

T. E. THOMAS.
HOT BLAST STOVE.
APPLICATION FILED JULY 3, 1909.

953,564.

Patented Mar. 29, 1910.

3 SHEETS—SHEET 1.

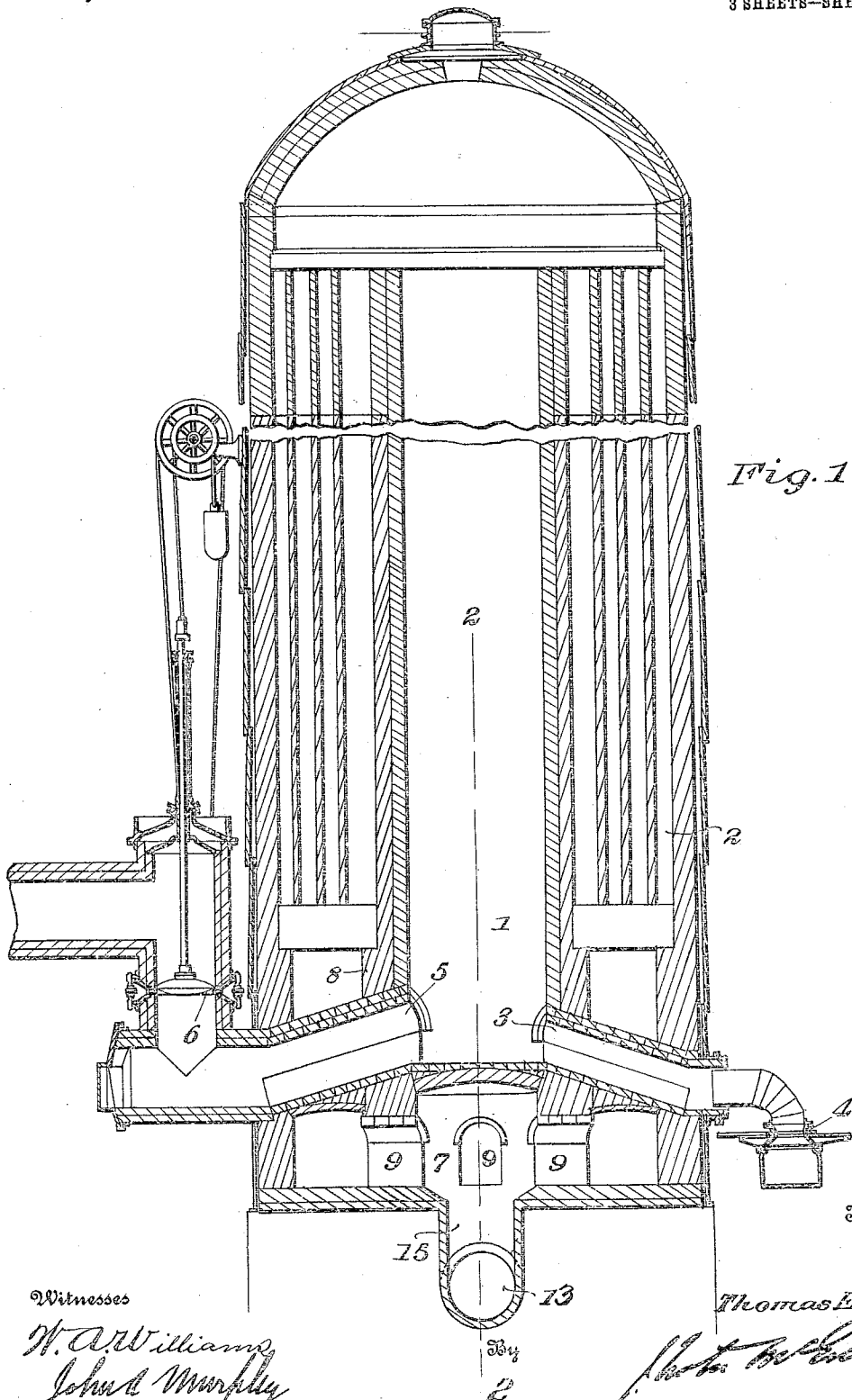


Fig. 1.

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Witnesses

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Fig. 2.

