(No Model.)

N. NEWMAN.

ROTARY TRACK CLEANER.

No. 457,324. Patented Aug. 4, 1891.

Fig. 1.

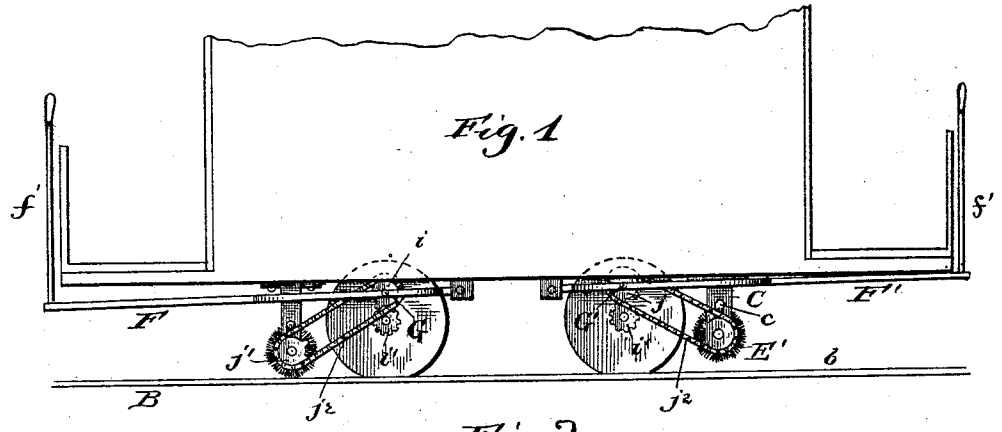


Fig. 2.

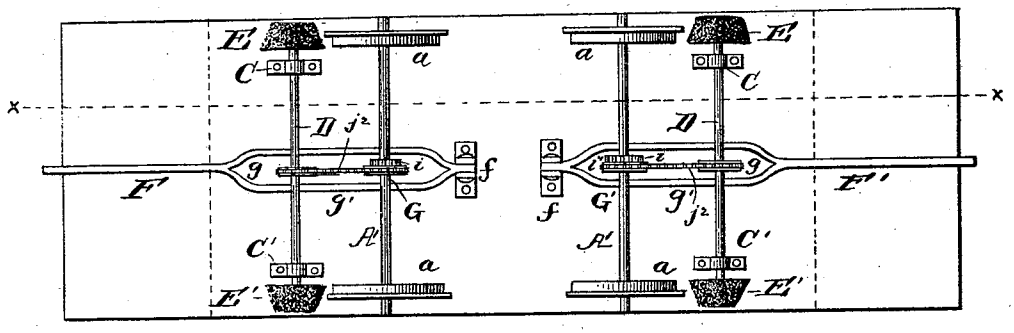
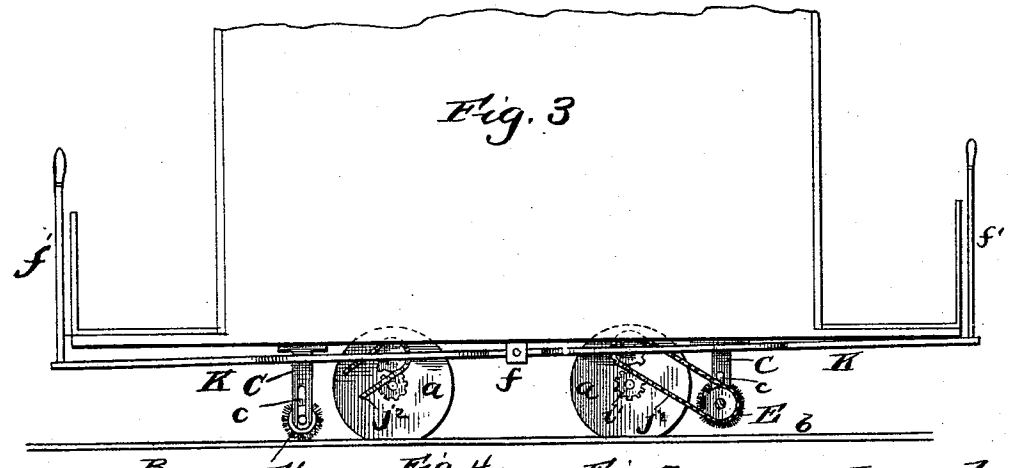


Fig. 3.



