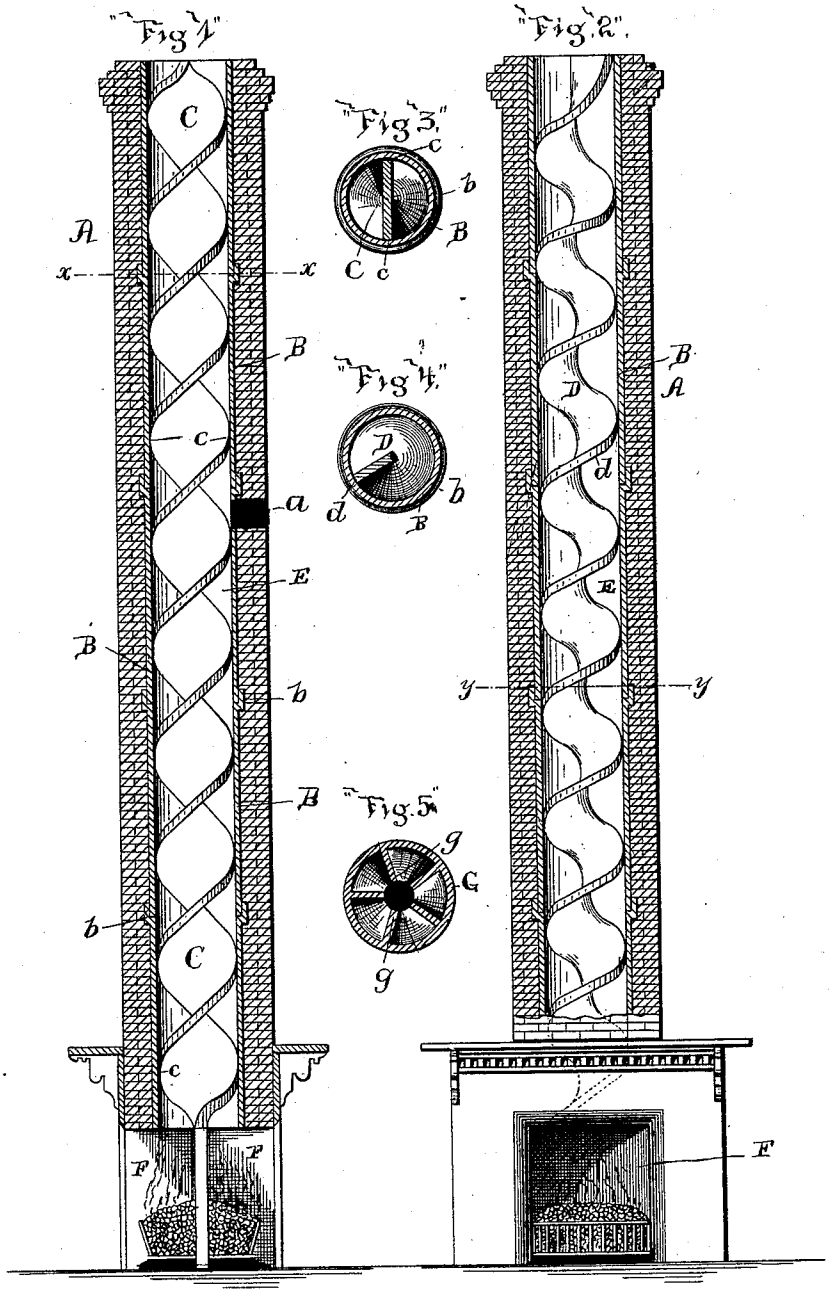
(No Model.)

T. T. MOORE.

SPIRAL SMOKE, HEATING, AND VENTILATING FLUE.

No. 432,544. Patented July 22, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS T. MOORE, OF KANSAS CITY, MISSOURI.

SPIRAL SMOKE, HEATING, AND VENTILATING FLUE.

SPECIFICATION forming part of Letters Patent No. 432,544, dated July 22, 1890.

