

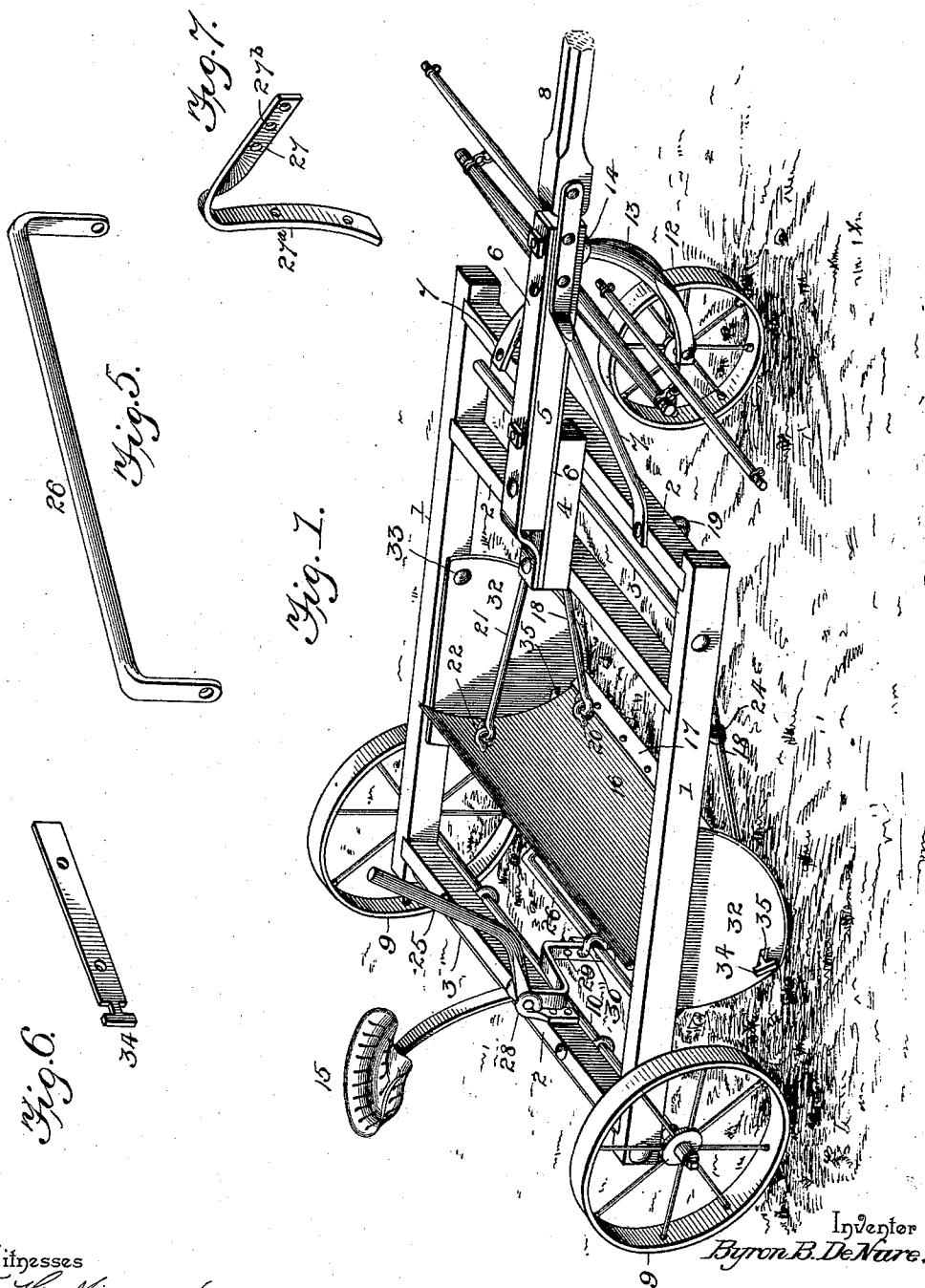
(No Model.)

2 Sheets—Sheet 1.

B. B. DE NURE.
LEVELING MACHINE.

No. 580,778.

Patented Apr. 13, 1897.



Witnesses

E. H. Moore

By *Ni's* Attorneys,

Inventor

Byron B. DeNure.

