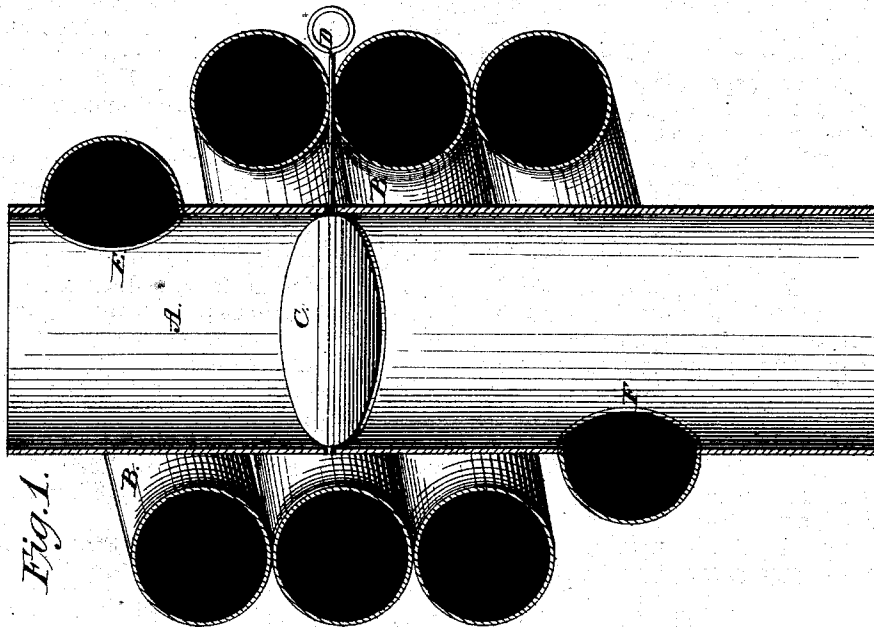
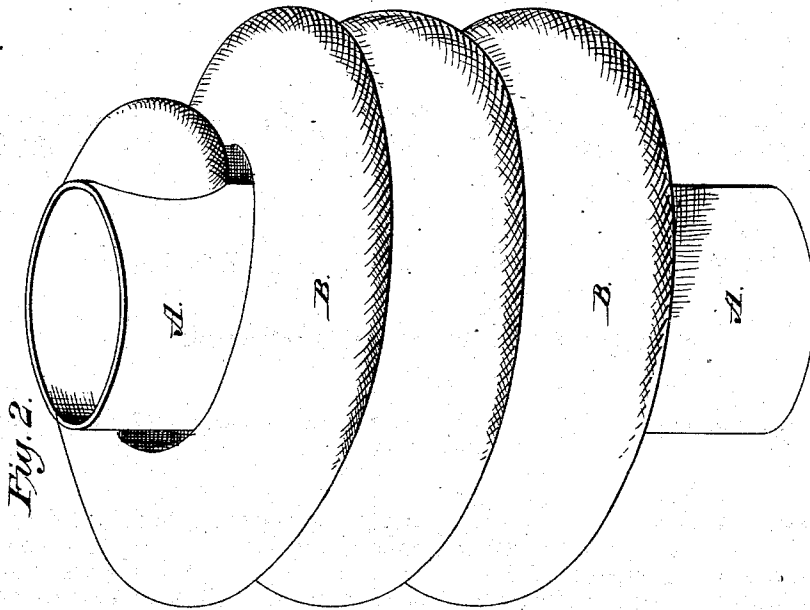


J. N. KNEELAND.
Heating-Drums.

No. 158,380.

Patented Jan. 5, 1875.



Attest:

*Lyman S Benjamin
Albert E Kneland*

Inventor:

*John N. Kneland
per Isaac S. Toll
Attorney*

UNITED STATES PATENT OFFICE.

JOHN N. KNEELAND, OF BURR OAK, MICHIGAN.

IMPROVEMENT IN HEATING-DRUMS.

Specification forming part of Letters Patent No. **158,380**, dated January 5, 1875; application filed November 13, 1874.

To all whom it may concern:

Be it known that I, JOHN N. KNEELAND, of Burr Oak, county of St. Joseph and State of Michigan, have invented a Spiral Heat-Radiating Attachment for Stove-Pipes, of which the following is a specification:

The object of my invention is to provide, for the ordinary vertical pipe or flue of any heating apparatus, a coil of pipe surrounding it, with means for the introduction of the products of combustion into either the vertical or spiral passage, thus producing superior radiation and consequent economy of heat, as will be shown by the drawings accompanying this specification, in which—

Figure 1 is a front view, representing my attachment in its normal position; and Fig. 2, a perspective view, with my attachment in a horizontal position, exhibiting the interior of the vertical flue in a common valve, and induction and eduction passages of the spiral pipe, as I will now proceed to describe.

In Fig. 1, A represents the main or vertical pipe; B, the surrounding coil. The products of combustion pass into A from the furnace below, and proceed directly upward and outward in the ordinary manner, or are diverted

into the surrounding coil B, as will be seen by reference to Fig. 2, where, at C, may be seen a pivoted valve, D, the handle, which, when open, permits the heat to ascend through the main pipe, or, when closed, to divert the products of combustion into the surrounding pipe B through the induction-aperture E of the vertical flue, what is left, after its tortuous course, escaping at F, and outward at the top of the main flue or pipe.

It will therefore be seen that a large surface is obtained for the radiation of heat, proportionate to the length of the coil. Great heat is obtained through this independent channel B, making more of a partial vacuum, thereby promoting the draft, impeding condensation, preventing the formation of pyroligneous matter.

What I claim is—

The combination of the coil of pipe B with the vertical flue A, the communicating-valve D, and the passages E and F, substantially as described, for the purposes set forth.

JOHN N. KNEELAND.

Witnesses:

ALBERT E. KNEELAND,
LYMAN S. BENJAMIN.