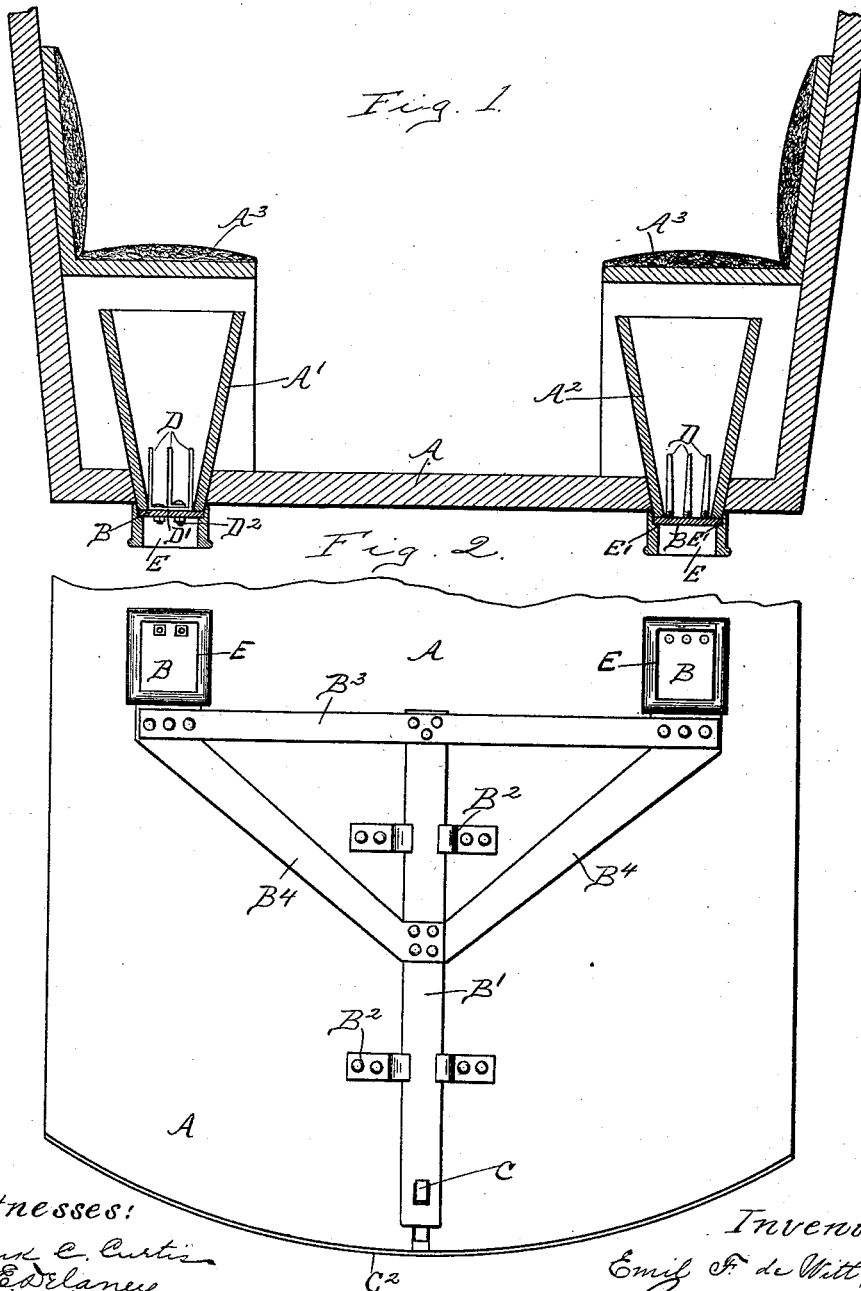


E. F. DE WITT.
SAND BOX FOR STREET CARS.

No. 491,161.

Patented Feb. 7, 1893.



Witnesses:
Frank C. Curtis
A. Edlaney

Inventor:
Emil F. de Witt,
by Geo. A. Mowbray
Atty.

(No Model.)

2 Sheets—Sheet 2.

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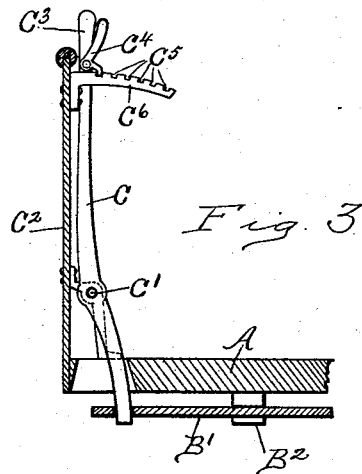
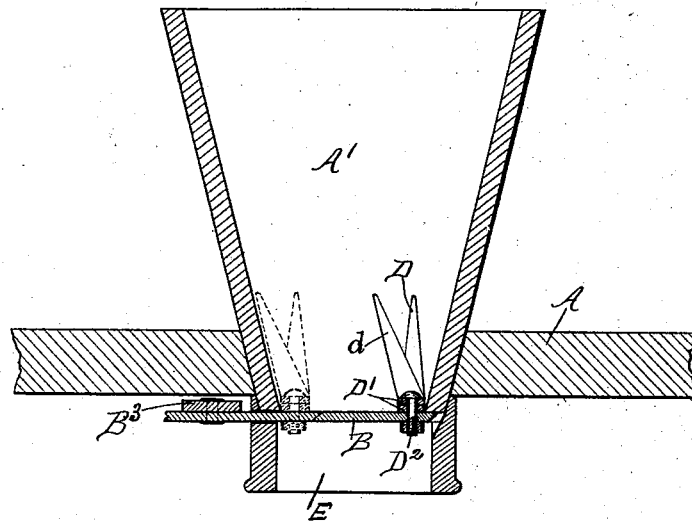


Fig. 3.

