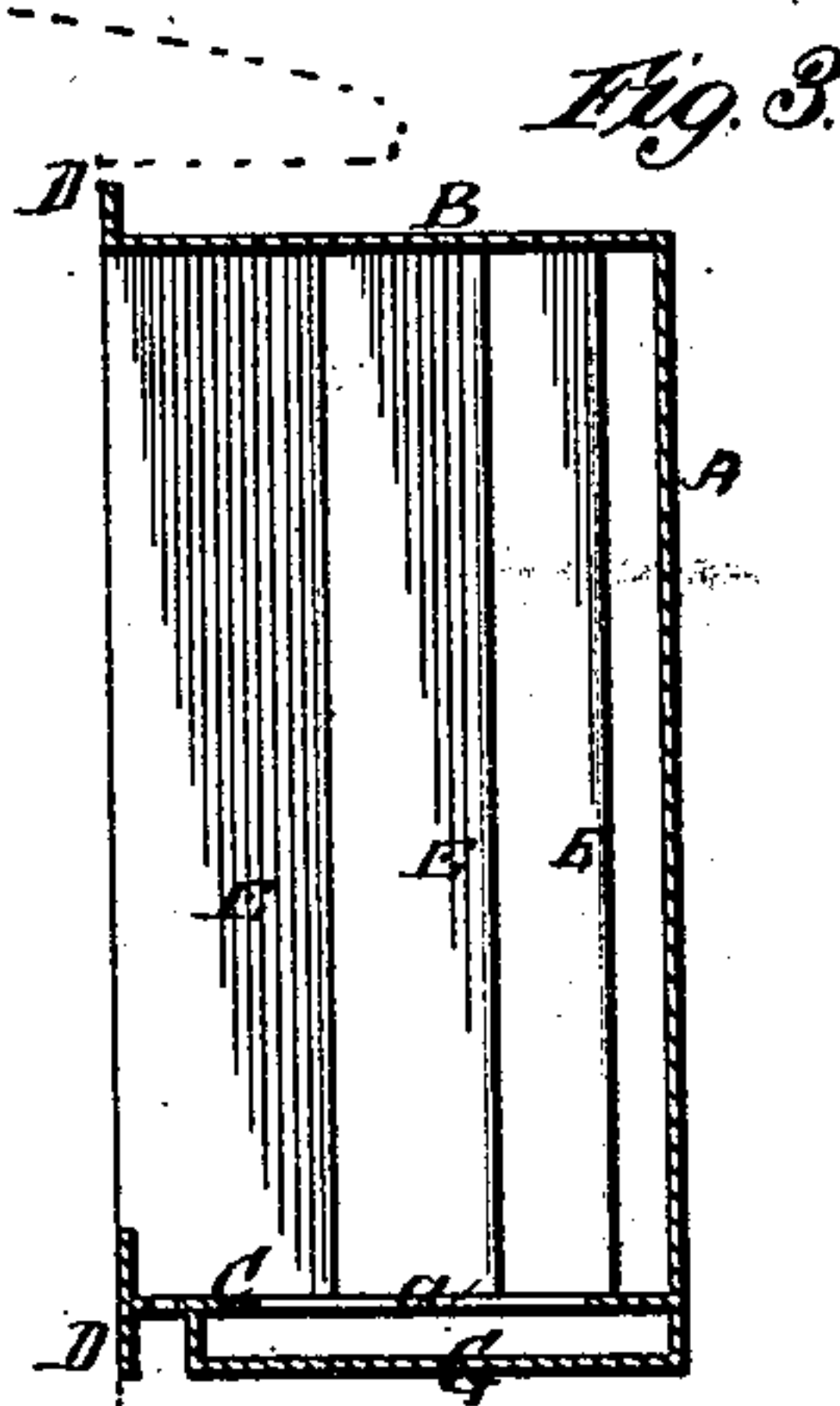
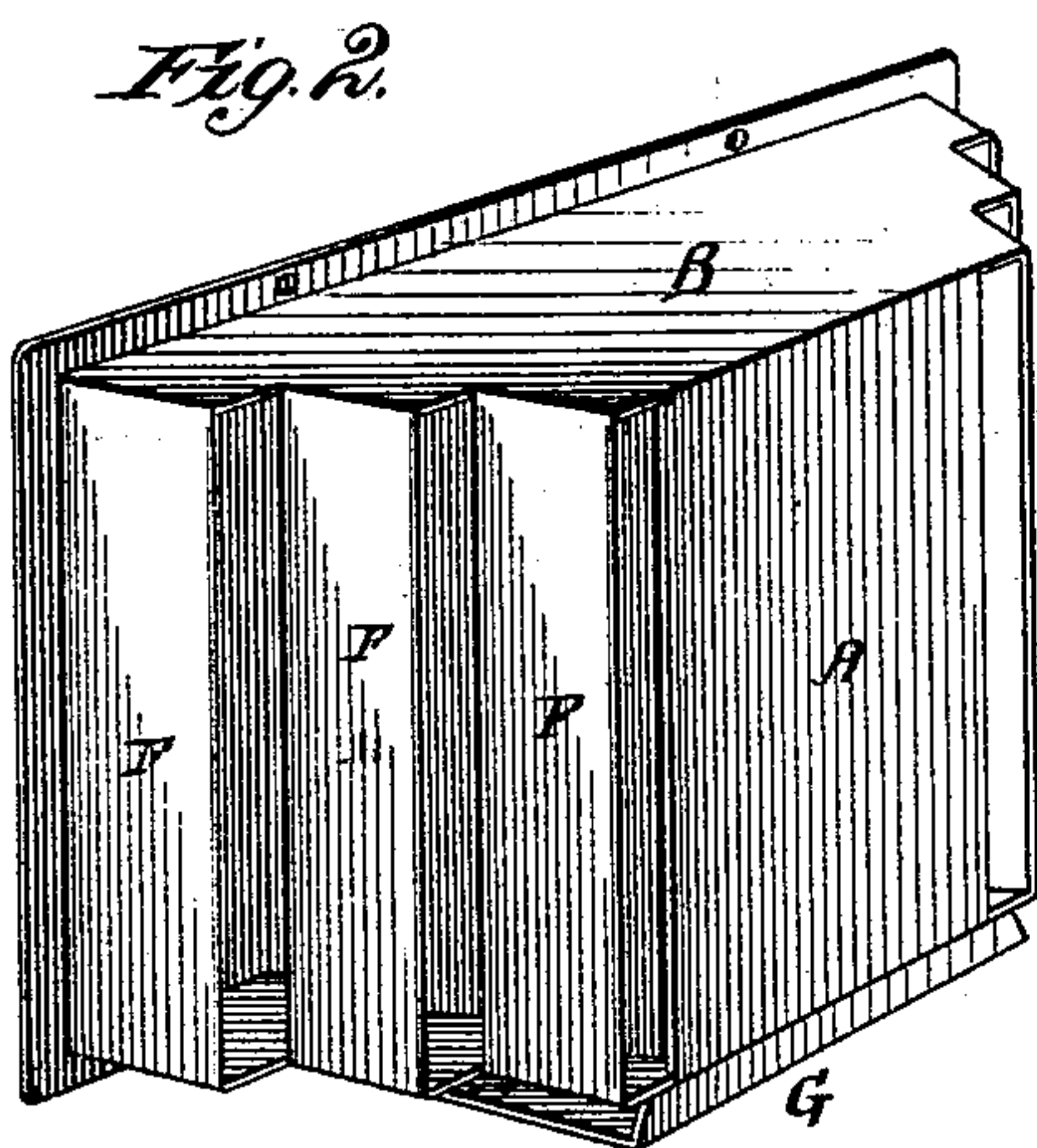
