

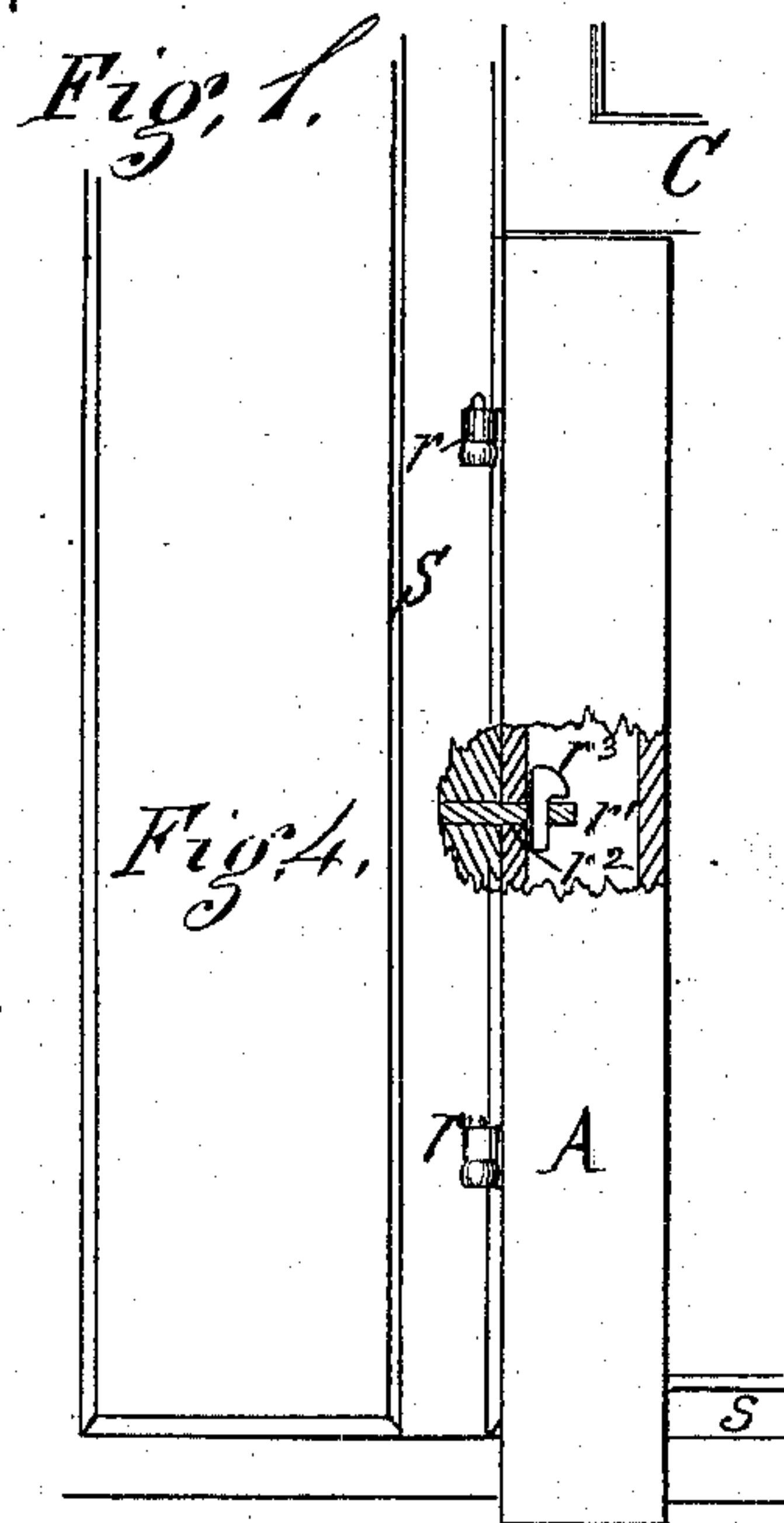