Fig. 4.



Witnesses:
Frank C. Curtis
A. C. Delaney

Inventor:
Emil F. de Witt
by Geo. A. Mosher
Atty.

UNITED STATES PATENT OFFICE.

EMIL F. DE WITT, OF LANSINGBURG, NEW YORK.

SAND-BOX FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 491,161, dated February 7, 1893.

Application filed October 22, 1892. Serial No. 449,570. (No model.)

To all whom it may concern:

Be it known that I, EMIL FREDERICK DE WITT, a citizen of the United States, residing at Lansingburg, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Sand-Boxes for Street-Cars, of which the following is a specification.

My invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a vertical transverse section of a street-car body, and the hoppers of my improved sand-boxes. Fig. 2 is a bottom plan view of a portion of such car and sanding apparatus. Fig. 3 is a view in side elevation of one of the car-platforms and a portion of the mechanism for operating the sand boxes. Fig. 4 is a longitudinal vertical central section of a portion of the car and one of the hoppers, on an enlarged scale.

In the use of traction railway-cars it is customary to apply sand to the rails when slippery to increase the traction of the wheels. Sand-boxes have been attached to the cars in a position to allow sand discharged therefrom to fall upon the rails in front of the traction-wheels. Varying degrees of moisture and temperature not only cause a variation in the amount of sand discharged through a given opening, but frequently operate to wholly cut off the discharge; and various means have been employed for forcibly ejecting and controlling the discharge of sand; but such devices require the constant attention and manipulation of an operator to obtain a constant discharge of sand. Such a requirement cannot be met by the operator of the mechanism which propels the car. For example, on an electric street-car, one man is compelled to operate the motor, the brake, the alarm-bell, and the sanding apparatus. I have ascertained that by providing the slide-valve of a sand-hopper with fingers projecting upward into the sand, and a convenient means for

imparting to the valve reciprocating movements as well as for holding the valve in a fixed partly open position, the manipulator of the propelling and other mechanism can not only obtain a certain discharge of sand, but can control the discharge without interfering with his other duties.

Referring to the drawings, A— represents the floor or bottom of the car, and A'—, A²—, two sand-hoppers, one on each side of the car, under the seats; A³—.

B—, B—, are the slide-valves adapted to open and close the bottom of the hoppers. The valves are secured to a common carrier, consisting of a bar, B'— movable in the hangers, B²— secured to the bottom of the car, the cross-bar, B³— and braces, B⁴—. I have shown the outer end of bar B'—, and the car-bottom apertured to receive the lower end of the hand-lever, C—, fulcrumed at C'— to the bracket secured to the dash-board C²— of the car. The upper end of the lever is provided with a handle, C³— and a pivoted pawl, C⁴—, adapted to be thrown in and out of the notches, C⁵— in the segment, C⁶— secured to project from the upper part of the dash-board. By means of the lever, the slide-valves can be reciprocated to open and close the sand-hoppers; and by means of the pawl and notched segment the valve can be secured in differing positions to afford discharge openings from the hopper varying as desired in capacity.

To insure the positive and free discharge of sand through the valve-openings, I provide each valve with a plurality of upright fingers, D— which project up into the body of the inclosed sand. I prefer to have such fingers in the form of blades secured to the valve edgewise to their line of movement, as shown in Fig. 4. Should the sand in the hoppers, from any cause, become packed, lumpy or sufficiently adhesive to cohere in masses and prevent or interfere with a free discharge, two or three full thrusts of the lever quickly made, will effectually disintegrate the masses and lumps so that it will discharge by gravity through the desired opening without further attention from the operator, until sufficient sand has been discharged or the contents of the hopper require further agitation.

I prefer to make the agitating fingers detachable from the valve so that a finger may

be replaced by another when broken or injured, without removing and inserting the slide-valve, which would necessitate taking the apparatus apart.

5 I have shown the blade fingers made of sheet-metal strips bent up from a body-plate, D'—, through which they are secured to the valve by bolts, D²—. The fingers may be any form of pins and secured to the valve by inserting a screw-threaded end into a similarly threaded aperture in the valve, as shown in one of the hoppers seen in Fig. 1.

The discharge opening of the hopper is narrower than the valve, and narrower than the discharging conduit, E—, beneath the valve, so that the sand in discharging will not strike the slideway, E'— of the valve to clog it, but will fall beyond and pass it. Such slide-way being located entirely without the periphery of the bottom discharge opening in the hopper.

When a hopper with inclined side-walls is employed, as shown in the drawings, I am able, by projecting one or more of the agitating fingers obliquely from the valve in a line approximately parallel with one of the inclined end walls of the hopper, to agitate a larger body of sand without limiting the slide movement of the valve.

30 In Fig. 4, I have shown one of the agitating fingers, d— projecting obliquely from the

valve in a line parallel with the inclined front wall of the hopper.

What I claim as new and desire to secure by Letters Patent is

1. In a sanding apparatus for railway cars, the combination with the hopper and a slide-valve controlling the hopper outlet, of a removable agitating finger projecting upwardly from the valve into the hopper and a detachable connection between the finger and valve, substantially as described. 35 40

2. In a sanding apparatus for railway cars, the combination with the hopper and valve, of a blade projecting upwardly from the valve into the hopper and secured to the valve edge-wise to its line of movement, substantially as described. 45

3. In a sanding apparatus for railway cars, the combination with a hopper having a bottom discharge opening, of a slide-valve controlling such opening and a slide-way for the valve beneath the hopper and located entirely without the periphery of the discharge opening therein, substantially as described. 50 55

In testimony whereof I have hereunto set my hand this 17th day of October, 1892.

E. F. DE WITT.

Witnesses:

GEO. A. MOSHER,
FRANK C. CURTIS.