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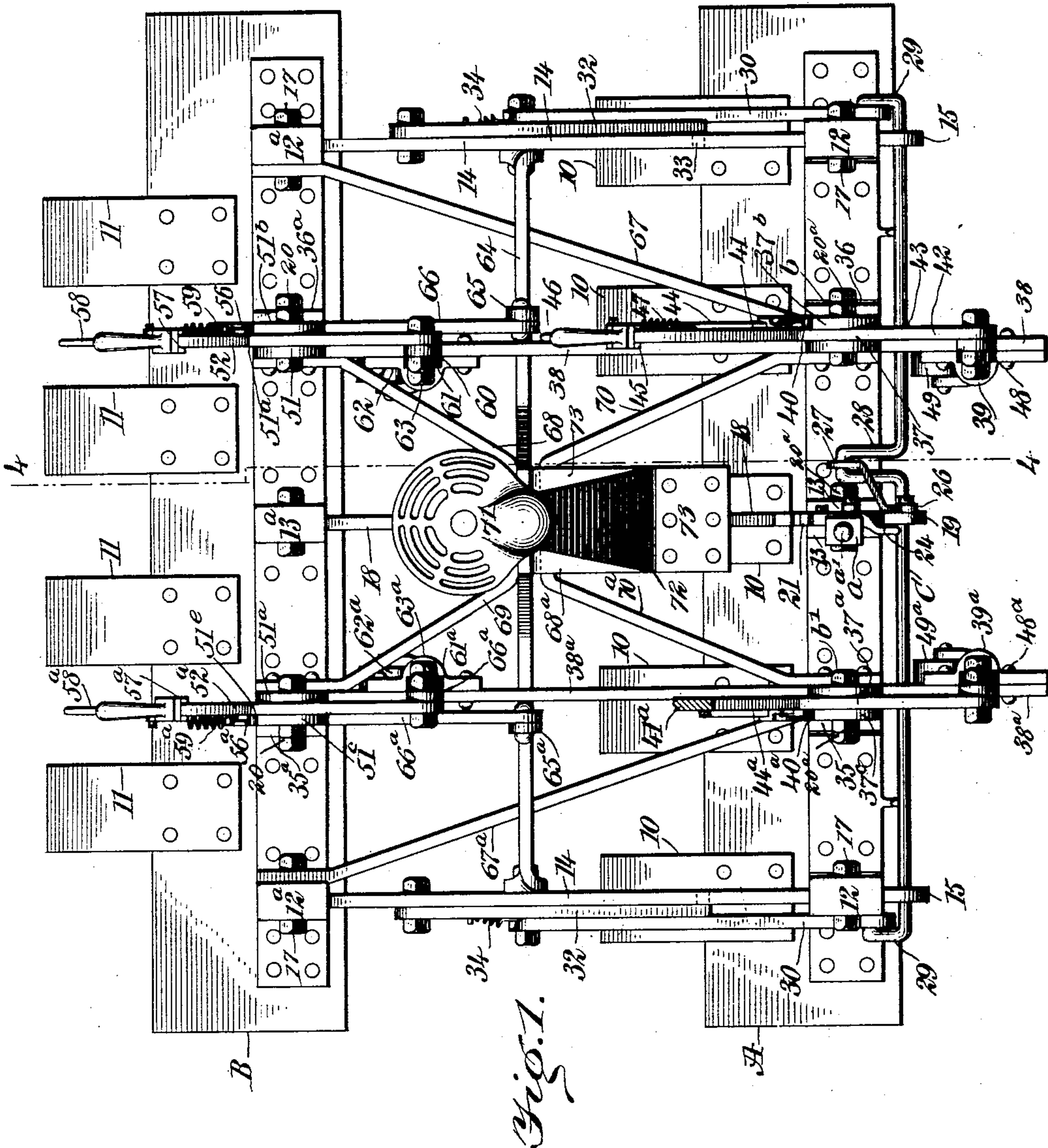
PATENTED FEB. 9, 1904.

