No. 648,133. Patented Apr. 24, 1900.

W. & J. REUTHER.

POTATO DIGGER.

(Application filed Dec. 10, 1898.)

(No Model.) 4 Sheets—Sheet 1

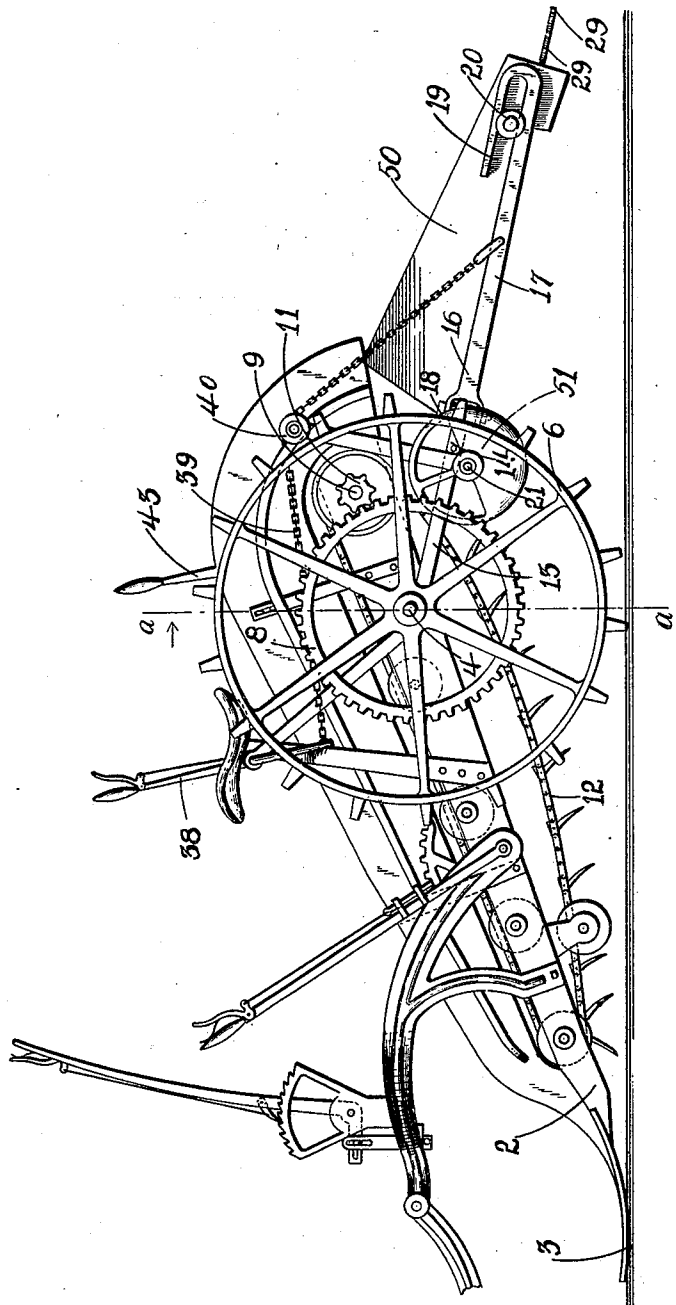


Fig. 1.

