

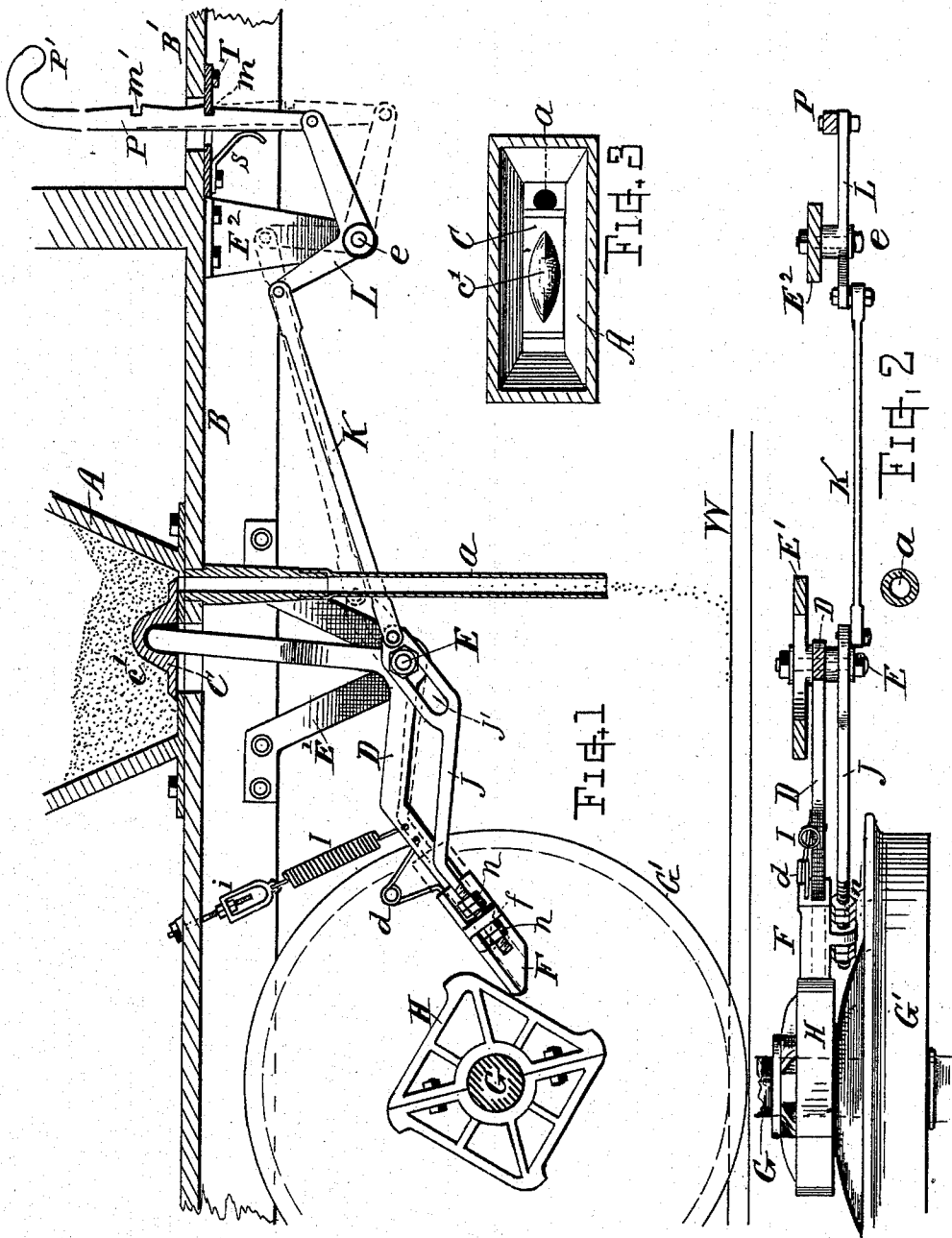
(No Model.)

A. PARRANT.

SAND DELIVERING MECHANISM FOR STREET CARS.

No. 527,446.

Patented Oct. 16, 1894.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## SAND-DELIVERING MECHANISM FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 527,446, dated October 16, 1894.

Application filed May 11, 1894. Serial No. 510,856. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER PARRANT, a citizen of the Dominion of Canada, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Sand-Delivering Mechanism for Street-Cars, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my invention is to provide, for the purpose named, an automatically operating mechanism of the nature and structure described, working in combination with the truck wheel-axle, and having suitable connections under control of the driver or motor-man for throwing the mechanism into and out of operative action as desired.

In the drawings, Figure 1 is a sectional side view of a sand-distributing mechanism embodying my invention. Fig. 2 is a sectional plan view of the same, and Fig. 3 is a horizontal section of the sand box showing the sliding gate in the bottom thereof.

