

A. J. MORRISON.
Car-Ventilators.

No. 142,807.

Patented September 16, 1873.

Fig. 1.

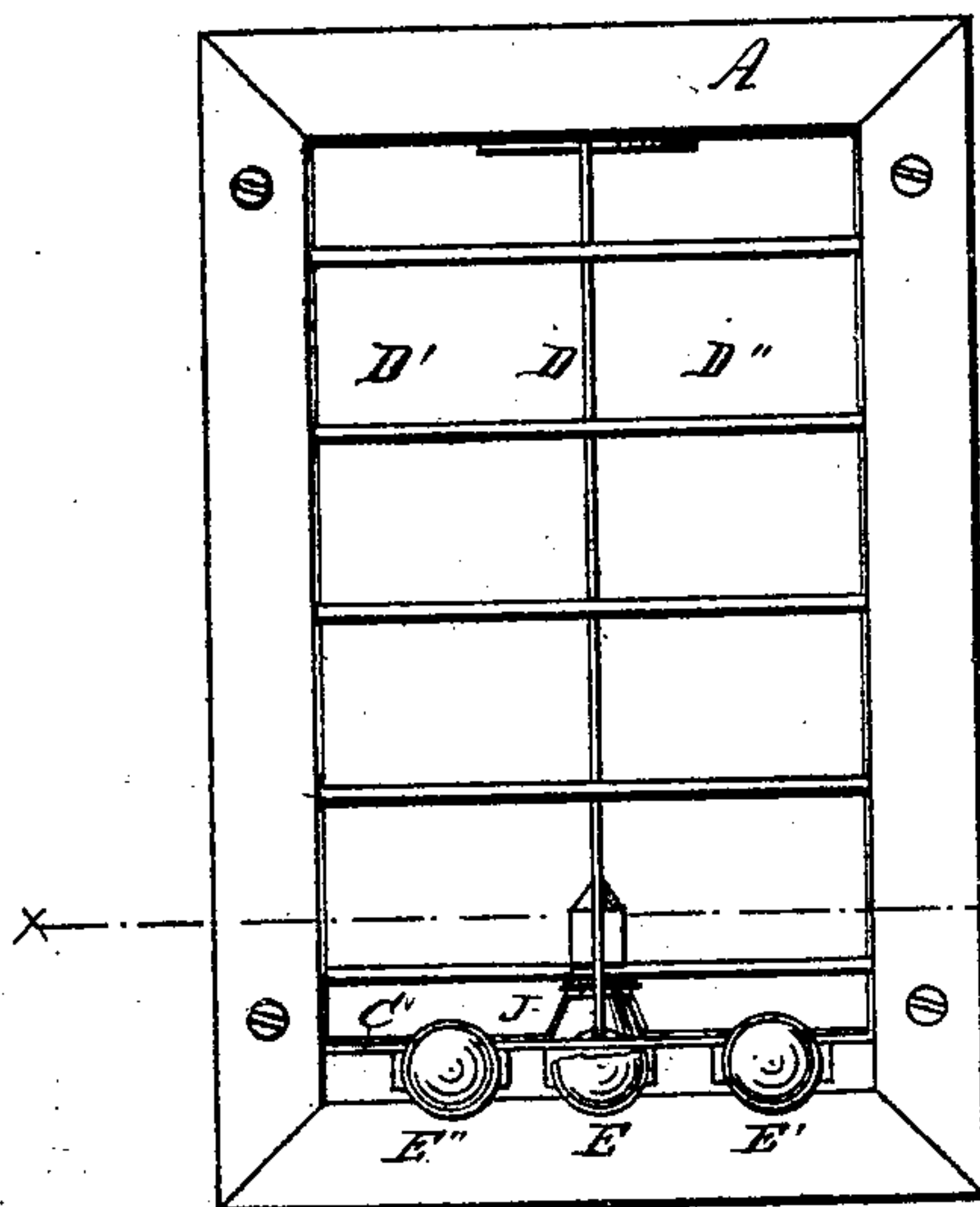


Fig. 3.