Witnesses.
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By A. J. Sangster. Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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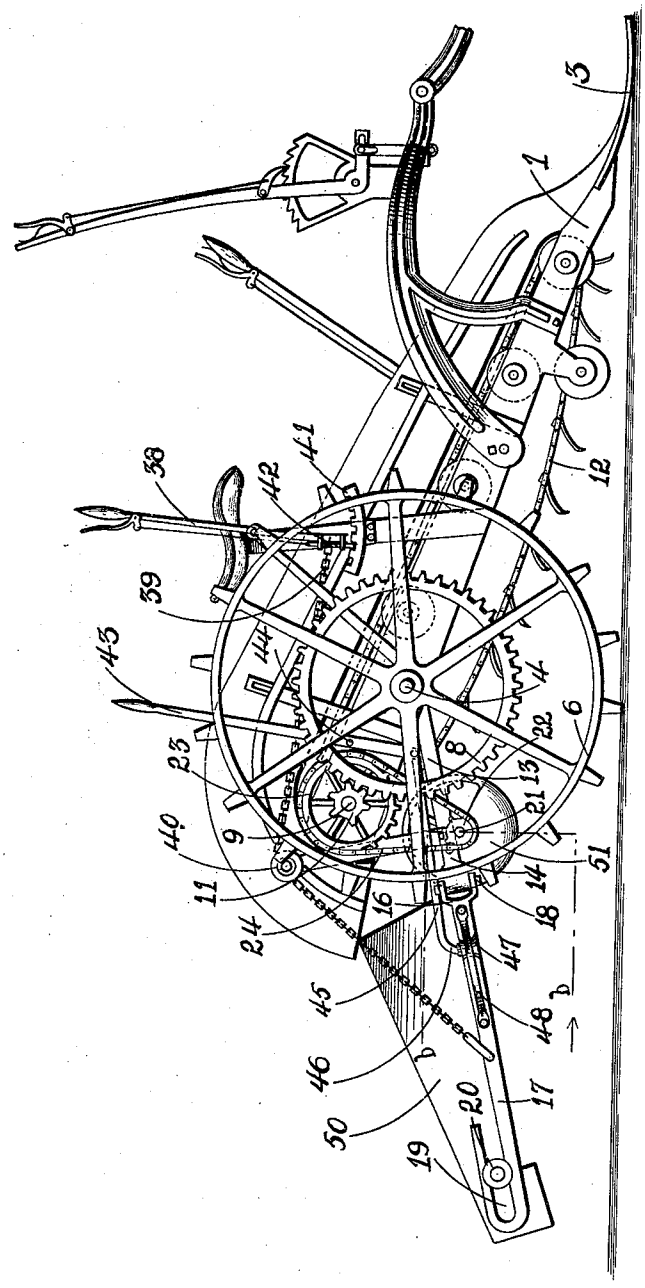
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(No Model.) 4 Sheets—Sheet 2.

Fig. 2.



Witnesses.

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(No Model.) 4 Sheets—Sheet 3.

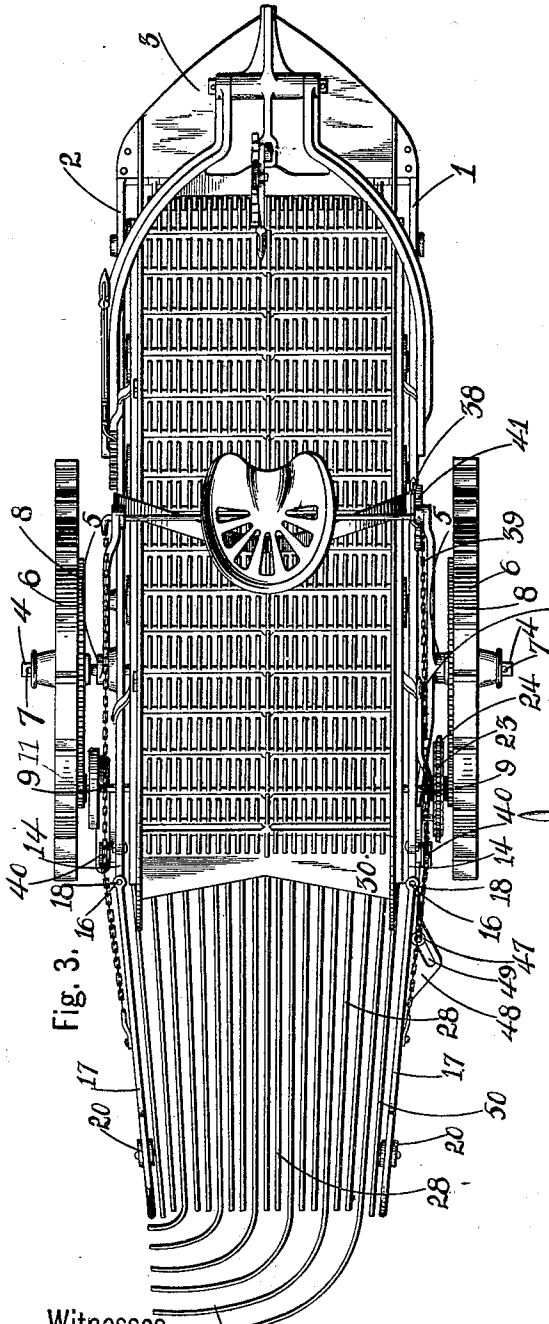


Fig. 3.

