

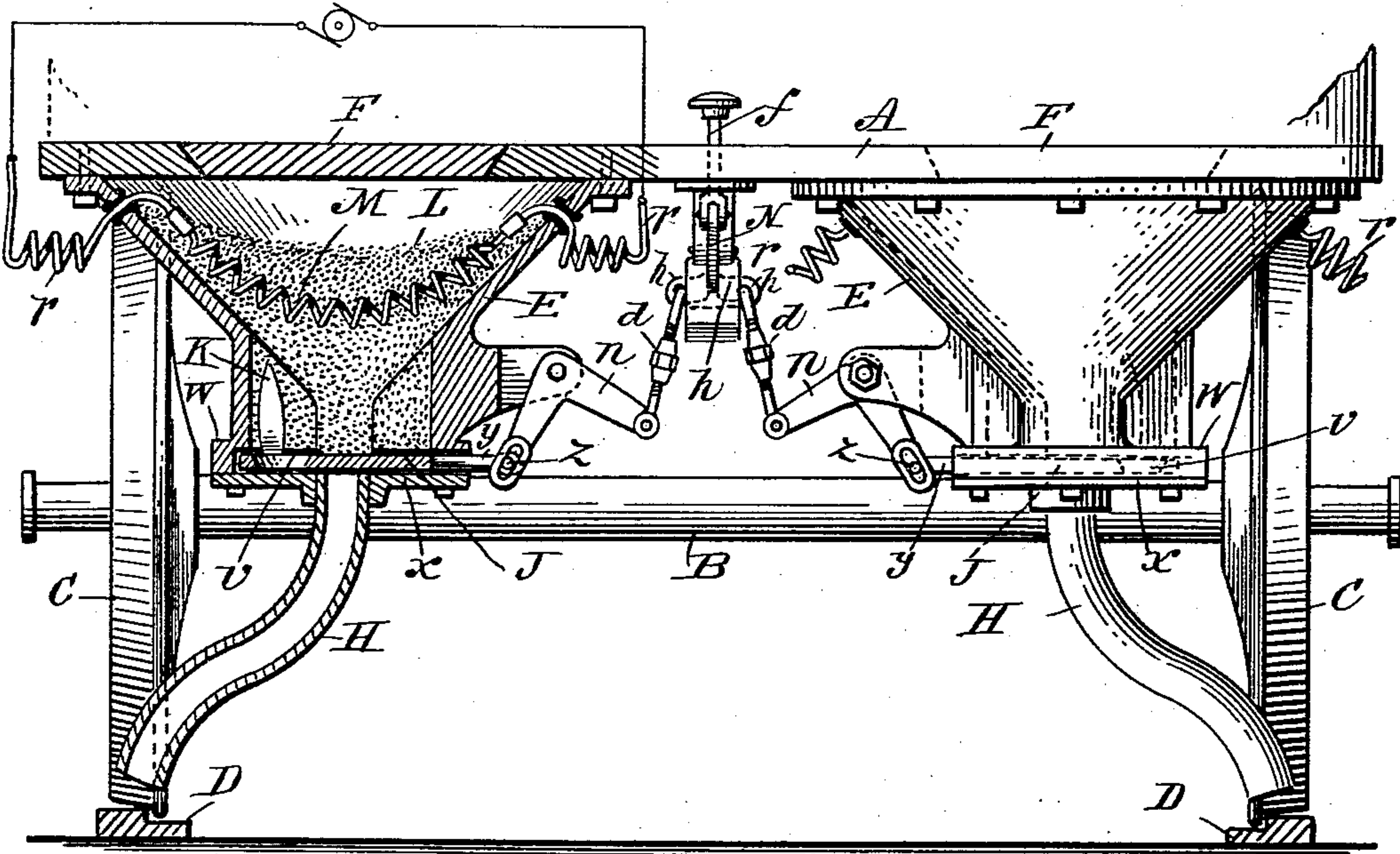
(No Model.)

