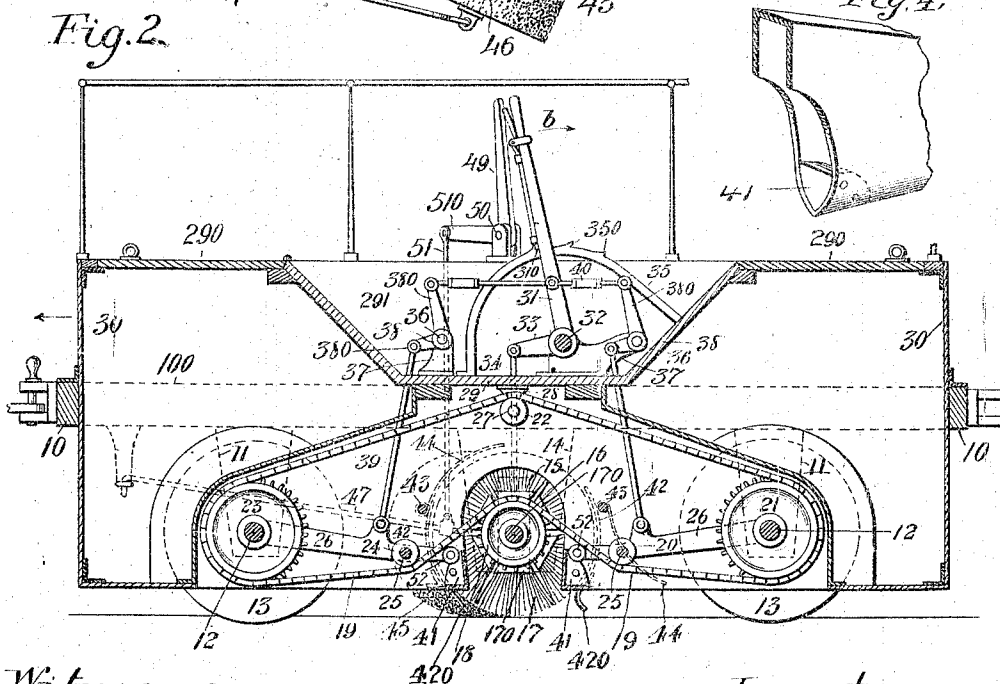
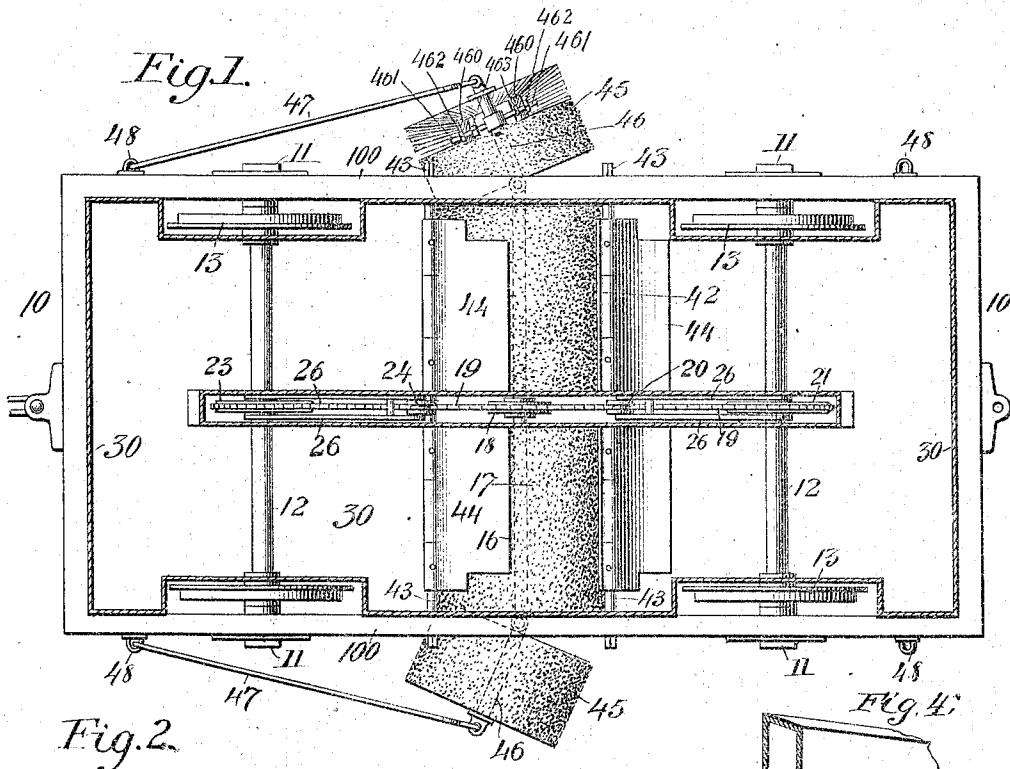


(No Model.)