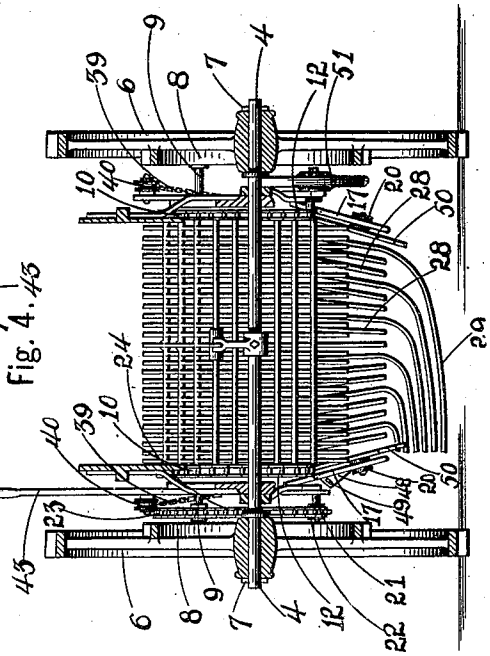


Fig. 4.

Witnesses.
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and
John Reuther,
By A. J. Sangster Attorney.

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W. & J. REUTHER.

POTATO DIGGER.

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(No Model.) 4 Sheets—Sheet 4.

Fig. 5.

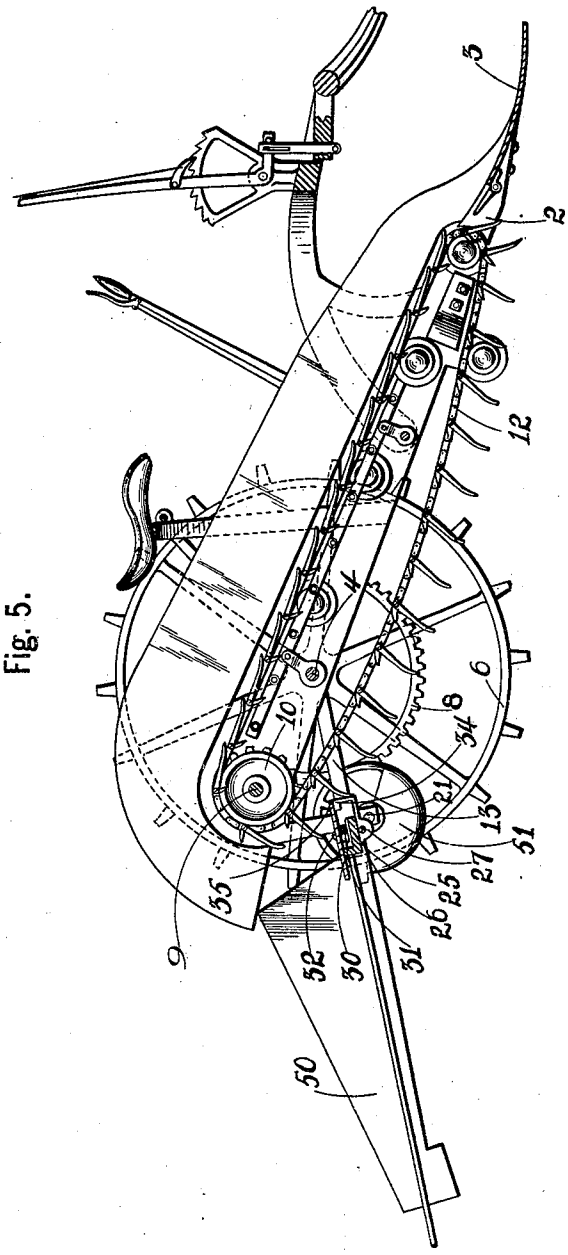


Fig. 7.

