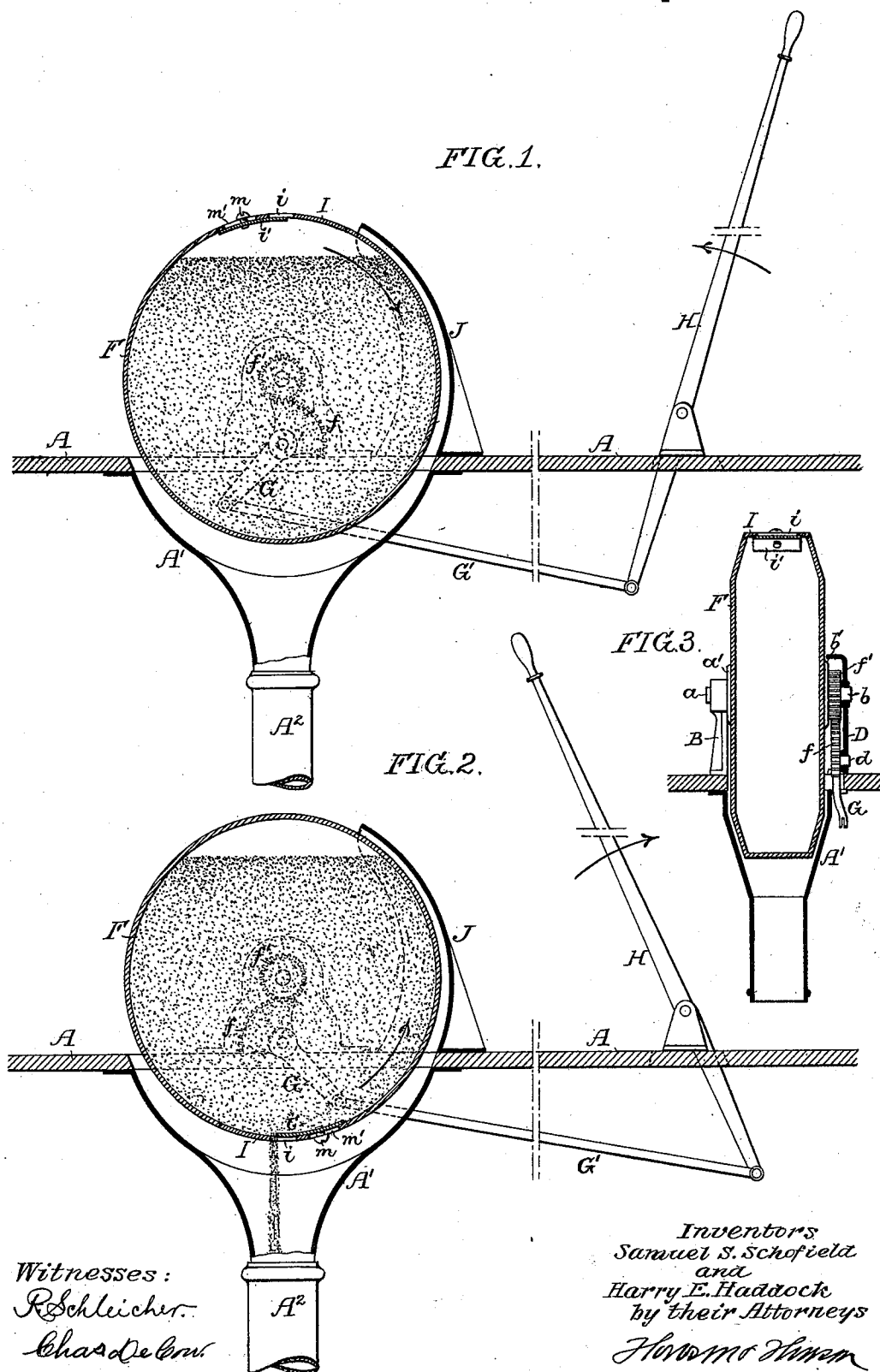


(No Model.)

S. S. SCHOFIELD & H. E. HADDOCK.
SAND BOX FOR CARS.

No. 568,497.

Patented Sept. 29, 1896.



UNITED STATES PATENT OFFICE.

SAMUEL S. SCHOFIELD AND HARRY E. HADDOCK, OF PHILADELPHIA,
PENNSYLVANIA.

SAND-BOX FOR CARS.

SPECIFICATION forming part of Letters Patent No. 568,497, dated September 29, 1896.

Application filed January 31, 1895. Serial No. 536,848. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL S. SCHOFIELD and HARRY E. HADDOCK, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Sand-Boxes for Cars, of which the following is a specification.

One object of our invention is to so construct a rotary sand-box for street-cars that the sand will always be drawn from the normal top of the mass, where it is lightest and driest, the mass being temporarily inverted for the purpose of effecting the discharge.

A further object is to cause the agitation of the mass of sand by centrifugal force in effecting each discharge, so as to prevent the packing of the sand within the box; and a still further object is to provide a sand-box which is cheap and simple in construction, convenient of manipulation, and not likely to get out of order when in use, provision being made for regulating the flow of sand to meet different requirements.

