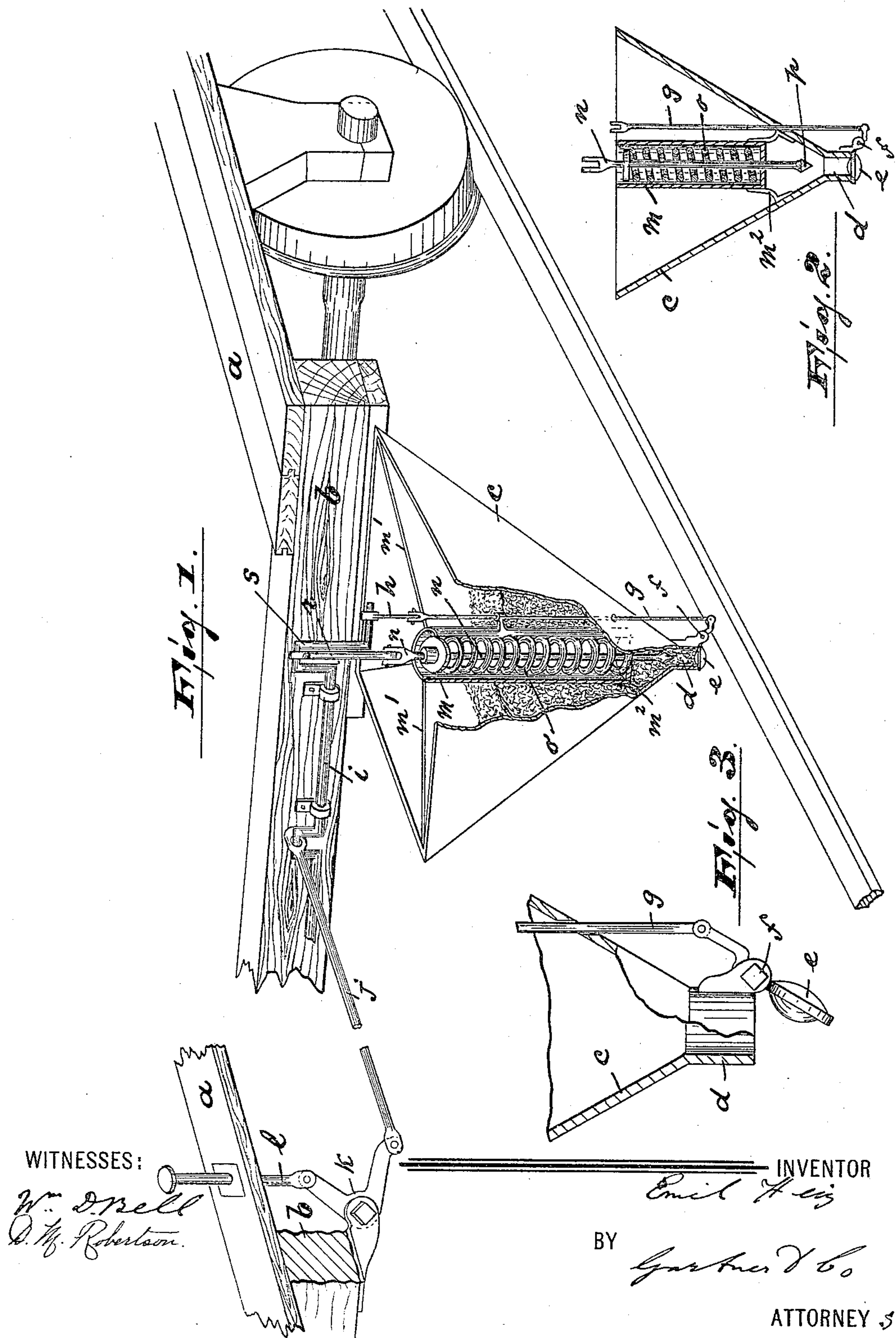


(No Model.)

E. HEIZ.  
SAND BOX FOR CARS.

No. 529,444.

Patented Nov. 20, 1894.





# UNITED STATES PATENT OFFICE.

EMIL HEIZ, OF PATERSON, NEW JERSEY.

