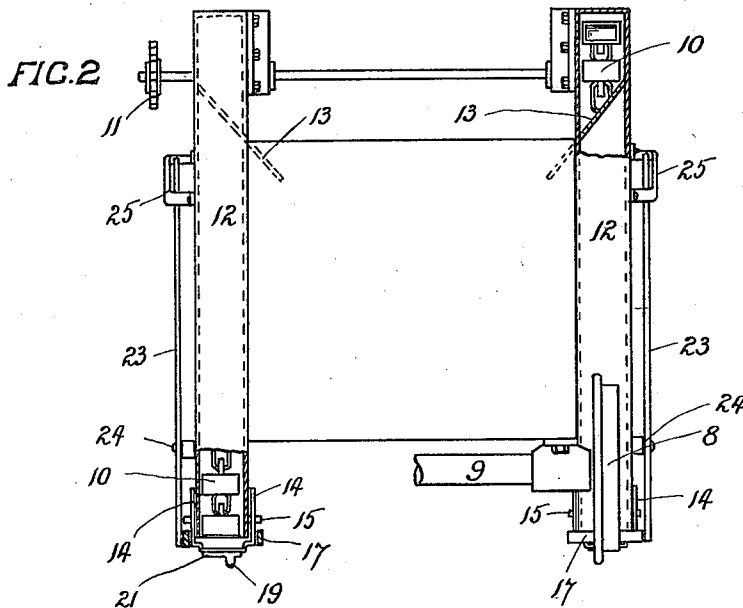
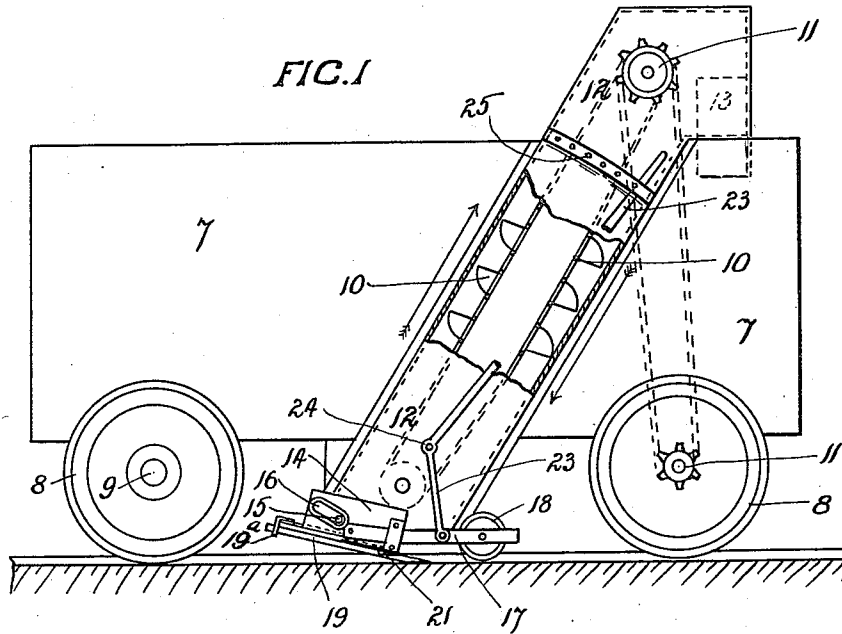


A. GARDNER.
 MEANS FOR USE IN CLEANING TRAMWAY TRACKS.
 APPLICATION FILED DEC. 19, 1910.

1,017,092.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.



