

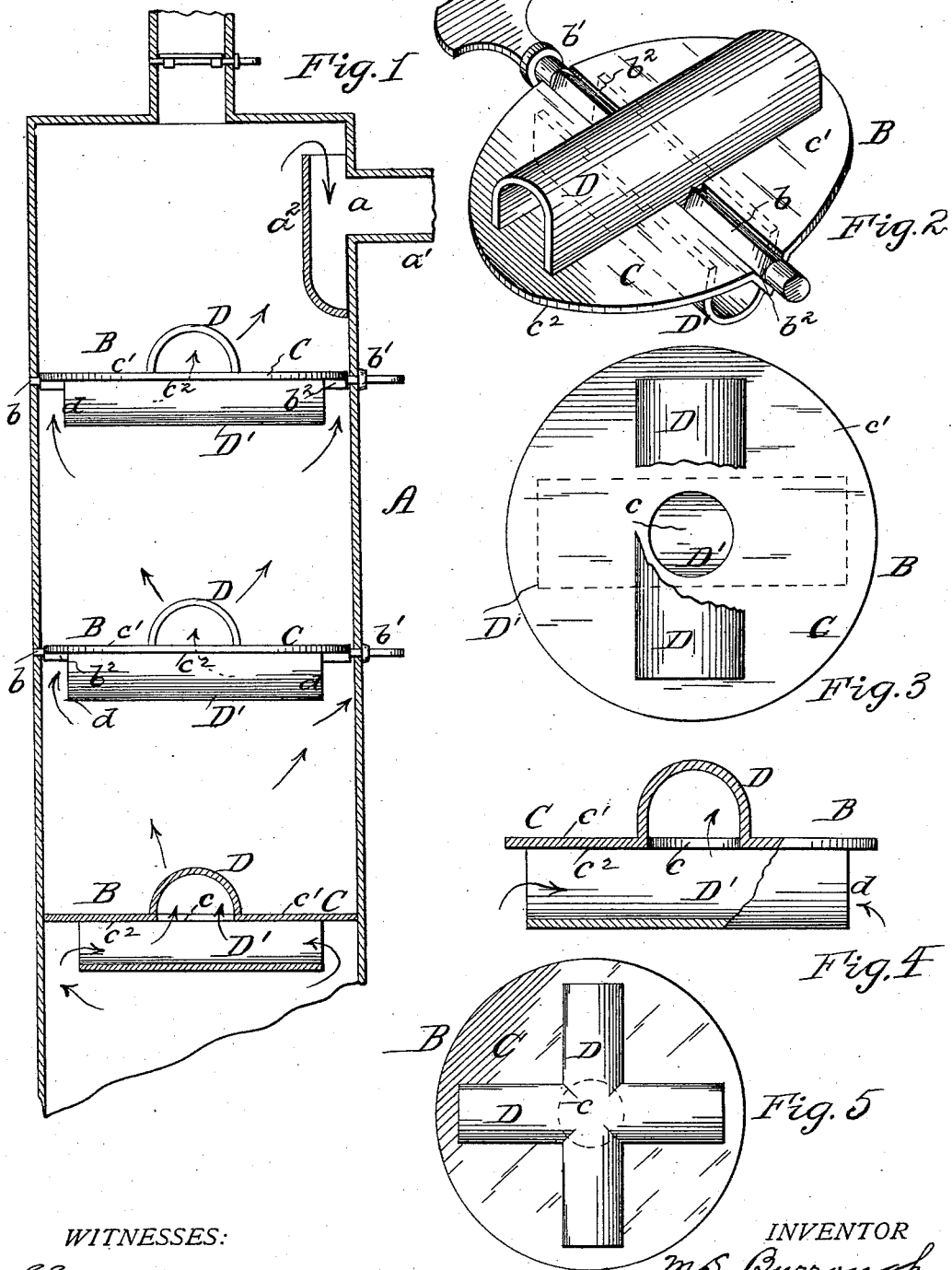
(No Model.)

M. S. BURROUGH.

DAMPER.

No. 305,373.

Patented Sept. 16, 1884.



