J. F. PEASE.

HOT-AIR FURNACE.

No. 192,837. Patented July 10, 1877.

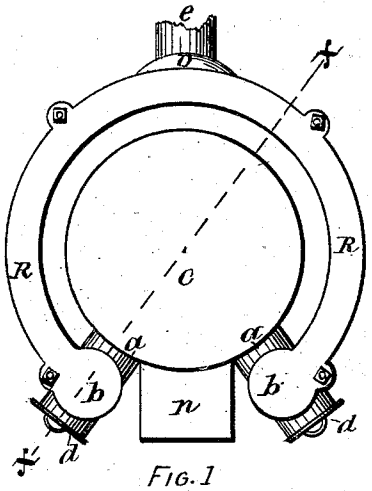


FIG. 1

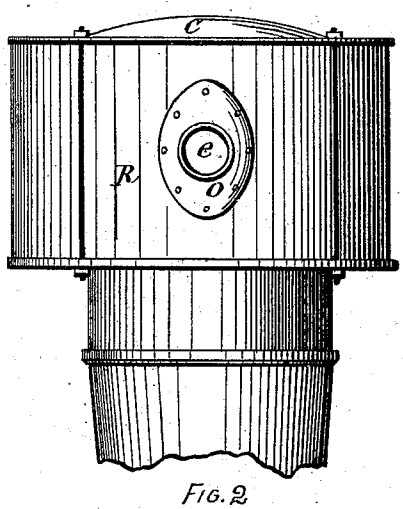


FIG. 2

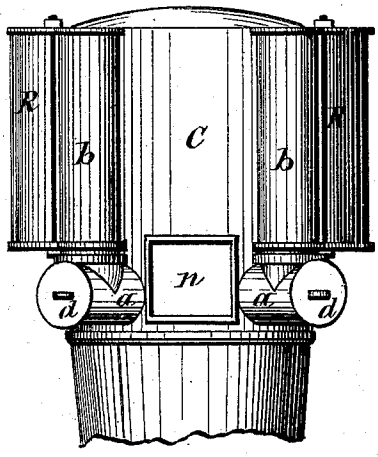


FIG. 3

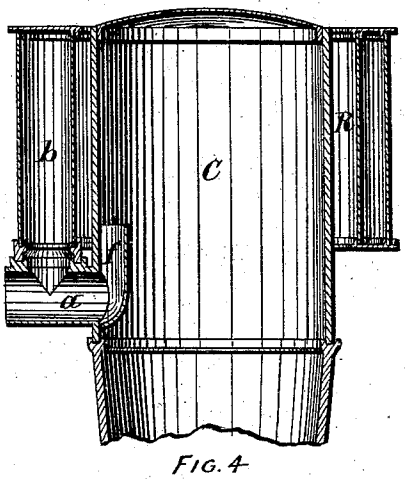


FIG. 4

Witnesses:

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E. Bendixen

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John F. Pease

per E. Laass Atty.

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UNITED STATES PATENT OFFICE.

JOHN F. PEASE, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **192,837**, dated July 10, 1877; application filed January 5, 1877.

To all whom it may concern:

Be it known that I, JOHN F. PEASE, of Syracuse, in the county of Onondaga and State of New York, have invented new and useful Improvements in Hot-Air Furnaces, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in that class of hot-air furnaces in which the products of combustion are conveyed through a radiator arranged around the exterior of the combustion-chamber or body of the furnace; and it consists in a novel, simple, and cheap construction of a radiator, which is easily connected with a furnace, easily renewed, repaired, and cleaned, and which also greatly augments the heating capacity of the furnace without impairing its draft.

The invention is fully illustrated in the accompanying drawing, wherein—

Figure 1 is a top view of a furnace with my improved radiator applied; Fig. 2, a rear view of same; Fig. 3, a front view, and Fig. 4 a vertical section on line *x x* in Fig. 1.

Like letters indicate like parts in each figure.

R is the radiator, constructed of two segments of cylinders of different diameters, concentrically arranged side by side, united at the ends, and closed at the top and bottom by a segment of an annular plate. It is isolated from the body of the furnace, and admits of a ready connecting or disconnecting with same. It communicates at the front with the combustion-chamber *c* by horizontal flues *a a* at or near the sides of the feed-door *n*, and has the exit-flue *e* at the rear.

For the purpose of further increasing the radiating-surface, and of allowing free ingress for the products of combustion to the radiator, the radiator is provided with cylindric enlargements *b b* at the ends where communicating with the combustion-chamber. By these enlargements the products of combustion are allowed to freely ascend, and caused to be better distributed in their passage through the radiator.

o is an oval concavo-convex plate, provided with a thimble for the attachment of the exit-flue, and fitted to an enlarged opening in the rear of the radiator, thereby augmenting the exit and improving the draft.

The radiator, being free from partitions and other impediments, is easily cleaned by inserting a broom through the exit at the rear, and sweeping the dust and ashes forward into the horizontal flues *a a*, where they can be emptied by removing the covers *d d* on the outer ends of said flues.

f is a shield or bridge over the inner end of the flues *a a*, extending upward, so as to cause the products of combustion to rise in the combustion-chamber and retard the escape of the heat.

What I claim as my invention is—

1. The combination of the radiator R, constructed of two segments of cylinders of different diameters, arranged concentrically side by side, united at the ends, and closed at the top and bottom by a segment of annular plate, the horizontal flues *a a*, and interior passages formed by bridges *f*, substantially as and for the purpose specified.

2. The combination of the radiator R, constructed of two segments of cylinders of different diameters, arranged concentrically side by side, and closed at the top and bottom by a segment of annular plate, the enlarged ends *b b*, horizontal flues *a a*, and interior passages formed by bridges *f*, all constructed and combined substantially in the manner described and shown, for the purpose set forth.

In testimony whereof I have signed my name and affixed my seal in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 29th day of December, 1876.

JOHN F. PEASE. [L. S.]

Witnesses:

JON. CUST. A. LIME,

EMIL BENDIXEN.