L. P. CHICOINE.

TRACK CLEARING EQUIPMENT.

APPLICATION FILED JULY 3, 1919.

1,396,355.

Patented Nov. 8, 1921.

2 SHEETS—SHEET 1.

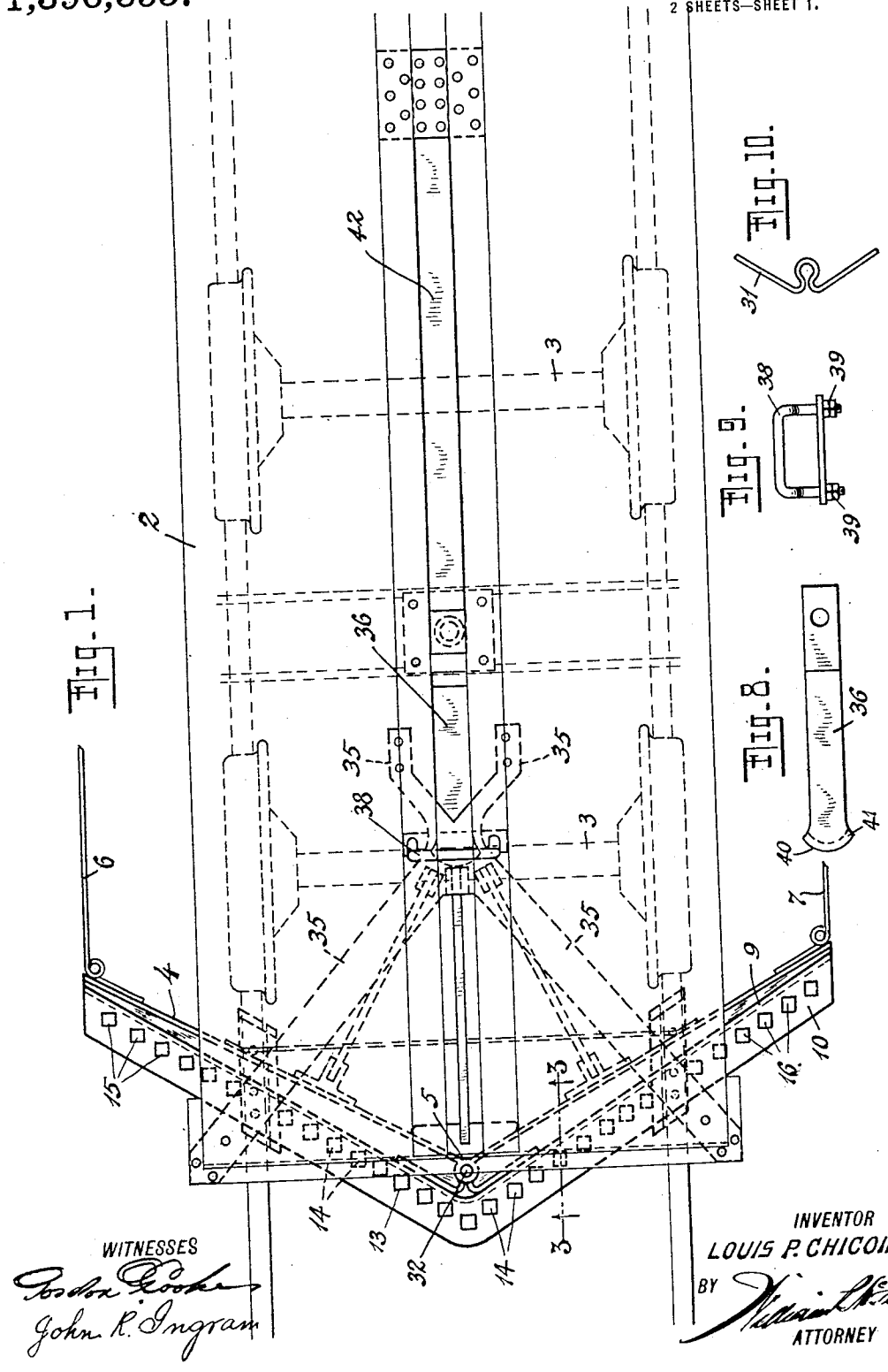


Fig. 1.

Fig. 10.

Fig. 9.

Fig. 8.

