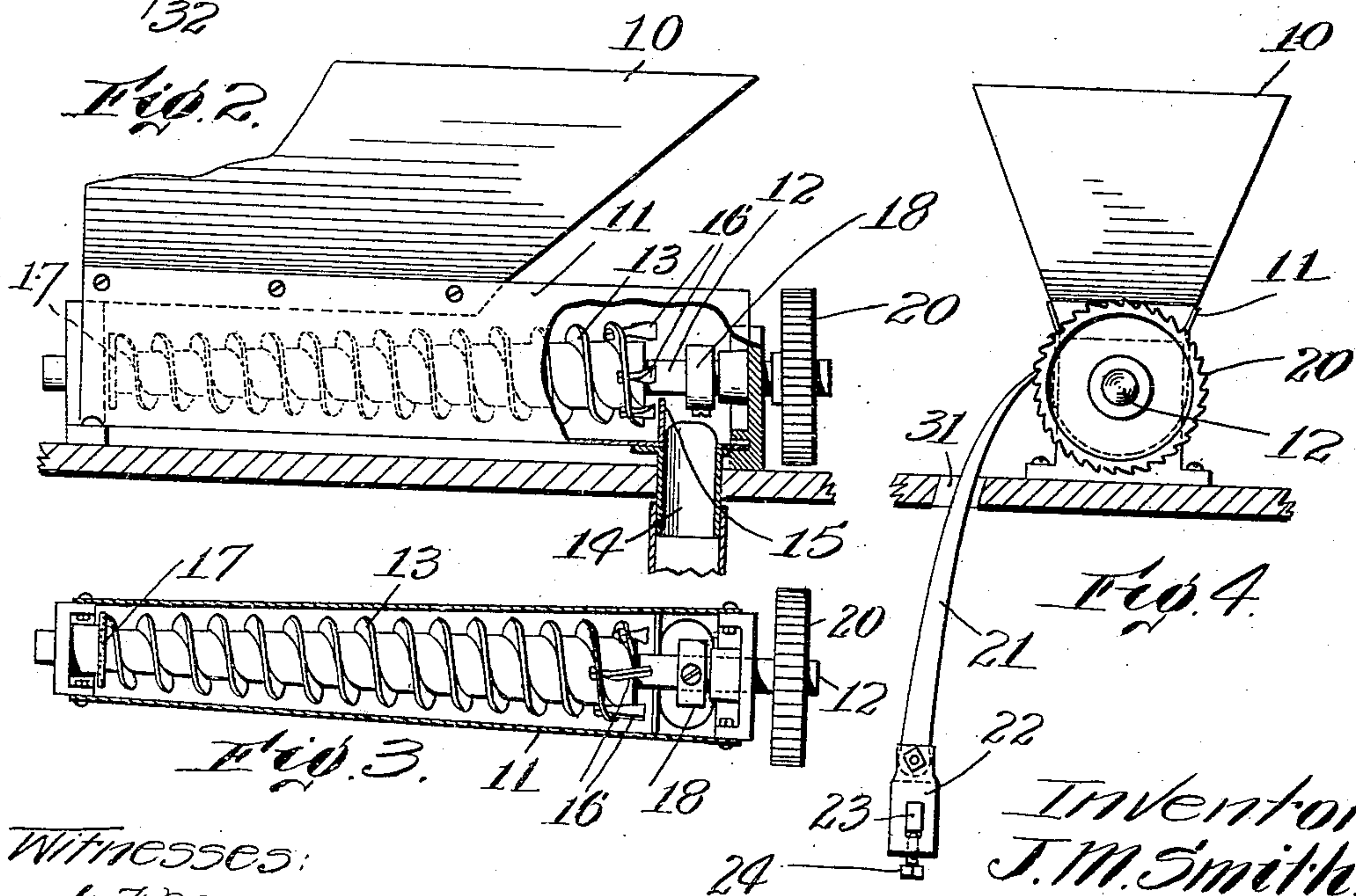
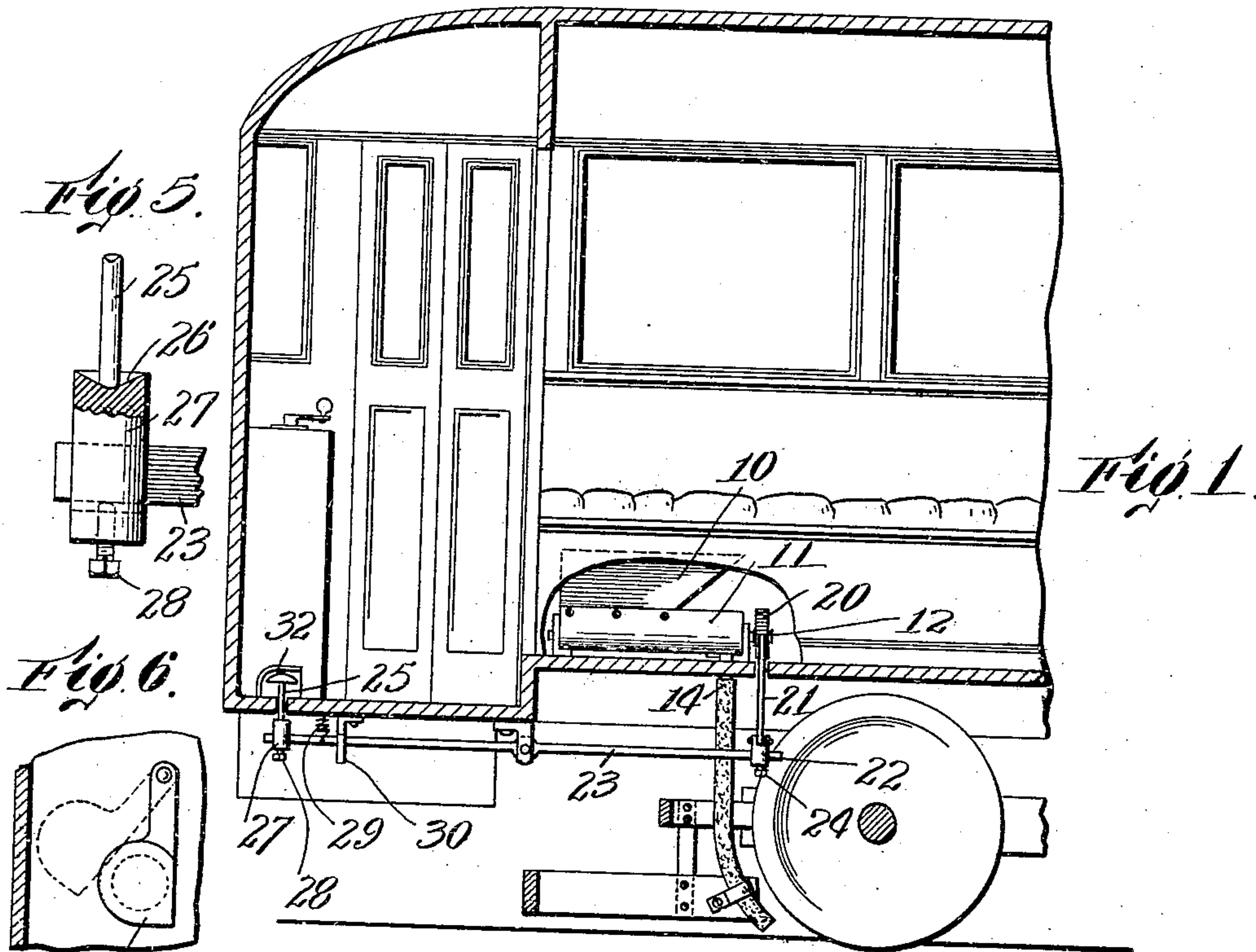


