

No. 610,550.

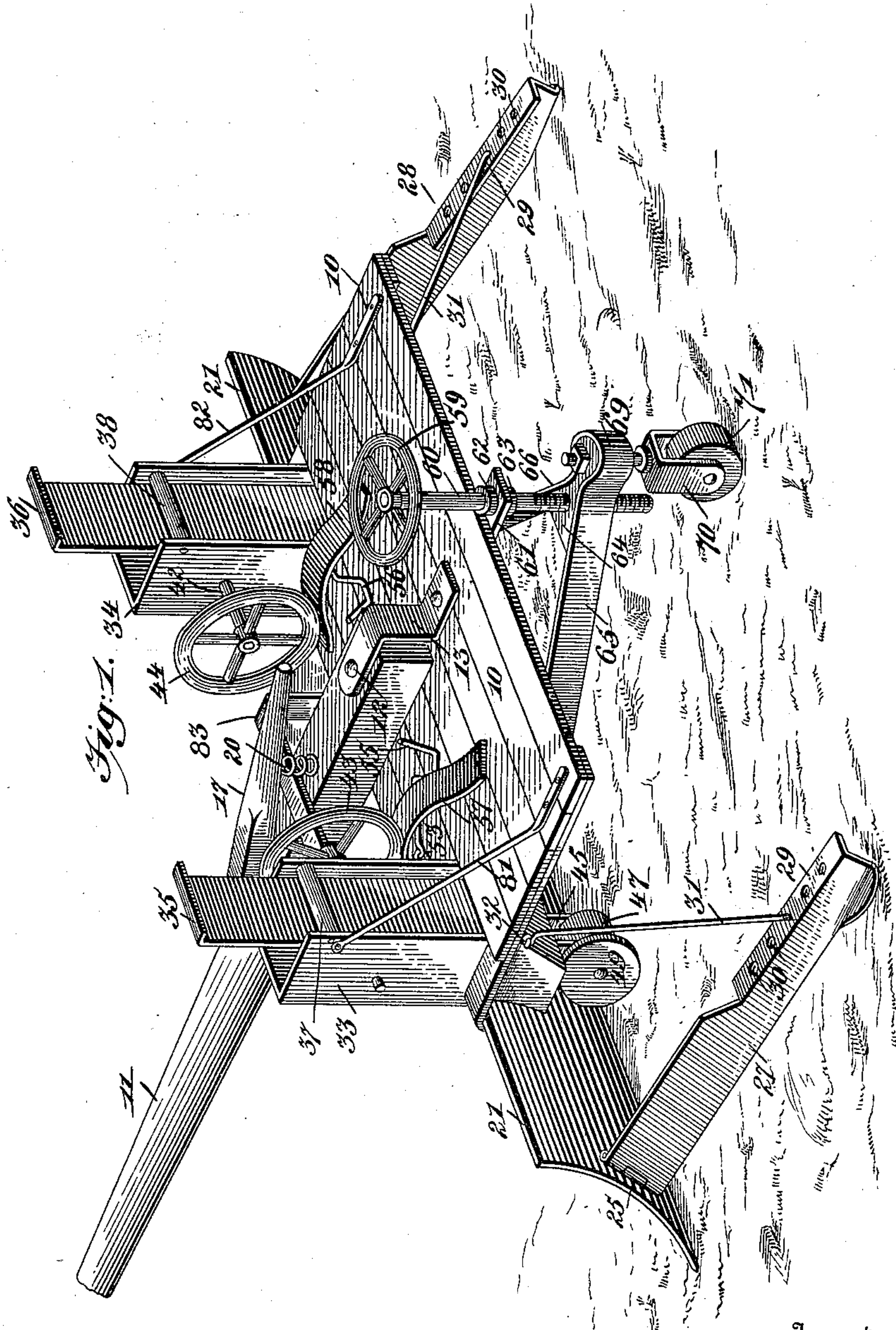
Patented Sept. 13, 1898.

J. V. MAXEY.
ROAD GRADING MACHINE.

(Application filed Nov. 13, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witness

W. E. Dieterich

Chas. D. Brock

Inventor

John V. Maxey

by *Marshall*
Attorneys

No. 610,550.