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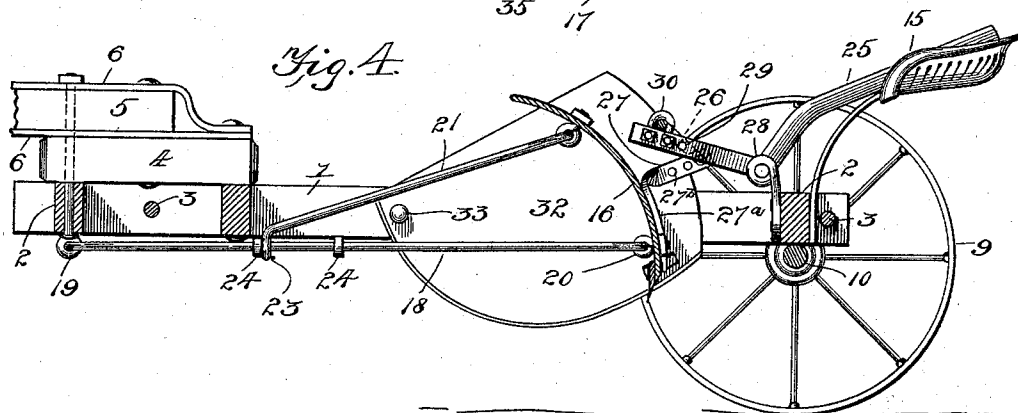
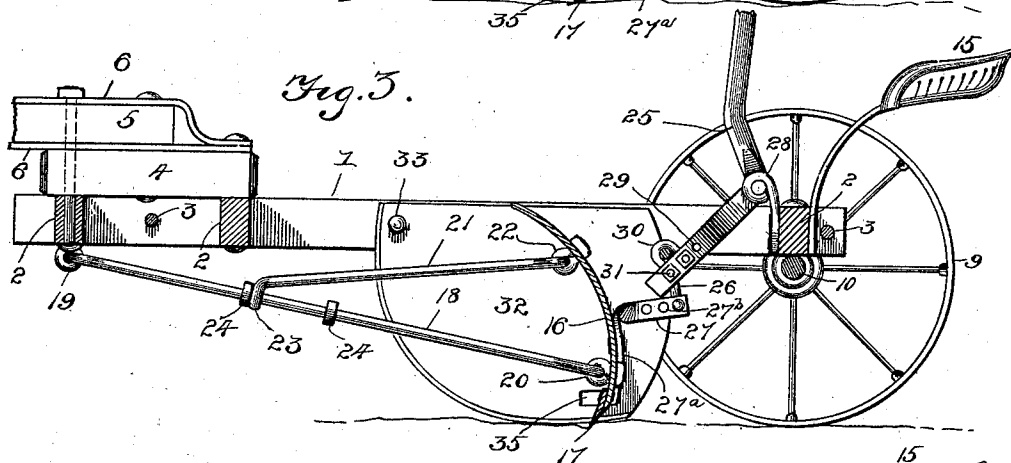
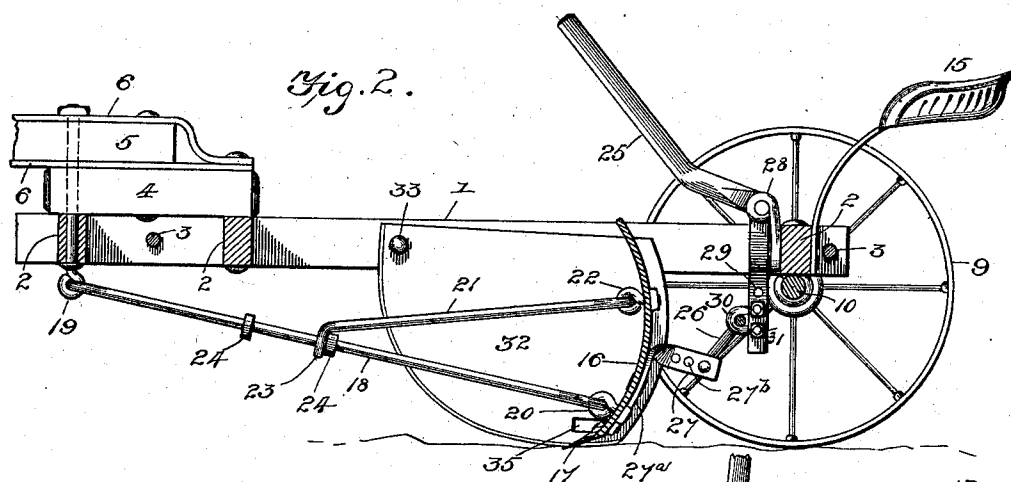
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2 Sheets—Sheet 2.

B. B. DE NURE.
LEVELING MACHINE.

No. 580,778.

Patented Apr. 13, 1897.



Witnesses

E. H. Monroe

By his Attorneys,

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Inventor
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UNITED STATES PATENT OFFICE.

BYRON B. DE NURE, OF VEKOL, ARIZONA TERRITORY.

LEVELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 580,778, dated April 13, 1897.