Witnesses:

J. B. McGirr.

N. T. Bernhard

Fig. 4.

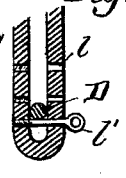
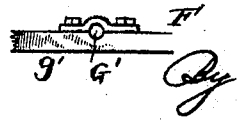


Fig. 5.



Inventor.

Nelson Newman

By H. D. Money

Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

NELSON NEWMAN, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO GEO. A. SANDERS AND SAMUEL J. WILLETT, BOTH OF SAME PLACE.

ROTARY TRACK-CLEANER.

SPECIFICATION forming part of Letters Patent No. 457,324, dated August 4, 1891.

Application filed January 27, 1891. Serial No. 379,287. (No model.)

To all whom it may concern:

Be it known that I, NELSON NEWMAN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Rotary Track-Cleaners; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in rotary track-cleaners; and the objects of the invention are to provide a simple and easily-controlled apparatus for efficiently cleaning the rails and track of a street or other railway from accumulations of ice or snow or other matter, to adapt the rotary brush or brushes to be propelled from one or both axles of the car on which the apparatus is carried, and to so construct the brush that it will throw the obstruction away from the rails and out of the path of the car.

With these and other ends in view my invention consists in the combination of devices and novel construction and arrangement of parts, as will be hereinafter fully described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of a car to which my improved track-clearer is applied. Fig. 2 is a plan view of the car in an inverted position to more clearly illustrate the mechanism, and Fig. 3 is a side view of a modified form of the invention. Figs. 4 and 5 are detail views of one of the slotted hangers or guides for the brush-shaft and the counter-shaft G, respectively.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which, and particularly to Figs. 1 and 2, A A′ designate the axles of a car or other vehicle to which my improvement is to be applied, and *a a* are the wheels on said axles, which travel on the rails *b b* of the track B. The improvement may be applied to an electric-street-railway car or to any other kind of vehicle adapted to travel on a track which it is desired to clear in an efficient and economical manner. Near each side of the car and in close juxtaposition to the axles thereof are the depending brackets C C′, which are bolted or otherwise suitably fixed to the car, and said brackets or hangers are slotted vertically, as at *c*, the slots in opposite hangers being in line with each other transversely of the car or vehicle. In each pair of these slotted hangers is fitted a shaft D, one of which is provided for each end of the car, the one shaft being on one side of one axle and the other shaft being on the other side of the other axle. At the ends of the shaft, which ends pass through and protrude beyond the hangers, are fixed the brushes E E′, one brush being over one rail of the track and the other brush over the opposite rail of the track. The brushes may be made so as to be readily applied and fastened to the brush-shaft and removed therefrom, and the brushes are made of a material especially adapted for the work to be performed by the brush. For instance, if light snow is to be cleared from the track a rattan brush can be used to good advantage; but if sleet has accumulated on the track, or if ice and snow are to be removed, a steel brush can be advantageously employed, which stiff steel brushes operate to break up the ice and to quickly and thoroughly cleanse the track or the rails thereof from accumulations or obstructions. Each brush is conical or made tapering in form, with its largest end at the inner side of the track-rail and its smaller end on the outer side of the rail, and when the brush is rotated rapidly and brought into contact with the obstruction on the rail it operates to throw the obstruction away from the rail and outside of the track, which is very advantageous.

My preferred mechanism for operating and controlling the brush-shafts consists of the two independently-pivoted bars F F′ and the shafts G G′, connected by sprocket-chains to the brush-shafts and arranged to be thrown into gear with the axles A A′; but I do not strictly confine myself to this precise form of

mechanism, as the single bar shown in Fig. 3 may be employed, and which will be hereinafter more fully referred to.

