R. E. BRESSLER.

RAILROAD WAY CONSTRUCTION AND MAINTENANCE CAR.

APPLICATION FILED DEC. 30, 1918.

1,347,677.

Patented July 27, 1920.

3 SHEETS—SHEET 1.

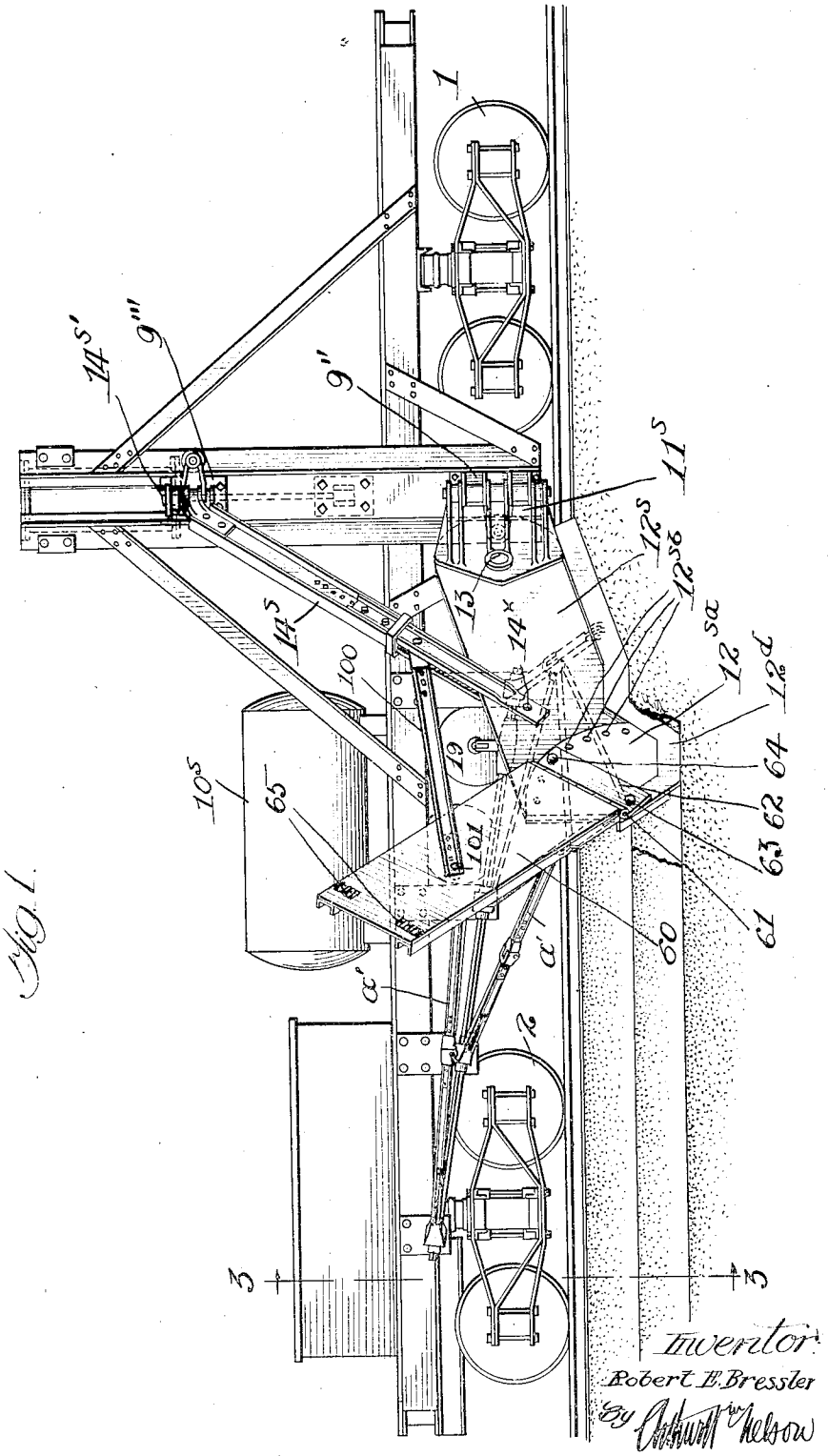


Fig. 1.

