

June 27, 1933.

J. A. BRYANT

1,915,919

RAILROAD TRACK DRESSER

Filed Dec. 3, 1931

2 Sheets-Sheet 1

Fig. 1

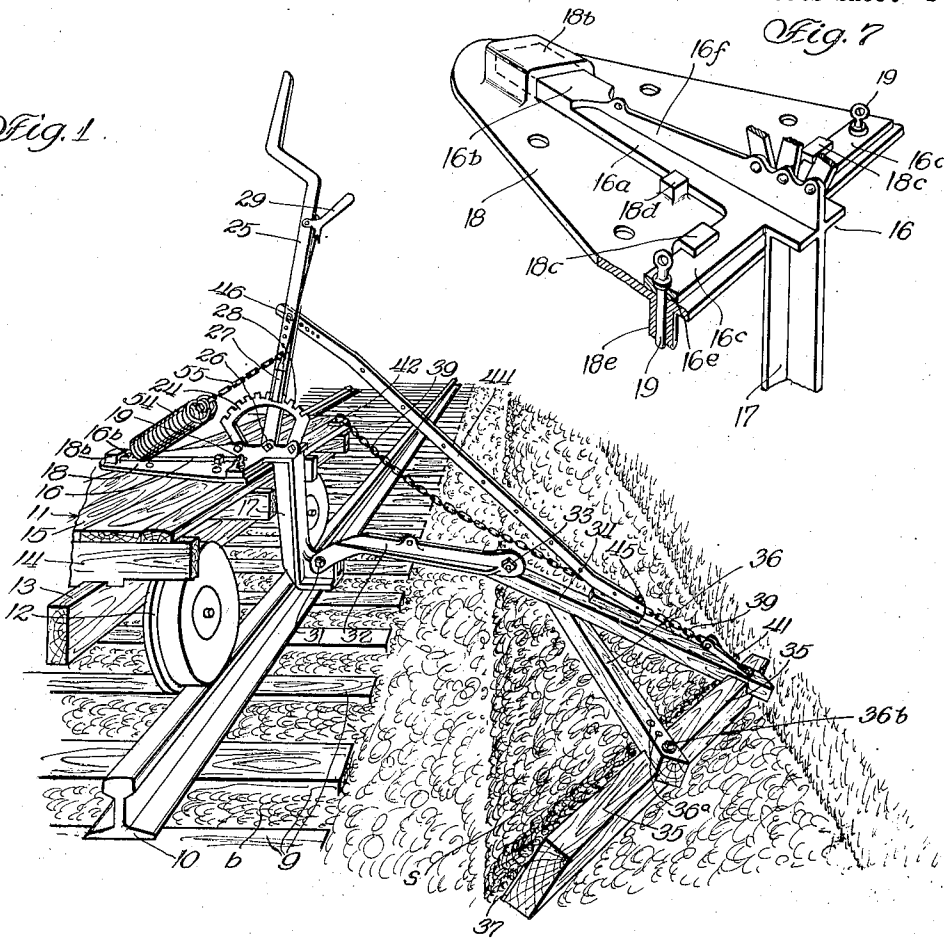


Fig. 7

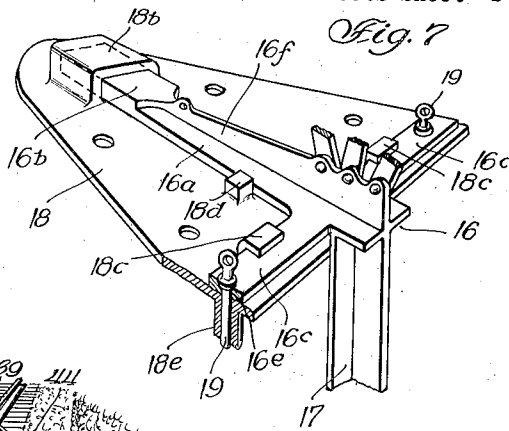
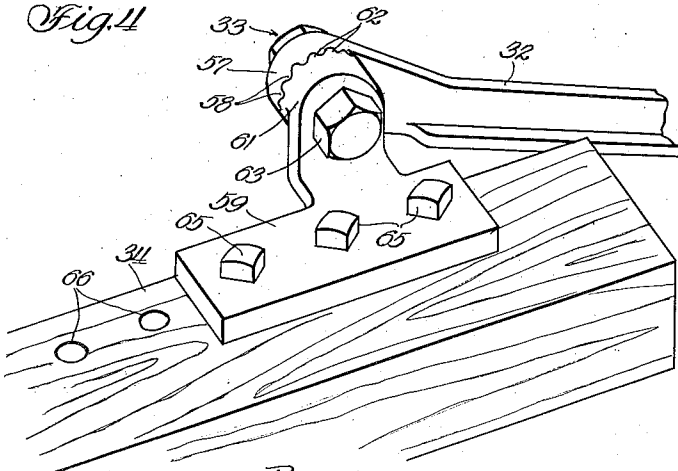


