

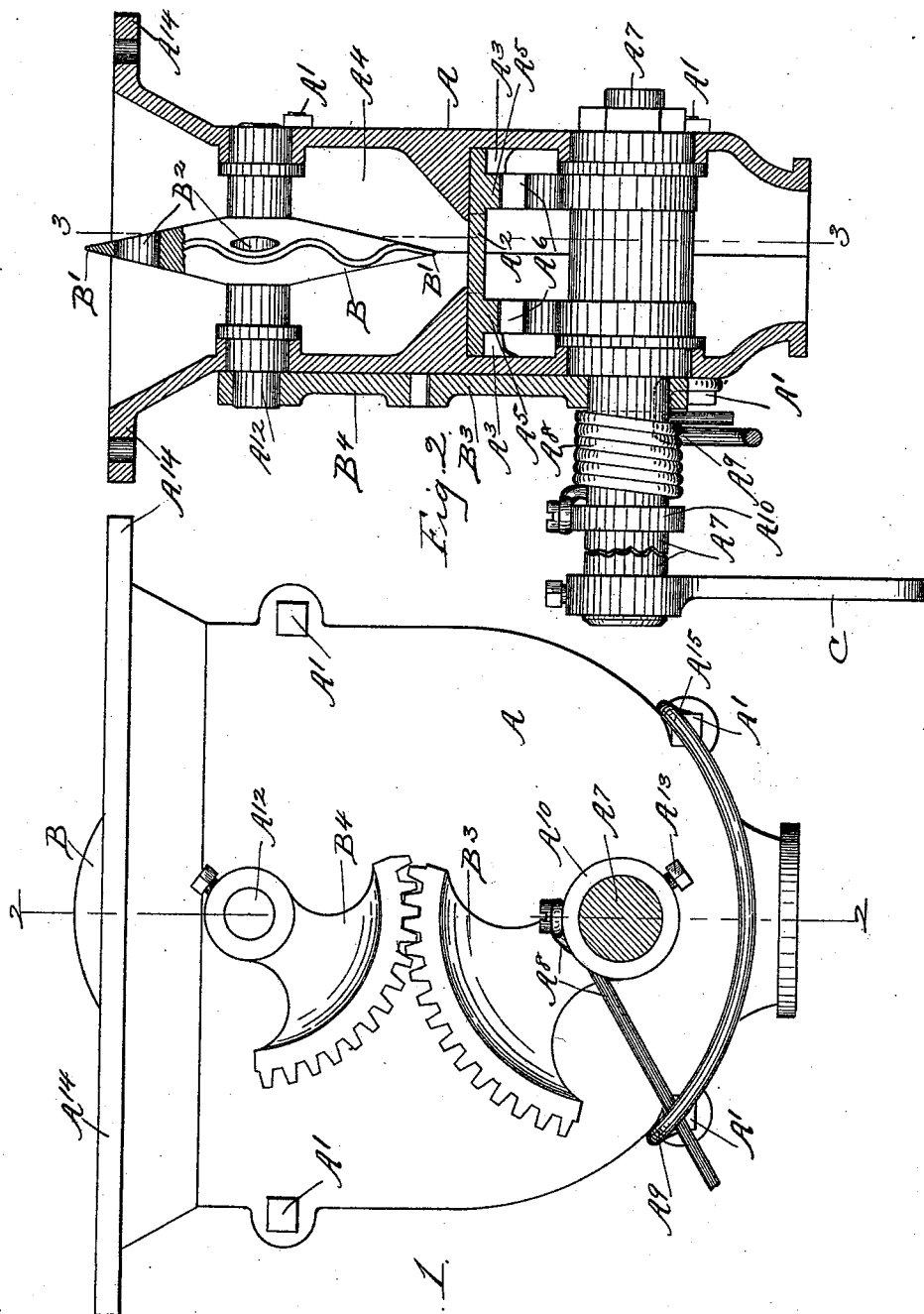
(No Model.)

2 Sheets—Sheet 1.

W. L. TRULAND.
RAIL SANDING APPARATUS.

No. 527,630.

Patented Oct. 16, 1894.



Witnesses:
G. J. Curtis
G. M. Donnell

Fig. 1.

Inventor:
William L. Truland
by Mosher Curtis
attys.

