(No Model.) 2 Sheets—Sheet 1.

F. MERTSHEIMER.

TRACK SANDING DEVICE.

No. 587,103. Patented July 27, 1897.

Fig. 1.

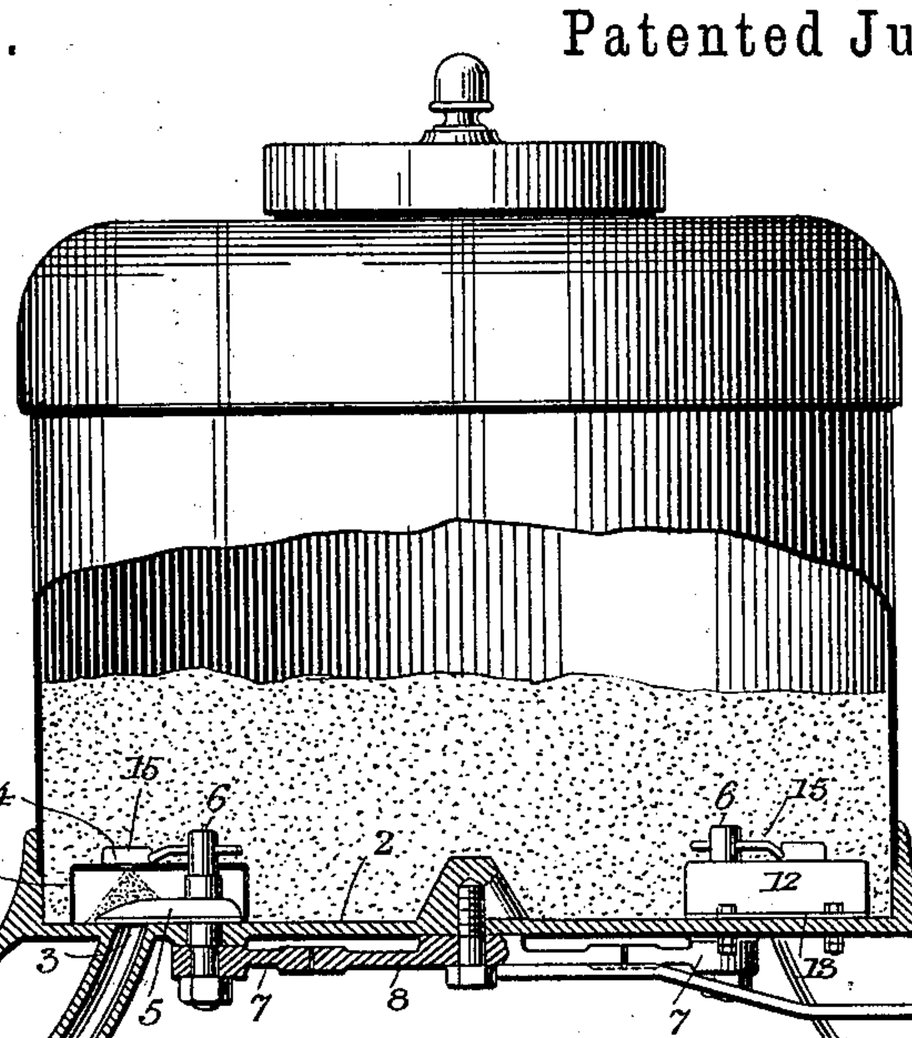
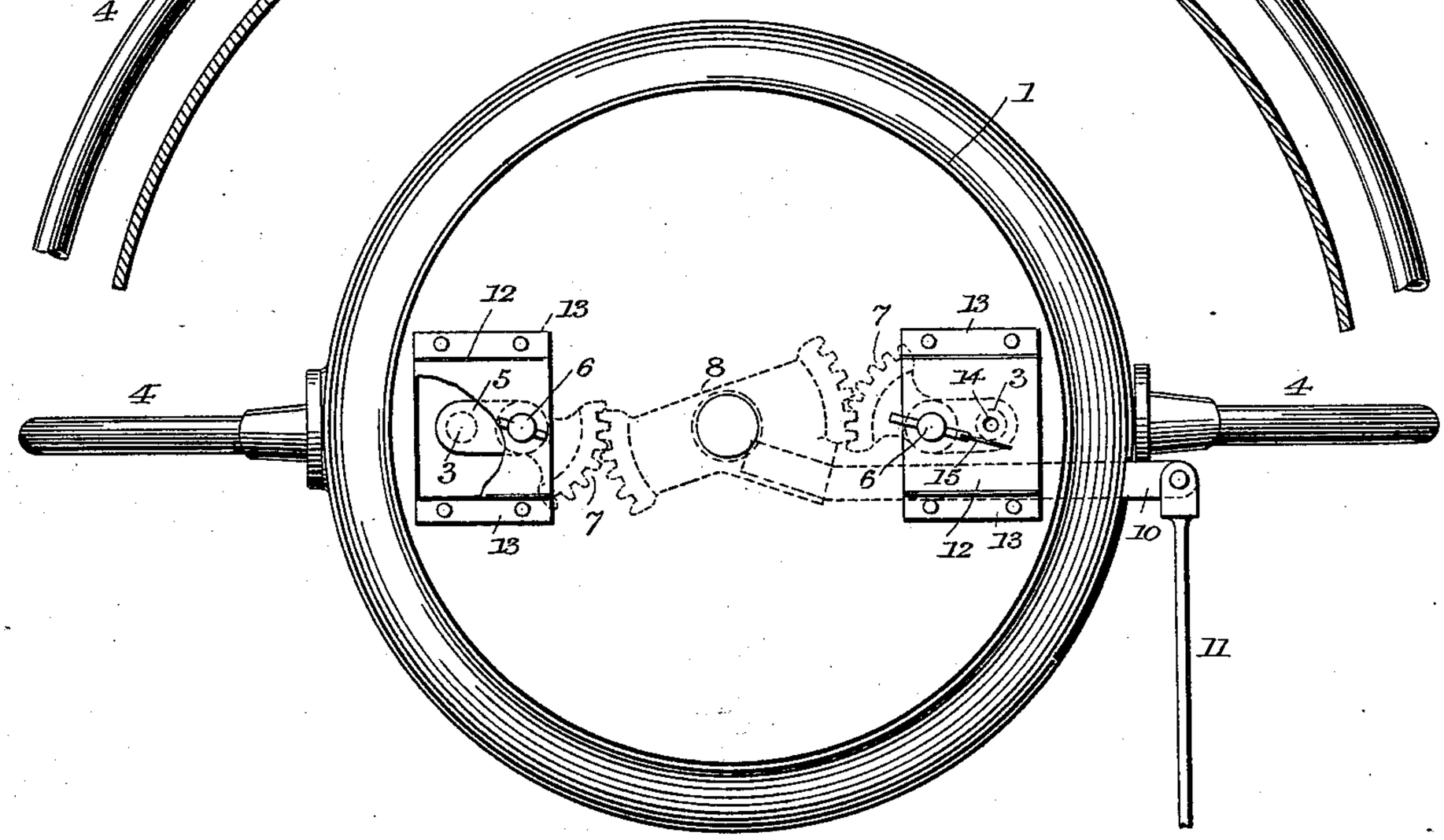