Fig. 4



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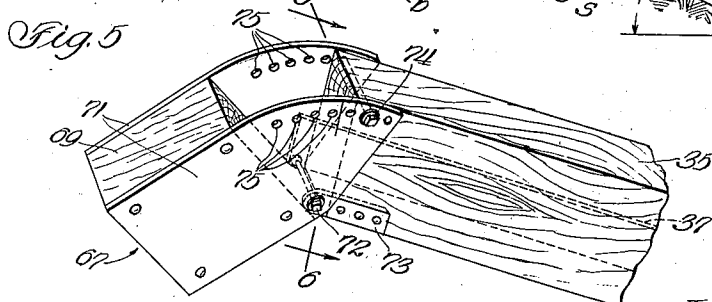
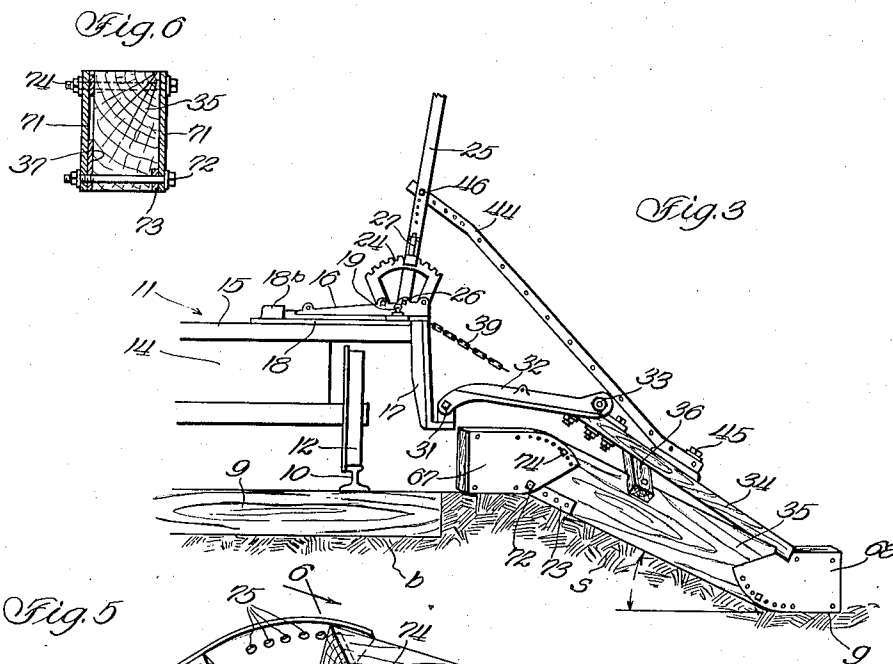
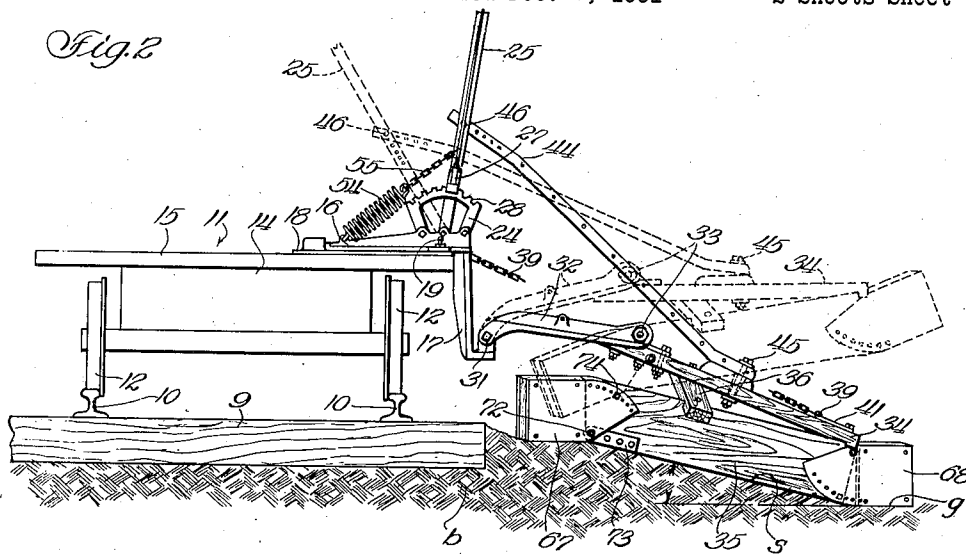
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