J. T. PORTER.  
TRACK SANDING DEVICE FOR CARS.

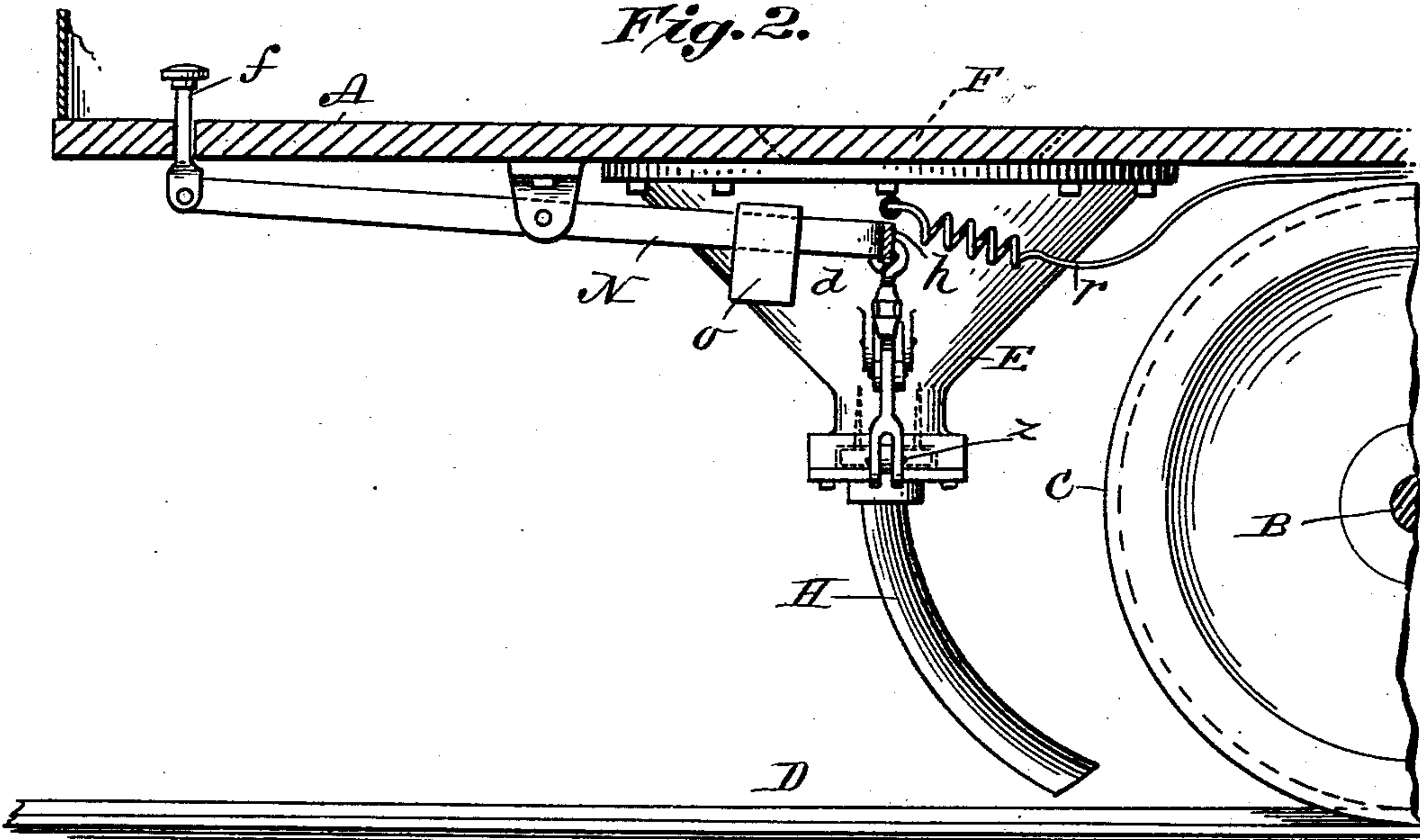
No. 563,237.

Patented June 30, 1896.

