N. S., G. W. & A. J. MONROE.

ROAD WORKING MACHINE.

APPLICATION FILED JUNE 16, 1915.

1,247,135.

Patented Nov. 20, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

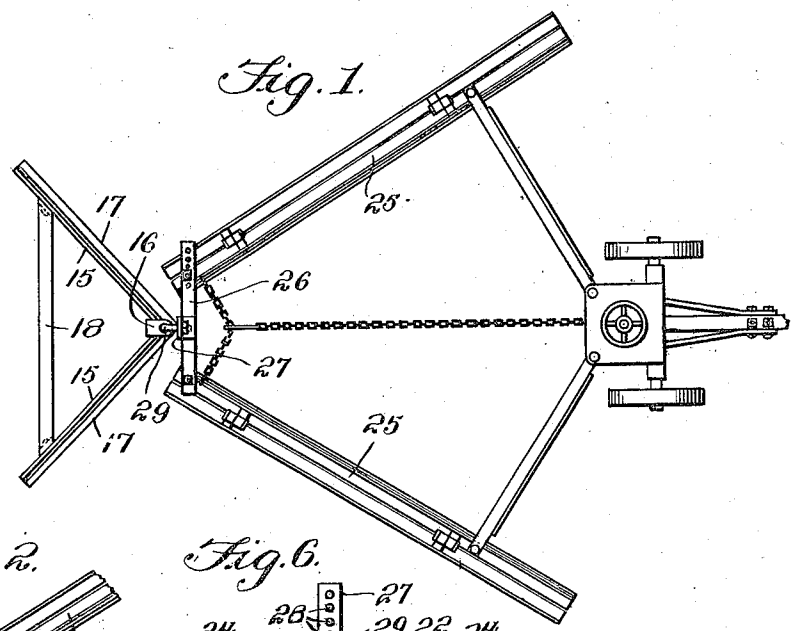


Fig. 2.

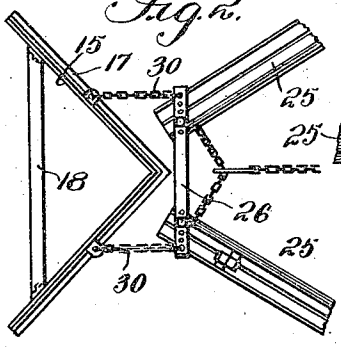


Fig. 6.

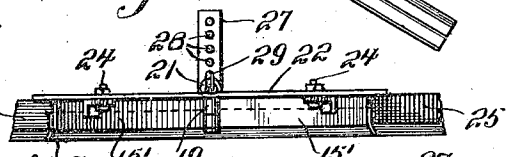


Fig. 3.

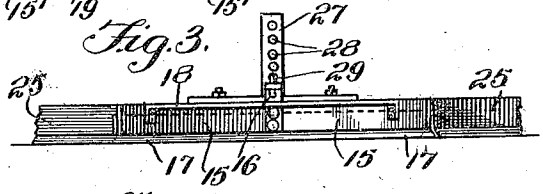


Fig. 4.

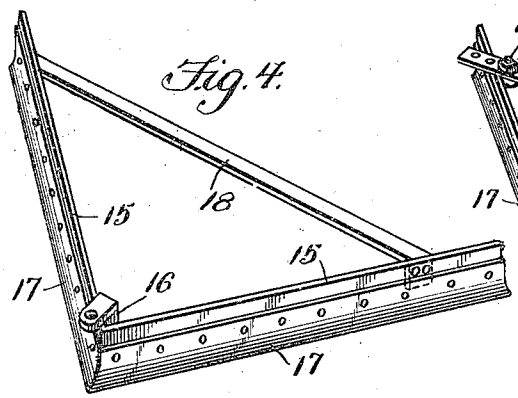
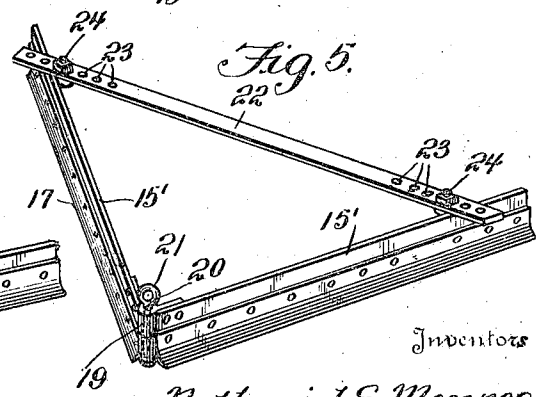