WITNESSES:
W. H. Berrigan
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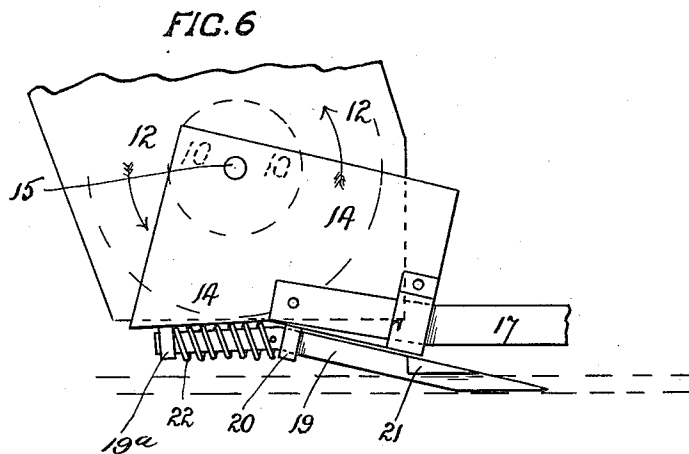
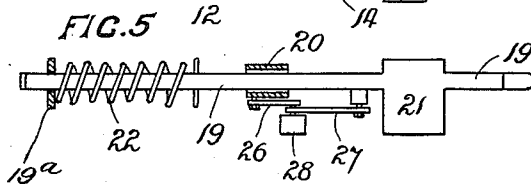
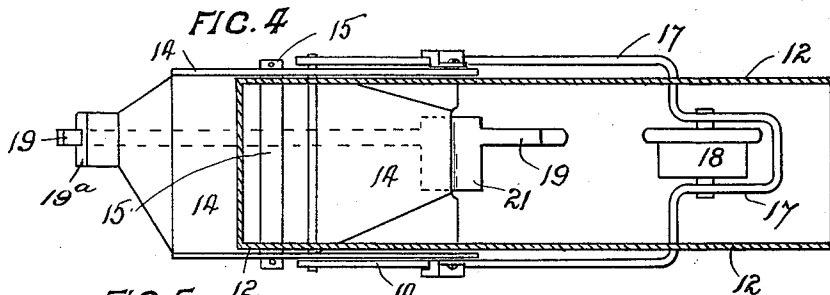
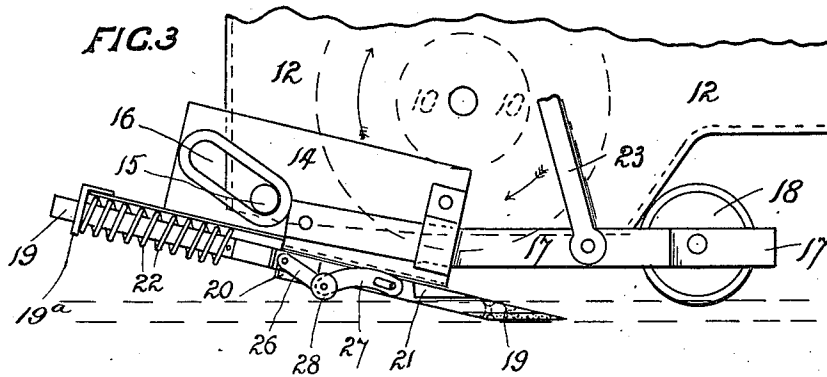
INVENTOR,
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 by *Frank Deemuel*
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2 SHEETS—SHEET 2.



WITNESSES:

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John H. Hoising.

INVENTOR,
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UNITED STATES PATENT OFFICE.

ARTHUR GARDNER, OF WELLINGTON, NEW ZEALAND.

MEANS FOR USE IN CLEANING TRAMWAY-TRACKS.

1,017,092.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed December 19, 1910. Serial No. 598,088.

To all whom it may concern:

Be it known that I, ARTHUR GARDNER, subject of the King of Great Britain, residing at Wellington, in the Dominion of New Zealand, have invented a new and useful Improved Means for Use in Cleaning Tramway-Tracks; and I do hereby declare the following to be a full, clear, and exact description of the same.

10 This invention has been devised in order to provide improved means whereby the rails of tramway tracks may be cleaned and the dirt removed therefrom, gathered up and collected. The means designed for that purpose are adapted to be mounted and carried on a special form of truck arranged to be drawn or driven along the track and to raise the dirt from the grooves in the rails and collect it in the truck.