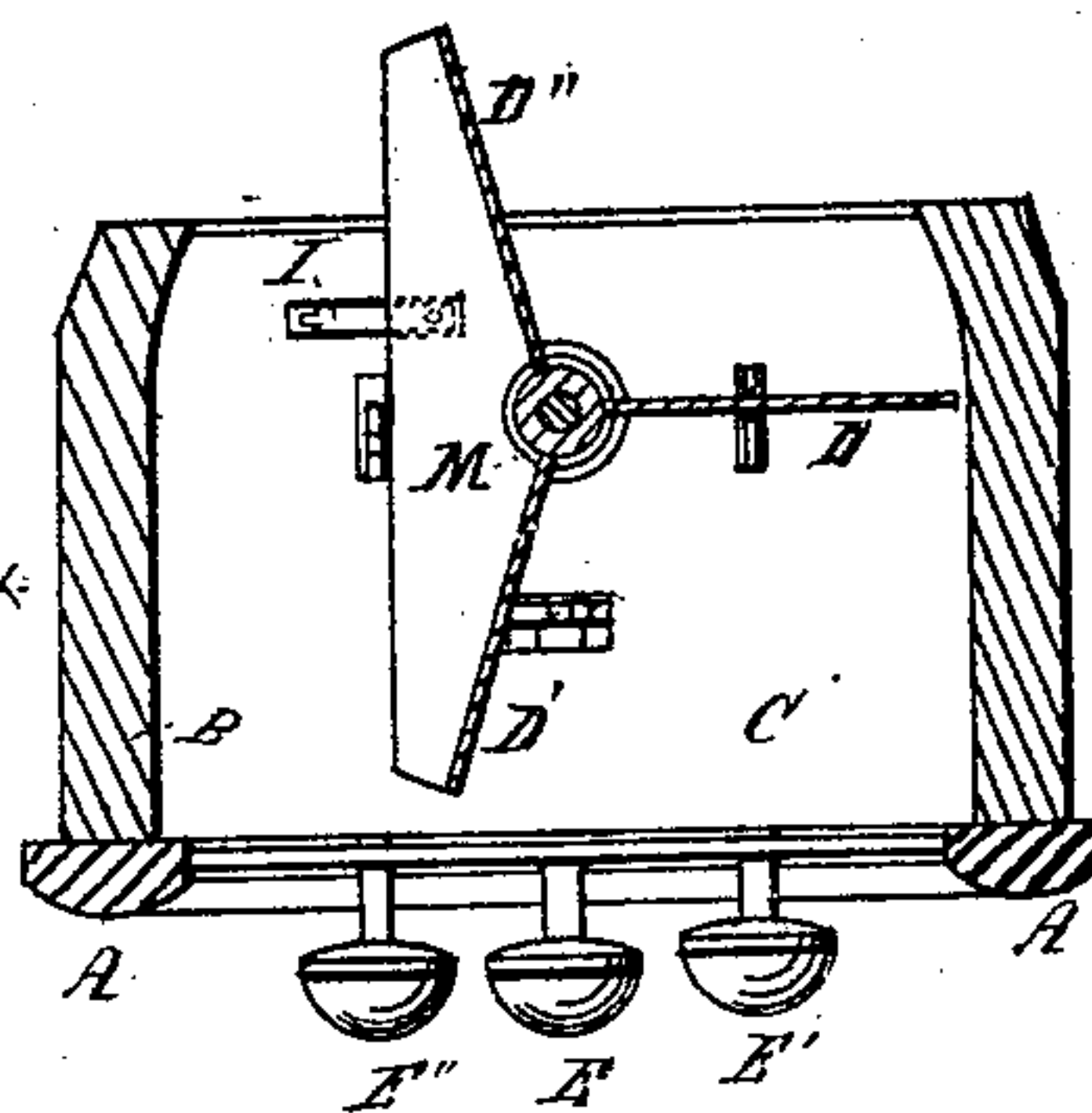


Fig. 2.