JAMES A. BRYANT, OF ST. CHARLES, ILLINOIS

RAILROAD TRACK DRESSER

Application filed December 3, 1931. Serial No. 578,627.

The present invention relates to a machine for dressing the ballast of a railway roadbed. In the ordinary railroad bed, particularly where the ties are set in a raised, ballasted bed, the rock, gravel or earth ballast constituting the bed tends to become displaced from between and around the ends of the ties, and to be scattered down along the side slope of the bed, such resulting from the vibration of passing trains and the action of weather, etc. The general object of the present invention is to provide an improved railroad track dresser which will reclaim this scattered ballast material and move it up to the side slope of the roadbed to proper position between and around the ends of the ties. The device comprises a deflector beam mounted on one side of a railroad car and projecting therefrom as an outrigger deflecting surface, adapted to engage the ballast material along the side slope of the roadbed and to deflect this material upwardly to the shoulder of the roadbed.

Another object of the invention is to provide an improved construction and arrangement of adjustable attaching mechanism for adjustably securing the deflector beam to the car. This adjustable attaching mechanism enables angular and translational adjustments to be given the deflector beam in the vertical plane: i. e., it enables the vertical angle of inclination of the beam to be adjusted for different angles of side slope of the roadbed; it also enables the deflector beam to be adjusted vertically with a translational motion whereby the entire beam can be made to work at a higher or lower level for accommodating different heights of the roadbed, and when fixed in one of these translational adjustments the vertical angular adjustment of the deflector beam can also be changed to conform to a particular angle or contour of the roadbed.

A further object of the invention is to provide improved lifting mechanism by which the deflector beam can be quickly and easily swung up to an inoperative position in order to clear obstructions along the roadbed.

A further object is to provide an improved construction and arrangement of extension

deflectors which may be provided on the upper and lower ends of the main beam deflector. Such extension deflector on the upper end of the main deflector beam may be employed to properly form the shoulder at the top of the roadbed adjacent to the ends of the ties and to pack the ballast into this shoulder, and a like extension deflector may be employed at the lower end of the main beam deflector for the purpose of gathering scattered ballast adjacent to the sub-grade or for leveling the sub-grade. In this regard, a further object of the invention is to provide improved means for adjusting the angular relations of the extension deflectors to the main beam deflector.

A further object of the invention is to provide track dressing mechanism of the above general description which can be embodied in the form of an attachment capable of quick and easy mounting on an ordinary hand-car, push-car or other track maintenance car. As illustrative of the practicability of such adaptation, I have used successfully for a considerable time an embodiment of my invention mounted on a small railway push-car, which push-car has been propelled by a gasoline engine driven maintenance car of the type widely employed in track inspection and maintenance work. Thus the present device does not necessitate the use of large rolling stock and a locomotive for its operation. While the above described attachment form of my mechanism is the preferred embodiment of the invention, it will be understood that if desired the mechanism can be constructed as part of a specially built car designed solely for track dressing.