Fig. 5.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 7.

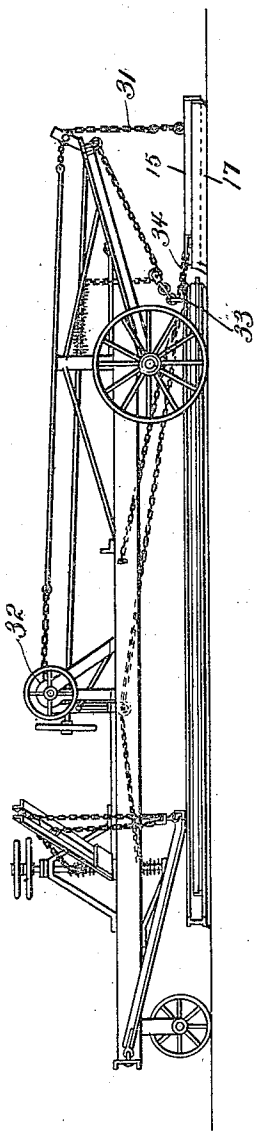


Fig. 9.

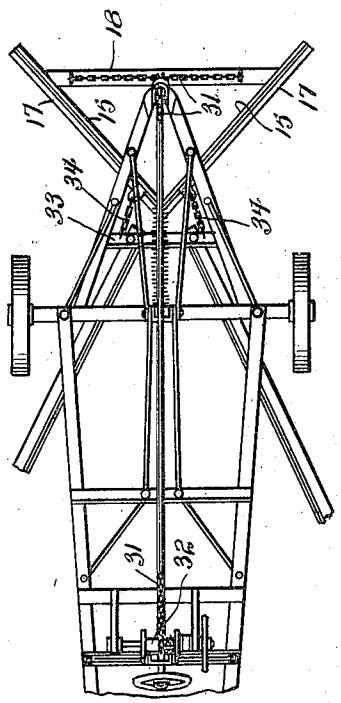
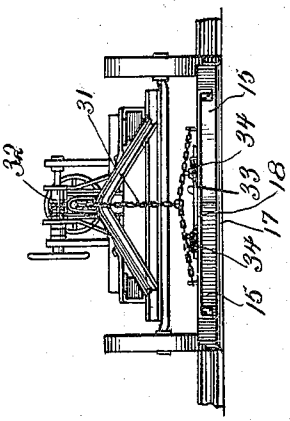


Fig. 8.



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UNITED STATES PATENT OFFICE.

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ROAD-WORKING MACHINE.

1,247,135. Specification of Letters Patent. Patented Nov. 20, 1917.

Application filed June 16, 1915. Serial No. 34,378.

To all whom it may concern:

Be it known that we, NATHANIEL S. MONROE, GEORGE W. MONROE, and ANDREW J. MONROE, citizens of the United States, residing at Arthur, in the county of Douglas and State of Illinois, have invented certain new and useful Improvements in Road-Working Machines, of which the following is a specification.

