Oct. 2, 1923. 1,469,464

P. URSINO

TRACK SURFACER AND CLEANER

Filed Dec. 13, 1920 2 Sheets-Sheet 1

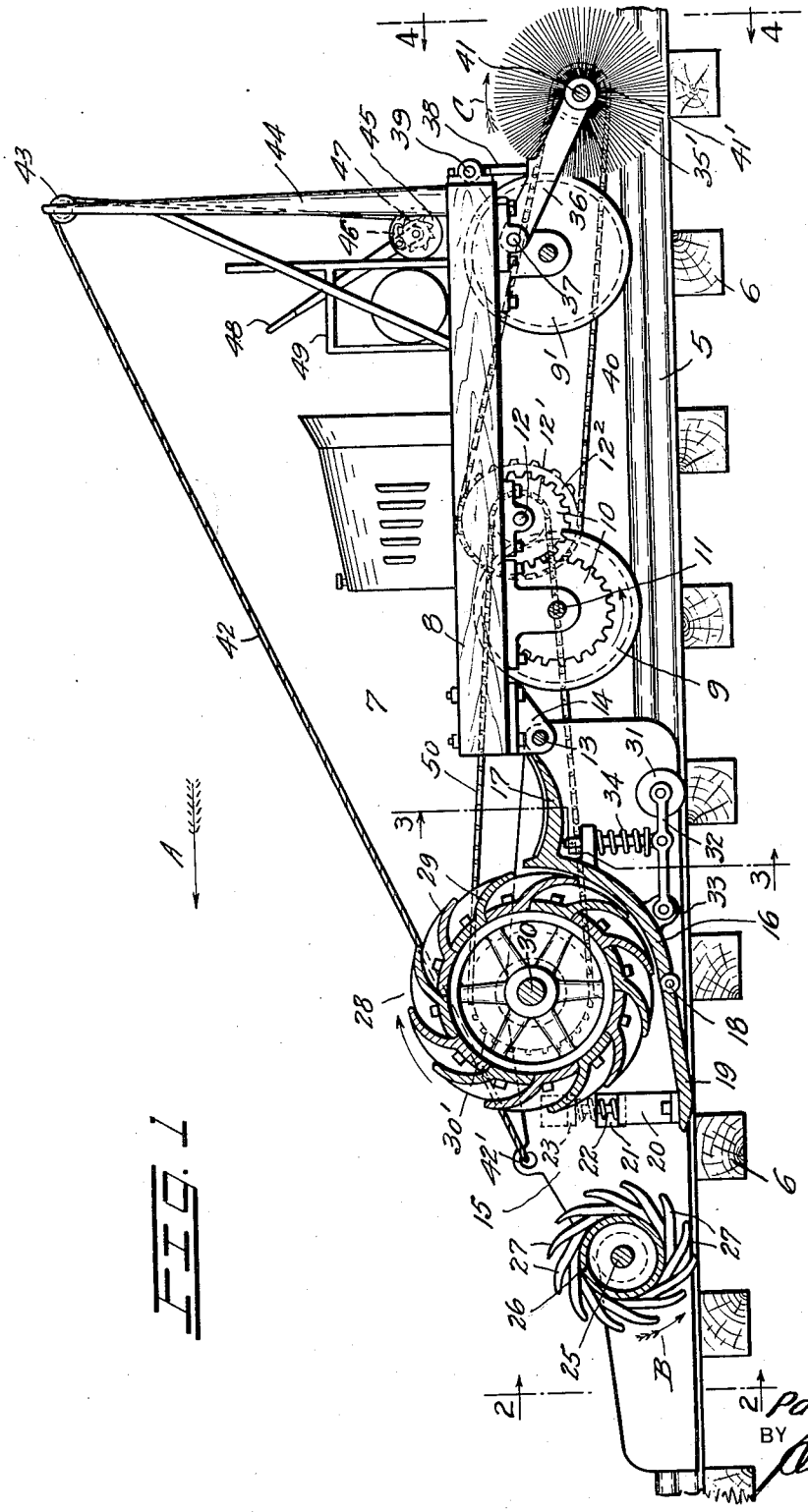


FIG. 1

