T. N. LOCKE.

TRACK SANDING DEVICE.

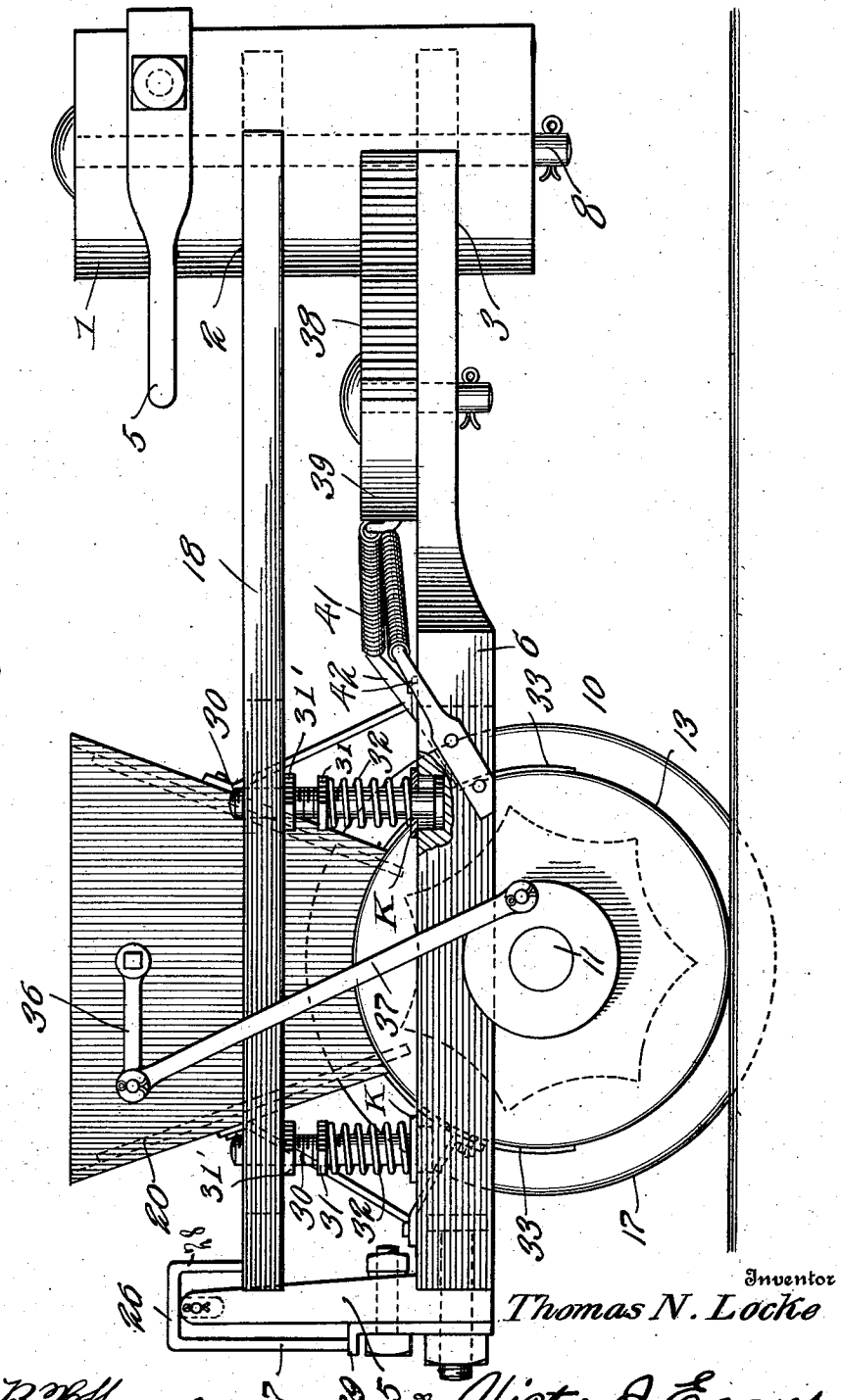
APPLICATION FILED OCT. 3, 1908.

1,010,280.