The independent bars F F′ are pivoted at their inner approximate ends to separate supports *f* on the bottom of the car and between the axles thereof, and said bars extend to opposite ends of the car and are connected to lifting bars or levers *f′*, by means of which the bars can be conveniently raised. Each bar F F′ is provided with a loop *g*, which provides two sides *g′ g′*, and in these sides *g′ g′* is suitably journaled a short counter-shaft G G′, one to each lifting-bar, the brush-shaft, and an axle. Each counter-shaft carries a spur gear-pinion *i*, that meshes, when the lifting-bar is lowered, with a similar pinion *i′* on the axle of the car, and said counter-shaft also carries a sprocket-wheel *j*, which is connected to a similar sprocket *j′* on the brush-shaft by a sprocket-chain j^2, as will be readily understood.

The operation of my invention is simple, and each brush-shaft may be brought into use and thrown out of use independently of the other brush-shaft. By lowering the free end of the pivoted looped bar the pinion *i* thereon is caused to mesh with the pinion *i′* on the axle, and the counter-shaft is thus driven, and it in turn rotates the brush-shaft, to which it is connected by the sprocket-chain. The brushes are thus rotated positively by the motion of the axles, and in reverse direction to the motion of the axles, and said brushes throw the snow or ice outwardly or away from the track and the wheels, and thus they operate with precision and efficiency to clear the rails. By lifting the bar or lever to raise the looped lifting-bar the gear on the counter-shaft is disengaged from the gear on the axle, and the brush-shaft of course stops turning.

In the modified form of my invention shown in Fig. 3 I use a common supporting-bar K for the two brush-shafts in lieu of two supporting-bars, one for each brush-shaft. This single bar K extends longitudinally of the car above the axles, and it is pivoted at an intermediate point of its length and at a point between said axles. This bar is provided with two loops on either side of the axles, and it carries the two counter-shafts, which are geared to the brush-shafts, and one of which is adapted to have its gear *i* mesh with one of the gears on one of the axles. Thus if one end of the bar K is lowered the gear on the counter-shaft on that side of its pivot will mesh with the gear on the axle and the brush at that end of the car will be rotated, while at the same time the other brush remains at rest, as its counter-shaft is not geared to the axle. By reversing the position of the bar the brush at the other end of the car can be started and the first-named brush stopped, and thus it will be seen that either brush can be brought into operation at will. The slotted hangers are also provided with transverse perforations *l*, and in said perforations are fitted the pins *l′*, which take beneath the brush-shaft and serve to support the brush-shaft and the brushes at the desired elevation.

I am aware that changes in the form and proportion of parts and details of construction can be made without departing from the principle or sacrificing the advantages of my invention.

What I claim as new is—

1. In a track-clearer, the combination, with an axle, of a brush-shaft carrying the brush, a lifting-bar pivoted to move vertically in relation to the axle, a counter-shaft carried by said lifting-bar and having a pinion adapted to mesh with a pinion on the axle, and a sprocket-chain passing around sprocket-wheels on the counter-shaft and the brush-shaft, substantially as described.

2. In a track-clearer, the combination, with an axle, of the vertically-slotted hangers, the brush-shaft fitted in said slotted hangers and carrying the conical brushes, the looped bar pivoted beneath the car and above the axle, the counter-shaft carried by said looped bar and adapted to be thrown into gear with the axle when the bar is lowered, and the connection between the counter-shaft and the brush-shaft for rotating the latter, substantially as described.

3. In a track-clearer, the combination, with the axles, of the two brush-shafts, each guided in suitable guides and carrying the brushes, the independent lifting-bars separately pivoted to the car or vehicle, and the counter-shafts separately journaled on one of said lifting-bars and each geared to one of the axles and one brush-roll, substantially as described.

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

NELSON NEWMAN.

Witnesses:
SAMUEL J. WILLETT,
DORA ADAMS.