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FIG. 2

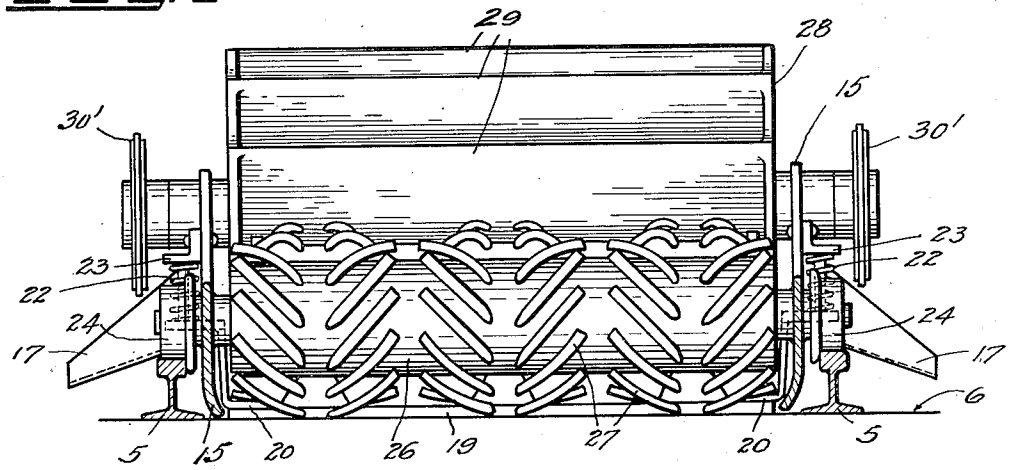


FIG. 3

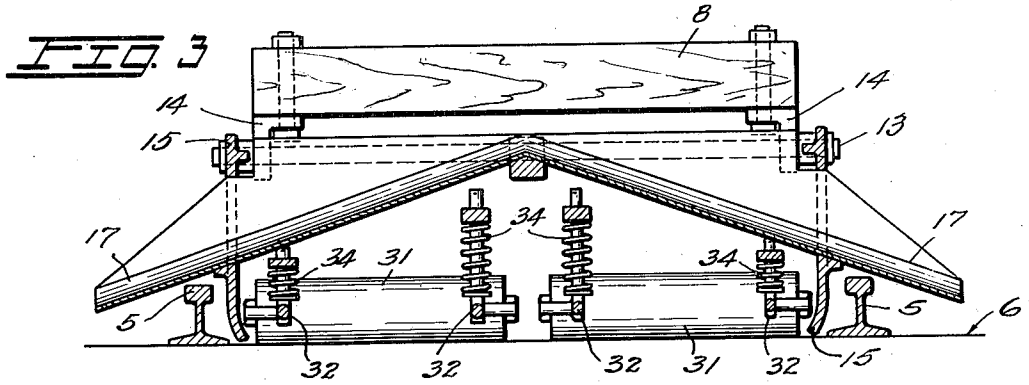
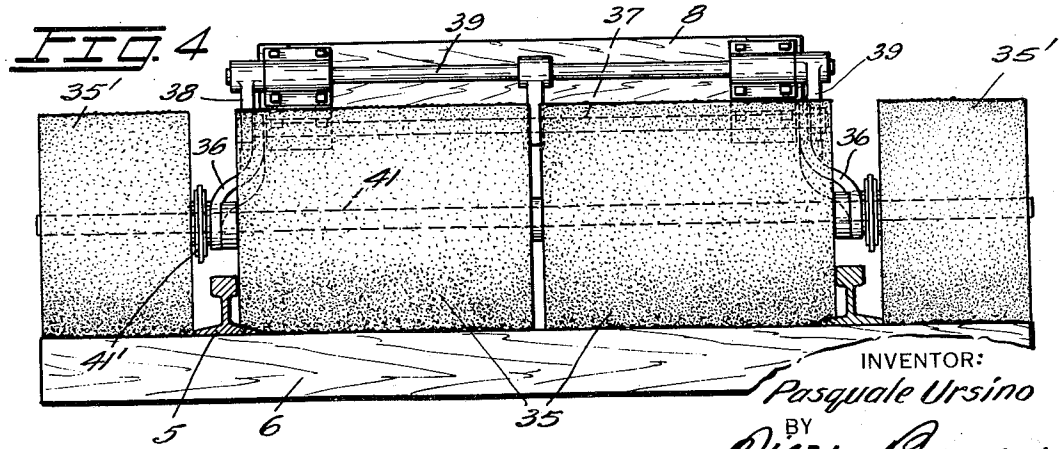