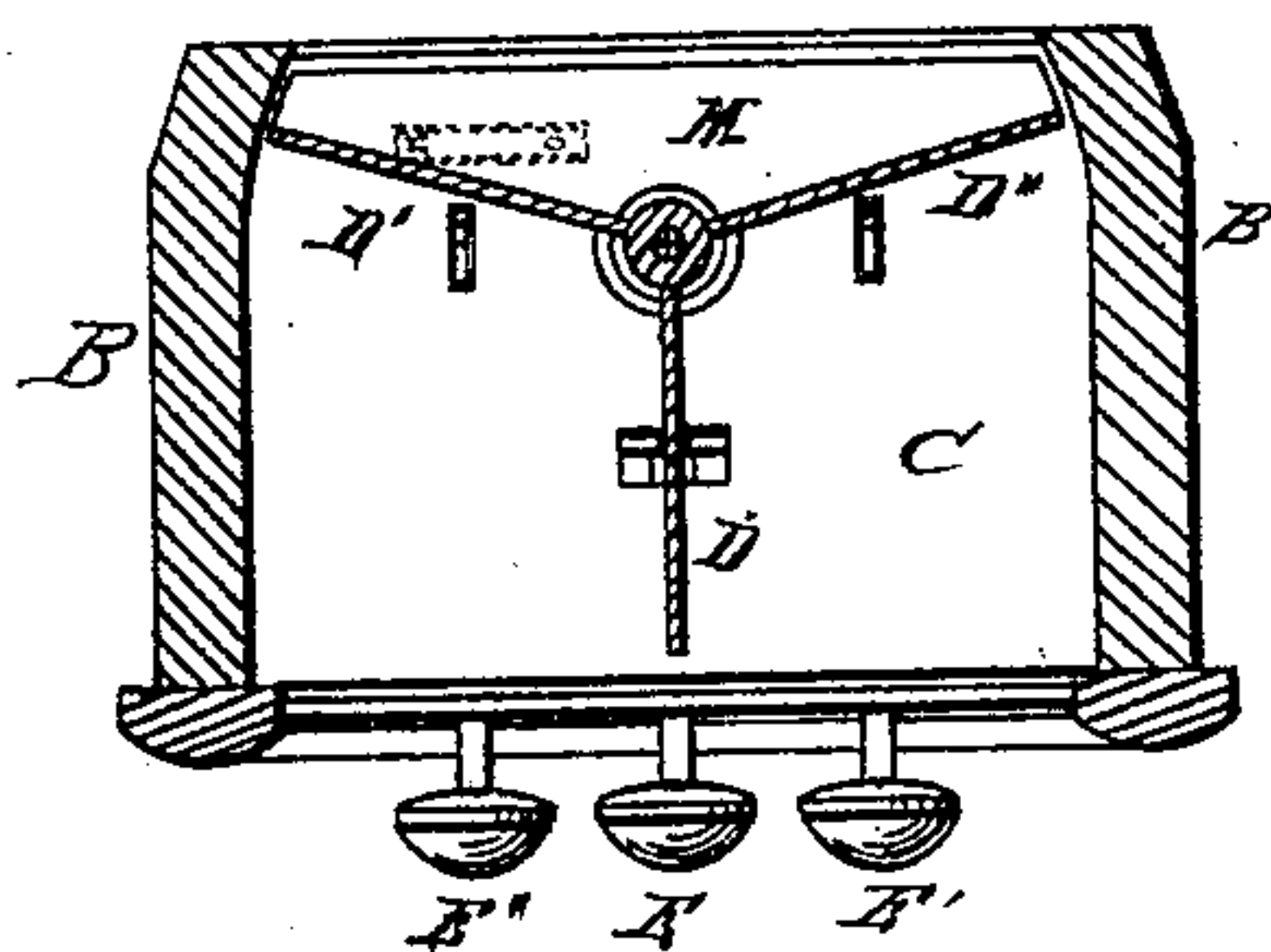


Fig. 4.

