

No. 883,789.

PATENTED APR. 7, 1908.

B. V. CROY.
SELF REGULATING DAMPER.
APPLICATION FILED JAN. 11, 1907.

Fig. 1.

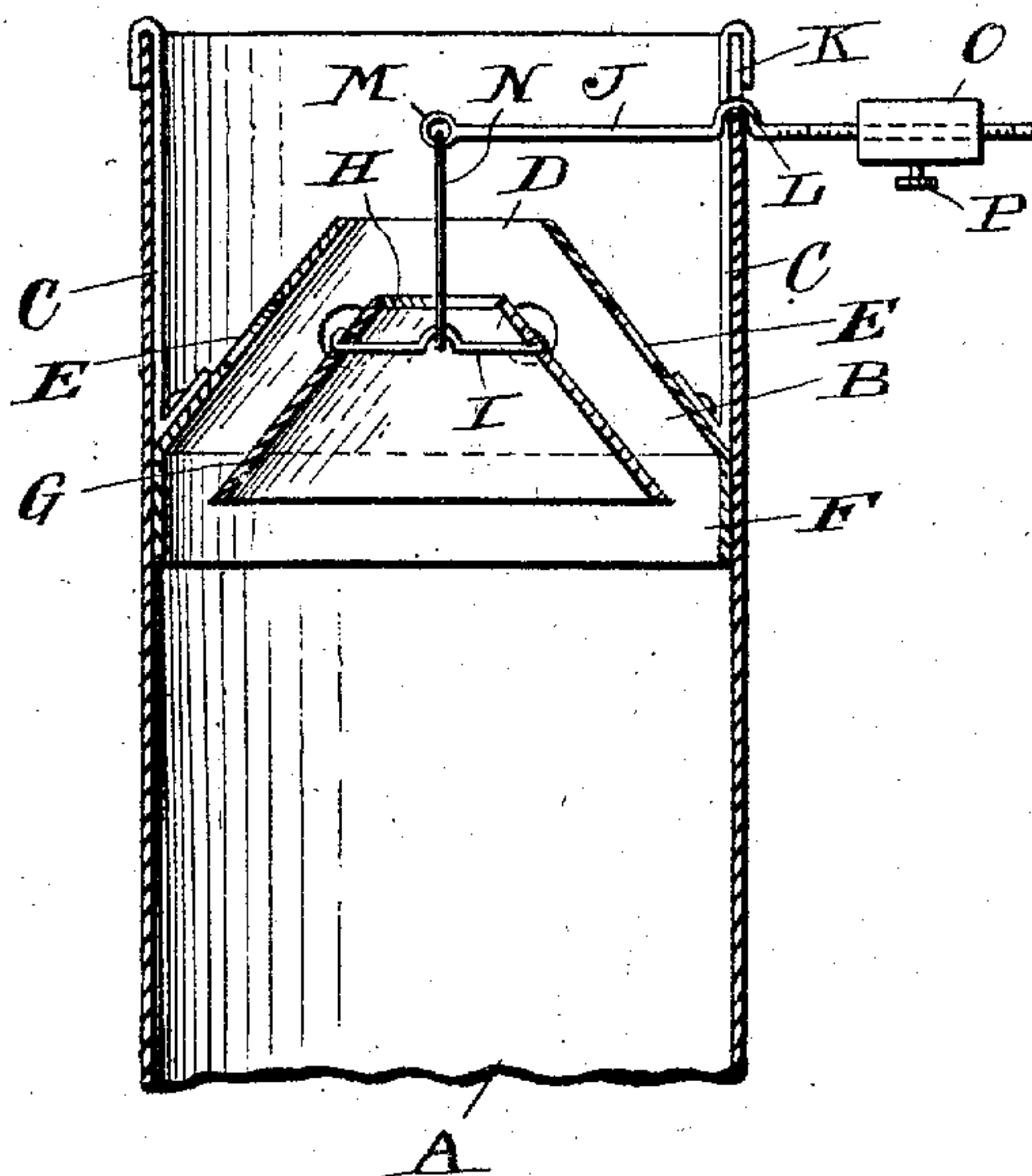


Fig. 2.

