

J. A. LAWSON.

Ventilating and Check Draft Damper.

No. 46,249.

Patented Feb. 7, 1865.

Fig. 1

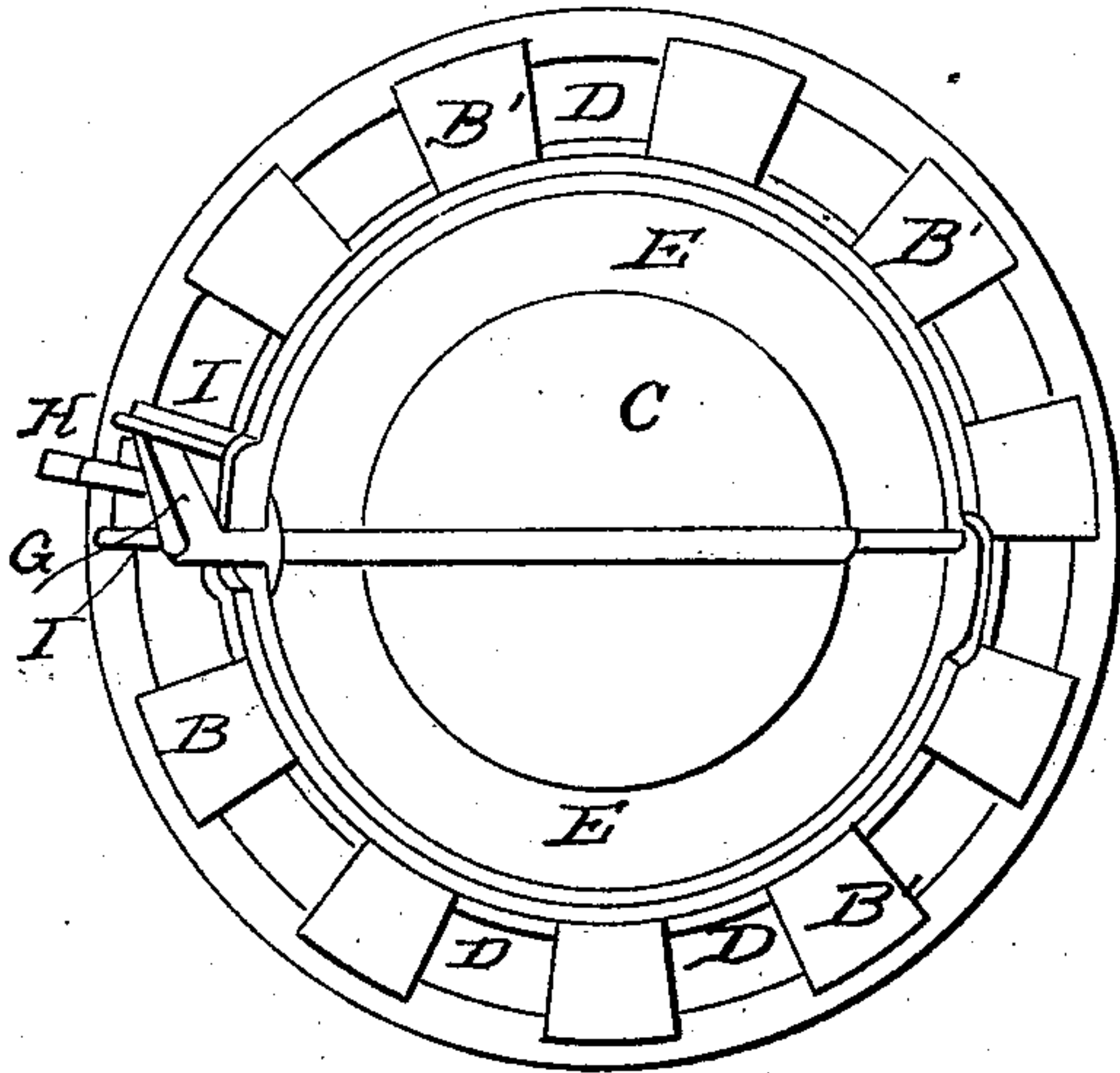