Fig. 2.



Witnesses
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F. L. Elmore.

Inventor
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(No Model.) 2 Sheets—Sheet 2.

F. MERTSHEIMER.

TRACK SANDING DEVICE.

No. 587,103. Patented July 27, 1897.

Fig. 3.

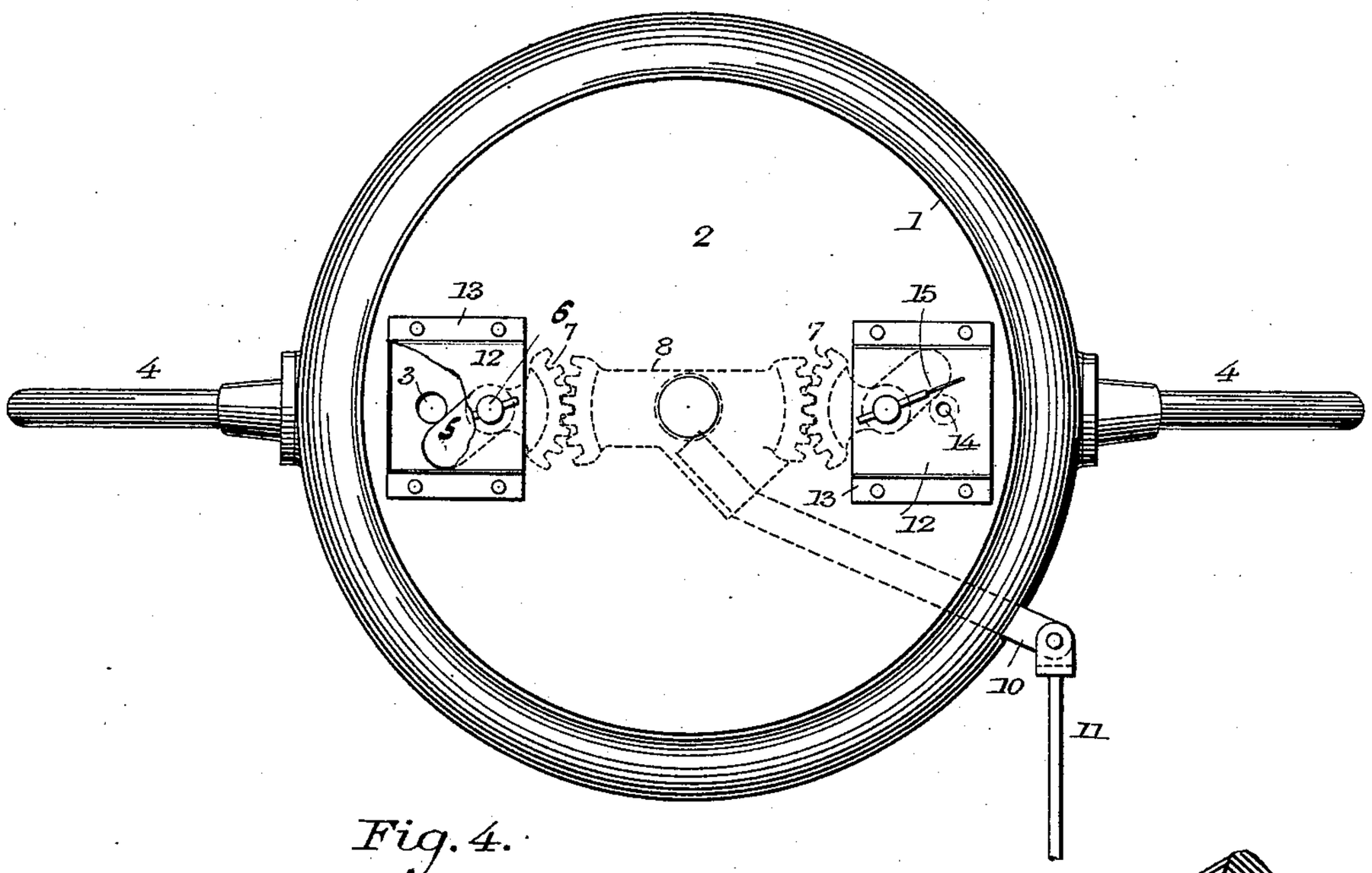


Fig. 4.

