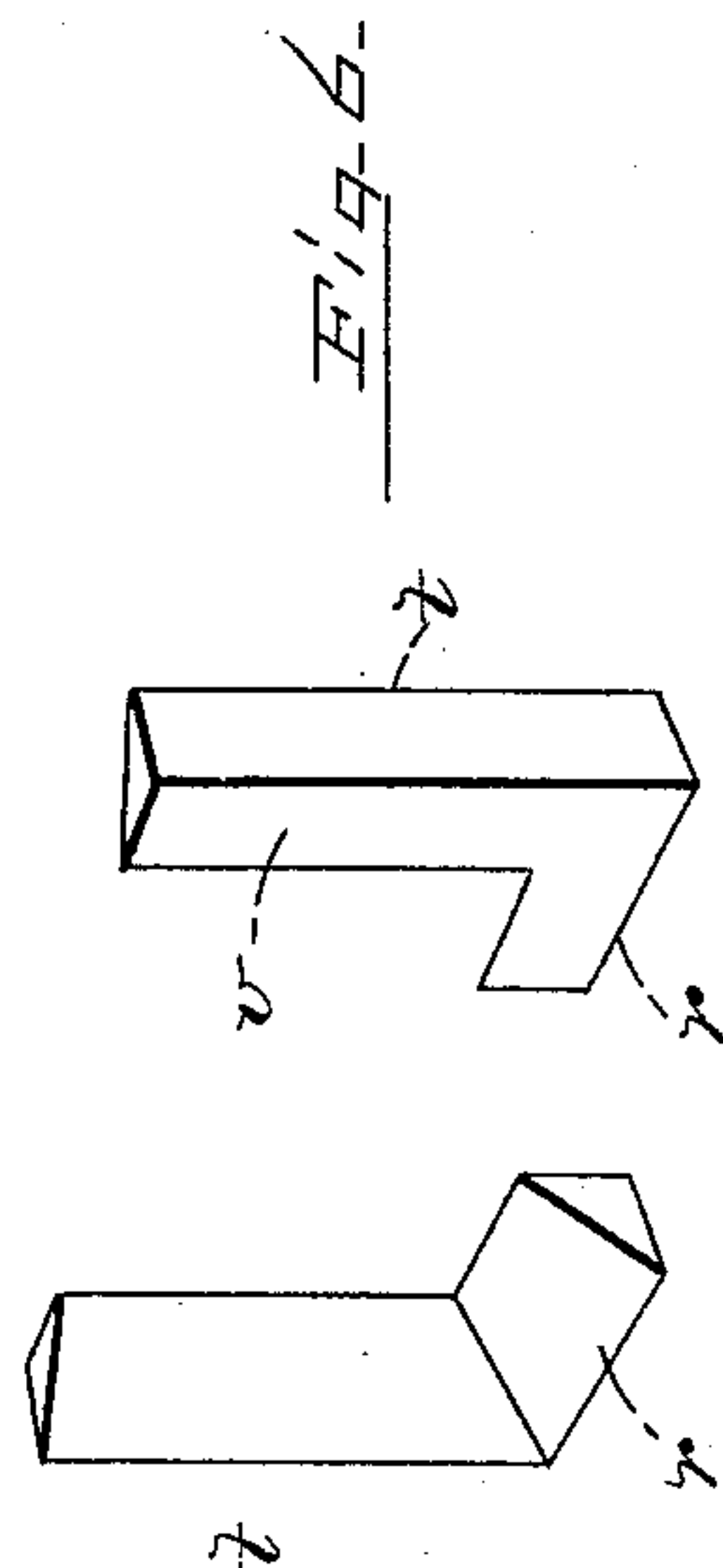