Application filed November 14, 1895. Serial No. 568,985. (No model.)

To all whom it may concern:

Be it known that I, BYRON B. DE NURE, a citizen of the United States, residing at Vekol, in the county of Pinal and Territory of Arizona, have invented a new and useful Leveling-Machine, of which the following is a specification.

My invention relates to machines for leveling and scraping land, the object thereof being to provide a simple, light, and powerful land-leveler that may be easily manipulated to tilt the scraper-blade forward to distribute its load evenly so as to fill depressions, and also to raise the scraper-blade free from the ground.

The invention further contemplates the provision of a locking-lever to prevent the accidental dumping of the scraper; also the provision of side cutter-blades of novel and superior shape.

With these and other objects in view my invention consists of the novel features of construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the complete leveler. Fig. 2 is a central longitudinal section thereof, showing the parts in operative position. Fig. 3 is a similar view showing the scraper in the dumping position. Fig. 4 is a similar view showing the scraper elevated. Fig. 5 is a detail view of the bail. Fig. 6 is a similar view of the guide-lugs for the scraper. Fig. 7 is a similar view of one of the brackets.

The leveler comprises a scraper-blade and operating mechanism therefor, which are arranged in a suitable open frame, having running-gear of any approved pattern. I prefer to use a frame composed of side beams 1 and cross-pieces 2, two in front and one at the rear, mortised together and also braced and held rigidly in place by tie-rods 3. Longitudinally connecting the two front pieces 2 is a brace-block 4, to the top of which is bolted the tongue-support 5, braced and strengthened by iron straps 6 and lateral braces or hounds 7. The tongue 8 is pivoted between the front projecting ends of the hounds 7. The running-gear consists of broad-tired rear wheels 9, mounted on the axle 10, and a swiveled caster 12, mounted in the bifurcated and rearwardly-bent post 13, loosely pivoted verti-

cally above its collar 14 in the tongue-support 5. A driver's seat 15 is centrally secured to the rear cross-piece 2.

The scraper-blade 16 is made of iron or wood, concaved toward the front, and loosely fitting between the side beams 1. The blade is provided with an interchangeable steel cutting edge 17 at its lower front edge. The scraper-blade 16 is held to the frame at its lower edge by means of a plurality, preferably two in number, of strong draw-bars 18, which are secured, respectively, at either side of the frame to eyebolts 19 in the front cross-piece 2 and at either end of the scraper-blade to eyebolts 20, secured through the blade just above the cutting edge 17. The upper edge of the scraper-blade is held in proper position by means of links 21, connected by eyebolts 22 to the scraper-blade near the upper edge thereof and provided at their front ends with laterally-disposed depending eyes 23, which are fitted to slide upon the draw-bars 18 and play back and forth thereover between stop collars or shoulders 24, rigidly welded or otherwise fixed on the draw-bars about midway of their length.

The scraper-blade is supported at its rear side by means of a hand-lever 25 and long bail 26, the latter being horizontally pivoted at its downturned ends to the radially-disposed arms 27 of the strengthening and supporting brackets 27^a, which are bolted across the ends of the scraper-blade. The hand-lever 25 is journaled horizontally in suitable bearings 28, secured to the rear cross-piece 2 adjacent to the driver's seat 15. The lower end of the hand-lever 25 is offset laterally to extend to the center of the lifting-bail 26, directly in front of the driver, and is provided with an obliquely-arranged series of perforations or holes 29 for the bolt-clip 30. This bolt-clip is secured in the proper perforations 29 by nuts 31 to give the scraper-blade the desired dip. The arrangement of these parts is such that when the scraper-blade is thrown down with the hand-lever forward the bolt-clip is just to the rear of the dead-center line, between bearings 28 and the bail-pivots at 27, so that the scraper-blade is thereby locked in place against being thrown up by any obstruction or load against its scraping edge.

At either end of the scraper-blade a sheet-

iron wing or fender 32, perpendicular thereto, is hung at its forward upper corner on a stud-bolt 33 to the inner face of the side beam 1, so as to swing vertically in facial contact with the beam between the beam and contiguous end of the scraper-blade. Vertical movement is given to these fenders 32 by means of T-lugs 34, bolted or otherwise fixed at the extremities of the scraper-blade near the cutting edge to project into slots 35 in the fender. The fenders are curved upwardly and forwardly at their lower and front edges and sharpened to provide cutting edges to mark and separate the sod or earth at the ends of the scraper.