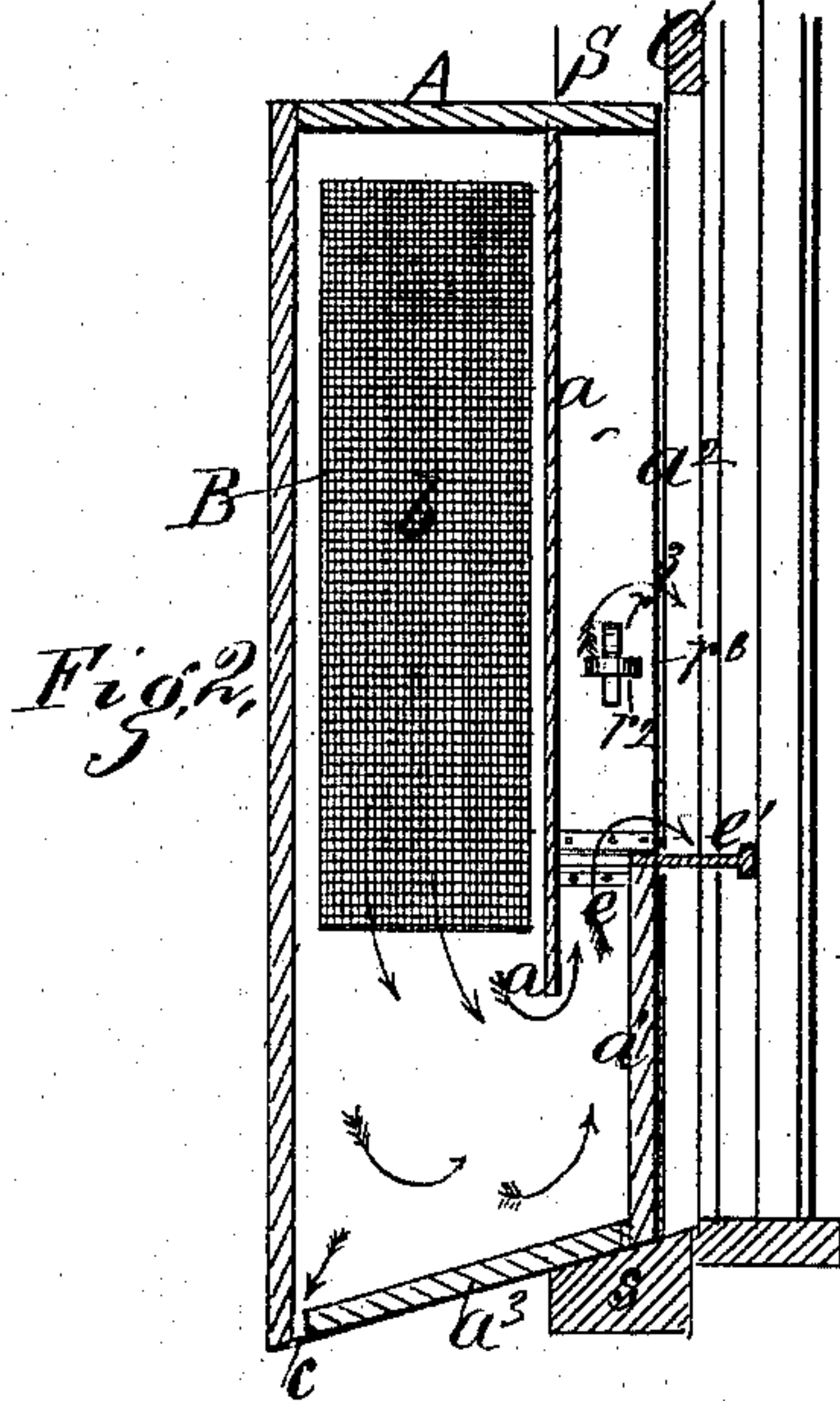
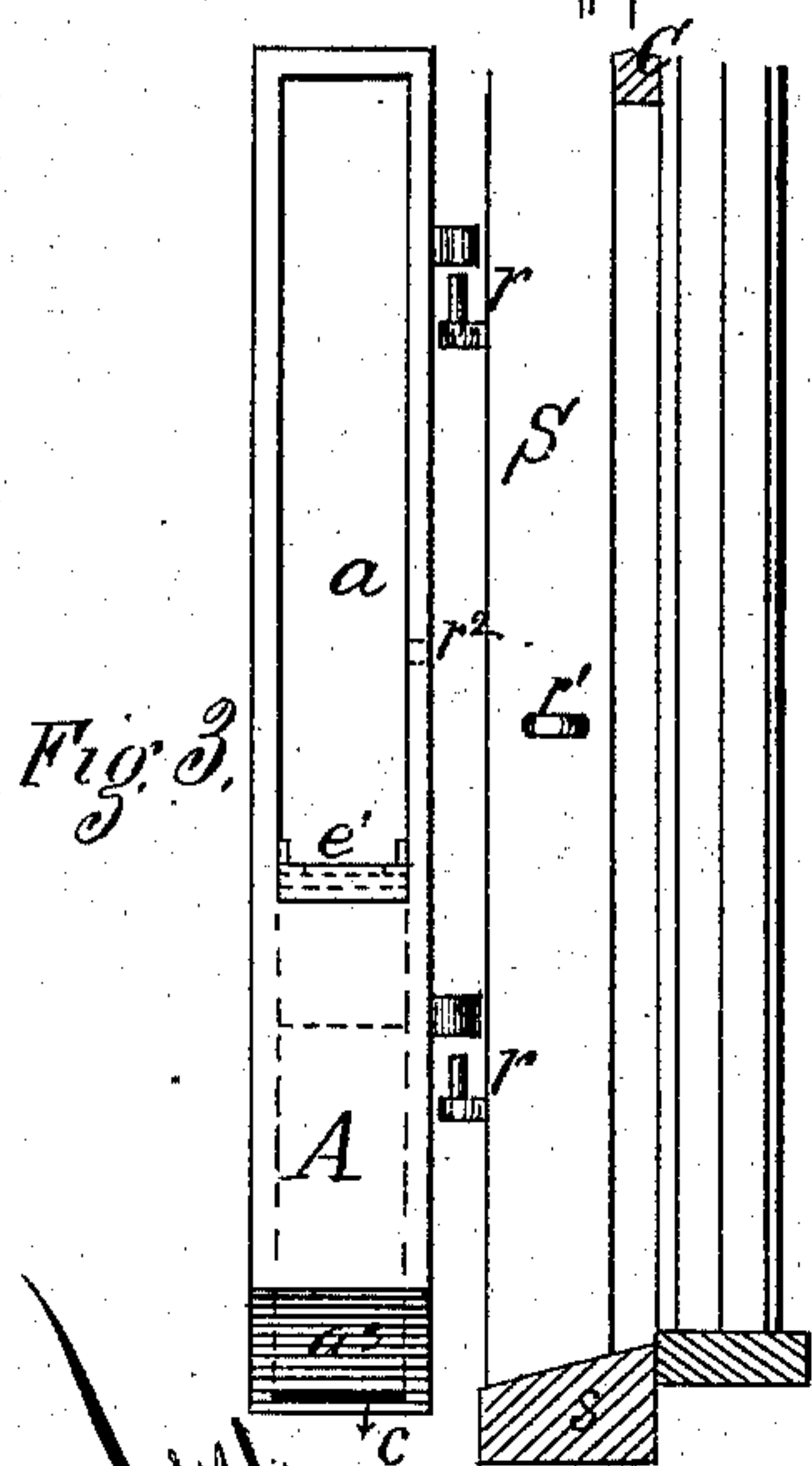
