

F. JOHNSON.  
Heating-Drums.

No. 148,463.

Patented March 10, 1874.

Fig. 1.

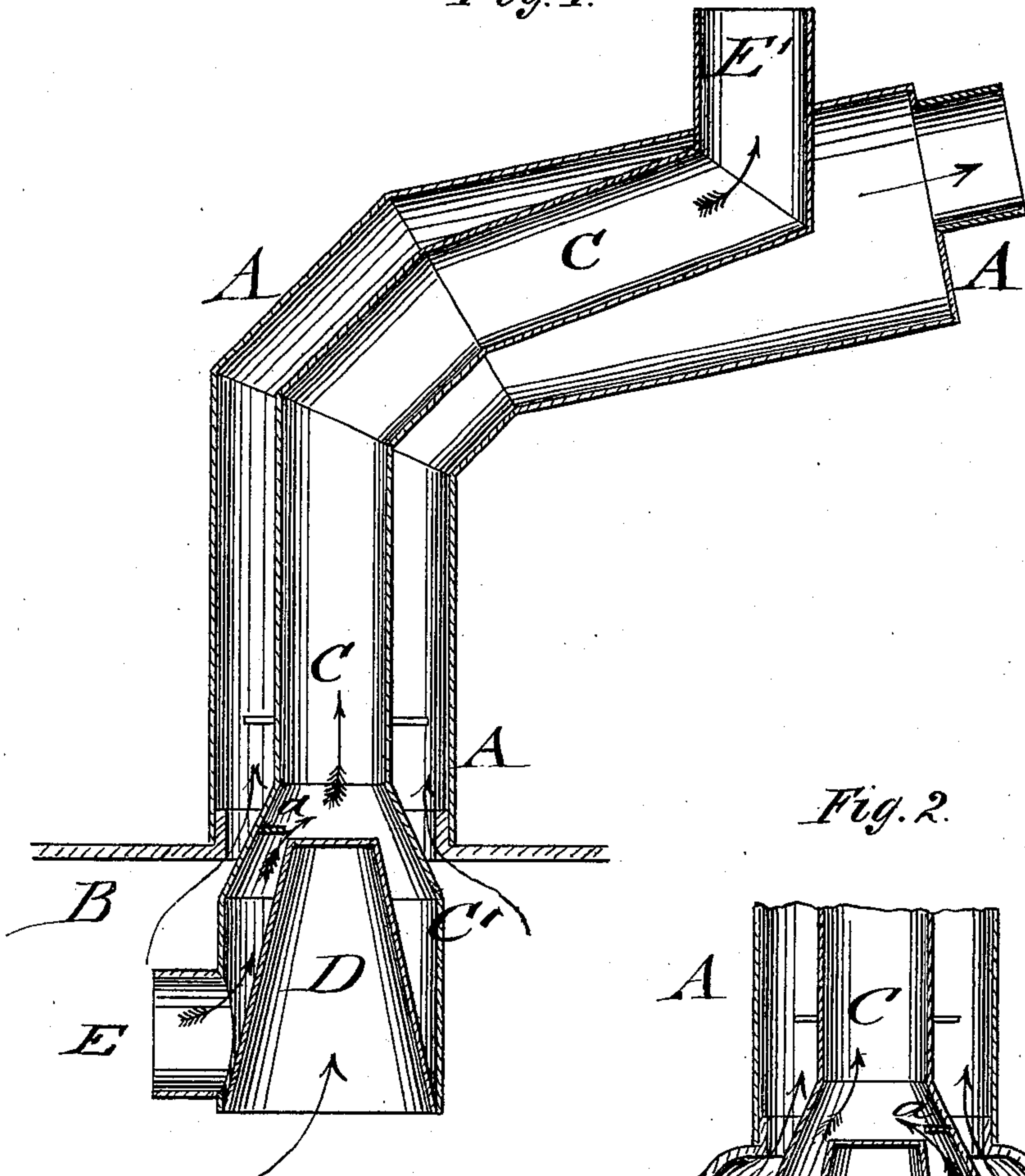
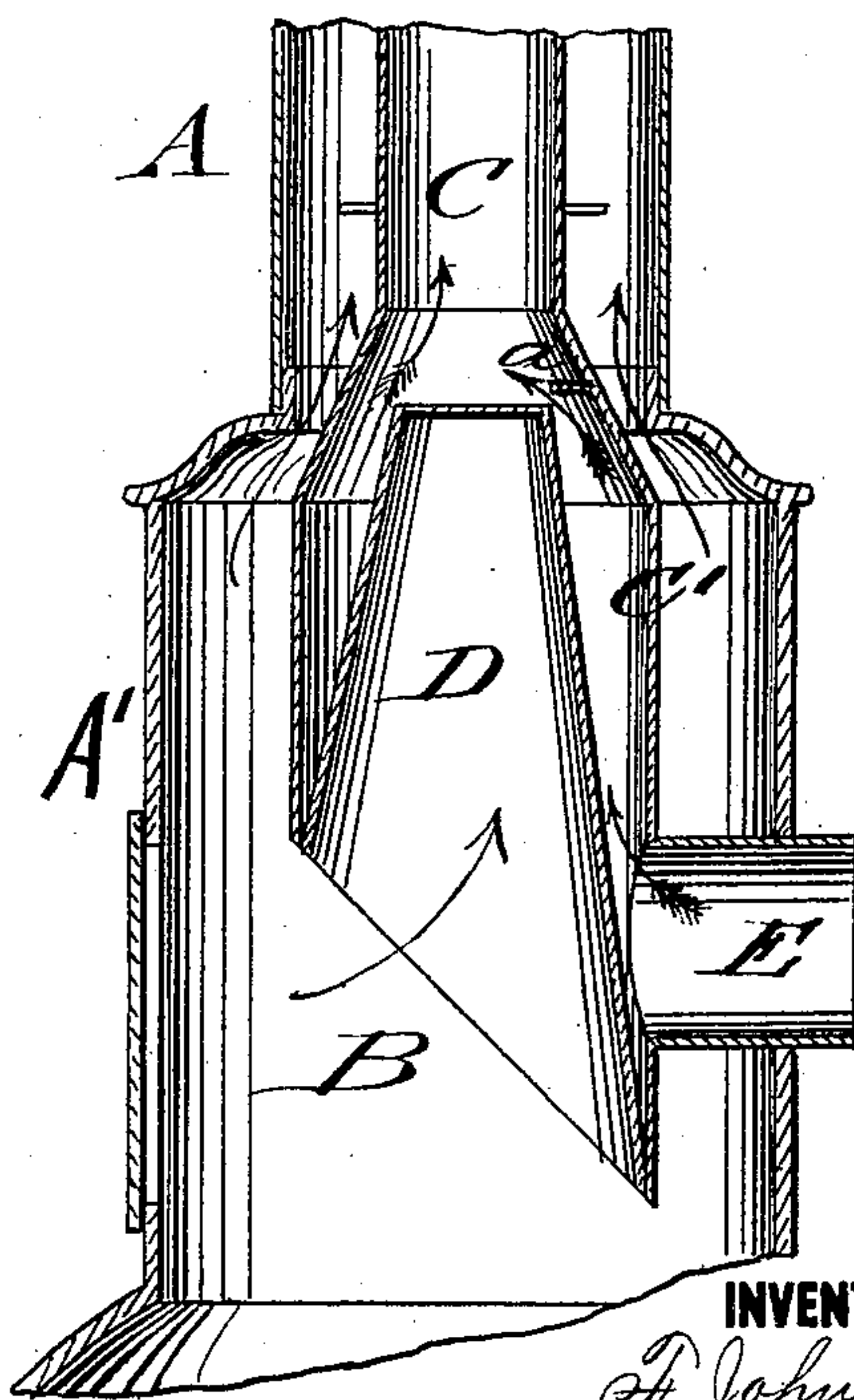


