No. 639,625. Patented Dec. 19, 1899.

A. L. SPRAGUE.

CAR TRACK SANDING DEVICE.

(Application filed Apr. 19, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

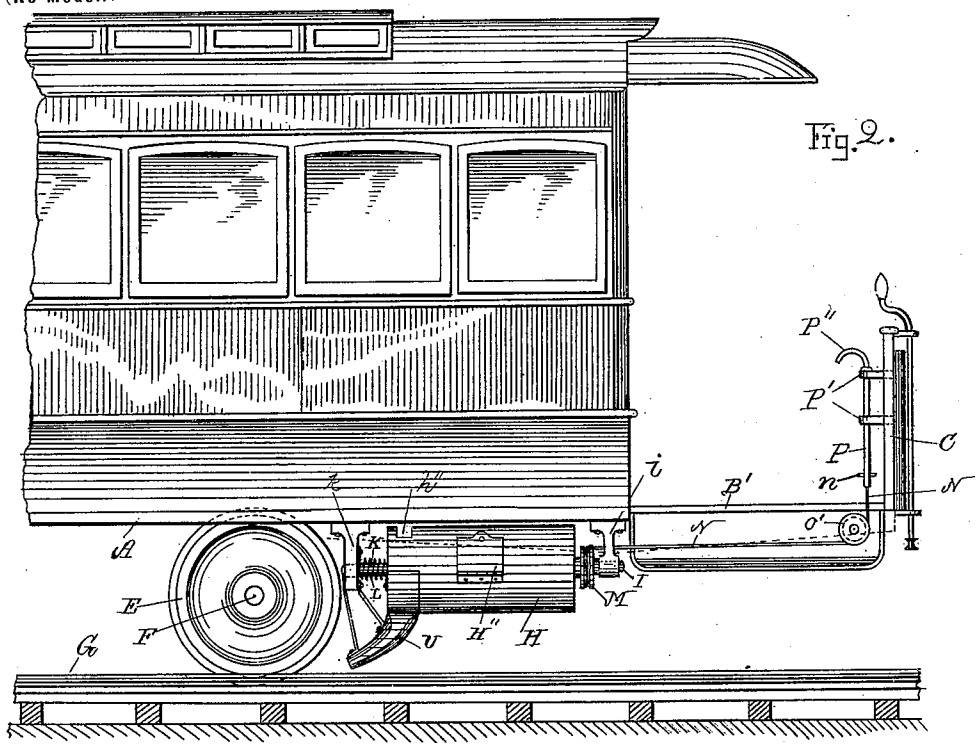
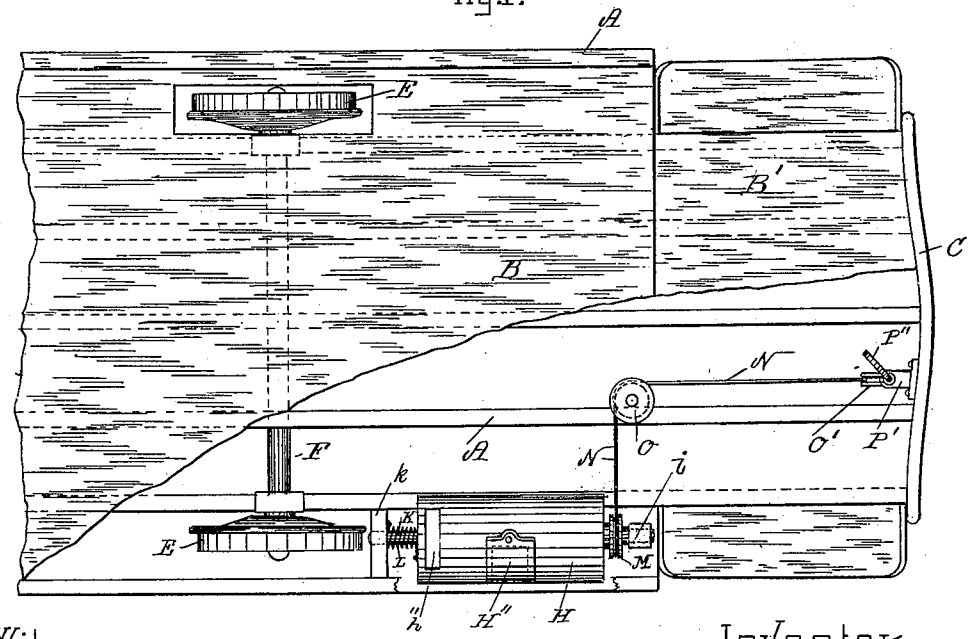