FIG. 4



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Patented Oct. 2, 1923. 1,469,464

UNITED STATES PATENT OFFICE.

PASQUALE URSINO, OF SEATTLE, WASHINGTON,

TRACK SURFACER AND CLEANER.

Application filed December 13, 1920. Serial No. 430,182.

To all whom it may concern:

Be it known that I, PASQUALE URSINO, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Track Surfacers and Cleaners, of which the following is a specification.

This invention relates to excavating and surfacing apparatus.

The object of the present invention is the provision of means adapted to be carried by a railway car for removing earthy material from above the plane of the track ties in the laying or repairing of the track.

The invention consists in the novel construction, adaptation and combination of devices as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view partly in side elevation and partly in longitudinal vertical section of apparatus embodying the present invention; and Figs. 2, 3 and 4 are sectional views through 2—2, 3—3 and 4—4 of Fig. 1.

In said drawings, the reference numerals 5 designate track rails supported upon ties 6.

The purpose of my invention is to remove from above the level of the tops of said ties any surplus material left by the graders when laying the track.

To such end, I provide a car, indicated generally by 7, having a platform 8 and flanged car wheels 9, 9^1. Said car may be propelled in any suitable manner as by means of spur gears 10 connecting the axle 11 of the traction wheels 9 with a shaft 12 which is driven by a motor, not shown, provided upon the car. Pivotally connected by a rod 13 to hangers 14 at the front end of the car is a forwardly projecting rigid frame comprising side plates 15, a concave member 16 intermediate thereof and to the rear of the member 16 a pair of spout elements 17 which incline downwardly at each side from the longitudinal axis of the car.

The width of said frame is such that the side plates 15 thereof may extend into the space between the rails as shown in Figs. 2 and 3.

Hingedly connected at 18 to the lower or forward edge of the frame member 16 is a scoop blade 19 having bracket arms 20 which extend through apertures such as 21 provided in the respective frame plates 15. Springs 22 interposed between the bracket arms 20 and attachments 23 on the outside of the frame serve to yieldingly retain the scoop blade so that its front end will be at a short distance above the plane of the ties.

The front end of said frame is supported by wheels 24 mounted upon the track rails and rigidly secured to an axle 25 which is journaled in boxes provided in the frame plates 15. The axle 25 carries a rotary digger between said frame plates. Said digger consists of a drum 26 equipped with curved teeth 27 which are preferably arranged in somewhat helical relations with respect to the drum axis.

When the car advances in the direction of the arrow A, Fig. 1, the wheels 24 rolling upon the track rails cause the digger to rotate as denoted by arrow B, Fig. 1, to break up earthy material in its path and tending to deliver such material rearwardly. 28 represents a conveyor wheel having peripheral bucket elements 29 which are arranged to revolve in the concavity of the frame part 16 and above the scoop plate 19 for the purpose of transferring material from the latter into the chutes 17. The wheel 28 is rotated on a shaft 30 mounted in bearings provided in the frame plates 15 and, as shown, is driven from power shaft 12 by an endless chain 50 passing about sprocket wheels 30^1 and 12^1 on the respective shafts.

To the rear of the frame part 16 is provided one or more rollers 31, two being shown in Fig. 3, which are journaled in the rear ends of levers 32 fulcrumed to lugs, such as 33 Fig. 1, provided on the frame. Said rollers are yieldingly held down in positions to roll upon the tires 6 and the ground therebetween by springs 34.

