J. D. MARTIN.

DITCHING AND GRADING MACHINE.

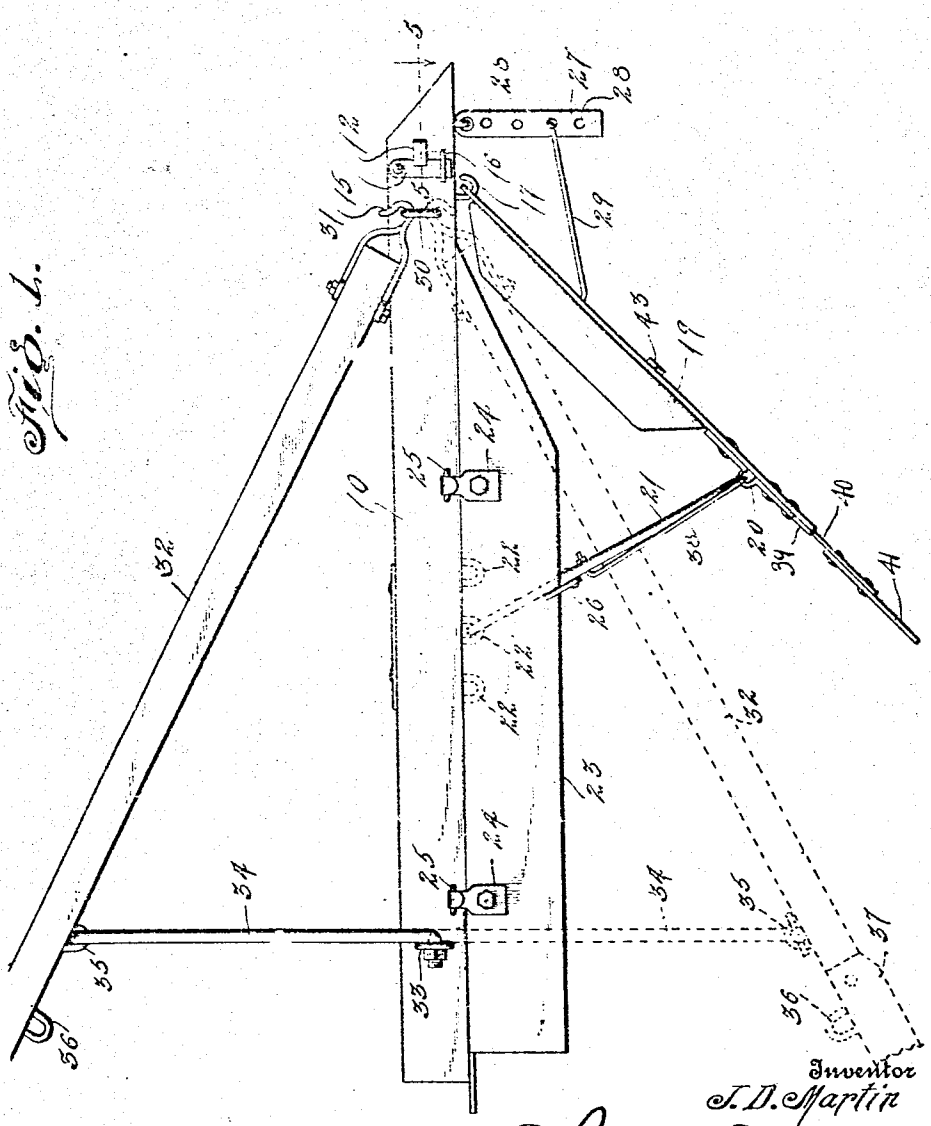
APPLICATION FILED DEC. 15, 1910.

987,476.

Patented Mar. 21, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

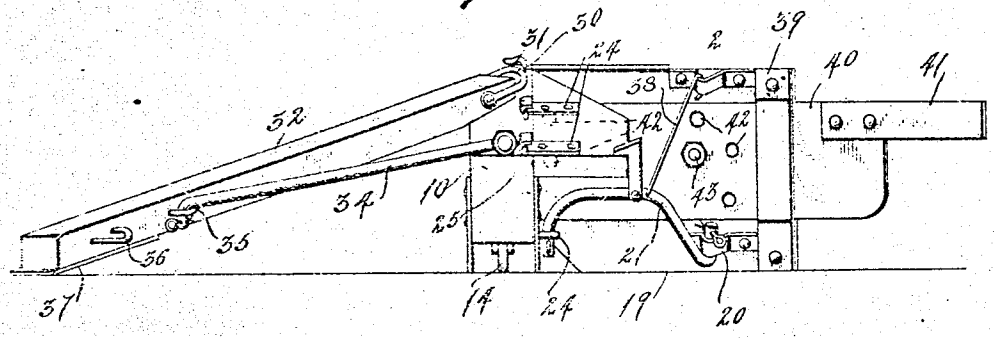


Fig. 3.

