a door, for convenience in cleaning out the drum D.

The pipes P P are open at both ends, so as to allow the air to flow freely through.

The entire furnace may be set in brick, or enclosed in an external cylinder of metal. The pipes for the supply of hot air may be arranged in any of the ordinary methods.

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

1. In base-burning stoves, making the walls, which divide the coal-receptacle from the ignition-chamber, double, and enclosing water, said water serving to preserve the said walls, and also for heating purposes.
2. The combination of the radiating-drum C with the ash-receptacle D, arranged and operating as described.

SAMUEL PIERCE.

Witnesses:

FRANK G. PARKER,
A. HUN BERRY.