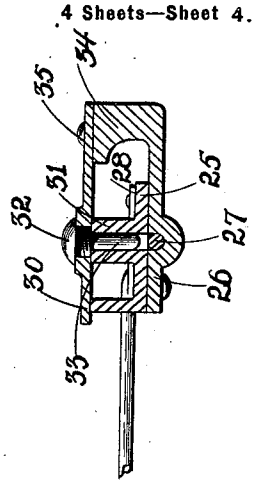
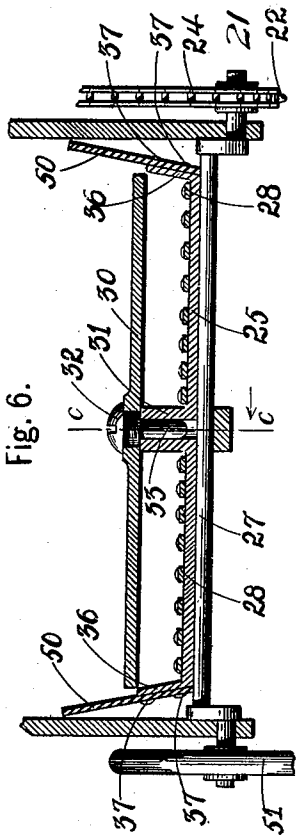


Fig. 6.



Witnesses.

L. M. Billings.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM REUTHER AND JOHN REUTHER, OF ELMA, NEW YORK.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 648,133, dated April 24, 1900.

Application filed December 10, 1898. Serial No. 698,852. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM REUTHER and JOHN REUTHER, citizens of the United States, residing at Elma, in the county of Erie and State of New York, have invented certain new and useful Improvements in Potato-Diggers, of which the following is a specification.

Our invention relates to an improved machine for digging potatoes; and the primary object of the invention is to simplify and cheapen the construction of the shaker mechanism, all of which will be more fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of the machine looking at it from the left side. Fig. 2 represents an elevation of the machine from the opposite or right side, also illustrating a portion of the draft-pole and its supporting mechanism. Fig. 3 represents a top plan view. Fig. 4 is a transverse section cutting centrally through the main wheel of the machine and the intermediate mechanism on or about line *a a*, Fig. 1. Fig. 5 represents a longitudinal central section through the machine. Fig. 6 is a section on or about line *b b*, Fig. 2, portions being broken away. Fig. 7 is a section on or about line *c c*, Fig. 6.

In referring to the details of the machine, as shown in the drawings, like numerals designate like parts.

We will first explain the construction of our preferable form of digger and then describe our improved shaker therefor.

1 and 2 represent the side frame-pieces of the machine, which are preferably constructed of cast metal. The shovel or plow 3 is rigidly fastened to the front end of said frame-pieces by any well-known means. At the opposite ends the side frame-pieces are supported by the axle 4, being provided with bosses 5, through which the axle 4 passes. On the axle 4 are mounted the main wheels 6, which are secured to the axle by any well-known means, preferably the pin or key 7 being rotatably supported thereon, and each is provided with a spur gear-wheel 8, rigidly secured to it or preferably formed in one integral piece with it in the usual way.

At the head of the side frame-pieces 1 and 2 is mounted in suitable bearings a transverse shaft 9, on which two sprocket-wheels 10 are mounted and rigidly secured by a key or other well-known means. (See Figs. 4 and 5.) Spur gear-wheels 11 are also mounted upon said shaft, which mesh and engage with the spur gear-wheels 8. The usual sprocket-wheels are located at or near each opposite inner side of the side frame-pieces 1 and 2 and support and operate the sprocket-chain 12, which are operatively connected to the agitating mechanism in the usual manner.

The construction of the shaking mechanism, which is located at the rear of the machine, is as follows:

Two bars 13 extend rearwardly from the frame side pieces 1 and 2, respectively, to the rear end of which are pivotally fastened, so as to be capable of a vertical movement, the front extremes of short connecting-bars 14. The forked front end 16 of each of the two side frame-bars 17 of the shaker is pivotally secured to the rear end of one of said short bars 14 by a bolt 18, which passes through openings in the forks and the vertical openings in the rear end of the short bars 14. The rear extremes of the shaker-frame bars 17 are bent upon themselves to form slideways 19, in which the rollers 20, supporting the rear of the shaker, are sustained and travel.