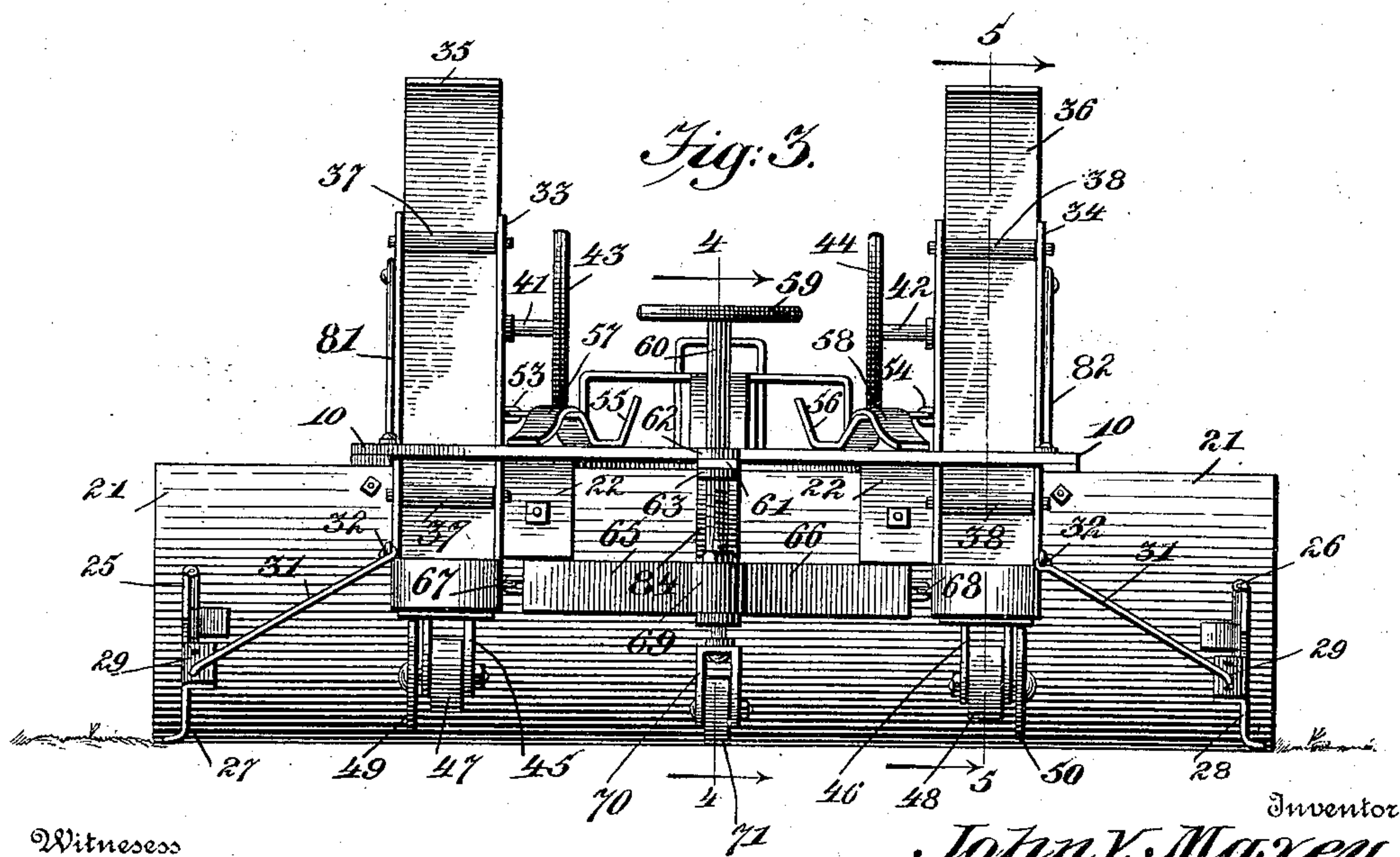
