

(No Model.)

J. B. OLDERSHAW.

HOT AIR FURNACE.

No. 381,574.

Patented Apr. 24, 1888.

Fig. 1.

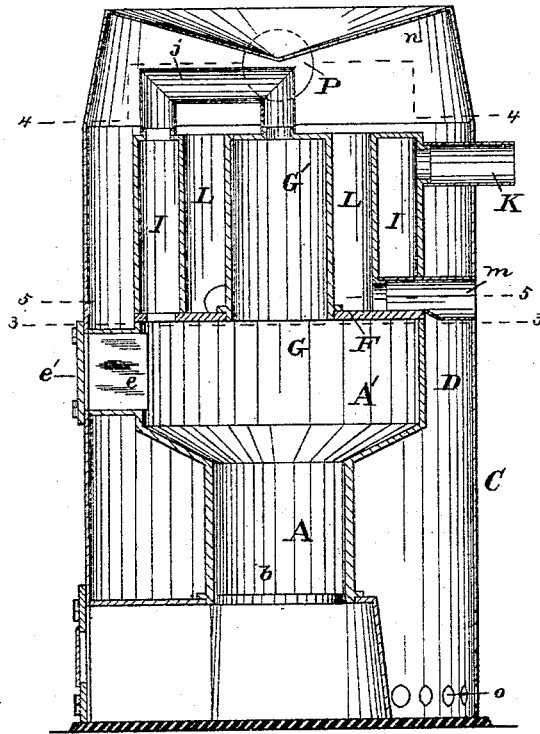


Fig. 2.

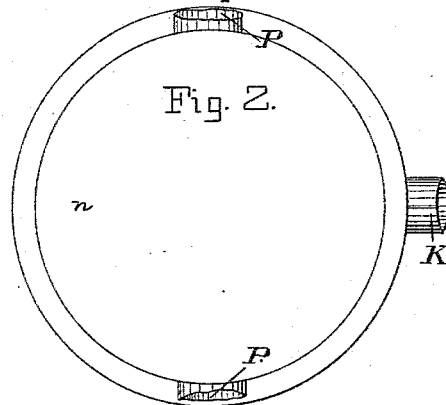


Fig. 3.

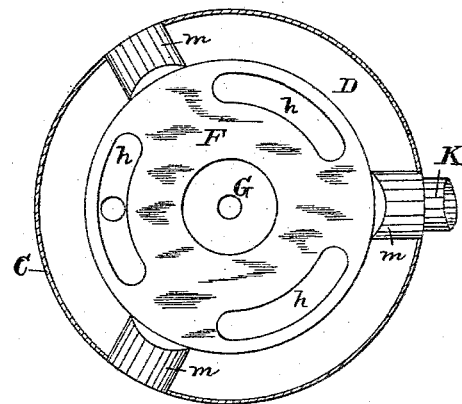


Fig. 4.

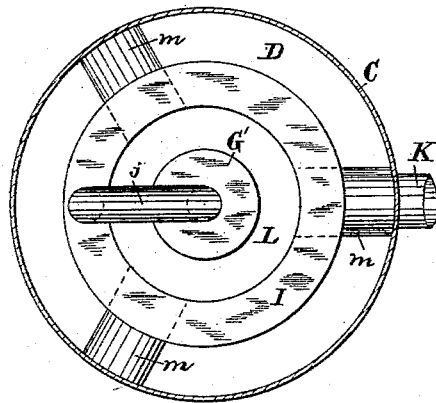
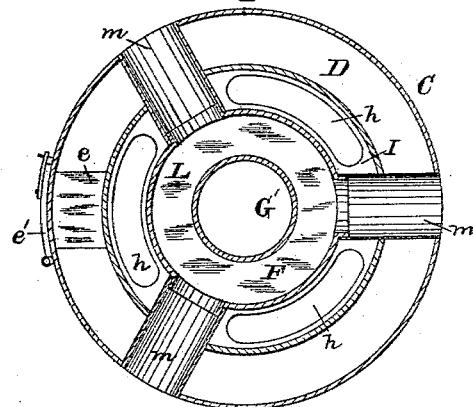


Fig. 5.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN B. OLDERSHAW, OF BALTIMORE, MARYLAND.

## HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 381,574, dated April 24, 1888.

Application filed June 20, 1887. Serial No. 241,827. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. OLDERSHAW, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Hot-Air Furnaces, of which the following is a specification.

This invention relates to a furnace for producing hot air, it being the object of the improvements comprising the invention to provide such construction as will furnish an increased supply of hot air without an increase in the consumption of fuel.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the furnace. Fig. 2 is a view of the furnace-top. Fig. 3 is a horizontal section on the line 3 3, showing the upper part. Fig. 4 is a plan taken on the line 4 4. Fig. 5 is a horizontal section on line 5 5.

The letter A designates the fire-pot; *b*, the grate; A', the combustion-chamber, and C a jacket or case surrounding the fire-pot and combustion-chamber and forming an inclosed heating-space, D. A feed passage or chute, *e*, leads from the jacket to the fire-pot, and is closed by a door, *e'*. The combustion-chamber A' or fire-pot has a top plate, F, with a central opening, G, and three slots or openings, *h*, concentric with said opening. Above the central opening is a fire-dome, G', and an annular smoke-chamber, I, surrounds the dome, and the slots *h*, before mentioned, lead from the combustion-chamber A' up into the annular smoke-chamber I. The top of the fire-dome G' and top of the annular smoke-chamber are connected by a smoke-pipe, *j*, and at a point diametrically opposite that where the said smoke-pipe enters is a smoke flue, K, which leads to the chimney.

The above-described central fire-dome, G', and annular smoke-chamber I are separated, so as to form between them an annular air-space, L, open at its top, and which becomes highly heated. I provide inlet passages or pipes *m*, which open through the jacket C and pass through the air-space D and smoke-chamber I into the annular air-space L. By this construction and combination of parts the air

will be drawn directly into the annular air-space L, where it is highly heated, and then passes up into the closed top *n* of the hot-air jacket, and there mingles with the hot air, which, when in a cold condition, entered at the bottom *o* of the jacket. It will thus be seen there are two supplies of cold air—the one which enters at the bottom of the jacket, and the other which enters midway between the bottom and top at the inlets or pipes *m*. The hot air in the closed top *n* passes out through the conveyers or pipes P, which will distribute it to any desired point.

A furnace of given size thus constructed has greater capacity for producing hot air than any construction I have heretofore seen.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A hot-air furnace consisting of a grate, fire-pot, and combustion-chamber, a dome, G', the hot-air chamber L, surrounding the dome, and an annular smoke chamber, I, communicating with the combustion-chamber, a pipe, *j*, connecting said dome and annular smoke-chamber and passing over chamber L, a jacket, C, inclosing said chambers, dome, and fire-pot, and having openings near its base, a chamber surrounding the fire-pot, annular chamber, and dome communicating with said hot-air chamber L, the lateral pipes *m*, passing through jacket C, chambers D and I, and connected with the chamber L, substantially as specified.

2. The fire-pot A, in combination with the combustion-chamber A', having top wall, F, with openings G *h*, the dome G', the annular smoke-chamber I, the heating-chamber D, the hot-air chamber L, the jacket C, with openings *o*, the pipe *j*, connecting dome G' and chamber I, the lateral pipes *m*, passing through jacket C, chambers D I, and communicating with the hot-air chamber L, and the exit-flue K, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN B. OLDERSHAW.

Witnesses:

JOHN E. MORRIS,  
JNO. T. MADDOX.