

(No Model.)

L. J. MUELLER.
HOT AIR FURNACE.

No. 365,193.

Patented June 21, 1887.

Fig. 1
on line x-x

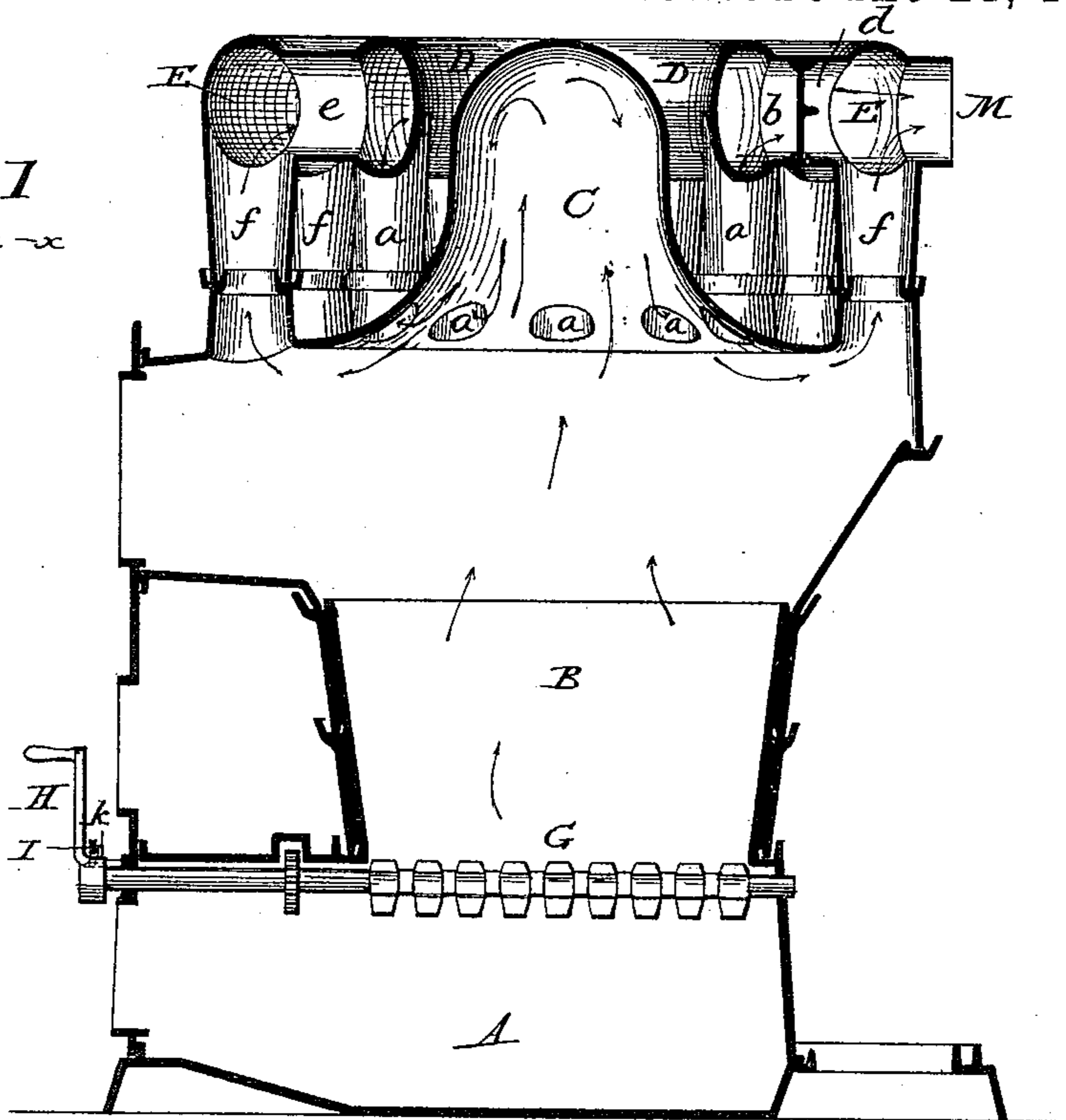
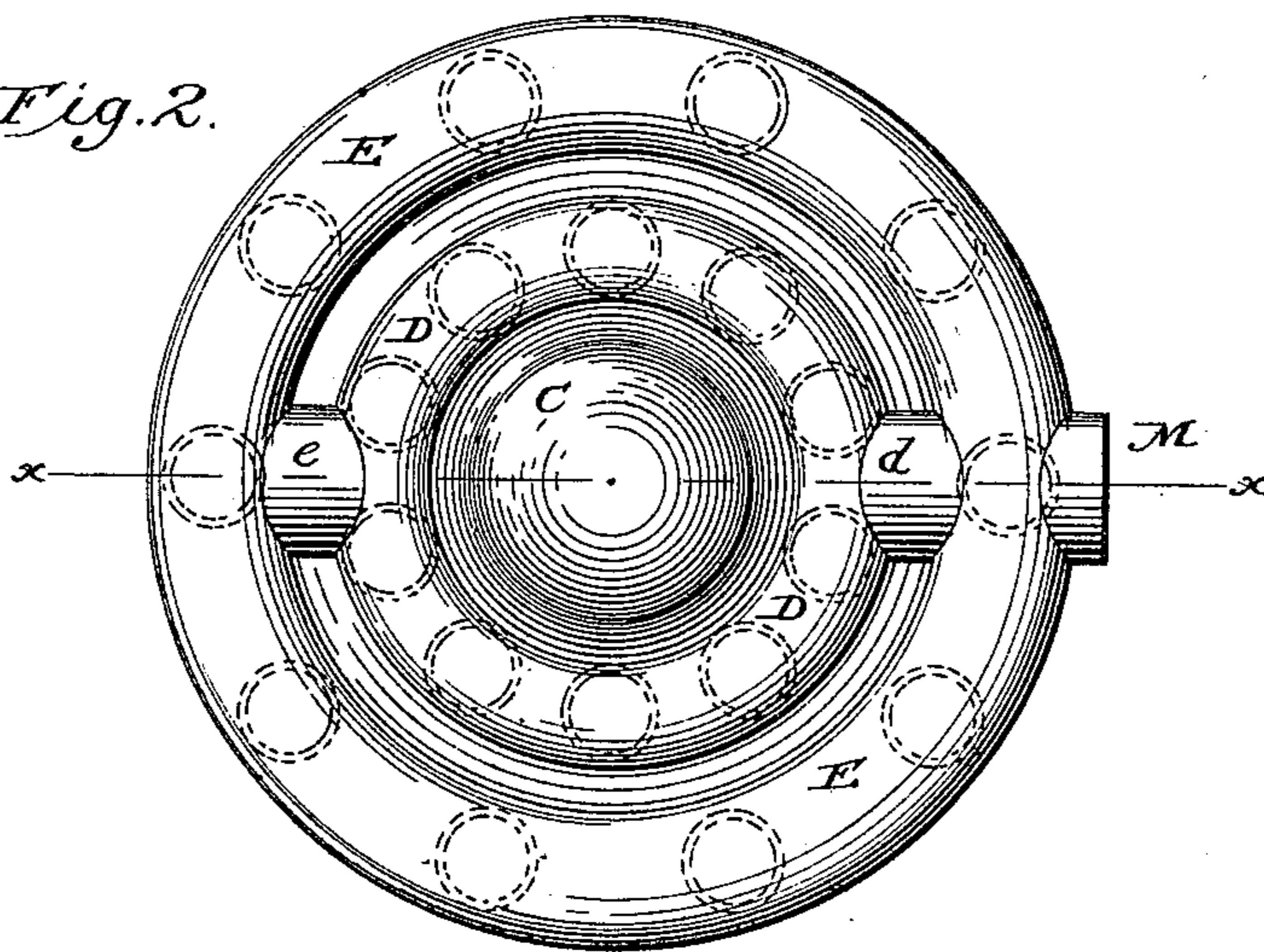


Fig. 2.



