H. A. Curtis,

Car Ventilator.

No. 103722. Patented May 31. 1870.

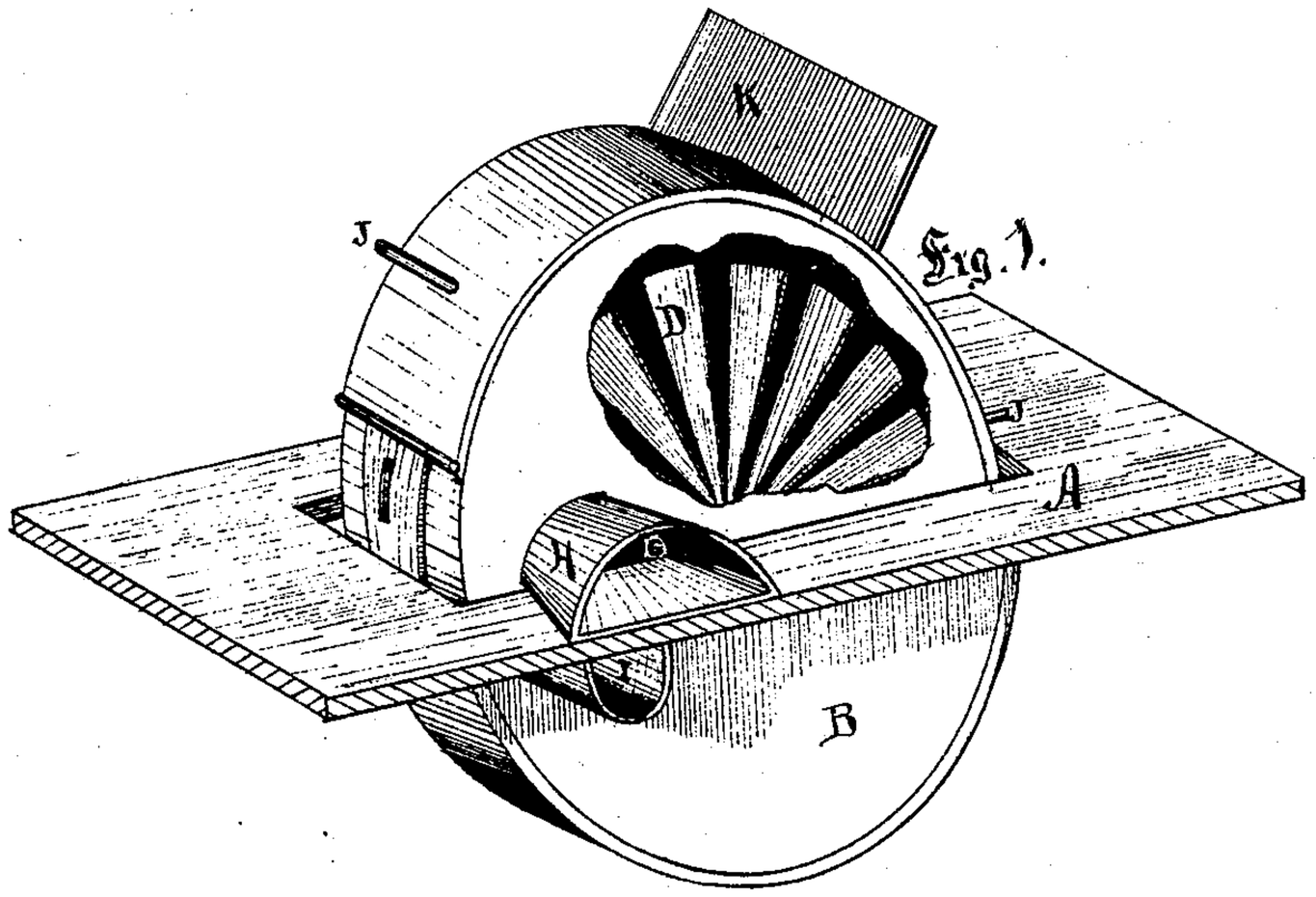

Fig. 1.

