

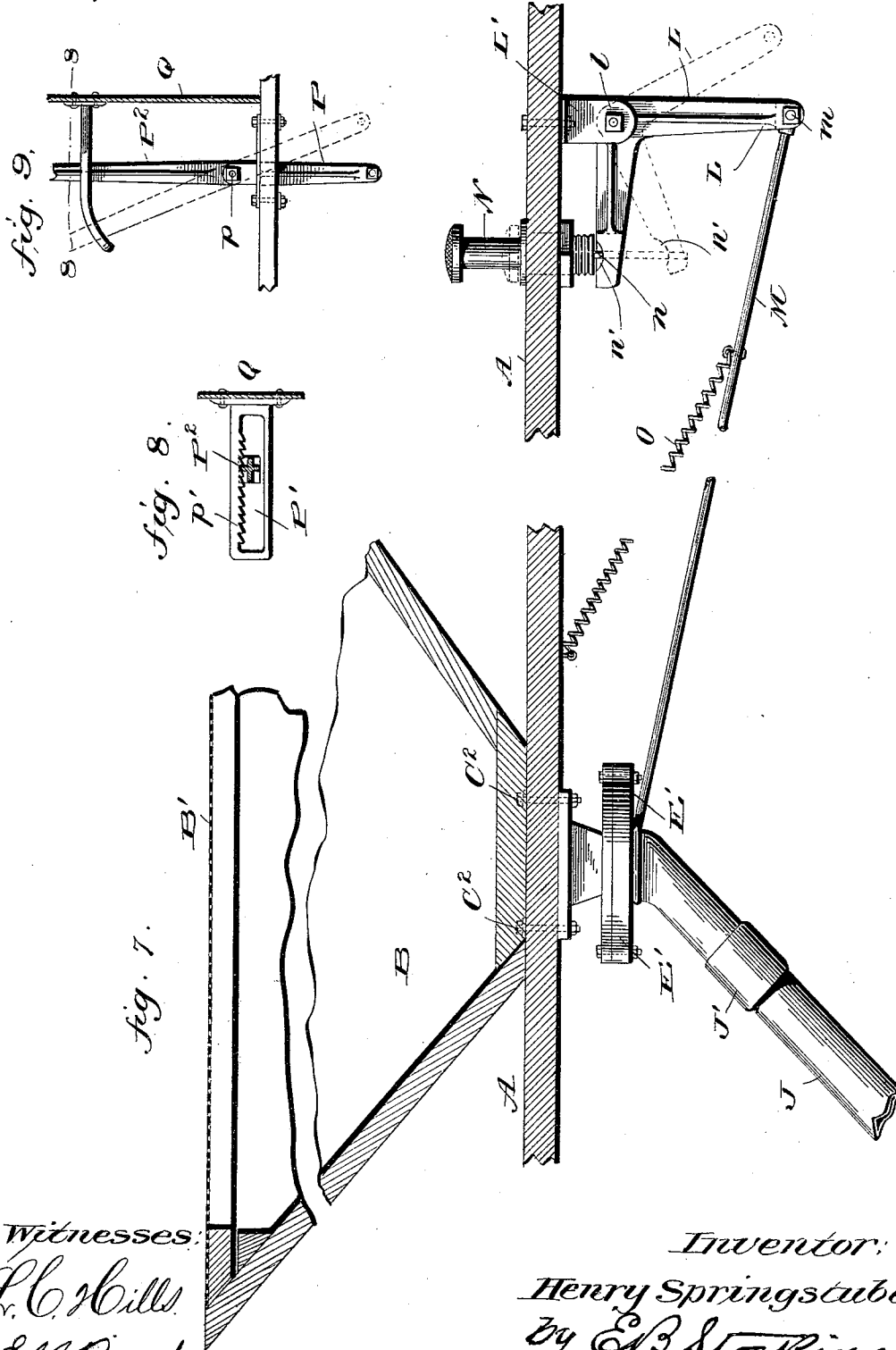
(No Model.)

2 Sheets—Sheet 2.

H. SPRINGSTUBE.
SAND BOX.

No. 544,327.

Patented Aug. 13, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY SPRINGSTUBE, OF ALLENTOWN, PENNSYLVANIA.

SAND-BOX.

SPECIFICATION forming part of Letters Patent No. 544,327, dated August 13, 1895.