Attest

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LOUIS JOHN MUELLER, OF MILWAUKEE, WISCONSIN.

HOT-AIR FURNACE.

SPECIFICATION forming part of Letters Patent No. 365,193, dated June 21, 1887.

Application filed May 26, 1886. Serial No. 263,315. (No model.)

To all whom it may concern:

Be it known that I, LOUIS JOHN MUELLER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain Improvements in Hot-Air Furnaces, of which the following is a specification.

My invention relates to the formation of the radiating-surfaces and the passages through which the products of combustion are directed; and it consists in the peculiar constructions hereinafter described and claimed, having as an object an increased radiating-surface and a thorough circulation of the heated parts.

In the accompanying drawings, Figure 1 represents a vertical central cross-section of the improved furnace from front to rear, on the line *xx* of Fig. 2. Fig. 2 is a top plan view of the same.

Referring to the drawings, A represents the base or ash-pit of the furnace; B, the fire-pot; C, a dome or chamber rising centrally above the fire-pot and combustion-chamber in position to receive the ascending gases and products of combustion.

D is an inner chamber or radiator encircling the upper end of the dome and communicating with the base of the dome by a series of upright flues, *a*.

E is a second annular chamber or radiator encircling the first and communicating therewith at the front and rear by the horizontal tubes *d* and *e*, and also communicating at its under side by vertical flues *f* with the outer portion of the dome. It will be observed that the base of the dome C is expanded or curved outward to receive the vertical flues *a* and *f*.

It is to be noted as an important feature of my construction that the lower ends or mouths of the flues *a* are at a considerably higher level than the mouths of the flues *f*, by reason of which fact and of the fact that they are nearer the center of the furnace the heated products and gases rising into the dome C are directed mainly through the flues *a* in their outward passage. In practice it is found that the products have a strong tendency to ascend centrally into the dome C, and descend thence along its inner surface to the lower mouths of the flues *a* and *f*. Such of the products as fail to enter the flues *a* continue their downward and outward course until they enter the flues *f*. If desired, a valve or damper, *b*, may

be placed in the rear pipe, *d*. When this chamber is closed, the products ascending through the flues *a* into the radiator D will be compelled to pass outward through the pipe *e*, and thence rearward through the radiator E, in order to reach the smoke-flue M, which opens from the rear side of radiator E.

I am aware that radiating-chambers of different forms have been connected with each other by pipes and flues variously arranged; but I believe myself to be the first to combine with the central dome the two radiators D and E and their vertical flues opening into the top of the furnace at different heights.

G, H, I, and K represent, respectively, the grate, its rocking-lever, a notched bar to permit the removal of the lever in one position only; and *k*, a stud on the journal of the grate. These devices form no part of the present invention.

Having thus described my invention, what I claim is—

1. In a hot-air furnace, the dome C, located immediately over the fire-pot to receive the ascending products of combustion, in combination with the two annular radiators D and E, the flues *f*, leading from the outer radiator into the lower end of the dome, and the flues *a*, leading from the inner radiator into the dome, their mouths being at a higher level than the mouths of flues *f*, as shown, whereby the products descending in the outer part of the dome are divided and delivered in part to each radiator.

2. In a hot-air furnace, the dome C, located centrally over the fire-chamber, in combination with the annular radiator D and its flues *a*, entering the base of the dome, the radiator E and its flues *f*, entering the base of the dome at a lower level than the first-named flues, and the connecting-pipes *e* and *d*.

3. In combination with the dome C, the radiators D and E, the vertical flues *a* and *f*, the connecting-pipes *e* and *d*, and a valve, *b*, located as described.

In testimony whereof I hereunto set my hand, this 8th day of March, 1886, in the presence of two attesting witnesses.

LOUIS JOHN MUELLER.

Witnesses:

WILLIAM MARTENS,

HENRY C. ROETHLISBERGER.