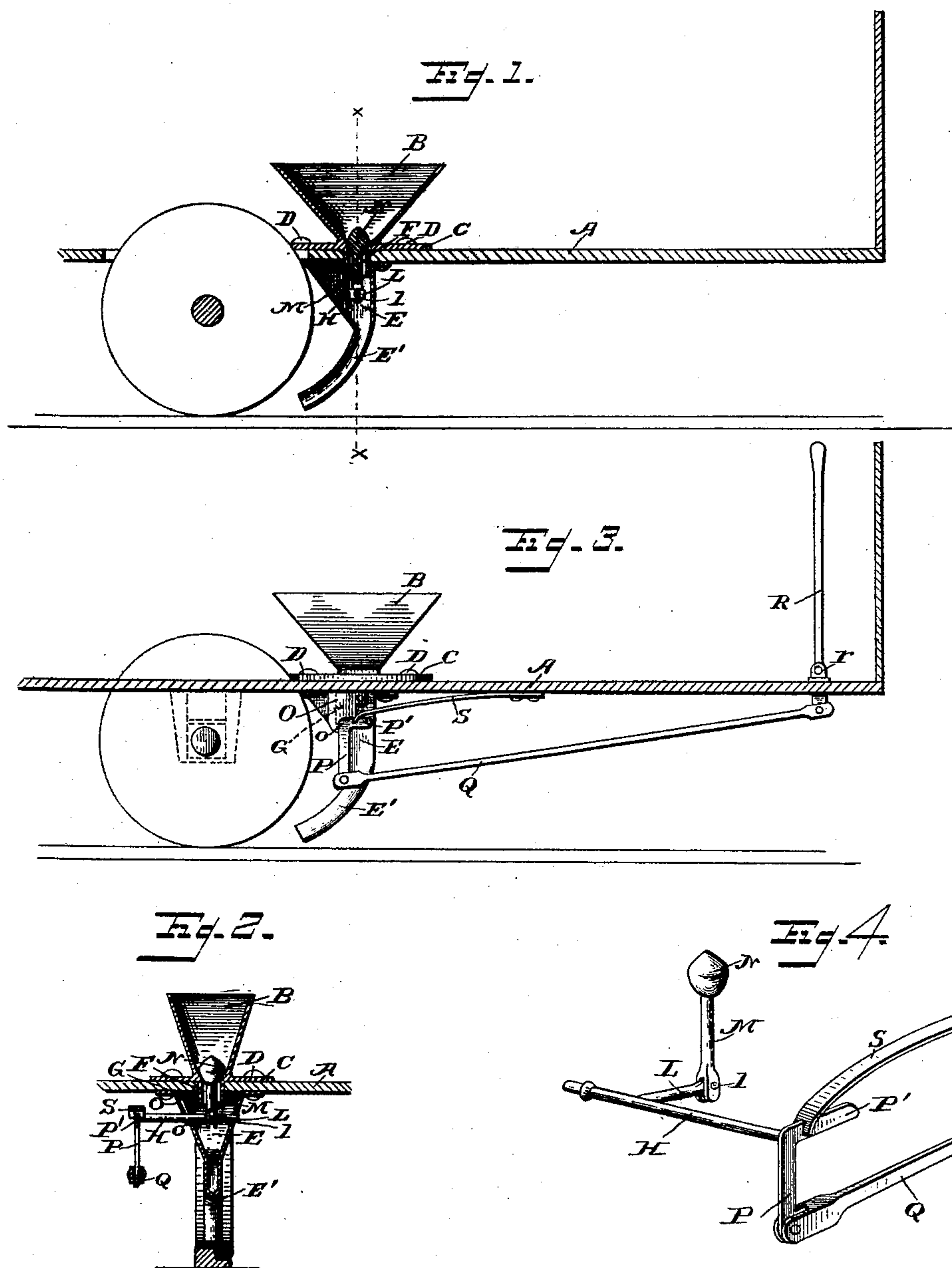


(No Model.)

J. H. & G. L. VOGAN.  
SANDING DEVICE FOR STREET CARS.

No. 481,535.

Patented Aug. 23, 1892.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN H. VOGAN AND GEORGE L. VOGAN, OF NEW CASTLE, PENNSYLVANIA.

## SANDING DEVICE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 481,535, dated August 23, 1892.

Application filed February 16, 1892. Serial No. 421,757. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN H. VOGAN and GEORGE L. VOGAN, citizens of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Sanding Apparatus for Street-Railway Cars; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in apparatus for distributing sand or similar substances on the rails of railway-tracks; and the object of the invention is to provide a simple, cheap, and effective apparatus which can be easily applied to a car and which is adapted to deliver sand uniformly and in such quantities as may be desired.