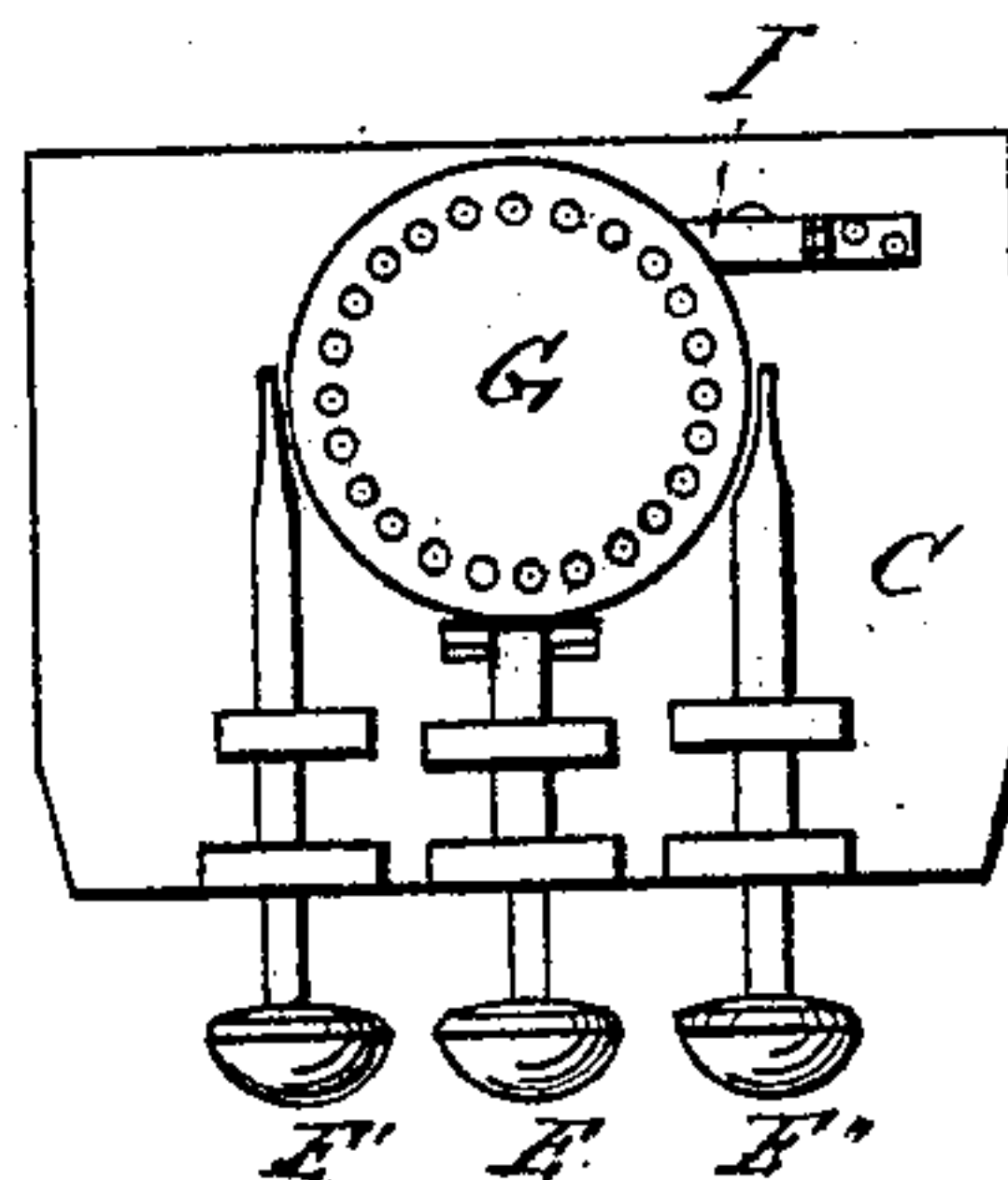


Fig. 5.