WITNESSES

Boston Cooke

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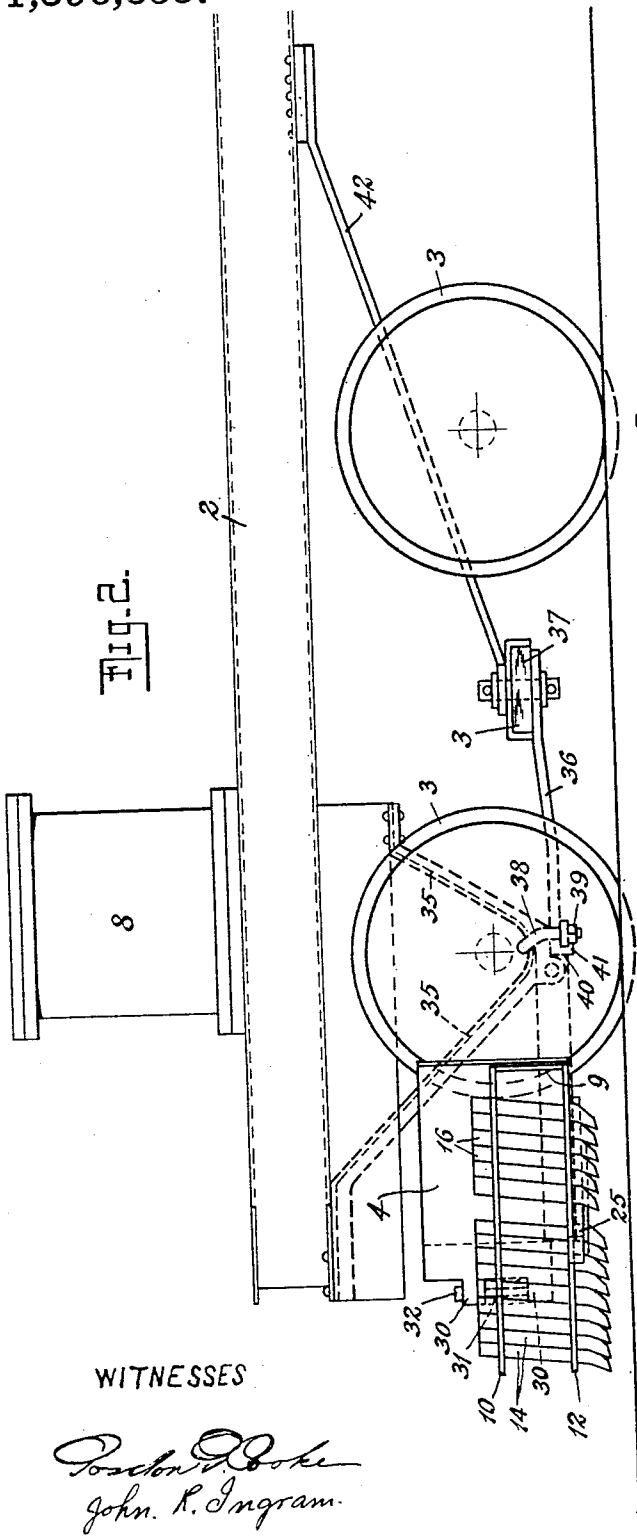


Fig. 2.

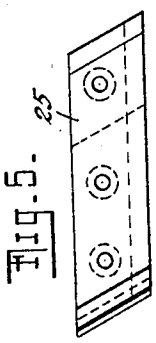


Fig. 5.



Fig. 6.

Fig. 7.

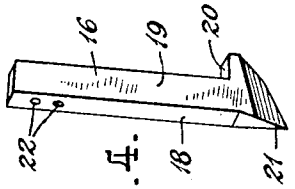


Fig. 4.

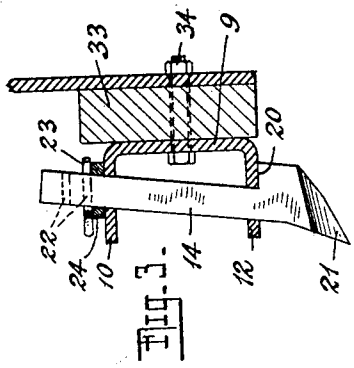


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

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TRACK-CLEARING EQUIPMENT.

1,396,355. Specification of Letters Patent. Patented Nov. 8, 1921.

Application filed July 3, 1919. Serial No. 308,656.

To all whom it may concern:

Be it known that I, LOUIS PHILIP CHICOINE, of the town of Vaudreuil, in the Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Track-Clearing Equipments; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to track-clearing equipment of the V-shape type employed by railroads for the purpose of disintegrating any accumulation of hard substance below the level of the railhead and more particularly cinders, sand, ice and snow.

The constructions heretofore employed for this purpose have proved most unsatisfactory and impracticable in most cases as special rolling stock was required to carry the equipment and when the latter was put to a test it proved unable to withstand the heavy strain exerted upon it.

The object of my invention is to provide a track-clearing device which will be readily applicable to rolling stock which is M. C. B. standard and more particularly the Jordan ballast spreader.