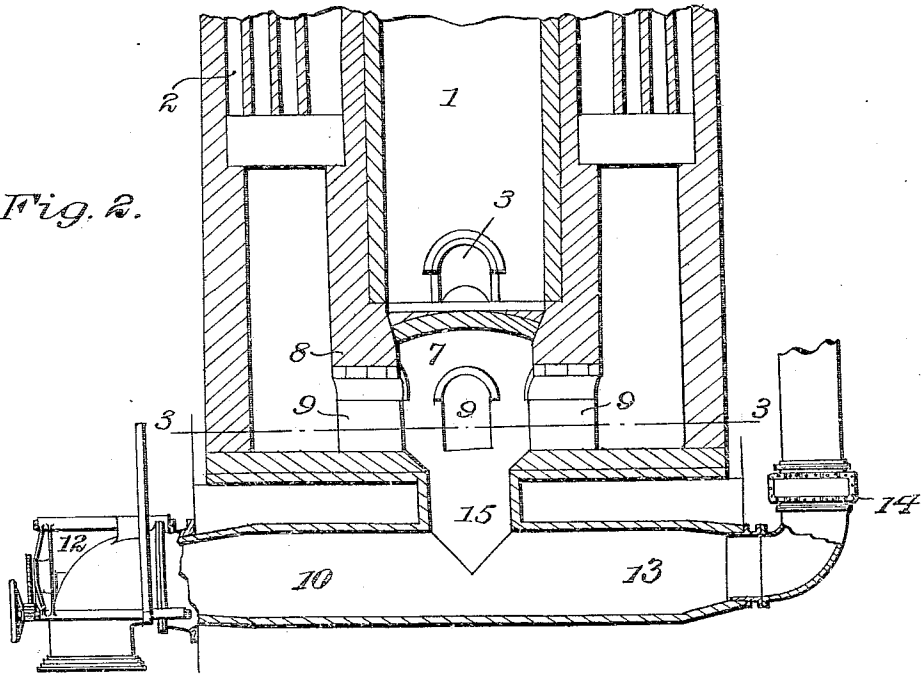
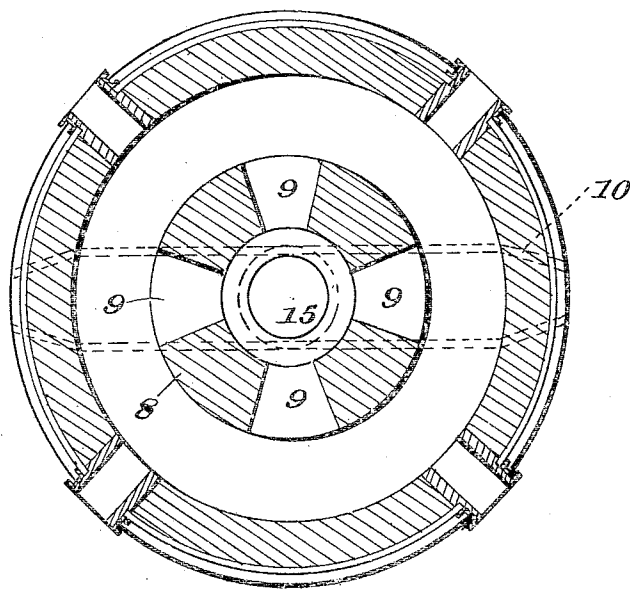


Fig. 3.



