(No Model.)

N. NEWMAN.

SANDING DEVICE FOR STREET CARS.

No. 457,325. Patented Aug. 4, 1891.

Fig. 1.

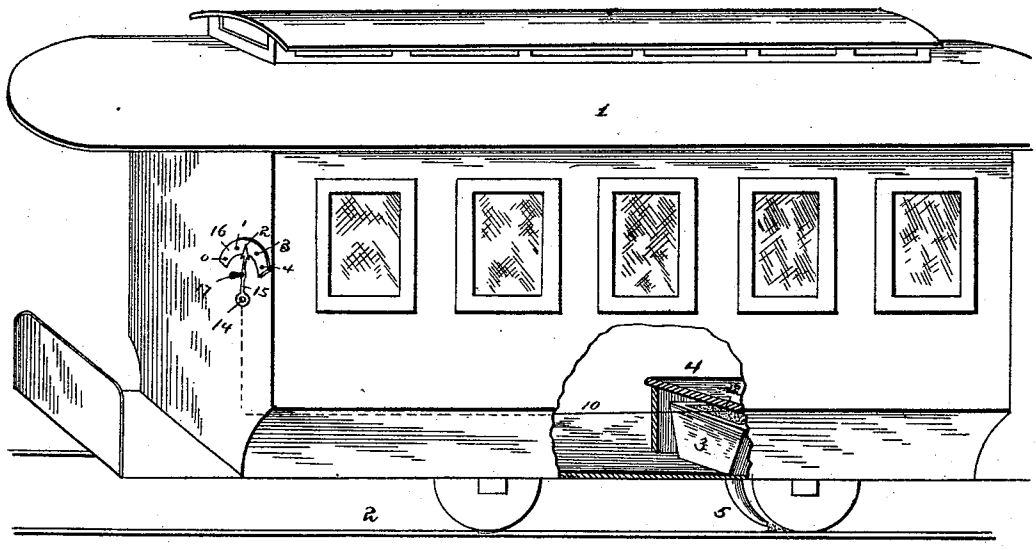


Fig. 2.

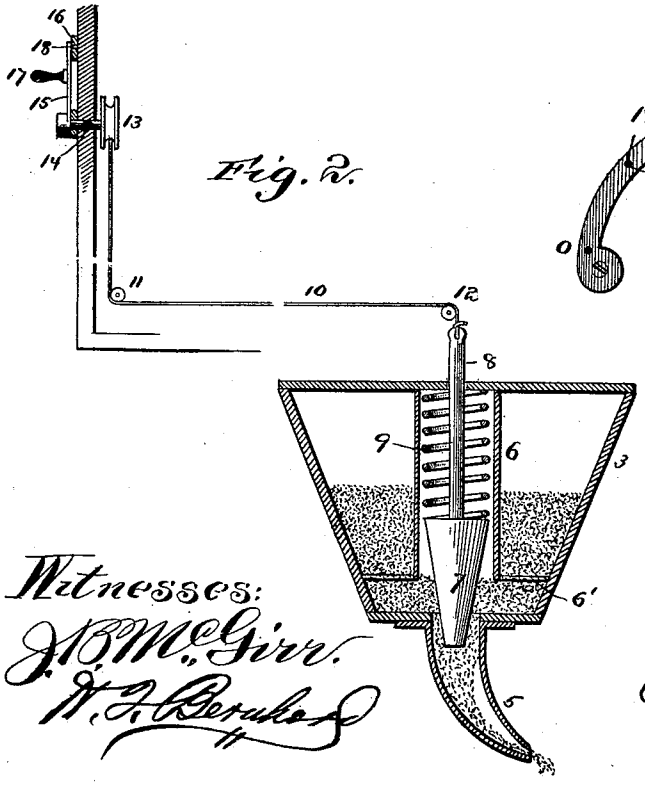
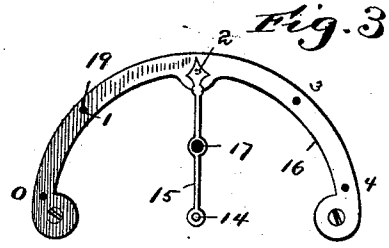


Fig. 3.



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UNITED STATES PATENT OFFICE.

NELSON NEWMAN, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO GEORGE A. SANDERS AND SAMUEL J. WILLETT, BOTH OF SAME PLACE.

SANDING DEVICE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 457,325, dated August 4, 1891.

Application filed April 6, 1891. Serial No. 387,826. (No model.)

To all whom it may concern:

Be it known that I, NELSON NEWMAN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Sanding Devices for Street-Cars; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My present invention relates to improvements in sanding devices especially adapted for street-cars, such as electric-railway cars, cable cars, and other tramway-cars, although it is equally applicable to any kind of a moving vehicle adapted for traveling on a stationary track, which I would have it understood is within the scope of my improvements.

The object of the present improvement is to provide a simple and inexpensive appliance which can be easily operated to deliver sand directly upon a rail of a railway-track, and which can be controlled from a point above the platform of the car to vary (increase or diminish) the quantity of sand spread on the rail.

