

No. 628,800.

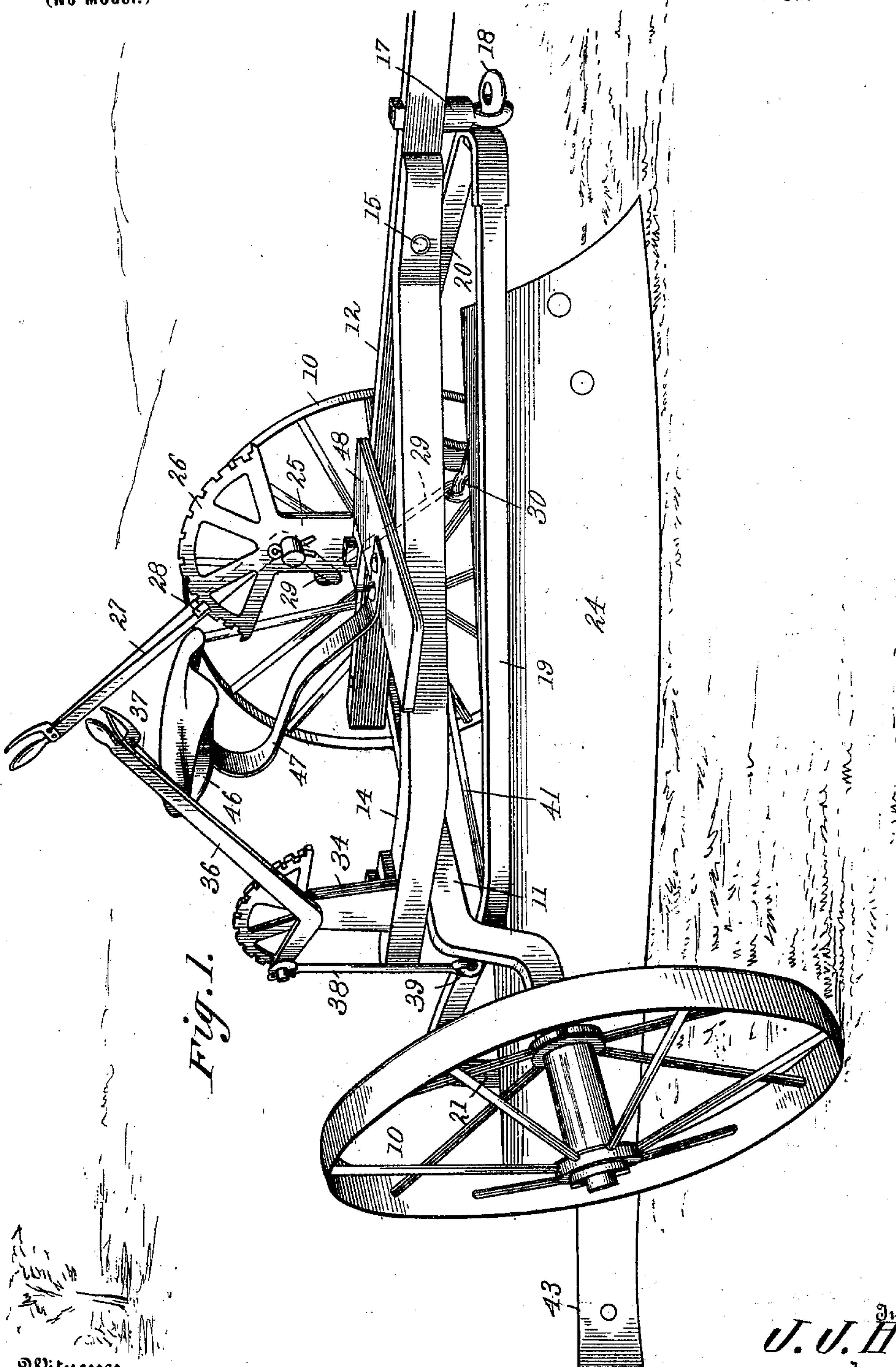
Patented July 11, 1899.