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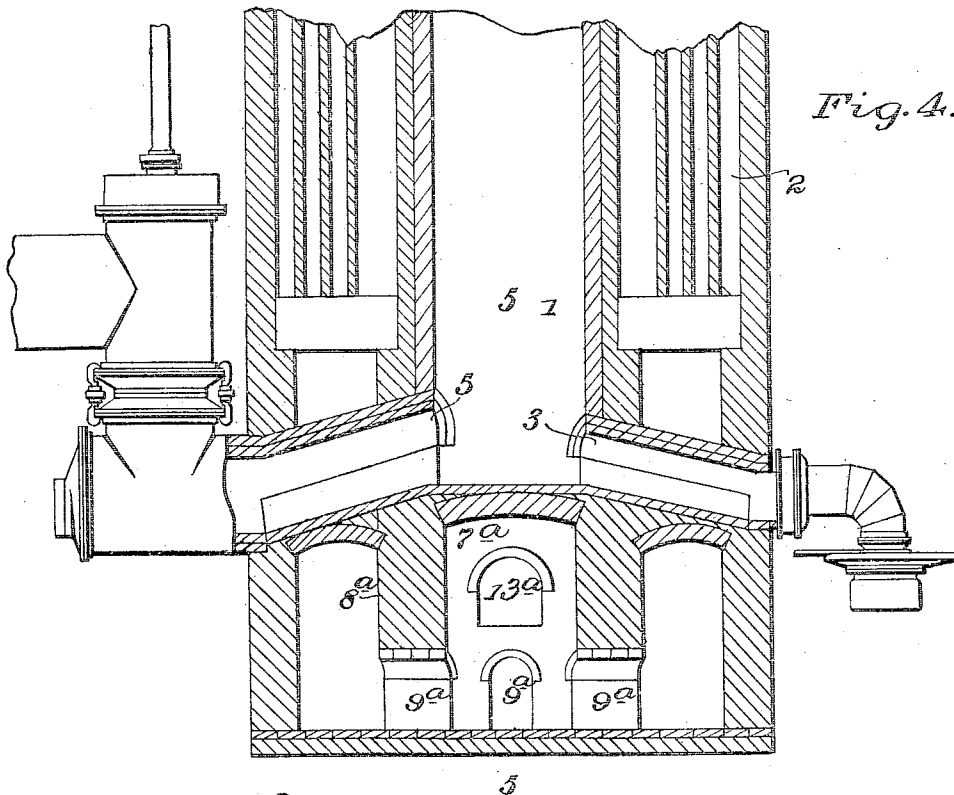
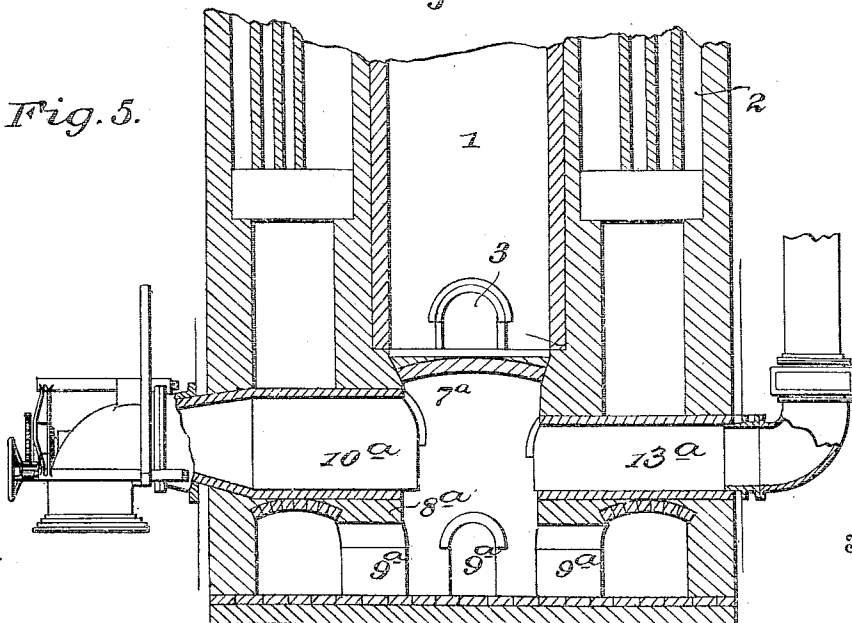


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS E. THOMAS, OF NILES, OHIO.

HOT-BLAST STOVE.

953,564.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed July 3, 1909. Serial No. 505,913.

To all whom it may concern:

Be it known that I, THOMAS E. THOMAS, of Niles, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Hot-Blast Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to so construct hot-blast stoves as to insure uniformity in the heating thereof by equalizing the dissemination of the heat from the gas port, and likewise to equally distribute the cold blast throughout the stove.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view, with parts broken away. Fig. 2 is a vertical section on line 2—2, Fig. 1, with parts broken away. Fig. 3 is a horizontal sectional view on line 3—3, Fig. 2. Fig. 4 is a vertical sectional view of a slight modification. Fig. 5 is a sectional view on line 5—5, Fig. 4.

In the drawings I have shown a two-pass stove having a central vertically-disposed combustion chamber 1, and an annular flange 2 of ordinary construction wherein may be located known forms of partitions and checker work, if desired. Into the lower end of the combustion chamber opens the gas burner port 3, the entrance to which is controlled by a valve 4, and from such end of the chamber leads a hot-blast port 5 having a controlling valve 6.