Other objects and advantages of the invention will appear from the following detail description of a preferred embodiment thereof. In the accompanying drawings illustrating such embodiment:

Fig. 1 is a perspective view of my improved track dressing mechanism mounted as an attachment on a small railway push-car, and engaged in the operation of dressing the side slope of the railway roadbed;

Fig. 2 is an end view of the car and attachment device, showing in dotted lines the

deflector beam raised to clear an obstruction, and showing in full lines one of the adjusted positions of the beam for dressing a certain height and angle of side slope;

5 Fig. 3 is a fragmentary view, similar to Fig. 2, illustrating another adjustment of the deflector beam;

Fig. 4 is a perspective view of the adjustable connection between the deflector or
10 scraper assembly and the swinging link arm which connects this assembly with the car;

Fig. 5 is a perspective view illustrating the adjustable attachment of one of the extension
15 deflector beams;

Fig. 6 is a transverse sectional view taken approximately on the plane of the line 6—6 of Fig. 5; and

Fig. 7 is a perspective view illustrating
20 the manner of detachably mounting the bracket, which carries the deflecting beam, on the railway car.

Figs. 1, 2 and 3 illustrate a typical roadbed consisting of a fill *b* of rock, gravel or earth
25 having a side slope *s* extending down to the sub-grade *g*. The track consisting of the ties 9 and rails 10 are usually set in a short distance from the shoulder at the upper end of the slope *s*.

30 An ordinary push-car is indicated generally at 11, comprising the usual wheels 12 and longitudinal and transverse frame members 13 and 14 to which the platform or floor 15 is secured. Detachably secured to the floor of
35 the push-car is an L-shaped mounting bracket 16 having a depending arm 17 projecting downwardly from the side of the car. Referring to Fig. 7, said bracket comprises a horizontal arm portion 16*a* which is adapted
40 to have quickly attachable and detachable mounting on the push car. The attachment is effected to a mounting plate 18 which is fixedly bolted or riveted to the platform 15 of the car. The inner portion of the attachment
45 plate 18 is formed with a raised socket 18*b* into which a tongue portion 16*b* on the inner end of the bracket is adapted to slide. The outer portion of the detachable bracket has laterally extending arms 16*c* which are adapted
50 to slip under hook lugs 18*c* which rise from the attaching plate and have outwardly projecting ends adapted to overlies the arms 16*c*. If desired, small abutment lugs 18*d* may project up from the attachment plate 18
55 to engage the side edges of the bracket arm 16*a* in order to carry stresses tending to deflect the bracket sidewise on the plate. The outer ends of the laterally extending bracket arms are apertured at 16*e* to receive readily
60 releasable pins 19 which slip down into sockets 18*e* extending downwardly from the forward portion of the attaching plate 18. To detach the bracket 16 from the plate 18 it is only necessary to lift the two pins 19 out
65 of their sockets and to then slide the bracket

outwardly, thereby disengaging the bracket extremity 16*b* from the socket 18*b* and disengaging the bracket arms 16*c* from under the hook lugs 18*c*. Replacing the bracket is merely a reversal of this, so as to reengage
70 the different socket or abutment portions of the bracket 16 with the corresponding socket or abutment portions of the socket plate 18. The quick detachability of the bracket enables the entire deflector beam assembly to be
75 instantly released from the push-car when it is desired to lift said car from the tracks to permit a train to pass, as I shall hereinafter describe in detail. A raised central rib 16*f* on the horizontal bracket arm has a latching
80 sector 24 suitably bolted or otherwise secured thereto, and a lifting lever 25 is pivotally mounted at 26 on this raised rib. Said lever carries a locking dog 27 adapted to engage
85 with the teeth 28 in the sector 24, this dog being releasable through actuation of an ordinary hand grip 29 on the lever 25. The connection of this lifting lever with the deflector beam will be referred to later.

The lower end of the bracket arm 17 carries a pivot bolt 31 on which an outwardly
90 projecting link or extension arm 32 is pivotally supported. The pivotal attachment of link 32 at pivot point 31 may be suitably reinforced by providing a plurality of co-
95 operating tongues or lugs on said link and on the bracket arm 17 all receiving the pivot bolt 31. It will be observed from Fig. 1 that the pivot axis 31 is disposed at a relatively low
100 point at the side of the car so that stresses acting longitudinally of the link 32 will have a minimum tendency to tip the car. The outer end of link 32 is pivotally connected at
105 33 with an extension arm 34 constituting part of the deflector or scraper assembly. The deflector beam, indicated at 35, is bolted or otherwise suitably secured to the outer end of the arm 34. A reenforcing strut 36 is secured
110 between the inner end portions of the arm 34 and beam 35 to carry the stresses acting against the front face of the deflector beam.

