

J. C. KENNEDY.  
Stove-Pipe Damper.

No. 82,848.

Patented Oct. 6, 1868.

Fig. 1.

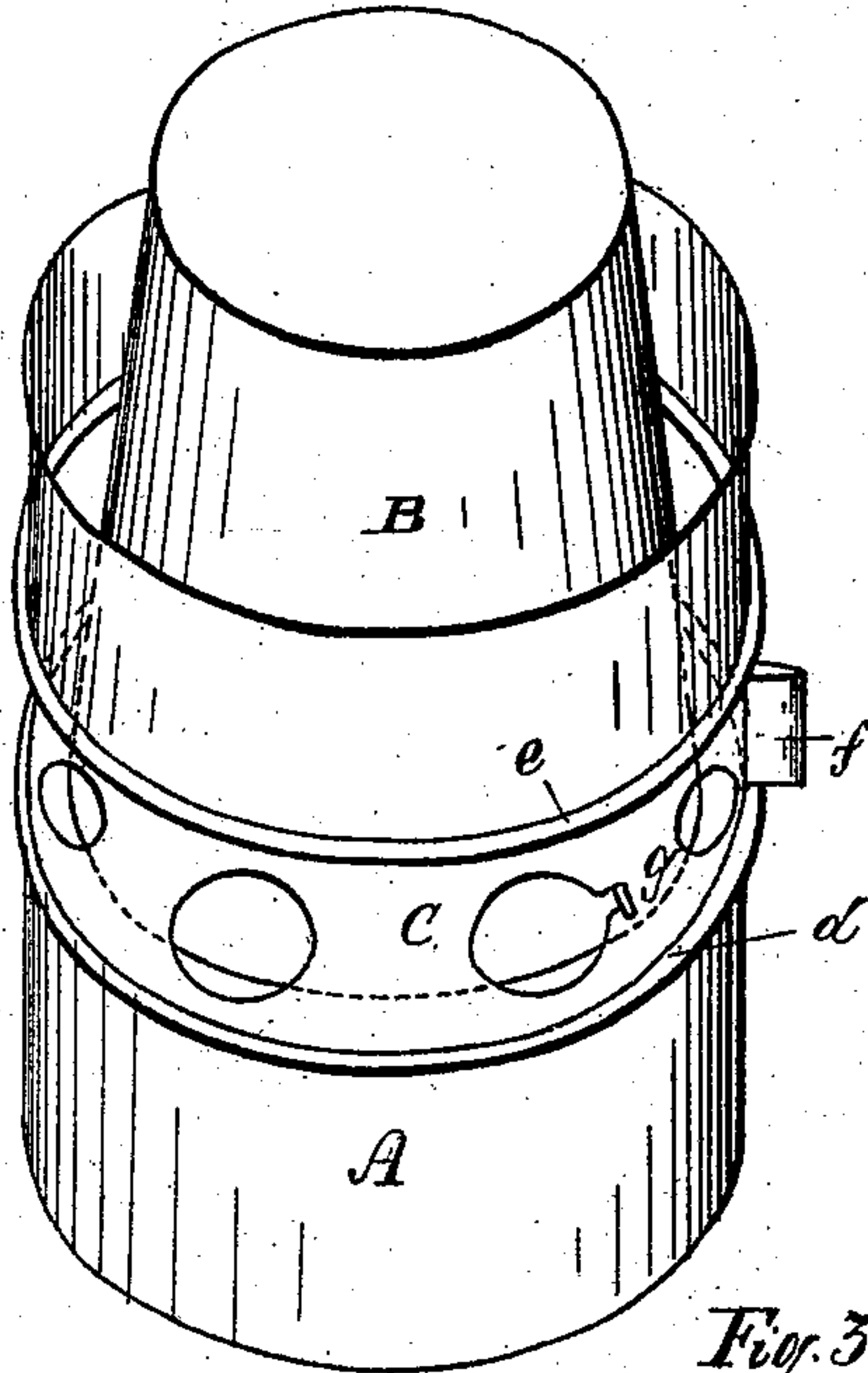


Fig. 2.