*Fig. 1.*



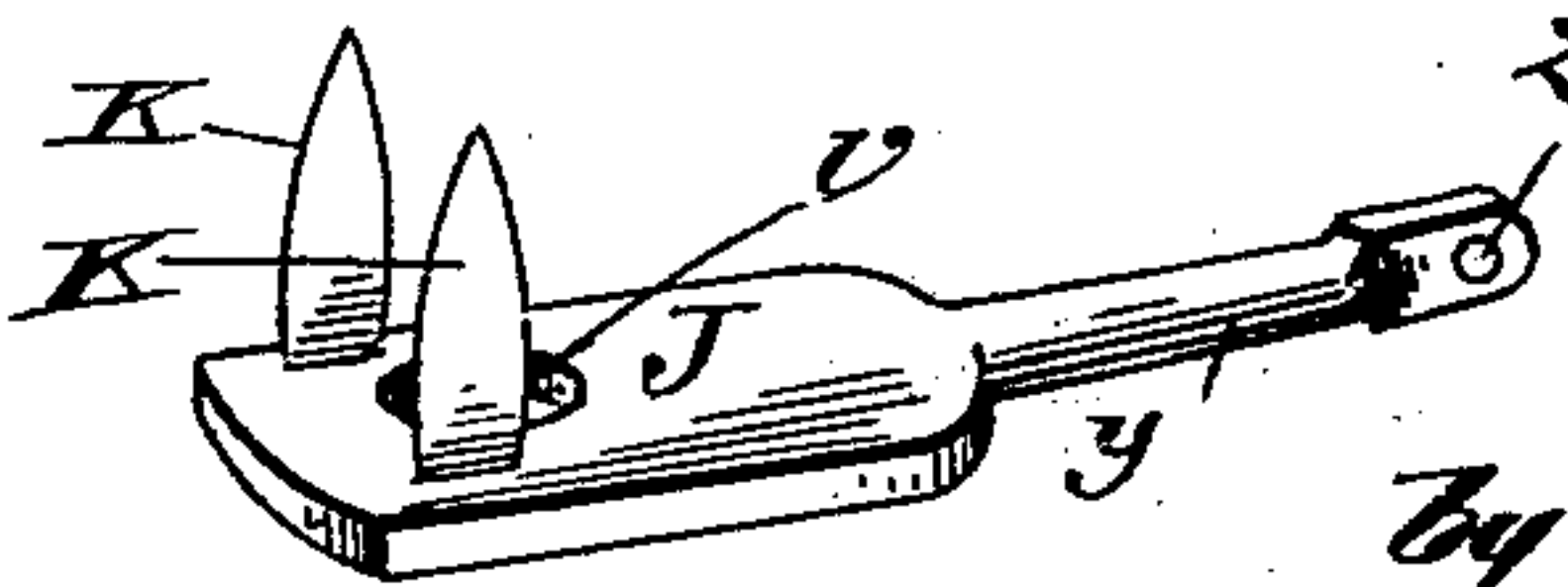
*Fig. 2.*



*Fig. 3.*

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## TRACK-SANDING DEVICE FOR CARS.

SPECIFICATION forming part of Letters Patent No. 563,237, dated June 30, 1896.

Application filed November 9, 1895. Serial No. 568,401. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES T. PORTER, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Track-Sanding Devices for Cars, of which the following is a specification.

This invention relates to track-sanding devices for electric and other street-railway cars, the object being to provide devices of improved construction for said purpose; and the invention consists in the peculiar construction and arrangement thereof, and in devices for the application of electricity to the sand contained in the hoppers of said sanding devices, all as hereinafter fully described, and more particularly pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is an elevation of parts of the end of a car having track-sanding devices embodying my improvements applied thereto, said figures showing one sand-hopper and parts thereof in vertical section and another hopper in side view. Fig. 2 is a longitudinal section of one end of a car, showing a sand-holding hopper in side elevation and certain details of operating devices hereinafter described. Fig. 3 is a perspective view of one of the sand-gates of a hopper.

