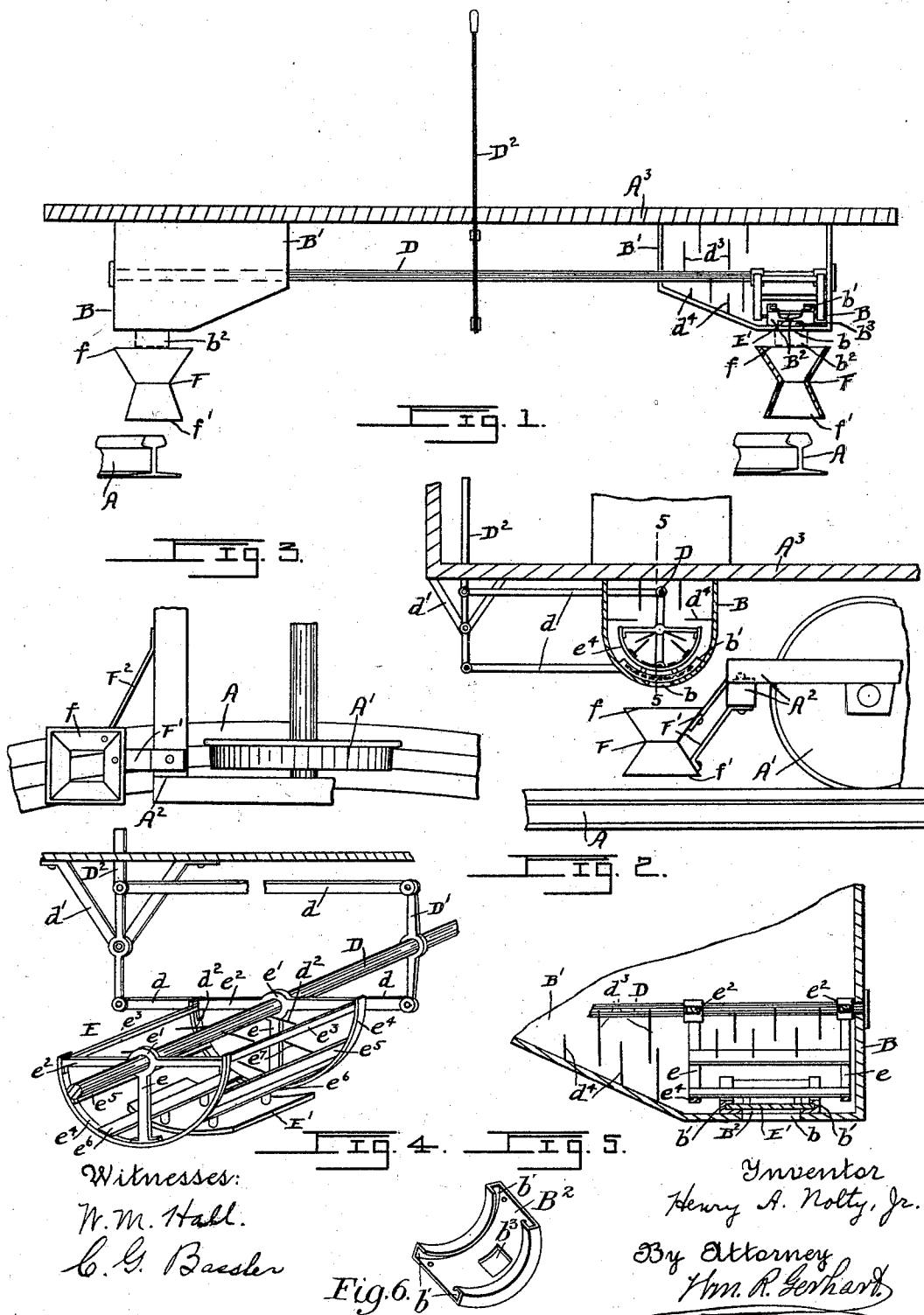


(No Model.)

H. A. NOLTY, Jr.
TRACK SANDER.

No. 581,939.

Patented May 4, 1897.



UNITED STATES PATENT OFFICE.

HENRY A. NOLTY, JR., OF LANCASTER, PENNSYLVANIA.

TRACK-SANDER.

SPECIFICATION forming part of Letters Patent No. 581,939, dated May 4, 1897.

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To all whom it may concern:

Be it known that I, HENRY A. NOLTY, JR., a citizen of the United States, residing at Lancaster, in the county of Lancaster, State of Pennsylvania, have invented certain Improvements in Track-Sanders, of which the following is a specification.

This invention relates to improvements in that class of track-sanders employed on electric cars or on other cars propelled through the friction between their own wheels and the rails; and the objects of the improvements are, first, to feed sand or gravel to the rails, as it is needed, and, second, to provide means for directing the sand or gravel to the rails in rounding curves.

