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

ROAD WORKING MACHINE.

APPLICATION FILED JUNE 16, 1915.

1,173,016.

Patented Feb. 22, 1916.

2 SHEETS—SHEET 1.

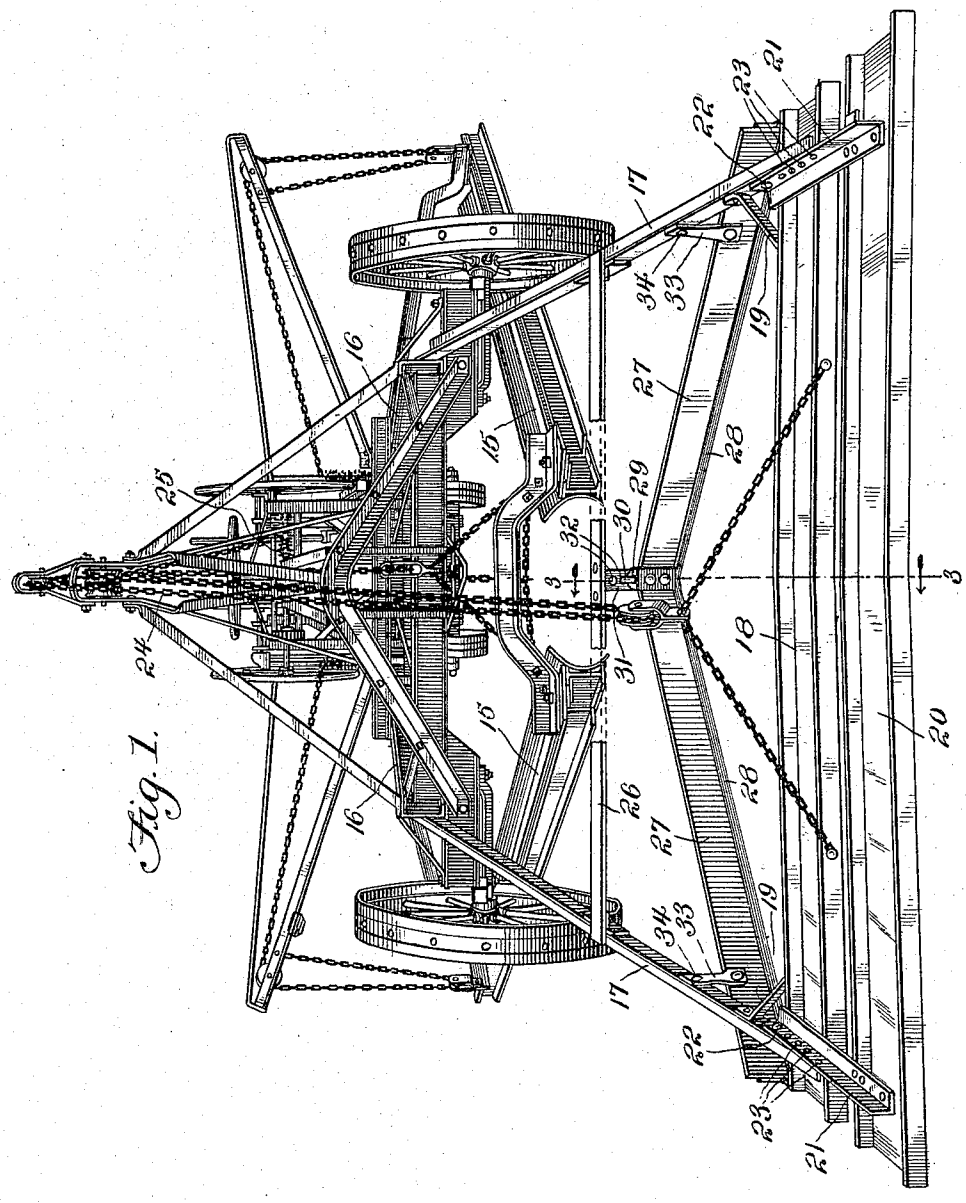


Fig. 1.