F. W. ARNDT.
LAND EVENER.

APPLICATION FILED OCT. 17, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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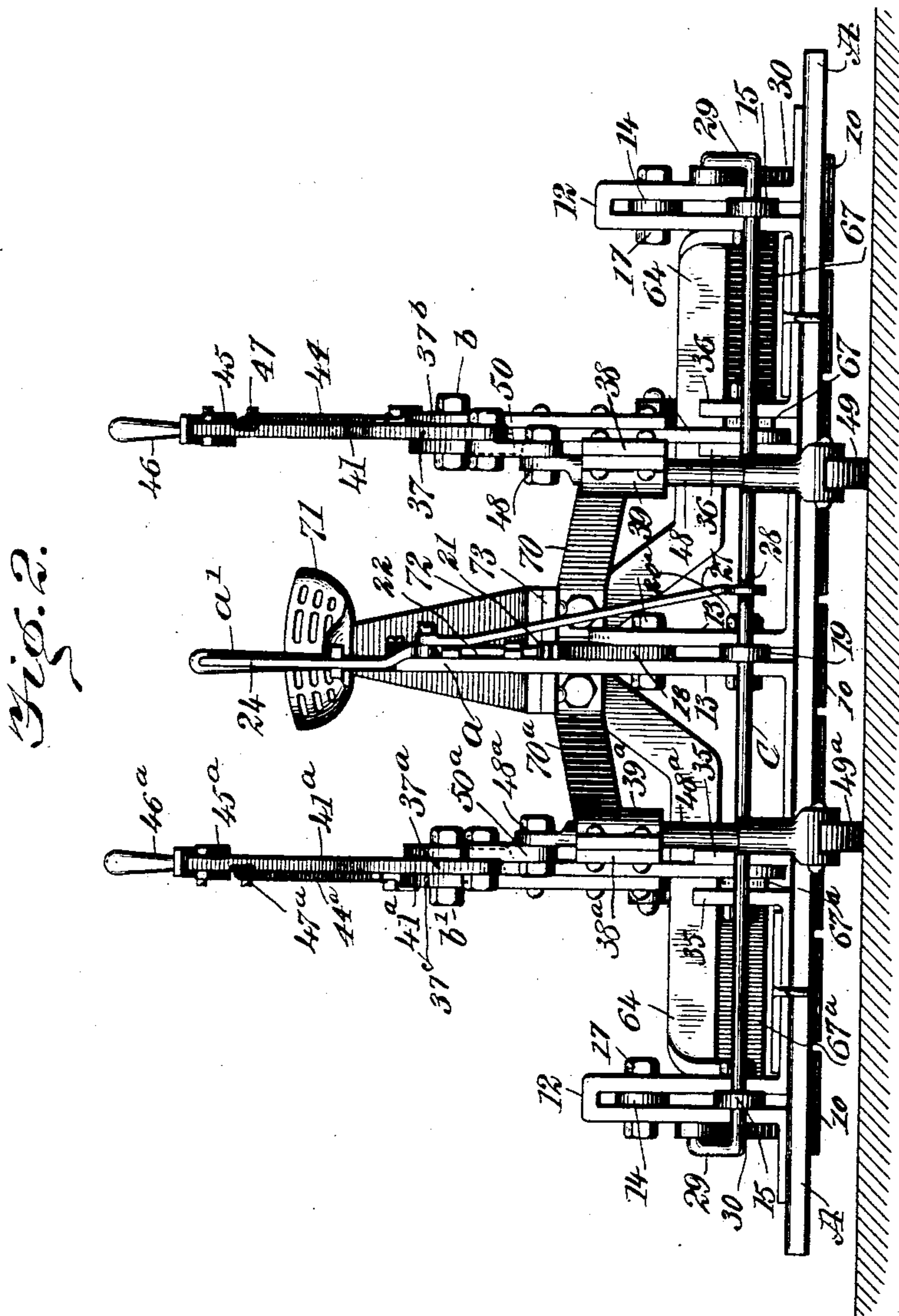
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4 SHEETS—SHEET 2.