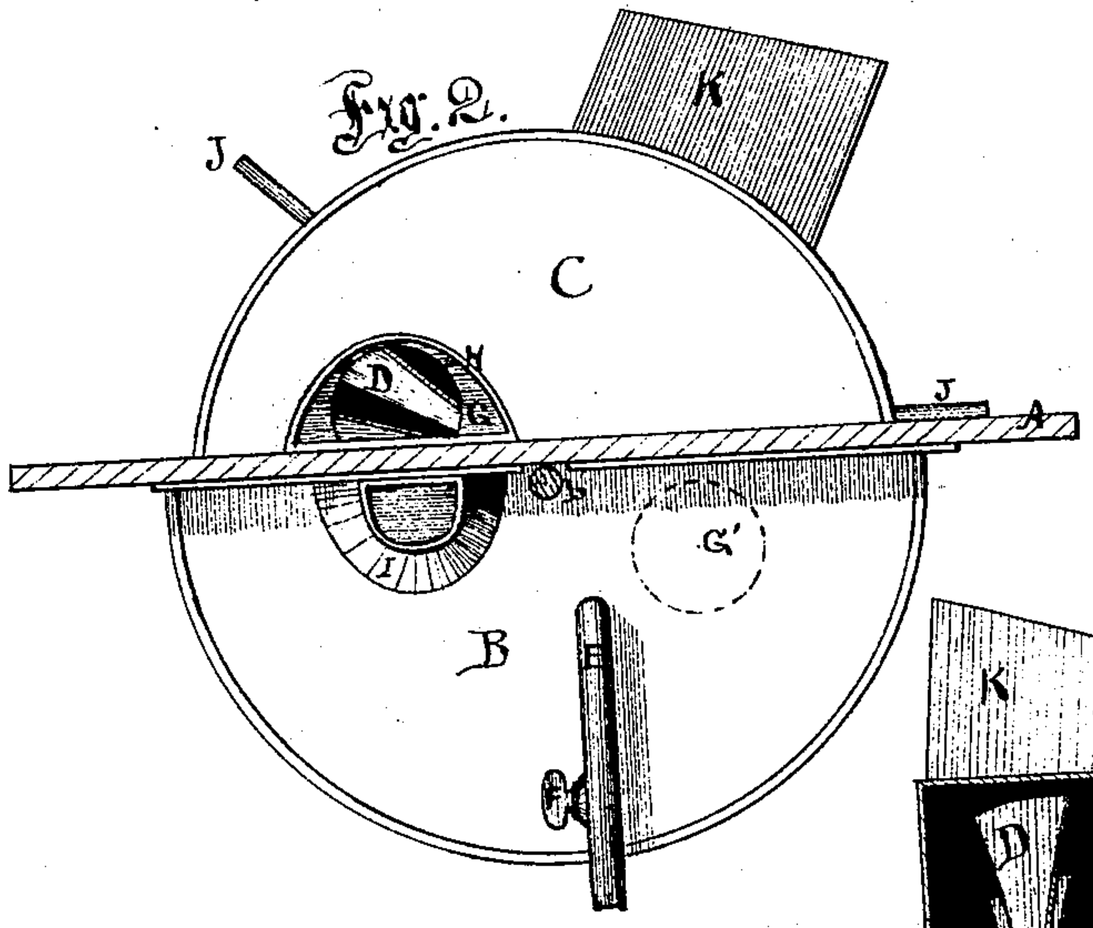

Fig. 2.

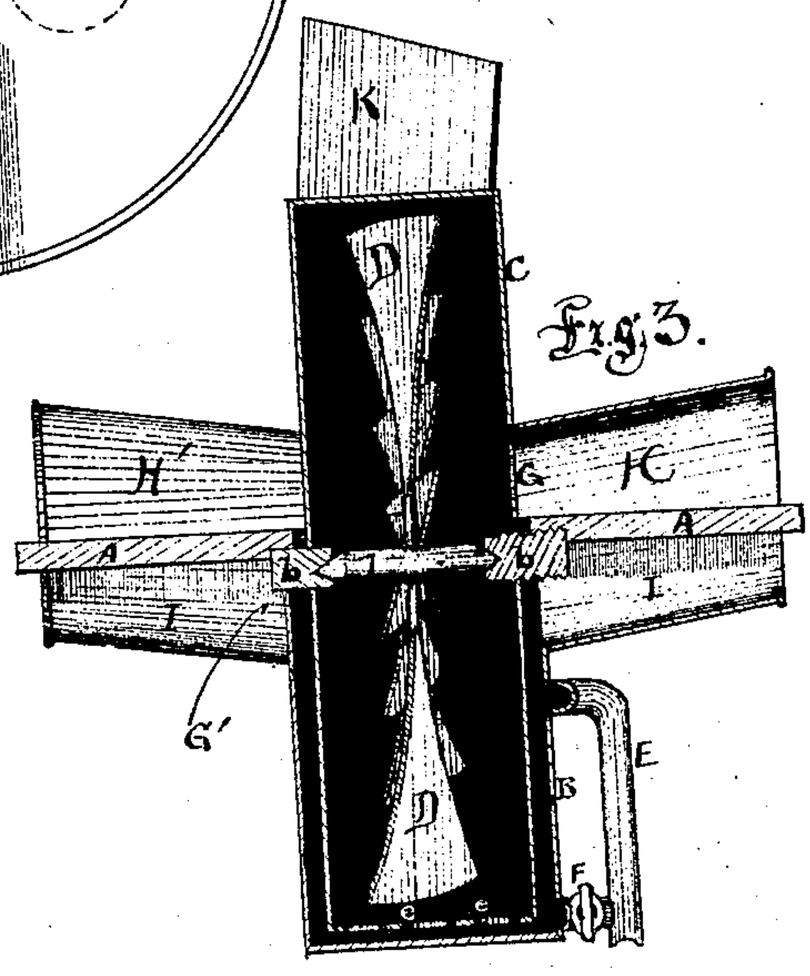

Fig. 3.