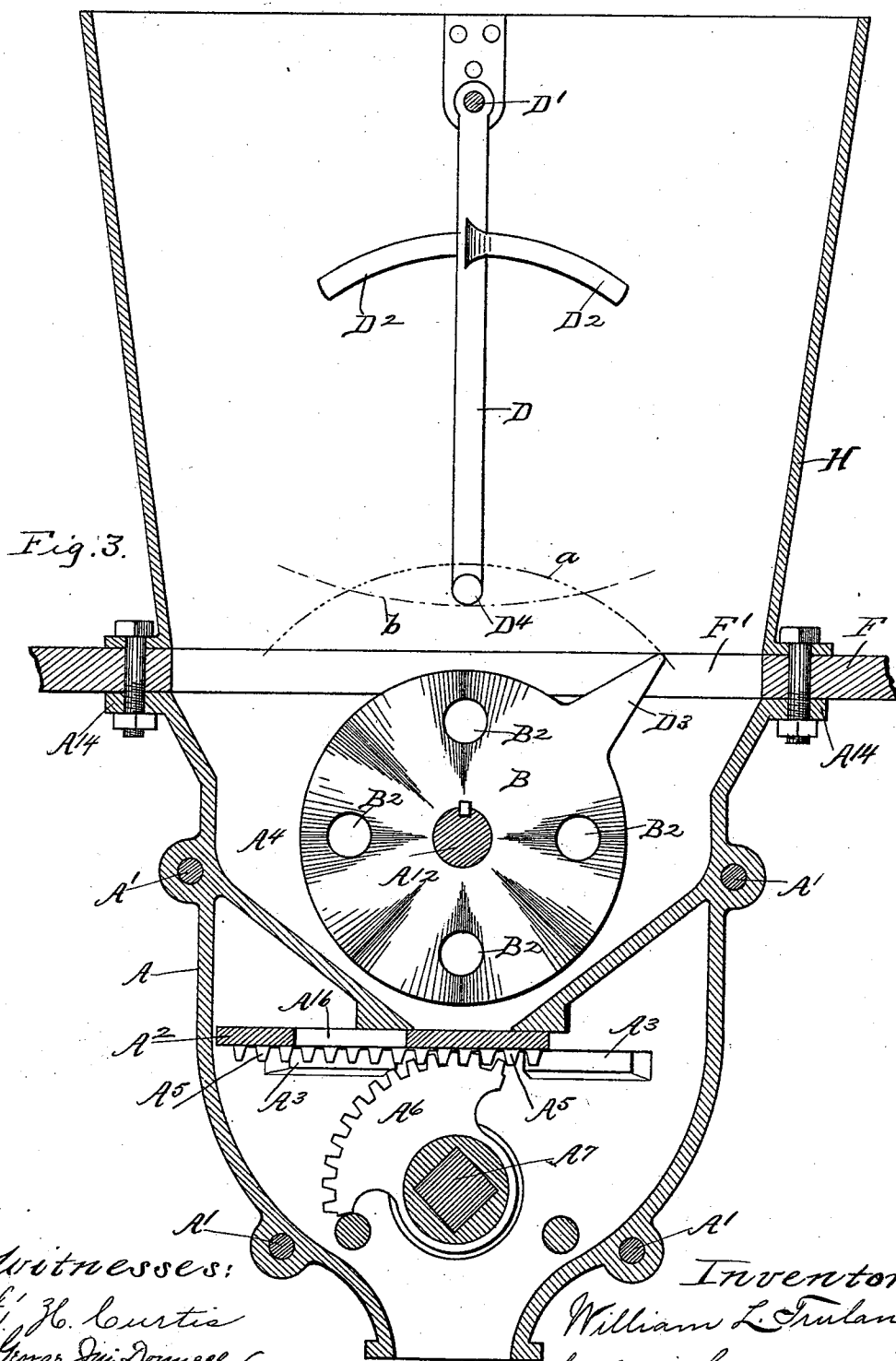
(No Model.)

2 Sheets—Sheet 2.

W. L. TRULAND.
RAIL SANDING APPARATUS.

No. 527,630.

Patented Oct. 16, 1894.



UNITED STATES PATENT OFFICE.

WILLIAM L. TRULAND, OF LANSINGBURG, NEW YORK.

RAIL-SANDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 527,630, dated October 16, 1894.

Application filed May 10, 1894. Serial No. 510,732. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. TRULAND, a citizen of the United States, residing at Lansingburg, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Rail-Sanding Apparatus, of which the following is a specification.

My invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in side elevation of the valved sand-box detached. Fig. 2 is a central vertical section taken on the broken line 2—2, in Fig. 1. Fig. 3 is a vertical section taken on the broken line 3—3, in Fig. 2, and showing the distributing sand-box attached to the supply-hopper.

A— is the sand-box formed of two similar sections secured together by bolts A'— and containing a slide-valve A²— movable on the slideway-guides A³— projecting interiorly from the box-walls and adapted to control the outlet at the lower end of the agitating chamber A⁴—.

The valve is provided on its lower side with the plate gears A⁵— adapted to mesh with segmental gears A⁶— fixed upon the shaft A⁷— rotary in suitable bearings in the box-walls, and controlled by the torsion-spring A⁸— secured at one end to a fixed support A⁹— on the box and at the other end to a collar A¹⁰— fixed upon the shaft.

