

(No Model.)

C. R. HOWARD.
SANDING DEVICE FOR RAILWAYS.

No. 534,798.

Patented Feb. 26, 1895.

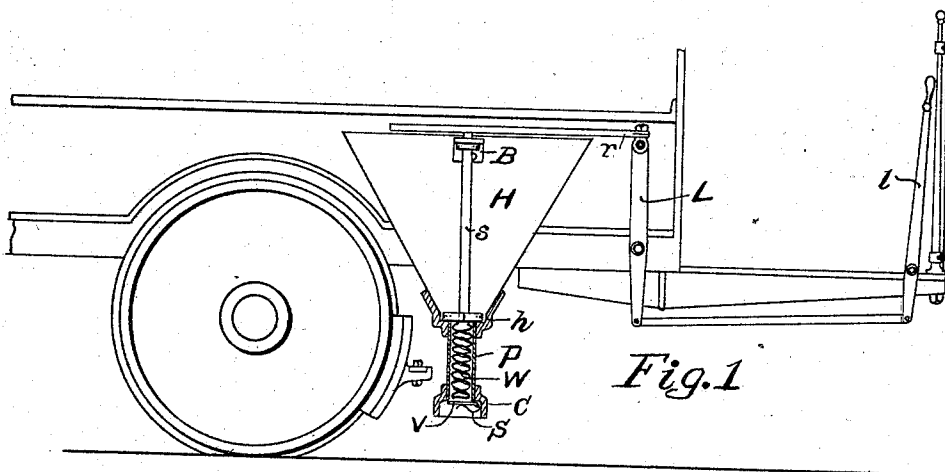


Fig. 1

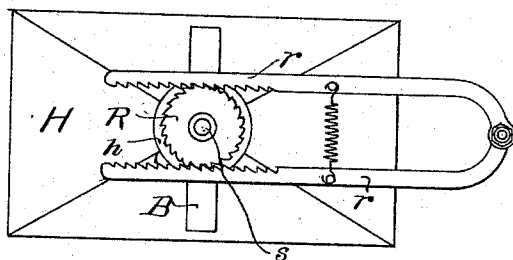


Fig. 2.

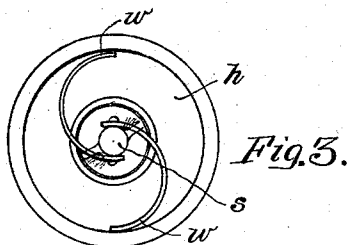


Fig. 3.

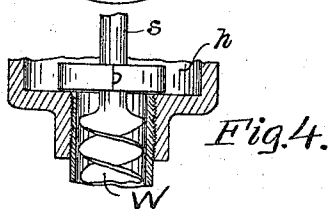


Fig. 4.

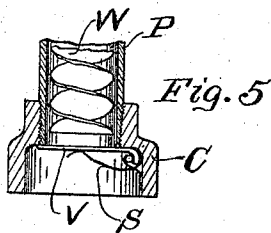


Fig. 5

WITNESSES:

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SANDING DEVICE FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 534,798, dated February 26, 1895.

Application filed November 26, 1894. Serial No. 530,066. (No model.)

To all whom it may concern

Be it known that I, CYRUS R. HOWARD, of Johnstown, county of Cambria, State of Pennsylvania, have invented a new and useful Improvement in Sanding Devices for Railways, of which the following specification is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to an improved form of sanding device for street railway cars, and has for its object to provide a sand box which shall be certain and efficient in its action and not liable to clog or fail on account of dampness or freezing.

Referring to the drawings: Figure 1 represents a section through a sand box embodying my invention and mounted in position in a car. Fig. 2 is a top plan of the same. Fig. 3 is a top plan of a portion of the feeding device enlarged. Fig. 4 is a section through Fig. 3. Fig. 5 is a section through a portion of the feeding device as hereinafter described.

I will now describe my invention.