This invention relates to road working machines, and it has particular reference to that class of machines which are provided with rearwardly convergent scraper bars spaced apart at their rear ends to permit the passage therebetween of a portion of the surface dirt which is taken from the road by the action of the scrapers and moved in the direction of the middle of the road where it is subsequently packed and smoothed to form a crown. Types of this class of machines are shown in Letters Patent No. 1,131,409, issued to Nathaniel S. Monroe on March 9, 1915, and also in Letters Patent No. 1,133,876, issued to Nathaniel S. Monroe on March 30, 1915. In the first mentioned patent a wheeled frame is shown to support the rearwardly convergent scraper bars. In Patent No. 1,133,876 the wheel supported carrying frame is omitted. It is to be understood, however, that the present invention is equally applicable to the two types of machines.

In machines of the general type shown in the above mentioned patents the dirt displaced by the scraper bars and issuing therebetween requires to be smoothed and compacted, and to this end it is not uncommon to utilize drags which have either been operated independently or connected with the machine. It frequently happens, however, that the surface dirt is displaced by the scraper bars in such quantities as to render it impossible for a mere drag having a troweling action to distribute such dirt properly, the result being that a distinct ridge of excessive height would be formed at the crown of the road. The present invention has for its object to produce a simple and improved spreading device, particularly adapted to be used in connection with machines of the type referred to, and by the action of which the dirt issuing between the scraper bars will be spread and redistributed over the surface of the road, thus leaving the road in a good smooth condition, and particularly in an advantageous condition for the subsequent operation of a drag or troweling device.

A further object of the present invention is to produce a simple and improved spreader which may be conveniently attached to or connected with a machine of the type described with freedom for such movement as may be required.

A further object of the invention is to simplify and improve the construction of the spreader and also to so construct the same as to enable the angle between the limbs thereof to be varied.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings,—

Figure 1 is a plan view showing a road machine of the frameless type having a simple and preferred form of the improved spreader applied thereto.

Fig. 2 is a detail plan view of the rear portion of the machine showing modified means for connecting the spreader therewith.

Fig. 3 is a rear elevation of the device as seen in Fig. 1.

Fig. 4 is a perspective view of the form of spreader shown in Fig. 1.

Fig. 5 is a perspective view showing a modified form of the spreader.

Fig. 6 is a rear view showing the modified form of spreader applied to the machine.

Fig. 7 is a side elevation showing a machine of the wheeled frame type to which the invention has been applied.

Fig. 8 is a rear elevation of the same.

Fig. 9 is a detail plan view of the rear portion of the same.

Corresponding parts in the several figures are denoted by like characters of reference.

The improved spreader in its most simple

form consists of a plate or bar of steel or other material which is bent to form a V-shaped structure having limbs or wings 15 and provided at the nose or apex thereof with an eye or aperture bracket 16 for convenience in attaching the same to the road machine. The limbs or wings 15 are preferably faced with blades, termed mold boards, 17, and the said wings are preferably connected together by a cross bar 18 to reinforce the construction.

Under the modified construction exemplified in Fig. 5 the limbs or wings, here designated by 15', are flexibly connected together by a hinge joint 19 including a pintle 20 having an eye 21 at its upper end for convenience in connecting the spreader with the road machine. The wings 15' are adjustably connected together by means of a cross bar or brace 22 which may be provided at each end with a plurality of perforations 23 with which the wings may be adjustably connected by means of bolts 24. Any other well known means may, however, be adopted for adjustably spacing and connecting the wings 15'.

25, 25 represent the scraper bars of a frameless road machine, the structure of said machine being illustrated in Fig. 1 of Letters Patent, No. 1,133,876, previously referred to. The scraper bars are connected together and spaced apart near their rear ends by means of a cross bar 26, the connection of which with the scraper bars is of such a nature as to allow the latter to move independently. On the cross bar 26 is mounted an upright 27 having a plurality of apertures 28 for the reception of an eye bolt 29, the eye of which may be engaged or connected with the eye 16 of the spreader, shown in Fig. 4, or with the eye 21 associated with the spreader shown in Fig. 5. The spreader may thus be loosely connected with the cross bar 26 for movement in a horizontal plane and also with freedom for movement of the rear ends of the wings of the spreader in a vertical plane, while by changing the eye bolt 29 from one to another of the apertures 28, vertical adjustment of the nose of the spreader may be effected.