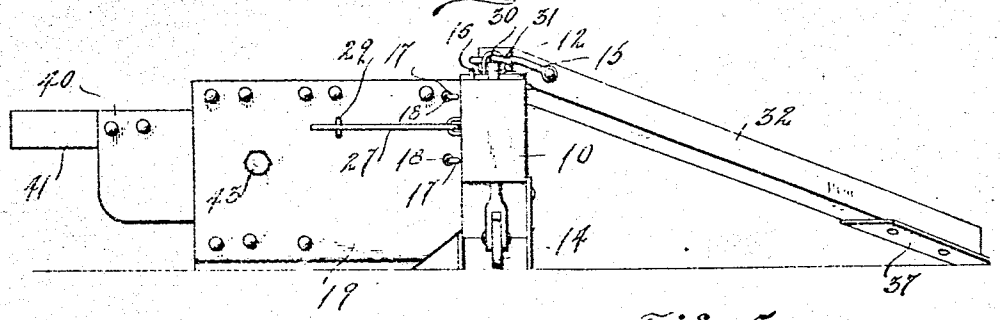


Fig. 4.

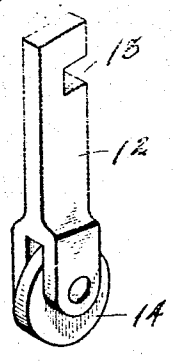
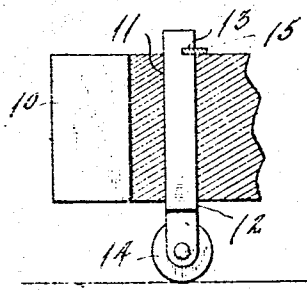


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN D. MARTIN, OF OWENSBORO, KENTUCKY.

DITCHING AND GRADING MACHINE.

987,476. Specification of Letters Patent. Patented Mar. 21, 1911.

Application filed December 15, 1910. Serial No. 597,498.

To all whom it may concern:

Be it known that I, JOHN D. MARTIN, a citizen of the United States, residing at Owensboro, in the county of Daviess and State of Kentucky, have invented certain new and useful Improvements in Ditching and Grading Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to ditching and grading machines.

The object of the invention resides in the provision of a machine of the character named wherein is provided means to prevent the lateral movement of the machine when the same is working on an incline.

A further object of the invention resides in so constructing the means for preventing lateral movement of the machine when working on an incline that the same may be shifted so as to be supported by the machine in an inactive position when a level tract of earth is being operated upon.

A still further object of the invention is the provision of a ditching and grading machine which will be efficient in operation, simple in construction, durable, and comparatively inexpensive to manufacture.

With these and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawing, wherein like characters of reference denote corresponding parts in the several views; and in which.

Figure 1 is a plan view of a ditching and grading machine constructed in accordance with the invention, and having certain parts thereof shown in full lines in the position they would occupy when operating upon an incline and in dotted lines in the position they would occupy when operating upon a level tract of land; Fig. 2, an end view looking at the rear of the machine with the parts in the position shown in full lines in Fig. 1; Fig. 3, a front view of the machine; Fig. 4, a detail perspective view of the guide wheel and its support; and Fig. 5, a section on the line 5—5 of Fig. 1.

Referring to the drawings, the invention is shown as comprising a beam 10 which constitutes the body portion of the device. This beam is provided with a vertical passage 11 at its forward end, through which extends the stem of a forked member 12; said stem being provided with a recess 13 which is disposed just above the upper side of the beam 10. Mounted in the lower end of the forked member 12 is a guide wheel 14 to facilitate the passage of the machine over the ground. The forked member 12 is held against displacement from the passage 11 by means of a pivoted plate 15 secured on the upper face of the beam 10 and adapted to be swung into the recess 13. The free end of the plate 15 is held against movement away from the upper face of the beam 10 when said plate is in locking position by means of a keeper 16.

Projecting from a side face of the beam 10 at the forward end thereof are staple members 17 which pass through openings 18 in a scraper blade 19. This scraper blade has formed on its inner face an eye member 20 in which is swiveled one end of a tie rod 21. The other end of this tie rod 21 is adapted for interchangeable engagement in a plurality of eye members 22 secured on the side of the beam 10, whereby the scraper blade may be adjusted angularly with respect to said beam. A platform 23 has secured thereto a pair of hook members 24 which are adapted for detachable engagement with staples 25 in the upper face of the beam 10. When these hook members 24 engage with the staples 25, the platform 23 will be supported by the beam 10 and a locking member 26 carried by the tie rod 21 serves to secure said platform against disengagement from the beam 10. Hingedly secured to the side of the beam 10 forward of the scraper blade 19 is a draft plate 27 provided with a plurality of openings 28. The movement of this draft plate toward and away from the scraper blade 19 is limited by a tie rod 29 which connects the draft plate with the scraper blade.