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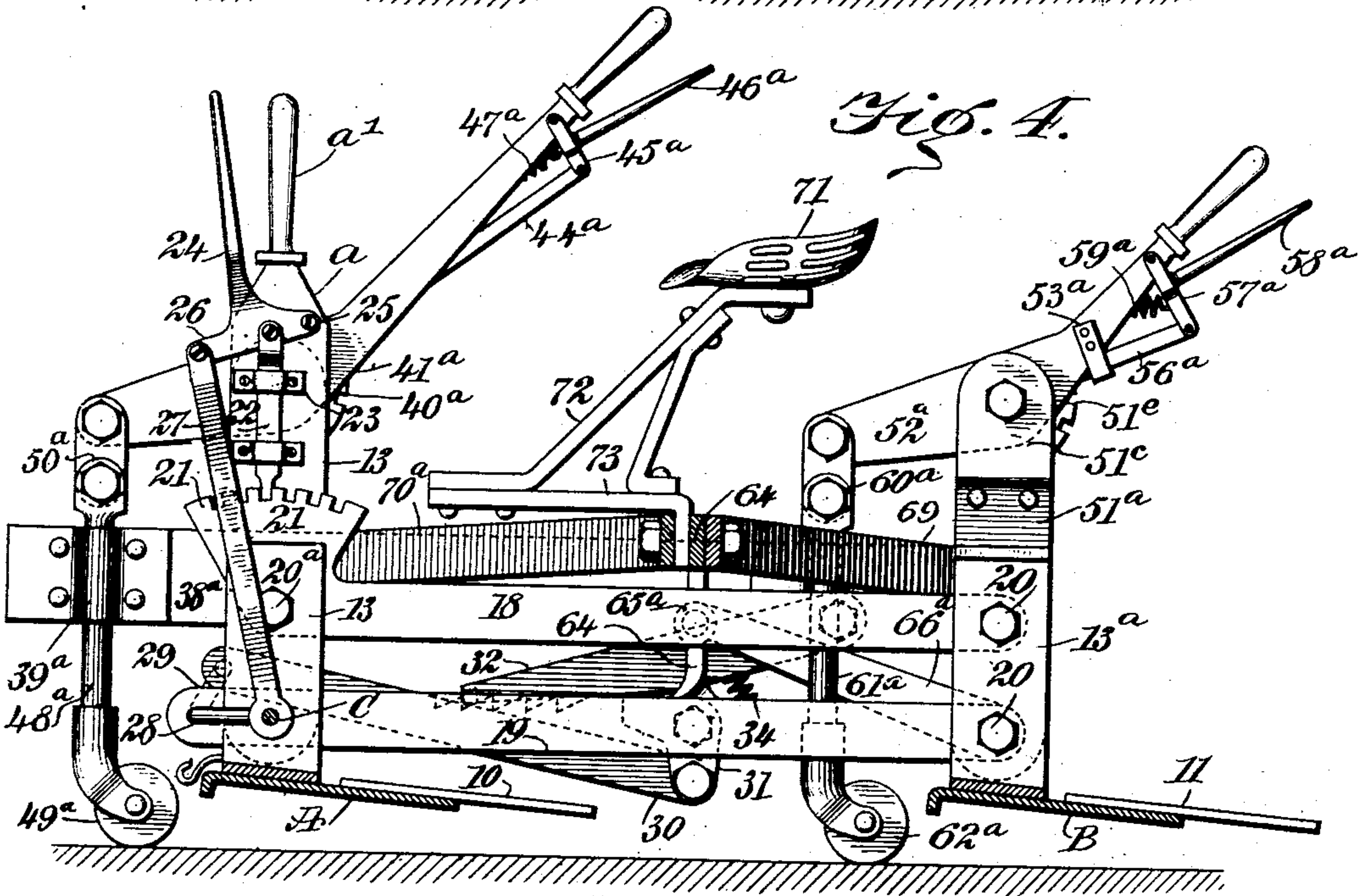