Under the modification shown in Fig. 2 the V-shaped spreader is connected with the cross bar 26 adjacent to the ends thereof by means of flexible elements such as chains 30, the rearward ends of said chains being connected with the wings of the spreader. In this figure the form of spreader illustrated in Fig. 4 is shown, but it is obvious that the construction of the spreader used in this connection may be modified.

When the spreader is applied to and used in connection with a road machine of the type shown in Letters Patent No. 1,131,409, the drag or troweling device shown in said patent is dispensed with, but the lifting device including a suitably guided chain 31 and a drum shaft 32 is retained. The spreader which may be of the type shown in Fig. 4 is connected with the cross bar 33 spacing the rear ends of the scraper bars by means of chains 34, and the cross bar 18 of the spreader is connected with the chain 31 of the lifting device, said chain being shown as being terminally bifurcated and connected with the cross bar 18 near the ends of the latter.

It is desired to be understood that while the spreader has been shown as applied to two particular forms of road machines, there are many other patterns of machines in connection with which it may be advantageously used. It is, furthermore, to be understood that no limitation is made either to the particular form or construction of the spreader or to the manner of connecting the said spreader with the road machine, except that the connection must be such as to permit the spreader to have the necessary freedom of lateral and vertical movement.

In the operation of the device the spreader engages the dirt displaced by the scraping device of the road machine, and it operates to redistribute such dirt over the surface of the road. By raising or lowering the point of attachment of the nose of the spreader, the height of the crown formed on the road may be varied. When the form of spreader illustrated in Fig. 5 is employed, the angle between the limbs of said spreader may be varied, and by so doing the dirt may be distributed over a greater or lesser area.

Having thus described the invention, what is claimed as new, is:—

1. The combination with a road machine having rearwardly convergent scrapers and a cross bar connecting and spacing the same at their rear ends for the passage of dirt therebetween, of a V-shaped spreader having ground engaging limbs, and means whereby the nose of the spreader is flexibly connected with the cross bar to give the body of the spreader freedom for vertical and lateral movement, the nose of the spreader being restricted from such movement.

2. The combination with a road machine having rearwardly convergent scrapers and a cross bar connecting the same and spacing them apart at their rear ends for the passage of dirt therebetween, of a V-shaped spreader having ground engaging limbs and means including interengaging eyes whereby the nose of the spreader is connected with the cross bar.

3. The combination with a road machine having rearwardly convergent scrapers and a cross bar connecting said scrapers and spacing them apart at their rear ends for the passage of dirt therebetween, of a V-

shaped spreader flexibly connected therewith, said spreader having ground engaging limbs, and hoisting means mounted on said frame whereby the rearward end portions of the spreader limbs may be lifted clear of the ground.

4. The combination with a road machine having rearwardly convergent scrapers and a cross bar connecting and spacing the same apart at their rear ends, of an upright mounted on said cross bar, a V-shaped spreader, and means for connecting the nose of the spreader flexibly and adjustably with the upright at various elevations and with freedom for swinging movement in vertical and lateral planes.

5. The combination with a road machine having rearwardly convergent scrapers and a cross bar spacing and connecting the same at their rear ends, of a V-shaped spreader comprising two rearwardly divergent ground engaging limbs and a hinge whereby the front ends of said limbs are connected together, said hinge including a pintle having an eye, an eye on the cross bar with which the eye of the pintle is engaged, and means whereby the limbs of the spreader are adjustably connected to vary the angle therebetween.

In testimony whereof we affix our signatures in presence of two witnesses.

NATHANIEL S. MONROE.
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ANDREW J. MONROE.

Witnesses:
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WM. DAWSON.

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