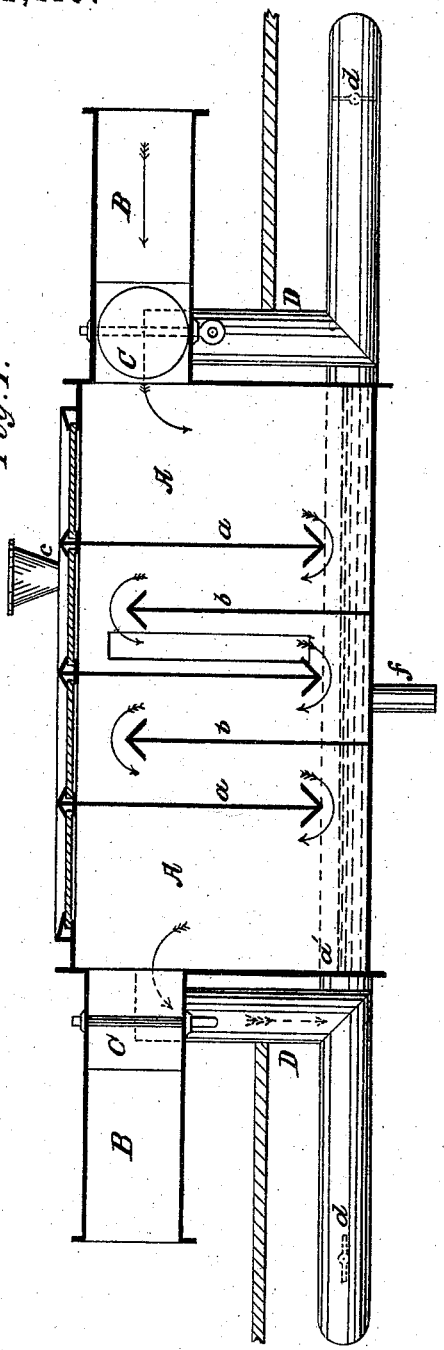
2 Sheets—Sheet 1.

J. C. HAYS.

CAR-VENTILATOR.

No. 182,116. Patented Sept. 12, 1876.

Fig. 1.



Witnesses.
Henry C. Hughes
Edward Holby

Inventor.
John C. Hays.
per James A. Whitney
Atty

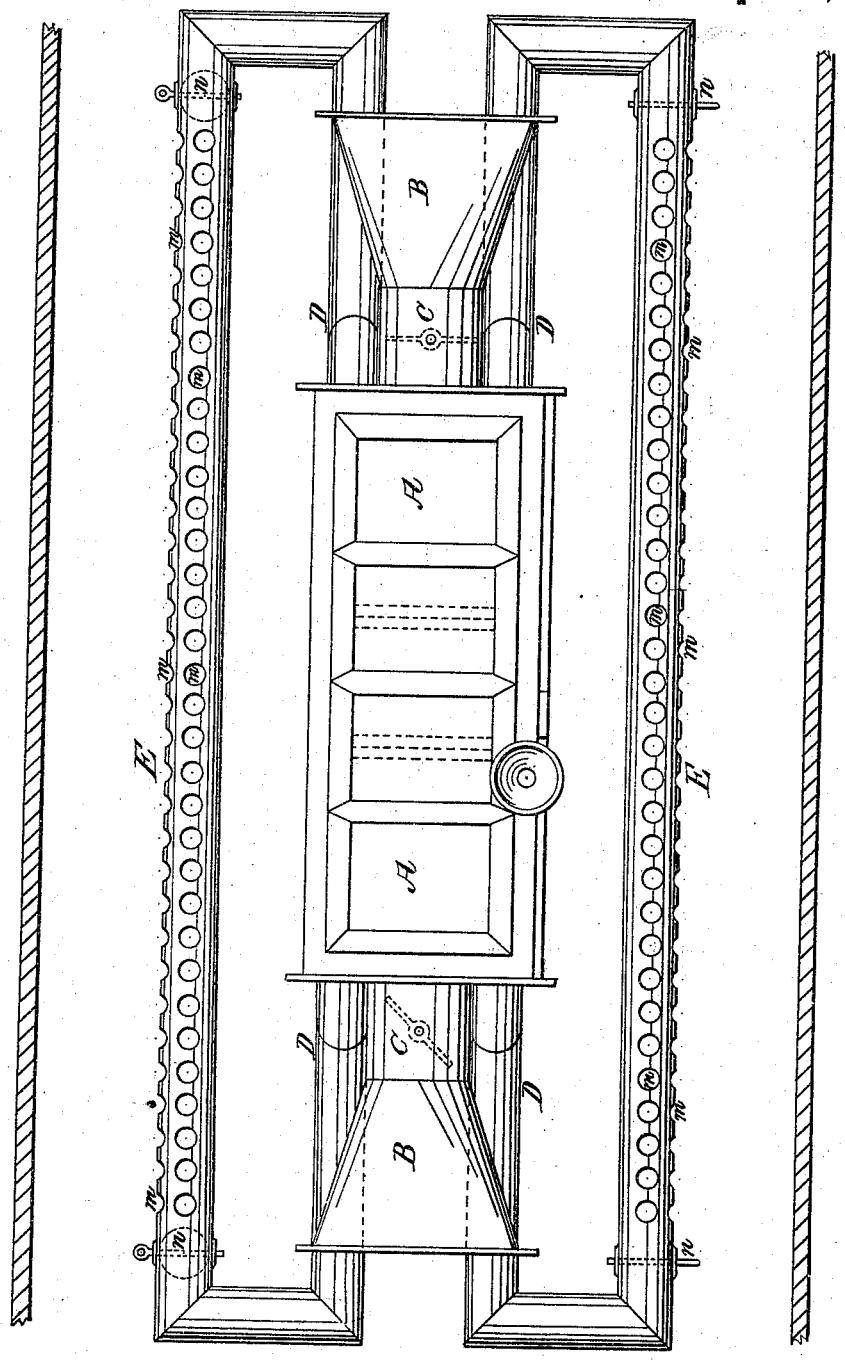
2 Sheets—Sheet 2.

