T. LANGSTRATH.

Hot-Air Furnace.

No. 166,015. Patented July 27, 1875.

Fig. 1

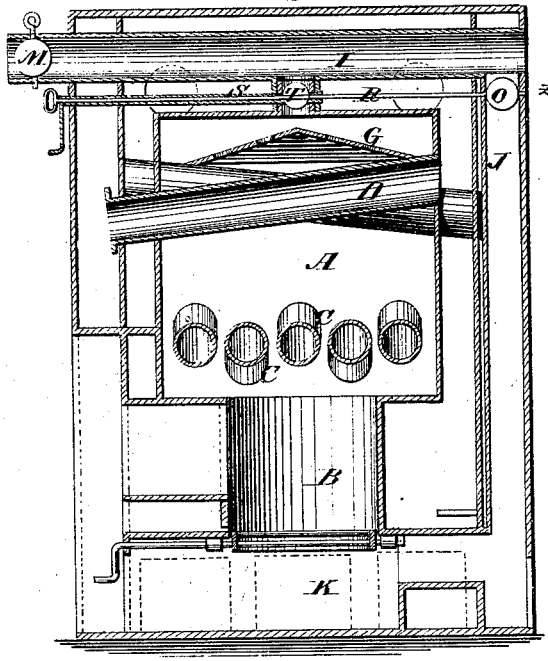


Fig. 2

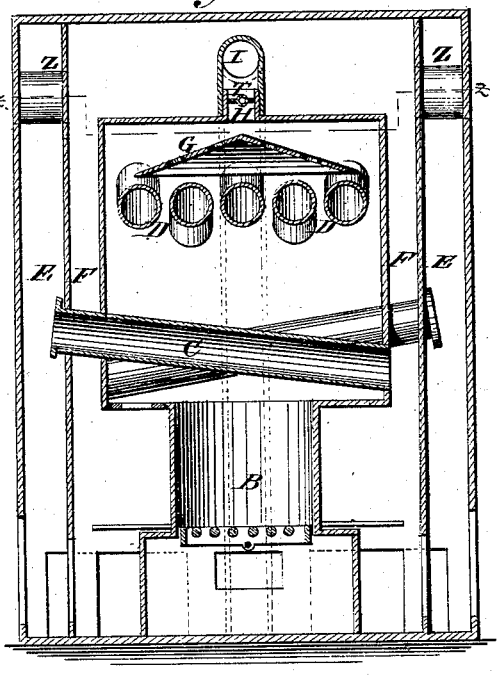
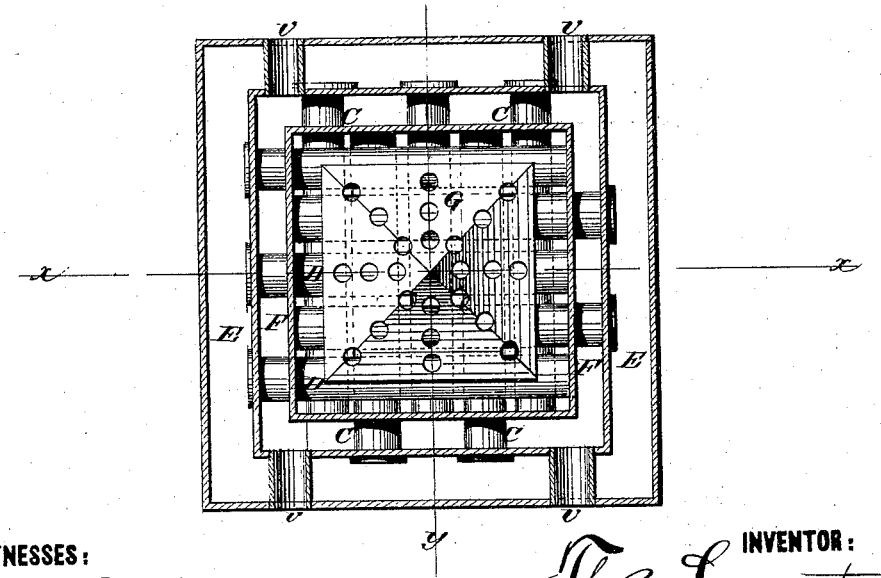


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS LANGSTRATH, OF GERMANTOWN, PHILADELPHIA, PA.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **166,015**, dated July 27, 1875; application filed June 5, 1875.

To all whom it may concern:

Be it known that I, THOMAS LANGSTRATH, of Germantown, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Hot-Air Furnace, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in claims.

Figure 1 is a sectional elevation of my improved furnace, taken on the line *x x* of Fig. 3. Fig. 2 is a section taken on the line *y y*, and Fig. 3 is a horizontal section taken on line *z z*, of Fig. 2.

Similar letters of reference indicate corresponding parts.

A is the combustion-chamber, in the bottom of which is the cylindrical fire-pot B. C and D are the pipes traversing the combustion-chamber, and conducting the cold air through the fire from the cold-air spaces E into the hot-air spaces F, the cold air being received in spaces E at the bottom, as here shown, or at the top, which will probably be preferred in practice. From the air-chamber F the air is conducted to the rooms by pipes V. G is the perforated deflector in the upper part of the combustion-chamber to distribute the heat to best advantage. H is the smoke-pipe, which leads out of the top of the combustion-chamber into the horizontal pipe I, going through the furnace from front to rear, and on the latter side receiving the dust-pipe J, leading up from the ash-pit K, to carry off the dust when the ashes are shaken down. Outside of the furnace at this point the smoke connects with the flue leading to the chimney. At the front of pipe I is a damper, M, to be opened to let in air to check the draft without opening the furnace-door and letting cold air in directly on the hot plates, which is very injurious to them. There is also a damper, O, in the dust-pipe to prevent the checking of the draft by cold air passing up from the ash-pit. The rod R of damper O passes through the furnace to the front, and is arranged in a tubular rod, S, of the damper T of the smoke-pipe.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of rod R, which actuates damper O of the indirect draft-flue, with tubular valve-rod S, which moves the damper T of the direct draft-flue, as shown and described.

2. The combination, with smoke-pipe H, of horizontal pipe I, receiving the former at its middle, open at both ends, and provided with a valve, M, at one end, as and for the purpose set forth.

THOMAS LANGSTRATH.

Witnesses:

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