

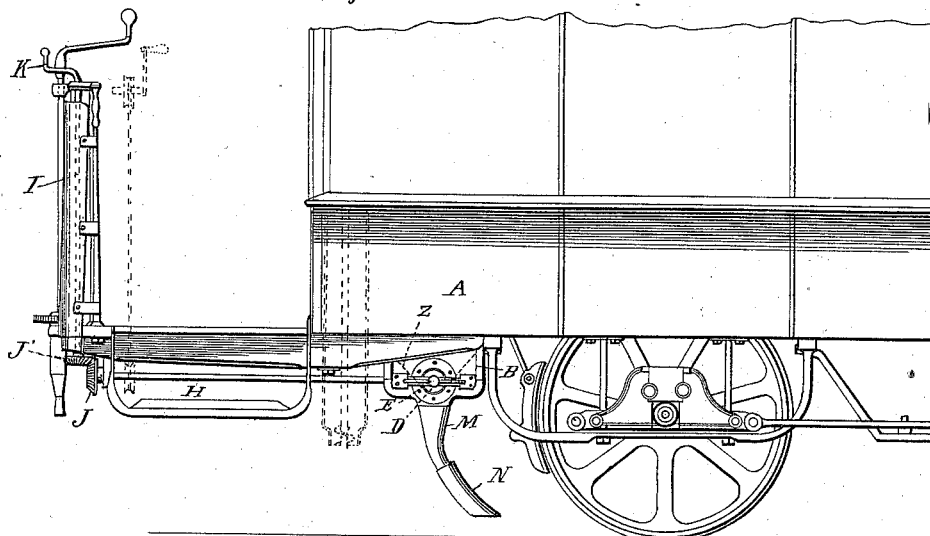
(No Model.)

W. V. H. WILLSON.  
SAND BOX FOR STREET CARS.

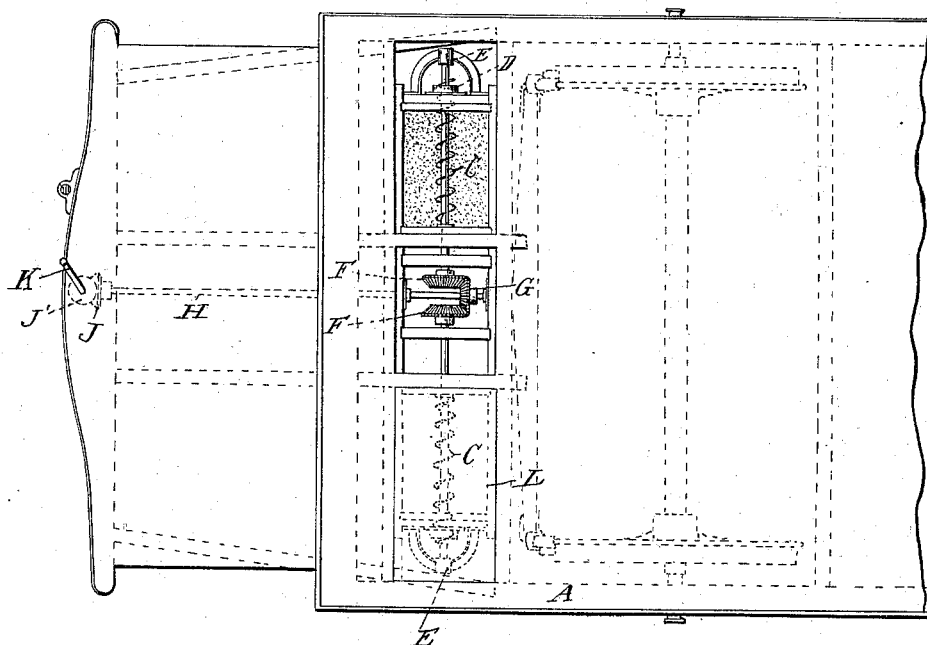
No. 382,247.

Patented May 1, 1888.

*Fig. 1.*



*Fig. 2.*



WITNESSES:  
*W. J. Robertson.*

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# UNITED STATES PATENT OFFICE.

WALTER VANDER HEYDEN WILLSON, OF TROY, NEW YORK.

## SAND-BOX FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 382,247, dated May 1, 1888.

Application filed January 5, 1888. Serial No. 259,838. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER VANDER HEYDEN WILLSON, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Sand-Boxes for Motors or Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

My improvement relates to devices for distributing sand or other similar materials on rail-road tracks; and the invention consists in the peculiar construction, arrangement, and combinations of parts, hereinafter more fully described, and then definitely pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of part of a car having my improvement; Fig. 2, a plan of the lower part of a portion of a car, also showing my improvement.