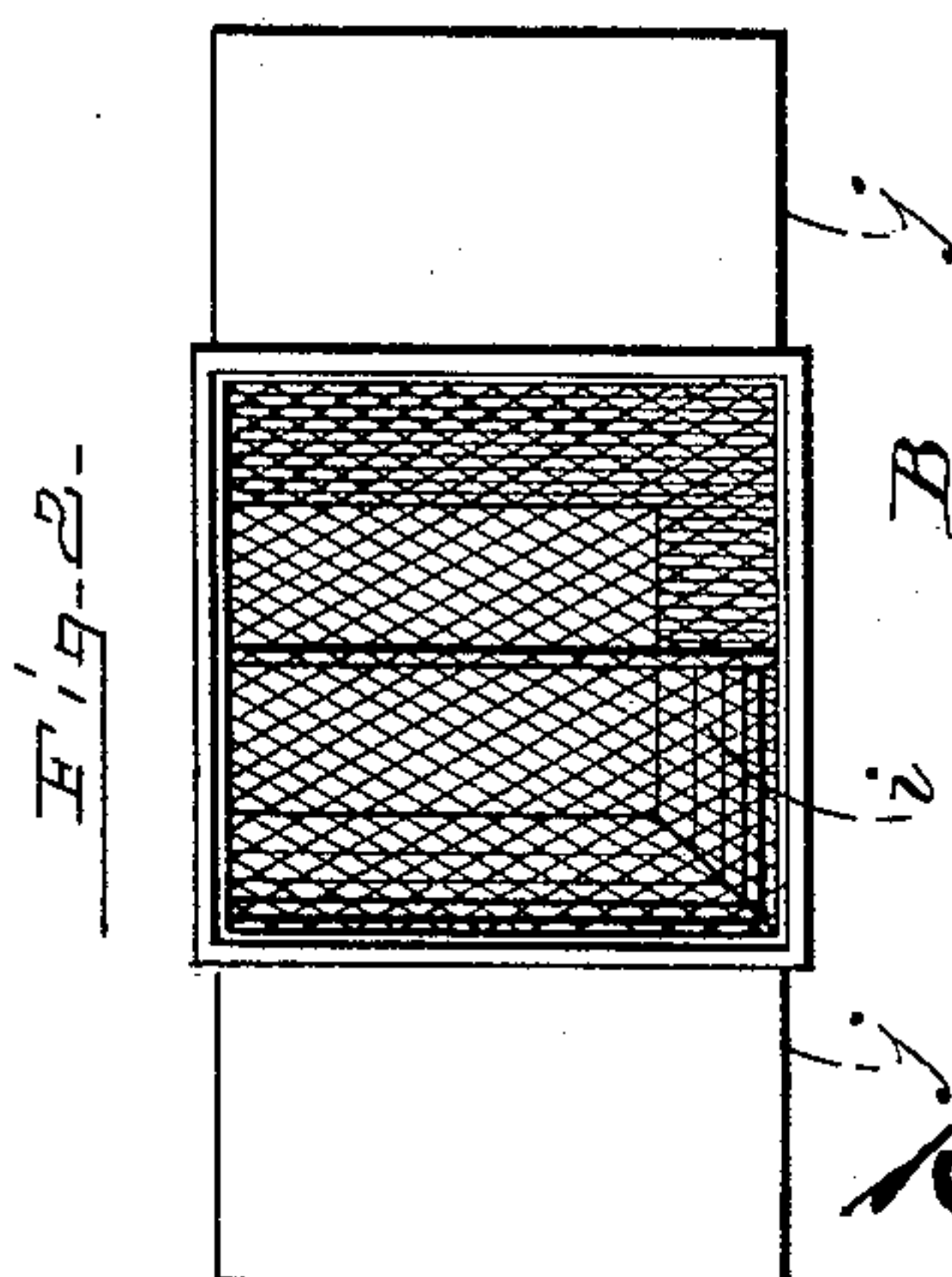
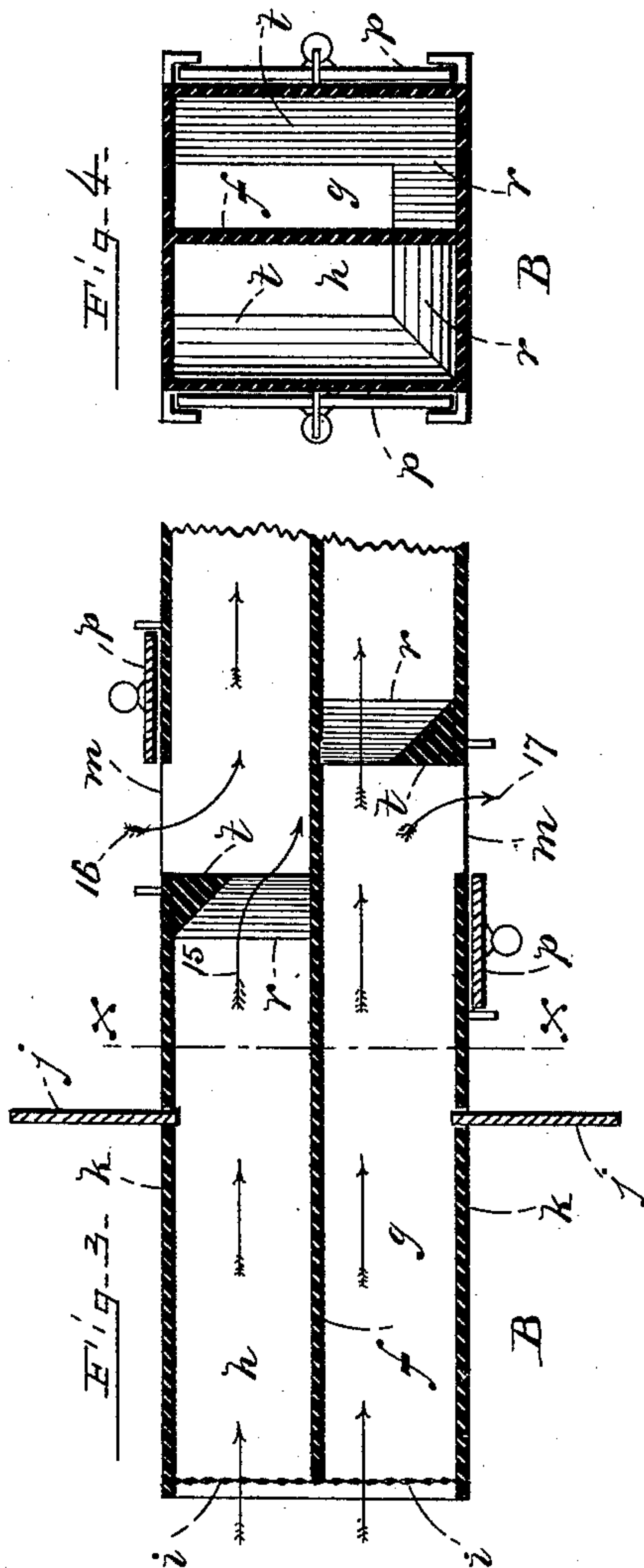
