

No. 724,949.

PATENTED APR. 7, 1903.

H. B. ROWLAND.

VENTILATING DEVICE FOR ELECTRIC MOTORS FOR CARS.

APPLICATION FILED APR. 19, 1902. RENEWED FEB. 3, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

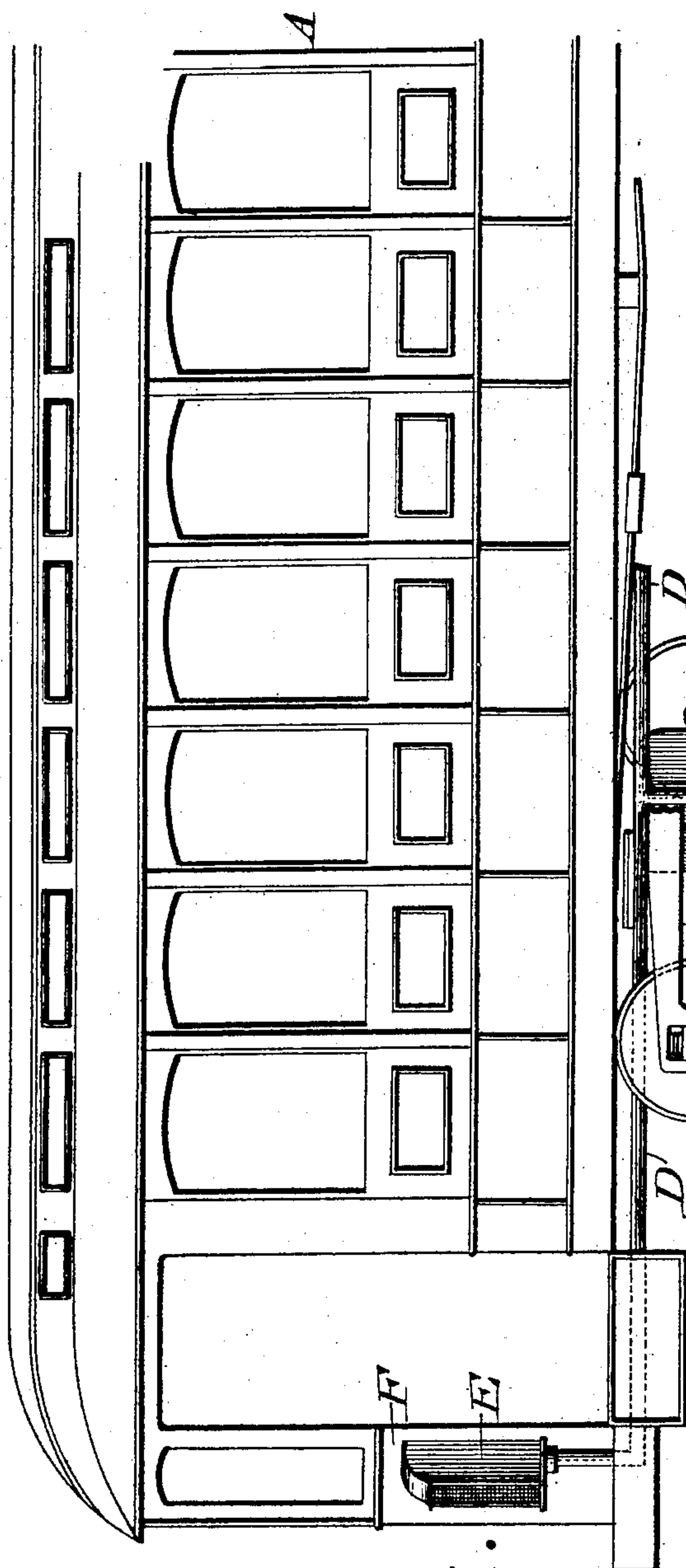


Fig. 1.