Referring now to the details of the drawings, A represents the body of the car, supported on the wheels and axles in the ordinary manner; but, as these form no part of my present invention, it is unnecessary to describe them further.

On the under side of the floor, and slightly in advance of the front wheels, I place two sand receptacles or hoppers, B B, made of any suitable material, in which run screw conveyers or worms C, the outer ends of which pass through the nozzles or mouth-pieces D D on the outer ends of the hoppers, and are supported by bearings E E. The other ends of the shafts of the worms pass through the inner ends of the hoppers and carry bevel-wheels F F, which mesh with a bevel-pinion, G, on a shaft, H, that runs lengthwise of the car toward the front, and is there connected with an upright shaft, I, by a pair of bevel-wheels, J J', which shaft has at its upper end a crank, K, similar to the ordinary brake-crank, only preferably not quite so long, the whole being so arranged that when the crank K is turned motion is given to the worms or conveyers C C by means of the shafts and gearing, in a manner well understood. With this arrangement a driver of a car, wishing to sand the tracks, as is often necessary with electric and other motor cars, by turning the crank K, can operate the worms or conveyers C C, and thus force out of each

nozzle or mouth D a stream of sand or whatever material may be put in the hoppers B B.

By this apparatus any desired material may be fed out through the nozzles—such as coarse sand or gravel, or ashes, either wet or dry—as it does not depend on gravity for its operation. The opening in the nozzle for the discharge of sand may be of any desired size, so that a large amount of material may be readily fed through, which amount, however, is entirely dependent upon the will of the driver, as the discharge depends upon the rapidity with which he turns the crank, for the sand will not run out without the driver turns the crank and thus operates the worms C. Besides these advantages, it is almost impossible to clog the discharge, as the feeder acts by positive force and not by gravity, and hence I consider my device a force-feeder, and believe myself to be the first to combine a force-feeder with the sand-distributer for a motor or car.

For convenience in filling the hoppers with sand, &c., and for oiling the bearings, I cover the hoppers, &c., with trap-doors L, two of which are shown removed in Fig. 2.

As before stated, the hoppers may be made of any suitable material; but I have found it convenient to make the sides and ends of wood with a bottom of galvanized iron of the shape shown by the dotted line Z in Fig. 1, although in some cases I may make the entire hoppers of galvanized iron. The nozzles and gear-wheels I usually make of cast-iron; but any suitable material may be employed. The worms may be constructed as shown, or they may be made of twisted wrought-iron in the same manner as ordinary bits for wood-boring are made.

Any convenient means may be employed for guiding the sand down in front of the wheels; but I prefer to suspend galvanized-iron funnels M beneath the nozzles, having at their lower ends short pieces of rubber tubing N.

To protect the gears J J' from mud, ice, &c., I usually cover them with a galvanized-iron casing, O.

Where there is a cab employed, as in motor-cars, I prefer to mount a sprocket-wheel or grooved pulley on the shaft H and run a chain or belt around it and over a similar wheel or pulley in the cab, by which it may be turned by the engineer or driver by means of a crank

in the cab. Such an arrangement is shown in dotted lines in Fig. 1.

Where I use the word "car" in the following claims I wish to be understood as meaning  
5 either a car or motor.

In some cases I intend to set the sand-receptacles in the corners of the car or under the seats, as shown in dotted lines in Fig. 1.

What I claim as new is—

1. The combination, with a car, of a sand-tank, an outlet leading from the same, a feeder constructed to force the sand from the tank into and through the outlet, and means for giving motion to the feeder, substantially as  
15 described.

2. The combination, with a car, of a sand-receptacle, B, and a worm or conveyer, C, with means for giving motion to the worm, substantially as described.

3. The combination, with a car, of a pair of sand-receptacles, worms running therein, bevel-wheels on the inner ends of said worms,

a bevel-pinion gearing with both of said bevel-wheels, and means for giving motion to said bevel-pinion, substantially as described. 25

4. The combination, with a car, of a pair of sand-receptacles, B B, worms C C, running therein, bevel-wheels F F on the inner ends of said worms, a bevel-pinion, G, meshing with both of said wheels F, a shaft, H, carrying said pinion G, a bevel-wheel, J, on the front end of said shaft, a second bevel-wheel, J', meshing with said wheel J, a shaft, I, carrying said wheel J', and a crank, K, on the top of said shaft I, all substantially as shown and described. 30 35

In testimony whereof I affix my signature, in presence of two witnesses, this 2d day of January, 1888.

WALTER VANDER HEYDEN WILLSON.

Witnesses:

WILLIAM ISENBERGH,  
SAMUEL FOSTER.