Patented Nov. 28, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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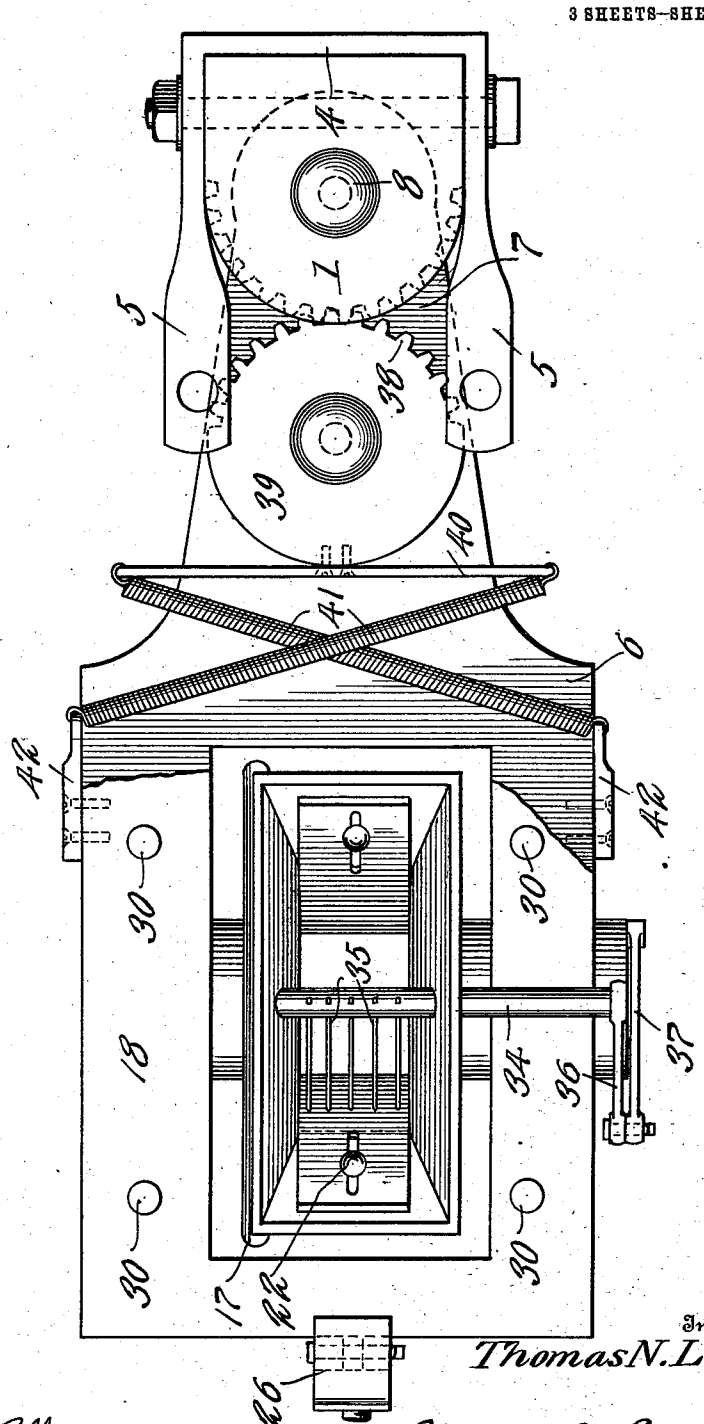
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 4.

