B. C. LORING.

TRACK SANDING DEVICE.

APPLICATION FILED NOV. 29, 1911.

1,040,554. Patented Oct. 8, 1912.

Fig. 1.

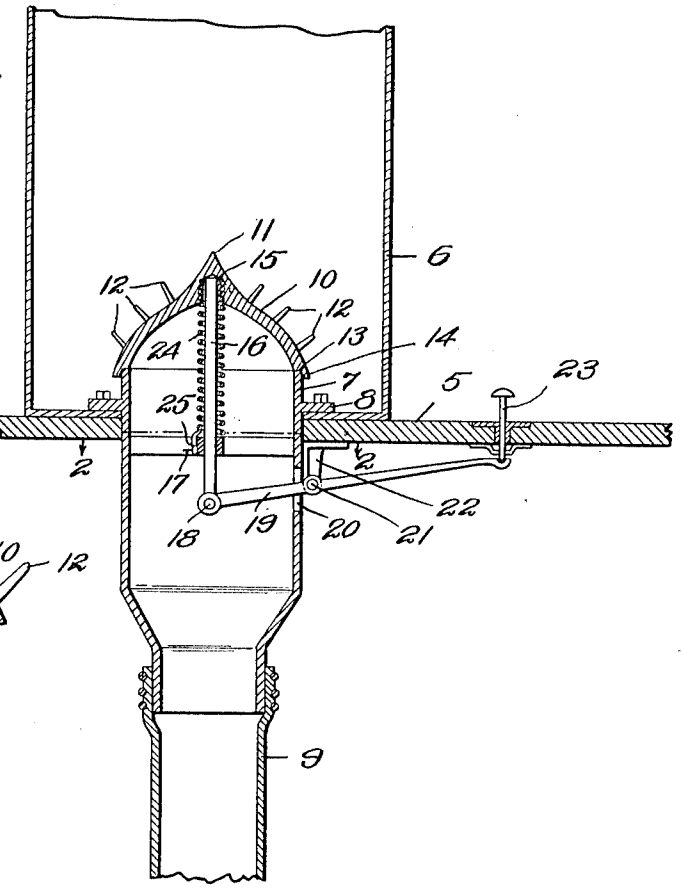


Fig. 3.

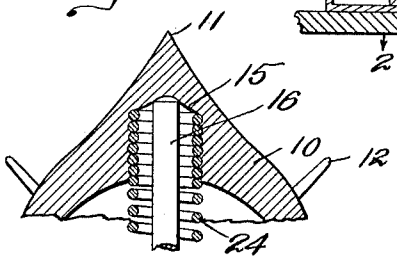
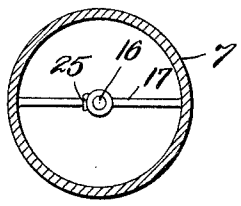


Fig. 2.



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TRACK-SANDING DEVICE.

1,040,554. Specification of Letters Patent. Patented Oct. 8, 1912.

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To all whom it may concern:

Be it known that I, BENJAMIN C. LORING, a citizen of the United States, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Track-Sanding Devices, of which the following is a specification.

This invention relates to means for supplying sand to the rails of a car track to prevent slipping of the wheels on such track, and refers especially to that type of such devices which is operated by the means of a lever under the control of the motorman.

It is well known that, owing either to atmospheric conditions or the jarring of the sand box or receptacle when the car is in motion or for both reasons, the sand frequently becomes packed so closely that it will not escape properly through the outlet from the box or receptacle when said outlet is opened by the motorman.

The object of the present invention is to provide an extremely simple and easily operated mechanism which will cause the sand to be sufficiently broken up in case it has become packed so that it will escape when it is desired that some shall be supplied to the track rails.

To these ends my invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings,—Figure 1 represents a vertical section through so much of the mechanism in one of its embodiments as is necessary to illustrate the invention. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 3 is a view similar to a portion of Fig. 1, on a larger scale to illustrate the connection of the coiled spring with the cone-shaped valve cap.

Similar reference characters indicate the same or similar parts in all of the views.

