(No Model.)

J. M. HARPER.

SAND BOX FOR STREET CARS.

No. 458,166. Patented Aug. 25, 1891.

Fig. 1.

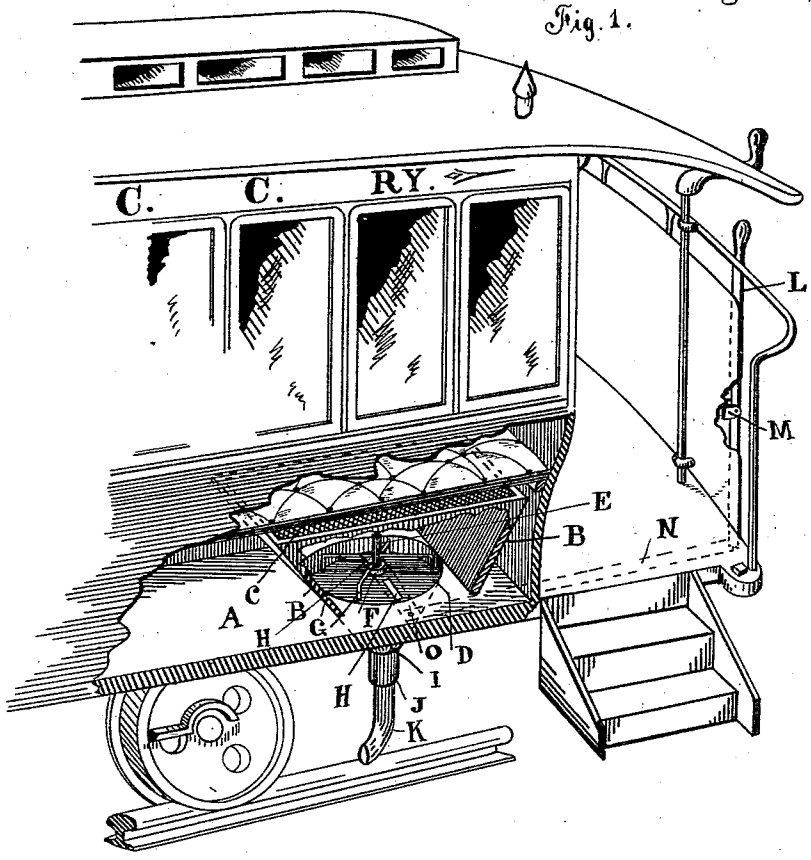


Fig. 2.

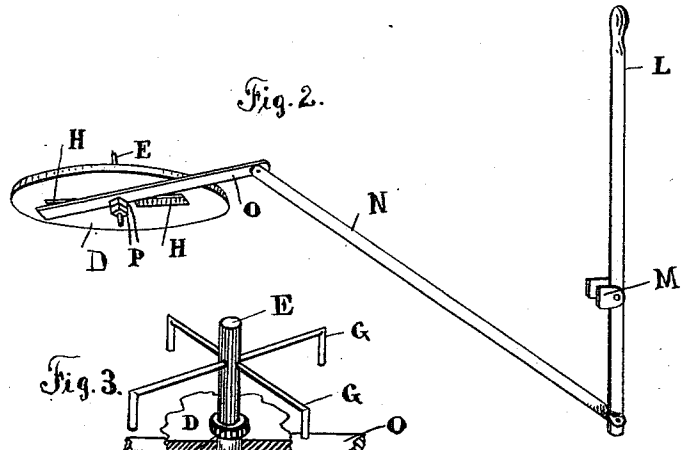


Fig. 3.

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UNITED STATES PATENT OFFICE.

JAMES M. HARPER, OF PEORIA, ILLINOIS.

SAND-BOX FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 458,166, dated August 25, 1891.

Application filed April 4, 1891. Serial No. 387,601. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. HARPER, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Sand-Boxes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in sand-boxes, by means of which a sand-box is provided, being simple in construction, effective in its operation, durable and cheap in first cost.

More particularly my invention relates to a sand-box designed to be located upon any part of the car desired, and consisting, essentially, of a box having openings or slots in the bottom which open into a spout below, directed to the rail of the track and having a suitable cut-off for opening and closing the openings or slots in the bottom, and provided with a rod or shaft bearing upward through the bottom and carrying within the sand-box suitable radial pins, the said rod or shaft designed to be operated or turned with the shifting of the valve, as will hereinafter be more fully described. The sand-box is also provided with a wire-netting cover.

That my invention may be more fully understood, reference is had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a street-railway car and of my improvement attached and constructed therewith. Fig. 2 is a detail view showing the bottom of the sand-box, with cut-off and lever with connection for operating the same. Fig. 3 is a detail view showing the bottom of the sand-box or a section thereof, and showing how the rod or shaft is connected with the bottom and showing the construction of the shaft or rod.

