

(No Model.)

W. GRUNOW, Jr.
SANDING DEVICE.

No. 521,467.

Patented June 19, 1894.

Fig. 1.

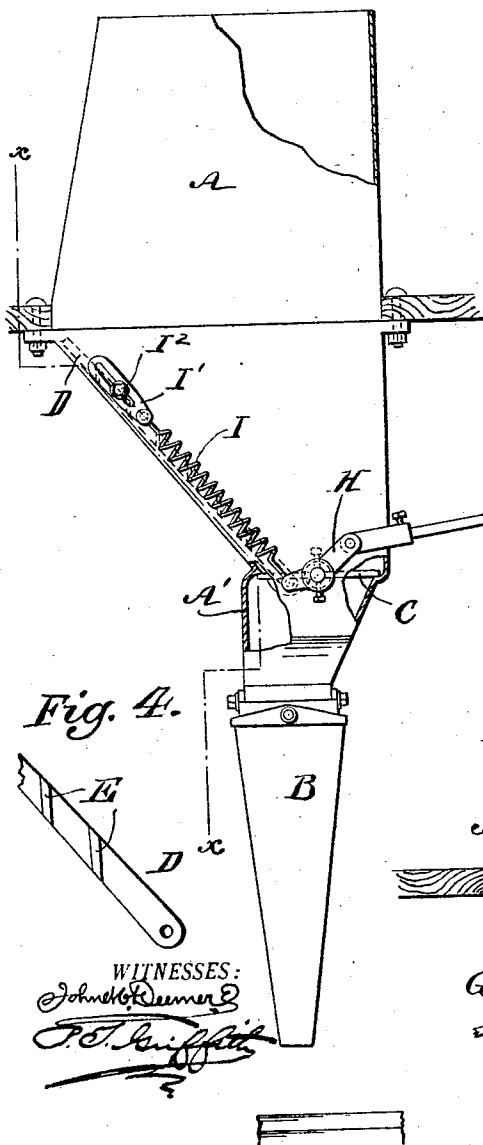
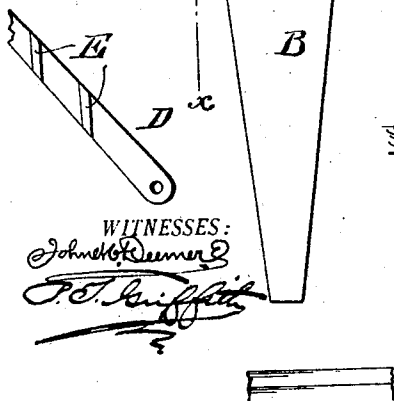


Fig. 4.



WITNESSES:

John H. Deemer
P. C. Griffith

Fig. 3.

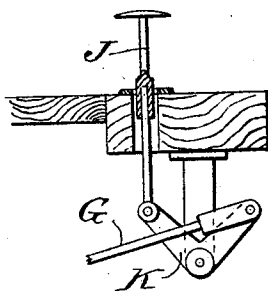
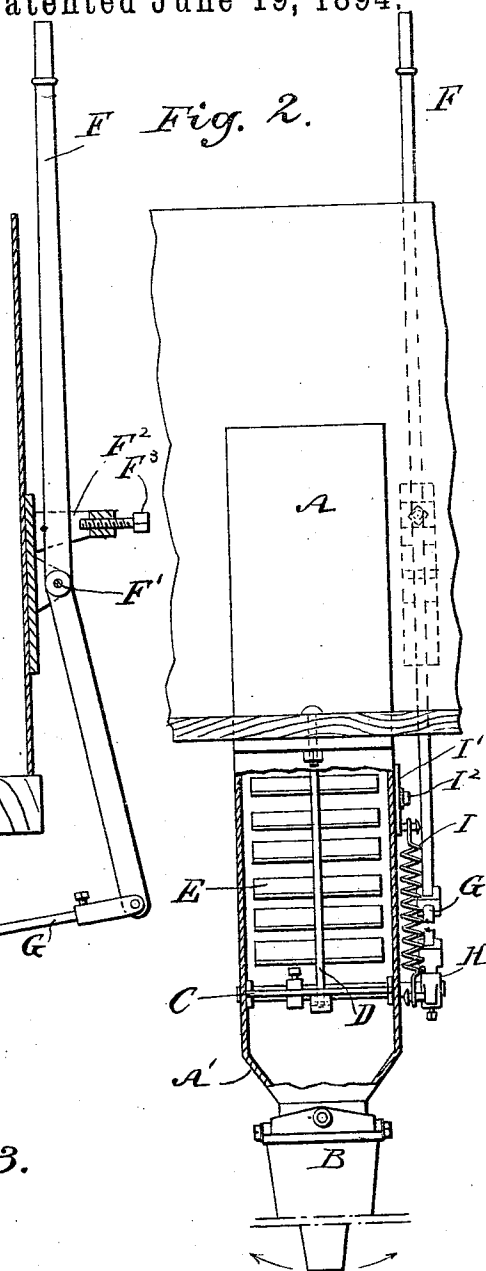


Fig. 2.



INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAM GRUNOW, JR., OF MOUNT VERNON, NEW YORK, ASSIGNOR TO
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SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 521,467, dated June 19, 1894.

Application filed February 15, 1894. Serial No. 500,213. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GRUNOW, JR., a citizen of the United States, and a resident of Mount Vernon, in the county of Westchester, State of New York, have invented certain new and useful Improvements in Railway Sanding Devices, of which the following is a specification.

This invention relates to devices for strewing sand, salt, gravel or similar friction-producing material upon the tracks or roadbed of street and other railways and has for its object to provide a device of this character capable of distributing either wet or dry sand continuously without danger of its caking in the sand box or hopper.