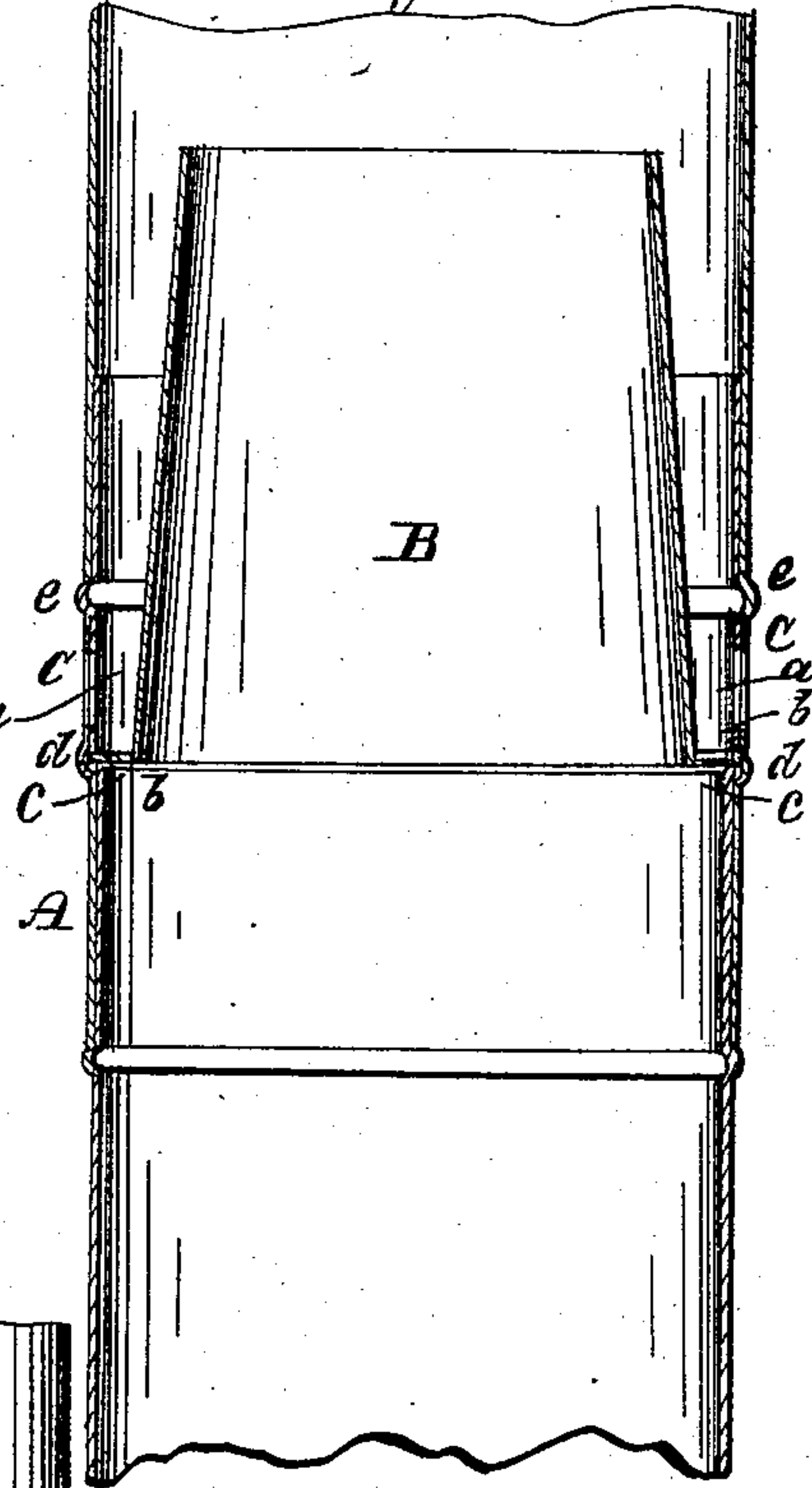
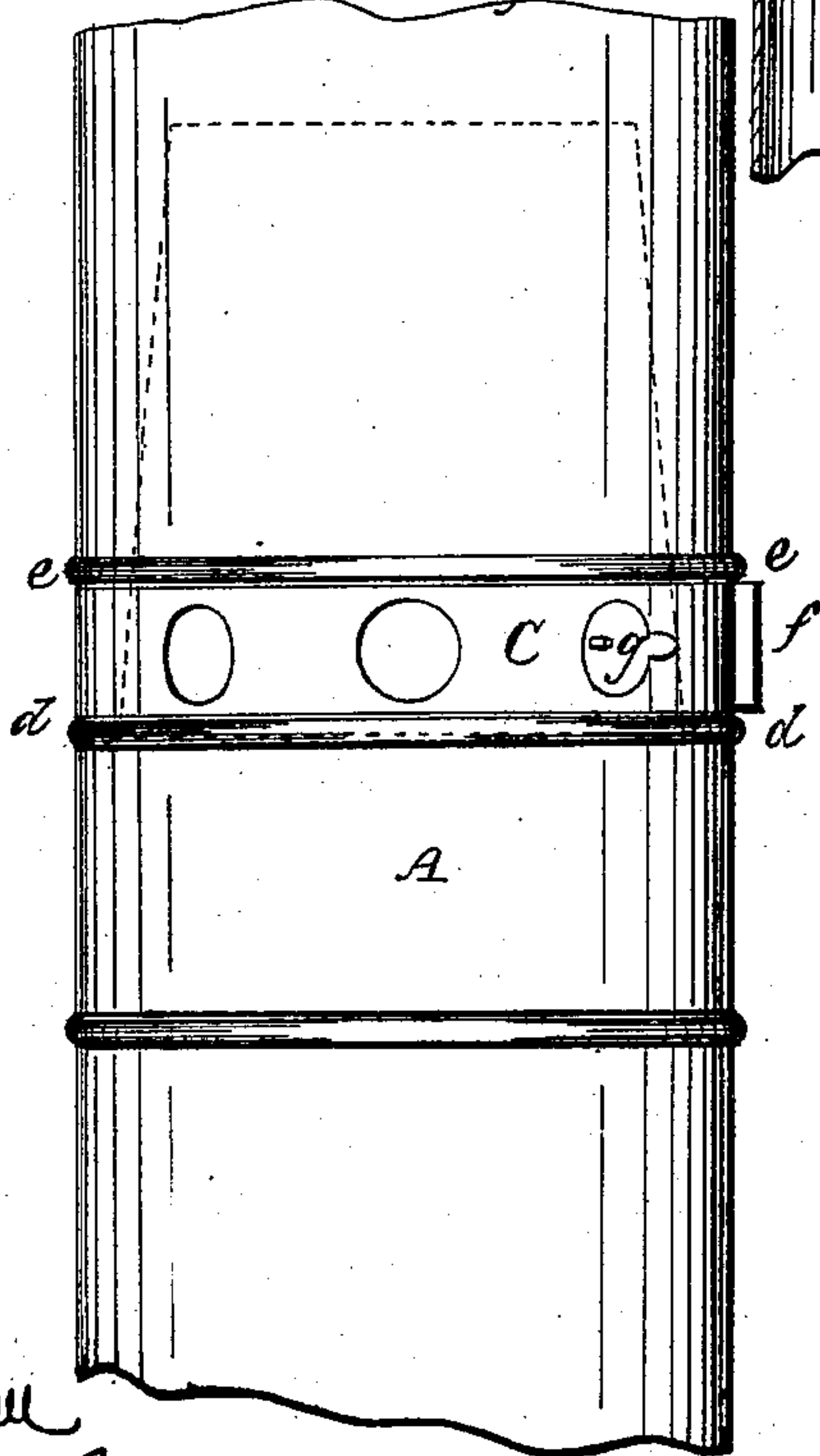