The upper part of the box has bearings for the shaft A¹²— which shaft supports in the agitating chamber the wheel B—. This wheel is beveled or tapered edgewise from its supporting shaft to a thin edge B'— at its periphery. The tapered portion of the wheel is provided with a plurality of perforations B²— adapted to receive and discharge sand, as the wheel is moved.

The spring-controlled, or main, shaft and the wheel-supporting shaft are respectively provided with the gear-segments B³— and

B⁴— fixed on their respective shafts and meshing with each other.

The spring-controlled shaft has a crank-arm C— adapted to be connected with an operating lever located on the car-platform in the usual, or any known, manner, and neither the car nor connecting mechanism are shown.

The slide-valve is provided with an egress opening A¹⁵— shorter, measured lengthwise of the slide, than the slide-movement, and approximately the same size as the box-outlet, both openings being considerably larger than that required to give the ordinarily desired flow of dry, smooth-running sand; and the gear-connection between the slide-valve and the actuating shaft is so adjusted that in moving the valve from the closed to the open position, the opening in the slide travels past the outlet and partly closes the same, thereby exposing the sand for a brief interval to the whole area of the opening in the slide, and facilitating the initial discharge-movement of the sand.

The size of the discharging area finally exposed when the slide-movement of the valve ceases may be varied at pleasure by varying the angular position of the segmental gear on the main shaft and fixing the same in the adjusted position by means of the set-screw A¹³—.

The agitating wheel or disk B— is corrugated on its tapered edge, as shown in Fig. 2, to form irregularities, in addition to the perforations B²—, in the surface of its tapered portion.

Between the intermittent operations of the disk, the sand will fill and pack around the irregularities thus formed, as well as in the perforations B²— insuring thorough agitation and unpacking of the sand when the disk is operated.

The upper part of the box is provided with an attaching flange A¹⁴— by means of which the box can be secured to a supply-hopper, or to the under side of a car-floor in position to register with the floor-opening to which the hopper leads.

In Fig. 3, I have shown the box secured beneath a floor F— having an aperture F'— registering with the open upper end of the box, and a sand-hopper H— superposed above the

box surrounding the floor-opening. The hopper may be of any desired form or size. I also provide an agitator for the sand within the hopper, in the form of a pendulum or lever D— having its upper end pivoted upon the cross-rod or shaft D'— supported at its ends by the hopper-walls. The pendulum is provided with a plurality of agitating fingers D²— projecting laterally therefrom and adapted to enter and stir up the sand when the pendulum is oscillated. As a means for operating the pendulum, I provide a projection or finger D³— fixed on the disk B— and projecting radially therefrom. As the disk is given rotary forward and return movements, the projecting finger D³— is caused to move through an arc indicated by the dotted curved line *a*— in Fig. 3. The pendulum is of sufficient length to extend within the arc traversed by the finger, and is provided with a head D⁴— adapted to be engaged by the finger to oscillate the pendulum when the disk is operated. The pendulum is thus oscillated by each movement of the disk across the path of the finger, the pendulum being moved through an arc represented by the dotted curved line *b*— in Fig. 3, until the curved paths of the finger and pendulum separate, permitting the finger to pass beneath the pendulum which swings wholly or partly back to a vertical position to be again engaged by the finger on its return movement.

In applying sand-boxes to railway-cars, varying conditions necessitate the location of the boxes in various positions beneath the car. It is also desirable to have the box adapted to be operated by either a pushing or pulling movement upon the crank-arm of the operating shaft. To meet such conditions and requirements, and change the boxes from a right-hand box to a left-hand box, it is only necessary to reverse the slide-valve,

end for end, and change the angular adjustment of the segmental gears which actuate the slide-valve, so that the valve will be actuated in the right direction when the actuating shaft is oppositely rotated or rocked. When the shaft is oppositely rotated, I substitute for spring A⁸— a detachable spring coiled in the opposite direction, with its fixed end bearing up against the support A¹⁵— instead of the support A⁹—.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a rail-sanding apparatus, the combination with a sand-box having a valved outlet, and means for operating the valve, of an edgewise-tapered disk rotary in the box, and having irregular surfaces on its tapered portion, and means for rotating the disk, substantially as described.

2. In a rail-sanding apparatus, the combination with a sand-box having a valved outlet, and means for operating the valve, of an edgewise-tapered disk rotary in the box, and having a plurality of apertures in the tapered part of the disk, and means for rotating the disk, substantially as described.

3. In an apparatus for sanding rails, the combination with a sand-box having a bottom-outlet, of an apertured slide for controlling such outlet, an agitator rotatably supported within the box, a common rock-shaft, gear connections between the rock-shaft and slide, and separate gear-connections between the rock-shaft and the rotary agitator, substantially as described.

In testimony whereof I have hereunto set my hand this 1st day of May, 1894.

WM. L. TRULAND.

Witnesses:

F. W. TRULAND,
GEO. A. MOSHER.