Inventor:
Robert E. Bressler
By Arthur W. Nelson
Atty.

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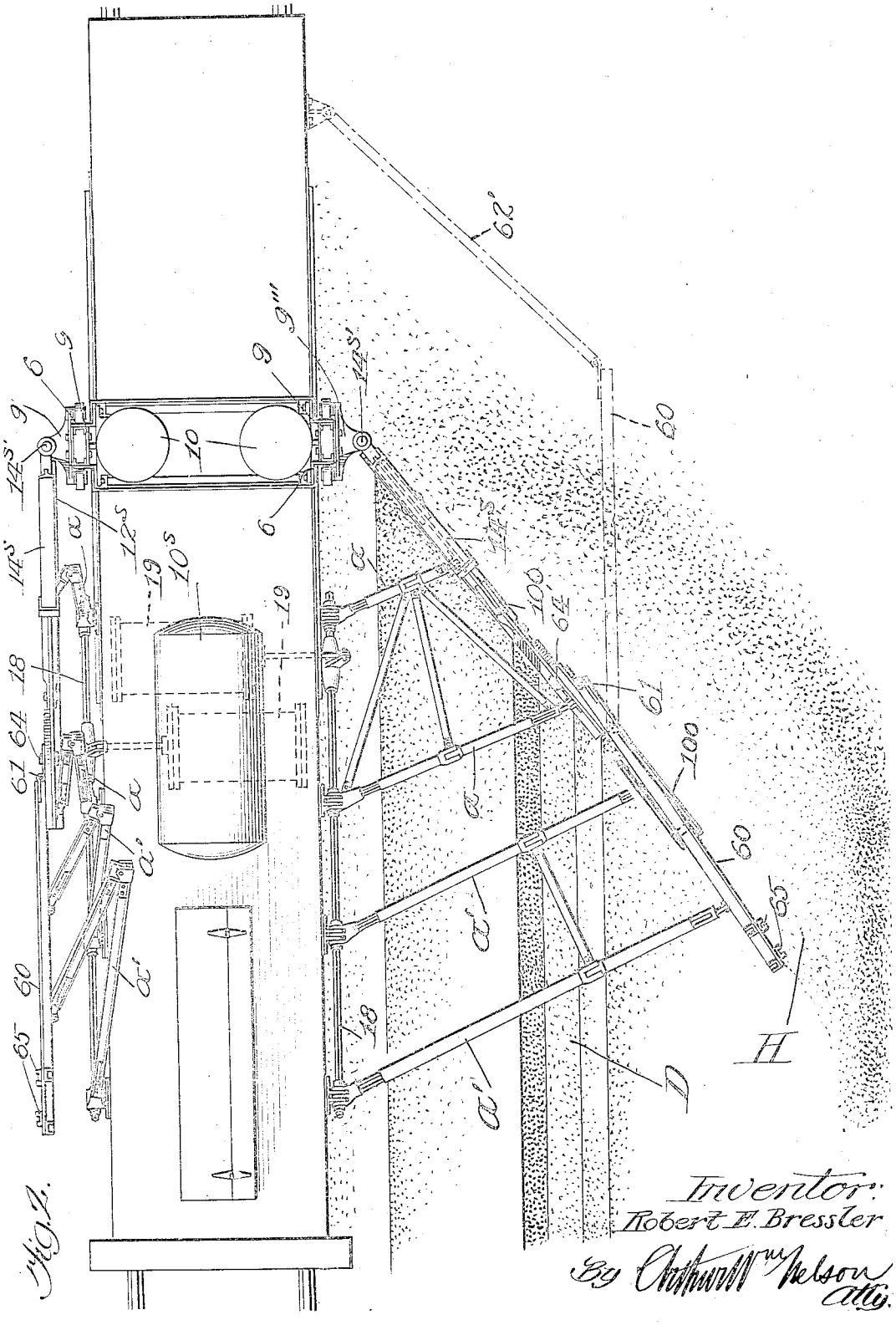