Fig. 2

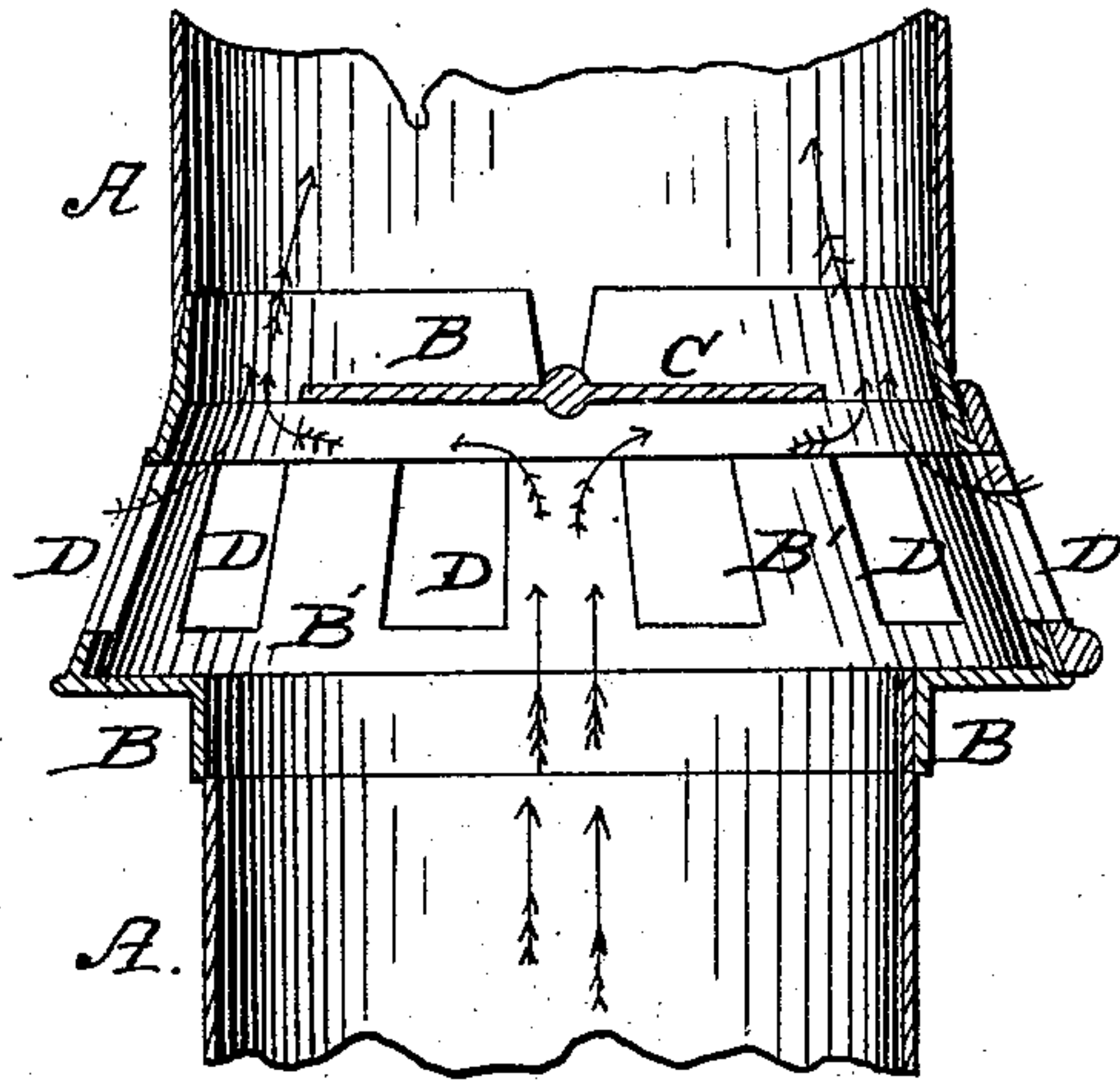


Fig. 3

