

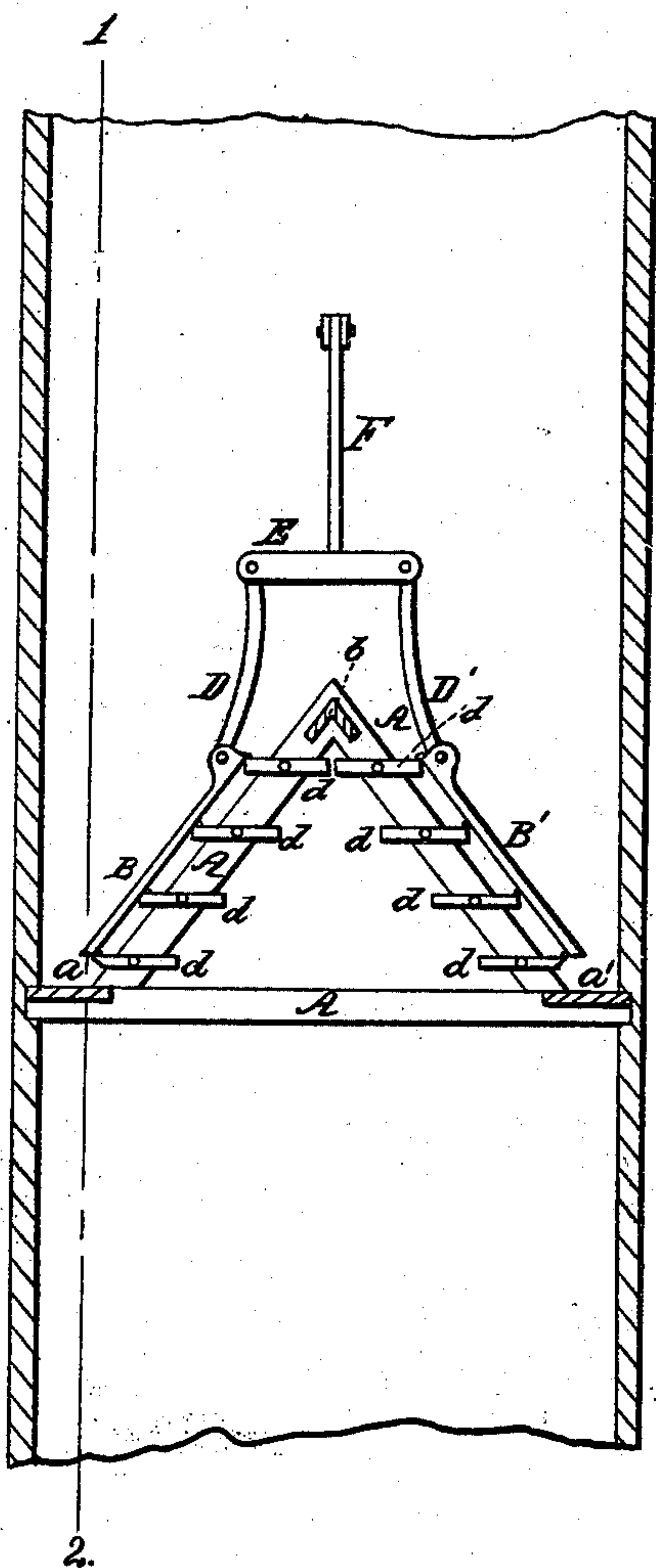
A. CAMPBELL.

Damper.

No. 17,077.

Patented April 21, 1857.

Fig. 1.



UNITED STATES PATENT OFFICE.

AUGUSTINE CAMPBELL, OF PHILADELPHIA, PENNSYLVANIA.

CHIMNEY-DAMPER.

Specification of Letters Patent No. 17,077, dated April 21, 1857.

To all whom it may concern:

Be it known that I, AUGUSTINE CAMPBELL, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Dampers for Chimneys; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in securing to the interior of a chimney a metal frame, to which are hinged a series of vanes, operated by levers and rods fully described hereafter, and so arranged as to open and close to any extent required for the passage or obstruction of the products of combustion.

The object of my invention is to obviate the friction and warping common to ordinary dampers as well as the difficulty and extent of movement required in the latter, and at the same time to afford a direct passage and extended area for the passage of the products of combustion.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the drawing which forms a part of this specification, Figure 1 is a sectional view of a chimney containing my improved damper. Fig. 2 a section on the line 1, 2, Fig. 1.

A and A' are two triangular frames connected together by the cross-pieces *a* and *a'* at the bottom, and the cross piece *b* at the top, the whole being built into, or otherwise attached to, the interior of a chimney, the triangular frames fitting close to the side of the same. To these frames are hinged the opposite ends of any convenient number of vanes *d, d*, so arranged that, when closed, they shall lap over each other and thereby entirely obstruct the passage of the products of combustion and when open afford a free egress for the same. To the under edges of the vanes on each of the

inclined sides are connected bars B and B' the upper ends of which are jointed to links D and D' and the latter to the cross-bar E which is connected by the link F to one end of the lever G; this lever has its fulcrum on a pin *h* attached in any convenient manner to the side of the chimney. To the end of the lever G is attached a rod I which may be connected to any suitable regulating apparatus. The lever G may be so accurately balanced by weights to counteract the tendency which the vanes, on account of their angular position, have to fall, that the slightest touch of the lever may be made to open and close the vanes, at the same time but a trifling movement of the lever is required for effecting this purpose, so that the most sensitive steam gage or indicator may be used in connection with the apparatus.

When the vanes are open a much greater area is afforded for the products of combustion than by either the ordinary throttle valve, or sliding damper, and the passage is much more direct than in chimneys where the latter are employed.

My improved damper possesses the further advantage of having no liability to warp and become inoperative as those of ordinary construction; it is likewise free from the friction incurred in moving the latter and is much more sudden and sensitive in its action.

What I claim and desire to secure by Letters Patent is—

The angular frame provided with a series of valves *d, d*, arranged, constructed and operated substantially in the manner herein set forth and for the purpose specified.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

AUGUSTINE CAMPBELL.

Witnesses:

HENRY HOWSON,
WILLIAM E. WALTON.