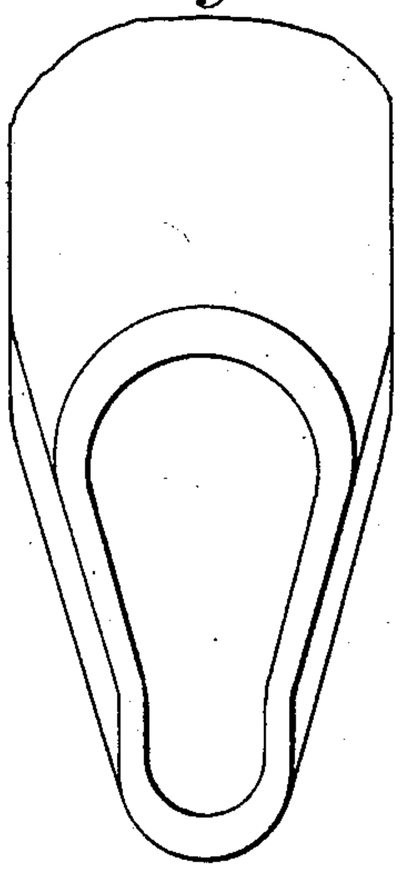
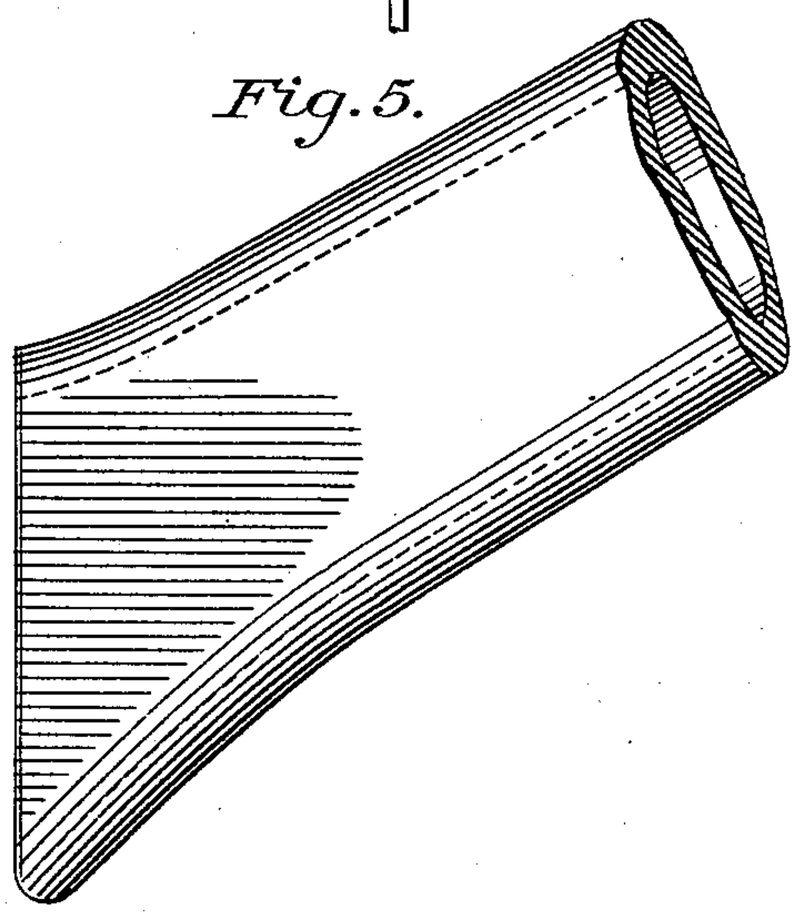


Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDERICK MERTSHEIMER, OF KANSAS CITY, MISSOURI, ASSIGNOR TO FRED B. MERTSHEIMER, OF SAME PLACE.

TRACK-SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 587,103, dated July 27, 1897.

Application filed March 20, 1897. Serial No. 628,441. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK MERTSHEIMER, of Kansas City, county of Jackson, and State of Missouri, have invented a new and useful Improvement in Track-Sanding Devices, of which the following is a specification.

This invention has reference to that class of track-sanding devices in which the sand is stored in a box or reservoir and its discharge controlled by valves in the bottom of the same. In this class of devices, as far as I am aware, the valves are subjected to the pressure of the overlying body of sand, and as a result their movements are attended with considerable difficulty on account of the crowding of the valves against their seats by the weight of the sand. It is the aim of the present invention to obviate this objection and produce a sanding device of simple construction and in which the valves will be free from the weight of the sand in the box.

With these ends in view my invention consists in combining with the discharge-valves a shield or covering of such form as to sustain the body of sand and to admit of the passage of the same in the requisite quantities to the valve-openings.

The invention also consists in the details of construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of a locomotive sand-box having my invention embodied therein. Fig. 2 is a plan view of the interior of the box, showing the shields for the valves, one of said shields being broken away to expose the valve to view, which latter is in its closed position. Fig. 3 is a similar view with the valves in an open position. Fig. 4 is an end elevation of the discharge end of the pipe for directing the sand to the track. Fig. 5 is a side elevation of the same.

