No. 796,976. PATENTED AUG. 8, 1905.

W. H. KILBOURN.

TRACK SANDING DEVICE.

APPLICATION FILED DEC. 5, 1904.

Fig. 1

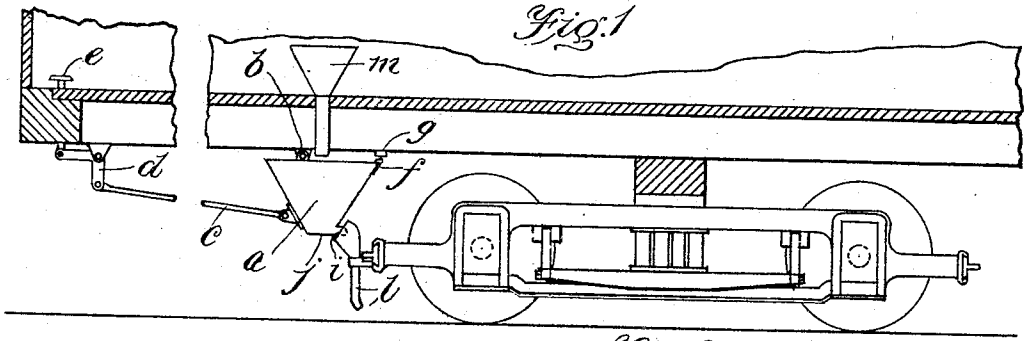


Fig. 2

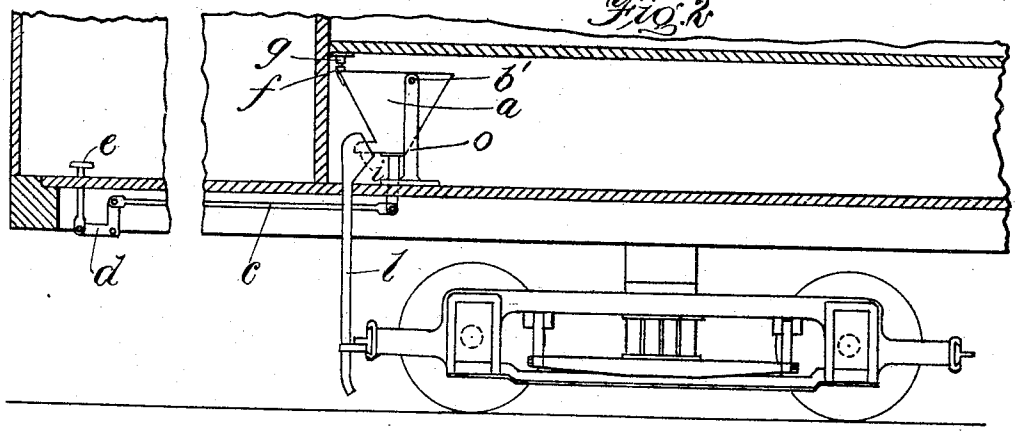


Fig. 3

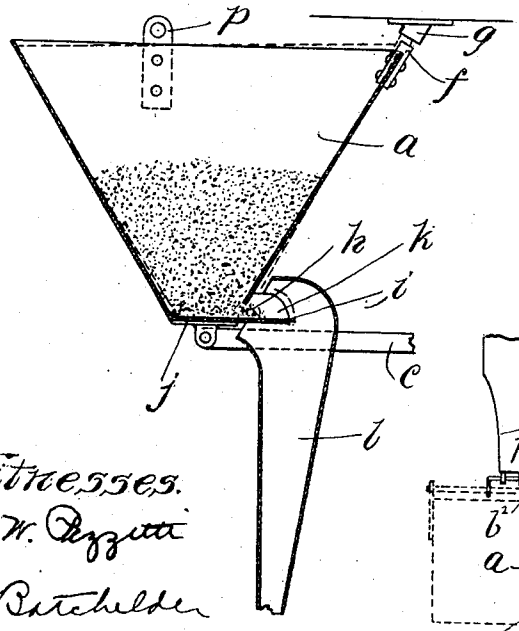


Fig. 4

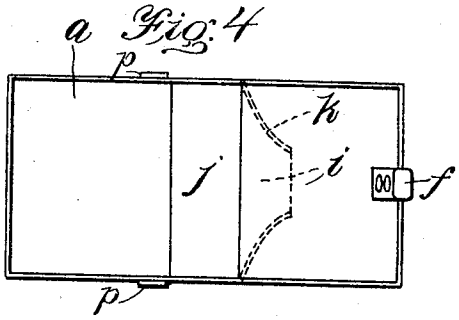
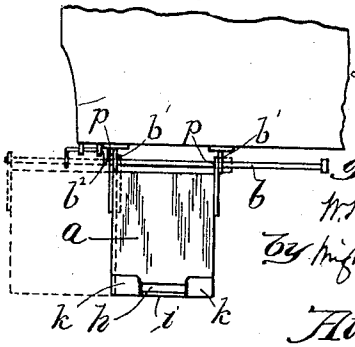


Fig. 5



Witnesses.