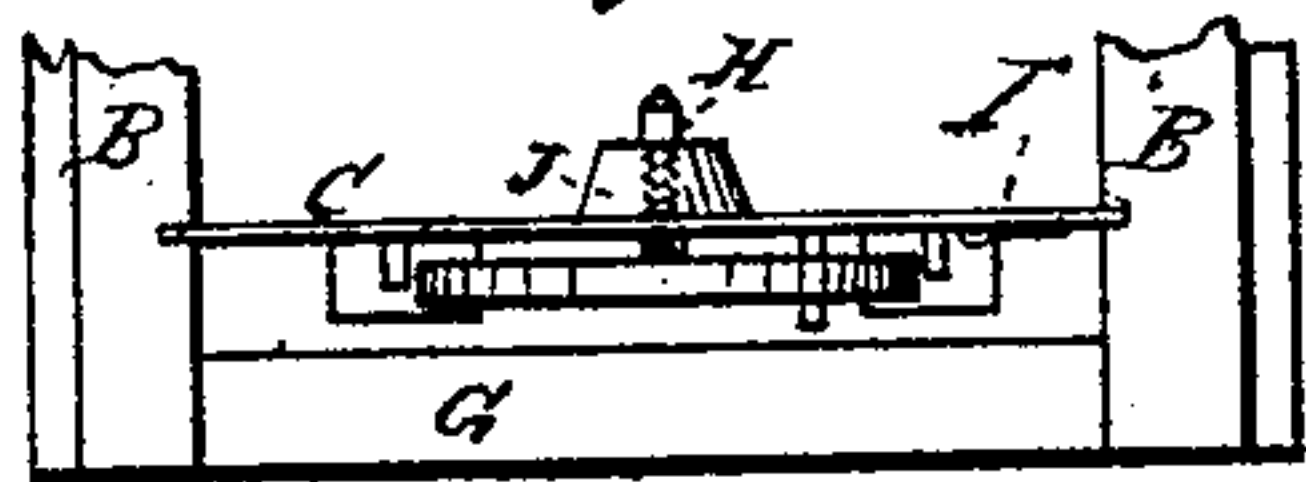
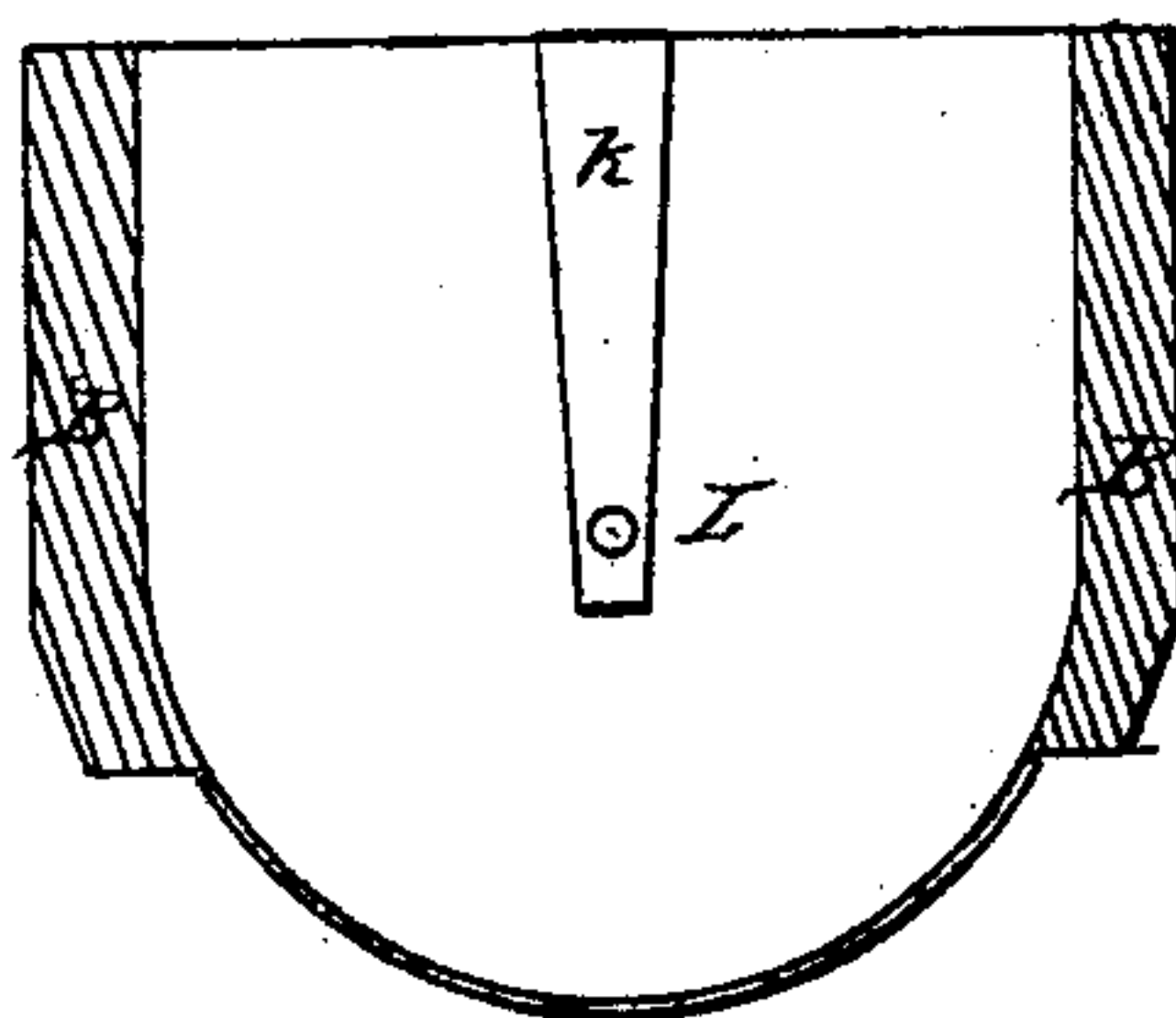