The operation of my improved leveler is very simple and efficient. The lever is thrown forward to its extreme limit to lower the scraper to operative position, as shown in Fig. 2. When it is desired to distribute the load so as to fill in the uneven places and depressions, the lever is pulled back slightly to throw the bail past its dead-center and thereby unlock the scraper-blade, and then pulled farther back to throw the scraper-blade forward at its upper edge, as shown in Fig. 3. This forward throw is permitted by reason of the stop-collars 24 and link-eyes 23. If it is now desired to discontinue work or to pass a boulder or other obstruction, a further back pull on the hand-lever will lift the scraper-blade on its draw-bars 18 and at the same time will lift the fender-wings by means of the T-headed lugs 34 and slots 35, as shown in Fig. 4.

It is often desirable to throw out more dirt, in grading or leveling, at one place than at another, and the forward movement of my scraper-blade meets this requirement admirably, as it can be thrown over wholly or partially at any moment without discontinuing the scraping operation.

The arms 27 are perforated, as shown at 27^b, to vary the adjustment of the arms of the bail 26, and the hand-lever is similarly perforated, as described, to vary the adjustment of the center of the bail, whereby the inclination of the bail to secure the desired locking action of the parts may be attained.

Many changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a leveling-machine, a transverse scraper-blade pivoted at its lower scraping edge and having at its upper edge a limited forward-swinging movement without varying the vertical position of its lower edge, whereby the scraper remains operative while its load is distributed, and also having vertical movement to remove its lower edge from contact with the soil, an operating-lever fulcrumed in rear of said blade, and connections between the lever and the blade whereby the latter

may be tilted from its normal position and subsequently elevated to remove its lower edge from contact, substantially as specified.

2. In a leveling-machine, a transverse scraper-blade pivoted at its lower scraping edge and adapted to swing forward to a limited extent at its upper edge, whereby the cutting edge of the scraper remains in operative position while at the same time the load may be distributed in varying amounts, an operating-lever mounted in rear of said blade, for tilting and elevating the same, and locking devices for securing the blade in its rearwardly-inclined position, substantially as specified.

3. In a leveling-machine, the combination with a frame, of draw-bars, pivoted at their forward ends to the frame and provided with limiting-stops intermediate of their lengths, a scraper-blade hinged adjacent to its lower edge to the rear ends of said bars, links hinged at their rear ends to said blade above the connection of the draw-bars and provided with eyes at their forward ends fitted to slide upon said bars between the stops, and operating means for supporting and elevating said blade, substantially as specified.

4. In a leveling-machine, the combination with a frame, of draw-bars, pivoted at their forward ends to the frame, and provided with limiting-stops intermediate of their lengths, a scraper-blade, hinged adjacent to its lower edge to the rear ends of said bars, links hinged at their rear ends to said blade above the draw-bars and provided with eyes at their forward ends fitted to slide on said bars between the stops, and means for supporting said blade in its vertical position, said means comprising a bail pivoted to the back of the blade and a lever journaled upon said frame and pivoted at its lower end to said bail, substantially as specified.

5. In a leveling-machine, the combination with a frame, of draw-bars, pivoted at their forward ends to the frame, and provided with limiting-stops intermediate of their lengths, a scraper-blade, hinged adjacent to its lower edge to the rear ends of said bars, links hinged at their rear ends to said blade above the draw-bars and provided with eyes at their forward ends fitted to slide upon said bars between the stops, and means for supporting said blade in its vertical position, said means comprising a bail pivoted to the back of the blade and a lever journaled intermediately to the said frame and pivoted at its lower end to said bail, said parts being arranged so that the lower end of the lever swings normally past the dead-center line of the lever-journal and bail-pivots, substantially as specified.

6. In a leveling-machine, the combination with a frame, of draw-bars, pivoted at their forward ends to the frame, and provided with limiting-stops intermediate of their lengths, a scraper-blade, hinged adjacent to its lower edge to the rear ends of said bars, links hinged at their rear ends to said blade above the draw-

bars and provided with eyes at their forward ends fitted to slide upon said bars between the stops, means for supporting said blade in its vertical position, and fender-wings at the ends of the blade loosely pivoted thereto at its lower edge, said fenders being pivoted to the frame at their forward upper corners, substantially as specified.

7. In a leveling-machine, the combination with a frame, of draw-bars, pivoted at their forward ends to the frame, and provided with limiting-stops intermediate of their lengths, a scraper-blade hinged adjacent to its lower edge to the rear ends of said bars, links hinged at their rear ends to said blade above the draw-bars, and provided with eyes at their forward

ends fitted to slide upon said bars between the stops, means for supporting said blade in its vertical position, and a fender-wing at each end of the blade loosely pivoted thereto at its lower edge, said fender being pivoted to the frame at its forward upper corner and having a sharpened, curved lower and front edge, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BYRON B. DE NURE.

Witnesses:

H. C. PURSELL,
J. C. BRISON.