J. J. HELLING.
DITCH GRADER.

(Application filed Mar. 11, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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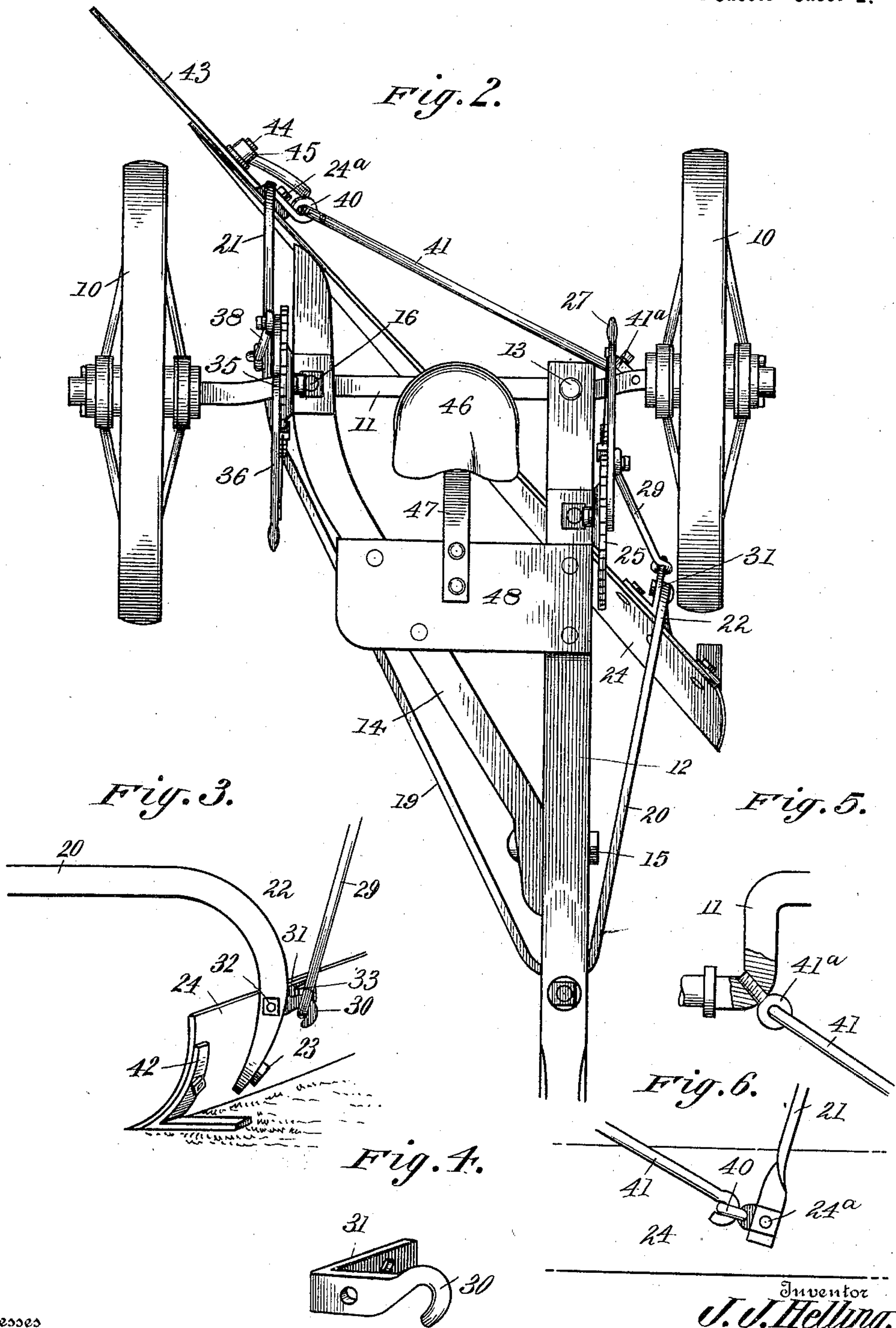
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UNITED STATES PATENT OFFICE.

JULIUS JOHN HELLING, OF UNION, FRANKLIN COUNTY, MISSOURI.

DITCH-GRADER.

SPECIFICATION forming part of Letters Patent No. 628,800, dated July 11, 1899.

Application filed March 11, 1899. Serial No. 708,696. (No model.)

To all whom it may concern:

Be it known that I, JULIUS JOHN HELLING, a citizen of the United States, residing at Union, in the county of Franklin and State of Missouri, have invented a new and useful Ditch-Grader, of which the following is a specification.

My invention relates to machines for grading water ditches or drains, but which with but slight, if any, alteration may be adapted to other kinds of operating.

The object of the invention is to furnish a cheap, simple, and efficient machine of this class in which will be provided simple means for accomplishing all the movements and adjustments of parts necessary to the effectual operation of the machine.

My invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the appended claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation in connection with the accompanying drawings, forming a part hereof, in which—

Figure 1 is a perspective view illustrating a machine constructed in accordance with my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a detail perspective view showing the front end of the scraper and its connections. Fig. 4 is a detail view of the hook-bracket illustrated in Fig. 3 detached. Fig. 5 is a detail view illustrating the manner of connecting one of the connecting-rods to the axle, and Fig. 6 is a detail view illustrating the connection of the opposite end of the same rod to the rear end of the scraper.