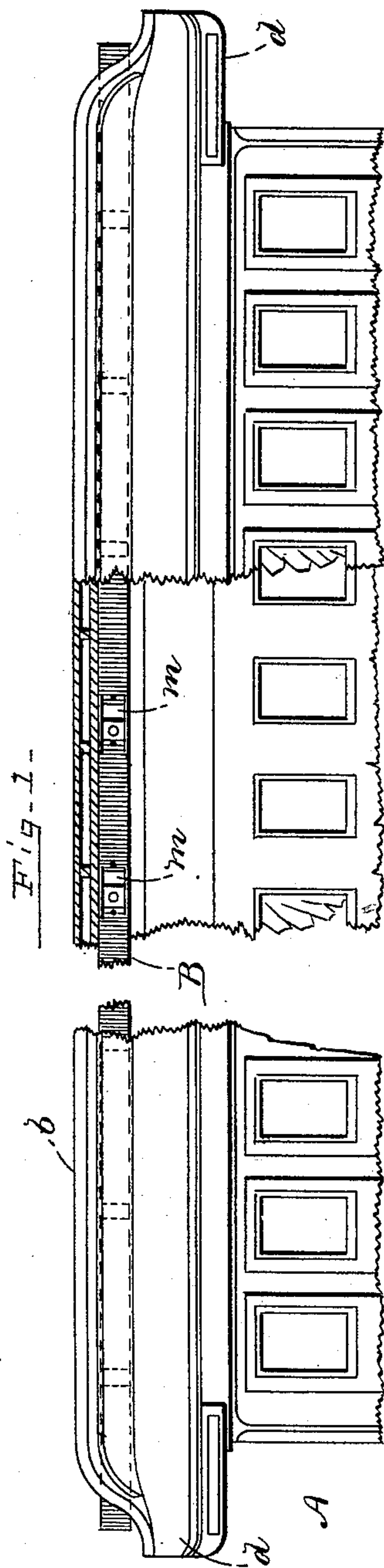