It is a box or hopper which carries the desired amount of sand and is mounted in the car just forward of the wheels as shown. To the bottom of this hopper is attached the vertical pipe P, carrying on its lower end the valve V normally held closed by the spring S. This valve is protected from mud or water being thrown upon it by the casing C which being secured to the pipe P carries the valve V and surrounds it acting as a shield therefor. The valve being placed at the outlet of the pipe P thoroughly protects to the end the channel through which the sand flows. This is a great advantage over those devices in which more or less of the sand duct is exposed to mud and water thrown up into its end where it settles gradually closing the opening.

In the pipe P is the feed-worm W carried by the vertical shaft s. This vertical shaft s carries the ratchet wheel R, and the ratchet bars r operate it by means of levers L and l within control of the car operator. The bracket B supports the upper end of shaft s. At the base of the hopper H is the circular portion h, and in this revolve the scrapers or agitators W which are secured to the shaft s.

The operation of the device is this: The hopper H is normally full of sand, which also runs

down the pipe P filling it. The valve V, however, prevents any from running out, as it is held up against the mouth of the pipe by spring S. When the car operator desires to sand the track, he works the lever l back and forth. This through the ratchet bars r turns the feed-worm continuously in one direction and forces the sand down in the pipe. The pressure of the sand upon the valve V causes it to open, and the sand to flow down upon the track. When he desires to stop the sanding, the operator ceases to operate the lever l, and the worm W stops. The sand is no longer forced downward against the valve V, and as the sand above the valve flows out, it shuts, thus cutting off the flow.

The feed-worm W supporting the weight of the sand, the spring S only need be strong enough to hold the valve up against the pipe and support the sand which may settle down through the worm. This valve V effectually prevents any dampness or mud working up into the sand, and it is thus at all times kept dry and ready for use, and should the valve stick, by reason of mud freezing or hardening thereon, the pressure of the sand when forced down by the worm is ample to break any such bond and open the valve.

The scrapers w serve to agitate the sand in the bottom of the hopper and scrape it into the mouth of the pipe P whence it is forced downward by the worm W.

While I have shown and described the worm as operated by the ratchet wheel R and ratchet bars r, I do not limit myself to that particular mechanical construction as it is evident that there are many ways of operating the worm from the platform of the car.

My device is also readily adapted for use on a salt car, that is a car from which salt is distributed along the track in snowy freezing weather, and while I describe and claim it as a sand box, it will be understood that I claim it as a salting device as well. It is well adapted to this use, as salt is specially liable when at all damp to stick and clog, and my device being positive forces the salt out and does not permit it to stick. I do not limit myself to the exact shape of hopper shown, as it may be rectangular or round or any shape best adapted to the place it is to occupy.

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

1. A sanding device for railways, comprising a receptacle for the sand, mounted upon the car and having an orifice in the bottom, a duct extending downward from said orifice, a feeding device located in said duct and adapted to force the sand downward therein, a valve at the end of said duct normally closed but adapted to be opened by the sand, and mechanism whereby the operator of the car may actuate the feeding device.

2. A sanding device for railways, comprising a receptacle for the sand, said receptacle being mounted upon the car, a duct leading downward from the receptacle, a valve at end of said duct, said valve being actuated by a spring to normally close said duct, but adapted to be forced open by the sand, a feeding-worm in said duct, adapted by its rotation to force the sand downward from the receptacle against the valve, and mechanism whereby the car operator may rotate the worm.

3. A sanding device for railways, comprising a receptacle for the sand, a duct or pipe leading downward therefrom, a shaft extending downward into the receptacle, a feed-worm secured to the bottom of the shaft and working in said duct, a valve at the mouth of said duct and actuated by a spring to normally close same, a shield or casing surrounding said valve and adapted to protect it from mud and water, and mechanism adapted to operate the aforesaid shaft.

4. In a sanding device for railways, in combination with a receptacle for the sand and feeding mechanism adapted to force the sand out of said receptacle, a valve normally closing the orifice from which the sand issues and adapted to be opened by the sand when forced from the receptacle.

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

CYRUS R. HOWARD.

Witnesses:

CHAS. L. HOWER,
ALBERT JONES.