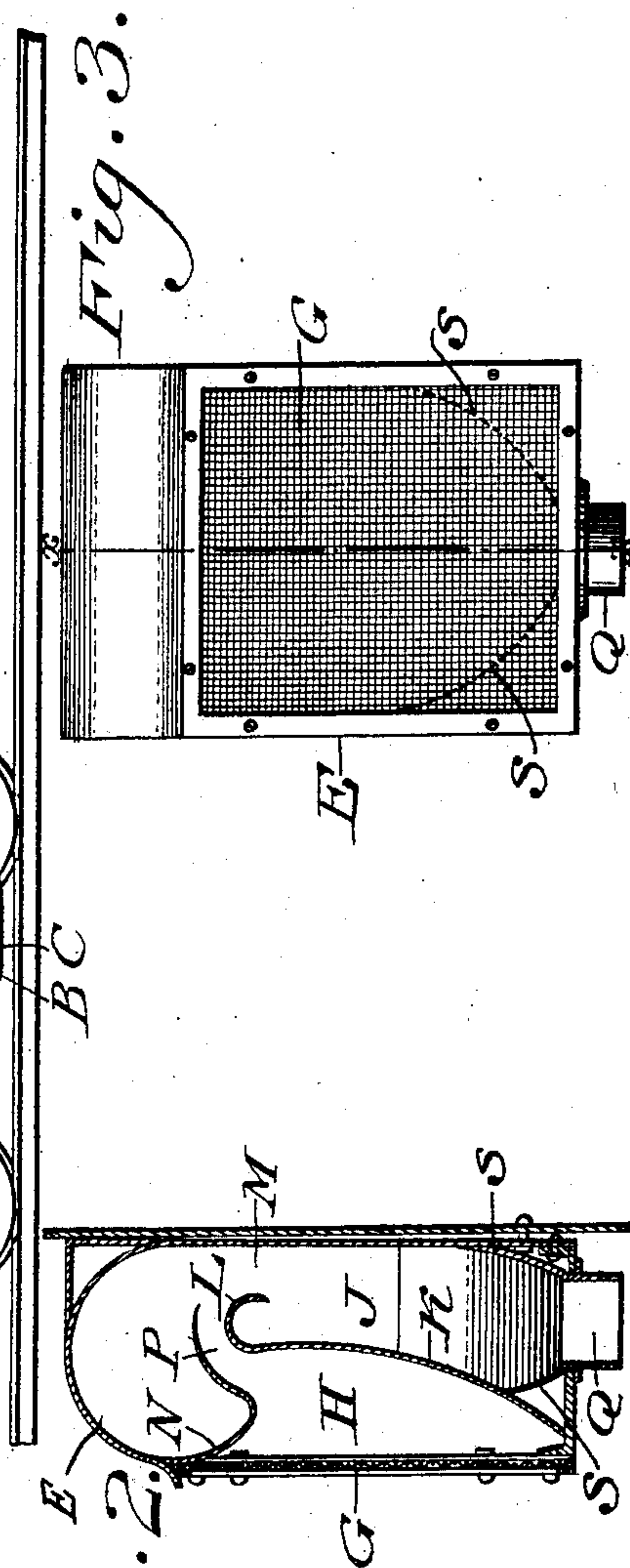


Fig. 2.

Fig. 3.

Witnesses
P. H. Nagle.
L. Bouville.

Inventor
Horace B. Rowland.
By Niederstein & Laibank
Attorneys

No. 724,949.

PATENTED APR. 7, 1903.