(No Model.)

R. C. NICHOLS.
DEVICE FOR VENTILATING VEHICLES.

No. 452,383.

Patented May 19, 1891.



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DEVICE FOR VENTILATING VEHICLES.

SPECIFICATION forming part of Letters Patent No. 452,383, dated May 19, 1891.

Application filed February 16, 1891. Serial No. 381,638. (No model.)

To all whom it may concern:

Be it known that I, ROBERT C. NICHOLS, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Devices for Ventilating Vehicles, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation showing my improved device in use on a railway-car; Fig. 2, an end elevation of the ventilator; Fig. 3, a horizontal section of the same; Fig. 4, an end elevation, the screws being removed; and Figs. 5 and 6 are perspective views of the current-directors, respectively, having different faces.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a device for ventilating street or railway cars and similar vehicles; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the car, and B the ventilator considered as a whole.

The ventilator comprises a box, preferably rectangular in cross-section, which is arranged longitudinally of the car in any convenient position. As shown, it is disposed under the monitor-roof *b*, its ends projecting over the hoods *d*.

The box is divided centrally and longitudinally by a vertical partition *f* into two compartments *g h*. The ends of the compartments are protected by screens *i* of gage suitable to prevent cinders from entering. Each compartment may be closed or partially closed by regulating-slides *j*, passing transversely through their outer walls *k*. At intervals in the walls *k* openings *m* are formed, leading into the car-chamber. These open-

ings may be closed by slides *p*. At one side of the opening *m* in the compartment *h* a horizontally-arranged vertically-inclined or beveled flange or current-director *r* is secured transversely of the floor of said compartment. To the end of said flange against the wall *k* a vertically-arranged laterally-beveled flange *t* is secured. The opposite faces of said flanges are vertical, as shown at *v* in Fig. 5, and flush with the adjacent opening *m*. Similar flanges *r t* are arranged in like manner at the opposite side of the corresponding opening *m* in the compartment *g*.

In the use of my improvement, the car being supposed to be traveling from right to left as viewed in the drawings, cold air entering the compartment *h* through the screen *i* strikes the beveled faces of the flanges *r t* and is thrown in the direction indicated by arrow 15 in Fig. 3 against the partition-wall *f* and by the opening *m*. A draft being thus set up in said opening, the vitiated air from the interior of the car is drawn therethrough in the direction indicated by arrow 16, and being carried along by the current, as described, is discharged at the rear end of the ventilator-compartment *h*. The flanges or current-directors *r t*, being disposed at the same side of the succeeding openings *m*, cause the air to pass with like effect by each of said openings. The fresh air entering at the same time the compartment *g* of the ventilator strikes the vertical side of the flanges *r t* and a portion thereof is directed through the opening *m* in the direction of arrow 17 in Fig. 3 into the interior of the car, a current also passing by said flanges and being directed by succeeding flanges in the compartment through corresponding openings *m*. A constant circulation of air is thus set up within the car, fresh air entering from the ventilator-compartment *g* and falling and the heated or vitiated air rising and passing into the compartment *h*. The amount of air admitted can easily be regulated by the slides *j p* in a manner which will be understood without a more explicit description.

I do not confine myself to disposing the ventilator under the monitor-roof of the car, as it may be placed under the hood or in any other suitable position; nor do I confine myself to constructing the ventilator of a single

box divided by the partition *f*, as two independent boxes may be used, respectively arranged to perform the functions of the compartments *g h*, said boxes being located in different positions in the car, if desired.

Having thus explained my invention, what I claim is—

1. A ventilating device for vehicles, comprising a longitudinally-arranged box-opening through the ends thereof and divided by a longitudinal partition into two compartments, openings leading from the interior of the vehicle into said compartments, and current-directors secured within said compartments, respectively, at opposite edges of said openings, the directors in one compartment being arranged to throw the fresh-air current against said partition and in the opposite compartment to eject it through said openings, substantially as described.

2. The ventilator B, provided with the compartments *h g* and openings *m*, in combination with the beveled flanges or current-direct-

ors *r t*, arranged in said compartments, substantially as described.

3. A ventilating device for vehicles, comprising two tubes or air-conductors open at their ends and arranged longitudinally of the vehicle, a series of openings in said conductors leading into said vehicle, and current-directors disposed within said conductors to create a draft from the vehicle to one conductor and from the companion conductor into said vehicle through said openings, substantially as described.

4. A car A, in combination with the ventilator B, provided with the compartments *h g*, having screened ends *i* and openings *m*, means for regulating the currents through said compartments and openings, and the beveled current-directors *r t*, arranged at the edge of said openings, substantially as described.

ROBERT C. NICHOLS.

Witnesses:

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