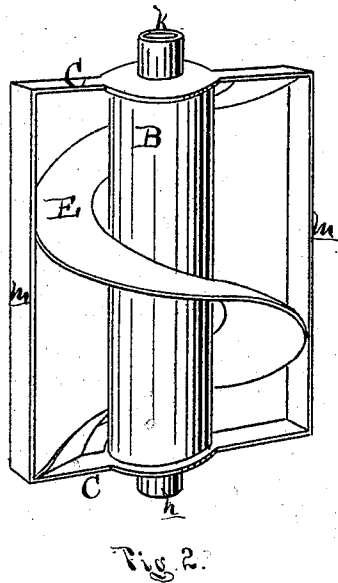
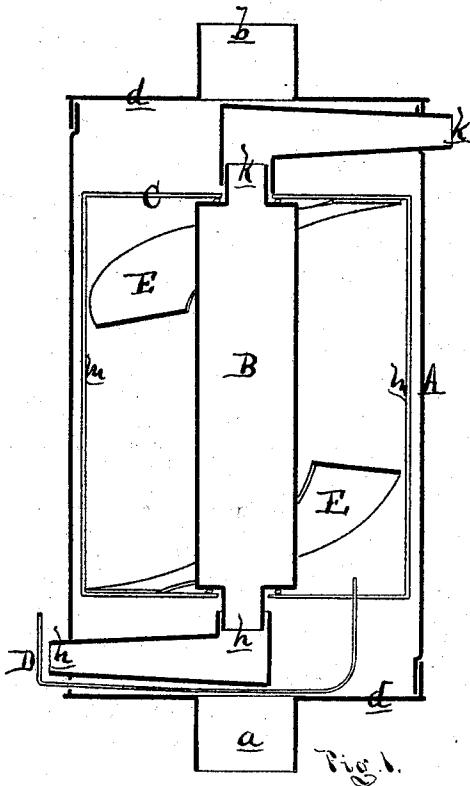


J. SPRINGER.  
Radiators

No. 151,170.

Patented May 19, 1874.



ATTEST:  
*Chas. J. Hunt*  
*W. P. Shalding*

INVENTOR:  
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By Attorney  
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# UNITED STATES PATENT OFFICE.

JOHN SPRINGER, OF CLINTON, WISCONSIN.

## IMPROVEMENT IN RADIATORS.

Specification forming part of Letters Patent No. **151,170**, dated May 19, 1874; application filed February 2, 1874.

*To all whom it may concern:*

Be it known that I, JOHN SPRINGER, of Clinton, in the county of Rock and State of Wisconsin, have invented an Improvement in Radiators, of which the following is a specification:

This invention relates to improvements in the construction of that class of radiators usually denominated as stove-pipe drums; and has for its object so constructing the same that, while acting in its legitimate capacity as a radiator, it will also, to a certain extent, operate as a regulator of the draft, and keep its walls clean from a deposit of soot.

Figure 1 is a vertical section through the center of my radiator. Fig. 2 is a perspective of the interior part of the same with the outer case removed.

Like letters indicate like parts in each figure.

In the annexed drawings, A represents the outer case, provided with inlet-pipe *a* and outlet-pipe *b* at opposite ends, through the center of the heads *d*. B is the inner drum, provided with inlet-pipe *h* and outlet-pipe *k*. C C are two collars, sleeved one on each of the pipes *h* and *k*, and the ends of these collars are connected together by the metallic straps *m*, the whole forming a frame, to which is secured spiral flange E, which is designed to nearly or quite fill the space between outer and inner drums. D is a stop, operated from the outside of the drum A, and so arranged that at will its inner end may be made to rest against one of the collars C.

The operation of this device is as follows: The smoke and heat enter the outer drum A through the inlet-pipe *a*, and pass upward through the spiral flue, made such by the spiral flange E, between the inner and outer cylinders or drums, and find an exit through the outlet-pipe *b*. When the stop D engages with one of the collars, the frame and spiral flange are stationary, and the draft is sluggish. Turning the stop from such engagement, the frame and flange will revolve, thereby increasing the draft, while at the same time it will prevent the deposit of soot upon the inner walls of the flue. The cold air enters the inner drum B through the pipe *h*. The air in its passage through this drum is heated by the radiation of heat through its wall, and finds an exit through the pipe *k* into the same or adjoining rooms.

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

1. In heat-radiators, the revolving flue, made by the spiral flange E, arranged to revolve between the inner drum B and the outer drum A, substantially as and for the purposes set forth.

2. The combination of the drums A B, pipes *a b h k*, collars C C, stop D, spiral flange E, substantially as described and for the purposes set forth.

JOHN SPRINGER.

Witnesses:

A. H. MORGAN,  
A. C. VOORHEES.