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

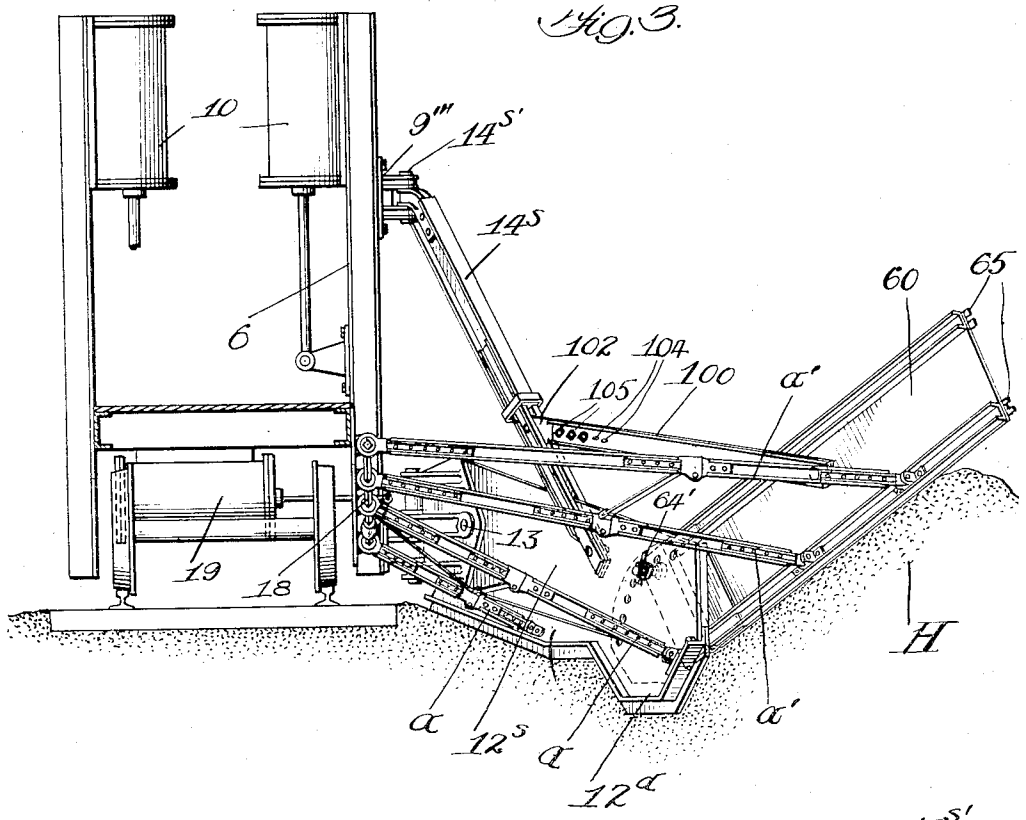
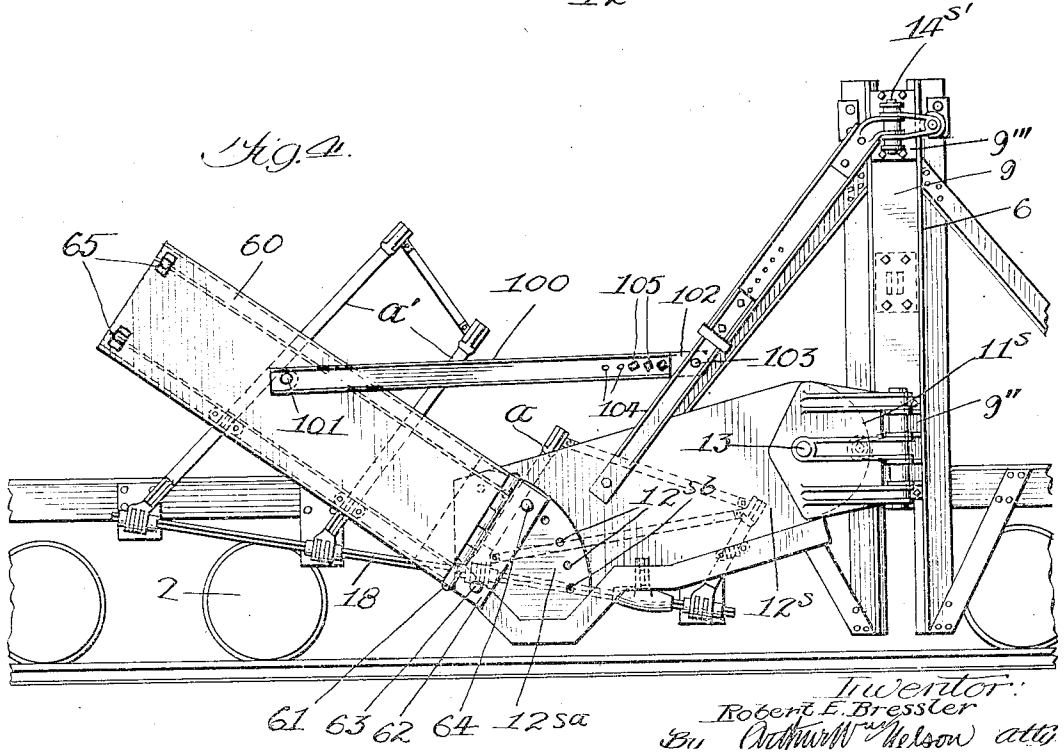