Referring to the drawings, 1 represents a sand box or reservoir provided with a bottom 2, containing two openings 3 for the discharge of sand into pipes 4, which extend downward and terminate a slight distance above the tops of the rails. Each of the openings is closed by a valve 5 in the form of a plate fixed at one end on a vertical stud 6, which extends downward loosely through the bottom of the box, so as to turn therein and carry the valve across the opening to open or close the same. To each of these studs below the bottom of the box is connected a toothed sector-plate 7, which plates are engaged by a toothed operating-lever 8, mounted on the under side of the box on a vertical bolt which is extended upward through the center of the lever and into the bottom of the box. It will be seen from this arrangement that by the movement of the lever on its central axis its toothed ends engaging the sector-plates will turn the studs on their axes and move the valves across the discharge-openings. The operating-lever has fixed to it an arm 10, which is extended laterally outward and is pivoted to an operating-rod 11, which may be extended to the cab or within convenient reach of the attendant.

Each of the valves is inclosed by a shield 12 in the form of a casing provided with vertical end and side walls and a top, which latter is formed with an opening through which the upper end of the stud extends. The opposite side walls of each casing are provided with outwardly-extending flanges 13, through which fastening-bolts are passed and into the bottom of the box and serve to hold the same securely in place over the valve. From this description it will be seen that the valves are completely inclosed by the casing, the latter receiving and sustaining the weight of the overlying body of sand, thereby preventing the same from interfering with the proper and easy movements of the valves.

Directly above the discharge-openings 3 the top of the casing is provided with a small opening 14 for the entrance of the sand in a limited quantity to the valve-opening, as plainly shown in Fig. 1. When the valves are in an open position, as shown in Fig. 3, the sand will pass directly through these small openings in the casing and thence into the pipes, by which it is directed on the top of the rails. When, however, the valves are in a closed position, as shown in Fig. 2, the sand entering through the small opening in the casing will accumulate on the valve beneath it in the form of a small conical pile,

which when the valves are opened will pass immediately into the pipes and be directed without delay onto the rails.

It will be understood of course that the details of the mechanism and the connections for operating the valves may be variously modified without departing from the limits of my invention, the essence of which resides in combining with the valve a covering or shield of a form to receive the weight of the body of overlying sand and prevent the same from interfering with the movements of the valve.

In order that there will be no liability of the stoppage of the openings in the top of the casings by gravel or other foreign substances in the sand, I attach to the upper end of each stud a horizontal finger 15, the free end of which is in position to pass over the opening in the casing when the valve is operated and which will in this manner serve to dislodge any gravel or other object which may rest on the opening.

In order that the sand when it passes from the discharge-pipes to the tops of the rails may be prevented from spreading unduly and leaving the same, I propose to contract the sides of the discharge end of the pipe adjacent to the rail, as shown in Figs. 4 and 5. The discharge-pipe 4 is curved at its delivery end to follow the contour of the wheel, so that adjacent to the track it extends nearly in a horizontal position. The portion of the pipe adjacent to the track or its under side being contracted, as shown, this will insure the passage of the sand to the rail in such a manner that as the locomotive advances a ridge of sand will be left on the central portion of the top of the rail.

Having thus described my invention, what I claim is—

1. In a track-sanding device the combination with the box provided with a discharge-opening, of a valve for controlling said opening and a casing or shield for the valve formed with an opening in its top for the entrance of the sand.

2. In a track-sanding device the combination with the box provided in its bottom with an opening, of a horizontally-movable valve for controlling the same, a casing inclosing the valve and provided in its top over the valve with an opening for the entrance of the sand.

3. In a track-sanding device the combination with the sand-box provided with a discharge-opening of a valve for controlling the same, a shield or covering above the valve formed with an opening for the entrance of the sand and a scraper-arm movable across said opening.

4. In a track-sanding device the combination with the sand-box provided in its bottom with a discharge-opening, of a horizontally-movable valve for controlling the same, a vertical stud carrying said valve, a shield or covering above the valve formed with an opening for the entrance of the sand and a scraper-finger connected to said stud above the shield with its free end in position to be moved across the opening as the valve is operated.

5. In a track-sanding device the combination with the reservoir for the sand and means for controlling the discharge of the sand therefrom, of a pipe for directing the sand to the rail, said pipe curved at its discharge end and having its sides adjacent to the track contracted laterally of the rail.

In testimony whereof I hereunto set my hand this 5th day of March, 1897, in the presence of two attesting witnesses.

FREDERICK MERTSHEIMER.

Witnesses:
C. R. HUGHES,
D. W. MEYER.