20 The invention consists mainly in the combination of a scoop of special design adapted to be drawn along the rail's surface and to clear the dirt from the groove therein, of an elevator of suitable design arranged to lift the dirt raised onto the surface of the scoop and deliver it into the truck. Any approved form of elevator may be employed but an endless bucket elevator of well known form is considered preferable, the buckets thereof being arranged to travel across the scoop and to gather the dirt raised thereby and to raise and deliver it into the truck. In order however that the invention may be thoroughly understood, reference is made to the accompanying sheets of drawings, in which an elevator of the bucket type is illustrated to show the manner of carrying out the invention.

40 In such drawings:—Figure 1 is a side elevation, partly in section of the apparatus. Fig. 2 is a front elevation thereof, also with parts shown in section. Fig. 3 is a side elevation on an enlarged scale of the scoop portion of the apparatus. Fig. 4 is a plan thereof. Fig. 5 is a detail drawing of a portion of the scoop tongue. Fig. 6 is a side elevation of an alternative construction of scoop.

50 The truck 7 is mounted on wheels 8 and axles 9 adapted to be run along the track and to be propelled or drawn by any suitable means, such for instance as by a motor carried upon itself or by being trailed behind a separately propelled car or other vehicle. Upon each side of the truck a bucket elevator 10 of any approved type is mounted

such elevators being driven by means of suitable chain and sprocket gearing 11 connecting with one of the axles 9 of the truck. If desired however these elevators may be driven by separate motors situated within the truck. Each elevator is contained within a casing 12 secured down the corresponding side of the truck and extending from below the bottom thereof to above the top edge thereof. Each elevator at its top end is adapted to discharge its contents on to an inclined chute 13 (Fig. 2) leading down into the truck. The lower end of the casing is left open.

Pivotaly hung on the bottom of the casing is the scoop 14, the sides of which pass up one on each side of the casing and are hung on the cross pin 15 extending through the casing and through inclined slots 16 in the scoop sides. The front end of the scoop is left open and it is supported by means of a forwardly extending frame 17 carrying a running wheel 18 adapted to run upon the tramway rail. The scoop bottom is arranged to incline upward from its front edge and is so situated with regard to the elevator 10 that as such elevator travels in the direction indicated by the arrows in Fig. 1 the buckets thereof will pass back across the surface of the scoop and then travel up in the casing.

Mounted beneath the scoop bottom is the tongue 19 that is adapted to slide longitudinally in guide bearings 19^a and 20 and whose forward end is provided with a bevel pointed flanger to fit into the groove of the rail. This end is also provided with a cross plate 21 adapted to rest on the rail's surface on each side of the groove and extending back to lie beneath the forward edge of the scoop bottom. This plate will thus, as the scoop is drawn along, lift the matter dug out of the rail groove by the tongue point or flanger and lead it back on to the surface of the scoop bottom in order that it may be caught and lifted by the buckets of the elevator. The back end of the tongue 19 is extended to the rear of the scoop where it is carried in a bearing 19^a extending from the scoop and is cushioned by the spring 22 surrounding it in order that the tongue may be kept down in the rail groove and the plate 21 closely against the rail's surface. This spring is arranged in compression between the bearing 19^a and a cross pin 22^a upon the tongue. At the same time this

spring will permit of the tongue sliding back should it engage with any solid obstacle in the rail and thereby allow for it jumping or clearing such obstacle. In order to raise the tongue and scoop from the rail when so required, a lever 23 is pivoted to the side of the casing at 24 (Fig. 1). One end of this lever is attached to the frame 17 while the other end is carried up to form a handle and lies within a guide 25 on the casing. By moving this handle backward, the scoop is caused to swing forward and upward at its front end upon the cross pin 15, the inclined slots 16 allowing of this adjustment of the scoop. It may then be retained in the raised position by securing the lever in any suitable manner.