Fig. 4.



Inventor:
Robert E. Bressler
By Arthur W. Nelson Atty

UNITED STATES PATENT OFFICE.

ROBERT E. BRESSLER, OF HAMMOND, INDIANA, ASSIGNOR TO O. F. JORDAN COMPANY, OF EAST CHICAGO, INDIANA, A CORPORATION OF INDIANA.

RAILROAD-WAY CONSTRUCTION AND MAINTENANCE CAR.

1,347,677. Specification of Letters Patent. Patented July 27, 1920.

Application filed December 30, 1918. Serial No. 269,016.

To all whom it may concern:

Be it known that I, ROBERT E. BRESSLER, a citizen of the United States, and a resident of Hammond, county of Lake, and State of Indiana, have invented certain new and useful Improvements in Railroad-Way Construction and Maintenance Cars, of which the following is a specification.

My invention relates to improvements in machines for constructing and maintaining railroad rights of way and has particular reference to improvements in ballast shaping, ditch-forming and bank-shaping cars.

The general object of my invention is to provide an improved and simplified car of the above character. A further object of my invention is to provide means operable in conjunction with ballast shaping and ditch-forming or side wing of a railroad car whereby a bank can be simultaneously formed at the desired distance from the track and the excess material wasted over the top of the bank.

A further object of my invention is to provide a bank forming device of such construction that it may be operated in conjunction with the side or ballast shaping wing of a railroad spreader to form a bank of any desired angle; and which is adapted, when used in conjunction with a ditching wing, to be placed in a position to carry the excess material from the ditch and elsewhere along with the car through cuts, or if the cut be a relatively long one left in spaced piles within the cut for convenient removal thereafter.

A further object of my invention is to provide mechanism of this type that can be employed in conjunction with the side or ballast shaping wing and which shall be of such construction as to be automatically moved from inoperative to operative position and vice versa through control mechanism arranged on the car.

My invention consists generally in the form, construction, arrangement and coöperation of the parts whereby the above named objects, together with others which will appear hereinafter, are attainable.

My invention also consists in the novel details of construction herein shown and described and my invention will be more readily understood by reference to the accompanying drawings which illustrate the preferred embodiment thereof.

In said drawings: Figure 1 is a side elevation of a railroad car embodying my invention, the wings being in operative position. Fig. 2 is a plan view of the railroad car shown in Fig. 1, the wings on the far side being in their inoperative or closed position and those on the near side in their open or operative position. Fig. 3 is a fragmentary detailed view substantially along the line 3—3 of Fig. 1 certain of the parts being omitted better to disclose the construction and operation of the wings and their bracing members; and Fig. 4 is a fragmentary side elevation of the car showing the wings folded into position substantially paralleling the car, the same being the inoperative position.