Application filed February 17, 1890. Serial No. 340,725. (No model.)

To all whom it may concern:

Be it known that I, THOMAS T. MOORE, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Spiral Smoke, Heating, and Ventilating Flues, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to smoke, heating, and ventilating flues; and it consists in the novel construction and arrangement hereinafter fully set forth and described.

The object of my invention is to provide a flue which will create a better draft for smoke, impure air, and heat than has heretofore been attained, its further object being to accomplish these ends with simplicity and economy, which I do by constructing and utilizing the device illustrated in the accompanying drawings, in which—

Figure 1 is a cross-sectional view of a chimney, showing my improved double flue. Fig. 2 is a similar view of a chimney, showing the device when formed into a single flue. Fig. 3 is a sectional plan view taken on line *x x* of Fig. 1. Fig. 4 is a sectional plan view taken on line *y y* of Fig. 2, and Fig. 5 is a sectional view of the modified form of my device.

Referring to the drawings by letter, A represents a chimney constructed of brick, stone, or other suitable masonry, having the fireplaces F F, in which fires may be kindled.

B are pipes built of terra-cotta, metal, or other suitable material, constructed in the chimney, as shown in the drawings. In said pipe is secured the spiral bar C, which forms the flues E, said flues E passing from the grates F F through the chimney, assuming the shape of the spiral. This is formed by taking a flat bar the size of the flue and twisting it in the shape of an auger or "Archimedean screw," one side of the bar forming a flue for one grate and the opposite side forming another flue. The webs *c* of the spiral bar C are designed to fit closely against the pipe B, so that there will be no connection between the two flues. Said pipe B has bells or projections *b*, in which the sections of pipe are secured. These bells or offsets *b* make the inside surface of pipe equal all the way down, as shown in Figs. 1 and 2.

a is a thimble through which a pipe from a stove or latrobe may be inserted. Any number of these thimbles may be provided, according to the height of the building in which these flues and chimneys are constructed.

D shows the device constructed of a single flue, having the bar made only half the width of the flue and twisted in the shape of a spiral, thereby causing the smoke, heat, and foul air to be drawn up through the chimney through the single chamber formed by said spiral bar. This bar can be constructed of sheet metal or in sections of terra-cotta, and built with the metallic or terra-cotta covering B placed around it, or it can have the masonry built closely against the flanges *c* and *d* of the spiral bars C D.

G shows my device constructed in a modified form, consisting of an outer covering G, having one or more tongues *g* radiating toward the center and twisted or formed in the shape of a spiral, thereby drawing the smoke up through a single flue, but causing it to "wind" in its passage through said flue. These flues can be used in residences, stores, or factories, and operated with stoves, furnaces, latrobes, or open fire-places. The length of the flue is increased a great deal by having the spiral bars. Therefore, where it has been necessary heretofore to construct very tall smoke-stacks, I obtain better results with a lower smoke-stack by using the flues constructed of the spiral bar. These flues can be used for conducting heat as well as smoke, and serve as a ventilator for conveying the impure air from the buildings in which they are constructed. The flue being constructed in this manner will, by reason of the spiral chambers, prevent the smoke and cold air from descending into the rooms. Heretofore where low chimneys have been constructed it has been found almost impossible to prevent back drafts of cold air and smoke. I in my improved flue obviate this and provide a flue of superior draft to any heretofore constructed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A spiral flue composed of a suitable bar, equal in width to the diameter of the chimney, twisted and formed into the shape of a spiral and fitting tightly in the chimney, thereby forming with the chimney-walls two flues which convey the smoke from the stove or furnace, substantially as described.

2. A spiral flue constructed of a spiral plate, extending from the center of the chimney to the sides thereof, composed of metal or terra-cotta, or other suitable material, inclosed in pipe B, thus increasing the draft and length of the chambers, thereby obviating the necessity of building tall smoke-stacks, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS T. MOORE.

Witnesses:
R. A. BALDERSON,
A. A. HIGDON.