Like numerals of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by numerals, 10 indicate the wheels upon which the machine is supported, and 11 the axle journaled in said wheels, the axle being cranked downward at each end to raise the frame without increasing the diameter of the wheels.

12 indicates the main frame-beam, which

also serves as the tongue and is secured to the axle 11 by bolt 13.

14 indicates a second frame-beam, which is secured to beam 12 at a considerable distance in front of the axle by means of bolt 15, extends laterally and backward, and is secured to the axle by bolt 16, thus forming, with axle 11 and beam 12, a triangular rigidly-braced frame, the beam 12 standing at right angles to the axle.

17 indicates an eyebolt depending from the beam 12 at a point in front of its junction with beam 14, through the eye of which passes an eyebolt 18, which extends rearwardly and affords a substantially universal joint, with the angle of a metallic V-shaped frame horizontally supported under the main frame and consisting of a long bar 19 and a short bar 20. The forward end of each of these bars is turned downward, as at 21 22, the end of the short bar being connected by means of a bolt 23 with a scraper 24 near its forward end and the end of the long bar by means of a bolt 24^a with the scraper near its rear end, the scraper being thus supported at front and rear by the V-shaped frame.

The bars 19 and 20, at their rear ends, are adjustably suspended from the main frame, and for this purpose the following mechanism is provided, viz: 25 indicates a bracket rigidly secured to the frame-beam 12, the upper end of bracket being formed in a curved rack 26. At the center of the curve of the rack is pivoted an elbow-shaped hand-lever 27, carrying a spring-pawl 28 to engage the rack and a rod 29, pivotally depending from its short arm and universally jointed at its lower end to the hook 30 of an angular bracket 31, secured by bolt 32 to end 22 of short bar 20 and by bolt 33 to the scraper. The bolt 16, which secures the beam 14 to the axle, also secures a bracket 34 to beam 14, and this bracket is formed into a curved rack 35 at its upper end. At the center of the curve of the rack is pivoted an elbow hand-lever 36, having a spring-pawl 37 to engage the rack, and at the end of its short arm a rod 38 is pivotally connected, the lower end of this rod being universally jointed at 39 to the arm 19. The bolt 24^a, which connects bar 19 to the

scraper, also serves to secure a hook 40, in which is engaged one end of a brace-rod 41, the opposite end being engaged in an eyebolt 41^a, depending from the axle at the lower angle of one of its cranked ends.

An angular brace 42 on the under side of the front end of the scraper, Fig. 3, serves to stiffen and strengthen the scraper at this point, and an extension-plate 43, secured to the rear end of the scraper on bolt 44 by hand-nut 45, serves to lengthen the scraper when desired.

The normal position of the scraper is at about an angle of forty-five degrees from the line of draft, and by means of the mechanism described either or both ends of the scraper may be adjusted at will, the hand-levers being on opposite sides and within easy reach of the driver seated in seat 46, supported by spring-bar 47, secured to the foot-board 48, said foot-board being bolted or otherwise secured upon the two main frame-beams. The whiffletree-hook will be secured in the eye of bolt 18.

My invention is extremely simple in construction and economical to construct, so that it may be made cheap enough to be within the reach of any ordinary farmer who has ditches to keep clean and graded.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a grading-machine, the combination with the wheels axle and frame-beams supported therefrom, of a V-shaped metallic frame suspended at its forward angle below the main frame-beam, a scraper arranged diagonally and adjustably suspended, at its front and rear ends from the bars of the V-

shaped frame, and a diagonal brace-rod connecting the rear end of the scraper with the opposite end of the axle, substantially as described.

2. In a grading-machine the combination with the diagonally-placed scraper and the axle, of the supporting-bar 20, bolted to the scraper near its forward end, the main frame supported on the axle, the rod 29 adjustably suspended from said main frame and the angular hooked bracket 31 connected to said rod, the scraper and the bar 20, substantially as described.

3. In a grading-machine, the combination with the scraper, the supporting-bar 21 and the axle, of the hook 40, the bolt 24^a connecting the scraper, rod 21 and said hook, the eyebolt 41^a secured in the axle, and the brace-rod connecting hook 40 and eyebolt 41^a substantially as described.

4. In a grading-machine the combination with the wheels and axle of the main tongue-beam bolted on top the axle the brace-beam bolted to the side of the tongue-beam and on top the axle, the V-shaped metallic frame comprising a long and a short bar with their angle to the front, an eyebolt depending from the tongue-beam on front of said angle, a second eyebolt through the eye of the first and the angle of said frame, the scraper diagonally located below the frames, and adjustable connection between the forward end of the scraper and the short bar, and the rear end of the scraper and the long bar, substantially as and for the purpose set forth.

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Witnesses:

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