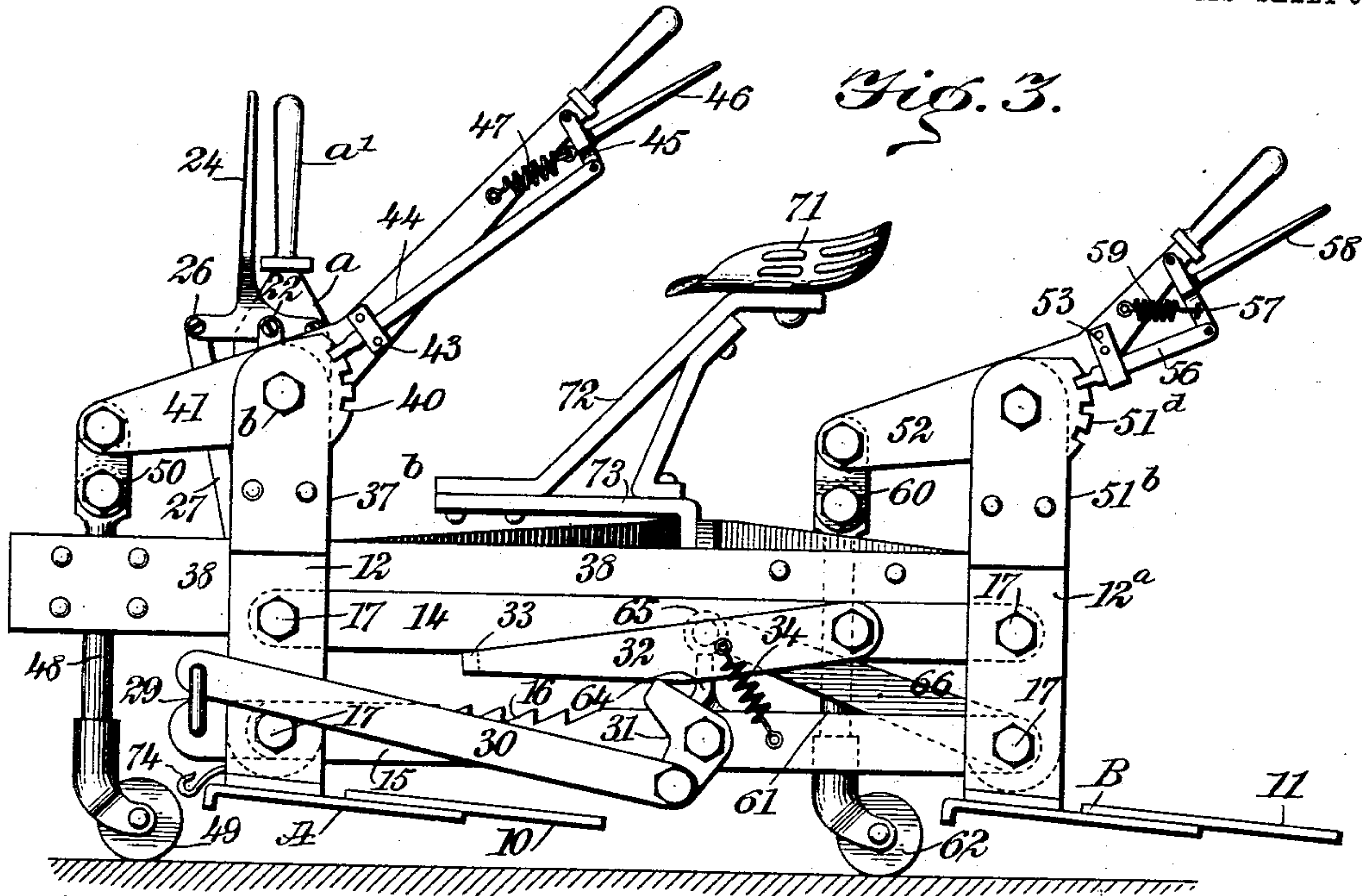
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4 SHEETS—SHEET 3.