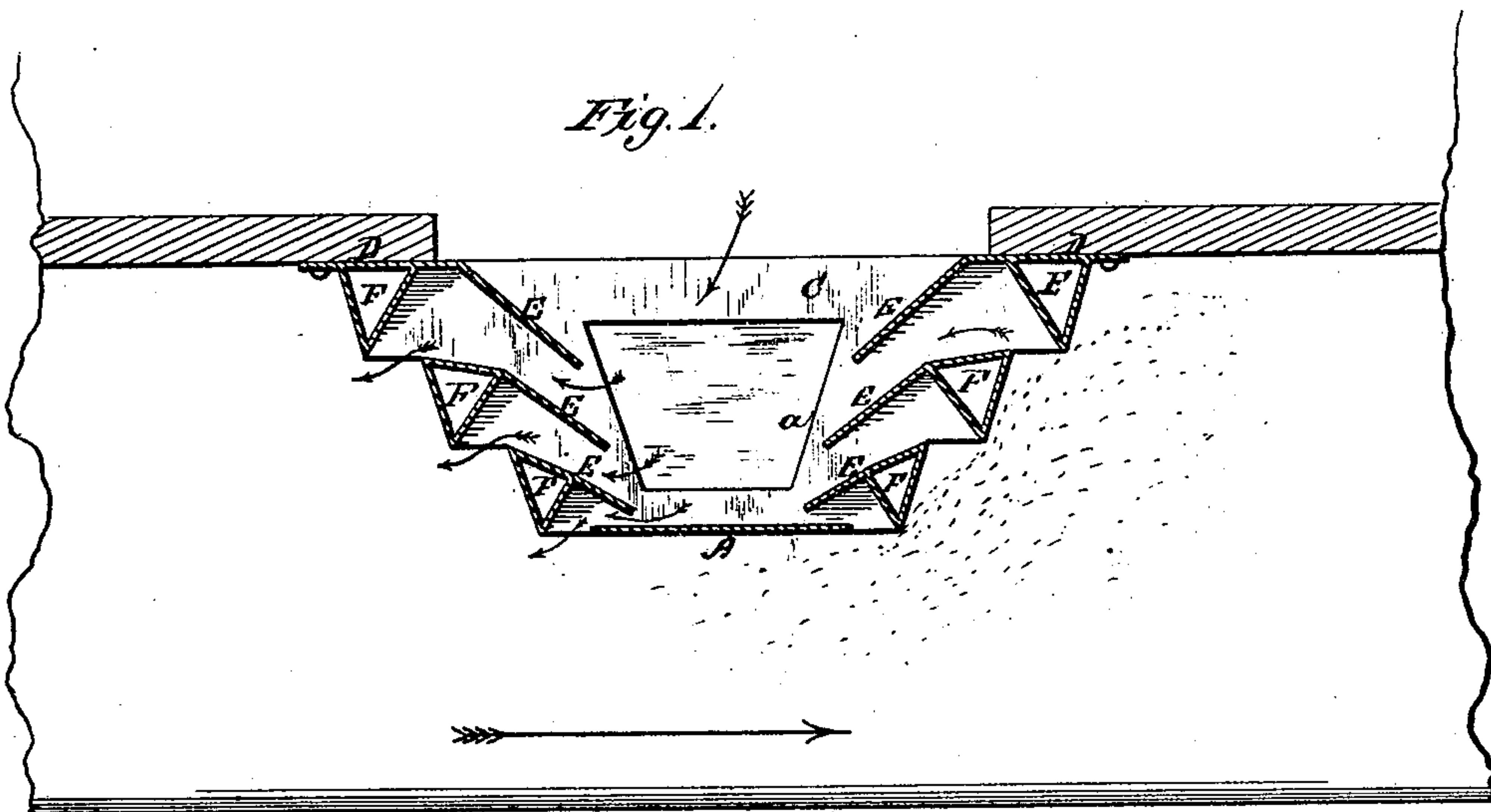