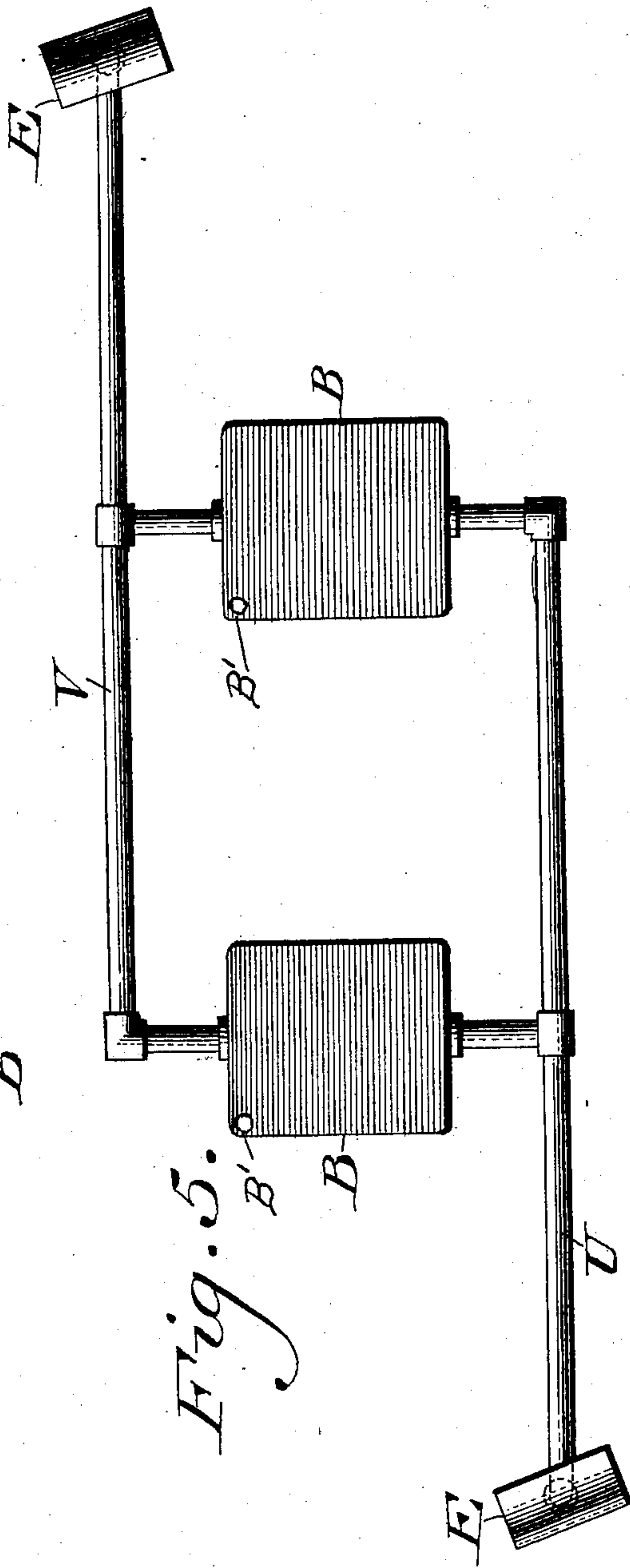
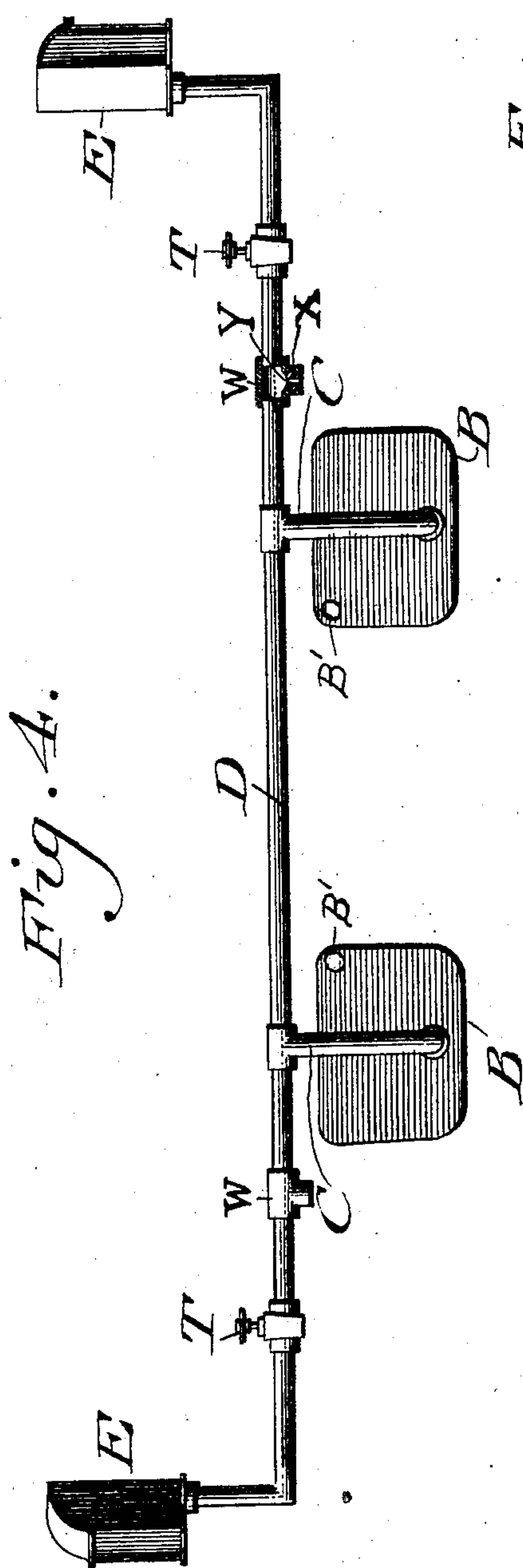
H. B. ROWLAND.