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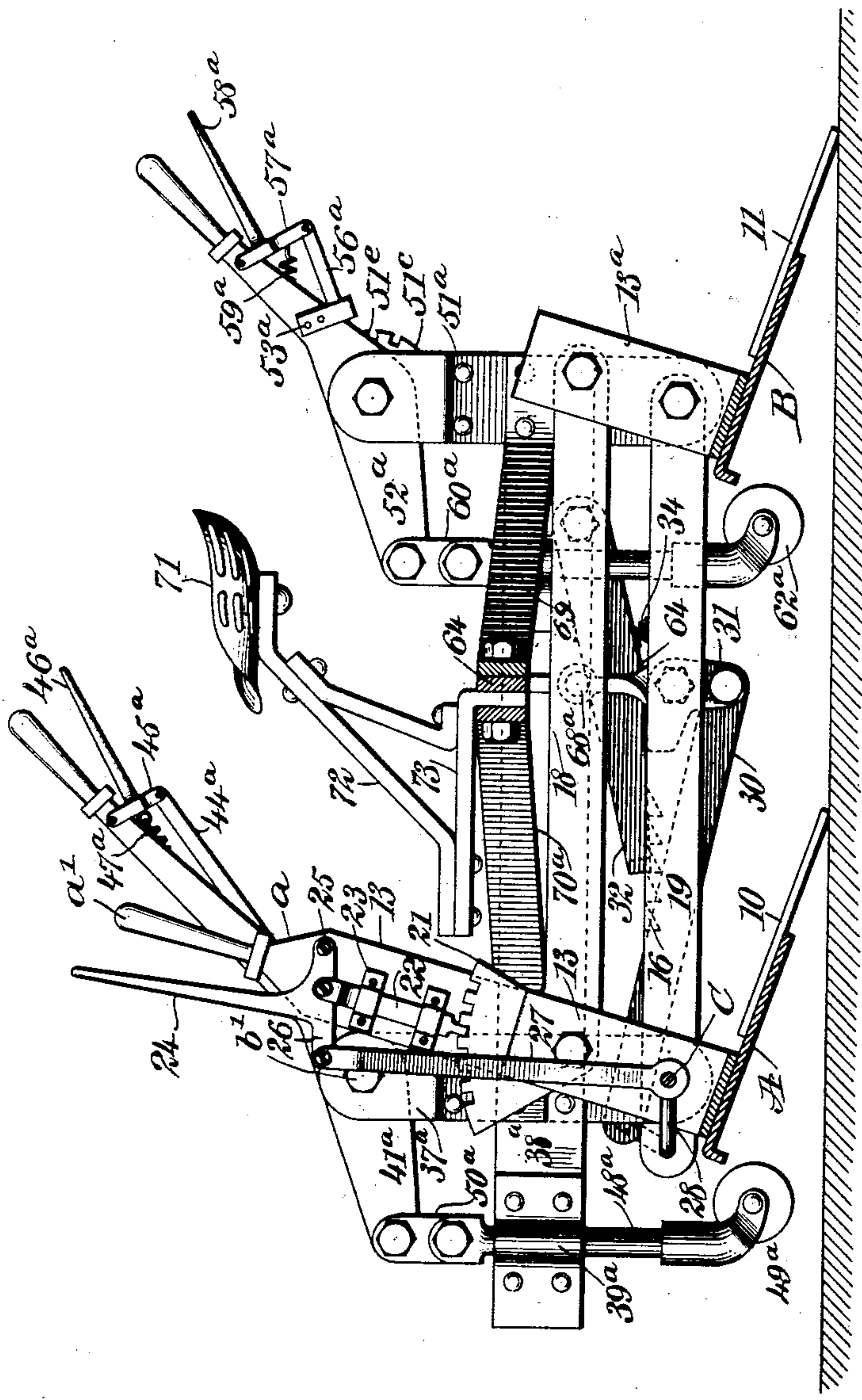
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4 SHEETS—SHEET 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDERICK WILLIAM ARNDT, OF PLATTE CENTER, NEBRASKA.

