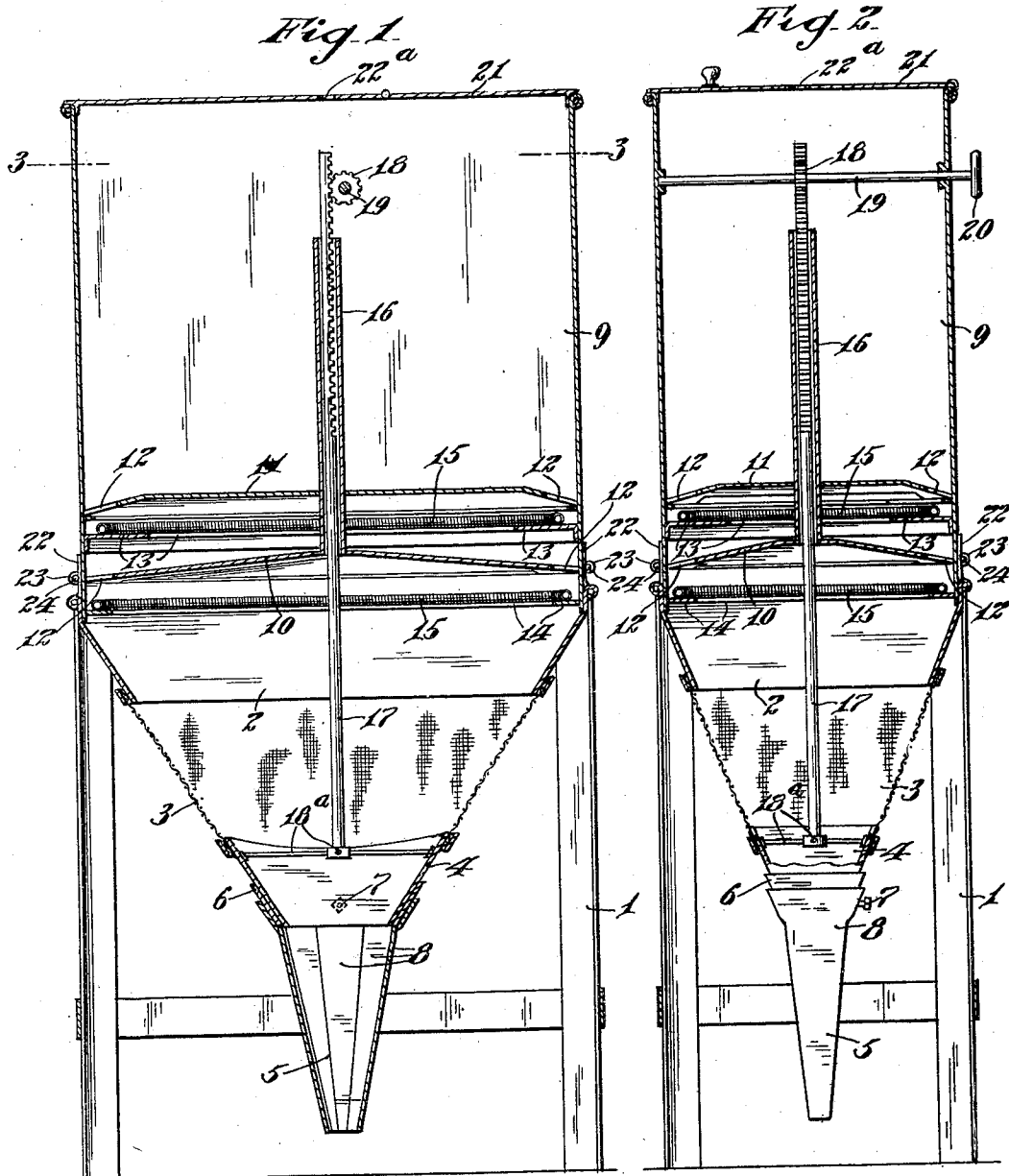


D. B. KEEPORTS.  
SAND BOX FOR CARS.  
APPLICATION FILED MAY 8, 1909.

937,813.

Patented Oct. 26, 1909.  
3 SHEETS—SHEET 1.



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Fig. 3.