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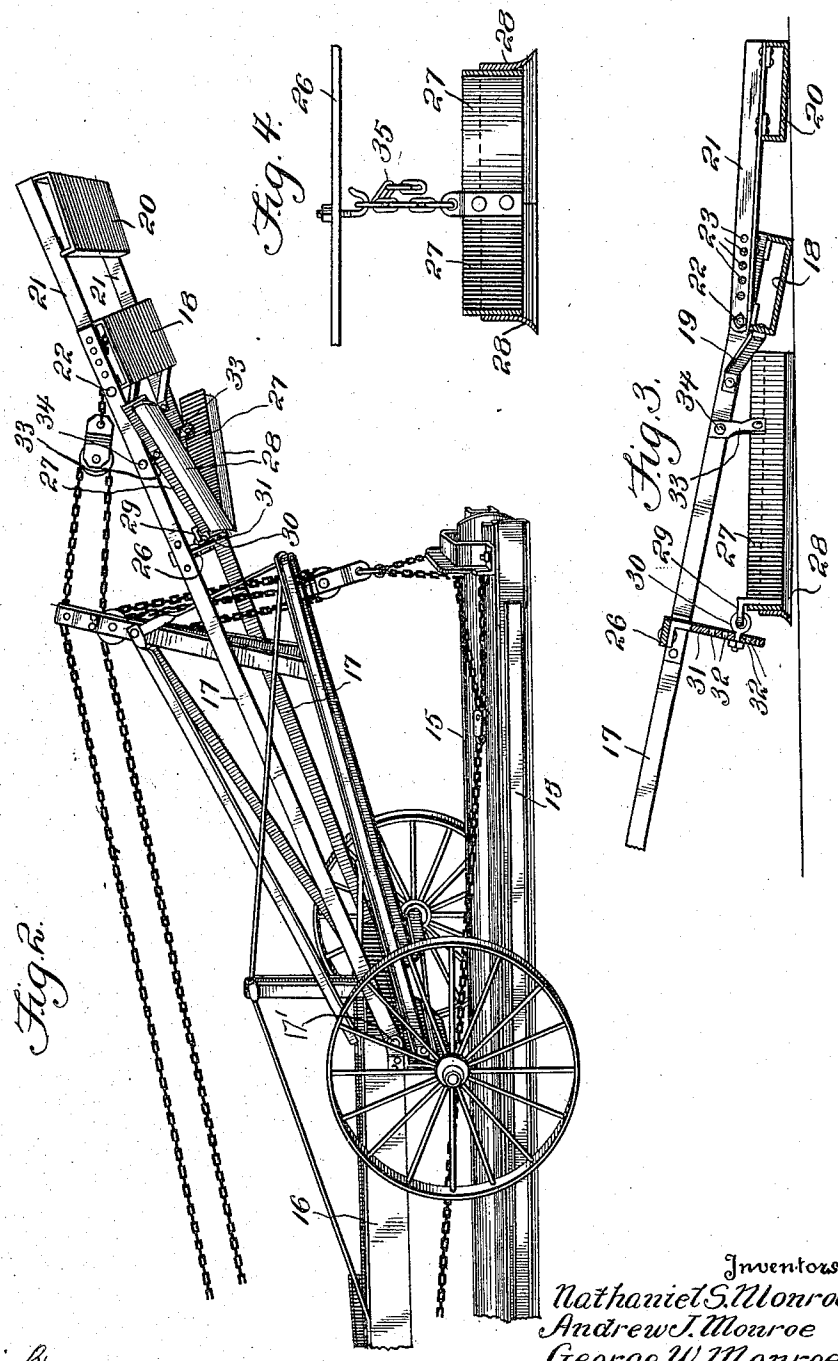


Fig. 2.

Fig. 4.

Fig. 3.

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UNITED STATES PATENT OFFICE.

NATHANIEL S. MONROE, ANDREW J. MONROE, AND GEORGE W. MONROE, OF ARTHUR, ILLINOIS.

ROAD-WORKING MACHINE.

1,173,016. Specification of Letters Patent. Patented Feb. 22, 1916.

Application filed June 16, 1915. Serial No. 34,379.