A. J. REYNOLDS.
SELF LOADING TRACK CLEANING CAR.

No. 562,489.

Patented June 23, 1896.



Witnesses:
G. H. L. Lavers



Fig. 3. Inventor:
Andrew Reynolds

UNITED STATES PATENT OFFICE.

ANDREW JACKSON REYNOLDS, OF WORCESTER, MASSACHUSETTS.

SELF-LOADING TRACK-CLEANING CAR.

SPECIFICATION forming part of Letters Patent No. 562,489, dated June 23, 1896.

Application filed August 10, 1895. Serial No. 558,941. (No model.)

To all whom it may concern:

Be it known that I, ANDREW JACKSON REYNOLDS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Self-Loading Track-Cleaning Cars, of which the following is a specification.

My invention relates to self-loading track-cleaning cars, into which the dirt is thrown automatically by rotary brushes; and my invention consists in the improved construction and arrangement of the operating parts, as will be pointed out by the claims, and which is fully illustrated in the accompanying drawings, in which I use either cable, electric motors, steam or horse power.

Figure 1 represents a sectional plan, the section being taken horizontally and through the car, just above the supporting-frame. Fig. 2 is a longitudinal central section of my improved track-cleaner, and Fig. 3 shows in perspective a wedge-shaped brush-separator and guide. Fig. 4 is an isometric view of a detail.

In the drawings, 10 is a rectangular frame to which the journal-boxes 11 and axles 12, having the flanged wheels 13, adapted to be run upon a street-car track, are secured. Secured near the center of the side frames 100 are guide-plates 14, carrying blocks 15, in which is journaled the main brush-axle 16, on which is secured the brush 17, consisting, in the present instance, of the sections 170, arranged around said axle and rigidly held in position, as will be described later on.

The axle or shaft 16 carries a sprocket-wheel 18, over which runs the driving-chain 19, passing beneath the pulley 20, around the sprocket 21 on the wheel-axle, thence over the pulley 22, around sprocket 23 on the front axle, and beneath the pulley 24. It will therefore be seen that when the car is moved (in the direction of the arrow) rotary motion will be imparted to the brush-axle 16 by the chain 19, thereby obtaining all the traction-power of the four car-wheels for driving the brush.

The pulleys 20 and 24 are journaled on studs 25, which are carried by the ends of a pair of levers 26, the other ends of which are pivotally held on the axle 12.

The pulley 22 is journaled on a stud 27, held in a bracket 28, which is secured to the under side of the planking 29. On the free ends of the levers 26 are provided the pulleys 52, over which the chain 19 also runs. These pulleys are for the purpose of raising the chain 19 entirely free from the sprocket 18, when it should be desired or necessary to completely stop the brush rotating, while the car is running on the track.

30 is the receptacle end or tank into which the dirt is automatically thrown by the brush, being supported by the above-mentioned frame 10, and consists, preferably, of sheet-iron, having a dumping-bottom and four inclosing sides or walls, the entire car being covered by planking into which trap-doors 290 are provided to permit access into the car. This planking serves as a floor upon which the operator may stand, and a pit 291 serves to receive the main lever 31 for raising and lowering the brush. This lever 31 is secured to a shaft 32, which is journaled in suitable boxes, and which also carries at each end an arm 33, connected by the link 34 with the block 15. It will thus be understood that a thrust of the lever 31 in the direction of arrow *b* will result in raising the brush from the ground, in which position it may be held by the teeth 350 of the sector 35, engaging the latch 310 of the hand-lever 31. Journaled on studs 36, which are held in brackets 37, are the bell-crank levers 38, the arms 381 of which are connected by means of the links or rods 39 with the levers 26, while the arms 380 are connected by the adjustable links 40 with the main lever 31, so that when the brush is raised from the ground the pulleys 20 and 24 are also raised sufficiently to permit the chain 19 to rise with the sprocket-wheel 18 on the brush-axle, and the tension of the chain on said sprocket 18 may be regulated at will by the adjustable links 40.