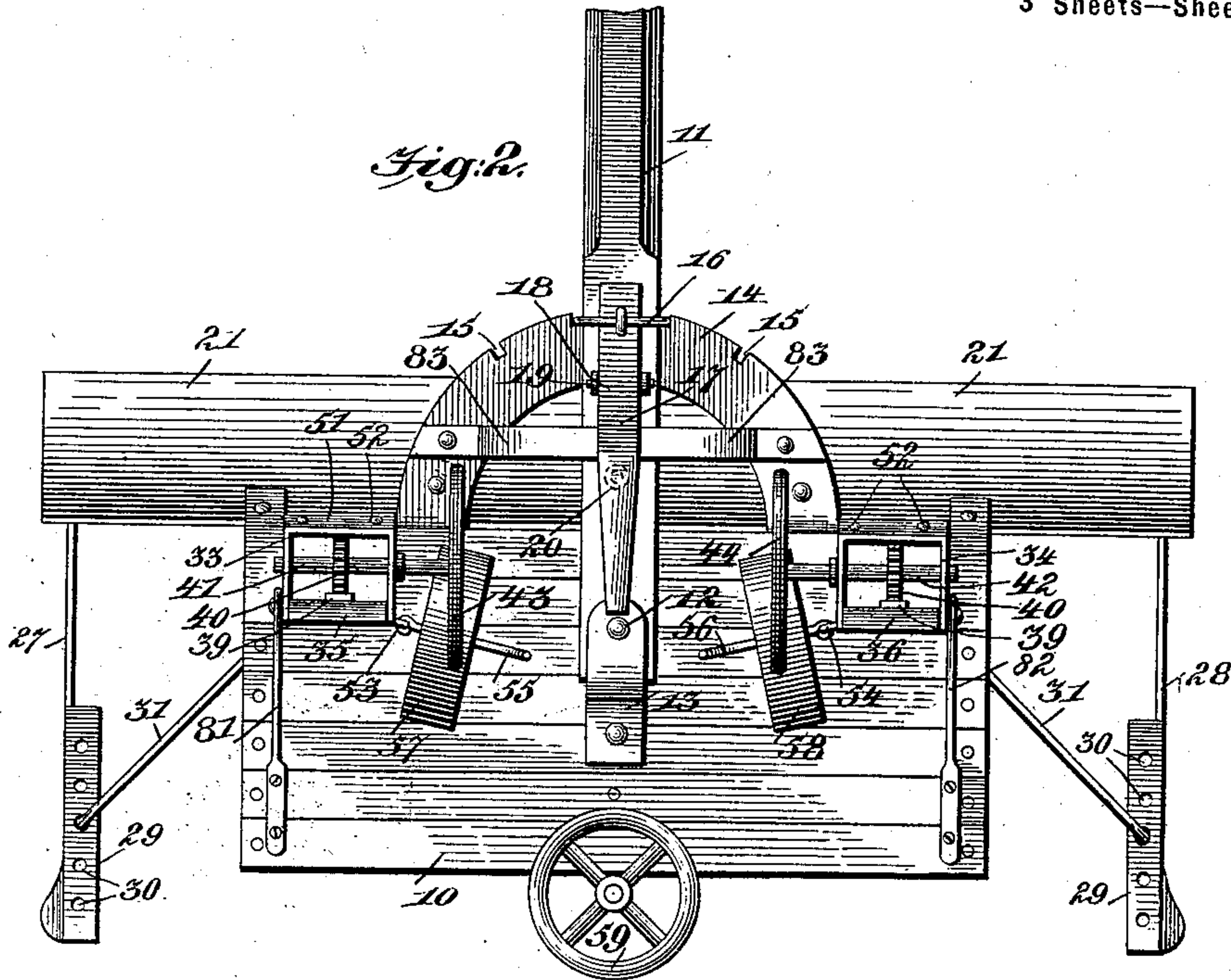
Patented Sept. 13, 1898.