To all whom it may concern:

Be it known that we, NATHANIEL S. MONROE, ANDREW J. MONROE, and GEORGE W. 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 machines and particularly to machines of the general type exemplified in Letters Patent No. 1,131,409, issued to Nathaniel S. Monroe on March 9, 1915, and in which rearwardly converging scraper bars connected and spaced apart at their rear ends for the passage of dirt therebetween are supported by flexible supporting means for vertical adjustment with respect to a wheeled supporting frame. The machine referred to also has a drag or troweling device connected with the supporting frame, said troweling device comprising rigid side bars pivotally connected with the sides of the frame, and a rigid troweling bar mounted on said side bars, means including a suitably guided flexible element and a winding drum being provided to effect vertical adjustment of the troweling bar and to support the latter above the ground. In a machine of this class it occasionally happens that so large a quantity of dirt is displaced by the scrapers that when compacted and smoothed by the troweling device, it forms a ridge or crown of excessive height.

The purpose of the present invention is to produce a simple and improved spreader adapted to act in conjunction with the troweling device for the purpose of redistributing the dirt displaced by the scraper bars over a considerable area of the surface of the road, thereby bringing about a highly advantageous condition for the operation of the troweling device.

A further object of the invention is to simplify and improve the construction of the spreader and the manner of mounting the same for operation in connection with the troweling device.

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 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 perspective rear view of a road machine of the type described having the improved spreader connected therewith. Fig. 2 is a perspective side view of the rear end portion of the machine, the troweling device and spreader being shown in raised position. Fig. 3 is a vertical sectional detail view taken substantially on the line 3—3 in Fig. 1. Fig. 4 is a transverse sectional detail view illustrating a modification.

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

The rearwardly convergent scraper bars 15 are supported by a wheeled frame 16 in substantially the manner shown and described in the Letters Patent hereinbefore referred to, such slight modifications as have been shown being merely incidental to the construction of a highly developed and workmanlike machine structure. A drag or troweling device has been shown which comprises rigid side bars 17 that are pivotally connected with the side members of the frame 16 near the rear end of the same at 17′, see Fig. 2, said side bars supporting a troweling bar 18 which has here been shown as consisting of a channel bar rigidly bolted upon or otherwise connected with the side bars 17. Corner braces 19 have been shown to reinforce the construction. An auxiliary troweling bar 20 has been shown, the same being fixedly secured on arms 21 which latter extend forwardly across the troweling bar 18 and are pivoted on the side bars 17, as indicated at 22. The auxiliary troweling bar may thus have a vertical swinging movement independently of the troweling bar 18, but apertures 23 are provided for the passage of additional bolts or fastening members, not shown, whereby the arms 21 may be secured rigidly with

respect to the side bars 17, thereby mounting the auxiliary troweling bar 20 in fixed relation to said side bars and to the troweling bar 18. For the purpose of effecting vertical adjustment of the troweling device means are provided including a suitably guided flexible element, such as a chain 24 and a winding drum 25 on which said chain may be wound.

The side bars 17 are connected together in advance of the troweling bar 18 by a cross bar 26 with which a spreader is connected, said spreader having been shown as consisting of a V-shaped bar, the wings of which, 27, are equipped with mold boards 28, said spreader being provided at the nose thereof with an eye 29 which may be engaged with an eye bolt 30 adjustably connected with an upright or bracket 31 mounted on the cross bar 26, said bracket having a plurality of apertures 32 with any one of which the eye bolt may be connected to provide for the vertical adjustment of the nose of the spreader. The wings of the spreader are connected by pivot members 33 with lugs 34 which are mounted for this purpose on the side bars 17.

Under the modified construction shown in Fig. 4 the nose of the spreader is adjustably connected with the cross bar 26 by means of a flexible element, such as a chain 35, which may be lengthened or shortened so as to vary the elevation of the nose of the spreader.