No. 875,631.

PATENTED DEC. 31, 1907.

J. M. SMITH.
TRACK SANDER.
APPLICATION FILED MAR. 23, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH M. SMITH, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WILLIAM J. SAUNDERS, OF WORCESTER, MASSACHUSETTS.

TRACK-SANDER.

No. 875,631.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed March 23, 1907. Serial No. 364,131.

To all whom it may concern:

Be it known that I, JOSEPH M. SMITH, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Track-Sander, of which the following is a specification.

In the use of rotating worms for track sanders, it has been found that while some forms are useful for wet sand, the same ones cannot be advantageously employed when the sand is dry and vice versa.

The principal object of the present invention is to provide means whereby the same device can be used with equal efficiency for dry and wet sand. This is accomplished by providing a worm capable of efficiently delivering wet sand and having means whereby the sand in a dry state is prevented from being discharged from the casing when the worm is not turning.

Another object of the invention is to provide improved means for operating the worm.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings which illustrate one form in which the invention can be constructed and in which,

Figure 1 is a side elevation of the end of a car showing the invention applied thereto. Fig. 2 is a side elevation of the sander casing with parts in section. Fig. 3 is a plan of the same with the hopper removed. Fig. 4 is an end elevation. Fig. 5 is an elevation on an enlarged scale of a detail, and Fig. 6 is a plan of another detail of the device.

The sand is held in a hopper 10 which is located on a casing 11 in which is a shaft 12 carrying the worm 13. In order to guard against the dry sand being discharged when the worm is not rotating, the latter is made in a tapering form with its large end at the discharge end of the casing. The axis of the worm and of the shaft 12 is also inclined to such a degree that the bottom of the flights of the worm is on substantially a horizontal line parallel with the horizontal bottom of the casing. By tapering the worm and mounting it on an inclined axis with the large end uppermost, it will be seen that the sand has to be lifted in order to be discharged

and that this shape in itself tends to prevent the accidental discharge of the dry sand from the casing.