J. V. MAXEY.
ROAD GRADING MACHINE.

(Application filed Nov. 13, 1897.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses
H. E. Dieterich
Chas. E. Brock

Inventor
John V. Maxey
by *Thurman Co.*
Attorneys

No. 610,550.

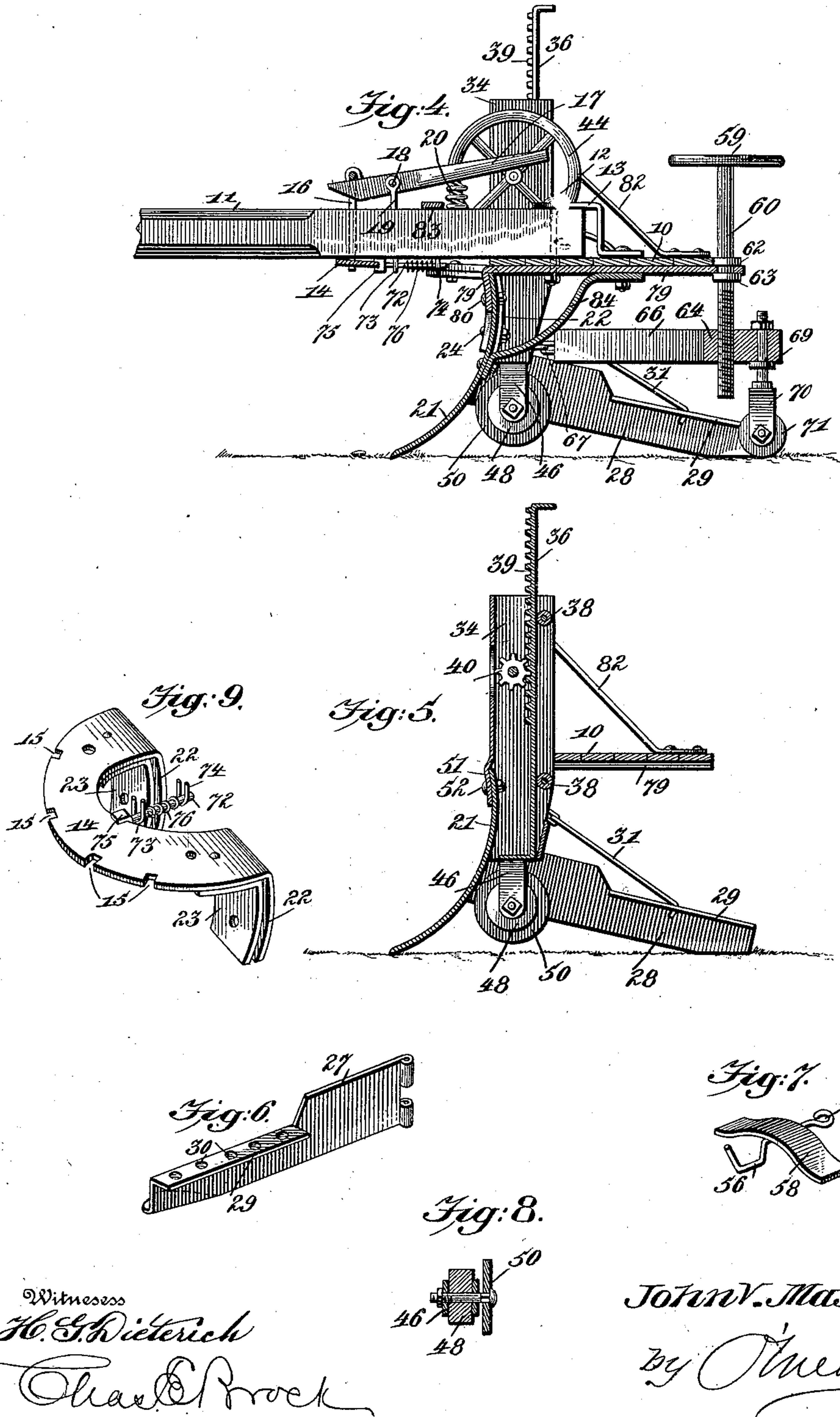
Patented Sept. 13, 1898.

J. V. MAXEY.
ROAD GRADING MACHINE.

(Application filed Nov. 13, 1897.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses
H. S. Dieterich
Charles Brock

Inventor
John V. Maxey
By *Thurston*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN V. MAXEY, OF MOUNT VERNON, ILLINOIS.

ROAD-GRADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 610,550, dated September 13, 1898.

Application filed November 13, 1897. Serial No. 658,429. (No model.)

To all whom it may concern:

Be it known that I, JOHN V. MAXEY, a citizen of the United States, residing at Mount Vernon, in the county of Jefferson and State of Illinois, have invented a new and useful Road-Grading Machine, of which the following is a specification.

My invention relates to road-grading machines, and has for its object to furnish a simple, durable, and effective machine of this class composed of a minimum number of inexpensive parts, whereby it is cheapened in cost and not liable to be easily broken or quickly worn out with ordinary usage.

