J. A. YOUNG.

Heating-Stoves.

No. 151,187. Patented May 19, 1874.

Fig. 1.

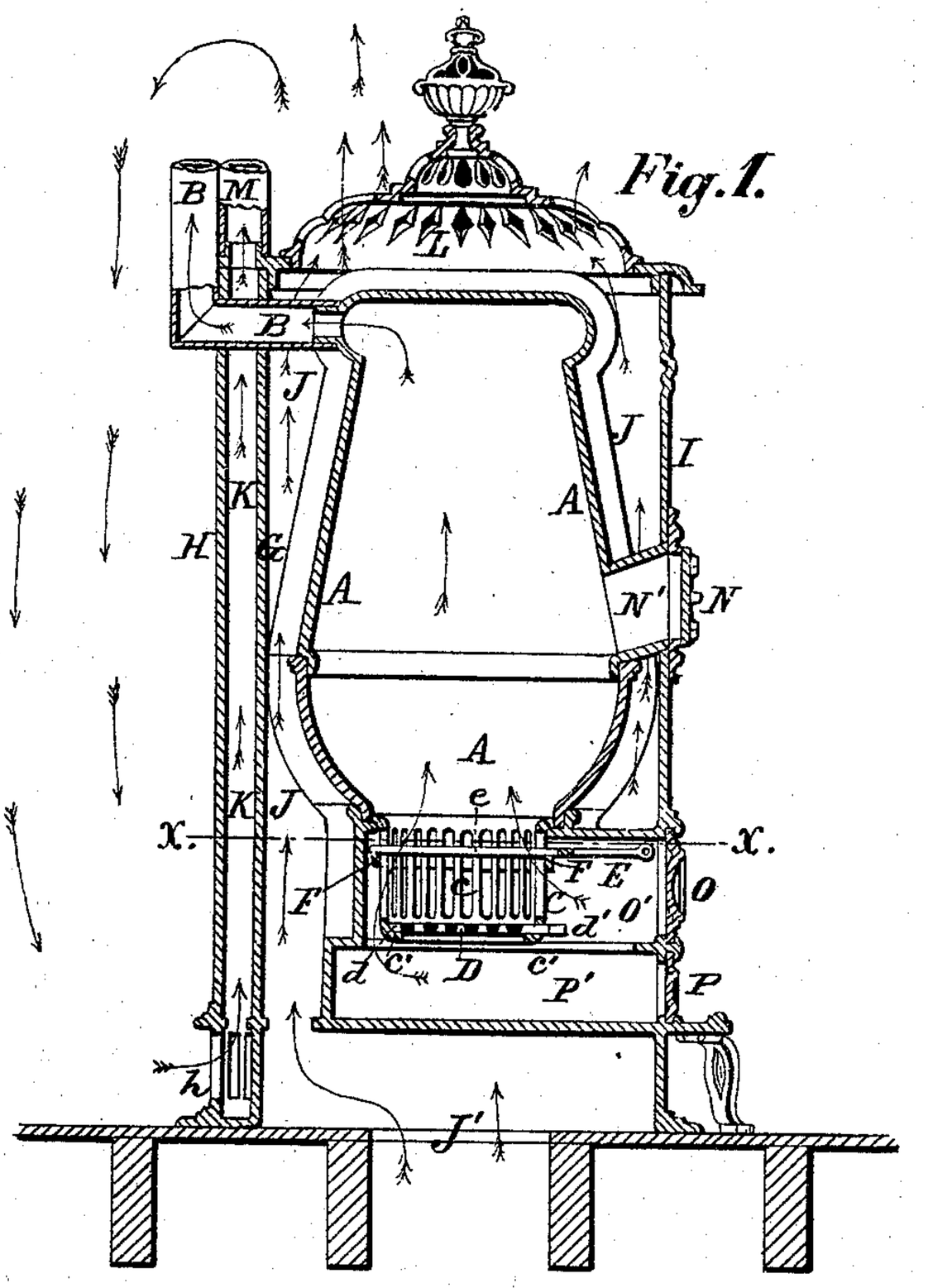


Fig. 2.