Said beam 35 is shown as consisting of a heavy timber, although it might be constructed of metal if desired. In the illustrated embodiment, a steel scraping blade 37
115 is secured to the front face of the beam, with the lower edge of said blade flush with or projecting slightly below the lower edge of the beam 35. The beam 35 is inclined fore and aft with its rear end innermost (Fig. 1) so
120 that when the push-car 14 is propelled forwardly the beam will deflect the ballast inwardly toward the track; and, referring to Figs. 2 and 3, said beam is held in fixed angular
125 relation to the arm 34 whereby with a given angular position of said arm the deflector beam will deflect the ballast up the desired slope *s* of the roadbed. The diagonal
130 strut 36 has a plurality of spaced holes 36*a* in its rear end for receiving the bolt 36*b* which

attaches said strut to the beam 35. The inward and outward or fore and aft deflecting angle of the beam 35 can be readily adjusted by removing the bolt 36b and replacing it in a different one of the holes 36a, thereby varying the effective length of the strut 36. When said bolt is securely fastened in place the strut 36 rigidly secures the beam 35 to the arm 34. The tractive force transmitted to the beam in the scraping operation is borne largely by a chain 39 which at its outer end is secured through an attachment fitting 41 with the outer portion of the arm 34 and beam 35, and which is suitably anchored at its inner end to the front corner of the push-car; as indicated at 42. This chain extends diagonally between the outer portion of the deflector beam and the front portion of the push-car and functions as a tension member for transmitting pull to the deflector beam.

A bar 44 extends between the arm 34 and the lever 25. This bar is pivotally connected with the arm 34 through a bolt connection 45, and is pivotally connected with the lever 25 by a transverse pivot bolt 46. The pivot connection 45 may consist of two pivot eyes connected by a transverse bolt, or it may consist, as shown, of a bolt extending through the arm 34 and having a slotted connection with the bar 44 to permit the desired range of pivotal movement between these parts. Provision may be made for changing the angle of the lever 25 in its relation to the arm 34, such as by making the bar 44 in two sections adapted to be increased or decreased in effective length; or by providing a series of holes in the upper end of said bar, or vertically spaced in the lever 25, or in both the bar and lever, whereby the pivot bolt 46 can be shifted to different ones of these holes for adjusting the effective length of the bar 44 or the point of attachment of said bar to the lever 25. To facilitate the operation of lifting the deflector beam to its inoperative position I propose anchoring one or more tension springs 54 to the inwardly extending arm portion 16a of the bracket 16 and connecting the upper ends of these springs with the lifting lever 25 through a chain 55. This spring means may be of sufficient tension to counterbalance the entire weight of the deflector beam assembly, or only part of its weight. In one construction the latching sector 24 may have its outer portion devoid of latching teeth 28 so that when the deflector beam is in its lowered operative position the lifting lever 25 cannot be locked to the segment 24, whereby the deflector beam is free to rise and fall in passing over undulations in the side slope s, the lever 25 in such arrangement then oscillating idly over the outer smooth portion of the latching sector 24. In an alternative construction, such being shown, teeth 28 are provided in the outer portion of the latching segment whereby a downward pressure can be

exerted on the deflector beam through the lever 25 and the beam then locked down under this pressure, such arrangement also being desirable where the springs 54 are designed to counterbalance a considerable part of the weight of the deflector beam assembly, the locked relation between the lever 25 and segment 24 then preventing said springs from removing too much of the effective weight from the deflector beam.

The pivot connection 33 between the arms 32 and 34 is preferably of the type permitting the angular relation between these two arms to be adjusted and then fixedly maintained in that adjustment. Referring to Fig. 4, the outer end of the arm 32 has a boss 57 in the face of which is formed segmental locking teeth 58. Secured to the other arm 34 is a bracket 59 which has a hub 61 in the face of which are formed cooperating segmental teeth 62 adapted to have locking engagement between the teeth 58. A bolt 63 passes through the two bosses and is adapted to lock the cooperating teeth 58—62 in their given angular adjustment.