A special object of my invention is to furnish a road-grading machine of extremely light draft and one which can be worked close up to culverts and bridges.

With these objects in view 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, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a road-grading machine constructed in accordance with my invention in position for practical operation. Fig. 2 is a top plan view thereof. Fig. 3 is a rear elevation thereof. Fig. 4 is a sectional view on the line 4 4 of Fig. 3. Fig. 5 is a sectional view on the line 5 5 of Fig. 3. Figs. 6, 7, and 8 are detail views of detached parts to be hereinafter referred to. Fig. 9 is a detail perspective view illustrating the manner of attaching and supporting the curved rack for adjusting the tongue.

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 is the floor or base of the machine, to which the tongue 11 is pivotally connected by a king-bolt 12, said bolt passing through an angular bracket 13, secured to the floor.

14 is a segmental or partially-circular rack provided with notches 15 in its outer face to

receive the lower ends of bars 16, which act as teeth and are secured to a lever 17, pivoted at 18 on a pin or bracket 19, projecting upward from the tongue 11 and supported normally in its upper position by a spring 20, located between it and the tongue. By pressing downward on the lever 17 the teeth 16 are released from the notches 15 in the segment 14, which will permit the tongue to be adjusted on the king-bolt to the right or left, as may be desired, to adjust the position of the curved blade or share 21 to adapt the machine for working upon the right or left hand side of the road. The segment or curved rack 14 is secured to the front edge of the curved blade or share 21 by having its rear ends bent downward behind the curved blade, as at 22, an L-shaped brace 23 being secured to the under side of each side of the curved rack and passed downward in front of the curved share, the bolts 24, which secure the downwardly-projecting ends of the curved rack, serving also to secure the braces 23 to the share.

Pivotally secured or hinged to the rear side of the share at 25 and 26 are the guide-plates 27 and 28, each being provided with a horizontal flange 29, having therein a series of perforations 30, in which are engaged the hook ends of brace-bars 31, pivoted at 32 to a rigid part of the machine, to be hereinafter referred to. When the machine is in operation, these guide-plates will be adjusted by means of the hook ends of the brace-bars 31 to lie in lines parallel with the tongue or line of draft.

33 and 34 are housings or upright hollow columns in which rack-bars 35 and 36 are mounted to slide vertically, having a rearward bearing against rollers 37 and 38, pivoted to the sides of the housings. These rack-bars are provided on their front sides with teeth 39 to engage with the teeth of gear-wheels 40, mounted on shafts 41 and 42, journaled in the housings and projecting inwardly toward the center of the machine, being provided on their inner ends with hand-wheels 43 and 44, whereby they may be turned to raise and lower the rack-bars. Projecting from the lower ends of the rack-bars are brackets 45 and 46, which carry shafts upon which are mounted wheels 47 and 48 and disks 49 and

50, the wheels being of less diameter than the disks and being intended to turn on the shaft and bear on the surface of the ground, while the disks are rigidly mounted on a square portion of the shaft and intended to cut into the ground and serve to prevent any lateral movement of the share. The housings are cut away at their front from the edge of the curved share 21, a portion being left sufficient to form a downwardly-projecting flange 51 to lie upon the front of the share and be secured thereto by a bolt 52. (See Fig. 5.)

The brace-bars 31, hereinbefore referred to, are pivoted at 32 to the housings. Pivoted at 53 and 54 to the housings 33 and 34, just above the floor 10, are treadle-bars 55 and 56, to which are secured brake-shoes 57 and 58, which lie upon the floor and are adapted to engage the under side of the hand-wheels 43 and 44 when pressed forward by the foot of the driver while sitting upon the wheel 59, erected upon the platform. This wheel is mounted upon an upright standard 60, which is threaded and passes through the supporting-bracket 61, projecting rearwardly from the floor, being prevented from moving upward or downward in said bracket by means of collars 62 and 63, one of which may be fixed and the other secured by a set-screw (Not shown.) The threaded end of this standard passes through a threaded opening in a block 64, mounted between arms or brackets 65 and 66, which are pivotally secured to the inner sides of the housings at 67 and 68 and project toward their outer ends, where they support a depending bracket 69, in which is mounted a caster-frame 70, carrying a wheel 71. The curved rack is held in the proper relative position vertically with regard to the tongue by means of a bolt 72, mounted in staples or bearings 73 and 74, extending from the under side of the tongue 11, and having a head 75, with a groove in its front end to overlap or embrace the rear edge of the curved rack 14, the bolt being held normally in contact with the edge of the rack by means of a spring 76, coiled about it between its supports.