Application filed April 15, 1895. Serial No. 545,771. (No model.)

To all whom it may concern:

Be it known that I, HENRY SPRINGSTUBE, a citizen of the United States, residing at Allentown, in the county of Lehigh, State of Pennsylvania, have invented certain new and useful Improvements in Sand-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in devices for sanding railway tracks or rails, and is designed more especially for use upon electric street-cars. It will of course be understood that the invention may be applied to other forms of cars.

It has for its objects, among others, to provide a simple and cheap sand-box and mechanism for controlling the discharge of sand therefrom, always under the control of the driver, motorman, or other person on the car. I provide for the screening of the material as it is placed in the box or hopper so as to prevent particles beyond a predetermined size passing into the same, and otherwise guard against injury to the operating parts or to their derangement. I further provide for the agitation of the sand to prevent clogging or caking, and further, I construct and arrange the parts as a whole so as to be readily assembled and occupy a minimum space.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a top plan of the parts of the device located beneath the platform of the car or other support, the actuating mechanism being omitted. Fig. 2 is a top plan with the upper plate removed, but indicated in position by dotted lines. Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is a side elevation. Fig. 5 is a vertical section through the line 5 5 of Fig. 1. Fig. 6 is an elevation at right angles to that of Fig. 4, with the agitating devices removed. Fig. 7 is an enlarged sectional view with portions broken away and parts in elevation, showing the box and the actuating devices in position on the car. Fig. 8 is a section on the line 8 8 of Fig.

9. Fig. 9 is a detail in elevation with a part in section, showing a modified form of the operating device.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a portion of the platform of a car, and B a box, hopper, or other receptacle mounted in any suitable position upon the car and designed to receive and contain the sand which is to be fed to the rails by means soon to be described. This box or receptacle has a screen B', as seen in Fig. 7, by which the sand is screened to prevent any particles above a predetermined size entering the box or receptacle, so as to prevent clogging or injury to the parts. As above stated, this box or receptacle may be placed in any desired position, as under the seat or wherever may be found most expedient. The remainder of the mechanism, except the lever for actuating the same, is designed to be all arranged beneath the bottom or platform of the car, as indicated in Fig. 7.

Referring now to Figs. 1 to 6, inclusive, the construction and arrangement of the parts constituting the box and the mechanism for controlling the discharge therefrom will be readily understood. It comprises the hopper C, having flanges C' through which pass suitable means, as bolts C², for securing the same to the under side of the car or platform, as seen in Fig. 7. The capacity of this hopper or sand-box may be varied as may be required, and it has a central sleeve or boss C³, shown best in Figs. 1 and 3, the shape of which is best indicated in Fig. 1, so as to provide the small opening C⁴, seen in Figs. 1 and 2, the said box or hopper having also the flange or lugs C⁵, through which pass suitable bolts D, which pass also through the flange E' of the lower casting or receptacle E to bind the two together, the said part E having at diametrically-opposite sides the recesses e in which are located the flat springs F, which are designed to bear against the under face of the slide to keep the same in close contact with the under face of the flange of the part C, as indicated best in Fig. 3, to prevent the ingress of sand between the upper face of the plate and the said flange, as will be readily understood.

The part E is formed with a sleeve or boss E² coincident with that of C³ of the part that is seen in Figs. 3 and 5, and in coincident openings in these two lugs or openings is the pin G, as seen best in Figs. 3 and 5, which pin extends in opposite directions from the center of the plate H, which is mounted for rotation upon said pin as a pivot or center, and the outer edge of which plate is, as above stated, located between the springs F and the under edge of the flange and part C, as clearly shown in Fig. 3. This plate has two diametrically-disposed openings *h*, preferably circular, although they may be of any other shape, and this plate is provided with an arm or lug I that extends through a slot or recess *d* in the part E, as seen in Figs. 1, 4, 5, and 6, and has an opening or openings *i* for the connection of the means which are employed for actuating the plate. When this plate is moved in one direction it brings the openings *h* therein coincident with the openings or passages C⁴ in the box C, as indicated by full lines in Fig. 2, and the sand in the box may pass through said openings into the spout; but when the plate is turned in the opposite direction the openings *h* are brought under a solid portion of the bottom of the box C, as indicated by dotted lines in said Fig. 2, and the flow of material is prevented.