WITNESSES:

*Chas. H. Hawley*  
*Chas. H. Williams*

INVENTOR

*M. S. Burrough*

*By S. J. Vanstavern*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

MARK S. BURROUGH, OF MERCHANTVILLE, NEW JERSEY.

## DAMPER.

SPECIFICATION forming part of Letters Patent No. 305,373, dated September 16, 1884.

Application filed March 18, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, MARK S. BURROUGH, a citizen of the United States, residing at Merchantville, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Dampers for Heating-Drums and Stoves, of which the following is a specification, reference being had therein to the accompanying drawings, wherein—

Figure 1 is a sectional view of my improved damper applied to a heating-drum. Fig. 2 is a perspective view of the damper. Figs. 3 and 4 are respectively a broken plan and transverse vertical section of the same, and Fig. 5 is a perspective of a modification.

My invention has relation to that form of heating-drum or stove dampers which are provided with tortuous channels or flues for retarding the passage of the hot gases from the fire-box, in order to utilize as much of their caloric as possible for heating purposes; and it has for its object to provide a simply-constructed damper which will have a circuitous passage-way or flue so arranged that the hot gases are not only retarded, but are also projected against the sides of the drum, stove, or pipe, to more fully obtain the benefit of their caloric for heating purposes, and thereby effect an increased saving in the fuel required for heating purposes.

My invention accordingly consists of a heating-drum, stove, or other like damper comprising a fixed or rotating disk having a central aperture and a diametrical or radial passage or flue on each side of said disk, each of which communicates with its central opening, and are arranged at right angles to one another, or have different courses or directions, as hereinafter more specifically described and claimed.

In the drawings, A represents a heating drum or pipe of any suitable or usual construction to suit the stove or heater to which it is designed to be applied. The mouth *a* of its outlet-pipe *a'* may, if desired, be provided with a dam or plate, *a''*, for preventing the too ready escape of the gases of combustion after finding their exit through the dampers B. Any number of the latter may be used, the

number depending upon the size and construction of the drums and the degree and extent of heating requirements demanded. These dampers may be fixed or rotating, as desired. I prefer to provide them with the usual or other axis or shaft, *b*, and handle *b'*, for rotating them, in order that the draft for the fire-box or the escape of the hot gases therefrom may be regulated as desired. The dampers are provided with the customary slots or depressions, *b''*, for the passage of the axis or shaft *b*; or the latter may be secured to the former in any other suitable manner. Each damper is composed of a disk or plate, C, having a central opening, *c*, and on each side or on its upper and lower surfaces, *c'* *c''*, is a flue or channel, D D', respectively. These flues communicate with the central opening, *c*, and are shown diametrically or radially arranged at right angles to one another, with their ends nearly flush with the edge of the disk or plate C.

Instead of using a single flue or channel, D, on each side of disk C, two or more radially-arranged flues may be used, as indicated in Fig. 5, and the plate C may be oblong in outline or otherwise configured, as desired, the result whereof is, that as the ends of flues D D' are the only openings for the hot gases to find their way into or emerge therefrom in order to gain a passage through the dampers, it follows that such gases will always strike the sides of the drums as they enter the lower flues, D', and as they leave or find their exit out of the upper flues, D, of the damper. The repeated impact of the gases against the sides of the drum heats the latter or causes said gases to impart their caloric to the drum for radiation into the apartment to be heated.

What I claim is—

1. A drum or pipe provided with one or more dampers composed of a plate, C, having an opening, *c*, and flues D D' on each side of said plate, and arranged at right angles to one another, substantially as shown and described.

2. The damper B, composed of plate C, with opening *c* and diametrical or radial flues D D' on opposite sides of said plate, and arranged at right angles to one another, substantially as shown and described.

3. The damper B, composed of plate C, hav-

ing opening *c* and flues D D' on opposite sides of said plate, and having different directions, and communicating with said opening, substantially as shown and described.

- 5 4. The damper B, composed of plate C, having central opening, *c*, and right-angle flues D D', substantially as shown and described.

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

MARK S. BURROUGH.

Witnesses:

JOHN RODGERS,  
S. J. VAN STAVOREN.