Sheet.1.

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J. J. Vogelgesang.
FURNACE.

PATENTED JUL 18 1871

Fig.1.

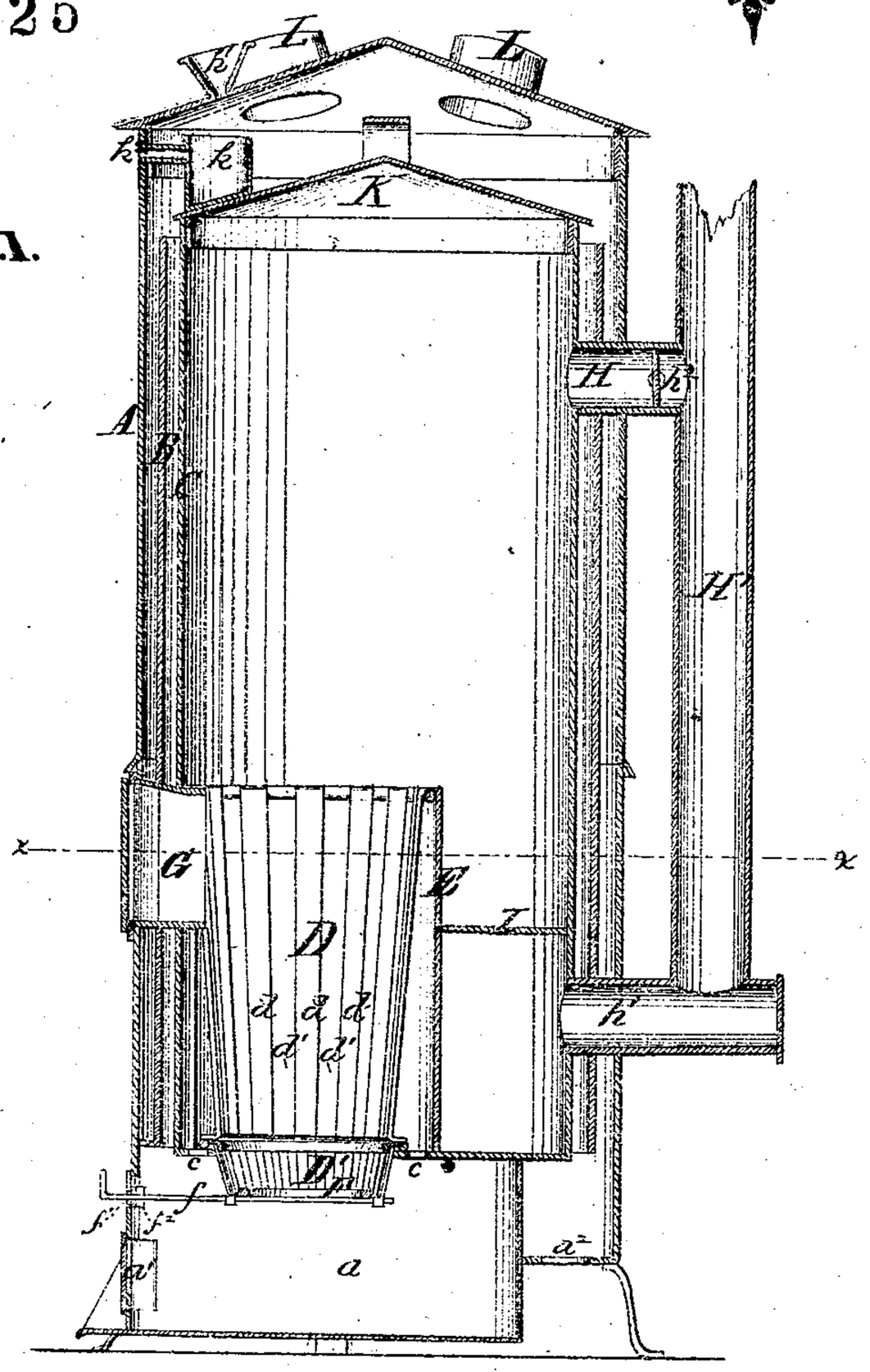
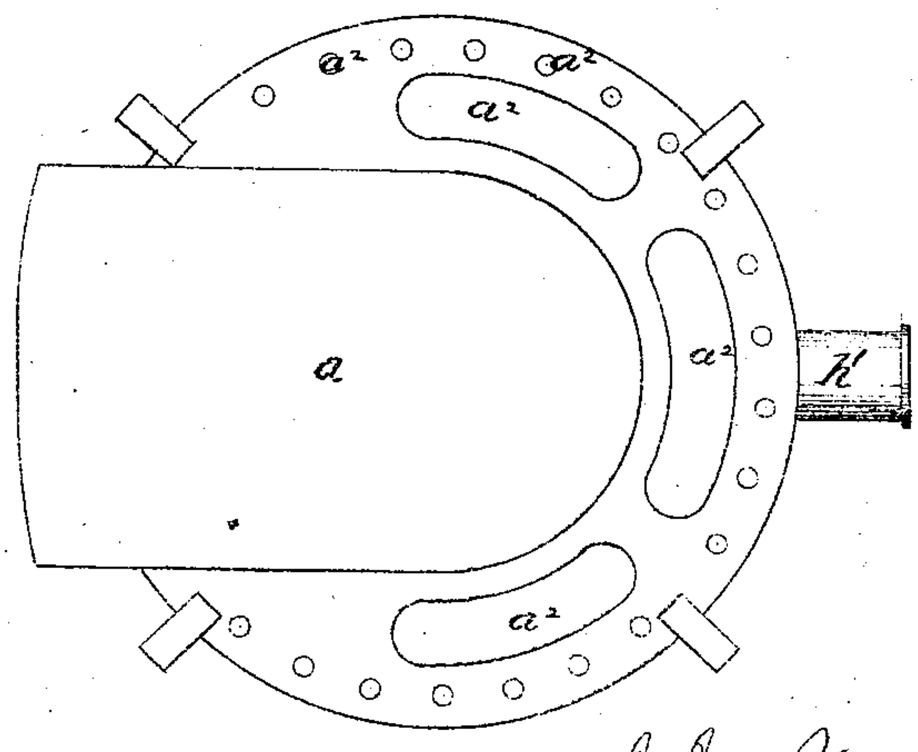