Witnesses
Lt. Hawkeness
D. J. Brown

Henry A. Curtis by his Attys
R. D. O. Smith

United States Patent Office.

HENRY A. CURTIS, OF RICHMOND, VIRGINIA.

Letters Patent No. 103,722, *dated May* 31, 1870.

RAILROAD CAR-VENTILATOR.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY A. CURTIS, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Improvement in Railway Car-Ventilators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of my invention.

Figure 2 is a side elevation of the same.

Figure 3 is a vertical cross-section of same.

My invention relates to that class of ventilators which are automatic in their action, and in which the current of air admitted is cooled and cleansed by means of water; and

It consists in a pivoted oscillating case, which admits a current of outside air from the direction of the car's motion, and permits the same to escape within the car, being subjected, *in transitu*, to the action of a spray of water, thrown up by a wheel, which is rotated by the action of said current of air.

That others may fully understand my invention, I will particularly describe it.

A represents a portion of the roof of a railway car, to the inner side of which the stationary inclosing case B is secured.

The case B is provided with bearings for the axis or journals *b* of the oscillating case C.

One of these journals is made adjustable, so that it may serve as a bearing for the face or spray-wheel D also, as shown in fig. 3.

The oscillating case C is hung upon the journals *b*, so that the larger portion of it is within the inclosing case B, and the latter is filled with water to a point nearly or quite to the overflow E, so that the lower part of the case C is immersed in the same, and partially filled through the holes *e e* in the bottom of said case.

Water may be introduced at the top of the case B above the roof A, or in any other convenient way, and the contents of the cases may be discharged by opening the cock F.

The waste way E may be arranged as circumstances render convenient to carry off the overflow, and discharge it at the outside of the car, or otherwise.

At either side of the case C is an orifice for entrance and exit of the draught or current of air.

In fig. 2 said orifices are shown at G G′, the position of the latter at the opposite side of the case being shown by a dotted line.

It will be perceived in this figure, that when the case C presents the orifice G above the roof A, the opposite orifice G′ opens below the roof, so that the air which enters the former above the roof of the car, passes across a part of the diameter of the case C, and escapes within the car at G′. While thus passing through the case C, the wheel D is caused to rotate rapidly, and, as each of its blades dips in the water at the bottom of the case at each revolution, the whole case will be filled with spray and drops of water, and the passing currents of air will not only be cooled to a greater or lesser degree, but the floating particles of dust, &c., will be caught and precipitated by the spray.

Hoods H H′ are placed upon the roof of the car, in such positions that they will serve as conduits for the entering currents of air, one on either side, to correspond with the positions of the orifices G and G′ respectively, and beneath the roof A the conduits I I are correspondingly located, to receive the escaping current, and convey it to such part or parts of the car as may be desirable.

The case C is mounted upon journals, so that it may oscillate sufficiently to change the position of the orifices G G′ from the conduits above to the conduits below the roof, respectively, and the stop-pins J J, or some equivalent contrivance, are placed in the periphery of the case C, so as to limit and arrest, at the proper point, the movement of the said case.

A diagonal vane, K, is placed at the top of the case C, for the purpose of moving said case upon its journals, to expose the orifices G G′ above the roof, according to the direction in which the car may be moving.

If required, packing may be interposed around the openings of the hoods H H, or conduits I I, to form a complete connection with the orifices G G′.

From the foregoing description it will appear that the case C will be automatically adjusted according to the direction from which the air current is to be received, and that the passage of said air current through the case will cause the spray-wheel to rotate, and thereby effect the purification of the air, as described.

Having described my invention,

What I claim as new is—

1. The adjustable case C, in combination with an inclosing water-case, B, and spray-wheel D, substantially as described.

2. In combination with the oscillating case C, the stop-pins J J and the adjusting vane K, substantially as described.

3. An oscillating case, C, provided with the orifices G G′, placed as described, in combination with the hoods H H′, for the purpose set forth.

4. In combination with an oscillating case, C, and spray-wheel D, a water-tank or receptacle, B, provided with a waste-way and draw off cock, as set forth.

In testimony whereof I hereunto set my hand this 25th day of April, 1870.

H. A. CURTIS.

Witnesses:

R. D. O. SMITH,

C. A. HARKNESS.