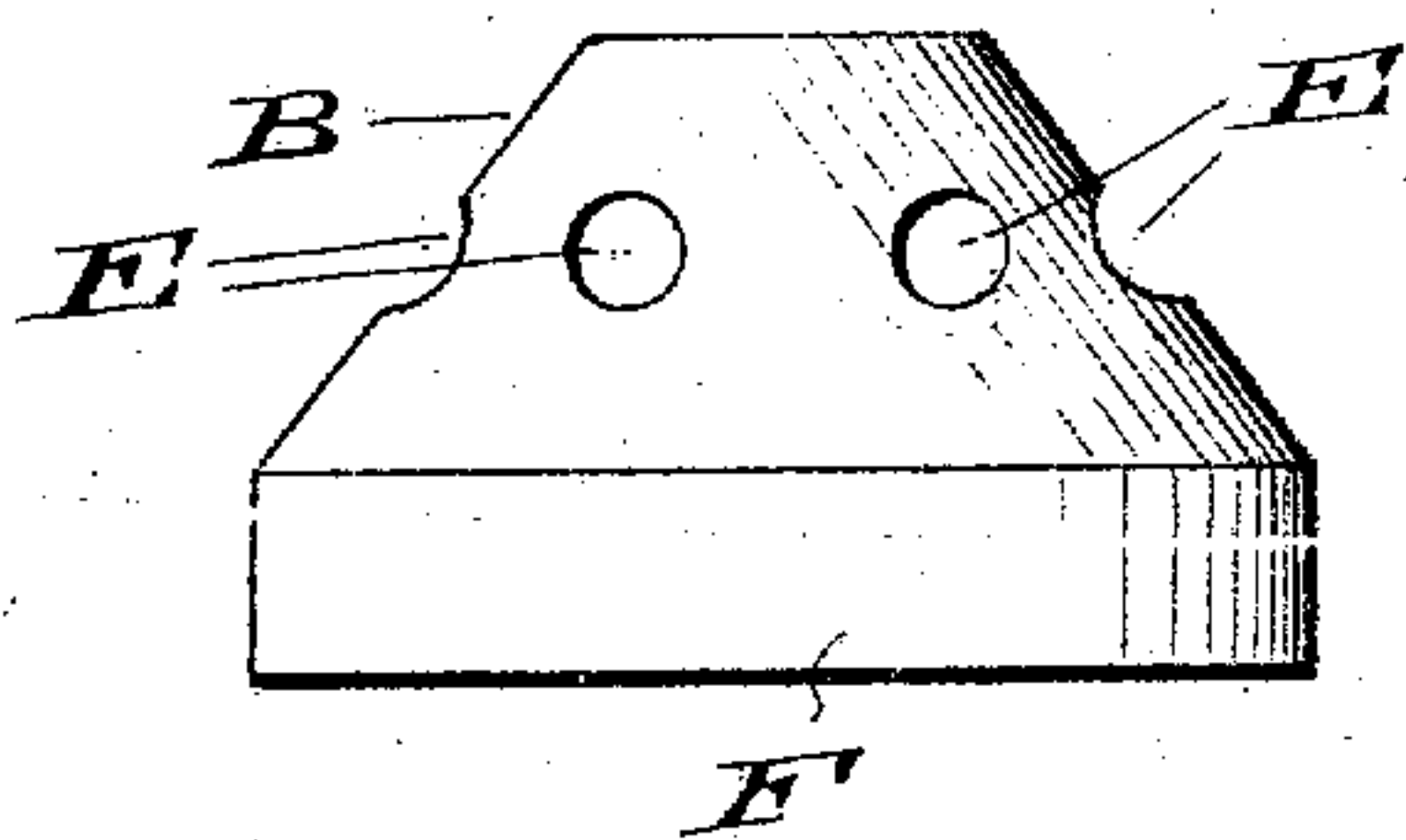
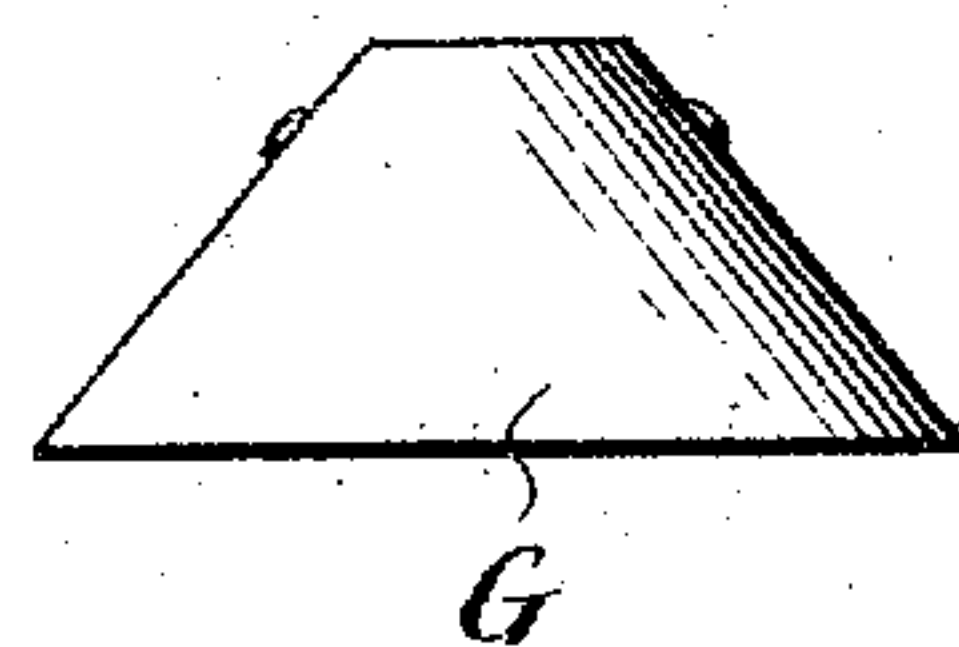


Fig. 3.