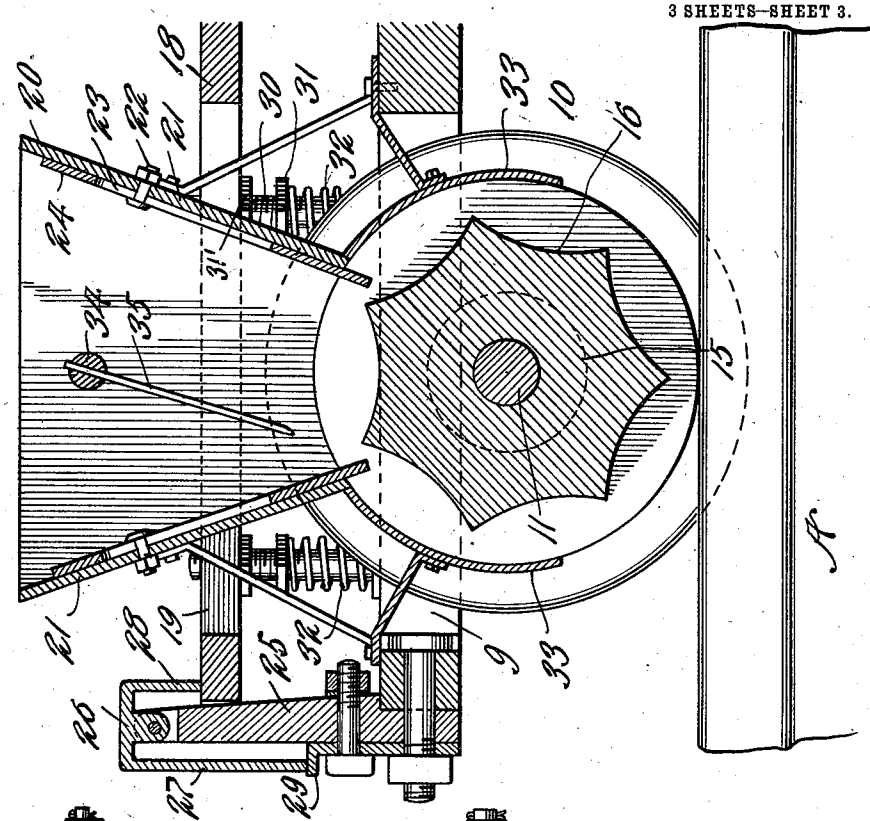
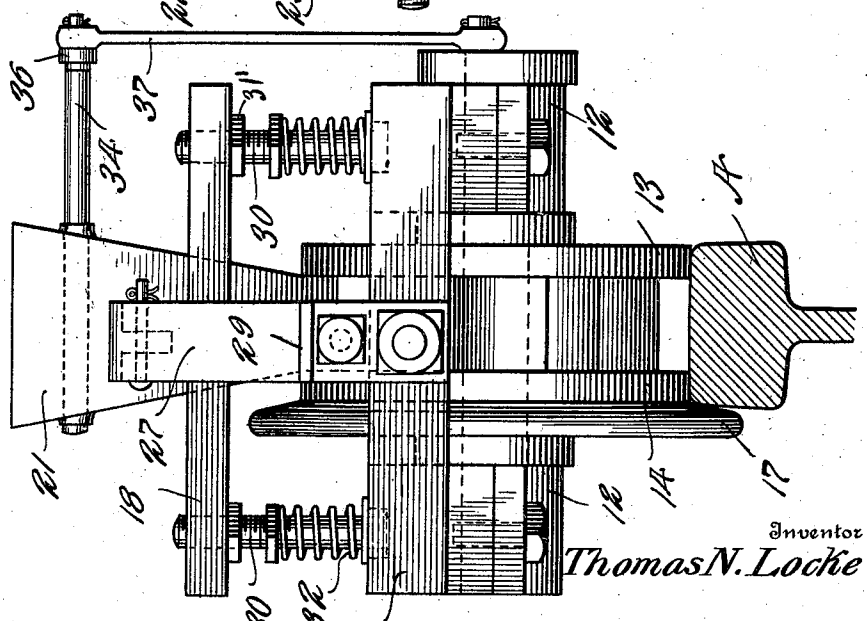


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS N. LOCKE, OF SALEM, MASSACHUSETTS.

TRACK-SANDING DEVICE.

1,010,280. Specification of Letters Patent. **Patented Nov. 28, 1911.**

Application filed October 3, 1908. Serial No. 456,103.

To all whom it may concern:

Be it known that I, THOMAS N. LOCKE, a citizen of the United States, residing at Salem, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Track-Sanding Devices, of which the following is a specification.

This invention relates to track sanding devices, and has for an object to provide a device of this character capable of being attached to a street car or similar vehicle, and which will be so constructed that in the movement of the car to which the device is attached, a predetermined charge of sand will be distributed upon the track at a point immediately in front of the wheels of the car trucks.

A still further object of my invention resides broadly in the provision of a hopper adapted to contain a quantity of sand for distribution, and to locate beneath the said hopper a revoluble track engaging element or wheel for receiving sand from the hopper and discharging it upon the surface of the track as above described, and to further provide a novel form of agitator located within the hopper and adapted to be actuated upon rotary movement of the said element or wheel.

