

J. B. HYZER.
Stovepipe Drum.

No. 47,833.

Patented May 23, 1865.

Fig. 1

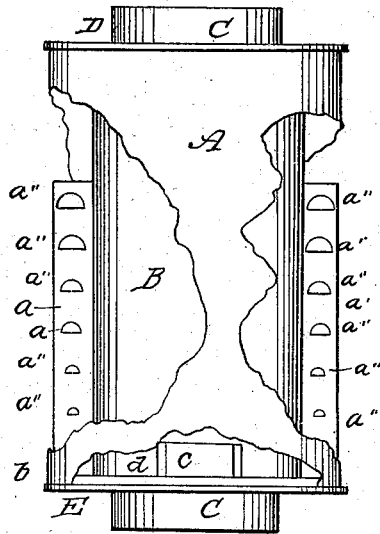


Fig. 2

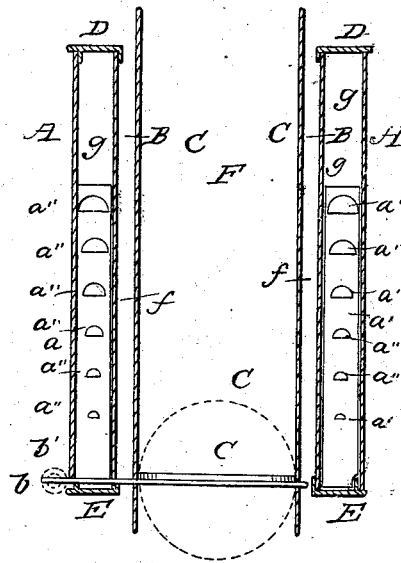


Fig. 3

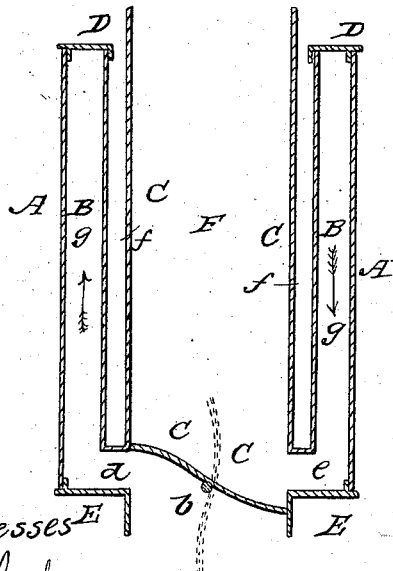


Fig. 4

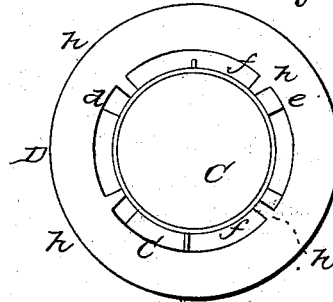
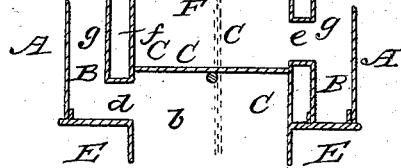


Fig. 5



Witnesses

Geo B. Clark
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JACOB B. HYZER, OF JANESVILLE, WISCONSIN.

IMPROVEMENT IN STOVE-PIPE DRUMS.

Specification forming part of Letters Patent No. 47,833, dated May 23, 1865.

To all whom it may concern:

Be it known that I, JACOB B. HYZER, of the city of Janesville, county of Rock, and State of Wisconsin, have invented a new and Improved mode of Constructing and Operating a Heat-Radiator; 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 accompanying drawings, making a part of this specification, like characters referring to like parts in each figure.

The nature of my invention consists, first, in making a series of holes through the radial plates used to partition heat-radiators, to partially turn the draft so that all parts of the radiating-surfaces are equally heated and radiate the same amount of heat; second, in so constructing a heat-radiator having ascending and descending flues or an inner unconfined hot-air space that one central pipe and an ordinary damper serve all the purpose of inducing and discharging the smoke and flame.

To enable others skilled in the mechanic arts to construct and operate a heat-radiator with my improvement, I will refer to the accompanying drawings, in which—

Figure 1 is an elevation with a portion of the outer cylinder or case broken away. Fig. 2 is a vertical section cut centrally on the line of the damper-rod. Fig. 3 is a vertical section at right angles to Fig. 2. Fig. 4 is a plan or top view of the heat-radiator. Fig. 5 is a vertical section (with a portion of the upper part cut away) similar to Fig. 3, showing a modification of the cross-flues and dampers.

I construct the radiator of any convenient form or size, and from any suitable material, providing it with the appendages heretofore used—to wit, an outer and an inner radiating-cylinder, A B, radial plates *a* and *a'*, and an inner unconfined hot-air space, *f*. Centrally through the hot-air space *f*, I pass the smoke-flue C, from opposite sides of which the cross-flues *d* and *e* are made to pass through the lower portion of the cylinder B into the space *g* between it and the outer case. When the cross-flues *d* and *e* are placed with reference to their altitude directly opposite to each other, as shown in Fig. 3, a damper bent in the form therein shown is required; but when the flues

d and *e* are placed one above the other, as shown in Fig. 5, I use the plain straight damper therein shown.

In the space *g* between the cylinders, midway between the cross flues, I put the radial plates *a* and *a'*, partitioning the lower portion of the space, so that the heated air, flame, and smoke, dividing as they enter through the flue *d*, must pass upward to the top of the radiator and over the radial plates *a* and *a'*, and thence downward and through the flue *e* into the central pipe, C, again. In the radial plates I make a series of holes or orifices, *a''*, the object of which is to allow enough of the heated air, smoke, and flame to pass through the radial plates to heat those portions of the radiating-cylinders adjacent to the lower portions of the plates, and so preventing the radiating-cylinders from being unevenly heated, as heretofore experienced.

When in operation, turning the damper *c* to the position shown by the dotted lines *c'*, Figs. 2, 3, and 5, secures a straight, direct, and full draft; but with it in the position shown in the drawings, the heated air, smoke, and flame pass through the flue *d* into the space between the radiating-cylinders A B, thence over or through the radial plates *a* and *a'* to the opposite side of the space, and thence through the flue *e* into the smoke-pipe C, above the damper.

It will be seen that a radiator constructed as above described, with the inductive and discharge pipes forming one and the same flue, secures the full draft of the ordinary pipe when desired, requires only one plain, cheap damper, and does not need to be supported, as the induction-pipe entering the radiator centrally from below supports it, thus avoiding the cost of constructing and the inconvenience of operating two dampers, and the difficulty of supporting the radiator when the induction-pipe does not enter it centrally from below.

I apply my radiator both to furnaces and stoves.

I am aware that ascending and descending flues and an inner hot-air space, as also a straight flue regulated by a single damper, (to wit, the ordinary stove-pipe and damper,) have heretofore been known and used, and I do not claim them when used separately, but

only when combined as hereinbefore described; but

What I do claim, and which I desire to secure by Letters Patent of the United States, is—

1. A heat-radiator, when constructed and arranged substantially as herein described and set forth.

2. The combination of ascending and descending flues and an inner hot-air space with

a straight flue regulated by a single damper, substantially as described.

3. Constructing the radial plates with a series of orifices or holes, substantially as and for the purpose set forth.

JACOB B. HYZER.

Witnesses:

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