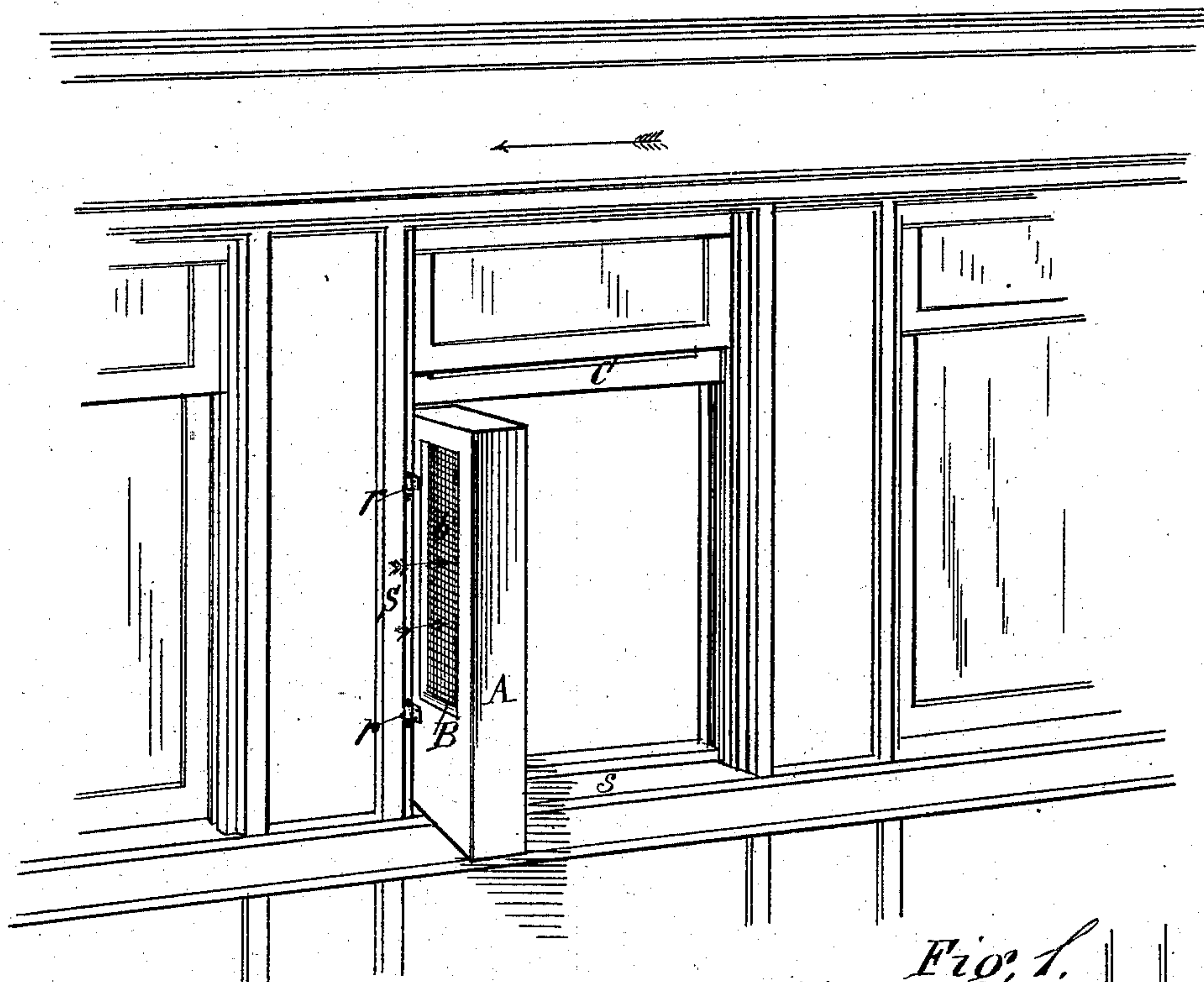
(No Model.)