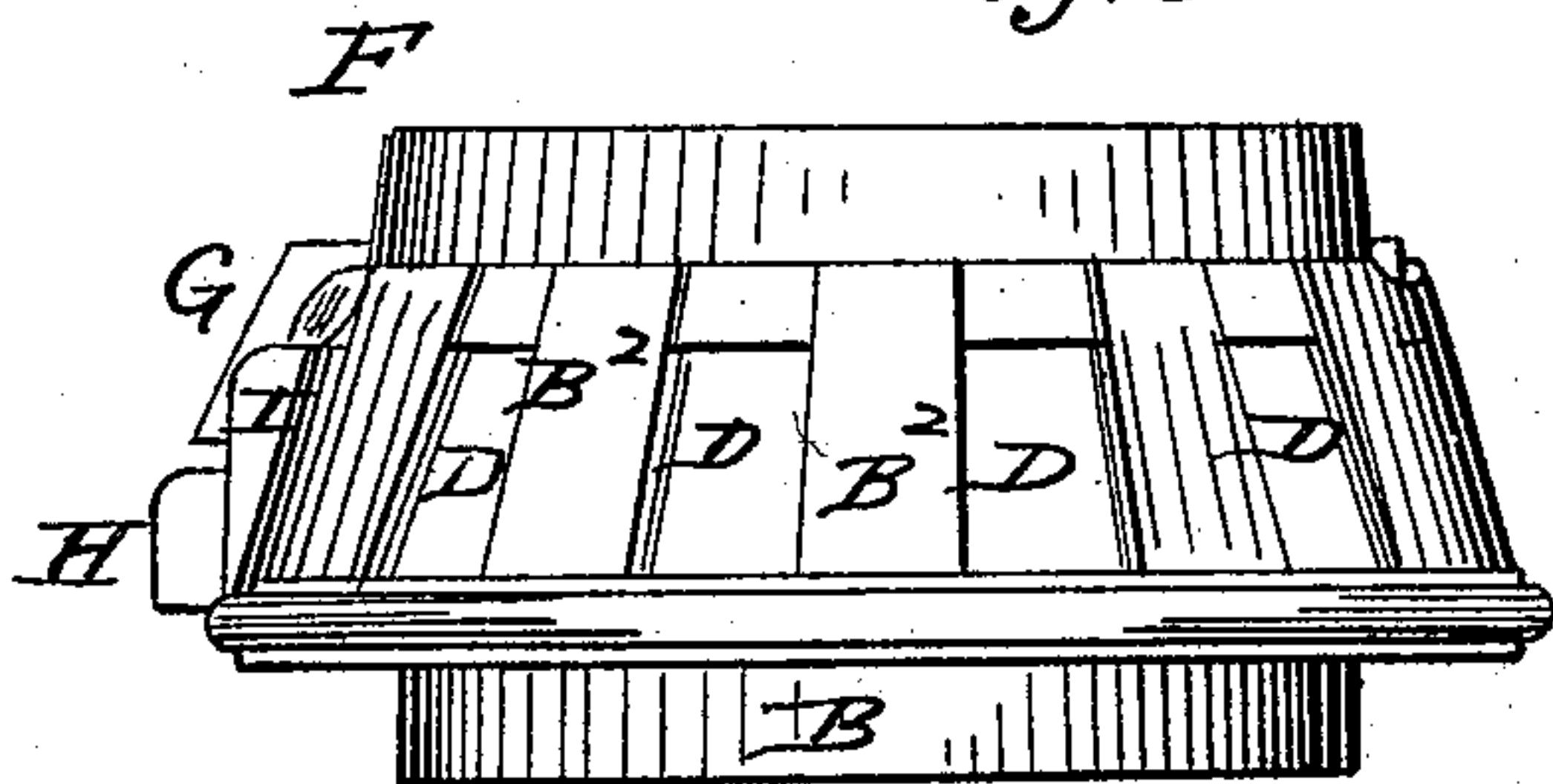


Fig. 4