The bracket 61, which supports the wheel-standard 60, is the rear end of one of the supporting-bars 79, by means of which the floor 10 is upheld, said supporting-bars being bent downwardly at their forward ends in front of the share and secured thereto by bolts 80.

The housings are braced by rods 81 and 82, secured at their lower ends to the floor 10 and at their upper ends to the outer sides of the housings. A keeper 83, secured at each end to the sides of the curved rack 14, passes over the tongue 11 and assists in preventing it from rising. A strong brace 84, secured at its rear upper end under the floor 10 and at its forward lower end to the curved share, serves to stiffen and maintain these parts in their proper relative positions.

In the operation of my improved road-grad-

ing machine the tongue and guide-plate 27 and 28 will be adjusted in substantially parallel lines at an inclination to the share, the parallel lines being also the line of draft, the wheels 47 and 48 and disks 49 and 50 being adjusted upward and downward, as desired, by means of the hand-wheels 43 and 44 and held in such adjusted position by means of the brake-shoes 57 and 58, the caster-wheel 71 adjusting itself to suit the line of draft.

From the foregoing description it will be seen that I have produced a durable and effective road-grading machine the parts of which are comparatively inexpensive and easy to be made and are secured together in such a manner as to make the structure strong and not readily breakable or liable to get out of order with ordinary use.

While I have illustrated and described the best means now known to me for carrying out my invention, I do not wish to be understood as limiting myself to the exact construction and arrangement shown and described, but hold that such slight changes and variations as might suggest themselves to the ordinary mechanic would properly fall within the limit and scope of my invention.

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 road-grading machine, the combination with the curved blade or share, of the tongue, adapted to be adjusted at an inclination to the share, and rear projecting guide-plates, hinged to the share and provided with means for adjusting them to parallelism with the tongue, substantially as described.

2. In a road-grading machine, the combination with the frame of the machine and the tongue pivoted thereto, of a curved rack, a spring-impelled slide-bolt, supported below the tongue in line therewith and having a grooved head to embrace the rear edge of the curved rack, substantially as described.

3. In a road-grading machine, the combination with the floor of the machine, the tongue pivoted thereto, a curved rack rigidly secured thereto beneath the tongue, having notches in its front edge, a hand-lever pivotally mounted on the tongue, tooth-bars secured to the forward end of said lever to engage in the notches, and a spring under the rear end of the lever to hold them normally in engagement, substantially as described.

4. In a road-grading machine, the combination with the floor and the housings, of the hand-wheels and their shafts mounted in the housings, the treadle-bars pivoted to the housings and bearing upon the floor, and the brake-shoes connected with the treadle-bars and adapted to engage hand-wheels, substantially as described.

5. In a road-grading machine, the combination with the frame of the machine and the curved share, of guide-plates, pivoted to the rear of the share near its ends and having

horizontal perforated flanges, and brace-rods, pivoted to the frame of the machine and having hooked ends to engage the perforations in the flanges of the guide-plates, substantially as described.

5 6. In a road-grading machine, the combination with the floor of the machine and the housings, of the converging brackets, pivotally secured at their front ends to the sides
10 of the housings, a caster frame and wheel suspended between their outer ends, a block mounted between them near their outer ends, having a screw-threaded opening, a bracket projecting to the rear of the floor above the
15 screw-threaded block, and a stool mounted upon a standard swiveled in said bracket and screw-threaded to engage in the screw-thread-

ed opening in the block, substantially as described.

7. In a road-grading machine, the combination with the floor of the machine and the housings, of the shafts mounted in the housings, the hand-wheels on the inner ends of said shafts, the treadle-bars pivoted to the inner ends of the housings, the brake-shoes
25 secured to the treadle-bars, and the stool mounted in position to bring the feet of the driver in the proper position to operate the treadle-bars, substantially as described.

JOHN V. MAXEY.

Witnesses:

NORMAN A. PIERCY,
NORMAN H. MOSS.