VENTILATING DEVICE FOR ELECTRIC MOTORS FOR CARS.

APPLICATION FILED APR. 19, 1902. RENEWED FEB. 3, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses
P. H. Hagler.
L. H. Bouville.

Inventor
Norace B. Rowland.
By *Niedersheim & Fairbanks.*
Attorneys

UNITED STATES PATENT OFFICE.

HORACE B. ROWLAND, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
ELECTRIC MOTOR AND GENERATOR VENTILATING COMPANY, A COR-
PORATION OF DELAWARE.

VENTILATING DEVICE FOR ELECTRIC MOTORS FOR CARS.

SPECIFICATION forming part of Letters Patent No. 724,949, dated April 7, 1903.

Application filed April 19, 1902. Renewed February 3, 1903. Serial No. 141,702. (No model.)

To all whom it may concern:

Be it known that I, HORACE B. ROWLAND, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Ventilating Devices for Electric Motors for Cars, of which the following is a specification.

My invention consists of an improvement in ventilating devices for electric motors for cars, and relates to the manner of directing the air into the motor-casing dependent upon the direction and the movement of the car.

It further consists of an improvement in the hood or air-collector for the air that is employed for ventilating the motor.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and pointed out in the claims.

Figure 1 represents a side elevation of a portion of a car provided with a ventilating device embodying my invention. Fig. 2 represents a vertical sectional view of a hood or air-collector, taken on line *xx*, Fig. 3. Fig. 3 represents a front elevation of a hood or air-collector. Fig. 4 represents a diagrammatic view showing the pipes and connections between the hoods and the motor-casings. Fig. 5 represents a diagrammatic view showing the pipes or connections, wherein separate pipes are employed leading to the hoods at the opposite ends of the car.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a portion of a car, and B a casing inclosing an electric motor thereof, it being understood that there can be any number of motors and that in Fig. 1 I have shown but one of these motors, while in Figs. 4 and 5 I have shown two motors within the casings B.

E designates a hood or air-collector, which in the present instance is shown as secured to the fender F of the car, although it will be understood that the same will be situated at any convenient point of the car, one arrangement being shown in the diagrammatic views shown in Figs. 4 and 5.

D designates a pipe or duct which communicates, in the construction shown in Figs. 1 and 4, with each of the hoods E at opposite ends of the car, said pipe having the pipes

or connections C leading therefrom to the interior of the motor-casings B, said pipe D being provided with valves T, which are situated between the hood E and the pipe C, adjacent thereto.

In Fig. 5 I have shown a pipe U communicating with one of the hoods E and with each of the motor-casings B, while another pipe, V, leads to or communicates with the other hood E and with each of the motor-casings B. The hood or air-collector is provided with an open front, across which extends a sieve G, that may be composed of wire mesh, fabric, or the like, that will prevent the entrance of any undue quantity of dust or the like, the interior of said chamber having a divided front chamber E and a rear chamber J, divided by an upright partition K, that extends from a point near the lower forward edge of the hood upwardly and rearwardly to the upper end thereof, where it is curved rearwardly and downwardly, as shown at L, a passage N being formed between this portion L and the rear wall of the hood leading into the rear chamber J. Extending from substantially the top of the screened opening of the hood is a deflector N, that reaches to a point a little below the end of the partition K, from whence it rises upwardly and rearwardly, extending from the upper end of the partition K, being curved to form, in conjunction with the curved portion L of the partition K, a passage P. An outlet Q is situated at the lower end of the chamber J, and the sides of the said chamber J above the port Q converge toward the latter in all directions to form a funnel, as best seen in Fig. 2 and in dotted lines, Fig. 3, in order to direct the air into said opening with the greatest facility, it being of course understood that the port Q communicates with the pipe D, above referred to. It will be further seen that a chamber is formed between the deflector N and the upper portion of the hood and that this chamber is in communication with the pipes M and P. The bottom of this chamber, which is formed by the deflector N, is depressed, so that it may catch any particles of dust that may be thrown into the opening.