Fig.2.



Witnesses.

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Villette Anderson

Inventor:

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Chipman Hussman &

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FURNACE.

117225

Fig. 2.

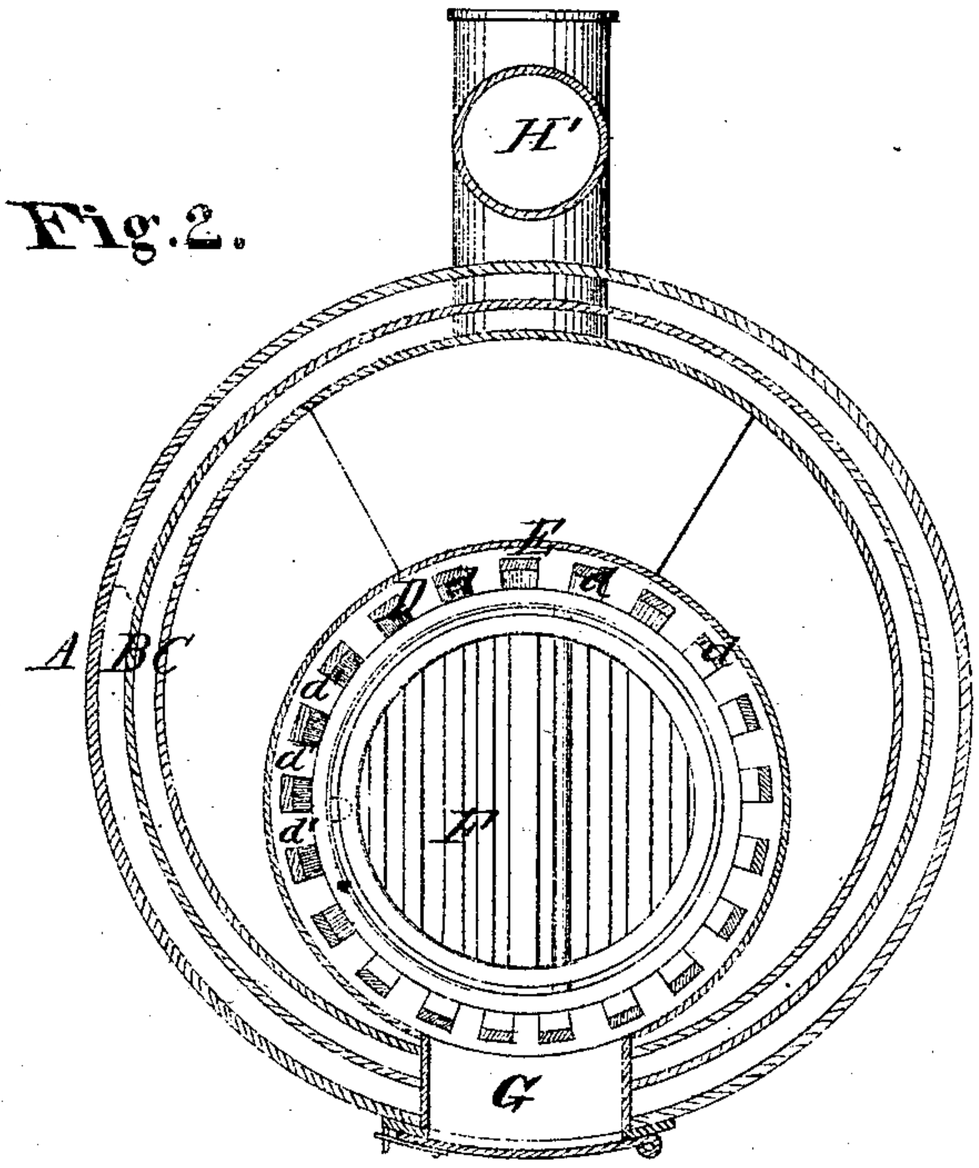
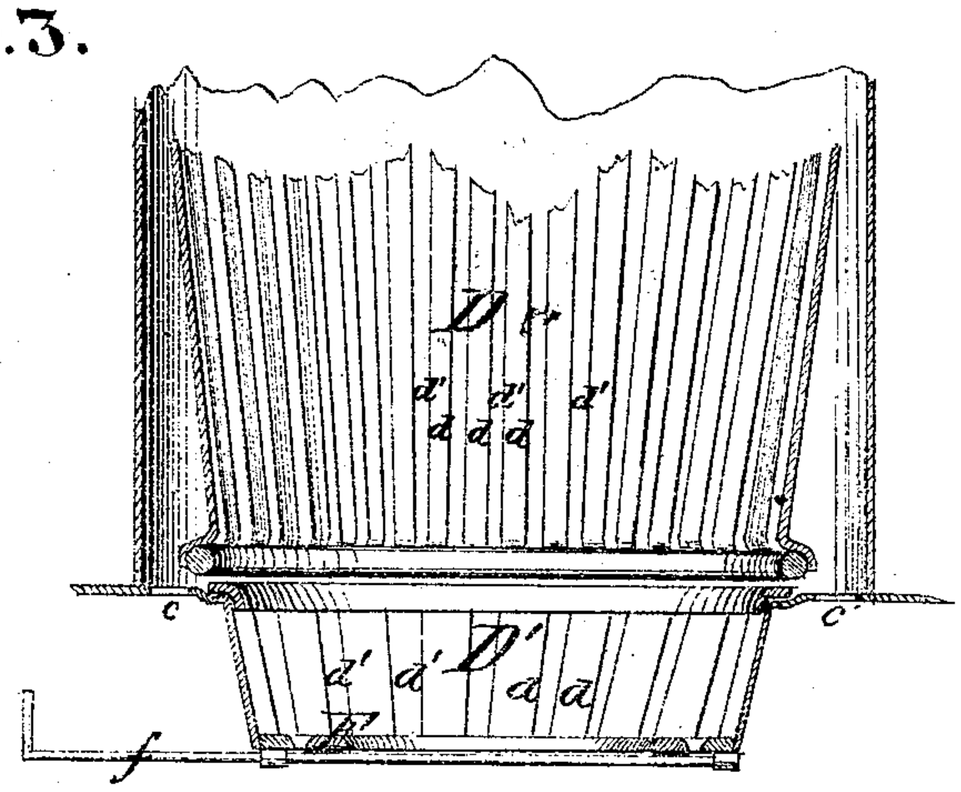


Fig. 3.