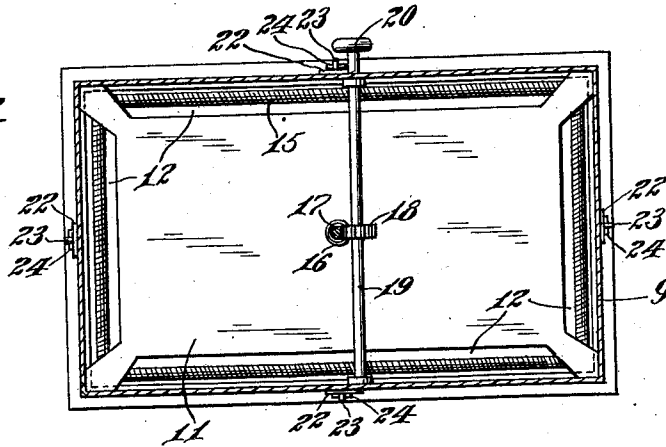


Fig. 4.

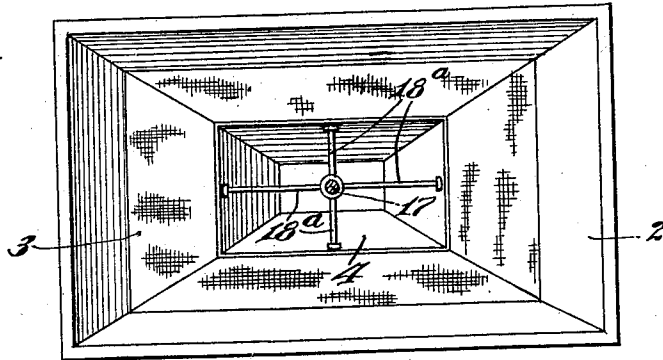
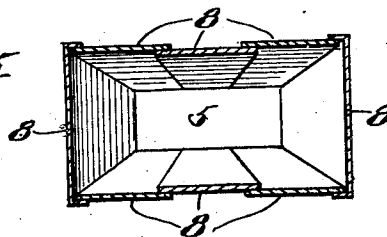


Fig. 5.



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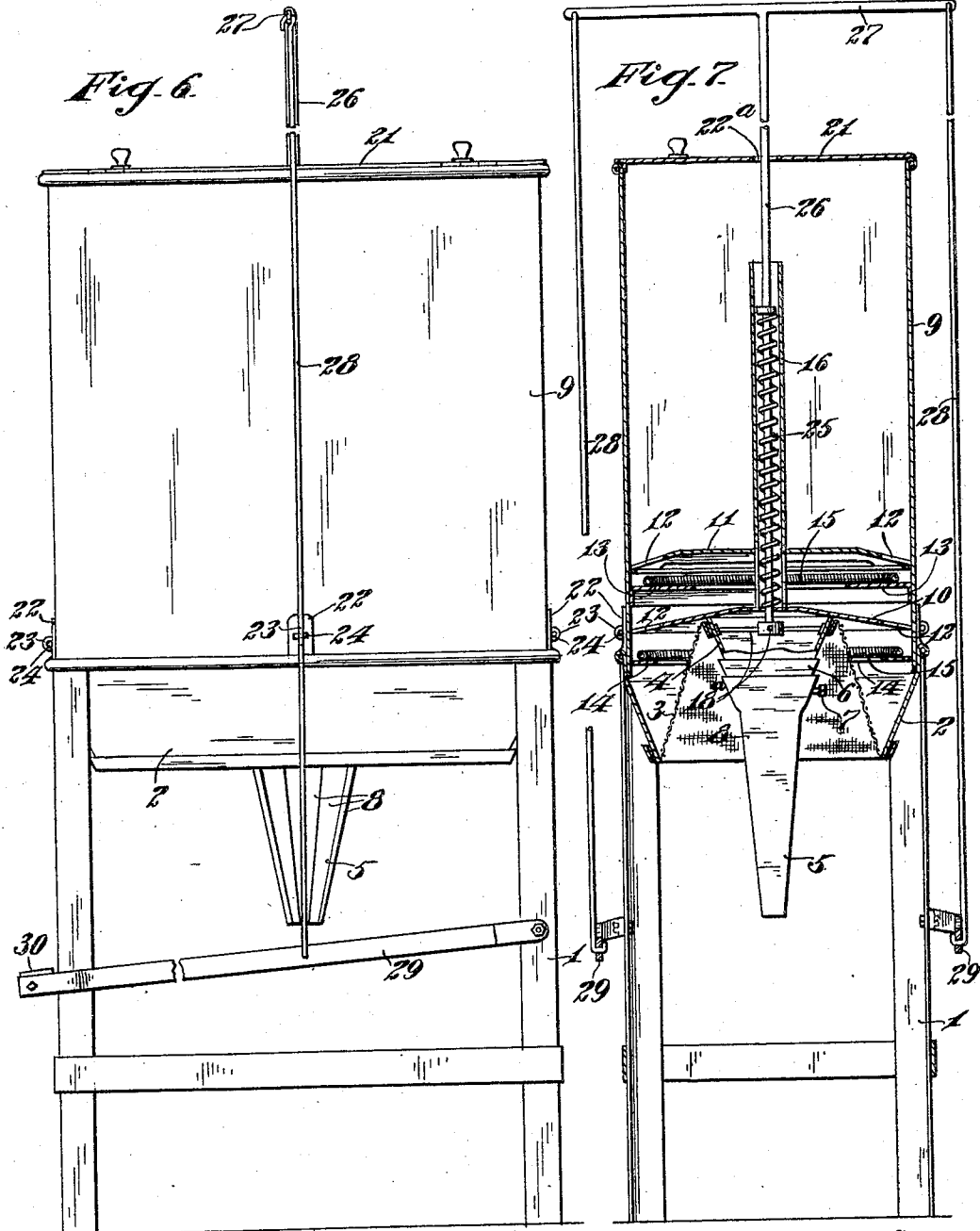
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# UNITED STATES PATENT OFFICE.