It will be seen from the foregoing that the two members 32 and 34 constitute sections of a jointed arm, which sections can be shifted to and fixedly locked in different angular relations. Such adjustments permit of translational or bodily shifted adjustments of the deflector beam 35 to accommodate different heights and angles of side slope s. For example, in Fig. 2 this jointed arm has been given one setting for a certain angle and contour of roadbed, in which setting the hinge axis 31 is above the extended plane of the upper edge of the deflector beam; and in Fig. 3 this jointed arm has been given another setting for a different angle and contour of roadbed, in which setting the hinge axis 31 is disposed below this extended plane of the upper edge of the deflector beam. The angular adjustment which can be effected around the hinge axis 31 plus the angular adjustment of the deflector beam relatively to this hinge axis enables the deflector beam to be adjusted to any angle, height and contour of roadbed. The jointed form of the arm 32, 34 can also be utilized to enable the deflector beam assembly to be swung upwardly to a position above the car 14 when it is desired to transport the outfit from one zone of operation to another. By disconnecting the strut bar 44 and releasing the adjustable joint 33 the link 32 can be swung upwardly and the arm portion 34 and deflector beam assembly swung inwardly to a position over the hand-car 14 where no part of the construction will project beyond the standard side clearance for the car.

In Fig. 4 the bracket 59 is shown as being secured to the arm section 34 by bolts 65, and, if desired, additional holes 66 may be provided in the arm section 34 for positioning

the bracket 59 at different points along the length of said arm.

Under some operating conditions it may be desirable to provide extension deflectors on the upper or lower ends, or both, of the main deflector beam, these upper and lower extensions being indicated at 67 and 68, respectively, in Figs. 2 and 3. The upper deflector 67 may be used to properly form the shoulder at the upper end of the slope *s* and to compact the ballast between and around the ends of the ties; and the lower deflector 68 may be employed for collecting scattered ballast on the sub-grade *g* and leveling this sub-grade. Fig. 5 illustrates one manner of constructing and attaching one of these extension deflectors, and the same construction is applicable to the other end of the main deflector beam, being merely disposed in reverse relation. The extension is shown as being constructed of a block 69 having side plates 71 rigidly secured thereto, with segmental portions of these plates projecting inwardly beyond the block. A pivot bolt 72 is extended through a projecting end of the scraper blade 37 and through a bracket 73 fastened to the reverse side of the main deflector beam. This pivot bolt also passes through the extending end portions of the plates 71. A fastening bolt 74 is extended through the other edge portion of the main deflector beam and this latter bolt is adapted to be received in different holes 75 formed adjacent to the curved edges of the plates 71. Attaching and detaching of the deflector extension only requires removing and replacing these bolts 72, 74, and the making of different angular adjustments of the deflector extensions relatively to the main deflector beam only requires releasing the bolt 74 for engaging in different ones of the holes 75.

The quick and easy detachability of the mounting bracket 16 and deflector beam assembly from the hand-car is an important feature of the invention. The device will often be used on track sections over which regular traffic occurs, and when a train enters the block or approaches the push-car it is desirable to be able to remove the outfit from the track in as short a time as possible. It is a rather cumbersome awkward operation to lift the push-car from the rails when the deflector beam assembly is connected thereto, and to avoid this the above described provision has been made whereby the track dressing parts of the construction can be instantaneously released from the push-car. This only requires releasing the chain 39, preferably by disconnecting its front end from the hook 42, and lifting the pins 19 out of their sockets in the socket plate 18. This enables the entire bracket 16 to be slid endwise out of the socket plate 18, whereby the mounting bracket and deflector beam assembly can be thrown clear of the rails at one

side of the track. The push-car can then be lifted off the rails to the same side or to the other side of the track. The reattachment of the parts only requires the slipping of the bracket 16 back into the socket plate 18, the dropping of the pins 19 in place, and the reattachment of the draft chain 39 to the hook 42. By virtue of the fact that the latching sector 24, lifting lever 25 and counterbalancing springs 54 are all connected to the bracket 16, all of these parts are removed as a unit assembly with the bracket, without necessitating disconnecting any other parts from the push-car.

While I have illustrated and described what I regard to be the preferred embodiment of my invention, nevertheless, it will be understood that such is merely exemplary and that numerous modifications and rearrangements of the parts may be made without departing from the essence of the invention.