C. C. MAC CONNELL.

CAR VENTILATOR AND DUST ARRESTER.

No. 252,390.

Patented Jan. 17, 1882.



Witnessed,
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Inventor Charles C. MacConnell
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UNITED STATES PATENT OFFICE.

CHARLES C. MACCONNELL, UNITED STATES ARMY.

CAR-VENTILATOR AND DUST-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 252,390, dated January 17, 1882.

Application filed October 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. MACCONNELL, Captain Fifth Artillery, U. S. A., stationed at Atlanta, Georgia, have invented or discovered a new and useful Improvement in Car-Ventilators and Dust-Arresters; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a perspective view of my improved car-ventilator and dust-arrester, showing the same applied to a car as in use. Fig. 2 shows the same by an enlarged view in sectional elevation. Fig. 3 is a view in elevation of the inner edge of the ventilator and of a part of the window-frame, showing the ventilator in position parallel with the side of the car for removal or putting in place; and Fig. 4 is a view in elevation, showing the ventilator secured in working position, part of the ventilator and window-frame being broken away to expose the staple or eye and key.

In the running of railway-cars strong currents of air are created close to and along the sides of the cars toward the rear, and upon raising windows on either side such currents pass into the car, principally at the forward edge of the open window, at a comparatively sharp angle with or slight inclination from the direction of the cars' motion. The strength of such currents is considerable, and they tend strongly to carry with them dust from the road-bed and smoke and cinders from the locomotive to such extent as often to render the ventilation of cars by open windows impracticable. Boards, blinds, or shields of various forms have been used on the front edge of car-windows for arresting such dust and dirt, but in so doing the air is also to a large extent prevented from entering the window, and consequently the desired ventilation or amount of fresh air is but partially secured.

The purpose of my invention is to permit entrance into the car of a greater or less amount of such currents of air, as may be desired, and at the same time arrest or prevent the entry of dust, cinders, &c., whereby the desired amount of air can be secured comparatively pure and free from dirt.