DAVID B. KEEPORTS, OF PHILADELPHIA, PENNSYLVANIA.

SAND-BOX FOR CARS.

937,813.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed May 8, 1909. Serial No. 494,784.

*To all whom it may concern:*

Be it known that I, DAVID B. KEEPORTS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Sand-Boxes for Cars, of which the following is a specification.

My invention relates to improvements in sand boxes for cars, the object of the invention being to provide improved means for feeding the sand, which will insure a uniform discharge, prevent clogging and which can be regulated as desired.

A further object is to provide improvements of this character, which will thoroughly dry the sand, and thereby insure a more perfect and uniform feed.

A further object is to provide an improved flexible hopper, which can be manipulated to regulate the feed of sand.

A further object is to provide an improved spout or discharge nozzle, which will prevent packing of the sand in the nozzle.

A further object is to provide improved means for manipulating the flexible hopper, so as to regulate the feed, or entirely shut off any escape of the sand.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a view in vertical longitudinal section illustrating my improvements. Fig. 2, is a view in cross section. Fig. 3, is a view in section on the line 3—3 of Fig. 1. Fig. 4, is a top plan view of the hopper, and Fig. 5, is an enlarged view in cross section through the spout. Figs. 6 and 7, are views illustrating a modification.

1 represents a rectangular frame or base, having a rectangular inclined ring 2 at its upper end, to which a hopper 3, preferably of fabric, is secured, and 4 is a rectangular metal ring secured to the lower portion of said fabric hopper, and the rings 2 and 4 and the fabric 3 constitute a hopper for di-

recting the sand into a nozzle or spout 5, having a ring 6 at its upper end, located around the ring 4 and secured to the latter by means of a set screw 7.

The nozzle or spout 5 above referred to, comprises a ring 6, to which metal strips 8 are secured, there being one strip at each end, and three strips at each side, the side strips overlapping each other as clearly shown in Fig. 5. By reason of this construction of independent strips forming the spout or nozzle, the vibrations of the car will be transmitted to the strips, and they will vibrate so as to compel the sand to feed regularly, and prevent any packing of the sand in the nozzle.

9 represents the sand reservoir, which is of general rectangular form, and adapted to fit neatly within the ring 2 and be supported by the latter. To secure the reservoir in the hopper, the frame 1 is provided at its sides and ends with a series of hinged hasps 22, adapted to receive staples 23 on the reservoir, and the latter may be locked by means of cross pins 24, or other suitable devices. This reservoir 9 is provided with a bottom 10, and a false bottom 11, spaced above the bottom 10, and both of said bottoms are provided at their sides and ends with openings 12 for the passage of sand. Between the bottom 10 and false bottom 11, an inwardly projecting flange 13 is located, and serves to compel the sand to follow a circuitous path before escaping through the bottoms into the hopper, and a flange 14 is secured in the reservoir near its lower end below the bottom 10. On these flanges 13 and 14, electric heating coils 15 are supported, and are adapted to transmit the heat to the sand to thoroughly dry the latter, and insure a uniform feed.