In the drawings, A indicates an end of a street-railway car, on which are shown an axle B, two wheels C C, and track-rails D D. Two sand-hoppers E E are bolted or otherwise properly secured under the platform of the car, into which sand is put which is to be sprinkled or spread upon said rails D D, as may be needed from time to time. The sand is supplied to said hoppers through trap-doors F F in said platform, Fig. 1, or in any other suitable manner. Each of said hoppers is provided with a tube H, secured to the lower end thereof, as shown. Said hoppers are preferably made of tunnel shape to the end that the sand therein will be concentrated, as it moves downward, to the open ends of said tubes.

A flange W is provided on the lower end of each hopper, and a flange  $x$ , to which the upper end of the tube H is secured, is bolted to

said flange W. Said flanges W and  $x$  are sufficiently separated to provide a space therebetween for the reception of the sand-gate J, (see Fig. 3,) and the lower end of the said hopper directly over said gate, as shown in Fig. 1, is sufficiently enlarged to permit said gate and the vertical sand-cutting prongs or knives K thereon to move unobstructedly under the mass of sand L in the hopper. Said knives K serve to divide or so cut any hard masses or bunches of sand, as they approach said gate, by the movement of the latter transversely over the upper end of the discharge-tube H, as to reduce them to such condition that the sand composing them may flow through the passage  $v$  of said gate and into and through said tube to the track D. Said gate is provided with an arm  $y$ , which extends outside of the hopper and has a pin  $z$  transversely through it, (and projecting on both sides thereof,) near its extremity. An elbow-lever  $n$ , having a slot in one arm for engagement with said pin, is so connected to said gate-arm, and is hung to swing on a projecting part of said hopper. Fig. 1 shows the last-named devices applied to both of said hoppers. Each of said elbow-levers has connected to its upper arm a turnbuckle-link  $d$ , whereby the requisite action of said gates may be secured by lengthening or shortening said links. Said connections  $d$  are attached by their upper ends to a yoke  $h$  on the end of a lever N, Fig. 2. This last-named lever is hung, between its ends, to the under side of the car, as shown, and a foot-bar  $f$ , extending through the car-floor, is pivotally connected thereto. A counterweight  $o$  is placed on said lever N, which acts on said lever to close said gates after they have been opened to let sand onto the track D.

To effect the sanding of the rails or tracks D by the above-described devices, the operator presses his foot upon said foot-bar  $f$ . Thereby, through lever N, connections  $d$ , and elbow-levers  $n$ , the gates J are opened and sand is permitted to flow through the said tubes H H. When the operator's foot is removed from said bar  $f$ , the counterweight  $o$  on lever N acts to close said gates. The movement of the foot of the operator is, ordinarily, rapidly repeated, so that compara-



tively little sand will be dropped upon the track in any one place. The said projections or knives K on said gate effectually prevent the accumulation of hardened bunches of sand over the gate. In cold or freezing weather damp or wet sand placed in said hoppers frequently becomes frozen or partially so, and little or none is delivered from the hopper when said gates are opened or moved. To obviate this difficulty, a portion of the current supplied to an electric car to propel it is diverted from the conduits thereof and is supplied to a resistance-coil M, which is so located in the said hoppers that when the electric current is connected therewith said coil becomes sufficiently heated to dissipate the dampness from the surrounding sand L, thereby putting it in proper condition to pass through said gates. The conductors r, leading from said coils M, may be connected with said car-supply, or, when the cars are not electrically propelled, a suitable storage bat-

tery may be provided on said car. A suitable switch or switches are arranged in said conductors for controlling the heating of said coils. 25

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

In track-sanding devices for cars, a sand-containing hopper, a sand-delivering pipe connected to said hopper, and a gate located between said hopper and tube, combined with mechanism for operating said gate from the platform of the car, an electrical resistance-coil supported in the sand-containing part of said hopper, a suitable source of electricity on said car, and conductors uniting said electrical source and said resistance-coil, substantially as set forth. 30 35

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Witnesses:

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