The advantage of combining my track-clearing device with the Jordan spreader is that the latter is very heavily built and consequently is able to withstand very heavy strain and the wings coact with the cutters in throwing the disintegrated particles to either side of the roadbed thereby preventing the ice or snow, or whatever the substance may be, from interfering with the operation of the device.

A further object of my invention is to so construct the device that wear and tear may be easily taken care of so that the cost of maintenance will be reduced to a minimum.

To this end my invention consists of the particular construction and arrangement of parts hereinafter described and pointed out in the claims.

Figure 1 is a plan view and Fig. 2 is a side elevation of the track clearer.

Fig. 3 is a section of the spreader showing means of securing a cutter.

Fig. 4 is a view of a cutter.

Figs. 5 and 6 are views of the slipper.

Fig. 7 is a view of the depending flange for clearing the rail.

Fig. 8 is a plan view of the thrust bar.

Fig. 9, is an elevation of the U-bolt for securing the hanger and thrust bar.

Fig. 10 is a plan view of a bracket for securing the channel iron to the spreader.

In the accompanying drawings my track-clearing device is shown applied to a Jordan ballast spreader. This spreader consists essentially of a flat car 2 having trucks 3, a spreading member 4 comprising a housing located at both sides and in advance of one of the trucks and having a V-shaped nose 5; laterally swinging wings 6 and 7 and power operated means 8 for lowering and raising the spreading member 4 and for operating the wings.

Upon the nose 5 of the spreader in close proximity to the rail head is mounted the track clearing device proper. This device consists of a channel iron 9 disposed horizontally and bent to angular form, the angle being more acute than the angle of the nose of spreader. The flanges of the channel iron are indicated at 10 and 12 and each is provided with a series of uniformly spaced and preferably square openings 13 the openings in the lower flange being in alinement with the openings in the upper flange but slightly in advance thereof to give to the cutters which are mounted therein a slight incline. These cutters are divided into three series, those between the rails being indicated at 14 and those on opposite sides thereof at 15 and 16. The series 14 preferably extend a greater distance below the level of the rail head than the series 15 and 16. Each cutter of each series is substantially the same as those of the other series and consists of a rectangular shank having a forward face 18 and side faces 19 and its lower end is of increased width to present a shoulder 20 which performs the dual function of preventing upward displacement of the cutter relatively to the channel iron and reinforces the point 21. A cutting point 21 is constituted by shearing off the faces 19 while the extreme lower portion of the face 18 is inclined at an angle to its main area to locate the point in advance of the main body of the cutter. The shanks of the cutters project upwardly through the openings in the flange 12 and the openings in alinement therewith in the flange 10 and the shoulder 20 is adapted to abut against the underside of the lowermost flange 12 for the purpose of limiting the upward displacement hereinbefore alluded to. In order that each cutter may be removed independently of the other

cutters the upper end of the shank projects a short distance above the flange 10 and is provided with holes 22 in which may be inserted a pin 23. As the points of the cutters periodically require regrinding it is obvious that the distance between the shoulder 20 and consequently the underside of the flange 12 and the extreme end of the point will be reduced and consequently in time the cutter would be rendered useless as it would not project the required distance below the level of the rail head. Consequently to overcome this contingency a washer 24 is mounted upon each cutter between its pin 23 and the flange 10 when the device is first constructed and as the cutter becomes shortened it may be removed and the washer inserted between the shoulder 20 and the underside of the flange 12 and the pin 23 inserted in another hole. Further wear may be taken care of by the insertion of additional washers. Upon the underside of the flange 12 and immediately above each of the rails and adapted to rest thereon is a nested slipper 25. This slipper is bolted rigidly in place and is provided with a depending flange 26 causing the latter to constantly follow the rails. Each section of the slipper is provided with a groove 27 to accommodate the flange of the section immediately above it. These slippers are adapted to slide upon the top of the rails and they are nested for the purpose of enabling the depth of the cut to be varied which is necessitated by the different sizes of the rails encountered. For instance in clearing a road bed having a comparatively small rail, all the sections would be used in order to position the cutting points a short distance above the ties, whereas in clearing a road bed having a comparatively large rail where the cutter must extend a greater depth below the rail head only one section would be employed.

In order to mount the device with a spreader the nose of the latter is provided with a pair of forwardly projecting lugs 30 between which a bracket 31 is located. This bracket is rigidly secured to the rear face of the channel iron and is held in position relatively to the lugs by a comparatively heavy pin 32. Between the channel iron and the spreader are inserted wooden filler strips 33, bolts 34 passing through the channel iron, filler strips and angular spreader member 4 uniting them rigidly together.

