M. GAGE.

Stovepipe Drum.

No. 53,806. Patented April 10, 1866.

Fig. 2.

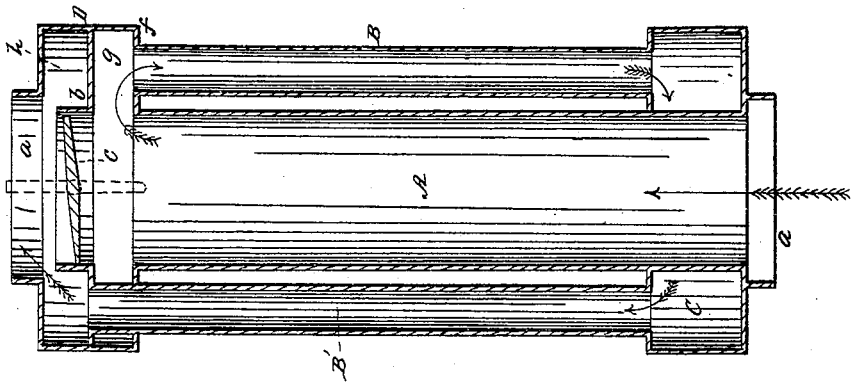


Fig. 3.

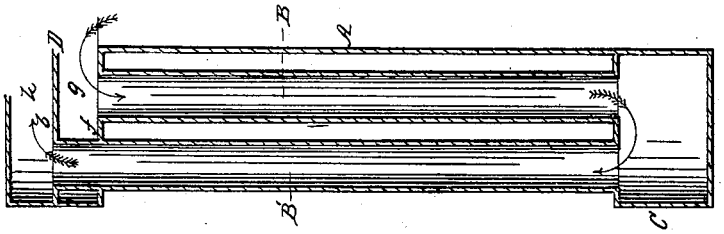
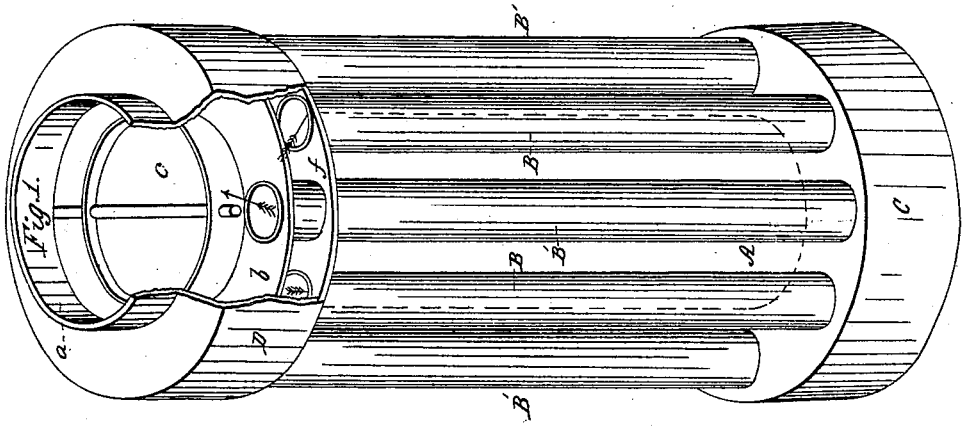


Fig. 1.



Witnesses:

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J. A. Davis

Inventor:

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Attys

UNITED STATES PATENT OFFICE.

MILO GAGE, OF MEDINA, NEW YORK.

STOVE-PIPE DRUM.

Specification forming part of Letters Patent No. **53,806**, dated April 10, 1866.

To all whom it may concern:

Be it known that I, MILO GAGE, of Medina, in the county of Orleans and State of New York, have invented a new and useful Improvement in Heat-Radiators for Stove-Pipes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of my improved heat-radiator; Fig. 2, a central vertical section of the same; Fig. 3, a diagram exhibiting a section of the pipes, and showing more particularly the method of producing the indirect draft.

Like letters of reference indicate corresponding parts in all the figures.

My improved radiator belongs to that class that are employed between the joints of stove-pipes.

The invention consists in the combination of a main and auxiliary tubes, with chambers at the top and bottom, so arranged that, while a great radiating-surface and a direct draft are produced, an indirect draft may also be produced by turning said draft downward through every alternate auxiliary tube and upward again through every intermediate one, when it is finally allowed to escape.

As represented in the drawings, A is the main central tube, B B B′ B′ the auxiliary tubes surrounding it, and C D the chambers at the top and bottom, which are provided with the usual flanges *a a* to connect with the joints of pipe. The lower chamber, C, simply incloses an annular space with the central tube passing through it and the auxiliary tubes opening into it from the top. The upper chamber, D, is divided into two compartments, *g h*, by a horizontal partition, *b*, having a damper or valve, *c*. The upper compartment communicates through to the main pipe beyond, to allow the passage of the draft after it has finally passed through the tubes, as will presently be explained.

Every alternate auxiliary tube B simply opens through the floor *f* into the lower compartment, *g*, of the upper chamber, while every intermediate tube B′ passes through the lower compartment and the partition *b*, and opens into the upper compartment, *h*. This arrangement is clearly exhibited in Figs. 1 and 3.

In kindling a fire, and whenever a direct draft is necessary, the damper *c* is opened, as indicated by red lines in Fig. 2, thus leaving the passage-way through the large central tube unobstructed. When the damper is closed, as in black lines, the draft collects in the lower compartment, *g*, and there being no escape except through the tubes B B, it passes downward into the bottom chamber, C, and thence passes up again through the tubes B′ B′ into the upper compartment of the chamber D and escapes.

The employment of the tubes A B B′ exposes a greater surface for radiation than any other arrangement with which I am acquainted. So obvious are its advantages in this respect that a device has already been patented involving the same idea; but in such device the draft is direct through the auxiliary as well as the main tubes. In contradistinction to this, the essential feature in my device consists in giving a return or indirect draft through the auxiliary tubes, so as to retain the heat as long as possible. To secure this result I combine with the tubes the chambers C D, which not only have the special effect of securing the indirect draft, but also serve as radiating-drums for throwing out much additional heat. This combination of the chambers with the tubes, whereby a direct or indirect downward draft may be produced, and at the same time the maximum amount of radiating-surface be secured, I believe was never before known.

I do not claim simply an arrangement of auxiliary tubes when the draft is direct, nor do I claim, simply and broadly, producing a return or indirect draft; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the chambers C D with the tubes A B B′, the chamber D being divided into the two compartments *g h* by the partition *b* and damper *c*, and the tubes B B′ connecting alternately with said compartments, the whole operating in such a manner as to combine the advantages of a direct and indirect draft with a large amount of radiating-surface, substantially as herein specified.

MILO GAGE.

Witnesses:

R. F. OSGOOD,

J. A. DAVIS.