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Frank B. Curtis

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UNITED STATES PATENT OFFICE.

JOHN J. VOGELGESANG, OF COLUMBUS, OHIO.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. 117,225, dated July 18, 1871.

To all whom it may concern:

Be it known that I, JOHN J. VOGELGESANG, of Columbus, in the county of Franklin and State of Ohio, have invented a new and valuable Improvement in Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a vertical section. Fig. 2 is an under-side or bottom view. Fig. 3 is a horizontal section through line *x x*. Fig. 4 is a vertical section, showing the lower part of basket-grate or fire-pot.

My invention relates to certain improvements in furnaces for heating distant apartments by air heated and rarefied in specially-adapted chambers within the confines of said furnace, and more particularly to the peculiar construction and arrangement of the fire-pot and devices contiguous thereto, by means of which a copious supply of fresh air is admitted to the fuel, its quantity regulated, a fire-basket provided to rotate independently of the fire-pot, and other desirable results secured from the general construction of the furnace, as hereinafter described.

In the accompanying drawing, A represents the usual outer casing, of galvanized iron or other suitable material, supported by feet, and provided with an ash-pit, *a*, of which a^1 is the door. Around the base of said casing is a number of openings, a^2, for the admission of fresh air to be heated. B is an inner cylindrical casing, separated by a slight space from the casing A, and also from the interior case or furnace C. Within the last mentioned is situated the fire-box D, having a projecting rim or flange to its upper edge, which is made to rest on the top of a cylinder, E, of thin metal, surrounding said fire-pot. The latter is composed of two parts, of which the lower is capable of being rotated laterally, while the upper remains stationary. For this purpose the basket or rotary section D′ is flanged on its upper edge, and supported by the bottom of the case C, in which a circular aperture is cut of sufficient diameter. A concentric row of openings, *c*, for the admission of fresh air to the fuel within the fire-pot, is cut outside said circular aperture. The form of the fire-pot and basket is that of the frustum of an inverted cone, or circular and tapering. They are constructed of a number of bars, *d*, separated by spaces *d′* through which the air finds access to the fire. The grate F is of the well-known tilting description, operated by a rod, *f*, passing through the diameter thereof, thence through the casings, and forming a suitable operating handle on the outside. This rod, being supported by the fire-basket, serves, also, as a device for rotating the same, for which purpose a slot, f^1, is cut in the casing A for the lateral movement of the rod. Attached to the latter is a register-slide, f^2, arranged inside the casing A, and provided with a number of apertures corresponding with similar apertures in the casing for the admission of air to the fire. Each operation of closing or opening the register rotates the fire-basket necessarily, thereby cleaning the same, and preventing the accumulation of clinkers. G represents a lined opening formed of corresponding apertures in the several casings in the fire-pot. It is designed for the admission of fuel, and is closed by a suitable door on the outside. H is the escape-flue for the passage of the products of combustion. Said flue opens into a vertical flue, H′, which extends downward and communicates with the interior of the furnace by an elbow-joint, h^1, opening at a point near the base of the fire-pot. A damper, h^2, arranged in the flue H, serves as a means of regulating the direction of the draught, so as to carry off the smoke and waste at once after leaving the fire, or cause them to descend and be burned, so as to pass off without loss of combustible matter. I is a segmental plate, horizontally arranged above the lower escape-opening, for the purpose of dividing the currents of vapor for more perfect consumption of their elements. K is the furnace-cover, on top of which is an evaporating-pan, *k*, filled with water by means of a funnel, k^1, passing through the cover of the casing A. k^2 is a small pipe passing from said pan through the outer casing to prevent the overflow of the water. L represents the hot-air flues. My object in placing the evaporating-pan so high is to more thoroughly dampen the air, which will prevent the passage of dust up the hot-air pipes and keep the air pure. The air to be heated enters the openings in the base of the casing A; thence circulates between the casings A B and B C until rarefied sufficiently to ascend through the flues L

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

The fire-pot D, fire-basket D′, grate F, openings d', rod f, register f^1 f^2, and cylinder E, constructed and arranged substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN J. VOGELGESANG.

Witnesses:

FRANK ARMSTRONG,

FREDRIK B. IHRIG.