## SAND-BOX FOR CARS.

SPECIFICATION forming part of Letters Patent No. 529,444, dated November 20, 1894.

Application filed June 8, 1894. Serial No. 513,882. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL HEIZ, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Sand-Boxes for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to a new and useful improvement in sand boxes for street and other railroad cars and it consists in the arrangement and combination of parts, whereby, when the outlet to the sand box is opened, the sand therein is agitated and discharged by the same mechanism, which controls and operates the said outlet.

It consists further in the combination and arrangement of parts hereinafter described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of the car showing the position of the sand box and the mechanism for operating the outlet and agitating the sand. Fig. 2 is a cross section partly broken away of the sand box, and Fig. 3 is a cross-sectional view of the lower or outlet end of the sand box and of the valve controlling the same.

In said drawings *a* represents the flooring of a car and *b* one of the cross pieces supporting the same. Secured to this cross piece *b* in any suitable manner, and preferably placed directly in front of each of the wheels of the car is a sand box *c* by preference pyramidal shaped the apex of the pyramid being inverted and terminating in an outlet pipe *d*. This outlet *d* is controlled by a valve *e* which is pivoted as at *f* to one side of the pipe *d* and is operated by a rod *g*. The rod *g* is connected by a link *h* to the crank shaft *i*, which by preference is also attached to the beam or cross piece *b*. This crank shaft *i* is operated by the rod *j*, angle lever *k* and the push-pin

*l* substantially as shown in Fig. 1, that is to say the push-pin *l* penetrates the flooring of the car and is pivotally secured to one arm of the angle lever *k* and depresses or raises the same. The angle lever in turn oscillates the link *j* which rocks the crank shaft *i*. The rocking of this crank shaft *i* opens and closes the valve *e* by raising and depressing the rod *g* through link *h*.

Within the sand box *c* is placed a cylindrical shell *m* secured at about the center of the box and directly over the outlet by means of brackets *m'* *m*<sup>2</sup>. Within this shell *m* is placed the spiral spring *o* surrounding an agitating rod *n* and controlling the up and down movement of the same. This rod *n* is preferably pointed at its lower end as at *p* and acts both as a discharger and agitator as will be hereinafter explained. To the upper end of the rod *n* is secured a link *r* which is pivoted to the eccentric or crank *s* of the crank shaft *i* in such a manner that when said crank shaft *i* is rocked as herein above explained, the link *r* is raised or lowered and in turn depresses the rod *n* against the action of the spring *o* or assists in raising said rod *n*. It is to be understood however that the rod *n* is depressed when the rod *g* is raised to open the valve *e* at the outlet and the sand is thereby forced out of the opening *d* by the rod *n*. The return of the rod *n* upward to agitate the sand in the box is done when the rod *g* is depressed to close the outlet. It will thus be understood that the driver upon the platform of the car by simply depressing the piece *l* not only opens the outlet to the sand box but discharges the sand therefrom by means of the plunger rod *n*, and upon releasing the piece *l*, the rod *n* will be raised by the spring *o* and the shaft *i* returned to its original position, thus closing the valve *e* and at the same time agitating the sand in the box.

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

1. In a sand box, the combination of the casing, having an outlet therefrom, a cylinder supported above said outlet and within the casing, an agitating and discharging rod,

traversing said cylinder and a spring surrounding said rod and controlling the same, means for depressing said rod a valve controlling the outlet and means for opening  
5 said valve while the agitating rod is being depressed to discharge the sand from the outlet, substantially as described.

2. The combination of the box *c*, outlet pipe *d*, valve *e*, rod *g*, link *h* and crank shaft  
10 *i*, with the cylinder *m*, rod *n* traversing said cylinder and controlled by the spring *o*, link *r* and crank *s* on said shaft *i* to which said

link *r* is secured, and with means for operating said crank shaft *i*, whereby the rod *n* is depressed when the rod *g* is raised and vice  
15 versa, substantially as described and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of June, 1894.

EMIL HEIZ.

Witnesses:

DUNCAN M. ROBERTSON,  
WM. D. BELL.