Fig. 1.



Witnesses.

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Fig. 3.

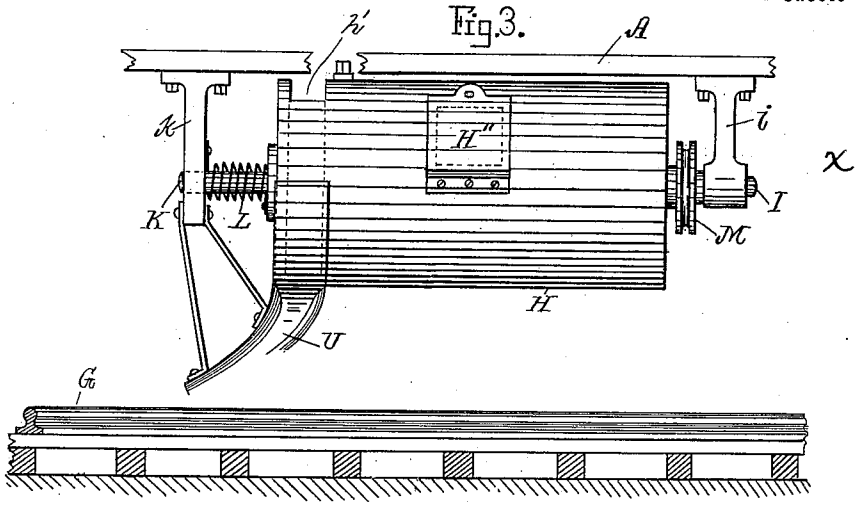


Fig. 4.

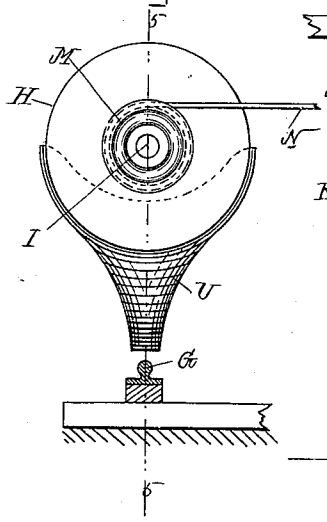


Fig. 5.

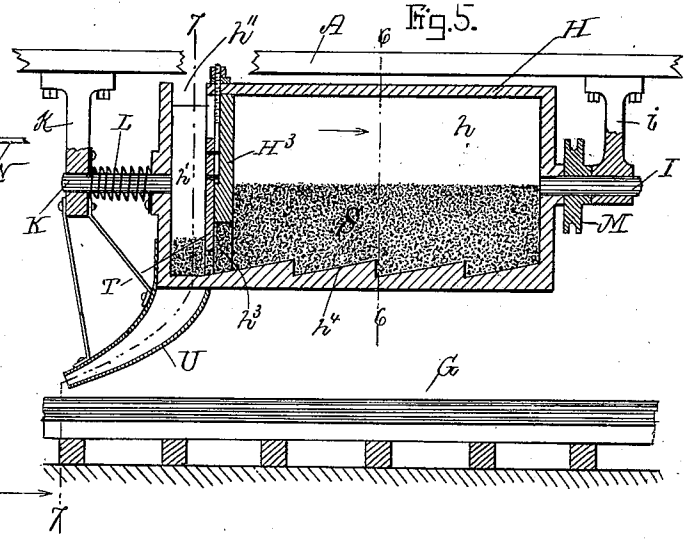


Fig. 7.

