

E. W. PRIOR.  
Stove-Pipe Drum.

No. 162,496.

Patented April 27, 1875.

Fig. 1.

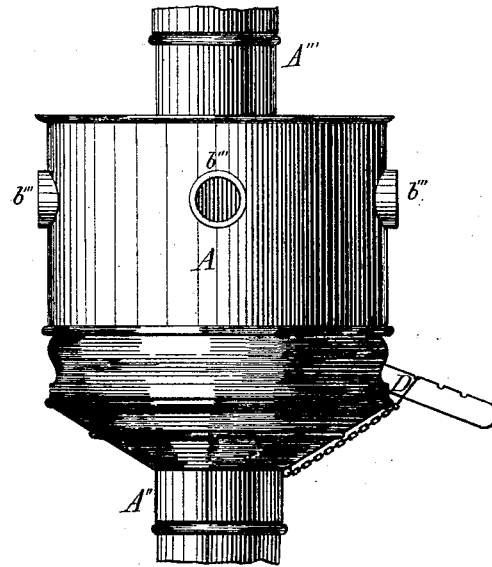
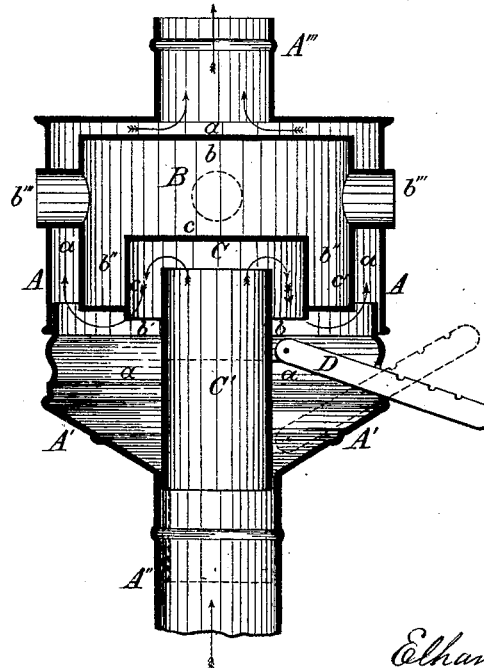


Fig. 2.



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att'y.

# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN STOVE-PIPE DRUMS.

Specification forming part of Letters Patent No. 162,496, dated April 27, 1875; application filed February 17, 1875.

*To all whom it may concern:*

Be it known that I, ELHANAN W. PRIOR, of Cambridge, in the county of Lamoille, in the State of Vermont, have made certain Improvements in Stove-Pipe Drums, of which the following is a specification:

The object of this invention is to construct the drum to act as a heater, by obstructing the direct path of the products of combustion in their exit from the stove or furnace, by such construction of the device as that the heat in the escaping gases will more effectively heat the air that may be in the hot-air chamber, and have such hot air to circulate with the surrounding air of the room; and it consists in the construction and arrangement of the parts of the device, as will be fully hereinafter described.

In the drawings, Figure 1 is a side view of the device, and Fig. 2 is a sectional view of the same.

A represents the outer shell of the main part of the device, and A' the shell or case of the lower section, which nicely fits into the upper part A. A'' is the induction pipe or funnel carrying the products of combustion from the stove or heater into the drum. A''' is the exit-pipe through which the products of combustion escape after escaping from the drum. a is a flue-chamber that receives the heated products of combustion and heated gases, and conducts such gases around and over a hot-air chamber, and into the exit-pipe A'''. B is a hot-air chamber within the shell A, and enough smaller in diameter to admit the products of combustion to pass around, over, and in contact with it until carried off through exit-pipe A'''. Hot-air chamber B on its lower side has an upward depression or flue-space, C, indented in, but smaller in diameter than, the chamber, with the outer walls perpendicular and projecting downward, a top plate, b, and bottom of chamber formed of annular plates b'' surrounding the flue-chamber C. and has hot-air outlets or openings b''' b'''' b''''' through flue-chamber a and shell A, protected by proper pipes through chamber a. C' is a cylindrical damper within chamber a, surrounded by the shell A' of the lower part of the drum, with its lower end within the upper end of induc-

tion-pipe A'', and its upper end in the flue-chamber C that extends upward into the bottom of hot-air chamber B, but is enough smaller in diameter to form a passage, b', around between it and the wall of chamber C, as seen in Fig. 2, and carries the products of combustion from pipe A'' into chamber C. This cylindrical damper can be raised or lowered by the lever D—as, for instance, when little or no heat is generated in chamber B, the damper C' is, by lever D, let down, as seen in dotted lines, when the products of combustion and heated gases will pass directly around the outside of chamber B into exit-pipe A''', but when thrown up, as seen in full lines in Fig. 2, the heated gases impinge against plate c of chamber B, and are deflected and kept in close contact with plate c and the perpendicular walls c' of chamber C, and pass under the lower and outer parts of chamber B to flue a, then on the outside of chamber B, over it, and into exit-pipe A'''.  
Any mechanical device may be attached to damper C' to operate it, and retain it in position.

It will be observed that by impinging the heated gases into the chamber C, that is indented into hot-air chamber B, that such gases are kept longer in close contact with such chamber than in the ordinary drum, hence will heat the air to a greater degree of heat than by the usual method, and consequently more heat is evolved from the hot-air chamber B.

Having thus described my invention, what I claim is—

1. In a stove-pipe drum, the hot-air chamber B, surrounded by flue-chamber a, and having the chamber C and hot-air openings b''', in combination with the induction-pipe A'' and exit-pipe A''', constructed and arranged with relation to each other, substantially as described.

2. In a stove-pipe drum, the combination of the hot-air chamber B, chamber C, induction-pipe A'', and exit-pipe A''', with the cylindrical sliding damper C', substantially as described.

ELHANAN W. PRIOR.

Witnesses:

WALLACE H. PARKER,  
MARTIN J. QUINN.