A tube 16 is located centrally in the reservoir, and communicates with an opening in bottom 10, and a rack bar 17 is secured at its lower end to crossed rods 18<sup>a</sup> in ring 4, and is engaged by a pinion 18 on a shaft 19, mounted in the upper portion of the reservoir, projecting through the reservoir and having a knob or hand hold on its outer end to facilitate the turning of the pinion, and

the consequent vertical movement of the rack bar, and it will be observed when the rack bar is moved upwardly, the ring 4 will be drawn upwardly, and such upward movement will restrict the feed of sand, and when the ring 4 is moved up against the bottom, the feed will be entirely cut off. The side edges of this ring 4 are preferably curved as shown, and it has been found that such curvature permits a better regulation of feed.

A cover 21 is provided on the reservoir, and this cover is made with an opening 22, so that the rack bar 17 will be projected through the same when drawn upward.

In the modification illustrated in Figs. 6 and 7, I employ a coiled spring 25 in tube 16, exerting an upward pressure on rod 26, connected to the crossed rods 18<sup>a</sup>, to normally hold the ring 4 against bottom 10, and hence close the outlet for the sand. The rod 26 projects up through the top 21, and is provided with a cross rod 27 projecting at right angles to the rod 26, and this rod 27 is connected by wires or other connecting devices 28 with a treadle or foot lever 29. The treadle or foot lever 29 is forked as shown, to straddle the frame and pivotally connected at one end to the frame 1, and at its free end is provided with a foot rest 30, so that the foot rest may be in convenient reach, and when depressed ring 4 will be lowered, and sand will escape until the foot rest is released, when the spring 25 will shut off the escape of sand.

While I have illustrated and described mechanism whereby the device may be operated by hand or foot power, it is obvious that it might be operated by electric or other power, and I do not therefore confine myself to the particular operating mechanism set forth.

Various other slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

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

1. In a device of the character described, the combination with a reservoir, and a bottom in the reservoir having openings therein, of a flexible hopper below said bottom, a metal ring at the lower end of said hopper, crossed rods in said ring, a vertical tube in said receptacle, and means in said tube, whereby said ring may be moved toward or away from the bottom to regulate the escape of sand.

2. In a device of the character described, the combination with a reservoir, and a bottom in the reservoir having openings therein,

of a flexible hopper below said bottom, a metal ring at the lower end of said hopper, crossed rods in said ring, a vertical tube in said receptacle, and means in said tube, whereby said ring may be moved toward or away from the bottom to regulate the escape of sand, and devices outside of the reservoir for operating said means.

3. In a device of the character described, the combination with a reservoir, and a bottom in the reservoir having openings therein, of a flexible hopper below said bottom, a ring in the lower end of said hopper, a rack secured to said ring and projecting into the reservoir, and a pinion in said reservoir meshing with said rack, and adapted to move said ring to regulate the feed of sand from the hopper.

4. In a device of the character described, the combination with a reservoir, and a bottom in the reservoir having openings therein, of a flexible hopper below said bottom, a metal ring at the lower end of said hopper, crossed rods in said ring, a vertical tube in said reservoir, a rack bar secured to said crossed rods, and projecting up through said tube, a shaft in said reservoir projecting at one end outside of the reservoir, a knob or hand hold on said shaft, and a pinion on said shaft meshing with said rack.

5. In a device of the character described, the combination with a reservoir, a bottom in the reservoir having openings at its sides and ends, a false bottom in said reservoir above the true bottom, and having openings in its sides and ends, an inwardly projecting flange in the reservoir between said false and true bottoms, and a flexible hopper below the bottom of said receptacle.

6. In a device of the character described, the combination with a reservoir, a bottom in the reservoir having openings at its sides and ends, a false bottom in said reservoir above the true bottom, and having openings in its sides and ends, an inwardly projecting flange in the reservoir between said false and true bottoms, and a flexible hopper below the bottom of said receptacle, a flange below said true bottom, and heating coils supported on both of said flanges.

7. In a device of the character described, the combination with a frame, a flexible hopper supported in said frame, a reservoir removably mounted in the upper end of said hopper and supported by said frame, devices on said frame locking the reservoir to the frame, and a spout or nozzle secured to the lower end of said hopper.

8. In a device of the character described, the combination with a reservoir, and a hopper below the same, of a nozzle on said hopper comprising a ring, and independent strips secured to said ring, substantially as set forth.

9. In a device of the character described,

the combination with a reservoir, and a rectangular hopper below the same, of a spout or nozzle removably secured to the lower end of said hopper, and comprising a rectangular ring, strips at the ends of said ring, and strips at the sides of said ring, said side strips overlapping each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID B. KEEPORTS.

Witnesses:

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J. A. L. MULHALL.