The shaker proper comprises the operating-shaft 21, which is supported in suitable bearings in the frame of the machine. A sprocket 22 is mounted upon said shaft, and a sprocket 23 of larger size is mounted upon the main driving-shaft and is connected with the sprocket 22 by a chain 24. The shaker-operating shaft 21 is eccentrically arranged or offset with respect to its pivotal ends, and the transverse supporting-plate bar 25 of the shaker-frame is mounted in a box 26 upon said offset portion, the shaft 27 passing and rotating within said box 26, thereby giving it a peculiar upward, downward, forward, and backward agitating movement. A series of tines 28 are rigidly fastened at regular intervals along the transverse bar 25 and extend rearwardly therefrom, several of said tines, which are indicated by the numeral 29, having their rear extremes bent or curved to one side to provide means for directing the vines, weeds, and lighter material to one side of the

machine. The front ends of the tines are protected by a shielding-plate 30, which is supported upon the tubular standard 31, which extends vertically upward from above the middle of the bar 25, (see Figs. 6 and 7,) a screw 32 being screwed into an opening in the plate 30 and having a reduced end 33 extending into the tubular standard. The box 26 is provided with a forward side flange or extension 34, which is fastened to the plate by the rivet or bolt 35. (See Fig. 7.) The ends 36 of the bar 25 are bent upward and secured to the side protecting-shields 50 by the rivets or bolts 37.

The vertical adjustment of the shaker is controlled by the hand-lever 38, a chain 39 being connected to the shaker-frame and said lever and supported in its travel by the rollers 40.

To secure the hand-lever 38 at any point in its adjustment, we preferably employ a segment 41, mounted upon a suitable portion of the frame of the machine, with which a pawl 42, connected to the hand-lever, is adapted to engage.

To adjust the shaker transversely, we preferably employ a hand-lever 43, which is pivoted to the machine-frame at any suitable point—say at 44—and pivotally secure a connecting-rod 45 to the lower end of said lever 43. The rear extreme of the connecting-rod is bent to form a short vertical portion or axle 46, upon which is mounted a roller 47, and upon one of the side bars of the shaker-frame is rigidly fastened a track portion 48, having a diagonally-extending slot 49. This track portion is fastened at its end to the side of the side bar of the shaker-frame by bolts or other well-known means, and the roller 47 is supported in the slot or slideway 49, substantially as shown in Figs. 2 and 3. Now by moving the lever 43 forward the roller travels rearwardly in said slideway, moving the shaker in its supporting-frame horizontally upon the bolts 18 and adjusting it transversely.

To equalize the movement of the shaker, we attach a balance-wheel 51 to one side of the supporting-shaft, which tends to give more even movement to the shaker, the wheel being unevenly weighted, so as to counteract the downward movement of the forward end of the shaker.

The operation of the shaker will be readily understood from the foregoing description and drawings.

We claim as our invention—

1. In a potato-digger, the combination with the machine-frame, of rearwardly-extending side bars supported from said frame, and having their ends bent upon themselves to form slideways, and a shaker provided with rollers traveling in said slideways, as set forth.

2. In a potato-digger, the combination with the machine-frame, of a shaker pivotally attached thereto, and having a diagonal slideway, an arm having a roller mounted in said slideway and a lever attached to said arm, as set forth.

3. In a potato-digger, the combination with a machine-frame, of a shaker pivotally attached thereto, so as to be capable of both vertical and transverse adjustment, a lever, a chain connecting said lever to the shaker for vertically adjusting the same, a side horizontal extension of said shaker having a diagonal slideway, an arm having a roller supported in said slideway, and a lever connected to said arm for transversely adjusting the shaker, as set forth.

4. In a potato-digger, the combination with the shaker and its operating-shaft, of a balance-wheel for equalizing the movement of said shaker, as set forth.

5. In a potato-digger, the combination with the shaker and its operating-shaft, of an unevenly-weighted balance-wheel mounted on said shaft, as set forth.

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Witnesses:
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