A further and particular object of the invention is to furnish means for readily opening and closing the valve of the sand-box and for ejecting the material therefrom at each movement of the said valve.

The invention consists in the novel construction and arrangement of parts herein-after more fully described and particularly set forth.

In the accompanying drawings forming part of this specification, in which like letters of reference designate corresponding parts throughout all the views, Figure 1 is a broken side elevation, partly in section, of the forward end of a street car provided with my improved device. Fig. 2 is a vertical section upon the line $x-x$. Fig. 3 is a section of the foot-lever operating devices and Fig. 4 is a detail of the agitating rod.

In the practice of my invention, I secure beneath the car adjoining the wheels a box or hopper A adapted to receive and hold the sand or other material. This box A tapers gradually toward the base, where it terminates in a downwardly projecting mouth or bore A' to which is swiveled the laterally adjustable chute B. At the beginning of the mouth is journaled a trip-valve C, having its bearings in the sides of the said mouth. Within a depression at the end of the said trip-valve is pivoted a rod D extending obliquely upward therefrom and resting upon the side of the hopper. Upon this rod is affixed at intervals a series of cross-bars or agitators E,

arranged diagonally to the rod and perpendicularly to the sander.

At the front of the car is the operating-lever F, journaled at F' and connecting by means of the pitman G with a bell-crank lever H, rigidly attached to the journal of the trip valve C. A spiral spring I, attached at the bottom to the free end of the bell-crank lever, is adjustably secured at its opposite end to the side of the hopper by means of the elongated loop I' and set-screw I².

The operation of the device will be readily understood from the foregoing description. The box being filled with sand or any other convenient material of like character and it being desired to facilitate the passage of the car over the tracks the operating lever F is thrown outward to an angle corresponding to the quantity of sand it is desired to permit to escape, the left-hand end of the trip-valve being thereby depressed and the opposite end raised, thus opening the mouth of the hopper and forcing out, or ejecting, the sand immediately above. At the same time the rod D having the cross-bars thereon is pulled downward by the movement of the trip-valve and the cross-bars thoroughly agitate the mass of sand, breaking up any particles which may have caked or solidified together, besides helping to dislodge or eject the sand through the mouth of the hopper. The cross-bars being perpendicular, the sand passes between them, instead of, as would otherwise occur, clogging up the spaces between them. Upon releasing the lever F the spring I restores the valve to the closed position. The direction of outgo of the sand is determined by adjusting the chute B, but this movable chute forms no part of the present invention.

The operating lever F extends through the guide F² attached to the dash-board of the car and the outward throw of the said lever is regulated by turning the screw F³. The pitman G is also adjustable by the screws G', which serve to take up the slack caused by use and wear.

In place of operating the device by means of the lever F, it may be desirable to employ the foot-lever or pedal J, which extends through the platform of the car and connects

to a bell-crank lever K supported beneath the said platform, the opposite arm of the said lever being pivoted to the pitman G. The pedal J should preferably be removable
 5 in order not to interfere with, or obstruct, the car platform when not in use.

I do not confine myself to either of these forms of operating mechanism, nor to the exact details of construction herein specified.

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

1. A railway sanding device consisting of a hopper having a chute at the base thereof, an
 15 ejector valve journaled in the sides of the hopper at the mouth thereof, a rod pivoted to the ejector-valve and having agitating cross-bars affixed thereto, and means for depressing one end of the ejector valve, substantially as shown and described.

2. A railway sanding device consisting of a hopper having a chute depending therefrom, a normally closed ejector-valve journaled in the sides of the hopper at the mouth thereof,
 25 a rod pivoted to the ejector-valve and having agitating cross-bars affixed thereto, and an operating lever pivoted to the dashboard of the car and adapted to depress one end of the said ejector valve, substantially as shown
 30 and described.

3. In a railway sander, the combination with a device of the character shown, of sand agitating and dislodging mechanism consisting of a rod pivoted to the valve of the sander
 35 and cross-bars permanently affixed thereto, substantially as shown and described.

4. In a railway sander, the combination with a device of the character shown, of a normally closed ejector-valve journaled in the
 40 sides of the sander at the mouth thereof and adapted, when open, to be depressed at one end and raised at the other, and agitating and dislodging mechanism consisting of an up-

wardly extending rod pivoted to the ejector valve and provided with cross-bars permanently affixed thereto, whereby the sand is
 45 prevented from caking and is ejected from the mouth of the hopper when the valve is open, substantially as shown and described.

5. In a railway sander, the combination
 50 with a hopper secured beneath the car, an ejector valve journaled in the mouth thereof, an agitating rod pivoted to the said valve and provided with cross bars affixed thereto, of an operating lever pivoted to the dashboard
 55 of the car and connected by means of a pitman with a bell-crank lever secured to the journal of the ejector-valve, and a spring attached to the free arm of the said lever and fastened to the hopper, substantially as shown
 60 and described.

6. In a railway sander, the combination with a hopper secured beneath the car, a normally closed ejector-valve journaled in the sides of the said hopper at the mouth thereof,
 65 an agitating rod pivoted to the said valve and provided with cross-bars affixed thereto, of an operating lever pivoted to the dashboard of the car, surrounded by a regulating guide, and connecting by means of a pitman with a
 70 bell-crank lever secured to the journal of the ejector-valve, and a spring attached to the free arm of the said lever, and adjustably fastened to the hopper by a loop having an elongated slot therein, and a set-screw extending
 75 through the said loop, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 31st day of January, 1894.

WILLIAM GRUNOW, JR.

Witnesses:

PERCY GRIFFITH,
 EDWARD M. CLARK.