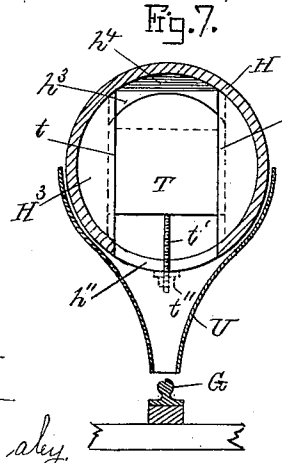
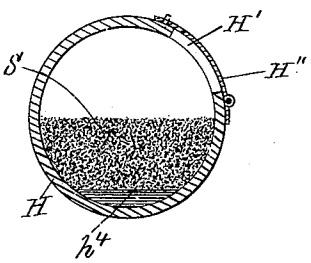


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

ABRAHAM L. SPRAGUE, OF MILTON, MASSACHUSETTS, ASSIGNOR TO THE SPRAGUE CAR APPLIANCE COMPANY, OF PORTLAND, MAINE.

CAR-TRACK-SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 639,625, dated December 19, 1899.

Application filed April 19, 1899. Serial No. 713,644. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM L. SPRAGUE, a citizen of the United States, residing at Milton, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Car-Track-Sanding Devices, of which the following is a specification.

This invention relates to improvements in car-track-sanding devices adapted for use on tramway cars or motors for the purpose of sanding the rail or rails when slippery or when going up grades, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, wherein—

Figure 1 represents a top plan view of the invention as applied to a tram-car. Fig. 2 represents a side view of the same. Fig. 3 represents a detail side elevation of the oscillating sand receptacle and distributer. Fig. 4 represents an end view of the same as seen from X in Fig. 3. Fig. 5 represents a central longitudinal section on the line 5 5, shown in Fig. 4. Fig. 6 represents a cross-section on the line 6 6, shown in Fig. 5; and Fig. 7 represents a cross-section on the line 7 7 in Fig. 5, showing the sand holder or receptacle in its reversed position for sanding the track.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A in Figs. 1 and 2 represents the car-frame; B, the floor, of which B′ is one of the end platforms; and C, the dasher, as is common in electric or other motor cars.

E E represent the wheels at one end of the car, said wheels being secured to the axle F, which is suitably journaled in bearings beneath the car-frame, as usual.

G G are the rails of the car-track.

The improved track-sanding device is composed of a preferably-cylindrical sand-receptacle H, to the opposite ends of which are secured the axles or shafts I K, which are journaled in the respective bearings *i k*, secured to the framework of the car in a manner as may be most practical and convenient. The said sand-receptacle is normally held in the position shown in Figs. 1 and 2, preferably by the influence of a coiled spring L, surrounding the shaft K and having one of its ends secured to the sand-box H and the other end secured to the bearing *k* or other stationary part of the framework.

To the axle I is secured a grooved pulley M, to which is attached one end of a cord or chain N, which is conducted partially around suitable guide-pulleys O O′ and connected at its forward end, preferably, to a rod P, movable in a guide P′, secured on the interior portion of the dasher C, and provided with a suitable pull or handle P″, as shown in Figs. 1 and 2.

In practice I make on the cord N or rod P a stop projection *n*, adapted to be brought in contact with the lower end of the guide P′ when the handle P″ has been pulled upward to the limit of its stroke, at which time the sand-chamber H has been turned to its position for discharging a portion of its contents onto the rail in front of one of the forward wheels, as will hereinafter be more fully shown and described.

In practice the handle P″ may be arranged to serve as a stop, so as to cause the sand-chamber H to be normally held by the influence of its spring L in the inoperative position shown in Figs. 1 and 2.