With these ends in view my invention consists in a box or receptacle carried on the car-body, under the seat therein, or at a convenient point, the sand-box being provided with a delivery-spout, which communicates with the interior of the box and depends from the car to a point within a short distance of the rail. In this box or receptacle is provided a vertical tubular guide, which is suitably braced or stayed, and in said tubular guide is arranged a conical or tapered valve adapted to seat itself within the mouth or orifice of the depending spout. This valve is carried by a rod which extends through the top of the receptacle, and around the rod is placed a coiled spring which takes bearing against the top of the receptacle and the head of the valve, to normally depress the latter to its seat in the mouth of the spout, thus closing the latter. To the upper end of this valve-rod is fastened a rope or pull-cord, which passes over suitable guide-pulleys on the car to a spool or reel, which is carried by a shaft or arbor suitably journaled in the car. This shaft or arbor also carries an index or pointer, which moves over a segmental or arc-shaped scale, marked with suitable division-lines, and this pointer has a pin adapted to be inserted in one of a series of apertures in the segmental scale, whereby the pointer can be fixed at the desired point to prevent the reel or spool from turning and thus sustain the valve, against the tension of its retractile spring, in an elevated position.

To enable others to more readily understand my improvements, I have illustrated the same in the accompanying drawings, in which—

Figure I is a view taken through a car to show the application thereto of my improved sanding device for the rails of a track. Fig. II is a sectional view through the receptacle or box and the means for controlling the operation of the valve. Fig. III is a detail view of the pointer and its scale.

Like numerals of reference denote corresponding parts in all the figures, referring to which—

1 is an ordinary tramway-car, and 2 are the rails of the track on which the car travels, which parts are of the common construction.

3 is the sand receptacle or box of my improvement, which is carried on the car at any suitable or convenient place thereon—as, for instance, beneath the seat 4 in the car, although this is not important. This box or receptacle is provided with a depending mouth or delivery-tube 5, which is fixed to the box and depends from the same for a suitable distance, so as to terminate at a point advantageous for delivery of the sand directly upon one or both rails of the track. This delivery-spout is preferably tapered throughout its length, and it communicates with the interior of the sand box or receptacle.

Within the box is provided a vertical guide-tube 6, which is fixed therein in any suitable manner—as, for instance, by having its upper end fastened to the top of the box and its lower end stayed by means of braces 6′. In this vertical guide-tube operates the valve 7, the valve-stem 8, and the coiled retractile

spring 9. The valve 7 is tapered throughout its length, or made conical in form, and arranged with its larger end uppermost; and said valve is adapted to seat or bear against the mouth of the delivery-spout, which thus forms a seat for the valve. The valve is normally closed by the reaction or tension of the coiled spring; but it can be lifted more or less to vary the size or opening between the surface of the valve or surface of the mouth or delivery-tube; thus the valve may be raised to deliver a small stream of sand, or it can be raised higher to deliver a larger stream, and so on. The valve-stem extends through the top of the sand-box, and the coiled spring is arranged around said stem, between the valve and the top of the box. To the upper end of the valve-stem is fastened a cord or wire 10, which passes over the pulleys 11 12, suitably supported on the car at desired intervals apart, and this cord or wire 10 runs to a spool or reel 13, to which it is suitably attached. This reel or spool is rigidly fastened to a shaft or arbor 14, suitably journaled in the car, and the other end of this shaft or arbor carries an index or pointer 15, which moves or travels over a segmental or arc-shaped scale 16, which is fixed to the car. The index has a knob 17, by which it can be conveniently moved over the scale, and in an aperture in the index is fitted a pin 18, which is adapted to take into one of a series of apertures 19 formed in the scale at proper intervals apart. This scale has the desired division-marks thereon.

The operation of my invention is simple, and may be briefly described as follows: The pointer or index being free or unconfined, the coiled spring normally forces the valve to its seat and cuts off the escape or flow of sand from the box or receptacle. If it is desired to allow a small quantity of sand to escape from the box, the hand or pointer is turned by means of the knob to the point 1 and there fastened by the locking device, and as the arbor or shaft is turned by the pointer the spool partly winds the cord around itself, and thus pulls upon the cord to raise the conical valve somewhat, and thus open to a limited extent the space between the valve and the delivery-spout. To increase the quantity of sand to be discharged from the box, the pointer may be turned successively from the point 1 to the points 2 or 3 or 4, according to the quantity it is desired to discharge, and the valve will be raised a distance corresponding to the amount of cord or wire that is coiled around the spool or reel on the arbor or shaft.

I am aware that changes in the form and proportion of parts and details of construction of the means herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such modifications as fairly fall within the scope of my invention.

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

1. The combination of a sand box or receptacle adapted to be carried by a car-body and provided with a fixed nozzle arranged to deliver onto a track-rail, the vertical guide-tube arranged within said box or receptacle in line with the nozzle or outlet from said box, the conical valve within said guide-tube and arranged to close or open the outlet from said box, a coiled spring around the valve-stem, and means for elevating the valve, substantially as described.

2. The combination of a sand-box having a delivery-spout, the valve, a shaft or arbor having the pointer or index and the spool, and the cord or connection between the spool and the valve, substantially as described.

3. The combination of a sand-box, the conical valve, the cord or wire fastened to the valve, the shaft or arbor carrying a spool, to which the cord or wire is fastened, the perforated scale, the pointer fastened to the shaft and having the locking-pin adapted to engage the scale, and the spring for normally depressing the valve, substantially as described.

4. The combination of a sand-box having the delivery-spout, the conical valve arranged to seat within the mouth of said spout and normally depressed by a spring, the shaft or arbor carrying the spool, the cord fastened to the valve-stem and the spool, and the pointer or index rigid with the shaft or arbor and having means for locking said pointer at the desired adjustment, substantially as set forth.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

NELSON NEWMAN.

Witnesses:
WM. R. BOWERS,
DORA ADAMS.