(No Model.)

W. H. SMITH.
Ventilator.

No. 236,639.

Patented Jan. 11, 1881.



Witnesses.

Robert Everett
E. A. Dick

Inventor.

William H. Smith
by M. Bailey
his Attorney.

UNITED STATES PATENT OFFICE.

WILLARD H. SMITH, OF BROOKLYN, NEW YORK.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 236,639, dated January 11, 1881.

Application filed October 28, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLARD H. SMITH, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

My invention has reference to what are known as "side wall ventilators," used on boats and railway-cars, principally the latter, to induce outward draft through the ventilator from within the moving car or boat.

It consists in combining with the deflecting-plates guards which serve as deflectors, to prevent too much air from entering through the front passages, and as shields to prevent the entrance of dust and cinders.

It also consists in the combination, with the ventilator, of a horizontal and longitudinal draft-flue below the same, and communicating with the interior of the ventilator through an opening in the bottom plate of the latter.

When the car to which the ventilator is attached is in motion, air draws through this draft-flue without obstruction. Such cinders and dust as may happen to enter the ventilator drop down into the draft-flue, and are carried off at once by the air-current passing there-through.

To enable those skilled in the art to understand and use my invention, I will now proceed to describe the manner in which the same is or may be carried into effect by reference to the accompanying drawings, in which—

Figure 1 is a horizontal longitudinal section of a ventilator embodying my improvements attached to the upper part of a car. Fig. 2 is a perspective view of the ventilator. Fig. 3 is a transverse vertical section of the same.

A is the outer plate of the ventilator; B C, the top and bottom plates, and D the flange by which the ventilator is secured to the car. E are the deflecting-plates.

The parts thus far described may be arranged with relation to one another in the usual way, or in the manner described and shown in another application filed by me for Letters Patent, now pending in the United States Patent Office.

In order to check the direct entrance of air

at the front into the channels or passages between the deflecting-plates, I provide guards F, which, while leaving the outer ends of these passages open, still shield the passages from direct entrance of air at the front, and at the same time prevent, to a great extent, the entrance therein of dust and cinders. The preferred form of these guards is that of a V, as shown in the drawings, this arrangement giving the air passages or channels an approximately V form, which is productive, in practice, of excellent results.

The guards are effective to exclude dust and cinders to a great extent. In order, however, to provide for clearing the ventilator of such solid matter as may enter notwithstanding the guards, I combine with the ventilator a horizontal and longitudinal draft-flue, G, open from end to end, arranged beneath the ventilator, and communicating with the interior of the same through an opening, *a*, in the bottom plate, C. Such solid matter as may enter the ventilator through the channels between the deflecting-plates will fall through the opening *a* into the draft-flue, and will at once be swept out by the air which continuously rushes through the flue when the car is in motion.

A side-wall ventilator provided with my improvements I find to be entirely effective, maintaining a constant draft outward from the body of the car, and excluding cinders and dust so completely that I am enabled to dispense with the wire-gauze screen usually employed to cover the communicating opening between the ventilator and the car. Rain also is excluded, whether the car be moving or standing still.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In side-wall ventilators, the combination, with the deflecting-plates, of guards arranged at the outer ends of the passages or channels between said plates to shield said passages from direct entrance of air at the front and to deflect dust and cinders to one side of said passages, substantially as and for the purposes hereinbefore set forth.

2. The guards of approximately V form, in combination with the deflecting-plates, substantially as hereinbefore set forth.

5 3. In combination with the body of the ventilator, the draft-flue arranged beneath and in communication with the interior of said ventilator, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 22d day of October, 1880.

WILLARD H. SMITH.

Witnesses:

E. A. DICK,
M. BAILEY.