Referring to parts, A designates the receptacle, box or hopper for containing the sand, arranged upon the floor of the car B, preferably beneath the seat; and provided with a chute or conductor *a* leading therefrom to deliver the sand upon the track W. A sliding gate or valve *c'* at the bottom of the sand-box controls the discharge of sand as required by opening and closing the mouth of the chute. An angle-lever D is pivoted on a fulcrum axis or stud E supported by a suitable bracket E' attached to the bottom sill of the car. One arm of said lever extends up through an opening in the bottom of the sand-box and engages in a cavity in the under side of the gate, said gate covering the opening, while the other arm of said lever D extends backward toward the axle G of the truck-wheels G', and is provided with a downwardly inclined end having arranged thereon a sliding shoe or contact member F that can be moved into and from engagement with a cam or actuator H arranged on the axle G and revolving therewith. The cam H is herein made with four swells or protuberant portions, but any desired number, more or less, can be employed for giving

quicker or less rapid impulses to the lever D, as in any instance required. A lifting spring I is connected with the arm of the lever for keeping it normally elevated and the gate closed. The end of said spring may be attached to the car bottom by a tension adjusting device; as at *i*.

The sliding contact piece F is fitted with an ear *f* at one side for receiving the screw-threaded end of a shifting bar J which is passed through the same and confined, more or less closely, by jam-nuts *n* arranged on the threaded end at opposite sides of said ear with a free intermediate space. Said bar J extends alongside the arm of the lever and has at its other end a guide or slot J' arranged in conjunction with the stud E, so that said bar can be moved backward or forward, as hereinafter explained. The end of the bar J is connected by a rod or link K with the upper arm of an angle lever L, pivoted at *e* to a bracket E<sup>2</sup> attached to the car bottom, and the lower arm of said lever L is pivotally joined with a shipper-bar P that extends up through the car platform B', and is furnished with a suitable grip or handle P' in reach of the driver or motor-man. Notches *m m'* are formed in the edge of the shipper-bar that engage with a plate or catch T attached to the platform for retaining the adjustment, and a spring S arranged to press against the bar serves to retain the parts in engagement, as indicated.

A spring *d* is preferably provided to press the shoe F toward its outward position, and to afford yielding contact thereof with the cam-surface to avoid pounding of the surfaces together.

The sand-gate C is provided with a hump or boss *c'* on its upper side which covers the cavity within which the end of the lever D engages, and also serves as an agitator to break up the sand at the bottom of the hopper; the ends of said boss being formed laterally sharp and upwardly inclined to act as a plow. The cam wheel H is best formed in two halves so as to be clamped onto the axle G by bolting the two parts together, as indicated.

The operation is as follows:—When the hand-bar P, lever L, link K and bar J are in the position shown in full lines Fig. 1, the shoe or contact piece F is at backward extension

on the angle-lever D and projecting therefrom so that it engages with the cam H; and the projecting point of the latter, as it revolves with the movement of the axle G, depresses the piece F and end of the lever D and thereby slides back the gate C, permitting sand to fall through the chute *a* upon the track W. The spring I immediately lifts the lever and closes the gate C when the point of the cam has passed, thus giving a vibratory motion to the lever; and this motion, by opening and closing the gate repeatedly in quick succession, continues to distribute sand so long as the mechanism is in active position. When it is desired to stop the delivery of sand the motor-man or attendant depresses the shipper-bar P which moves the lever L, link K and bar J to the position indicated by dotted line Fig. 1, and thereby retracts the member F upon the lever D out of contact with the cam H, and the gate C is then retained closed by the action of the lift-spring I until the mechanism is again thrown into operation by lifting the shipper-bar.

I claim and desire to secure by Letters Patent—

1. The combination with the car and its wheel-axle, of the sand receptacle, the sliding gate and delivery chute, the gate-operating lever, the contact-shoe movable and sliding on the end of said lever, the lift-spring attached to said lever, a cam on the wheel-axle, and *d* means for shifting said contact-shoe endwise into and from engagement with said cam, for the purpose set forth.

2. The combination with the sand-box, the

sliding-gate, the gate operating angle-lever fulcrumed on the stationary pivot stud E and having the retractible contact member longitudinally movable on the end thereof; and the cam upon the car-axle, of a bar J supported by a slot or guide at the fulcrum pivot E connected with said contact member, and having its end joined by a rod with an angle-lever, and a shipper-bar at the car-platform, substantially as and for the purpose set forth.

3. In a sand-delivering mechanism for street-cars, the combination with the sand-box and its delivery chute, of the sliding gate or valve having the hump *c'* upon its top side with a cavity beneath, and the operating lever connecting or engaged therewith through an opening in the bottom of the sand-box.

4. In a sand-distributing mechanism for street-cars, the contact piece F sliding on the end of the gate-actuating lever, and provided with a perforated ear *f*, the bar J having its threaded end passing through said ear, with the jam-nuts *n n* arranged with an intervening space for loosely confining said ear, and the spring *d* normally forcing said contact piece toward the end of the lever, in combination with the actuating cam H, the sand-feeding devices and connections for working said bar J.

Witness my hand this 8th day of May, A. D. 1894.

ALEXANDER PARRANT.

Witnesses:

CHAS. H. BURLEIGH,  
ELLA P. BLENUS.