As will be seen from the foregoing description taken in connection with the drawings, the V-shaped spreader is mounted directly in the path of the dirt issuing between the scraper bars and that its action on such dirt will be to spread and distribute the same over a considerable area before being subjected to the action of a troweling device. It will be seen that the elevation of the nose of the spreader may be varied, thereby varying the height of the ridge or crown of the road, the surface of which will be smoothed and compacted by the action of the troweling device. The auxiliary troweling bar 20 may be mounted rigidly or pivotally, as may be preferred, the main object being to provide the most advantageous construction for successful operation.

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

1. In a road machine, a wheel supported frame, rearwardly convergent scrapers supported thereby, said scrapers being connected and spaced apart for the passage of dirt therebetween, a troweling device comprising rigid side bars pivotally connected with the sides of the frame and extending therefrom and a troweling bar rigidly mounted on said side bars, and a spreader flexibly connected with the troweling device and supported in the path of dirt issuing between the scrapers to redistribute the same over the surface of the road.

2. In a road machine, a wheel supported frame, rearwardly convergent scrapers supported thereby, said scrapers being connected and spaced apart for the passage of dirt therebetween, a troweling device comprising rigid side bars pivotally connected with the sides of the frame and extending therefrom and a troweling bar rigidly mounted on said side bars, and a V-shaped spreader flexibly connected with the troweling device and supported in the path of dirt issuing between the scrapers to redistribute the same over the surface of the road.

3. The combination with a road machine having rearwardly convergent scrapers and a wheeled carrying frame, of a troweling device comprising rigid side bars pivotally connected with the sides of the frame, and a troweling bar fixedly secured on said side bars, a cross bar connecting said side bars, and a V-shaped spreader connected with said cross bar.

4. The combination with a road machine having rearwardly convergent scrapers and a wheeled carrying frame, of a troweling device comprising rigid side bars pivotally connected with the sides of the frame, and a troweling bar fixedly secured on said side bars, a cross bar connecting said side bars, and a V-shaped spreader having its nose connected with said cross bar for vertical adjustment with respect thereto.

5. The combination with a road machine having rearwardly convergent scrapers and a wheeled carrying frame, of a troweling device comprising rigid side bars pivotally connected with the sides of the frame, and a troweling bar fixedly secured on said side bars, a cross bar connecting said side bars, and a V-shaped spreader having its nose connected with said cross bar for vertical adjustment with respect thereto, the wings of said spreader being pivotally connected with the side bars of the troweling device.

6. The combination with a road machine having rearwardly convergent scrapers and a wheeled carrying frame, of a troweling device comprising rigid side bars pivotally connected with the sides of the frame, and a troweling bar fixedly secured on said side bars, a cross bar connecting said side bars, and a V-shaped spreader having wings pivotally connected with the side bars of the troweling device, and means for supporting the nose of said spreader for vertical adjustment.

7. In a road machine, a wheel supported frame, rearwardly convergent scrapers carried by said frame, a troweling device comprising rigid side members pivotally connected with the sides of the frame, a troweling bar rigidly supported by the side bars,

arms pivotally connected with the side bars and extending across the rigidly supported troweling bar, and an auxiliary troweling bar mounted on said arms.

8. In a road machine, a wheel supported frame, rearwardly convergent scrapers carried by said frame, a troweling device comprising rigid side members pivotally connected with the sides of the frame, a troweling bar rigidly supported by the side bars, arms pivotally connected with the side bars and extending across the rigidly supported troweling bar, and an auxiliary troweling bar mounted on said arms; a V-shaped spreader having wings pivotally connected with the side bars of the troweling device, and means for supporting the nose of the spreader for vertical adjustment.

9. In a road machine, a wheel supported frame, rearwardly convergent scrapers carried by said frame, a troweling device comprising rigid side members pivotally connected with the sides of the frame, a troweling bar rigidly supported by the side bars, arms pivotally connected with the side bars and extending across the rigidly supported troweling bar, and an auxiliary troweling bar mounted on said arms; a V-shaped spreader having wings pivotally connected with the side bars of the troweling device, and means for supporting the nose of the spreader for vertical adjustment; and means for effecting vertical adjustment of the rearward portion of the troweling device and of the spreader carried thereby with respect to the frame of the machine.

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

NATHANIEL S. MONROE.
ANDREW J. MONROE.
GEORGE W. 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."