In the drawings I have shown my invention as combined with or a part of a railroad spreader of the well-known Jordan construction such as is disclosed in Patent No. 996,256, granted to O. F. Jordan June 27, 1911. It should be distinctly understood, however, that this car is used for purposes of illustration, and that except where limited by the claims, I may employ a car of any suitable construction. While it is not necessary to describe the car in detail, since such description will be found in said patent, nevertheless a general description of the car and its operation will be helpful at this time. I might add that my invention as here embodied is applied to the standard Jordan spreader, the spreader wing marked 12 in said patent being removed and a wing of a slightly different form used. The car is provided with front and rear trucks, 1 and 2 and with suitable center and side sills. At a point just back of the front trucks will be found vertical columns 6—6 which are secured to opposite sides of the under-frame and which extend nearly to the rails. The ballast shaping wing 12^s is operated in the same manner and by the same mechanism by which the spreader wing 12 of the Jordan spreader is operated. The ballast shaping wing 12^s is attached at one end to the movable hinge posts 9 which is freely slidable in the column 6. One post 9 is arranged at each side of the car and they are operated by means of compressed air engines 10, 10. The car is equipped with a compressed air reservoir 10^s suitably connected to the engines 10, 10. I have not here detailed the pipe connections and valves

since they may be as shown in the herein mentioned Jordan patent.

The two sides of the car are exactly alike except that the parts occupy reverse positions, and this being the case a description of one side, and its operating mechanism, will serve clearly to define both sides. It should be here remarked that the mechanism on each side is independently operable and that either one or both thereof may be used at the same time dependent upon the work to be done. The post, 9, bears a heavy hinge 9'' on its lower part and to this is secured the heavy hinge section 11^s. The pivot pin of the hinge occupies a vertical position and the wing 12^s is pivoted in the part 11^s by means of the horizontal pivot pin 13. The two pivot pins being at right angles allow the wing 12^s to swing in both horizontal and vertical positions. The horizontal movement occurs in distending and retracting the wing to and from its working position and the vertical movement when it is desired to incline the same to any desired angle to the horizontal plane in the ballast shaping of the road bed. The free end of the wing 12^s is sustained and also braced by an adjustable telescopic brace member 14^s, the lower end of which is pivotally attached to the wing at 14^x, and the upper end of which is vertically pivoted at $14^{s'}$ to a plate 9''' upon the upper part of the post 9. The wing 12^s being attached to the post obviously rises and falls therewith.

For holding the wing distended against the ballast which it must displace as the car is moved forward I prefer to employ a plurality of braces *a*—*a* which extend from the side of the car to the inner side of the wing and which are constructed and operated in the manner of the braces 2—2 in said Patent No. 996,256. I will not describe these parts in detail and will only say that the braces *a*—*a* serve both as braces and as toggle levers which, when shaft 18 is rocked, as by means of an air engine 19, serve to throw or move the wing 12^s outwardly to operative position or inwardly to inoperative position.

When it is desired to form a ditch D on the side of the road bed the wing 12^s is of a form having a portion 12^d which is given that shape desired in the completed ditch. In railroad practice it is necessary even after the ditch is originally formed to clear it several times during the year if the road bed is to be maintained in proper order. Whether the ballast shaping and ditching portion 12^d be used in the initial construction work or in maintenance work a quantity of material will pile up forward of the wing 12^s. In passing through a cut this would soon waste over the end of the wing 12^s and into the pre-formed ditch thus making impossible the formation of a proper ditch. To provide a construction to meet the demands of such a situation I have devised a mechanism shown and described in my co-pending application Serial No. 252,398. I merely mention this fact in the present case because my invention is here primarily concerned with the forming and shaping of a bank although it may be used for the work just described.