As the chain 19 runs lengthwise and in the middle of the car, the dirt would naturally interfere with the smooth working of the moving parts, and I therefore inclose the entire driving mechanism within a case of sheet-iron, rectangular in cross-section and open at the bottom only, and, as the inner ends of both brush-sections run close to this case, I provide at the bottom of the case the wedge-

guides 41, the object of which is to guide the bristles gradually outward and thereby prevent them from wearing out or being torn by the lower edge of the case-opening. This guide 41 is illustrated in Figs. 3 and 4 of the drawings, and consists, substantially, of two side plates connected at their lower edges, and a front plate which serves to retain the side plates in proper relation to each other.

The guides are placed between the sides of the case with their sharp edges downward, and the corners of the case are drawn together, so as to lie against the sides of the wedge, and are there secured, so that as the brushes are rotated their bristles (which at their outer ends intermesh) are separated and crowded outward, and thus guided toward the outside of the case, covering the driving-chain.

Secured to the bottom of the car and in contact with the brush are the shields 42, having at the bottom the rubber extensions 420 of a sufficient length to reach the pavements with their lower edges. These shields 42 serve to receive the dirt as it is whirled by the brush and to prevent it from leaving the brush.

Pivoted just below the upper edges of each shield is a shaft 43, which carries a deflector 44, adapted to be turned up or down, as desired. In the present instance the left-hand deflector is turned upward, so that it will form a combination of the shield 42, while the right-hand deflector is turned down and thus leaves an opening for the passage of the dirt as it is precipitated from the brush.

In the drawings, I have shown the ends of the deflector-shafts as adapted for a wrench, but it will be understood that other means may be employed to suit the convenience of the operator.

In order to enable the sweeper to cover more ground than the width of the car or the length of the leading-brush 17 would warrant, I provide the supplemented side brushes 45, constructed like the brush 17, namely: A series of sections 460, carrying the bristles, are mounted on bolts 461, which project radially from the axle 46, and which carry the nuts 462 463, between which the sections are clamped, so that, when the bristles wear off, the sections 460 may be adjusted and moved away from the center, leaving the diameter of the brush the same until the bristles are entirely worn off, and consequently have to be renewed.

The axle 46 is connected with and driven by the axle 16 through closely-connected universal joints, and its outer end is supported by the rod 47, having at its other end a hook adapted to enter the eye 48, attached to the frame 100, and so placed that an inclination is given to said axle, as shown in Fig. 1, the outer end of said axle being in advance of the inner end, so that the brushes intermesh at the joints and prevent the dirt from escaping between the two sections, while gath-

ering and throwing the dirt which is beyond the car centrally into the path in front of the main leading-brush. The inner end of the axle 46 being connected with the axle 16, both will rise or fall together, and the outer ends of the axle 46 are raised or lowered by means of the handle 49, pivoted in the swivel-bracket 50 and the link 51, which connects the arm 510 with the rod 47.

It will be seen that I employ only one brush, and no matter in what direction the car may run this form of a sectional brush is adapted to do its work.

In the drawings the self-loading car is illustrated as traveling from right to left. If it is desired to change and run the other way, it is only necessary to hook the rod 47 into the opposite eye 58 and reverse both deflectors 44, whereby the dirt is thrown into the other and empty end of the car.

By using the "trolley" system and electric motors with my improved track-cleaning cars, I am able to take up and out of a city by rail all loose foreign matter found within two or three feet of the track, at any desired speed, including dirt, snow, and slush; at a great saving of time, cost, and power over any known device that runs off the rails. To accomplish this, I sweep the dirt from the curbstones up near the railway-tracks with ordinary horse-sweepers, where it is picked up and loaded into the passing car by the rotary brushes, as shown in my drawings and specification. If preferred, I employ two sets of sectional brushes, and their connections are set at the extreme ends of the car, forming a "double-header," as it were, in which case I duplicate the parts and drive each brush separately.

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

1. In a track-cleaning car, the combination with the sectional, rotary brush of the stationary shields, and the reversible deflector, whereby the dirt may be directed into either end of the car, substantially as described.

2. The combination with the self-loading car, the main brush and side brushes, so arranged, but the side brushes will form an angle, or means for changing the direction of said angle from one side to the other, according to the direction of movement, substantially as described.

3. In a track-cleaning car, the combination with the car-body, the brush, means for driving said brush, and a cover or protector for said driving mechanism, of the wedge-guides 41 for separating the bristles of the brush and guiding them toward the outside of said cover or protector, substantially as and for the purpose set forth.

ANDREW JACKSON REYNOLDS.

Witnesses:

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