Fig. 3.



Witnesses:

John A. Gadsden  
Phil. J. Larnier.

Inventor:

John C. Kennedy

# United States Patent Office.

JOHN C. KENNEDY, OF CHICAGO, ILLINOIS.

*Letters Patent No. 82,848, dated October 6, 1868.*

## IMPROVEMENT IN STOVE-PIPE DAMPERS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN C. KENNEDY, of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful Combined Stove-Pipe Damper, Ventilator, and Draught-Accelerator; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a perspective view of a section of stove-pipe, provided with the damper and ventilator.

Figure 2 is a vertical section of a portion of the pipe, showing the damper in position.

Figure 3 represents a side view of the same portion of the pipe, the damper or cone being shown in dotted lines.

The object of this invention is to provide means for controlling, and regulating, and accelerating the draught in stove-pipes, without obstructing the interior of the same, by a damper, and, at the same time, to afford means of ventilation, without employing a special device for that purpose.

The invention consists in the employment, instead of an ordinary damper, of a truncated hollow cone, open at both ends, of smaller diameter than the stove-pipe, and fitted in a section of the same, the latter being perforated, and provided with an annular register, as will be hereinafter more fully described.

In order to enable those skilled in the art to which my invention appertains to fully understand and use the same, I will now proceed to describe it in detail, with reference to the drawings, in the several figures of which similar letters indicate corresponding parts.