Mounted in the upper face of the beam 10 just inward of the plate 15 is an eye member 30 in which is engaged a hook 31 secured to the forward end of the arm 32. Another eye member 33 is mounted in the upper face of the beam 10 and has rotatably secured therein one end of a bar 34; said bar being adapted for a swinging movement transversely of the beam 10. The free end of this bar 34 is secured in an eye member 35 mounted in one side of the arm 32 so that when said bar is

swung transversely of the beam 10, the rear end of the arm 32 will move in unison therewith. The free end of the bar 34 is adapted for detachable engagement with the eye member 35 so that the same may be again engaged with another eye member 36, and thus vary the angularity of the arm 32 with respect to the beam 10. This arm 32 carries at its rear end an earth engaging blade 37 which is positioned so as to engage the earth at a slight angle when the arm is disposed as shown in full lines in Fig. 1. This engagement of the blade 37 with the earth serves to prevent lateral movement of the machine when the same is operating upon the side of a hill or any inclined tract of land. Of course, when it is not desired to use the arm 32 for the purposes mentioned, it may be easily swung to the position shown in dotted lines in Fig. 1.

The platform 23 may be utilized as a seat for the driver and also as a support for additional weights which are used as occasion demands to render the machine more steady.

The upper portion of the scraper blade 19 is strengthened by means of a tie rod 38 which has one end secured to the scraper blade near the upper edge thereof and its other end secured to the tie rod 21.

Extending across the inner face of the scraper blade 19 at the rear end thereof is a strap 39 the intermediate portion of which is spaced away from the adjacent face of the scraper blade. Slidably mounted between this strap and the scraper blade is a banking plate 40, the outer end of which is provided with a reduced extension 41 so as to produce a stepped limiting edge. This banking plate 40 is provided with a plurality of openings 42 in which is adapted to be interchangeably inserted a bolt 43 passing through the scraper blade 19, whereby the outer edge of the banking plate may be held in different adjustments with respect to the outer end of the scraper blade. By the use of this banking plate, earth may be deposited at greater or less distances from the rear edge of the scraper blade as desired and the stepped formation of the outer edge of said banking plate so shapes the contour of the earth deposited by the machine that the same will not roll back as readily into the ditch as would be the case if the same were banked alone by the scraper blade. It will of course be understood that the inner end of the banking plate can be raised and lowered to a certain extent so as to permit the lowermost and uppermost openings 42 to be passed into registration with the opening in the scraper blade 19 through which the bolt 43 passes.

What is claimed is:—

1. A machine of the class described, comprising a beam, a scraper blade hinged to the forward end of the beam, means for securing said scraper blade in different angular adjustments with respect to the beam, an arm swingingly mounted on said beam for movement from one side thereof to the other, and an earth engaging blade carried by said arm adapted to be actively disposed when the arm is moved to a position on the opposite side of the beam from the scraper blade.

2. A machine of the class described, comprising a beam, a scraper blade hinged to the forward end of the beam, means for securing said scraper blade in different angular adjustments with respect to the beam, an eye member mounted in the upper side of the beam at the forward end of the latter, a second eye member mounted on the upper side of the beam at the rear end of the latter, a bar having one end secured in the second named eye member and adapted for a swinging movement from one side of the beam to the other, an arm having its forward end secured in the first named eye member and its rear end secured to the free end of said bar for movement from one side of the beam to the other simultaneously with the free end of the bar, and an earth engaging blade carried by said arm adapted to be actively disposed when the arm is moved to a position on the opposite side of the beam from the scraper blade.

3. A machine of the class described, comprising a beam, a scraper blade hinged to the forward end of the beam, means for securing said scraper blade in different angular adjustments with respect to the beam, an eye member mounted in the upper side of the beam at the forward end of the latter, a second eye member mounted in the upper side of the beam at the rear end of the latter, a bar having one end secured in the second named eye and adapted for a swinging movement from one side of the beam to the other, an arm having its forward end secured to the first named eye member and its rear end secured to the free end of said bar for movement from one side of said beam to the other simultaneously with the free end of the bar, means for securing the free end of the bar at different points in the length of the arm, and an earth engaging blade carried by said bar adapted to be actively disposed when the arm is moved to a position on the opposite side of the beam from the scraper blade.

4. A machine of the class described, comprising a beam, a scraper blade hinged to the forward end of the beam, a tie rod connecting the scraper blade and beam and securing the former in angular relation to the latter, a platform having securing devices for detachably connecting same with the beam, and means carried by the tie rod for locking the platform on the beam.

5. A machine of the class described, com-

prising a beam, a scraper blade hinged to the forward end of the beam, means for securing said scraper blade in different angular adjustments with respect to the beam, and a banking plate carried by the scraper blade and adjustable longitudinally of the latter.

6. A machine of the class described, comprising a beam, a scraper blade hinged to the forward end of the beam, means for securing said scraper blade in different angular adjustments with respect to the beam, a banking plate carried by the scraper blade and adjustable longitudinally of the latter, and means for securing said banking plate in different adjustments with respect to the scraper blade.

7. A machine of the class described comprising a beam, a scraper blade secured to said beam, and a banking plate carried by the scraper blade and adjustable longitudinally of the latter.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN D. MARTIN.

Witnesses:

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HENRY M. TALBOTT.