It will be observed that the sand is discharged into contact with the worm at the small end thereof and in order to guard against the stoppage of the worm by the wedging of stones or any other hard object which is deposited at the small end, the casing itself is made tapering so that it is substantially parallel with the adjacent surface of the flights as is indicated in Fig. 3. This is true also of the bottom. It will be seen that the lower part of the casing 11 is semi-circular in cross-section and tapered so that it corresponds with the shape of the worm at all points thereof.

Located adjacent to the large end of the worm is a discharge outlet 14 and between this outlet and the end of the worm is a wall 15 to hold the dry sand and prevent its being discharged accidentally. In order to further guard against the discharge of the dry sand, the end flights are provided with longitudinal flukes 16 which are broad-faced and extend out toward the wall 15. When the worm stops, it will be obvious that such of these flukes as are buried in the sand will tend to prevent the discharge thereof, while when the device is used on wet sand, they will serve to break it up and insure its discharge when the worm is rotated.

The shaft of the worm is provided with a rubber disk 17 serving as a packing to prevent the sand from getting into the bearing, and with a collar 18 at the other end for a similar purpose and to hold the worm and shaft in proper position.

For the purpose of driving the shaft of the worm, it is provided with a ratchet-wheel 20 which is operated by a pawl 21 pivotally mounted on a block 22. This block is mounted on a lever 23 so that it may be adjusted back and forth and a set-screw 24 is provided for fixing it in adjusted position. This lever is operated by a pin 25 located in convenient position and bearing in a cup 26 in the top of the block 27 which is adjustable along the lever 23 and is held in adjusted position by a set-screw 28. By means of this adjustment, it will be seen that when the parts become worn so that the pin 25 is out of center with the cup 26 or the pawl 21 out of proper

position with respect to the ratchet-wheel, these blocks 22 and 27 may be adjusted to bring the parts to proper position.

The lever is normally held up by a spring 29 and is provided with a guide 30 fixed to the bottom of the car and having a vertical slot through which the lever passes.

The pawl 21 is guided in a passage 31 in the floor of the car through which it passes. The top of the pin is protected by a swinging cover 23.

The operation of the device will be readily understood by the description above given.

While I have illustrated and described a particular form of the invention, I am aware that many modifications may be made therein without departing from the scope of the same as expressed in the claims. Therefore, I do not wish to be limited to the features of construction shown, but

What I do claim is:—

1. A track sanding device, comprising a casing having a substantially horizontal bottom, and a tapering worm conveyer inclined at such an angle that the bottom of the conveyer is substantially parallel with the bottom of the casing, said casing being tapered so that its sides are substantially parallel with the sides of the worm.

2. A track sanding device, comprising a casing, and a tapering worm conveyer mounted on an inclined axis, the lower part of said casing having a cross-section corresponding with that of the conveyer throughout its length.

3. A track sanding device, comprising a casing, and a tapering worm conveyer mounted on an inclined axis, the lower part of said casing having a cross-section corresponding with that of the conveyer throughout its length, said casing having a discharge opening at the large end of the worm, and a wall between the end of the worm and the discharge opening.

4. A track sanding device, comprising a casing, and a tapering worm conveyer having its larger end at the discharge end of the casing, said casing having a wall extending upwardly from the bottom thereof at the end of said worm.

5. A track sanding device, comprising a casing, and a tapering worm conveyer having its larger end at the discharge end of the casing, said casing having a wall extending upwardly from the bottom thereof at the end of said worm, said worm having longitudinal flukes extending toward the large end of the casing from its end flights.

6. A track sanding device, comprising a tapering worm mounted on an inclined axis and having longitudinal flukes extending from the flights of the large end thereof.

7. A worm for a track sanding device having longitudinal flukes extending from the flights at the discharge end thereof.

8. In a track sanding device, the combination of a casing having a discharge opening, an inclined shaft in said casing, a worm on the shaft, a ratchet-wheel connected with the shaft, a pawl for operating the ratchet-wheel, and a lever with which said pawl is adjustably connected.

9. In a track sanding device, the combination of a worm, a ratchet-wheel connected therewith, an operating lever, a block adjustably mounted on said lever, and a pawl pivotally connected with the block for operating said ratchet-wheel.

10. In a track sanding device, the combination of a lever, two blocks adjustably mounted thereon, one of said blocks having a cup-shaped upper end, an operating pin adapted to rest in said cup-shaped end, a pawl pivotally mounted on the other block, and a ratchet-wheel adapted to be operated by said pawl.

11. In a track sanding device, the combination of an operating lever, two blocks mounted thereon, a pin adapted to engage one of said blocks, a pawl mounted on the other block for operating a ratchet-wheel, and a guide for said lever having a vertical slot through which the lever passes.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

JOSEPH M. SMITH.

Witnesses:

LOUIS W. SOUTHGATE,
ALBERT E. FAY.