I claim:

1. In a railroad track dresser, the combination with a railway car, of a bracket mounted on said car, an arm pivotally mounted on said bracket for substantially vertical swinging movement, a deflecting beam, adjustable means operatively connecting said beam with said arm enabling said beam to be inclined upwardly or downwardly at different vertical angles relatively to said arm, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, and lifting means mounted on the car and operatively connected with said deflecting beam for raising the same.

2. In a railroad track dresser, the combination with a railway car, of a bracket mounted on said car, an arm pivotally mounted on said bracket for vertical swinging movement, a deflecting beam, adjustable means operatively connecting said beam with said arm enabling said beam to be inclined upwardly or downwardly at different vertical angles relatively to said arm and enabling said beam to be shifted to different positions inwardly or outwardly relatively to said arm, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, lifting means mounted on the car and operatively connected with said deflecting beam for raising the same, and a draft transmitting connection extending diagonally between said deflecting beam and said railway car.

3. In a railroad track dresser, the combination with a railway car, of a bracket mounted on said car, a jointed arm pivotally mounted on said bracket, said jointed arm comprising inner and outer sections adapted to assume different angular positions, the inner section of said arm being pivotally mounted on said bracket, a deflecting beam

connected with the outer section of said arm, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, and lifting means mounted on the car and operatively connected with said deflecting beam for raising the same.

4. In a railroad track dresser, the combination with a railway car, of a bracket mounted on said car, a jointed arm pivotally mounted on said bracket, said jointed arm comprising inner and outer sections adapted to assume different angular positions, the inner section of said arm being pivotally mounted on said bracket, a deflecting beam connected with the outer section of said arm, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, and a draft transmitting connection between said deflecting beam and the railway car.

5. In a railroad track dresser, the combination with a railway car, of a bracket adapted to be mounted on said car, quickly detachable mounting means for removably securing said bracket to the car, a jointed arm pivotally mounted on said bracket, said jointed arm comprising inner and outer sections adapted to assume different angular positions relative to each other, said inner arm section being pivotally mounted on said bracket, a deflecting beam connected with the outer arm section, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, and a diagonal draft transmitting connection for transmitting draft from the railway car to said deflecting beam.

6. In a railroad track dresser, the combination with a railway car, of a bracket adapted to be mounted on said car, quickly detachable mounting means for removably mounting said bracket on the car, a jointed arm pivotally mounted on said bracket, said jointed arm comprising inner and outer sections adapted to assume different angular positions relative to each other, said inner arm section being pivotally mounted on said bracket, a deflecting beam connected with said outer arm section, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, lifting means mounted on the car and operatively connected with said deflecting beam for raising the same, and a draft transmitting connection extending diagonally between said deflecting beam and the railway car.

7. In a railroad track dresser, the combination with a railway car, of a bracket adapted to be mounted on said car, an arm pivotally mounted on said bracket, a deflecting beam connected with said arm, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, and a socket mounting member on the car for removably receiving said bracket, whereby said bracket, arm and deflecting beam can be quickly released as a unit from the railway car.

8. In a railroad track dresser, the combination with a railway car, of a bracket adapted to be mounted on said car, an arm pivotally mounted on said bracket, a deflecting beam connected with said arm, said deflecting beam being adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, lifting means mounted on said bracket and operatively connected with said deflecting beam for raising the same, and a socket mounting member on the car for releasably receiving said bracket, whereby said bracket, arm, deflecting beam and lifting means can be detached from the car as a unit.

9. In a railroad track dresser, the combination with a railway car, of a deflecting beam adapted to deflect ballast up the sidelong slope of the railway roadbed towards the rails, and mechanism for connecting said beam with the car comprising a jointed arm having inner and outer arm sections, means pivotally connecting the inner arm section with the railway car, said deflecting beam being connected with said outer arm section, and means for securing said arm sections in different angular relations.

10. In a device of the class described, the combination with a railway car, of a deflecting beam adapted to engage the roadbed material to one side of the rails, and means for detachably connecting said beam with the railway car comprising a mounting member secured to the car and having a shoulder, a bracket adapted to be removably engaged with said mounting member and having a shoulder cooperating with the shoulder on said mounting member for preventing movement of said bracket relatively to said mounting member in one direction, and releasable pin means connecting said bracket with the car preventing movement of said bracket relatively to the car in another direction.

In witness whereof, I hereunto subscribe my name this 5th day of November, A. D. 1931.

JAMES A. BRYANT.