Fig. 6.



Witnesses

Julius Sanderson,
George D. Batterson

Inventor

Andrew J. Morrison

UNITED STATES PATENT OFFICE.

ANDREW J. MORRISON, OF TROY, ASSIGNOR OF ONE-HALF HIS RIGHT TO
THOMAS W. C. MOORE, OF MOHAWK, NEW YORK.

IMPROVEMENT IN CAR-VENTILATORS.

Specification forming part of Letters Patent No. **142,807**, dated September 16, 1873; application filed
June 6, 1873.

To all whom it may concern:

Be it known that I, ANDREW J. MORRISON, of the city of Troy, county of Rensselaer and State of New York, have invented a Railway-Car Ventilator, of which the following is a specification:

The object of my invention is, first, to introduce a free circulation of pure cooling air through the car during summer travel without drawing in cinders with the air during the process—a thing not effectually accomplished by any ventilator now in use; second, to expel foul air from within the car.

The machine is fully illustrated in the accompanying drawings.

Figure 1 is a front elevation of my railway-car ventilator as seen from the inside of the car, the ventilator being closed.

A is a molding, attached by screws to the case B. C is the inside bottom of case B. D, D', and D'' are three rectangular wings, made of metal, wood, paper, cotton, or rubber, and each firmly joined to the other at one of their like edges, one of their longer edges being preferable, and at such inclination to each other that two of the angles formed thereby, Fig. 2, as D D' and D D'', shall be equal to each other, while the remaining angle, D' D'', is one-fifth larger than either of the others. These wings so attached to each other form a wheel, which, when the proper force is applied, will revolve about the line in which they are joined together as an axis. The wings thus arranged are supported in the case B, and made to revolve on their axis between two centers, the one in the top and the other in the bottom of the case. The center in the upper part of the case is a socket, in which a point projecting from the axis plays, while the lower center is the point of an adjusting-screw, which plays, through the nut J fastened to the bottom C, into a socket in the lower end of the axis. By this screw the wings are adjusted to their proper place, and firmly held in position for revolving. The center or socket L in the top of the case is made of a metal strip, which slides to its place in grooves, and is there secured by the molding A. E, E', and E'' are three keys or spring-bolts attached to