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UNITED STATES PATENT OFFICE

BENJAMIN V. CROY, OF CUNOT, INDIANA.

SELF-REGULATING DAMPER.

No. 883,789.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed January 11, 1907. Serial No. 351,824.

To all whom it may concern:

Be it known that I, BENJAMIN V. CROY, a citizen of the United States, residing at Cunot, in the county of Owen and State of Indiana, have invented certain new and useful Improvements in Self-Regulating Dampers, of which the following is a specification.

My invention relates to dampers of the self-regulating type and has for its object the provision of an instantaneously removable and replaceable damper comprising a cone-shaped diaphragm suspended in the pipe by means of hooks secured to the upper edge of a vertical section of pipe, and a cone-shaped cut-off suspended on one arm of a lever fulcrumed on the edge of a hole or slot in the pipe and extending out of the pipe and having a counter-weight adjustably secured thereto.

The construction and advantages of my invention will be described in detail hereinafter and illustrated in the accompanying drawings in which—

Figure 1 is a longitudinal sectional view of a fragment of a length of stove pipe showing my improved damper in position therein and in section, Fig. 2, a detail view in elevation of the cone-shaped diaphragm, and Fig. 3, a detail view in elevation of the damper.

In the drawings similar reference characters indicate corresponding parts throughout the several views.

A indicates a length of stove pipe.

B indicates a conical-shaped diaphragm suspended from the upper edge of length A by means of hooks C riveted or otherwise secured thereto and having an opening D in its upper end and other openings E in its inclined surface for the passage of smoke and gases.

F indicates a cylindrical apron or flange extending downwardly from the lower edge of the cone-shaped portion which serves to cause a closer fit between the diaphragm and the pipe.

G indicates the damper which is cone-shaped so as to fit snugly the lower surface of the diaphragm B and is long enough to entirely cover the holes or openings E therein, when in engagement with the diaphragm, but does not extend to the full diameter of

the pipe so as to leave a space for the passage of smoke around its edge when not in engagement with the diaphragm.

H indicates a hole in the upper end of the damper and I a wire bail secured in the damper G across said hole.

J indicates a lever fulcrumed in a hole or slot K in pipe A the lever being provided with an offset L to seat on the edge of said hole or slot. The arm of said lever J inside of the pipe A is bent to form an eye M, and N indicates a rod secured in said eye M and to wire bail I to support the damper G.

O indicates a weight adjustably secured to the arm of the lever outside of the pipe A by means of set screw P.

In operation when the amount of heat passing through the pipe A is normal the damper G is in the position shown in Fig. 1 but as the heat increases, causing an increase in the draft, the damper G is raised thereby gradually cutting-off the area of egress of the products of combustion which continuing would eventually cut-off the draft except through the hole H. Then as the heat diminishes the pressure against the damper G decreases and permits it to recede from the diaphragm and the operation is repeated. I have stated that the damper would be raised so high as to cut-off egress of the products of combustion except through hole H but when in satisfactory operation the damper will reciprocate but slightly so as to keep the fire at substantially a uniform condition. It will be also understood that the temperature of the fire may be regulated by adjusting the weight O on lever J and if desired that the arm of the lever may be provided with a graduated scale to assist in positioning the weight to secure the temperature desired.

It will also be understood that as the diaphragm B and its connections are readily removable from the length of stove pipe A the damper may be readily transferred from one stove pipe to another.

Having thus described my invention what I claim is—

In a damper, in combination with a stove pipe, a cone-shaped and perforated diaphragm contained in the pipe, said diaphragm being

provided with a central opening, a lever fulcrumed on the pipe, and a cone shaped hollow damper provided with a central opening in alinement with the opening in the diaphragm, said damper being secured to said lever and adapted to reciprocate in the pipe into and out of engagement with said diaphragm to close and open the perforations

therein, substantially as shown and described.

In testimony whereof I hereto affix my signature in the presence of two witnesses.
BENJAMIN V. CROY.

Witnesses:

JESSE T. HORN,

MICHAEL T. FLANNERY.