H. A. FORBES.

SANDING GEAR FOR TRAM CARS AND LIKE VEHICLES,

APPLICATION FILED MAY 12, 1917.

1,247,948.

Patented Nov. 27, 1917.

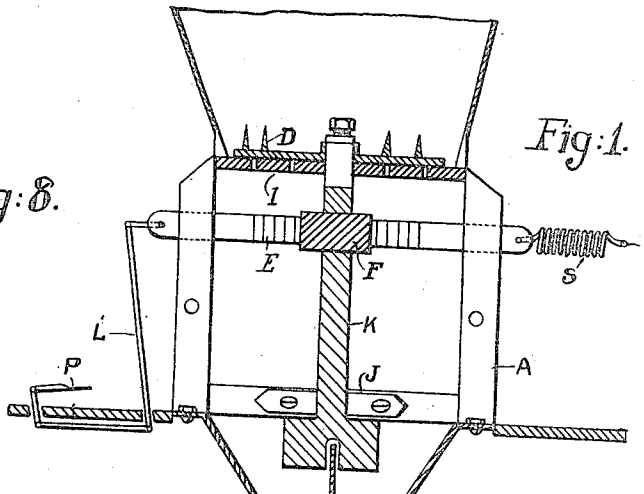


Fig:1.



Fig:8.

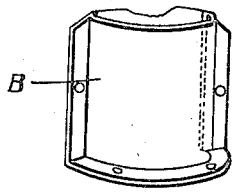


Fig:3.

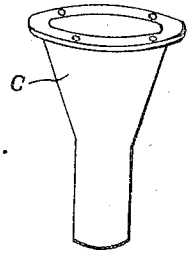


Fig:4.

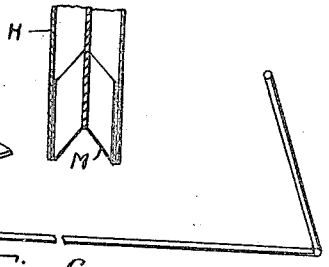


Fig:6.

Fig:10.

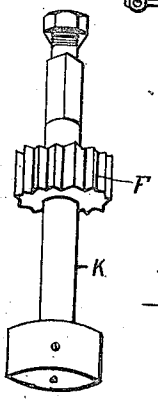
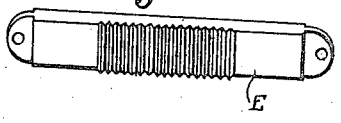


Fig:7.



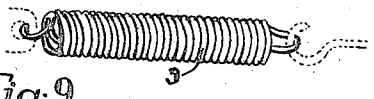


Fig:9.

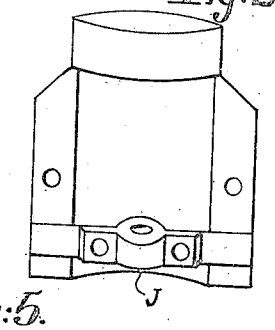


Fig:2.

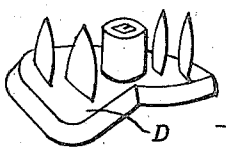


Fig:5.

INVENTOR

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UNITED STATES PATENT OFFICE.

HARRY ASHBURN FORBES, OF HIGH BARNET, ENGLAND.

SANDING-GEAR FOR TRAM-CARS AND LIKE VEHICLES.

1,247,948. Specification of Letters Patent. Patented Nov. 27, 1917.

Application filed May 12, 1917. Serial No. 168,242.

To all whom it may concern:

Be it known that I, HARRY ASHBURN FORBES, a subject of the King of Great Britain, residing at 6 New Road, High Barnet, Hertfordshire, England, have invented a new and useful Improvement in Sanding-Gear for Tram-Cars and like Vehicles, of which the following is a specification.

My invention relates to improvement in apparatus for insuring the regular and immediate discharge of sand from the sand-hopper of tramcars and the like.

Experience has proved that the ordinary sanding gear whereby the sand is discharged from the hopper by gravity alone, whenever a valve on the pipe is opened by the motor driver, is quite unreliable in consequence of the tendency of the sand in the hopper to clog, and also because wet sand or mud tends to accumulate in the discharge pipe at or near the orifice and thereby to choke the same; whereby the flow of sand is liable to be interrupted in one or both of the discharge pipes which may cause a failure in the braking of the car.

My invention is illustrated in the accompanying drawings as follows:

Figure 1 shows the apparatus in vertical section as applied to a sand hopper and delivery tube.

Fig. 2 shows the main body casting.

Fig. 3 shows the inspection door and shield.

Fig. 4 shows the funnel connecting the delivery tube to the body casting.

Fig. 5 shows the sand stirrer.

Fig. 6 shows the operating rack.

Fig. 7 shows the rotating pinion and spindle.

Fig. 8 shows the tube rod and scraper.

Fig. 9 shows the spring attached to the operating rack.

Fig. 10 shows the pedal and connecting rods.

In these drawings the usual sand hopper has attached to its base the cylindrical casting A to which is secured below the funnel C, which in turn connects with the sand delivery tube H.

The casting A is provided above with a fixed perforated plate I and has below the cross-stay J with journal for the agitator mechanism.

This mechanism comprises the spike plate D arranged to rotate within the sand hopper and so shaped (Fig. 5) as to facilitate the descent of the sand past it.

The plate D is fixed on the central shaft K supported rotatably in journals in the plate I and the crosspiece J respectively, and possessing the pinion F fixed on it.

Against the pinion F is placed the ratchet bar E; this bar has one end attached to the spring S, and the other end linked to the lever system L and pedal P.

The expanded lower end of the shaft K has axially secured to it the rod or wire G provided below with one or more vanes or scrapers M.

The operation of the apparatus is as follows:

The hopper having been filled with sand, the rotatable plate D in the position of rest prevents the sand from escaping through the perforated plate I; as soon, however, as the operator depresses the pedal P, the motion of the ratchet bar E rotates the pinion F and shaft K, thus causing the holes in the plate I to be uncovered. The sand then falls through C into the flexible pipe H and is delivered to the rails.

Any clogging of the pipe H by moisture, dirt, or wet sand or any other obstruction is rendered impossible by reason of the scraping action of the part or parts M whenever the mechanism is operated. By thus insuring the certainty of operation of the sand supply, I make sure of the full coöperation of each wheel of the car to which the device is applied at each operation, which is of especial value on steep gradients.

In the foregoing description I have set forth my invention as applied to a tramcar by foot power; from this the adaptation of the same for actuation by mechanical or electrical means, or the clearing of the sand-pipe by means of a chain sprocket wheel, or a ball chain and ribbed spindle or other mechanical equivalent will be obvious.

What I claim is:—

Improved apparatus for insuring the regular and immediate discharge of sand from the sand-hopper of a car; comprising in combination a vertically tapering hopper a cylindrical prolongation beneath said hopper, a tapering connection attached to said prolongation, a sand pipe attached to said connection, a perforated base at the small

end of said hopper, a flat plate of irregular contour resting on and so disposed as to cover normally the holes in said base, stirrers upwardly projecting from said plate, a central shaft fixed to said plate above and centrally supported in the said cylindrical prolongation, means for rotating and reciprocating the said plate for the purpose of temporarily uncovering the holes in the base of the sand-hopper, and a flexible wire in said sand pipe attached to and partaking of the motion of said central shaft.

In testimony whereof I sign my name to this specification in the presence of two subscribing witnesses.

HARRY ASHBURN FORBES.

Witnesses:
HERBERT SEFTON-JONES,
EDWARD C. FRYER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."