the under side of the bottom C. If the ventilator is in motion, the spring-bolt E, pushed in, will, through a slot in the bottom C, catch the wing D at its lower edge, stop its revolving, and hold the ventilator closed, no matter in which direction—to the right or to the left—the car is proceeding. If the car is moving to the right, and it is desired to modify the current of air coming in, spring-bolt E', pushed in, will, through a slot in the bottom C, catch wing D at its lower edge, stop the revolutions of the wings, and maintain the ventilator half open to the left. On the other hand, if the car is proceeding left, spring-bolt E'', pushed in, will hold the ventilator half open in like manner to the right. The lower edge of the wing D is the only one of the three wings which will, at any time, catch on either of the spring-bolts. E' and E'' are slots in the lower edges of wings D' and D'', for passing over spring-bolt E when that bolt is not in use, and also when it is in use.

The form of that section of the case B from the axis of the wheel to the inside of the car is a parallelogram, its width double the width of either wing, and height the length of the wings, while that portion of the case from the axis of the wheel to the outside of the car is a longitudinal section of a hollow cylinder, in which the wings are made to revolve by the current of air produced by the car in motion. The top of this section of the case B is a half-circle, projecting beyond the side of the car and covering the top of the wings, while the edges of the sides and the bottom of the case are only flush with the side of the car.

Fig. 2 is a horizontal section of Fig. 1 in the dotted lines X X.

Fig. 3 is a horizontal section of the ventilator half open, in the dotted lines Y Y, Fig. 1, with a view of the bottom C and a triangular slip, M, fitted in the angle D' D'' between those two wings, close to their lower edges, and sloping downward and outward, to act as a water-shed when the ventilator is closed. In this figure spring-bolt E' is represented shoved in, holding wing D. Bolt E is also represented shoved in, holding the ventilator closed, in the dotted lines.

Fig. 4 is a view of the under side of the bottom C, showing the perforated head G of the adjusting-screw H and a portion of the drop-peg I for holding the screw stationary after being set.

Fig. 5 is an outside view of the lower edges of case B, the outer edge of bottom C, the edge of the perforated head G of the adjusting-screw H, the point of the drop-peg I in place, the nut J fast to the bottom C, and the point of the adjusting-screw H, on which the wings revolve.

Fig. 6 is the inside of the top of the case B, showing the metal slip K with the center or socket L. When the adjusting-screw is turned down and the molding A taken off, this metal slip and the bottom C, together with the wings, can be removed from the case.

If desired, the spring-bolts E, E', and E'' may be substituted by keys operating like the keys of a piano.

With the ventilator constructed as now described, and in position, if the car is proceeding to the right the wings will be revolving to the left, shedding cinders, while carrying in a steady flow of fresh air from the outside as, in their revolutions, they turn inward, and drawing impure air out as, in their revolutions, they turn outward. If the car is proceeding

to the left the wings will be, in like manner, revolving to the right, and the same effect be produced.

If, while the car is moving to the left, spring-bolt E' is pushed in, the movements of the wheel would not be checked, because, in its turning, wing D would strike the out end of the bolt and drive it back to its place, E' not being the right bolt to shove in when the wheel is revolving in that direction. The same would be the case if the car was proceeding to the right and bolt E'' was pushed in, the construction of the ventilator being such as to govern itself in this respect, and not permit a wrong use of the keys to stop its usefulness.

For those ventilators in the top of the car bolts E' and E'' may be dispensed with.

I claim as my invention—

1. The wings D, D', and D'', constructed, attached, adjusted to the case B, and operating substantially and for the purposes as hereinbefore described.

2. The bottom C, with adjusting-screw and nut, drop-peg, and spring-bolts, as hereinbefore described.

ANDREW J. MORRISON.

Witnesses:

JULIUS SANDERSON,
GEORGE T. BATTERSON.