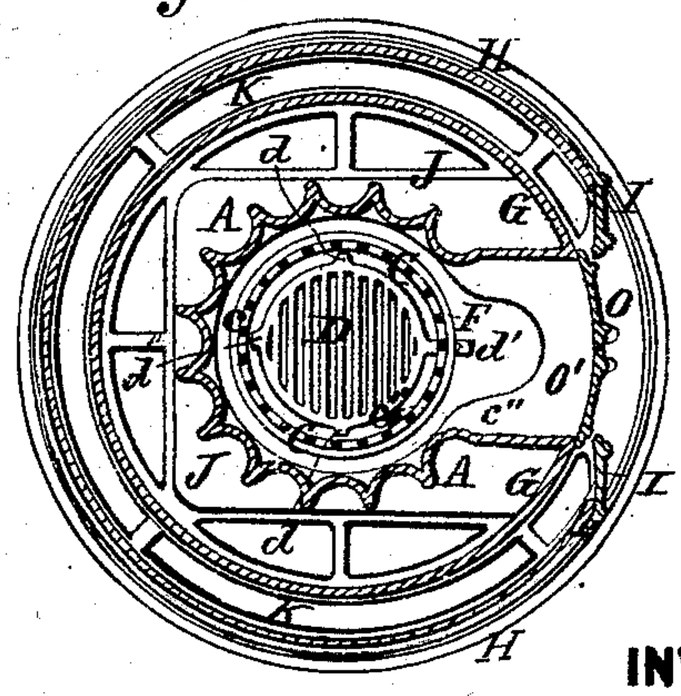
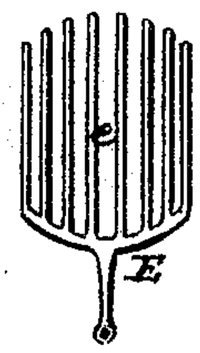


Fig. 3.



ATTEST:

Robert Burns.
W. T. Tanner

INVENTOR:

John A. Young
By Knight Bro's
Attys.

UNITED STATES PATENT OFFICE.

JOHN A. YOUNG, OF COLLINSVILLE, ILLINOIS.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **151,187**, dated May 19, 1874; application filed February 24, 1874.

To all whom it may concern:

Be it known that I, JOHN A. YOUNG, of Collinsville, in the county of Madison and State of Illinois, have invented a certain Improved Heating and Ventilating Stove, of which the following is a specification:

This invention consists in providing a double casing, forming two chambers, to surround an ordinary stove, the inner of these two concentric chambers being connected at bottom to the outer air, which is discharged in a heated condition into the room, through the perforated top of the casing. The outer chamber or space is open at bottom, where it takes the foul air of the room, and discharges it through a pipe discharging into the stove-pipe or smoke-flue of the building.

Figure 1 is an axial section. Fig. 2 is a sectional plan at line *x x*. Fig. 3 is a plan of the fire-support.

A is the stove, having a fluted outer plate, as shown clearly in Fig. 2, so as to expose a greater heating-surface to the air. B is the stove-pipe for carrying off the products of combustion. C is the grate, formed with circularly-arranged vertical bars *c*, and which is provided with an inturned flange, *c'*, on which rests the horizontal part or bottom D, supported by lugs *d* and handle *d'*, so that the grate D may be tilted to discharge the ashes. This tilting movement is permitted by providing the supporting-flange *c'* with a gap, *c''*, through which one of the supporting-lugs may descend when the grate-bottom is turned to the proper position. Otherwise, when none of the lugs are in conjunction with the gap *c''*, the grate-bottom cannot be tilted, but admits of agitation by reciprocating oscillation in a horizontal plane. E is a fork, consisting of a number of parallel tines, *e*, of sufficient length to reach through the grate, and which pass between the grate-bars *c*, and rests on the horizontal ring F, arranged on the outside of the grate-bars, the purpose of this arrangement being to support the live coals during the cleaning of the grate by the tilting of the grate-bottom D. G H are cylindrical casings united to a fire-front, I, and forming two concentric heating-chambers, J K. The chamber J has an open bottom, J', communicating, through an opening in the floor, with the outer air. The air, passing up, comes in contact with the stove, is heated, and discharges into the room through the perforated top L. The foul air at the floor of the room flows into the chamber K through the apertures *h* in the casing H, and passes up through said chamber into the pipe M, arranged preferably side by side with the stove-pipe B, for the purpose of keeping said pipe M in a heated condition. The pipe M may connect with and discharge the foul air into the top of the pipe B, or into the smoke-flue of the building, as desired. N is a door in fire-front of the casings, communicating with the stove A by the chute N'. O is a door closing the opening to the grate-space O', and P is a door closing the opening of the ash-pit P'.

The operation of the apparatus is as follows: The air-supply to the fire is taken from near the floor, and the products of combustion pass off through an ordinary chimney or stove-pipe. The heated air-supply for the room is taken from the outside of the building, through a duct communicating with the bottom of the inner concentric chamber J, and becomes heated by contact with the outer surface of the stove, which surface is much increased by its fluted construction. After heating, this air escapes into the room through the perforated or open-work covers; and by its greater rarity expels the foul air from the upper part of the room, which then descends, and is, with the lower stratum of cold air, carried off through the apertures *h* in the outer case H, passing through the chamber K and escape-flue M. The course of the air in the room is indicated by the arrows.

I claim as my invention—

The combination of the stove A, perforated top L, inner chamber J, receiving air from outside the apartment and discharging it into the room, and outer chamber K, surrounding the inner chamber, and having perforations *h* at its bottom to receive foul air from the room and discharging into the chimney, all as herein set forth.

JOHN A. YOUNG.

Witnesses:

SAML. KNIGHT,

ROBERT BURNS.