No. 772,218. PATENTED OCT. 11, 1904.

C. B. COOPER.

SANDING DEVICE.

APPLICATION FILED JULY 2, 1904.

NO MODEL.

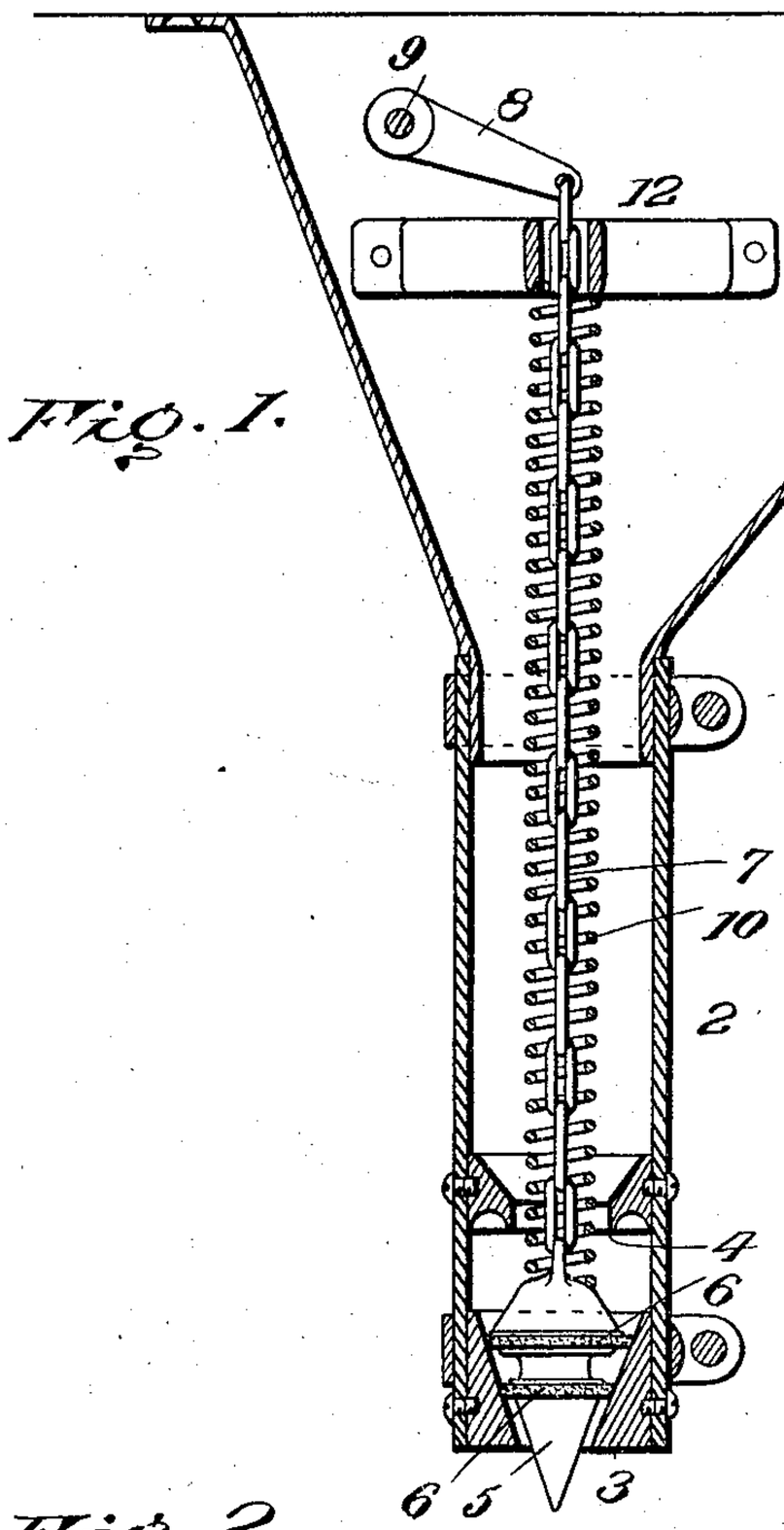


Fig. 1.

Fig. 2.