My improved device is constructed as follows:

A box, A, is made of wood or other suitable materials—say about eight inches in width, three or four inches in thickness, and in length about equal to the full vertical movement given to the car-window when desired. The interior of such box is divided longitudinally by a partition, *a*, which extends from the top downward—say three-fourths of the length of the box, more or less. This partition *a* is placed, by preference, about one-third the width of the box from its inner edge, *a'*. The upper part of this inner edge, *a'*, is cut out, leaving an opening, *a*², from the top of the box downward—say from one-half to two-thirds the length of the box—stopping short of or above the lower end of partition *a*, however, forming thereby a passage, *e*, between *a* and *a'*, which serves as an uptake flue or air-passage, leading to the main discharge-opening *a*². On the other side of partition *a*, toward the outer edge of the box, is made an opening, B, in the front side of the box, which opening is covered with a screen, *b*, of fine wire-gauze. The size and form of this opening B may be varied, as desired, with reference to admitting the desired amount of air. The screen is employed to arrest dust, cinders, &c., and will to a large extent effect this object, though more or less fine dust will often pass through it with a strong current of air.

In order to separate such dust as may pass the screen, I carry the partition *a* below the openings B and *a*², as shown in Fig. 2, and also provide one or more small openings, *c*, in the bottom of the box. Then as air enters through the screen it will take a downward course, dipping under partition *a*, and then rise through passage *e* and pass through opening *a*² into the car. In so doing, however, a part of the air will find escape through the bottom opening, *c*, and will carry with it all or the greater part of the dust which may come into the box, such dust being separated from the main current of air by the force of gravity, assisted by the momentum secured by the downward course of the inflowing air and by the upward course to the discharge. It is obvious, however, that a material part of the advantages described may be secured even when the opening B extends

below partition a , since even in that case the principal part of inflowing air must take a downward course toward the dust-outlet c in order to pass under the partition.

5 In order to regulate the supply of air, any suitable form of valve—as, for example, a slide-valve, e' —may be arranged to open and close the passage e , as may be desired, or an equivalent valve device may be placed at some other convenient point in the air-passage between the inlet and outlet.

I have shown the bottom a^3 of the box inclined downward, corresponding with the slope of the window-sill s . This is done partly to secure a better rest on the sill and partly to give an incline to the bottom toward the opening e , and prevent accumulation of dust on the bottom. Such a ventilating-box may be secured in place in various ways. The means shown 20 consists of an open hook-and-eye hinge, r , Figs. 1, 3, and 4, secured to the box and window-case S in the usual way of setting such hinges, whereby the box may be raised off or put in place at pleasure by turning it against 25 the side of the car, as illustrated in Fig. 3. In order to hold the box at right angles to the side of the car, an eye, r' , may be set in the window-frame, which protrudes through a slit, r^2 , in the side of the box. A key, r^3 , binds the box in 30 place, preventing it from swinging on its hinges r . Any other convenient mode of fastening the box may be employed, however.

The position of the box or ventilator is against the side of the window in the direction of the cars' motion, and it may be placed outside of the window-sash C , as shown, and designed for use when the window is raised; or it may be fitted in or against the window-frame in any convenient way so as to open into the car at 40 the side of the window whether it be up or down. This latter adaptation is very desira-

ble, especially in sleepers, enabling a passenger to obtain any desired supply of fresh air without raising the window.

When it is desired to reverse the direction 45 of motion of the car for a regular run the ventilators may be shifted from side to side of the car, so as to bring them (as rights and lefts) at the forward side of the windows.

I claim herein as my invention— 50

1. A ventilator for use in car-windows, consisting of a box, A , having in combination a screen-protected air-inlet, B , in its side face, an air-outlet, a^2 , in its inner edge, a partition, a , extending from the top of the box downward 55 below the outlet a^2 , and a dust-outlet, c , in the bottom of the box, substantially as and for the purposes described.

2. In an inclosed ventilator adapted for use in a car-window, the combination of a screen- 60 protected air-inlet, an air-passage leading therefrom downward within the ventilator, a dust-escape opening in the line of downward flow of air, and an air-passage leading from the inflow-passage upward to the air outlet or 65 discharge, substantially as and for the purposes set forth.

3. In a ventilating-box, A , the combination of screen-covered inlet B , dust-outlet c , an inflow air-passage leading downward from inlet 70 B to outlet c , an air-passage, e , leading upward from the inflow-passage to a main air-outlet, and means for opening and closing the air passage between the inlet and outlet, substantially as set forth. 75

In testimony whereof I have hereunto set my hand.

CHARLES C. MACCONNELL.

Witnesses:

C. L. PARKER,
C. M. GORMLY.