J. B. HAUPT.

Hot-Air Furnace.

No. 128,799. Patented July 9, 1872.

Fig. 1.

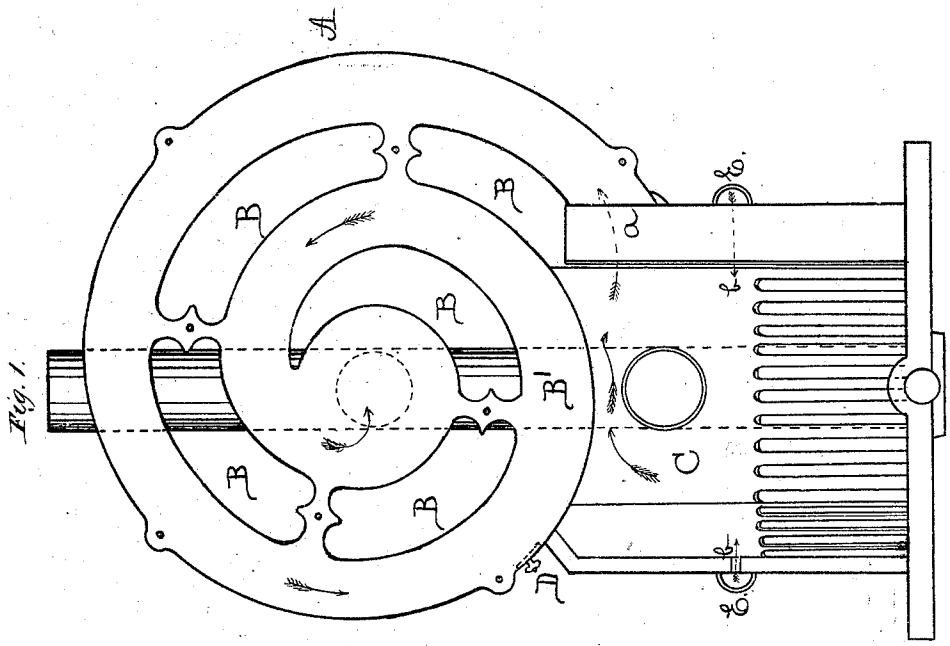
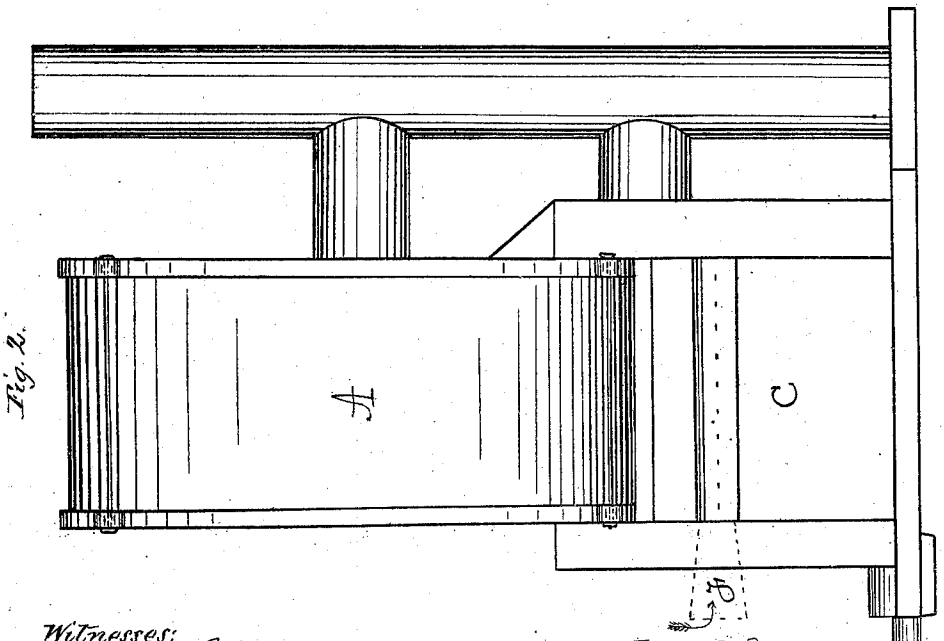


Fig. 2.



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atty.

UNITED STATES PATENT OFFICE.

JACOB B. HAUPT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. 128,799, dated July 9, 1872.

To all whom it may concern:

Be it known that I, JACOB B. HAUPT, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Heating Apparatus; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains, to fully understand, make, and use the same, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a front view of the device illustrating my invention. Fig. 2 is a side view thereof.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists of a spiral tube, having spaces within its convolutions or radiating surfaces, and so arranged that the heat is reflected from that portion of the tube which is in the fire-box or chamber on which the tube is supported and into the entrance of said tube, then passes around the inside thereof to a point where it enters the furnace and continues its passage through the spiral over the furnace, where it becomes reheated, and finally through the remainder of coil to the exit-pipe.

Referring to the drawing, A represents the radiator, which may be inclosed in masonry or brick-work, or otherwise, in any well-known manner. This radiator consists of a spiral tube, preferably rectangular in cross-section, and having spaces B between the convolutions or radiating surfaces of the tube, which form passages for the free circulation of air and preservation of heat by reflection and absorption. The tube is arranged above the fire-chamber C, so that a portion, B′, of its convolutions projects into or is suspended within the fire-chamber. The current of air entering the fire traverses the grates, coals, and fire-chamber, and the spiral tube, thereby becoming heated and carrying with it the smoke and soot through the entire coil to the chimney. As the products of combustion rise from the fire they are reflected from the portion B′ of the tube which is in the fire-chamber to a passage on the side which is the entrance *a* of the tube. The current of heated matter now follows the course of the tube and reaches B′ thereof, and there becomes reheated and continues to pass around the convolutions or coil until it reaches its termination, where it communicates with the pipe leading to the chimney. A current of air entering apertures of the masonry or brick-work is reflected upon the sides of the fire-box, rises and comes in contact with the exterior of the radiator, and being thus thoroughly heated is directed by conducting-pipes to the registers of the house or room.

By my invention there is produced a large radiating surface, whereby the volume of heat is increased. The tube provides an uninterrupted circular draft. There is simplicity in the construction of parts and economy of fuel. The dust is readily removed by shaking the radiator. A portion of it will fall into the fire-chamber, and other portions will seek the lowest points of the coils. A slide or door, D, may be arranged with or near the part B′ of the tube for access to the dust therein. The dust at the center or termination of the coil is easily reached by removing the chimney-pipe. The sides of the fire-chamber above the portion occupied by the coal, or other fuel, may be perforated, as at *b*, and covering said perforations are tubes or sections thereof, E, which extend transversely and communicate at their front ends with conveyers F, (shown in dotted lines, Fig. 2,) which extend from the masonry or brick-work to the tubes E, and convey air thereto, the latter entering the fire-chamber in small jets, and causing the consumption of the gases therein.

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

The radiator A, consisting of a spiral tube having spaces B within its convolutions or radiating surfaces, substantially as and for the purpose described.

The above signed by me this 22d day of May, 1872.

J. B. HAUPT.

Witnesses:

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