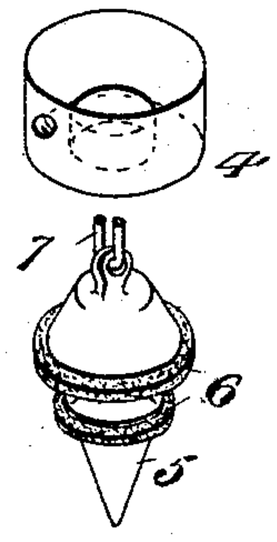
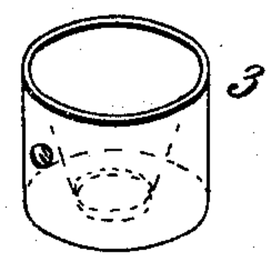
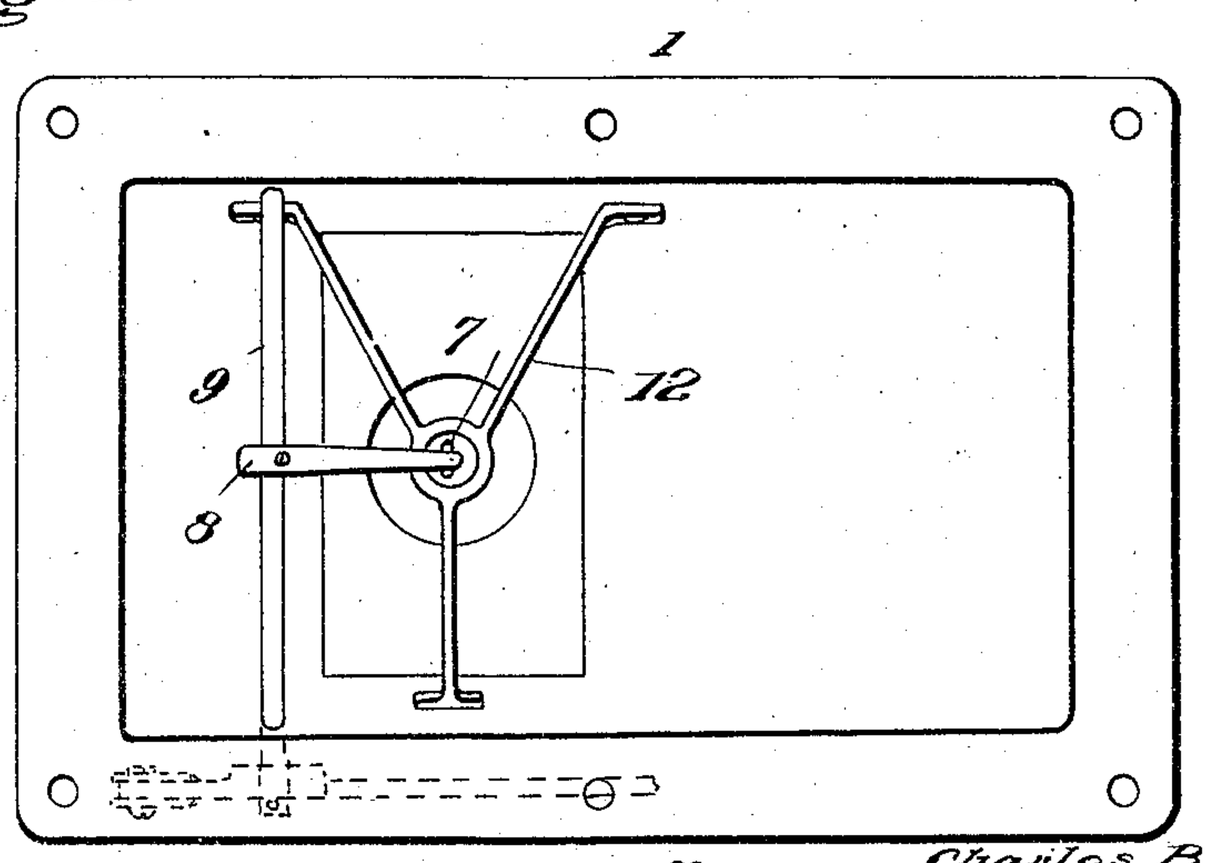


Fig. 3.





Witnesses

Francis F. Maguire

Inventor

Charles B. Cooper.

By James L. Quigley Jr., Attorney

No. 772,218. Patented October 11, 1904.

UNITED STATES PATENT OFFICE.

CHARLES B. COOPER, OF NEW BRIGHTON, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO DAVID KLEINTOP AND CHARLES H. HERBERT, OF ALLENTOWN, PENNSYLVANIA.

SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 772,218, dated October 11, 1904.

Application filed July 2, 1904. Serial No. 215,165. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. COOPER, of New Brighton, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Sanding Devices; 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.

It is well known that one of the greatest difficulties encountered in sand-boxes for railway-cars arises from the absorption of moisture, which results in the packing of the sand. Further difficulty is experienced by reason of the carelessness or inattention on the part of a motorman resulting in frequently allowing the outflow of an unnecessary amount of sand because of failure to remove his foot from the actuating-lever. To guard against breakage upon coming in contact with any obstruction and to provide for the direct application of the sand to the rails, it is customary to employ a flexible tube leading from the sand-box. Heretofore the valve mechanism having been located within the sand-box moisture has always had a tendency to accumulate within the flexible tube, resulting in the clogging thereof.