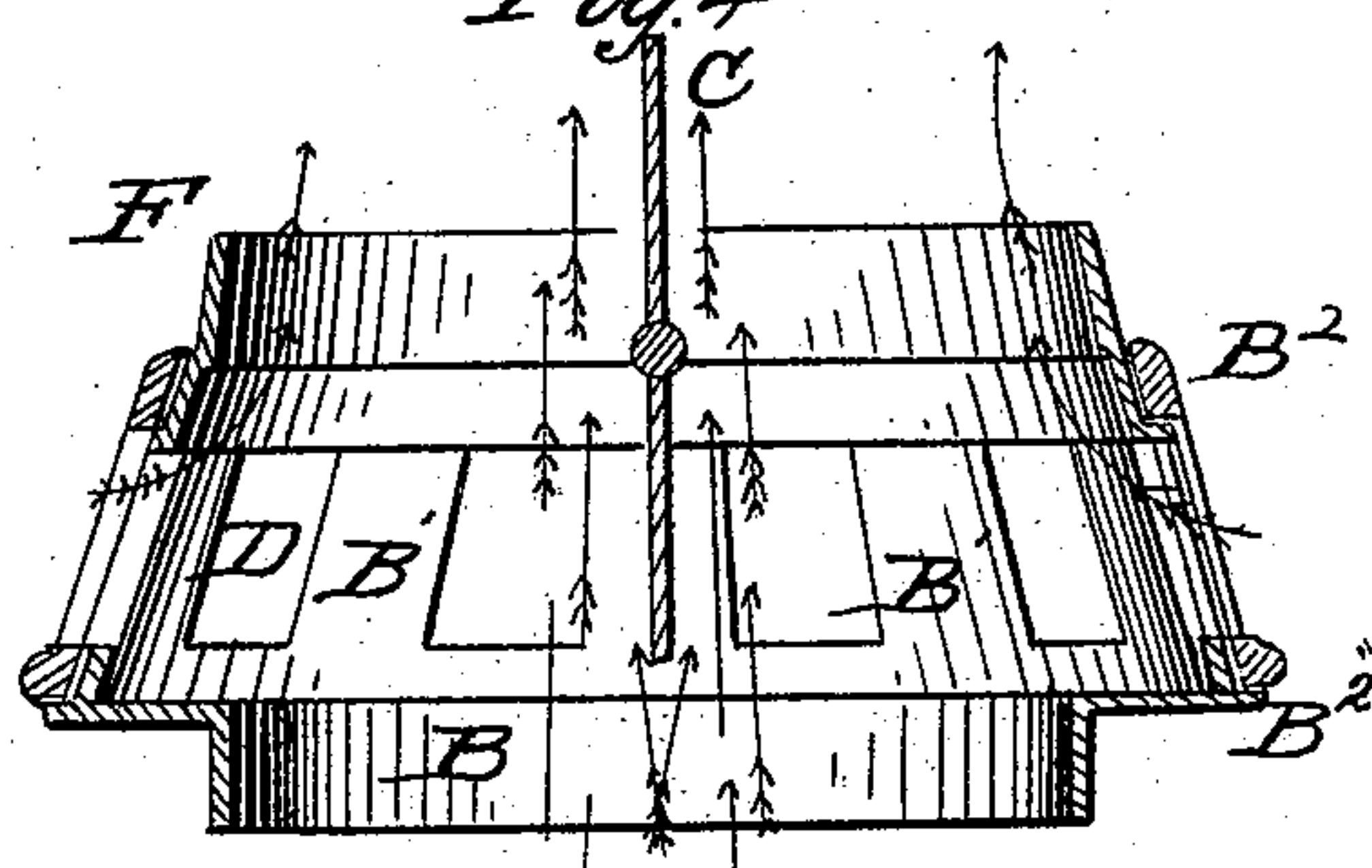
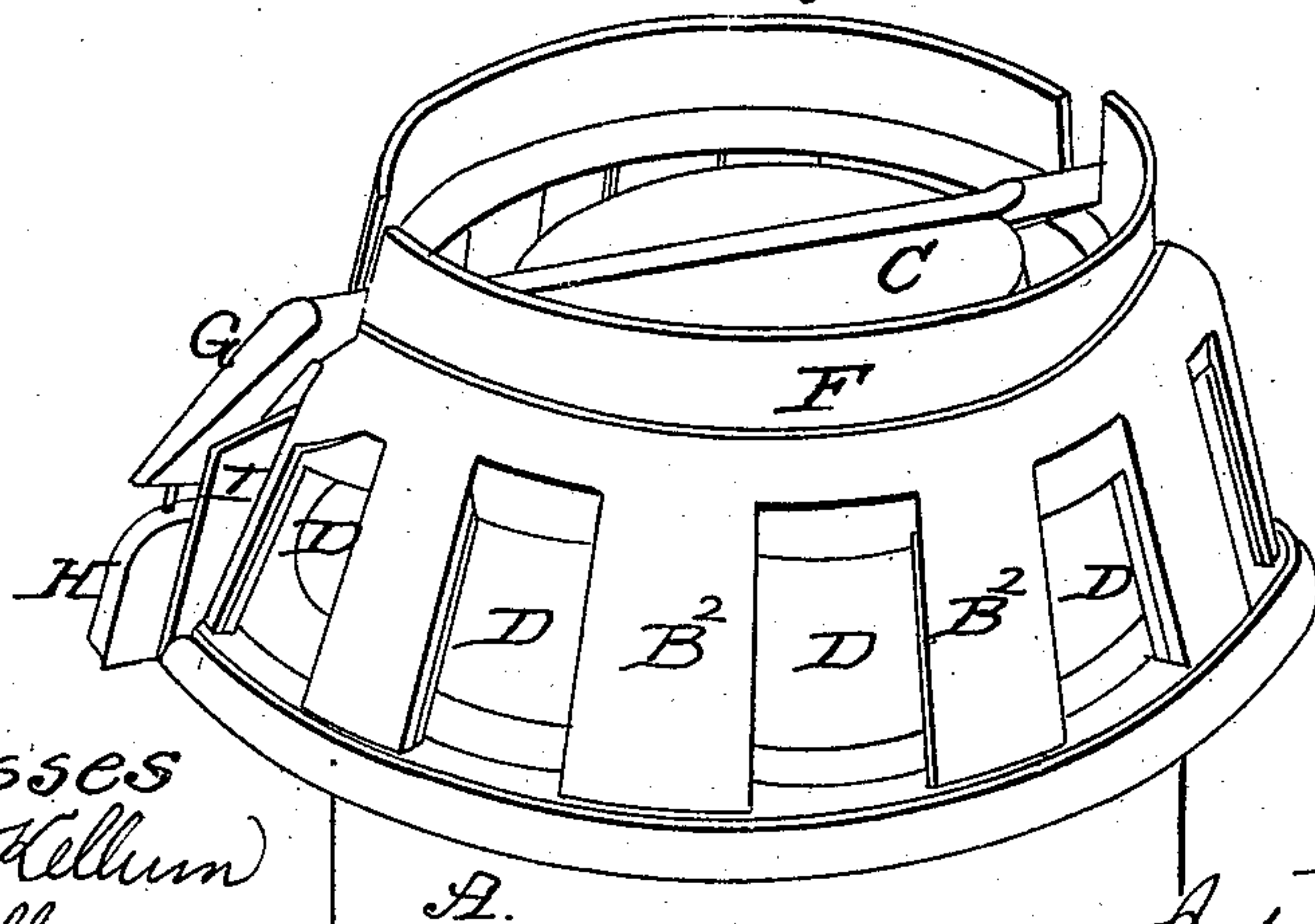