LAND-EVENER.

SPECIFICATION forming part of Letters Patent No. 751,826, dated February 9, 1904.

Application filed October 17, 1903. Serial No. 177,409. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM ARNDT, a citizen of the United States, and a resident of Platte Center, in the county of Platte and State of Nebraska, have invented a new and Improved Land-Evener, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a machine for evening the ground so constructed that the finger of front and rear bars can be adjusted to more or less forcibly touch the ground at a desired inclination and be held in adjusted position until released and wherein when the evener-bars are adjusted from engagement with the ground adjustably-mounted supporting-wheels will be brought into position to form roller-supports for the device, enabling it to be readily drawn to or from the field.

Another purpose of the invention is to provide means for adjusting the wheel-supports and for regulating the inclination of the leveling members of the machine, which means are within easy reach from the driver's seat, and to construct a machine of the character above described in a simple, durable, and economic manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the machine. Fig. 2 is a front elevation thereof. Fig. 3 is a side elevation of the machine. Fig. 4 is a transverse section taken practically on the line 4-4 of Fig. 1, the leveling members being elevated; and Fig. 5 is a view similar to that shown in Fig. 4, but illustrating the position of the parts when the leveling members are lowered.

A represents the front bar of the machine, and B the rear bar, and these two bars are termed "leveling-bars," since the forward bar A carries a number of rearwardly-extend-

ing leveling-fingers 10 and the rear bar B carries corresponding leveling-fingers 11. The leveling-fingers on the two bars A and B may be in any desired number; but the leveling-fingers on the rear bar are less in number than the fingers on the forward bar, and the fingers 11 on the rear bar occupy a position which is in transverse alinement with the spaces between the fingers on the forward bar—as, for example, five leveling-fingers may be secured to the forward bar A, in which event four fingers 11 are secured to the rear bar B, as is illustrated in Fig. 1.

A standard 12 is secured to the upper face of the front leveling-bar A, near each end, and these standards 12 are inverted-U-shaped, as illustrated. Corresponding standards 12^a are secured to the rear leveling-bar B. At the central portion of the front leveling-bar A two standards 13 are located, the standards being disconnected, and one of the standards (that designated as *a*) is longer than the other, as is best shown in Figs. 4 and 5, and this longer standard *a* terminates at its upper end in a handle *a'*. The longer standard *a* of the central group 13 is adapted for use as a lever or as a shifting-bar to change the position of the front leveling-bar A and through connections to be hereinafter described correspondingly change the position of the rear leveling-bar B. An inverted-U-shaped standard 13^a occupies a position on the rear leveling-bar B corresponding to the position of the front standards 13. Connecting-bars 14 and 15, located one above the other, are pivotally connected in the opposing end standards 12 and 12^a, as is shown in Fig. 3, and in the upper edge of the lower connecting-bars 15 teeth 16 are produced, having more or less of a rearward inclination, the lower connecting-bars 15 extending beyond the forward standards 12. The parallel connecting-bars 14 and 15 at each end portion of the machine are pivoted in their respective standards 12 and 12^a by means of suitable bolts 17 or their equivalents, and at the central portion of the machine parallel connecting-bars 18 and 19 are located, also one above the other, as is shown in Fig. 4, being pivoted at their rear ends by suitable

bolts 20 in the rear standard 13^a and by bolts 20^a or their equivalents between the members of the forward central standard 13. At the forward end of the upper connecting-bar 18 a rack 21 is formed, and this rack extends above the shorter member of the standard 13, as is also shown in Fig. 4, and the spaces between the teeth of the rack 21 are adapted to receive the lower end of a latch-bar 22, mounted to slide in suitable guide-loops 23, secured to the longer member *a* of the said central standard 13, as is shown in Figs. 4 and 5. The upper end of the latch-bar 22 is pivotally attached to about the central portion of the head of an inverted-T-shaped thumb-lever 24, pivoted at one end of its head to the longer member *a* of the standard 13, as is shown at 25 in Figs. 4 and 5, and the opposite end 26 of the head portion of the lever 24 is pivotally attached to a link 27, which extends downward and is attached to a crank-arm 28, formed about centrally upon a shaft C, which shaft is journaled, preferably, in openings in the forwardly-extending ends of the end connecting-bars 15 and in the forwardly-projecting end of the lower central connecting-bar 19, as is illustrated in Fig. 1. A crank-arm 29 is formed at each end of the shaft C, the crank-arms 29 extending in the same direction and likewise in the same direction as the central crank-arm 28, as is also shown in Fig. 1. The crank-arms 29 are pivotally attached to end links 30, and the said end links 30 are pivotally connected with angle lifting-fingers 31, pivoted on the lower connecting-bars 15 at the ends of the machine, as is shown in Fig. 3, and these lifting-fingers are each adapted for engagement with the under edge of a latch-arm 32, the latch-arms being pivoted at their rear ends at the rear outer portions of the upper end of the connecting-bars 14, as is best shown in Fig. 3. Each latch-arm 32 is provided with a head 33, adapted for engagement with the teeth 16 in a lower end connecting-bar 15, as is shown in Figs. 4 and 5, the heads of the latch-arms being normally held in engagement with the said teeth 16 by means of springs 34, attached to the latch-arms and to the lower connecting-bars 15. In the operation of this portion of the machine when the thumb-latch 24 is drawn rearward or in direction of the handle *a'* of the lever-arm *a* of the standard 13 the latch 22 is disengaged from the rack 21 and the shaft C is operated in a manner to cause the lifting-fingers 31 to elevate the latch-arms 32, disengaging their heads 33 from the teeth 16, as is illustrated in Fig. 3, whereupon said lever arm or member *a* of the standard 13 can be drawn rearward, as is illustrated in Fig. 5, bringing the fingers 10 and 11 on the leveling-bars A and B in engagement with the ground at their free ends and imparting to the said bars A and B simultaneously the same inclination through the operation of the parallel connecting-rods 14 and 15 and 18 and