To the outer end of the wing 12^s I provide what in this instance I term an outer wing which serves as a bank shaping and material conveying wing. On the face of the wing 12^s I secure rigidly a heavy filler plate 12^{sa} and at the inner end of the outer wing 60 I provide a vertical hinge pin 61 which hingedly secures the plate 62 to the wing 60. The plate 62 in turn is pivotally mounted upon the wing 12^s by means of a horizontal pivot 63, arranged adjacent the lower end of the hinge plate. Adjacent the upper end of the hinge plate, I provide a locking pin, 64, positioned for co-action with openings 12^{sb} in the plate 12^{sa}. The holes 12^{sb} are positioned on an arc the center of which is the horizontal pivot 63. It is obvious that the wing 60 may thus be swung to any desired angular position and there held in position by means of the locking pin 64. The locking pin 64 passes entirely through the plate 12^{sa} and also through the material of the body of the wing 12^s. To prevent the locking pin from accidental removal a nut and pin may be used as shown at 64′ (see Fig. 3).

As a further means of holding the outer wing 60, particularly against twisting movement, I provide a strut 100. As shown this strut is composed of two channel members, spaced slightly apart, and the outer ends of which straddle the wing 60, to which they are secured by a pivot pin 101. The inner end of the channels forming the strut 100, straddle a plate 102 which is pivotally attached, at 103, to the brace 14^s. A plurality of holes 104 are provided in the strut 100 to accommodate a bolt 105 in such manner that the length of the strut may be changed as necessary to permit placement of the outer wing 60 in desired positions.

When the wing 60 is to be used for the purpose of forming or shaping a bank upon a hill side or embankment H the wing is placed at the desired angle to the horizon such for example, as is indicated in the drawings. As the car moves forward any material that accumulates in the front of the wing 60 is shifted laterally or upwardly along the wing and eventually wasted over the end of the wing 60 which generally will be over the top of the embankment. Likewise any material that is accumulated by the wing 12^s, either in operation of forming a ditch or otherwise, will be automatically carried to the end of the

wing 12^s, there shifted to the wing 60, which in turn will automatically discharge the same at its outer end and over the top of the bank. In this manner the ballast of the road bed, a suitable ditch, and a suitable bank may be simultaneously formed or shaped and any excess material conveyed to a path entirely free of the road bed so that in no event will the excess material find its way back and form an encumbrance upon the road bed.

I have also arranged the wing 60 for operation from the car so that both the wing 12^s and the wing 60 may be automatically distended or retracted from inoperative to operative position, and vice versa by a workman on the car. The wing 60 is braced and operated by means of the toggle levers a' which are mounted upon the shaft 18 and which in their construction and operation are similar to the braces a—a already referred to whereby the wing 12^s is actuated.

In operation the wing 60 will usually be found at a slight angle, with respect to the side of the wing 12^s and at the same time when the parts are in their closed position, as indicated on the far side of the car in Fig. 2, both wings are substantially parallel to the car. This is necessary or desirable for the reason that the car must pass through tunnels and other limiting elements along the right of way. In order to cause the wing 60 to swing into parallel position with respect to the side of the car, I properly proportion the arms of the toggle levers a' a' so that as the shaft 18 is rocked the wing 60 will be drawn inwardly at such speed with respect to the wing 12^s, that by the time the wing 12^s has reached its innermost position, substantially paralleling the car, the outer wing 60 will have reached a corresponding position. Similarly when the wings are distended, the relative movement of the wings will be such as to cause them to assume an angular position with respect to one another, somewhat as indicated in the drawings. The exact position of the wing 60 may vary for work of different kinds and the angle shown and the position of the braces should be understood to be by way of illustration and not by way of limitation. All of the toggle operating levers and braces a—a and a' a' are preferably formed in the manner shown in the aforementioned Jordan Patent No. 996,256, that is to say, they are composed of members so joined that the lengths of each link may be changed by a telescopic co-action of the parts. In this manner a very wide latitude of adjustment may be had both for positioning the wing 12^s and the wing 60.

The wing 60 may also be used for the same purpose as the wing 60 shown and described in my co-pending application heretofore mentioned. When the wing is to be used for such a purpose, to wit: the carrying of material through cuts and the like, the wing 60 is placed in a horizontal position and there locked by means of the locking pin 64, which, of course, is associated with the proper opening 12^{sb} in the plate 12^{sa}. Also to this end the wing 60 is swung forwardly to a position substantially paralleling the car and there connected to the car by means of the strut 62′ as indicated by the dot and dash lines in Fig. 2 of the drawings. It is not thought necessary to describe this function further in the present case for the reason that it is fully developed in my previously mentioned pending application, which is particularly directed to that structure. It may be noted, however, that I provide at the end of the wing 60, in the present instance, hinge lugs 65 whereby the strut 62′ may be pivotally attached thereto.

