W. PARKS & G. M. ALLEN.
Hot-Air Radiator.

No. 206,403. Patented July 30, 1878.

Fig. 1.

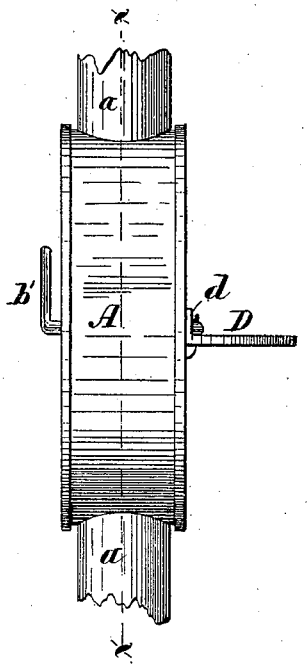
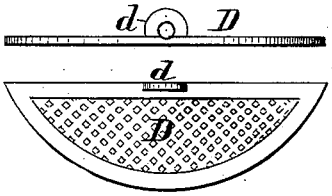


Fig. 3.



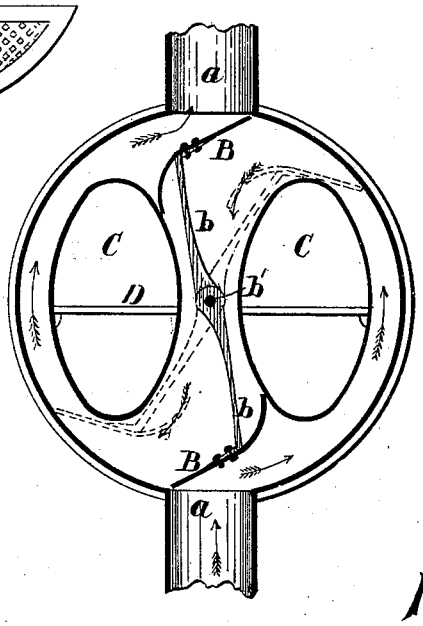


Fig. 2.

Witnesses.,
W. C. Coales
Geo. C. Smith

Inventors
William Parks
George M. Allen

UNITED STATES PATENT OFFICE.

WILLIAM PARKS AND GEORGE M. ALLEN, OF FORT ATKINSON, WISCONSIN.

IMPROVEMENT IN HOT-AIR RADIATORS.

Specification forming part of Letters Patent No. **206,403**, dated July 30, 1878; application filed December 17, 1877.

To all whom it may concern:

Be it known that we, WILLIAM PARKS and GEORGE M. ALLEN, of Fort Atkinson, in the county of Jefferson and State of Wisconsin, have invented a new and Improved Hot-Air Radiator; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the improved radiator. Fig. 2 is a diametrical section of Fig. 1 at dotted line *x x*. Fig. 3 is a top and edge view of shelf D.

Similar letters of reference indicate corresponding parts in the several figures.

This invention and improvement in radiators for stoves relate to a new combination of parts for directing the draft, as well as the peculiar construction of the same; also, a shelf attachment, the manner and purpose of which we now proceed to explain.

In the accompanying drawings, A, Fig. 1, represents a hot-air radiator of the cylindrical form, the outer case being secured by means of flanges upon the inner edge of the two heads of the cylinder, which are held in place by damper-rod *b'*, which passes through the center of the radiator-heads. Shelf D is also secured to one side of the radiator by means of damper-rod *b'* passing through flange-collar *d* upon the edge of shelf D, and is held in place by a pin inserted through the end of the damper-rod, outside of flange-collar *d*. The opposite end of damper-rod *b'* is turned upward to a right angle for the purpose of a handle to operate the damper.

a a are stove-pipe attachments to the radiator, Figs. 1 and 2.

Fig. 2 represents a section of Fig. 1 cut at dotted line *x x*. C C are two oval apertures through the radiator, which are formed by means of two pipes, each end of which fit flanges that surround the apertures upon the inside of each head, and are held in position by damper-rod *b'*, which acts as a bolt, holding the heads together.

The damper-bar *b* is fixed upon the center of damper-rod *b'* for the purpose of operating dampers B B, which are attached permanently to each end of bar *b*. It will be observed that by means of this double damper, as illustrated, the direct passage through the radiator is closed, leaving a passage open, in the direction of the arrows, directing the current of heat about the tubular apertures C C, in the form of a figure **8**, which conveys a uniform heat to the whole surface of the radiator. When the damper is turned to the position shown by dotted line, Fig. 2, it closes the side passages and opens a direct passage through the center between the apertures C C, bar *b* being made so thin as to occupy but little space.

D, Fig. 2, shows the edge of the shelf and a small projection upon the inner side of apertures C C for the support of each end of the shelf. The weight of shelf D upon damper-rod *b'* produces a friction which prevents dampers B B from accidentally moving from position.

Fig. 3 represents the top of shelf D and the front edge of the same, with collar-flange *d*. This shelf is a great convenience for keeping articles warm.

The space about the apertures C C forms three separate passages from the entrance to the exit. The dampers are placed diagonally across the entrance and exit when closed, as in Fig. 2, and thus two of these passages are closed, both at the entrance and exit, leaving one circuitous passage, as before described.

One great advantage derived from this invention is found in the heat being brought directly into contact with the plates which compose the exterior surface of the radiator, there being no loss by inclosed heating-surfaces except the dampers.

We do not claim three hollow columns connecting two chambers or their equivalent, for this is shown in the patent of Edward S. Blake, No. 84,989; but

What we do claim is—

1. The hot-air radiator A, having the two tubular apertures C C, with their surrounding passages, as described, in combination with the dampers B B, constructed to operate as described, and shown in Fig. 2, for the purpose specified.

2. The shelf D, as described, in combination with damper-rod *b'*, as described, for the purpose specified.

WILLIAM PARKS. [L. S.]
GEORGE M. ALLEN. [L. S.]

Witnesses:
GEO. C. SMITH,
THOMAS CRANE.