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TRACK-SANDING DEVICE.

No. 796,976. Specification of Letters Patent. Patented Aug. 8, 1905.

Application filed December 5, 1904. Serial No. 235,424.

To all whom it may concern:

Be it known that I, WASHINGTON H. KILBOURN, of Greenfield, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Track-Sanding Devices, of which the following is a specification.

This invention relates to devices for application to vehicles, particularly electric cars, having provisions for throwing sand on the track in front of the driving-wheels of the vehicle; and it comprises the device having the novel features hereinafter described and claimed.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a vertical longitudinal section of a portion of a vehicle having my novel device applied thereto. Fig. 2 represents a similar view of a modified form of the invention in which the sand-containing receptacle is located within the body of the vehicle. Fig. 3 is a vertical section, and Fig. 4 a plan view, of the receptacle or hopper in which the sand is contained. Fig. 5 represents a rear view of the receptacle and a portion of a car.

The same reference characters indicate the same parts in all the figures.

The device consists of a hopper or receptacle *a*, adapted to contain sand, which is preferably pivotally connected at *b* to a portion of an electric car or other vehicle and is adapted to be moved by means of a link *c*, pivotally connected to a portion of the receptacle and to a bell-crank lever *d*, arranged to be operated by the driver of the vehicle through a knob *e*. The sand-receptacle is provided with a stop-piece or abutment *f*, preferably connected to the upper edge of one side thereof, and adjacent to the abutment is fixed to the frame of the vehicle a stop *g*. At the lower part of the receptacle there is provided an outlet *h*, through which the sand is adapted to be projected when required, and adjacent this outlet, immediately below it, is provided a laterally-projecting guard *i*. Preferably this outlet is located adjacent the bottom of the receptacle, on its rearward side, and the guard is formed as an extension of the bottom plate *j* of the receptacle, although this precise arrangement is not essential, and the outlet and guard may be situated at any other point. The outlet *h* is always kept open, and a certain amount of sand will flow through the outlet and rest upon the projecting guard, the latter being projected far enough to prevent a continuous stream of sand flowing out from the opening onto the track. The side members *k* extend upwardly from the sides of the guard and inclose the outlet, forming a spout, through which the sand may be projected and which extends into the opening of a tubular guide *l*, leading downward toward the track immediately in front of the driving-wheels.

The operation of the device is as follows: As the pivotal connection is located to one side of and above the center of gravity of the hopper *a*, the latter will tend under the influence of gravity to turn about its pivot and separate the abutment *f* from the stop *g*. When, however, the driver of the vehicle presses upon the knob *e*, he operates the lever *d* and link *c* to move the receptacle rearwardly in rotation about its pivot until the abutment and stop engage. The engagement of these parts will cause the motion of the receptacle to stop with a jar, and the sand resting upon the outlet-guard *i*, owing to its momentum, will be projected beyond the edge of the guard into the guide member *l* and will so be conducted down to the track. Upon removing the pressure from the knob the abutment will again separate from the stop, and by repeated actuations of the members, as above described, successive small amounts of sand may be supplied on the track. If the actuations of the receptacle are rapid enough, a practically continuous stream of sand may be thrown out.

In the structure shown in Fig. 1 the sand-receptacle is located beneath the floor of the car, and provision, consisting of a funnel *m*, is made by which sand may be supplied to the receptacle. In the form of Fig. 2 the receptacle is pivoted to standards *o* at the point *b'*, located within the body of the car and underneath one of the seats.