From the foregoing description it will be evident that I have provided mechanism whereby the road may be shaped, a ditch formed and an embankment shaped at the same time, any excess material being conveyed along the wings to the outer end thereof and eventually wasted over the top of the embankment. The parts are all operable by a workman on the car and in this sense are automatic since they can be retracted and distended by the mere movement of the valve controlling the engines by which they are operated. Likewise the parts may be raised and lowered through the engines provided for that purpose.

Should it be desired the road bed may be shaped and ditched and the wing 60 used as a material carrying wing whereby the excess material can be carried through cuts and wasted over the bank at the end of the cut, or, if the cut be a long one, left in the spaced piles within the cut for convenient removal thereafter.

I claim:

1. The improvements herein described comprising a car, in combination with a side wing having its inner end pivoted thereto, an outer wing horizontally and vertically pivoted to the outer end of the side wing, means for locking the outer wing against movement on its horizontal pivot, said outer wing in operative position being at an angle to the face of the side wing and said operating means being formed to fold both the side wing and the outer wing into substantially parallel relation to the side of the car.

2. The improvements herein described comprising a car in combination with a side wing having its inner end pivoted thereto, an outer wing carried by a horizontal and a vertical pivot at the outer end of the side wing, wing swinging and holding braces joining the side wing, the outer wing and the car, means for actuating said braces to swing the side and outer wings, said holding and

swinging braces being formed to cause the outer wing and side wings to swing at different speeds in their movement to and from the car.

3. The improvements herein described comprising a car in combination with a side wing pivotally united to the car at its inner end, an outer wing having at its inner end a hinge plate attached by a vertical pivot to the outer wing, a horizontal pivot passing through the lower end of the hinge plate and the side wing, and a locking pin passing through the upper end of the hinge plate and entering one of a series of openings provided therefor in the side wing.

4. The improvements herein described comprising a car, in combination with a side wing having its inner end pivoted thereto, an outer wing horizontally pivoted to the outer end of the side wing, a bracing strut extending between the side wings and the car; a bracing strut extending between the outer wing and the side wing bracing strut; and means for moving said wings from inoperative to operative position and vice versa.

5. The improvements herein described comprising a car, in combination with a side wing having its inner end pivoted thereto, an outer wing horizontally pivoted to the outer end of the side wing, a bracing strut extending between the side wing and the car; a bracing strut extending between the outer wing and the side wing, and means for locking the outer wing, against movement on its horizontal pivot.

6. The improvements herein described comprising a car, in combination with a side wing having its inner end pivoted thereto, an outer wing horizontally pivoted to the outer end of the side wing, a bracing strut extending between the side wing and car, an adjustable bracing strut extending between the outer wing and the side wing bracing strut, means for locking the outer wing against movement on its horizontal pivot, and means for moving said wings from inoperative to operative position.

7. The improvement herein described comprising a car in combination with a side wing having its inner end pivoted thereto, an outer wing having at its inner end a hinged plate attached by a vertical pivot to the outer wing, said hinged plate and outer wing carried by a horizontal pivot at the outer end of the side wing and means for moving said wings from an inoperative to an operative position, said outer wing in operative position being at an angle to the face of the side wing and said operating means being formed to fold both the side wing and the outer wing into substantially parallel relation to the side of the car.

8. The improvement herein described comprising a car in combination with a side wing having its inner end pivoted thereto, an outer wing having at its inner end a hinged plate attached by a vertical pivot to the outer wing, said hinged plate and outer wing carried by a horizontal pivot at the outer end of the side wing, and means for locking the outer wing in a fixed position with respect to the inner wing.

In testimony thereof, I have hereunto set my hand, this 29th day of November, 1918, in the presence of two subscribing witnesses.

ROBERT E. BRESSLER.

Witnesses:

ARTHUR WM. NELSON,
EVELYN COYLE.