J. C. HAYS.

CAR-VENTILATOR.

No. 182,116. Patented Sept. 12, 1876.

Fig. 2.



Witnesses.
Henry C. Hughes
Edward Holly

Inventor.
John. C. Hays.
per James A. Whitney
Atty

UNITED STATES PATENT OFFICE.

JOHN C. HAYS, OF YONKERS, NEW YORK.

IMPROVEMENT IN CAR-VENTILATORS.

Specification forming part of Letters Patent No. **182,116**, dated September 12, 1876; application filed August 18, 1876.

To all whom it may concern:

Be it known that I, JOHN C. HAYS, of Yonkers, in the county of Westchester and State of New York, have invented certain Improvements in Car-Ventilators, of which the following is a specification:

The object of this invention is to provide an efficient apparatus for removing the dust from the air supplied to railway-cars; and to this end the invention consists in a ventilating-trunk, constructed with an internal zigzag passage, so arranged that a current of air caused to pass through the trunk will be made to impinge against the partitions forming said passage with a force sufficient to mechanically precipitate or throw down the particles of dust, cinder, &c., suspended in the air, said impurities being caught and retained by volume of water placed in the bottom of the trunk, the air being brought more or less in contact with said volume, but not passed through the same, in combination with funnels, arranged at opposite ends of the trunk, with valves arranged to close or open the funnels, and with pipes arranged to conduct the purified air from the trunk to the interior of the car, the several parts being constructed and provided in such relation with each other that the apparatus being placed at the roof of the car, the air passing through the foremost of the funnels has the dust, cinders, and like impurities mechanically cast downward and caught by the water in the trunk, whence the air thus purified passes through the rearmost pipe of the trunk, conducted in its purified condition to the interior of the car.

The invention further comprises the combination, with the aforementioned parts, of perforated distributing-pipes, arranged to distribute the purified air in fine streams along the sides of the interior of the car.

A is the trunk, of rectangular form, and provided internally with vertical partitions *a b*, the partitions *a* depending from the top of the trunk, but not reaching quite to the bottom thereof, while, on the other hand, the partitions *b* extend upward from the bottom, but do not reach quite to the top of said trunk. By this means a zigzag passage is formed through the trunk, as indicated by the arrows in Fig. 1. In the bottom of the trunk, as indicated at *a'* in said Fig. 1, is placed a quantity of water, which, however, does not extend up to the lower end of the partitions *a*, thereby leaving a sufficient space between said partitions *a* and the surface of the water to permit the passage of air through the trunk, as hereinafter explained. Upon each end of the trunk is attached a funnel, B, of more or less flaring form to gather a larger quantity of air for passage to and through the trunk A. Each of these trunks B is provided with a butterfly or equivalent valve, C. At each end of the trunk A, communicating therewith, are pipes D. Each of these pipes should be furnished with a butterfly or equivalent valve, *d*. At the top of the trunk may be provided an inlet, *c*, by means of which the supply of water may be placed in the trunk A, and at the bottom of said trunk may be an outlet, *f*, through which the water, when clogged with impurities, may be withdrawn. Both the inlet *c* and outlet *f* are, of course, closed during the use and operation of the apparatus. The trunk A, with its adjuncts herein described, is placed at the roof of the car, the funnels B above said roof.

When the car is going in one direction the valve C, in the foremost of the funnels B, is open, and the rearmost of said valves C is closed. Furthermore, the valve *d* in the foremost of the pipes D is closed, while the corresponding valve *d* in the rearmost of said pipes D is open. The parts being in this position, the forward movement of the car causes a current of air to enter the foremost of the funnels B, and pass therethrough into the trunk A. This current of air, as it passes through the trunk, strikes in succession against the partitions *a b* with an impact sufficient to jar or interrupt the movement of the particles of dust, cinder, and the like, thereby causing such particles to drop downward to and into the water, which catches and retains the same, while the current of air thus freed from the aforesaid particles or impurities passes on and out through the rearmost of the pipes D into the interior of the car.

The pipes D connect, as represented in Fig. 2, with the pipes E, arranged along the sides of the car, preferably just under the roof thereof. These pipes are perforated, as represented at

m, and are provided with valves *n*, the foremost of the valves *n* being closed when the apparatus is in operation, as just set forth. As the air passes from the pipes D to the pipes E it flows out through the length of the latter in thin streams—in other words, in a finely-divided condition—under greater or less velocity, and is thereby distributed to all parts of the interior of the car. Of course, when the car moves in an opposite direction, the position of the several valves is reversed, the air entering at the opposite end of the trunk A, but passing through the same, and being distributed therefrom in the same manner as when the air is caused to enter at the other end, as hereinbefore explained.

It is, of course, to be understood that any suitable liquid other than water may be used in the place thereof in the bottom of the trunk A—as, for example, a solution of salt or water having dissolved in it a small percentage of glycerine to retard its evaporation.

What I claim as my invention is—

1. The ventilating-trunk A, constructed with the alternating partitions *a b*, providing the internal zigzag passage, in combination with the funnels B, having the valves C and the pipes D, the whole combined, constructed, and arranged substantially as and for the purpose herein set forth.

2. The perforated distributing-pipes E, in combination with the trunk A, constructed with the internal zigzag passage, the funnels B, the valves C, and pipes, all substantially as and for the purpose herein set forth.

JOHN C. HAYS.

Witnesses:

EDWARD HOLLY,

H. WELLS, Jr.