In the accompanying drawings, Figure 1 is a view, partly in longitudinal section and partly in elevation, of a rotary sand-box constructed in accordance with our invention, the sand-box being shown in normal position. Fig. 2 is a similar view, but illustrating the sand-box temporarily reversed, so as to effect the discharge of sand therefrom; and Fig. 3 is a transverse section of the device.

A represents part of the flooring of the car, beneath which is a segmental hopper A', provided with a spout A², leading down to a point in front of one of the wheels of the car and close to the rail.

Secured to the floor of the car and projecting upwardly therefrom are two pillow-blocks B and D, the former having at the upper end a bearing for a trunnion *a*, projecting from a plate *a'*, suitably secured to one side of a hollow cylindrical drum F, and to the opposite side of the latter is secured a plate *b'*, having a projecting trunnion *b*, adapted to a bearing in the opposite pillow-block D, the latter also having a bearing for the short shaft *d* of a lever G, one arm of which forms a toothed segment *f*, meshing with a pinion *f'* on the trunnion *b*, the other arm of the lever being connected by a rod G' to a lever

H, hung to a bracket on the platform of the car, so as to be within easy reach of the motorman.

The pillow-block D is hollow, so that it not only serves as a bearing for the trunnion *b* and shaft *d*, but also as a gear-case to inclose the segment *f* and pinion *f'* and protect the same from dirt and dust. The hollow cylindrical drum F may be made of cast or sheet metal or of wood, as may be the most convenient, the lower portion of the drum projecting through the opening in the car-floor A and into the segmental hopper A'.

The peripheral portion of the drum has a section I, which may be removed when it is desired to fill the drum, and in this section I is an opening *i*, the area of which may be increased or diminished by the adjustment of a sliding plate *i'*, which has a set-screw *m*, passing through an elongated slot *m'* in the section I of the drum.

Extending up in front of the drum F and partially embracing the sides of the same is a curved shield or guard J, the bottom of which is flush with the front edge of the opening in the car-floor.

When the drum F is in its normal position, the opening *i* is uppermost and the operating mechanism is in the position shown in Fig. 1, the operating-lever H being thrust forward and the sand being retained in the drum. When it is desired to deliver sand upon the track, the lever H is drawn rearward, as shown in Fig. 2, so as to cause the swinging of the lever G, the toothed segment of the latter acting upon the pinion *f'*, so as to cause a half-turn of the drum F, thus bringing the discharge-opening *i* forward and downward in the direction of the arrow until it reaches the position shown in Fig. 2, so that the sand will flow out through the opening and into the hopper A' and pipe A², the curved shield or guard J receiving and directing into the hopper any sand discharged from the opening *i* of the drum during the first part of the half-turn of the same. When sufficient sand has been discharged, a restoration of the lever H to the position shown in Fig. 1 causes the drum F to turn backward in the direction of the arrow, Fig. 2, until the discharge-opening *i* is again at the top of the

drum. By reason of this construction the sand is always taken from the top of the mass within the drum, where it is the driest and lightest, and consequently most readily to flow, and in the quick turning of the drum from one position to the other there is such a shaking up or agitation of the mass of sand by reason of centrifugal action that the sand is always kept in a loose granular condition, any such packing of the mass as would prevent the free delivery of sand when the drum is turned to the position shown in Fig. 2 being effectually prevented.

We are aware that sand-boxes have before been proposed in which the sand-receptacle was in the form of a hollow drum adapted to turn on its axis and having a projecting peripheral spout for the delivery of sand, the partial turning of the drum carrying this spout from a point above the axis of the drum to a point below the same, but in our sand-box it is essential that the discharge-opening shall be at the top of the drum, that is to say, immediately above the axis of the drum or within thirty degrees of a line drawn vertically through said axis, so that the sand shall always be drawn from the top portion of the mass, and so that a quick movement of such extent can be imparted to the drum as will insure the centrifugal action necessary to effect the agitation of the mass of sand and prevent packing of the same.

Without claiming broadly, therefore, a

sand-box consisting of a hollow cylindrical drum mounted so as to be capable of turning partly around its axis, we claim and desire to secure by Letters Patent—

1. A rotary sand-box consisting of a hollow cylindrical drum mounted so as to be free to turn and having at the top a discharge-opening, a sliding plate having a set-screw adapted to an elongated slot in a section of the drum, whereby it is adapted to vary the area of the discharge-opening, and mechanism for imparting a half-turn to said drum, so as to carry the discharge-opening from the top to the bottom of the same, substantially as specified.

2. A rotary sand-box consisting of a hollow cylindrical drum having projecting horizontal trunnions, a pinion on one of said trunnions, a lever having a toothed segment for engaging with said pinion, and pillow-blocks having bearings for said trunnions and for the shaft of the lever, one of said pillow-blocks being hollow so as to constitute also a gear-case, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

SAMUEL S. SCHOFIELD.
HARRY E. HADDOCK.

Witnesses:

FRANK E. BECHTOLD,
JOSEPH H. KLEIN.