With these ends in view our invention consists in the combination, with a hopper or sand-box attached to the floor or platform of a car and provided with a depending spout extending through the floor, of an auxiliary hopper secured to the under side of the car around the lower end of the depending spout of said main hopper and provided with a delivery tube or pipe, a plunger or piston arranged in the main hopper and having its stem entering the auxiliary hopper, a shaft journaled in the sides of the auxiliary hopper and connected with the stem of the valve in the main hopper, an operating-lever and a spring-arm attached to the floor of the car and normally holding the valve in the main hopper, so as to prevent the escape of sand therefrom.

Our invention further consists in the peculiar construction and arrangement of parts, as will be hereinafter fully pointed out and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view through a portion of a street-railway car provided with our improved sanding apparatus. Fig. 2 is a vertical transverse sectional view on the line *x x* of Fig. 1. Fig. 3 is a side elevation, and Fig. 4 is a detail view, of the valve and its connections.

Like letters of reference denote correspond-

ing parts in the several figures of the drawings, referring to which—

A designates a portion of the floor of an ordinary street-railway car. On the upper side of the floor A is secured a hopper or vessel B. This hopper B is provided with a short depending tube F, which extends through the floor A and projects a short distance beneath the same. The hopper B is preferably provided at its lower end with an annular flange C, through which suitable securing-bolts D can be passed to fasten said hopper firmly in place.

To the underside of the floor A is securely attached an auxiliary hopper E, which surrounds the lower open end of the tube F, depending from the main hopper B. The auxiliary hopper E terminates in a delivery or discharge pipe E', which extends from the lower end of the hopper E to a point a short distance above the track-rail and in line with the same.

In one side of the hopper E is formed a vertical slot G, and in this slot and a suitable bearing in the opposite wall of said hopper is journaled a horizontal rock-shaft H. The shaft H is provided at an intermediate point of its length and within the hopper E with an arm L, which preferably extends at right angles and is rigidly united to or made integral with the said rock-shaft. The free end of the arm L extends into the lower bifurcated end of a valve-stem M, to which it is connected by a pivot *l*, and the upper end of this stem is attached to a conical-shaped valve N, adapted to close the outlet in the lower end of the main hopper B. The shaft H is prevented from moving up in the slot G by means of a locking-plate O, which is pivotally connected to the side of the auxiliary hopper and provided in one edge with a notch *o*, in which the shaft H fits when the plate O is moved into the position shown in full lines in Fig. 3.

To the end of the rock-shaft H beyond the hopper E are rigidly attached or formed integral therewith two arms P P', which extend substantially at right angles to each other. The lower end of the arm P is connected by means of a link Q with the lower end of an operating-lever R, pivoted to suitable lugs or castings *r* on the floor A.



To the under side of the floor A is rigidly attached one end of a flat spring-arm S, the free end of which is bifurcated and extends on opposite sides of the arm P' on the rock-shaft H.

The operation of our invention is as follows: The hopper B is filled with sand or other desirable substance, and when it is desired to distribute the sand on the rails of the track the upper end of the lever R is moved rearwardly into the position shown in Fig. 1. The forward movement of the lower end of the lever R turns the rock-shaft H in its bearings, and the arm L thereon forces the valve-stem and the valve N upwardly to uncover the upper end of the tube F and permits the sand to escape through such tube into the auxiliary hopper E, from whence it passes to the rail through the delivery or discharge pipe E'. As the rock-shaft H is turned the arm P' forces the free end of the spring-arm S upward, and when pressure is removed from the lever R the spring S returns the parts to their normal positions and the valve N closes the upper end of the tube F and prevents the further escape of the sand from the hopper B.

We are aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of our invention can be made without departing from the spirit or sacrificing the advantages thereof, and we therefore reserve the right to make such changes and alterations as fairly fall within the scope of our invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a main hopper provided at its lower end with a short tube, of an auxiliary hopper arranged below the main hopper and surrounding the lower end

of the tube attached thereto, a valve arranged in the main hopper, a rock-shaft journaled in the walls of the auxiliary hopper and connected with the valve in the main hopper and with an operating-lever, a discharge-pipe connected to the auxiliary hopper, and means for holding the valve normally closed, substantially as described.

2. The combination, with a main hopper, of an auxiliary hopper arranged below and communicating with the main hopper, a discharge-pipe leading from the auxiliary hopper, a rock-shaft journaled in the walls of the auxiliary hopper and connected to an operating-lever, a valve arranged within the main hopper and having its stem extending into the auxiliary hopper and connected to the rock-shaft therein, and means for normally keeping said valve closed, substantially as described.

3. The combination, with a main hopper, of an auxiliary hopper arranged below and communicating with the main hopper, a rock-shaft journaled in the auxiliary hopper and connected with an operating-lever at one end, a valve arranged in the main hopper and having its stem extending into the auxiliary hopper and connected to an arm on the rock-shaft, a discharge-pipe connected to the lower end of the auxiliary hopper, and a flat spring-arm having one end secured in position and its free end bifurcated and bearing against an arm on the rock-shaft, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN H. VOGAN.  
GEORGE L. VOGAN.

Witnesses:

E. N. BAER,  
A. W. GARDNER.