It is difficult to feed moist sand to the rails, as the same is apt to form cakes and lumps which clog up the sanding mechanism, and even when the sand does flow properly it is liable to fall outside and inside of the rails in rounding curves in consequence of the tangential position of the car-body with reference to the rails of the track. My improvements overcome these objections.

My invention consists in the construction and combination of the various parts, as hereinafter fully described, and then pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a transverse section of a car having a track-sander embodying my invention attached thereto, the front of one of the sand-chests being cut away. Fig. 2 is a side elevation, the sand-chest being shown in section. Fig. 3 is a top plan view of a portion of a truck, showing the position of the sand-guide on a curve. Fig. 4 is a perspective view of the agitator and valve, and Fig. 5 a vertical section on broken line 5 5 of Fig. 2. Fig. 6 shows a detail.

Similar letters indicate like parts throughout the several views.

Referring to the details of the drawings, A indicates the rails of a track; A', the wheels of a car; A², the truck-frame, and A³ the platform of a car. To the bottom of the platform A³ and over each rail is secured a sand-chest, the bottom of the outer section B of each chest, which is over the rail, being semicircular in cross-section, and from said

section B the inner section B' of the sand-chest tapers upward toward the bottom of the car-platform, whereby the sand in section B' is automatically fed into section B as the sand is discharged therefrom, as will be described. Beneath said platform there is a transversely-disposed rock-shaft D, having its bearings in the walls of both of the sand-chests, and midway of the rock-shaft is an upright lever D', each arm of which is connected by a rod *d* with an upright hand-lever D², fulcrumed in a hanger *d'*, attached to the bottom of the car.

In section B of each sand-chest an agitator E is rigidly secured to rock-shaft D. Each agitator comprises two parallel hangers *e*, having eyes *e'* thereon, through which the rock-shaft passes; two horizontal bars *e*², rigidly attached to said eyes and extending outward therefrom and having their outer ends connected by cross-bars *e*³; two semicircular bars *e*⁴, each secured to the lower end of one of the uprights *e* and to the outer ends of one of the bars *e*², and intermediate cross-bars *e*⁵ *e*⁶, attached to semicircular bars *e*⁴ and which serve as push-bars to carry sand to the port in the bottom of section B.

To cross-bars *e*⁶ is secured a slide-valve E', curved to conform with the contour of the bottom of section B of the sand-chest which plays over a port *b* in said bottom. The slide-valve moves over a bearing-plate B² on the bottom of section B, and the edges thereof engage guideways *b'* on the edges of said bearing-plate, which has an opening *b*³ therein that registers with the port *b* in said section B. These guideways may be entirely omitted, and, if preferable, the valve may bear directly on the bottom of section B.

*d*² indicates breakers on the rock-shaft D above the agitators, some of which lap the ends of other breakers *e*⁷ on the cross-bars of the agitators, and *d*³ indicates breakers on the part of the rock-shaft passing through section B' of the sand-chest.

*d*⁴ *d*⁴ are inwardly-extending breakers attached to the walls of the sand-chest.

F indicates sand-guides, one being located over each rail. These sand-guides consist of funnels, the mouths *f* whereof flare or are spread transversely of the rails. Each sand-guide is supported in front of the wheels on

one side of the truck and beneath the port of one of the sand-chests by beams F' and a brace F'' , rigidly secured to one of the transverse members of truck-frame A^2 , so that the sand-guide is always held over the rail traveled by the wheels before which it is carried. These sand-guides prevent the sand from being fed to one side of the rails when the car is rounding a curve, for, as the truck closely follows the movement of the wheels over the rails, the sand-guides are kept directly above the same instead of deviating to the outside or inside thereof, as do the outlet-openings of the sand-chests. To overcome the effect of any slight divergence of the discharge-openings of the sand-guides from the center of the rails, said openings are somewhat flared transversely of the rails, as shown at f' , Fig. 1. The mouths, however, of the sand-guides are of sufficient width to receive the discharge from the sand-chests, no matter what the degree of curvature of the track may be. To prevent the dispersion of the sand as it is fed from the ports of the sand-chests to the mouths of the sand-guides, short pipes of greater diameter than said discharge-openings may be attached to the sand-chests, as shown in dotted lines at b^2 , Fig. 1.

In operating, the agitators and the valves attached thereto are actuated by the car-driver through hand-lever D^2 and its connections. The various breakers serve to disintegrate any masses of sand that may be formed in the sand-chests, and the cross-bars e^2 , e^3 , and e^6 of the agitator serve to push the sand toward and into ports b of the sand-chests. The sand passes from said ports into the flaring mouths of the sand-guides, whence it is deposited, through the reduced discharge ends of said sand-guides, onto the rails.

I do not restrict myself to the details of construction herein shown and described, as it is obvious that many changes may be made therein without departing from the spirit and scope of my invention, neither do I restrict myself to the use of a sand-guide with a sanding device of the character described, nor to the construction of the sand-guide herein shown and described, as said sand-guide may automatically have a movement imparted thereto to cause it to follow the curvature of the rail.