At the rear of the car is a plurality of the rotary brushes 35 and 35^1 which respectively serve to sweep the ties 6 between and outside of the track rails. Said brushes are carried by the free ends of arms 36 whose other ends are pivotally connected to a rod 37 upon the car. 38 represent finger devices depending from a rod 39 upon the car and are engageable by the arms 36 to limit the upward movements of the brushes in operation.

When the car, however, is passing over

obstacles, such as railway crossings, the fingers 38 may be swung out of the way of arms 36 to enable the brushes to raise.

Said brushes are desirably rotated in the direction indicated by arrow C, Fig. 1, by an endless chain 40 passing about sprocket wheels 12^2 and 41^1 on the power shaft and brush shaft 41, respectively.

For raising the frame and the parts associated therewith to clear obstacles in the track I provide a hoisting cable 42 which is connected as at 42^1 to the frame plates, thence passes over a sheave 43 on post 44 to a winding drum 45.

This winding drum may be actuated by any suitable means as, for example, a pawl 46 and ratchet wheel 47 operated through the medium of a lever 48 disposed within convenient reach of the operator's seat 49.

In the operation of this invention, the car in traveling ahead effects the rotation of the digger 26, the conveyor wheel 28 and the brushes 35, 35^1. The digger in rotating breaks up any hummocks of earthy material and delivers the same upon the scoop blade 19.

The digger, furthermore, urges any accumulation of material to within the scope of the conveyor buckets 29 which thereupon delivers the material into the chutes 17 from which the material is, by gravity, discharged at opposite sides of the track.

Surplus material is thus seen to be removable from the track through the instrumentality of the digging and conveying appliances as above described.

Any loose material passing under the scoop blade 19 is pressed downwardly by rollers 31 to produce hard compact surfaces between the ties and somewhat below the plane of the upper surfaces of the ties, and into such depression earthy material from the tops of the ties is swept by the rotary brushes.

The invention is peculiarly useful in laying new railway tracks as it not only eliminates much manual labor but also produces much better and neater appearing work.

What I claim, is,—

1. In apparatus of the character described, the combination with a railway track, of a railway car provided with apparatus rendered operative by the travel of the car for successively removing surplus material from above the ties, discharging said material from the track, pressing down the earthy material between the ties, and sweeping the ties.

2. In apparatus of the character described, the combination with a railway track and a car mounted thereon, of a chute arranged transversely of the car, a rotary digger carried by the car in front of said chute, means for conveying material from said digger to the chute, and a brush carried by said car for sweeping the tops of the track ties.

3. In apparatus of the character described, the combination with a railway track and a car mounted thereon, of a chute arranged transversely of the car, a rotary digger carried by the car in front of said chute, means for conveying material from said digger to the chute, a rotary brush carried by said car for sweeping the tops of the track ties, and rollers interposed between said digger and the brush for pressing down material between the ties in the path of said brush.

4. In apparatus of the character described, the combination with a railway track and a car mounted thereon, of a frame hingedly connected to one end of said car, means actuated from the car for elevating said frame from the track, a discharge chute carried by said frame and provided with a downwardly inclined discharge spout, a power actuated rotary digging device, and a power actuated rotary conveying means carried by said frame for transferring material from the digging device to said chute.

5. In apparatus of the character described, the combination with a railway track and a car mounted thereon, of a frame hingedly connected to one end of said car, means actuated from the car for elevating said frame from the track, a discharge chute provided in said frame, a rotary digging device, and a conveying wheel for transferring material from said rotary digging device to said chute, said digging device and said wheel being respectively rotated by the travel of the car.

6. In apparatus of the character described, a railway car, a frame projecting forwardly therefrom, said frame comprising side plates and a member connecting the latter, a chute provided upon said frame, a scoop-blade hingedly connected to the frame member between the side plates, springs tending to yieldingly retain said scoop-blade in operative position, a rotary conveyor device positioned between the frame plates and above said scoop-blade, said conveyor device serving to transfer material from said scoop-blade to said chute.

Signed at Seattle, Washington, this 8th day of December, 1920.

PASQUALE URSINO.

Witnesses:
PIERRE BARNES,
MARGARET G. SUPPLE.