19, and after the leveling-bars have been suitably adjusted they are held in the adjusted position by means of the latch 22, entering the space between the teeth of the rack 21, and, further, by the engagement of the heads 33 of the latch-arms 32 with the teeth 16, which engagement is brought about as soon as the latch-lever 24 is again carried forward.

At one side of the central forward standard 13 short twin standards 35 are secured to the front bar A, and at the opposite side corresponding standards 36 are secured to the same bar, while corresponding standards 35^a and 36^a are fastened in any approved manner to the rear bar B. A rocking bar 37 is pivoted between the twin standards 36, and a similar rocking bar 37^a is pivoted between the standards 35. A corresponding rocking bar 51 is pivoted between the twin standards 36^a, and a similar rocking bar 51^a is pivoted between the twin standards 35^a. The rocking bars 37 and 51 are connected by a horizontal wheel-carrying bar 38, and the rocking bars 37^a and 51^a are connected by a similar wheel-carrying bar 38^a, both of the wheel-carrying bars being made to extend beyond the front edges of the forward rocking bars 37 and 37^a. Bearings 39 and 39^a are respectively fastened at the outer end portions of the wheel-carrying bars 38 and 38^a, and at the outer sides of the rocking bars 37 and 37^a added outer side members 37^b and 37^c are secured, having rearwardly-extending racks at their upper ends, (designated as 40 and 40^a.)

A lever, preferably an angle-lever 41, is fulcrumed, by means of a suitable bolt *b*, at the upper end of the rocking bar 37 between said bar and the outer side bar 37^b, and a similar lever 41^a is fulcrumed, by means of a suitable bolt *b'*, at the upper end of the rocking bar 37^a between said bar and the outer side bar 37^c. The levers 41 and 41^a are provided near their forward ends with guide-loops, (designated as 43,) and links (designated, respectively, as 44 and 44^a) are mounted to slide in the guide-loops 43 of the levers 41 and 41^a, engaging with the racks 40 and 40^a. The link 44 at its rear end is pivotally attached to a head-block 45, pivoted to the rear or handle end of the lever 41, the said block being provided with a handle 46 adjacent to the handle of the lever, and a spring 47 is connected with the lever 41 and the head-block 45, serving to normally hold the link 44 in engagement with the rack 40. The same arrangement is provided for the lever 41^a, in which the link is designated as 44^a, the head-block as 45^a, the handle for the head-block as 46^a, and the spring as 47^a.

A shank 48 has free vertical movement in the bearing 39 on the wheel-supporting bar 38, and the said shank carries a wheel 49 at its lower end and is connected by a link 50 at its upper end with the forward extremity of the lever 41. A corresponding arrangement

is provided for the lever 41^a and the wheel-supporting bar 38^a, in which the shank is designated as 48^a and the wheel as 49^a and the link as 50^a.

5 At the upper end of the rear rocking bar 51 a lever 52, usually an angle-lever, is pivoted, and a similar lever 52^a is pivoted on the rear rocking bar 51^a. The lever 52 is provided with a forwardly-extending latch-bar 56, held
10 to slide in slideways 53 and to engage with a rack 51^d upon an added bar 51^b, extending upward from a side of the rocking bar 51, and the said latch-bar 56 is pivotally connected with a head-block 57, having a handle 58 and
15 a spring 59, connected with the lever 52, and the head-block 57 serves to normally hold the latch-bar 56 in engagement with the rack 51^d at the rear upper edge of the added bar 51^b, the lever 52 being pivoted between the rocking bar 51 and added bar 51^b. The opposite
20 rear lever 52^a is provided with a latch-bar 56^a, engaging with a rack 51^e at the upper rear portion of an added bar 51^c, secured to the rocking bar 51^a, the lever 52^a being fulcrumed
25 between the bars 51^a and 51^c. The rear end of the latch-bar 56^a is pivoted to a head-block 57^a, having a handle 58^a, the head-block being controlled by a spring 59^a. A link 60 extends down from the lever 52, and a corresponding
30 link 60^a extends down from the lever 52^a, a shank 61 being pivoted to the link 60 and a shank 61^a to the shank 60^a. At the lower end of the shank 61 a wheel 62 is mounted to turn, and a corresponding wheel 62^a is provided for
35 the shank 61^a. The shank 61 is guided in a suitable bearing 63, attached to the wheel-carrying bar 38, and the shank 61^a is similarly guided by means of a bearing 63^a, attached to the wheel-carrying bar 38^a.