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

1. The combination, in a track-sander, of a sand-chest having a bottom with a concave inner surface, and a slide-valve located in the sand-chest and having a convex bottom surface corresponding with the concave surface of the bottom of the sand-chest, the slide-valve being adapted to play over a port in the bottom of said sand-chest, for the purpose specified.

2. The combination, in a track-sander, of a sand-chest having a bottom with a concave inner surface, a curved agitator in the sand-

chest, push-bars on the agitator and adjacent to the bottom of the sand-chest, and a slide-valve located in the sand-chest and having a convex bottom surface corresponding with the concave surface of the bottom of the sand-chest, the slide-valve being adapted to play over a port in the bottom of said sand-chest, for the purpose specified.

3. The combination, in a track-sander, of a sand-chest having a curved bottom, with a port therein, a rock-shaft passing through the sand-chest, an agitator consisting of a frame, rigidly attached to the rock-shaft, curved side bars, and push-bars secured transversely to the side bars and adjacent to the bottom of the sand-chest, and a valve attached to the agitator and adapted to slide over said port, for the purpose specified.

4. A sand-chest having a curved bottom, with a port therein, a rock-shaft passing through the sand-chest, an agitator consisting of a frame, rigidly attached to the rock-shaft, curved side bars, and push-bars secured transversely to the side bars and adjacent to the bottom of the sand-chest, in combination with a valve, attached to the agitator and adapted to slide over said port, and breakers or stirrers secured to members of the agitator, for the purpose specified.

5. The combination, in a track-sander, of a sand-chest having a curved bottom, with a port therein, a rock-shaft passing through the sand-chest, an agitator consisting of hangers and transverse bars, both rigidly secured to the rock-shaft, curved bars attached to the hangers and to the transverse bars, and push-bars secured to the curved bars and adjacent to the bottom of the sand-chest, and a slide-valve connected with said curved bars, substantially as and for the purpose specified.

6. A sand-chest having a curved bottom, with a port therein, a rock-shaft passing through the sand-chest, an agitator consisting of hangers and transverse bars, both rigidly secured to the rock-shaft, curved bars attached to the hangers and to the transverse bars, and push-bars secured to the curved bars and adjacent to the bottom of the sand-chest, in combination with a bearing-plate on the bottom of the sand-chest and having an opening therein registering with the port in said sand-chest, and a slide-valve connected with said curved bars and engaging guide-ways on the bearing-plate, for the purpose specified.

7. A sand-chest having a section with a curved bottom and a section having the bottom sloping upward from the curved bottom, in combination with a rock-shaft, extending through both said sections, an agitator on the rock-shaft and having the lower portion thereof curved to fit the bottom of said first section of the sand-chest, a slide-valve on the agitator and adapted to play over a port in the curved bottom of the first section, breakers or stirrers on the portion of the rock-shaft in said section having the sloping bottom, and breakers

or stirrers attached to the walls of said section, for the purpose specified.

8. A sand-chest having a section with a curved bottom and a section having the bottom sloping upward from the curved bottom, in combination with a rock-shaft, extending through both said sections, an agitator located in the section having the curved bottom and consisting of hangers and transverse bars, rigidly secured to the rock-shaft, curved bars attached to the hangers and to the transverse bars, and push-bars secured to the curved bars and adjacent to said curved bottom, a slide-valve connected with said curved bars and adapted to play over a port in the curved bottom, breakers or stirrers on the portion of the rock-shaft in said section having the sloping bottom, breakers or stirrers attached to the walls of said section, and breakers or stirrers on members of the agitator, substantially as and for the purpose specified.

9. The combination, in a track-sander, of a sand-chest, and a sand-guide disconnected from the sand-chest and located between the discharge-opening therein and the rail, for the purpose specified.

10. The combination, in a track-sander, of a sand-chest, a sand-guide disconnected from the sand-chest and located between the discharge-opening therein and the rail, and a supporting connection between the wheel-

truck and the sand-guide, for the purpose specified.

11. The combination, with a track-sander, of a sand-guide rigidly secured to the wheel-truck and located between the discharge-opening of said sander and a rail of the track, the mouth of said sand-guide flaring transversely of the rail, for the purpose specified.

12. The combination, with a track-sander, of a sand-guide rigidly secured to the wheel-truck and located between the discharge-opening of said sander and a rail of the track, the mouth of said sand-guide and the discharge-opening thereof both flaring transversely of the rail, substantially as and for the purpose specified.

13. The combination, with a track-sander, of a sand-chest having a curved bottom, with a port therein, an agitator in said chest and having a slide-valve thereon adapted to play over the port, push-bars on the agitator and adjacent to the curved bottom, and a sand-guide secured to the wheel-truck and located between said port and a rail of the track, the mouth of said sand-guide flaring transversely of the rail, for the purpose specified.

HENRY A. NOLTY, JR.

Witnesses:

C. G. BASSLER,

WM. R. GERHART.