Fig. 5



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES A. LAWSON, OF TROY, NEW YORK.

VENTILATING AND CHECK-DRAFT DAMPER.

Specification forming part of Letters Patent No. 46,249, dated February 7, 1865.

To all whom it may concern:

Be it known that I, JAMES A. LAWSON, of the city of Troy, county of Rensselaer, State of New York, have invented certain new and useful Improvements in Ventilating and Check-Draft Dampers for Stove and Furnace Pipe; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being hereby had to the accompanying drawings, and to the letters of reference marked thereon, which said drawings make a part of this specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 is a horizontal section just above the damper and looking downward. Fig. 2 is a vertical section with pipe connected therewith, and showing the damper closed, and more fully described hereinafter. Fig. 3 is a front view. Fig. 4 is a vertical section with the damper open, and hereinafter described. Fig. 5 is a perspective view.

The nature of my invention consists in the employment of a damper in the pipe attached to the exit-flue of any stove or furnace, so constructed and arranged as to more effectually check the draft by bringing the hot air within the pipe in contact or conjunction with cold air admitted from the room outside of the pipe, in the manner and by the means substantially as hereinafter described and set forth.

It also consists in the combination of a vertical revolving-damper with a horizontal damper arranged immediately above the said vertical damper around the stove or furnace pipe, in the manner and for the purposes hereinafter more fully described.

Having thus described the nature of my invention and improvements in ventilating and check dampers, I will here proceed to describe the construction and operation thereof, which is as follows, to wit:

I construct the tube B of cast-iron of any desired size, which at its lower end is connected with the pipe below, while at the upper end thereof I arrange a cylinder, with its sides vertically inclined toward the center of the pipe above, which cylinder B', Figs. 2 and 4, contains elongated openings D, Figs. 1, 3, 5, &c. There may be as many such openings as may be deemed best, and they may be of any size or shape desired, which are for the purpose of admitting the cold air from the sur-

rounding room to the said stove or furnace pipe below and at the outer edge of the horizontal damper C above, as hereinafter set forth. I then place upon and around the said cylinder B' another cylinder, B², Figs. 3, 4, and 5, which is made to fit correctly the said cylinder B', and which also has elongated openings corresponding with those in the said cylinder B', so that by moving the said cylinder B² in a horizontal direction the said openings in the inner cylinder, B', will be closed by means of a shield between the openings in the cylinder B². Then, by moving the said outer cylinder, B², back horizontally, the said openings therein will be directly opposite those in the inner cylinder, B', and so the operation may continue in respect to these cylinders—to wit, inner cylinder, B', and outer cylinder, B².

C is a horizontal damper of less diameter than that of the pipe when used, as may be seen by reference to Fig. 1. The space E, Fig. 1, between the outer edge of the damper C when closed and the collar F, Figs. 3, 4, and 5, is for the purpose of bringing the current of hot air rising with the pipe A in contact or conjunction with the current of cold air admitted through the vertical cylinder-damper, as shown at Fig. 2. To do this the damper C must be closed and the vertical cylinder-damper B² must be open, as seen at said Fig. 2. The dark arrow represents the cold air thus admitted, while the red arrows represent the rising current of hot air within the pipe A. The hot air in the pipe A is usually the hottest in the center of the pipe, which, rising, comes in contact with the horizontal damper C, is forced along the under surface thereof until it reaches the said space or opening E, when it meets the current of cold air coming in through the said vertical cylinder-damper, which current of cold air, in combination with the said horizontal damper, produces the desired check upon the draft, at the same time ventilating the room and permitting a sufficient draft to the fire to keep up the desired state of combustion. Whenever the said damper C is closed, then the vertical cylinder-damper B² is open, and whenever the said vertical cylinder-damper B² is closed then the damper C is open. The operation of the said vertical cylinder-damper also operates the said damper C. This is done by means of the downward-projecting arm G, Figs. 1, 3, and 5, which is

governed by the projections I I, Figs. 1, 2, and 3. This arm G is cast with the rod or piece connected with the damper C, and on which the same turns when operated. H, Figs. 1, 2, and 3, is for the purpose of operating the said vertical cylinder-damper B². Fig. 4 shows the horizontal damper C open, and the red arrows indicate the line of draft or hot air rising upward.

Having thus described the construction and operation of my invention and improvements in ventilating and check-draft damper for stoves, furnaces, &c., what I claim, and desire to secure by Letters Patent of the United States of America, is—

1. The employment of a horizontal damper in any stove or furnace exit-pipe, and of less diameter than such pipe, and above a vertical cylinder-damper around such pipe, so as to

more effectually check the draft by bringing the hot air within the said pipe in contact or conjunction with cold air admitted from the room surrounding such pipe through said vertical cylinder-damper, in the manner substantially as herein described and set forth.

2. The combination of the vertical cylinder-damper B² with the horizontal damper C, arranged immediately over the said vertical cylinder damper B², in the manner substantially as and for the purposes herein described and set forth.

In testimony whereof I have on this 9th day of January, 1864, hereto set my hand.

J. A. LAWSON.

Witnesses:

MARCUS P. NORTON,
CHAS. D. KELLUM.