It is obvious that many changes and modified forms may be made without departing from the spirit of this invention. For instance, it is not essential that the location of the abutment *f* and the stop *g* should be exactly as shown, since they may as well be lo-

cated at any point where they will be brought in contact upon a movement of the receptacle in the direction in which the spout projects from the receptacle; nor is it essential that the sand-receptacle be pivoted, as the objects of the invention would be as well served if it were mounted in any other manner, so that it could be moved in opposition to the action of gravity against a fixed abutment in order to jar the hopper and throw off a quantity of sand. This result could be secured if the hopper were mounted in inclined guideways, so as to slide bodily. It is obvious that the receptacle may be moved away from the stop by a spring or springs instead of by gravitation. The receptacle when located below the car may be so connected with the car that it may be readily moved outwardly and exposed to permit convenient refilling. This may be accomplished by making the pivot *b* in the form of an elongated rod adapted to slide in guides *b' b'*, Fig. 5, secured to the car. The receptacle is provided with ears *p*, adapted to oscillate on the rod. When the receptacle is to be filled, it may be moved outwardly with the rod, as shown by dotted lines in Fig. 5, the rod *b* sliding in the guides *b'*. When the receptacle is moved back to its operative position, the rod *b* may be secured against outward endwise movement by a latch b^2. The link *c* may be detachably connected with the receptacle in any suitable way.

I claim—

1. A track-sanding device comprising a movable receptacle having an outlet at its lower portion, a stop arranged to arrest the receptacle, means for moving the receptacle toward the stop, and a guard projecting from the outlet in the direction in which the receptacle is moved to engage the stop.

2. A track-sanding device comprising a movable receptacle having an outlet, a stop arranged to arrest the receptacle, means for moving the receptacle toward the stop, a guard projecting from the outlet in the direction in which the receptacle is moved to engage the stop, and a sand-guide leading from the guard toward the track.

3. A track-sanding device for vehicles, comprising a sand-receptacle movably mounted on the vehicle, a stop fixed on the vehicle adjacent a portion of the receptacle, the latter being provided with an outlet at its lower portion, means for moving the receptacle toward the stop and a guard projecting from the outlet in the direction in which the receptacle is moved to bring the abutment against the stop.

4. A track-sanding device for vehicles, comprising a sand-receptacle movably mounted on the vehicle, a stop fixed on the vehicle adjacent a portion of the receptacle, the latter having an outlet at its lower portion on the side adjacent the stop, and means for moving the receptacle toward the stop.

5. A track-sanding device for vehicles, comprising a movable sand-receptacle having an abutment, a stop fixed to the vehicle at one side of and above said abutment, means for moving said receptacle against the force of gravity to bring said abutment into engagement with said stop, the receptacle having an opening, and a guard carried by the receptacle adjacent the opening and below the same, projecting laterally therefrom in the direction in which the receptacle is moved to bring the abutment against the stop.

6. A track-sanding device comprising a receptacle mounted for oscillatory movement, having an abutment, and having an opening in its lower portion, a fixed stop adjacent said abutment, a guard carried by the receptacle adjacent and below the opening projecting laterally from the receptacle, and means for oscillating the receptacle to bring the abutment into engagement with the fixed stop.

7. A track-sanding device for vehicles, comprising a sand-receptacle having a pivotal connection with the vehicle, above and at one side of its center of gravity, and an outlet, a guard carried by the receptacle, adjacent the outlet and projecting laterally from the receptacle, means for turning the receptacle about its pivot contrary to the force of gravity in a direction to advance the said outlet and guard, an abutment mounted on the receptacle, and a stop fixed to the vehicle adjacent the abutment, arranged to be engaged by the abutment when the receptacle is turned in the direction indicated.

8. A track-sanding device for vehicles, comprising a sand-receptacle movably mounted on the vehicle, having a sand-outlet at its lower portion and a guard therefor adjacent to and below the outlet and projecting laterally therefrom, means for moving the receptacle in the direction in which the guard extends, and provision for suddenly checking such movement of the receptacle, whereby a quantity of sand is projected from the guard.

9. In a track-sanding device, a sand-receptacle having provisions for pivotal connection with a vehicle and an outlet at its lower portion, and provided with a laterally-projecting guard adjacent to the outlet below the same.

10. In a track-sanding device, a sand-receptacle having provisions for pivotal connection with a vehicle and an outlet at its lower portion, and provided with a laterally-projecting spout surrounding the lower portion of the outlet.

11. In a track-sanding device, a sand-receptacle having provisions arranged above and at one side of the center of gravity of the receptacle for pivotal connection with a vehicle, and an outlet at its lower portion, and provided with a laterally-projecting guard adjacent to the outlet below the same.

12. A track-sanding device comprising a

receptacle located below the bottom of a car, sliding connections between the receptacle and the car to permit the movement of the receptacle to and from its operative position, and means for confining the receptacle in its operative position.

13. A track-sanding device comprising a receptacle having ears, a rod engaged with said ears, and guides affixed to a car, the rod being slidably engaged with the said guides.

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

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Witnesses:

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