J is a spout extending preferably in an inclined direction from the under side of the part E, as indicated, and arranged in position with relation to the rails to deposit the sand thereon when the plate is in position to permit of the discharge of the sand. This spout may be of any suitable character, in this instance being shown as in sections united by a coupling J'.

In order to agitate the sand within the box and prevent clogging or caking thereof, I provide a stirrer or stirrers K, consisting of upright forks carried by the plate H, as shown, and extending up into the sand, so that as the plate is moved the said forks or stirrers move through the sand and agitate the same.

Any suitable mechanism may be employed for actuating the plate H and controlling the discharge of the sand. In Fig. 7 I have shown one form, while in Figs. 8 and 9 is illustrated another, and it will of course be understood that other forms of mechanism may be employed for this purpose.

The form shown in Fig. 7 comprises a bell-crank lever L, pivoted at its elbow, as at *l*, to a bracket or support L', suitably secured to the under side of the platform or support A, and having connected to the free end of its vertical arm, as at *m*, a link or rod M, the other end of which is connected with the arm I extending from the plate H.

N is a foot-lever or push-pin suitably mounted to reciprocate vertically through an opening in the platform A and carrying at its lower end a pin *n*, designed to engage in a concavity or recess *n'* in the upper face of the free end of the horizontal arm of the lever

L, so that pressure upon the foot-lever or push-pin N will tilt the lever L on its pivot, as indicated by dotted lines in Fig. 7, and thus through the medium of the rod M change the position of the plate H so that the openings *h* therein will be brought in position to permit of the discharge of the sand from the box. When pressure is removed from the foot-lever or push-pin, the spring O, connected at one end of the under side of the platform and at the other end to the rod M, between its ends, returns the plate and the lever to its normal position, as will be readily understood.

In the form shown in Figs. 8 and 9 there is a lever P, suitably pivoted, as at *p*, between its ends, the lower end being designed to be connected with the rod M, while the portion above its pivot passes through a yoke P' suitably secured to the dashboard Q of the car, and having teeth or a ratchet-bar *p'*, as seen best in Fig. 8, into which is designed to engage the rib or lug P² on the lever P, as indicated in Fig. 8. When it is desired to allow the sand to be discharged, the lever P is moved into position indicated in dotted lines in Fig. 9, and there held, if desired, by engagement of the rib or lug with the ratchet of the yoke, and when it is released the spring will return the parts to their normal position.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination of the receptacle provided with a screen, a sand box arranged beneath the same, a discharge spout and an interposed centrally pivoted plate for controlling the discharge of the sand, and a stirrer fixedly mounted on said plate, substantially as described.

2. The combination of the two-part sand box, a centrally pivoted rotatable plate interposed between said parts, and carrying a stirrer fixedly supported thereon and springs bearing upon the under side of said plate, substantially as described.

3. The combination of a two-part sand box, each part having a stirrer fixedly mounted thereon and a boss centrally disposed and an interposed plate having an integral central pin extended upon opposite sides of said plate and held in said bosses, substantially as described.

4. The combination of a two-part sand box, each part having a stirrer fixedly mounted thereon and a boss centrally disposed and an interposed plate having a central pin extending above and below the plate and held in said bosses, and springs bearing upon the under side of said plate, substantially as described.

5. The combination of a two-part sand box, each part having a boss centrally disposed and an interposed plate having an integral central pin held in said boss, and a stirrer carried by said plate, substantially as described.

6. The combination of a two-part sand box, each part having a boss centrally disposed and an interposed plate having an integral central pin held in said boss, and springs bearing upon the under side of said plate, and a stirrer carried by said plate, substantially as described.

7. The combination with a two-part sand box, each part having flanges and one part with diametrically disposed recesses, of springs arranged in said recesses, and a rotatably mounted plate interposed between said springs and the flange of the upper part of the box, substantially as shown and described.

8. The combination of a two-part box having flanges and each part with centrally disposed oppositely extending bosses, and a plate having also a stirrer fixedly mounted thereon and centrally disposed oppositely extending integral projections entering said bosses and forming a pivot upon which the plate may turn, substantially as described.

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

HENRY SPRINGSTUBE.

Witnesses:

JOHN BECK,

DANIEL D. TREYLER.