40 A cross-bar 64 is pivoted at its ends to the lower end connecting-bars 15, and this cross-bar 64 is made to straddle the upper central connecting-bar 18. Extensions 65 and 65^a are made from the said cross-bar 64, and links 66 and 66^a are respectively pivoted to the extensions 65 and 65^a and to the rear uprights 36^a and 35^a.

A brace-bar 67 is pivotally connected with the rear end standard 12^a and with a forward
50 intermediate standard 36, and a similar brace 67^a is connected with the other rear end standard 12^a and with the forward intermediate standard 35. Braces 68 and 69 are attached to the rear central portion of the cross-bar 64
55 and to the rear end portions of the wheel-carrying bars 38 and 38^a or to the rear rocking bars 51 and 51^a, as may be found most convenient. Corresponding forward braces 70 and 70^a are attached to the forward central
60 portions of the cross-bar 64 and to the forward portions of the said wheel-carrying bars or the forward rocking bars, with which they are connected.

The driver's seat 71 is supported by a tri-
65 angular bracket 72, and this bracket is ordi-

narily attached to a horizontal bracket 73, secured to the central portion of the cross-bar 64.

It will be observed that the forward and the rear wheels may be independently raised or lowered as far as may be desired, and when
70 the wheels have been suitably adjusted, as is shown in Fig. 3, to carry the leveling members from the ground when the leveling members are in their normal position the machine may be wheeled readily to and from the field,
75 and when the leveling-bars are adjusted downward to working engagement with the ground, as is shown in Fig. 5, the supporting-wheels will be out of engagement with the ground, as is shown in the same figure.
80

Suitable draft devices will be located at the forward portion of the machine for the purpose of hitching a team to the leveler.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—
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1. In a land-evener, a wheel-supported frame comprising a series of pivotally-connected members, front and rear leveling-bars carried by the frame, fingers extending from the leveling-bars, and independent adjusting
90 devices connected with the leveling-bars, to raise and lower them and to carry the fingers into and out of engagement with the ground, as described.

2. In land - eveners, a wheel - supported
95 frame, means for raising and lowering the wheels of the frame, locking devices for said means, parallel leveling-bars at the front and rear lower portions of the frame, fingers extending rearwardly from the rear longitudinal
100 edges of the leveling-bars, parallel connecting-bars arranged in series and pivotally connecting the leveling-bars, adjusting devices for the connecting-bars, and locking devices for the adjusting devices, as described.
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3. In a land-evener, parallel leveling-bars, fingers extending rearwardly from the rear longitudinal edges of the said bars, parallel
110 connecting-bars, arranged in series and pivotally connecting the leveling-bars, an adjusting device for the leveling-bars, a locking device for the connecting-bars, and mechanism connecting the adjusting device with the said locking device, whereby to automatically
115 release the locking device from locking position prior to the operation of the adjusting device, as described.

4. In a land-evener, parallel leveling-bars, parallel connecting-bars in series pivotally
120 uniting the leveling-bars, supporting-bars pivotally connected with the leveling-bars, forward and rear wheels adjustably carried by the supporting-bars, adjusting and locking devices for the said wheels, and an adjusting
125 and a locking device for the leveling-bars, as set forth.

5. In a land-evener, parallel leveling-bars, parallel connecting-bars pivotally connecting
the leveling-bars, a locking device for the connecting-bars, a shifting device for the
130

leveling-bars, a connection between the locking device and the adjusting device, whereby the two are simultaneously operated, wheels adjustably carried by both of the said leveling-
5 bars, independent adjusting-levers for the said wheels, and locking devices for the wheels carried by each adjusting-lever, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK WILLIAM ARNDT.

Witnesses:

JOHN MOFFETT,
W. P. SCHELP.