The casings B should be provided with openings, as shown at B', for the escape of the air therefrom.

The operation is as follows: The air enters the hood E which is at the forward end of the car in the direction that it is going, and the valve T in the pipe D adjacent said hood E is open, while the other valve T at the rear portion of the car is closed, whereby the air that enters the forward hood E passes through the pipe D and the pipes C into the motor-casing, the valves being operated in the reverse manner should the car be going in the opposite direction, whereby it will be understood that the air in either case is forced into the motor-casing. In the construction seen in Fig. 5 no valves are necessary, since the air will be directed from the hood E which is at the front portion of the car into the motor-casings D through either of the pipes U or V, dependent upon which the hood E is at the forward end of the car. It will be further seen that I provide a hood for the purpose described that screens the air before it enters the front chamber H, wherein it will be seen that the heavier particles of dust entering thereinto through the screen will fall to and be collected in the bottom of said chamber H. Furthermore, the deflector N serves to deflect the rain and prevent it from entering the passage P and into the chamber J, while the curved passages between the chambers H and J reduce the resistance to the passage of the air when the latter is forced downwardly through the funnel and port Q into the pipe D and from thence to the casing.

Upon reference to Fig. 2 it will be readily seen that the downwardly-extending portion of the deflector M will deflect any water that may enter the hood against the partition K at a point below the entrance to the passage P, and as such water strikes the partition K it will flow down the same to the bottom of the chamber H, from which point it may be allowed to escape through an opening. (Not shown.)

I also provide means for allowing the escape of water that may be due to moisture within the hoods E or pipes leading therefrom to the motor-casing, and, although this may or may not be employed with all the different constructions I have shown, I have for the purpose of illustration shown it only in Fig. 4. This device consists, conveniently, of a T W in the pipe D between the hood E and the motor-casing. In the branch of the T is a plug X, through which is a small opening Y. Thus it will be seen that any water that may pass along the pipe will escape through this small opening Y, and thus be prevented from reaching the motor-casings. It is also understood that although I have shown the valves T as hand-operated they may consist of a check or any other convenient form of valve.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a ventilating device for electric mo-

tors, a casing surrounding the motors, hoods on each end of a car, a pipe communicating with each of said hoods and with said motor-casing and valves in said pipe, adapted to be operated in order to cause the air to enter the motor-casings and drip-outlets between said valves and casings.

2. In a ventilating device for motors of a car, casings surrounding the motors, hoods on opposite ends of the car, a pipe communicating with one of said hoods and with each of said motor-casings, and a second pipe communicating with the other hood and with each of said motor-casings.

3. In combination with the casing inclosing the electric motor of a car, a hood or air-collector mounted upon said car and having a front and rear chamber, said front chamber having a screened open front, and said rear chamber communicating at its upper end with the upper end of the front chamber, and at its lower end with said casing.

4. A hood or air-collector of the kind specified, having a front and rear chamber, said front chamber having a screened open front, a curved passage leading from the upper end of the front chamber to the upper end of the rear chamber, and an outlet-port at the lower end of said rear chamber.

5. A hood or air-collector having front and rear chambers, said front chamber having a screened open front with a passage extending from the upper end of said front chamber to the upper end of said rear chamber, a deflector extending downwardly from the open front of said front chamber to a point below said passage, and an outlet leading from the lower end of said rear chamber.

6. In combination with a casing inclosing the electric motor of a car, a hood or air-collector mounted upon said car and having a front and rear chamber, said front chamber having a screened open front, and said rear chamber communicating at its upper end with the upper end of the front chamber, and at its lower end with said casing, and an upper chamber situated above the front and rear chambers and communicating at its lower end with the passage extending therebetween.

7. In combination with the casing inclosing the electric motor of a car, a hood or air-collector mounted upon said car and having a front and rear chamber, said front chamber having a screened open front, and said rear chamber communicating at its upper end with the upper end of the front chamber, and at its lower end with said casing, and an upper chamber situated above the front and rear chambers and having a depressed front portion and communicating at its lower rear side with a passage between the front and rear chambers.

HORACE B. ROWLAND.

Witnesses:

JOHN A. WIEDERSHEIM,
HARRY COBB KENNEDY.