The sand-chamber H is provided, preferably on its side, with a feed-opening H′, which is normally kept closed by means of a suitable cover H″, provided with any well-known locking device, if so desired. The said sand-receptacle is transversely divided by means of a wall H^3 into two compartments *h* and *h′*, the former being the sand-receptacle proper and the latter being the discharge and measuring chamber, provided at its periphery with a discharge-opening *h″*, as shown in Figs. 5, 6, and 7. Communication is established between the chambers *h* and *h′* by means of a perforation h^3 in the wall H^3, such perforation being preferably arranged about diametrically opposite to the discharge-opening *h″*, as shown in the drawings. In practice I prefer to make on the interior portion of the compartment *h* one or more inclined surfaces h^4 h^4, which during the rocking motion of the chamber H serve as a means to disintegrate and break up the sand in case it should be moist and sticky.

For the purpose of regulating the supply of sand from the receptacle *h* from time to time to the compartment *h′*, I prefer to arrange within the latter a laterally-adjustable slide

or gate T, adapted to be guided in ways t t, secured to or forming a part of the division-wall H^3, so as to adjust the position of said gate T for the purpose of regulating the size of the supply port or opening h^3, according to the amount of sand that is to be discharged when the position of the receptacle H is reversed, as represented in Fig. 6. Any desired mechanism may be used for the purpose of adjusting the position of the gate T, and I have for this purpose shown in the drawings the said gate as being provided with a screw-threaded spindle t', provided with a thumb-nut or nut t'', by the turning of which the position of said gate may be adjusted.

I have shown in the drawings a hand-pull and connecting device to a pulley on the shaft of the oscillating sand-chamber for the purpose of rocking the latter to a position for discharge of sand onto the rail and a spring for automatically returning it to its normal inoperative position; but I wish to state that I do not desire to limit myself to such precise mechanism for the purpose of oscillating the sand-holding chamber, as I may for such purpose use a pedal action, a hand or foot lever, or operate the same electrically without departing from the essence of my invention.

U is a stationary spout or conductor, the upper portion of which fits loosely around the under side of the oscillating chamber H, below the discharge-opening h'', and the lower end of which terminates a little above the rail G in front of the wheel E, as shown in Figs. 2, 3, 4, 5, and 7.

The operation of the track-sanding device is as follows: The chamber h is charged with sand through the side opening H', after which such opening is closed by the cover H'', as shown in the drawings. Normally said charged receptacle is held in the inoperative position (shown in Figs. 1, 2, 3, 4, 5, and 6) by the influence of the spring L. When it is desired to discharge a portion of the sand from the chamber h', all that is necessary for the motorman or man in charge to do is to pull upward on the handle P'', by which the chamber H is turned about half a revolution around its axis, causing the discharge-opening h'' to face the rail and to coincide with the upper portion of the spout U, as shown in Fig. 7, thus allowing the sand contained in the compartment h' to be discharged onto the rail in front of the wheel. As soon as the operator lets go the handle P'' the chamber H is automatically returned to its normal position (shown in Figs. 1, 2, 3, 4, 5, and 6) by the influence of the spring L, causing a portion of the sand S to enter the discharge-compartment h' from the sand-holding compartment h, ready for a subsequent discharge whenever the man in charge pulls upward on the handle P'', and so on.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. In a car-track-sanding device an oscillating sand-receptacle divided into two compartments h and h', a port h^3 establishing communication between said compartments, a discharge-opening h'' leading from the chamber h', and a stationary spout or conveyer U, through which the sand is conducted to the rail from the sand-chamber, substantially as and for the purpose set forth.

2. In a car-track-sanding device an oscillating sand-receptacle divided into two compartments h and h', a division-wall H^3 arranged between them and having a port h^3, an adjustable gate T, and a discharge-opening h'' in the chamber h', all arranged and combined substantially as and for the purpose set forth.

3. In a car-track-sanding device, an oscillating sand-receptacle containing a sand-holding chamber h, having one or more inclines h^4 on its interior, a delivery-chamber h', from which the sand is conducted through a spout U, and a perforated division-wall H^3, arranged between the chambers h and h', substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ABRAHAM L. SPRAGUE.

Witnesses:
ALBAN ANDRÉN,
KARL A. ANDRÉN.