A portion of the car floor or platform is shown at 5, the sand box or receptacle 6 being mounted upon any suitable portion of said platform or floor. A tubular outlet 7 projects through the bottom of the sand box 6 and preferably is provided with a flange 8 by means of which said outlet is secured in position. Secured to the lower end of the outlet 7 is a pipe 9 (usually of flexible material such as a rubber hose) through which the sand may be directed to the track rail. The upper end of the outlet is normally closed by a cone-shaped cap 10 having a pointed tip 11 and having sand-agitating pins 12, which may be integral with the casting forming the cap or may be separate studs driven into holes in said cap. These pins preferably project in a direction substantially perpendicular to the sides of the cone so that, when the cone is lifted by means hereinafter described, the said pins will be caused to move somewhat sidewise through the sand that is bearing upon said cap. Owing to this formation, the pins may be quite short because it will be sufficient for the purpose to break up a rather thin layer of sand that is closest to or bearing upon said cap. The lower edge 13 of the cap is formed as a shoulder which normally sits upon the upper edge of the outlet 7, and around said shoulder is a flange or lip 14 which over-hangs the outer edge of the top of the outlet, said flange or lip not only serving to aid in guiding the cone valve to proper seating position after it has been raised, but also to dislodge any stone that might be temporarily resting upon the upper edge of the outlet.

Underneath the pointed tip 11 the cap is formed with a socket 15, the bottom of which rests upon the upper end of a lifting rod 16 which latter passes through a suitable spider or guide bar 17 and has its lower end pivotally connected at 18 with a lever 19. Said lever passes through a slot 20 in the side of the outlet 7 and is pivoted at 21 to a bracket 22 depending from and suitably secured to the platform or floor 5. The free end of said lever occupies a position to be actuated by a removable foot pin 23 by means of which the motorman may actuate the lever to raise the rod 16 and valve cap sufficiently to permit a small quantity of sand to escape under the edge of said cap. When the lever is released, the cap will descend to seating position. To aid the cap in so returning, I preferably provide a spring 24 having its ends connected in a suitable manner to pull the valve cap downwardly. The lower end of said spring may be secured by having its end formed as a hook 25 to engage the guide bar 17. The other end of the spring may be connected in any suitable manner to the valve cap. I have illustrated this connection as effected by engaging the upper end of the coil spring

with the socket 15 in a manner similar to a screw, the wall of said socket having a shallow spiral groove with which the upper end coils of the spring are engaged. This connection permits the valve cap to oscillate or rock slightly upon the upper end of the lifting rod 16, so that the lower edge of said valve cap will automatically find a close seating relationship with the upper end of the outlet 7. When the valve cap is lifted its pointed tip enters the sand and divides it, the shape of the cap permitting it to work upwardly sufficiently through the sand to open a crevice between its lower edge and the top of the outlet, this same vertical movement of the cap causing the pins 12 to agitate the sand so that no matter how closely it may be packed, it will be sufficiently broken up by said pins to enable it to readily escape through the crevice formed when the cap is again lifted.

While I have shown the operating connections as including a lever of the first order, I do not limit myself thereto, as any preferable connections for raising the rod 16 may be employed to suit the type of car with which the device is to be used.

It will now be understood that I have provided an exceedingly simple device of the character described which can be economically manufactured and which is durable and reliable and effective in keeping the sand at the bottom of the box or receptacle sufficiently agitated or broken up to enable it to be discharged in small quantities through the outlet and from there directed to the car track.

I claim:—

1. A track sanding device comprising a sand receptacle having an outlet, a vertically movable rod in said outlet, a cone-shaped cap for closing the outlet, said cap being free to oscillate on the upper end of said rod, and means for lifting said rod.

2. A track sanding device comprising a sand receptacle having an outlet, a vertically movable rod in said outlet, a cap for closing said outlet, said cap being free to oscillate on the upper end of said rod and having a pointed sand-spreading tip, the cap also having projections for agitating the sand, and means for lifting said rod.

3. A track sanding device comprising a sand receptacle having a tubular outlet, a cone-shaped cap having its base normally resting on the top of the outlet and having a lip surrounding the upper end of the outlet and means for lifting said cap.

4. A track sanding device comprising a sand receptacle having an outlet, a cone-shaped cap having an interior central socket, a rod loosely entering said socket, and means for lifting said rod.

5. A track sanding device comprising a sand receptacle having an outlet, a guide located in said outlet, a rod vertically movable in said guide, means for lifting said rod, a cone-shaped cap mounted on the upper end of said rod and supported solely thereby when raised, the base of said cap being adapted to normally rest upon the top of the outlet, and a spring connecting the cap and guide.

6. A track sanding device comprising a sand receptacle having an outlet, a cone-shaped cap having its base normally resting on the top of the outlet and provided with sand-agitating projections, said cap having an internal central socket, a spring having one end fitted in said socket, a rod passing through the spring and engaging the inner end of the socket, a guide for said rod, the lower end of the spring being engaged with said guide, and means for lifting the rod.

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

BENJAMIN C. LORING.

Witnesses:

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