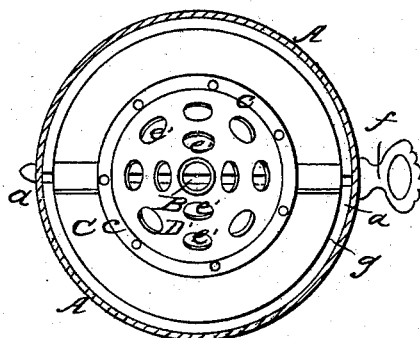


H. C. BROWN.  
 Damper for Stovepipes.

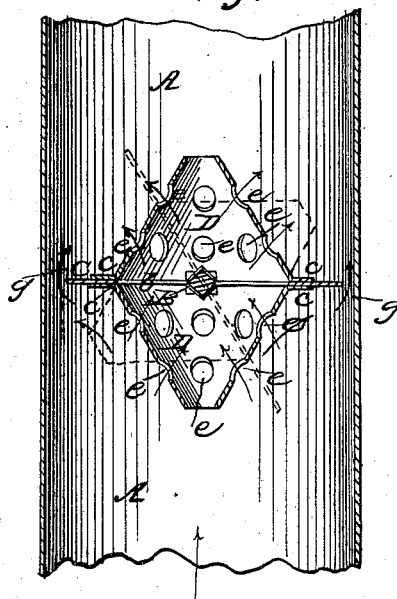
No. 47,923.

Patented May 30, 1865.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
 Jay Hyatt.  
 J. Fraser

Inventor:  
 Henry C. Brown

# UNITED STATES PATENT OFFICE.

H. C. BROWN, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN DAMPERS FOR STOVE-PIPES.

Specification forming part of Letters Patent No. 47,923, dated May 30, 1865.

*To all whom it may concern:*

Be it known that I, H. C. BROWN, of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Dampers for Stove-Pipes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical cross-section of a joint of stove-pipe, showing my improved damper in elevation. Fig. 2 is a longitudinal section of the pipe and damper.

Like parts are designated by like letters in both figures.

The object of my improvement is economy in the combustion of fuel; and my invention consists, essentially, of two hollow perforated cones, with their bases attached to an annular disk, in combination with a stove-pipe, and so constructed as to form a damper, which both deflect the draft or current against the inner surface of the pipe and at the same time retard its velocity, as will hereinafter be more fully described.

The intense draft resulting from the use of stoves with their comparatively small draft-pipes occasioned such an enormous expenditure of fuel as led to the introduction in stove-pipes of the ordinary damper, which consists of a plane circular disk fitting inside the pipe. While these dampers were used to diminish the size of the passage, the velocity of draft through the remaining aperture was increased. What is required to secure the best effect is such a construction of the damper as will direct or deflect the heated products of combustion to the surface or periphery of the pipe, while at the same time it retards the velocity of the same, in order that the heat may be the more readily imparted to the pipe, and thereby radiated into the apartment.

As represented in the drawings, A is a section of ordinary stove-pipe, transversely through which passes a rod or axis, B, having for its bearings holes *aa* in opposite sides of the pipe. To this axis is secured, in any suitable manner, an annular disk, C, so that its plane shall be in a direction across the pipe, the greater diameter of this disk being a little less than that of the pipe, so as to leave a small space around its periphery for the passage of the smoke and heated air, and

the less diameter, or that of the opening *b*, being about one-half that size.

D D' are two hollow perforated cones, whose bases are of the same diameter as that of the opening *b*, or the interior diameter of the disk, to which they may be secured in any desirable manner, that shown being flanges *c c* of the cones riveted to the disk C. These cones are provided with perforations *e e e e'* in their sides, as shown, and may be perforated at their apices by truncating; but this is not essential to the operation of the damper.

The disk C and cones D D' are preferably made of sheet-iron; but any other suitable material may be employed.

At one or both ends of the axis B is attached or formed the usual knob or handle, *f*, by which the damper is turned.

The operation of my improved damper thus constructed is as follows: The current of smoke and heated air, flowing in the direction of the black arrow at the bottom of Fig. 2, impinges against the sides of the cone D and disk C, a portion being deflected against the surface of the pipe by the sides of the cone, and thence passes through the space *g* between the periphery and pipe, while the other portions are forced through the perforations *e e* in the sides and apex of said cone. Those currents entering the perforations of the cone D, which has its apex opposed to the direction of the draft, assume an oblique direction, which causes them to emerge on the opposite side of the reverse cone D', as indicated by the arrows in Fig. 2, and thus impinge directly against the pipe, so that all or nearly all the gaseous products of the fuel are compelled, in passing the damper, to approach the pipe surrounding it, and at the same time are so retarded in their progress as to allow the heat to be absorbed and radiated to the surrounding atmosphere.

When it is required to increase the intensity of the draft, the damper may be turned to the position indicated by red lines, Fig. 2; but in this position its operation is still the same, for the surfaces of the double cones and of the disk are oblique to the direction of the draft currents, and cause them to impinge against the sides of the pipe in every direction, having therefore the same effect while allowing a free draft. This effect is also produced when the damper is opened to its greatest extent.

I do not claim, broadly, the use of a deflecting-damper; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the annular disk C and hollow perforated cones D D' with the pipe A, substantially as and for the purposes herein specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY C. BROWN.

Witnesses:

J. FRASER,  
JAY HYATT.