Fig. 2.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

FREDERICK JOHNSON, OF FROSTBURG, MARYLAND.

## IMPROVEMENT IN HEATING-DRUMS.

Specification forming part of Letters Patent No. **148,463**, dated March 10, 1874; application filed December 13, 1873.

*To all whom it may concern:*

Be it known that I, FREDERICK JOHNSON, of Frostburg, in the county of Alleghany and State of Maryland, have invented a new and Improved Air-Heating Attachment for Stoves, of which the following is a specification:

Figures 1 and 2 are sectional elevations, showing my heating attachment applied to a stove.

The invention is an improvement in the class of heaters formed by a drum arranged within a fire or furnace chamber, to receive cold air and discharge it into the apartment in a heated condition.

The invention relates to a drum having a conical form and a correspondingly-shaped cone filling its interior, the same being arranged in a stove, as hereinafter described.

In the drawing, A indicates the pipe of the cylindrical stove B. It is traversed internally by a pipe, C, which has a mouth, E', opening laterally. The drum or part C', which forms its terminus within the stove A', is enlarged, as shown, corresponding to the size of the latter, but arranged to leave an annular space between them. The drum C' is inclined or tapered at its upper end, below its junction with the pipe C, for the purpose of preventing lodgment of soot, which is a non-conductor, at that point, and also to facilitate the upward passage of air, which enters through the lateral extension E of the drum. The lower edge of the drum is joined to the corresponding edge of a hollow truncated cone, D, which is open at the bottom to admit flame and heat from the fire, which will, in practice, be immediately beneath it. The top of the cone comes opposite the inclined or conical part of the drum. The object of making the part D con-

ical is to secure a more direct impingement of the flame and radiated heat on its exposed inner surface, and thus secure a corresponding result in heating of the air admitted through pipe E. The course of the air, and the course of the flame and products of combustion, are indicated by feathered and featherless arrows, respectively, that of the former being through the pipe E, around the cone D, and in contact with all the inner surface of the drum C'; thence, through the pipe C, into the apartment at E'; while the latter enter the cone and strike against every part of its inner surface, and also encircle the drum, thus radiating heat into the air in the drum and in apartment before passing along the flue A. *a* is a small air-deflecting plate.

The drum and cone are shown in Fig. 2 as cut away obliquely from the front side to allow coal or other fuel to be conveniently introduced through the stove-door opposite, to avoid escape of smoke and gas through the door on being opened, and to facilitate cleaning of the interior of the cone.

The cone and drum may be made of cast-iron, and the pipe C of sheet metal.

I do not claim a drum having a cavity opening downward into the fire-chamber of a stove or furnace; but

What I claim is—

The cone D and inclosing-drum C', made conical or tapered in its upper part, and having the pipe-connections C and E, in combination with a stove, A', as shown and described.

FREDERICK JOHNSON.

Witnesses:

SAMUEL JOHNSON,  
HENRY JONES.