Another object of my invention is to provide a device of the class described which will be provided with means whereby it may be attached to a car truck or to any other part of the car, and to further provide simple, effective and novel means for retaining the distributing wheel upon the track upon which it is to travel.

Other objects and advantages will be apparent as the nature of the invention is better set forth, and it will be understood that changes within the scope of the claims may be resorted to without departing from the spirit of the invention.

In the drawings, forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views:—Figure 1 is a side elevation of the sanding device. Fig. 2 is a top plan view of the same. Fig. 3 is an end view of the same, and Fig. 4 is a detail longitudinal section taken through a portion of the device.

Referring now more particularly to the drawings, there is shown a sanding device consisting of a head member or block 1 bifurcated horizontally at 2 and 3 for a purpose to be hereinafter explained. The head member or block 1 is provided with a bracket 4 of yoke form which is preferably provided with a pair of horizontally disposed arms 5 adapted, in any suitable manner to be connected to the truck of a car or to any other desirable part thereof. A frame 6 is provided and is formed with a head or bearing 7 mounted in the bifurcated portion 3 of the head member or block and as illustrated the block or head member has connected thereto a vertically disposed pivot post or pintle 8 which is connected with the head 7 of the frame 6 so that the latter is free for slight oscillatory movement. At the rear end the frame 6 is provided with a slot 9 in which is disposed a portion of a sand distributing element or wheel 10. The said distributing element or wheel 10 is preferably revolubly mounted upon a shaft 11 journaled at its ends in bearing boxes 12 which extend downwardly from the frame 6. The said distributing element or wheel 10 consists of a pair of spaced annular flanges or collars 13 and 14, the peripheral faces of which being arranged to travel upon the tread surface of a rail A. The said collars or flanges 13 and 14 are connected to each other by means of a hub 15 which is provided upon its peripheral surface with a series of concavities or pockets 16. The pockets or concavities, in practice, can be of any suitable size and may be arranged to distribute upon the surface of the track, a predetermined charge of sand or the like. The collar or flange 14 is formed with a peripheral annular extension 17 which serves as a guide flange for the distributing wheel and effectively holds the same in its operative position upon the rail as will be readily understood.

The frame 6 just described will be referred to hereinafter for the purpose of clearness as a main frame, and disposed immediately above the said main frame and in suitable spaced relation thereto preferably, is a supplemental frame 18 which has its forward extremity operatively connected with the post or pintle 8 so that the frame is free for slight oscillatory movement. The supplemental frame 18 is provided adjacent to its rear end with an elongated slot 19 disposed immediately in line with the slot 9 in the frame 6. A hopper 20 is carried by the main frame and its lower reduced end

extends downwardly below the slot 19 and is positioned immediately above the distributing element or wheel 10. The front and rear walls 21 of the said hopper have secured thereto bolts or suitable adjusting and clamping devices 22, the shanks of the said bolts or devices being disposed in elongated slots 23 formed in plates 24 mounted within the hopper. In view of the just described construction it will be apparent that the plates 24 are mounted for angular adjustment within the hopper so that the discharge end thereof can be reduced or enlarged at the will of the operator so that the desired quantity of sand can be delivered from the hopper to the distributing element. The plates 24 in width are somewhat less than the distance between the flanges or collars 13 and 14 and the said plates have their lower extremities partly disposed in the said space between the flanges or collars.

The main frame has connected thereto in any suitable manner at a point preferably at the rear of the hopper a post or standard 25 having pivoted thereto at its upper end a bracket 26. The bracket 26 carries spaced depending abutments or fingers 27 and 28, the latter having its lower extremity adapted for engagement with the rear extremity of the supplemental frame, and the former has its lower extremity normally engaged with a stop or lug 29 which extends preferably from the standard or post 25.