The object of my invention is to overcome all these difficulties and to provide a sander which will be simple in construction and operation and not liable to readily get out of order.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view. Fig. 2 is a top plan view. Fig. 3 is a view of the valve detached.

Referring to the drawings, 1 designates the sand-box, which may be of any preferred form of construction and from which depends a flexible tube 2, designed to extend at its lower end to within a short distance of a track-rail circumjacent a car-wheel, as customary. Within this flexible tube 2, at the lower end thereof, is a valve-seat 3, having a central conical opening, and a short distance thereabove is a second valve-seat 4, having a central circular opening.

5 designates the valve, which is of approximately plumb shape, being so formed as to conform to the conical opening of valve-seat 3, with its pointed end extended through and beyond the latter, such valve carrying gasket-rings 6, fitted in grooves, which rings bear against the seat 3 and serve to prevent moisture from entering the tube. The valve is rounded at the top, so that when raised it will be seated against the under side of seat 4, within the opening thereof, and thereby cut off the outflow of sand from above said seat. This valve is suspended by a flexible chain 7 from an arm 8, mounted on a shaft 9, supported by sand-box 1, such shaft being actuated by any suitable means within convenient control of a motorman or other attendant. The valve is normally held to its seat by a coil-spring 10, encircling chain 7 and bearing at its top against a cross-piece or spider 12 and at its lower end against the valve. This spring and chain being extended through the outlet of the sand-box and through tube 2 tend to constantly agitate the sand and prevent clogging thereof, in addition to the primary functions of controlling the seating and unseating of the valve.

From what has been said it will be seen that with the valve in its lower seat the admission of moisture to the flexible tube is impossible, thus retaining the outlet for the sand in a perfectly dry state under all conditions of weather. No sooner is the valve open to admit of the outflow of a certain amount of sand than the passage-way through the tube is again closed by the seating of the valve against the inner or upper seat 4. This not only prevents the admission of moisture into the tube, but also prevents any undue waste of the sand, since no sooner is valve 5 raised from its lower seat than it is drawn against its inner or upper seat. Hence for continuous feeding the operator must constantly manipulate the controlling means to effect the intermittent un-

seating of the valve. It will also be noted that aside from preventing the admission of moisture into the flexible outlet-tube the spring and chain serve as agitators to prevent clogging of the sand in such tube.

The advantages of my invention will be apparent to those skilled in the art. It will be especially noted that although the valve mechanism is located wholly within the flexible outlet-tube it in no way interferes with the flexibility of the latter, preserving all the advantages thereof the same as if the valve were located wholly within the sand-box.

I claim as my invention—

1. The combination with the sand-box and the outlet-tube therefor having upper and lower openings through which the sand passes, of a valve fitted between said openings for closing one while the other is open, and means for actuating the valve, as set forth.

2. The combination with the sand-box and the flexible tube therefor, of the valve fitted in the outer or lower end of such tube, a seat therefor, and flexible means for controlling the valve extended from the sand-box through said tube, as set forth.

3. The combination with the sand-box and the flexible tube therefor, of two spaced-apart valve-seats fitted in said tube at or near its outer or lower end, a valve designed to engage both of said seats, and means for actuating the valve.

4. The combination with the sand-box and the flexible tube therefor, of two valve-seats, one fitted in the outer end of such tube and the other a short distance inwardly therefrom, each of said valve-seats having a central opening, the valve designed to close the opening in each valve-seat, means for normally holding the valve against one seat, and means for moving it into contact with the other seat.

5. The combination with the sand-box and the outlet-tube therefor, of the two spaced-apart valve-seats fitted in said tube at or near the outer end thereof, a valve movable between said seats, a chain from which said valve is suspended, a spring acting on said valve, and an actuating-shaft to which said chain is connected.

6. The combination with the sand-box and the outlet-tube therefor, of the two spaced-apart valve-seats fitted in said tube at or near the outer end thereof, a valve movable between said seats, a chain from which said valve is suspended, a coiled spring encircling said chain and bearing against said valve, and an actuating-shaft to which the chain is connected.

7. The combination with the tube having inner and outer valve-seats, of the plumb-shaped valve normally fitted against its outer seat, means for moving such valve into engagement with the inner seat, and gasket-rings carried by the valve.

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

CHARLES B. COOPER.

Witnesses:

CLIFFORD C. BONNEY,

HARVEY W. CALHOON.