A represents a section of ordinary stove-pipe, made short, for convenience, and formed with an annular series of perforations, *a a a*, for the admission of air from the apartment, when desired. B is a truncated hollow cone, open at top and bottom, and formed with a flange, *b*, around its base. This cone is of smaller diameter than the pipe, and is fitted permanently on the section A, and there retained by means of its flange, *b*, entering a groove, *c c*, formed on the inner surface of the section, as clearly shown in fig. 2. To form this groove, the sheet metal is "struck up," whereby an annular bead, *d*, is produced on the exterior of the pipe, which said bead serves to support the several sections, as will be seen by reference to fig. 2. To secure the cone B, its base must be forced into the section A until the flange *b* enters the groove *c*, where it is held by the springing back of the flange to its former position.

The series of perforations *a*, in section A, surround the lower portion of section B. An annular slide, C, provided with openings corresponding to those in the pipe, is fitted on the exterior of the section, between the beads *d d* and *e e*. *f* represents a projection formed on or attached to the slide C, for convenience in operating the same. The movement of the slide C is limited by a stop-pin, *g*, fixed in the pipe A, and projecting through one of the openings in the annular band.

The operation is as follows:

If the stove or furnace is to be kept at full operation, the apertures *a a* must be completely closed, by turning the annular damper C, as seen in fig. 3. The operation of the pipe, in this case, does not differ from that of any common stove-pipe whose damper is open to the full extent, but, if a reduction of draught is necessary, and the damper C is turned so as to partly or wholly open the apertures *a a*, the operation is entirely changed from that of a revolving damper of the old construction, when partly or wholly closed.

The hot gases, passing through the pipe A and cone B, are suddenly brought in contact with a current of fresh air, entering the annular space between the pipe A and the cone B through the apertures *a a*, from outside, which current is more or less forcible, according to the heat of the gases inside, and the temperature of the locality where the stove chances to be. An exchange of heat and cold takes place, resulting in a balanced and lower temperature of the mixture, which makes them heavier and more difficult to expel; hence the draught in the stove is either retarded or stopped, according to the degree of resistance it has to overcome in expelling the gases through the pipe; but this would be without advantage over the old or common damper, if the described action were not accompanied by another, which makes my invention very valuable. The fresh air, as it mingles



with the products of combustion at the mouth of the cone B, serves to oxidize them, and prevent the formation of smoke, which is always the case when the draught of a stove is stopped above the grates by devices heretofore commonly employed. In this manner, the draught of a stove or furnace can easily be regulated without the inconvenience of smoke, but the meritorious operation of my invention extends also to another branch of usefulness. It is easily seen that, by putting my damper in a proper position, it serves as a very powerful ventilator, drawing off all foul air surrounding the pipe with more speed than a common ventilator could do, because it is not operated by the same amount of heat as this one is.

It will be obvious to those familiar with the art to which this invention appertains, that the contraction of the stove-pipe by the cone improves the draught, when in full force through the pipe. My invention differs from all others, in that it always affords egress through the pipe for the products of combustion, even when the draught is reduced to the lowest desirable degree. In the case of all other devices, the damper in the pipe must be completely closed, in order to cut off the supply of air when the fire is to be extinguished, but, under the employment of my invention, the fire may be extinguished by merely closing the draught-regulator at the front of the stove, leaving the passage through the pipe free and unobstructed, so as to carry off the products of combustion from the smouldering fire. In order to render the invention effective as a means of regulating the draught, the cone is made larger or smaller, in proportion as the maximum draught is greater or less; and, for the purpose of securing the proper proportions in the first place, and render subsequent alterations unnecessary, I propose to use smaller supplemental cones, resting upon B, so as to form a continuation thereof.

I am aware that ventilating-devices have been applied to stove-pipes, in conjunction with dampers, but, in devices of this character heretofore known, the ventilator generally necessitates the enlargement of the stove-pipe, and is separate and distinct in form and construction from the damper. In my device, the ventilator is incidental to, and yet an essential part of, the damper.

Having thus fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

A cone, B, or its equivalent, applied to a stove-pipe, substantially as described, and employed in conjunction with a register, in the manner and for the purpose set forth.

The above signed by me, this twenty-seventh day of August, 1868.

JOHN C. KENNEDY.

Witnesses:

JOHN A. WIEDERSHEIM,  
PHIL. F. LARNER.