The spreader housing is suspended from the underframe by a diagonal hanger 35. This hanger extends below the horizontal axial plane of the wheels and the adjacent truck and it is reinforced by a thrust bar 36 one end of which is connected by a bolster 37 and the other to the hanger by a U-bolt 38 and nuts 39. The last-mentioned end of the thrust bar is rounded off as at 40 and provided with a depending lip 41 the rounded off portion being for the purpose of permitting relative movement between the hanger and truck. The thrust on the bolster 37 is transmitted to the center sills by a second thrust bar 42. This second thrust bar is connected to the center sills through the medium of a comparatively heavy plate.

The bolster in the embodiment illustrated is of inverted channel iron form and a filler block 50 is inserted between the flanges of the former at the point of connection of the thrust bars, a pin 51 located in the vertical axial plane of the king bolt passing through both thrust bars, bolster and filler block, displacement of the pin being prevented by cotter pins 52.

The angle of my improved device and the position of the cutters relatively to each other are such that from the nose of the device to opposite sides thereof, each cutter is slightly in advance of the adjacent cutter and consequently a chipping action is obtained which facilitates in the clearing of the road bed. The spacing between the cutters also prevents the substance which is to be removed from the road bed from jamming and obtaining a lowing action. The wings 6 and 7 also facilitate greatly in the removal of the disintegrated particles as the spreader moves along the track.

The power operated means for raising and lowering the spreader frame and operating the wings is common to all spreaders of this type and is therefore not herein described.

What I claim is as follows:

1. In a track-clearing device the combination with a carrier, of a horizontally disposed channel iron carried by the carrier and being of angular form in longitudinal section, said channel iron including flanges having a plurality of openings therein, a series of substantially vertical cutters projecting upwardly through the openings in said flanges, fixed means upon the cutters for preventing upward displacement thereof and removable means located at the upper ends of the cutters for preventing downward displacement thereof.

2. In a track-clearing device the combination with a carrier, of a horizontally disposed channel iron carried by the carrier and being of angular form in longitudinal section said channel iron including flanges having a plurality of openings therein, a series of vertical cutters projecting upwardly through the openings in said flanges, each cutter being of increased width near its lower end to limit upward displacement and having a plurality of holes in its upper end and a pin constructed and arranged to be inserted through said holes for preventing downward displacement of the cutter.

3. In a track-clearing device the combination with a carrier, of a horizontally dis-

posed channel iron carried by the carrier and being of angular form in longitudinal section said channel iron including flanges having a plurality of openings therein, a series of vertical cutters projecting upwardly through the openings in said flanges each cutter being of increased width near its lower end to limit upward displacement and having a plurality of holes in its upper end and a pin constructed and arranged to be inserted through said holes for preventing downward displacement of the cutter, and a washer encircling each cutter between its pin and the upper flange of the channel iron and adapted to be inserted between the lower flange thereof and the adjacent shoulder on the cutter when the latter becomes worn.

4. The combination with a ballast spreader including a spreader member, a truck bolster, and an underframe with center sills; and means consisting of thrust bars extending between the spreader member and the bolster and between the bolster and the center sills and constructed and arranged to permit of relative movement between the underframe and the spreader member.

5. In a track-clearing device the combination with a piece of railway rolling stock and a carrier mounted thereon and extending transversely to the track, said carrier having a plurality of openings therein, of a series of substantially vertical cutters projecting upwardly through the openings in said carrier, fixed means upon the cutters adjacent their lower ends for preventing upward displacement thereof and removable means located at the upper ends of the cutters for preventing downward displacement thereof.

6. In a track clearing device the combination with a carrier extending transversely to the track, of a series of cutters mounted in said carrier, each cutter consisting of a rectangular shank having the lower portion of its front face disposed at an angle to the plane of such face for the purpose of locating the cutter point in advance of said plane and each cutter being mounted in the carrier with its shank disposed at an angle to the road bed.

7. In a track clearing device the combination with a carrier extending transversely to the track, of a series of cutters detachably mounted in said carrier, each of said cutters consisting of a rectangular shank the lower end of which is extended forwardly to locate the cutting point in advance of the plane of the shank and rearwardly to reinforce said point, the side faces of said lower end being sheared off to present a knife edge terminating in the point.

8. In a track-clearing device, the combination with a carrier, of a channel iron extending across the rails and of angular form in longitudinal section, cutters mounted upon said channel iron and a plurality of nested flanged slippers secured to the underside of the channel iron adjacent each end thereof and in bearing relation with the rails each slipper consisting of a substantially flat member having turned up ends and a depending flange and groove adjacent one side the groove accommodating the flange of the slipper immediately above.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

LOUIS PHILIP CHICOINE.

Witnesses:
GORDON G. COOKE,
WILLIAM J. C. HEWETSON.