In order to provide for the scoop being effectually and automatically raised from the rail when the point of the tongue meets obstacles in the groove, for instance to provide for the scoop and tongue riding freely over points, frog crossings or the like in the rails, means are provided whereby the backward sliding movement of the tongue when engaging with such obstacles will cause a roller to be forced down on to the rail surface which roller, by means of suitable levers, will serve to raise the front end of the scoop and the tongue, well above the rail's surface. These means are shown clearly in Figs. 3 and 5, and consist of two levers 26 and 27 pivotally attached to each other and pivotally connected at their outer ends respectively to the tongue bearing 20 and the tongue 19 so as thus to form an elbow joint. A small roller 28 is carried on the pivot pin 29 connecting the two levers. When the tongue is in its forward position the levers will lie approximately in a continuous plane but as the tongue moves back their jointed ends will be forced down causing the roller to make contact with the rail and thereby to lift the front end of the scoop and the tongue clear up above the rail. The tongue is provided the necessary freedom of sliding movement for ordinary running by having its pivot connection with the lever 27 passing through a slot formed longitudinally in such lever.

In Figs. 1 to 5 the scoops and elevators are shown as arranged to collect and elevate the dirt by the elevator buckets traveling from front to back of the scoops as they pass around the lower portions of their travel and commence their upward travel. They thus pass in the same direction as that in which the dirt is caused to pass across the scoop bottom by the impetus of the travel along the line. In some cases it may be desired to have the buckets traveling in the reverse direction, that is from the back toward the front of the scoop so as to gather up the dirt as it moves rearward. In such cases the construction shown in Fig. 6 may

be employed. In this construction the bottom of the scoop is made to incline downward at its back end, and the elevator buckets pass across such back portion from the back to the front thereof in the direction indicated by the arrows in such figure. The dirt raised by the scoop will thus work back on to this back portion of the scoop and be met and caught by the elevator buckets so as to be raised thereby into the truck.

In forming the tongue it is considered advisable to so make it as to allow of the different wearing parts being removed and replaced whenever required. For instance the point entering the groove may be separable as shown in Fig. 3 and secured by rivets to the tongue.

The different parts are duplicated on the opposite side of the truck so as to provide for cleaning both rails of the track at the same time. If required two sets of apparatus may be arranged on each side of the truck and disposed at reverse angles so as thereby to provide for cleaning operations being carried out as the truck travels both ways. In such cases the scoops not in use are raised clear of the rails by the manipulation of their levers 23.

Instead of having a separate truck to receive the elevated dirt, the appliances may be attached to an ordinary passenger car having bins or receptacles to receive the material raised by the scoop.

What I do claim as my invention and desire to secure by Letters Patent is:—

1. Means for the purposes herein indicated comprising a truck adapted to be moved along the track, scoops carried on each side of the truck and resting on the rails of the track, a tongue projecting forwardly from each scoop adapted to enter the groove in the corresponding rail, and an elevator on each side of the truck arranged to work along the bottom of the corresponding scoop and to deliver the dirt into the truck, substantially as specified.

2. In means for the purposes herein indicated, a truck adapted to be moved along the track, a scoop pivotally supported on the side of the truck, a tongue extending forwardly from the front edge of the scoop and mounted in guide bearings on the scoop, a spring cushioning such tongue when moved longitudinally backward, an elevator mounted on the side of the truck and arranged to travel along the scoop bottom, a chute entering the truck over which the elevator passes, and means whereby such elevator may be driven, substantially as specified.

3. In means for the purposes herein indicated, a truck adapted to be moved along the rails, a scoop pivotally supported at its back end to the truck side, a lever pivoted to the side of the truck and connected with

the scoop at its forward end, a tongue slid-
ably mounted beneath the scoop and pro-
jecting beyond the front edge thereof, a
spring cushioning such tongue, an elevator
5 mounted on the side of the truck and ar-
ranged to travel along the bottom of the
scoop, a chute entering the truck over which
the elevator passes, and connections between
the truck axle and the elevator shaft, for

driving the elevator, substantially as speci- 10
fied.

In testimony whereof, I have signed this
specification in the presence of two sub-
scribing witnesses.

ARTHUR GARDNER.

Witnesses:

W. ALEXANDER,
M. E. BROWN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."