In Fig. 1, A refers generally to the car and particularly to that portion of the car underneath the seat. B B represent oblique sides of the sand-box, it being provided with the other necessary sides, the said box being built or adjusted upon the floor of the car and occupying a portion of the space underneath the car-seat. D is the bottom of the sand-box, slightly depressed below the main portion and circular in form, and provided with the slots H H, which open into the receptacle I below, the same being funnel-form, which opens into the spout J, which acts as a sleeve for the smaller spout K. E is an upwardly-tending rod, bearing through an opening in the bottom of the sand-box, and provided with the collar F and also with the radial pins G. Below the bottom of the sand-box, or rather underneath the same, is the cut-off O, connected with the lever L by means of the rod or bar N, as shown in dotted lines, with the lever L pivoted, as at N, and designed to operate the cut-off O. The connecting rod or bar N is pivotally connected with the valve O and with the lever L. C is a wire-netting which constitutes a cover for the box.

In Fig. 2, P refers to nuts on the rod E.

The construction of the rod E is best seen in Fig. 3, where it is shown provided with the collar F to bear upon the bottom of the box D, and bearing upward carries the radial pins G G, and depending downward through the bottom carries the cut-off O, and is squared, as at Q, and bears through a square opening in the said cut-off O, and is threaded below to bear the nuts P, designed to hold the cut-off up close against the bottom of the box.

The sand-box being properly adjusted and the cut-off being closed over the openings in the bottom of the box, sand is poured in through the wire-netting until the box is filled, the wire-netting preventing the entrance therein of large stones or débris or anything that would be likely to hinder the free passage of the sand through the openings in the bottom of the box or the spouts, and when so filled and it is desired that sand should be deposited upon the rail of the track the lever L is operated either forward or backward, thus shifting the cut-off and freeing the openings to allow the sand to flow from the box. The sand flowing from the box enters the funnel-shaped compartment below and is conducted by suitable pipes to the rail, and the quantity of the flow is regulated by the cut-off, as the same may be partially or wholly removed from the openings, as may be desired. With the shifting of the cut-off there is always a simultaneous movement of the rod E, as the squared portion Q of the rod E

constitutes the axis or turning-point of the said cut-off, and when the rod E is so turned there is a corresponding movement of the pins G G, which may be termed "agitators," which said pins, radiating as here shown, may be of any number desired and of any length, and may be straight or hooked, as desired, and placed at any elevation above the bottom of the sand-box.

It is very essential that an agitator be used in connection with the sand-box, or, in fact, with any sand-box, as the sand-deposit therein is liable to gather moisture and become packed when there is no flow from the box to such an extent that if the valve were wholly removed from the openings in the bottom it would not flow, or if it became clogged in any way, as by stones or débris of any kind, as would be apt to happen if the sand were not screened before being put into the box, or when being put into the box, it would then be impossible to make the same operate to supply the sand required; but by the use of the agitator the sand is readily stirred by simply operating the lever, thus turning the rod which bears the pins, and being thus loosened or pulverized will flow freely through the opening, or, if it become clogged by stones or débris, the pins of the agitator, if arranged to drag immediately over the openings, will readily free the same from such obstruction to the flow, and thus providing a continuously-operative sand-box capable of supplying a steady flow of sand at any time and in any quantity desired.

The pipes depending from the sand-box proper may be in any form desired, and may be hinged so as to raise or lower by suitable means to relieve it from contact with obstacles or to prevent it from being immersed in water, as it is necessary that the pipes be kept perfectly dry to facilitate the flow of sand. A rubber pipe may be used, if desired, and may be raised or lowered by any suitable means. The sand-box may be made of any suitable material and may be varied in form to suit the application in which it may be desired to be used, and it may be located upon any part of the car, as may be desired.

The depending pipes if jointed or of rubber must be secured to some portion of the car-truck, so that the lower end of the pipe will be carried immediately over the rail in order that the vibration of the body of the car to which the sand-box is attached or the side motion of the wheels, if any, will not interfere with the distribution of sand upon the rail.

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

1. In a sand-box, the compartment B B, provided with the wire-netting screen and having the slightly-depressed circular bottom part D, the same provided with the slots H H, the rod E, bearing upward into the box and carrying the radial pins G G and having the collar F to bear upon the bottom and depending through the bottom part D and squared, as at Q, to bear the cut-off O, and threaded to bear the nuts P with the cut-off O, carried upon the squared portion Q and connected with the lever L by means of the rod or bar N, pivoted to the said cut-off and lever at its respective ends, and the lever L, pivoted as at N, all substantially as described and set forth.

2. In combination with a sand-box, the rod E, bearing upward from the bottom and provided with the radial pins G G and having the collar F to bear upon the bottom D, and depending through an opening in the bottom, is squared, as at Q, to bear the cut-off O, and threaded to bear the nuts P with the cut-off O, carried upon the squared portion Q of the rod E, all substantially as described and set forth.

3. In combination with a sand-box, an agitator consisting of a rod bearing up through the bottom of the box and carrying radial pins and made to turn within the box by means of a cut-off carried upon a squared portion of the said rod, the same designed to open and close openings in the bottom of the box, a depending spout connected with the sand-box and directed to the rail, the same to be of metal or rubber and may be jointed to swing from side to side and the lower portion of which may be fixed to the car-truck to always hold it in position over the rails, all substantially as described and set forth.

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

JAMES M. HARPER.

Witnesses:

GEORGE BREIER, Jr.,

JAMES B. DUNLEA.