The main frame is provided with a plurality of bolts 30 whose lower ends or headed portions are mounted in recesses in the main frame. The upper threaded ends of the bolts are extended through passages in the supplemental frame. As shown, the bolts are provided with washers K which are seated directly against the main frame to close the recesses in which the headed portions of the bolts are seated. Springs 32 are mounted upon the bolts and are confined between the washers and the adjusting nuts 31′. Nuts 31 are also adjustably mounted on the bolts and are disposed above the nuts 31′ and they bear beneath the supplemental frame. On downward adjustment of the nuts 31′ the bolts will be elevated slightly so as to cause the nuts 31 to be moved tightly against the supplemental frame, thus forcing the same against the finger 28. This construction is necessary in order that the device can be made to accommodate itself to tracks of different character or to one in which there may be certain imperfections, it being understood that it is essential that the wheel 10 or sand-distributing element is forced to bear against the track to insure a proper discharge thereto of the sand.

Arcuate guards 33 are carried by the main frame and extend partly around the distributing element and serve as means for obviating the premature discharge of sand. The hopper has mounted therein an oscillatory shaft 34 which carries a plurality of downwardly extending tines or agitating fingers 35, the said fingers being disposed in suitable spaced relation to each other and extend crosswise of the machine approximately the width of the hopper. The shaft 34 has connected thereto at one end a crank arm 36 with which is connected one end of a pitman or connecting rod 37 operatively connected with the distributing wheel as clearly shown in Fig. 1.

The head member or block 1 is provided with a horizontally disposed gear segment 38, the teeth of which meshing with those of a gear segment 39 pivotally mounted upon the main frame forwardly of the hereinbefore described hopper. The segment 39 has secured thereto a horizontally disposed arm 40, the ends of the said arm being secured to the forward extremities of helical springs 41. The rear extremities of the said springs are secured in any suitable manner to brackets 42 which extend upwardly from the sides of the main frame. Incident to the fact that the main frame is mounted to the head or block 1 so that it can be moved horizontally, it will be appreciated that through the medium of the gear segments 38 and 39 and the springs 41 which are connected thereto, the main frame will at all times be held in its operative position, the wheel or distributing elements 10 thus being provided with means whereby it will always travel upon the tread surface of the rail.

It is thought that the foregoing description fully sets forth the purpose of the invention, but for clearness, it might be described briefly that in use, sand or the like can be carried in the hopper 20 and will be automatically fed to the distributing element or wheel 10. The pockets 16 formed in the distributing element convey the desired quantity of sand to the track and discharge it immediately in front of the wheels of the car trucks. It will be apparent that I may adjust the plates 24 to determine the desired discharge of sand from the hopper to the distributing wheel.

A device of the character described is extremely simple in construction, may be applied to cars of the well known type and is automatically driven by reason of the fact that it is carried directly by the car and that the distributing wheel rides upon one of the rails. The operation of the distributing wheel not only discharges upon the track the desired quantity of sand, but through the connections hereinbefore described between the oscillatory shaft 34 and the said distributing wheel, it is obvious that the agitating fingers will be operated simulta-

neously with the operation of the wheel so that sand within the hopper will be thoroughly loosened whereby it may be properly discharged to the distributing wheel.

I claim:

1. A track sanding device comprising a head adapted to be secured to a car body, a main frame carried by the head and adapted for horizontal swinging movement, a supplemental frame carried by the head and disposed above the main frame and connected thereto by adjustable means whereby the main frame will be braced to the supplemental frame, a hopper, and a distributing wheel communicating with the hopper.

2. A track sanding device comprising a pivotally mounted frame, a revoluble sand distributing element carried by the frame, and a hopper communicating with the distributing element.

3. A track sanding device comprising a pivotally mounted frame, a revoluble sand distributing element provided with a series of peripheral pockets, and a hopper communicating with the distributing element.

4. A sand distributing device comprising a frame, a track actuated revoluble distributing element, a hopper communicating with the distributing element, and revoluble element actuated agitating means located within the hopper.

5. A track sanding device comprising a head, a main frame carried by the head and connected therewith for horizontal swinging movement, a sand distributing wheel carried by the main frame, a hopper carried by the supplemental frame and communicating with the distributing wheel, a series of gear teeth upon the head, a gear segment carried by the main frame, said segment having its teeth in mesh with the teeth upon the head, and coil springs secured at their inner ends to the main frame and at their outer ends to the gear upon the said main frame.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS N. LOCKE.

Witnesses:

EDGAR J. WHELPLEY,

HARRY ELBEBBEE.