7 is a chamber which is located directly beneath the combustion chamber, and in its circular wall 8 are formed ports 9, see Fig. 3. There may be any desired number of ports, but four are preferred. The roof of this chamber is preferably arched, and the wall 8 is circular in horizontal section and concentric with the inclosing wall of the stove, the annular flue 2 being between the two walls. I have shown the chimney outlet 10 as having a valve 12, and the cold blast inlet 13 as having a valve 14.

In Figs. 1, 2 and 3, the cold blast inlet 13 and the chimney outlet 10 are shown as located beneath the stove and leading radially from a central throat 15 depending from the bottom of chamber 7. This throat opens

centrally into the chamber 7 so that the cold-blast by entering the chamber at its center may be distributed equally to the surrounding annular chamber through the plurality of openings in wall 8, and likewise when the stove is under gas with the chimney valve open the down draft will be equal throughout the annular chamber. The invention is not confined, however, to the described arrangement, since, as shown in Figs. 4 and 5, the cold-blast inlet 13^a and the chimney outlet 10^a may be brought into the stove above the bottom thereof so as to open into chamber 7^a at opposite points near the roof thereof, but in this arrangement the ports 9^a which form communications between the central chamber and the annular flue 2 are in the bottom of the surrounding wall 8^a. In this arrangement, however, I still maintain the same advantages arising from equally disseminating the heat and equally distributing the cold-blast.

In practice, with the valve 4 of the gas burner port open, and the valve of the chimney outlet port likewise open, the gas entering the combustion chamber will rise through the latter to the dome-like top of the stove and descend evenly through the annular flue 2 and thence pass into the central chamber 7 or 7^a and out through the chimney outlet. The draft of the latter insures the even and thorough heating of the stove, since the gases are all drawn evenly down through flue 2 and thence into the central chamber. After the stove has been thoroughly heated, the chimney outlet valve 12 is closed, as is also the gas burner port valve 4, while the valve 14 of the cold blast port and the valve 6 of the hot blast port are opened. The cold air being introduced directly into the central chamber will be distributed equally into the annular flue wherein it will rise to the top of the stove and then pass down through the combustion chamber and out through the hot blast port 5.

The advantages of my invention will be apparent to those skilled in the art. It will be seen that all danger of uneven heating of the stove is avoided, since the draft from the chimney outlet acts evenly upon the lower end of the annular flue and cannot draw more strongly from one side of the stove than from the other. Likewise the same advantage is obtained in respect to the cold blast which will pass in equal proportions through the several ports of the

central receiving and distributing chamber into the annular flue.

I claim as my invention:—

- 5 1. A hot blast stove having a centrally-arranged combustion chamber, an annular flue surrounding said chamber and extending downward beyond the lower end thereof, a gas inlet opening into, and a hot blast outlet leading from, said combustion chamber, a chamber located centrally beneath
10 said combustion chamber and opening radially at a plurality of points into said annular flue by which it is surrounded, a chimney outlet leading from, and a cold blast
15 inlet opening into, said chamber the inner ends of said chimney outlet and cold blast inlet being out of direct line with the openings between the central chamber and the annular flue.
- 20 2. A hot blast stove having a centrally-arranged combustion chamber, an annular flue surrounding said chamber and extending downward beyond the lower end thereof, a gas inlet opening into, and a hot blast out-
25 let leading from, said combustion chamber, an annular wall forming a chamber centrally beneath said combustion chamber and having a plurality of openings into said an-

nular flue by which it is surrounded, a chimney outlet leading from, and a cold blast
30 inlet opening into, said chamber the inner ends of said chimney outlet and cold blast inlet being out of direct line with the openings between the central chamber and the annular flue.

- 35 3. A hot blast stove having a centrally-arranged combustion chamber, an annular flue surrounding said chamber and extending downward beyond the lower end thereof, a gas inlet opening into, and a hot blast
40 outlet leading from, said combustion chamber, a chamber located centrally beneath said combustion chamber and opening radially into said annular flue by which it is
45 surrounded, said latter chamber having a throat at the center of its bottom, a cold blast inlet opening into, and a chimney outlet leading from, said throat.

In testimony whereof, I have signed this specification in the presence of two subscrib-
50 ing witnesses.

THOMAS E. THOMAS.

Witnesses:

P. J. SHEEHAN,
H. V. BATCHELLER.