

(No Model.)

2 Sheets—Sheet 1.

J. LEE.

POTATO DIGGER.

No. 381,706.

Patented Apr. 24, 1888.

Fig. 1.

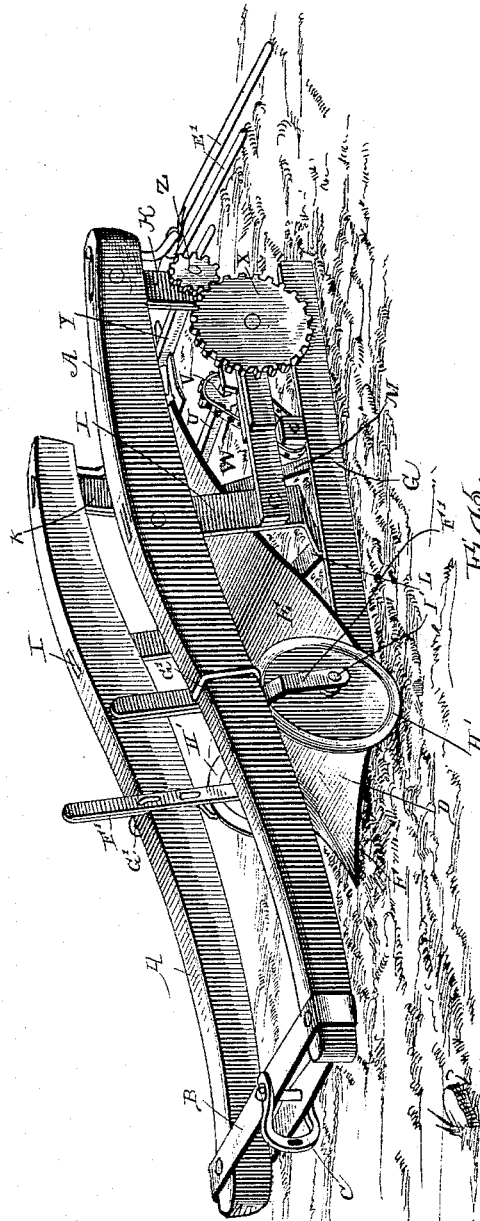
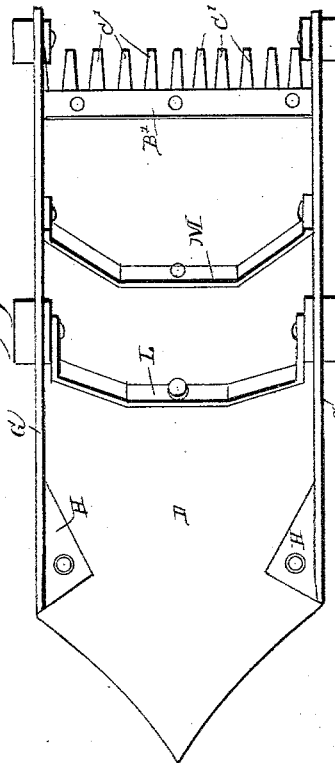


Fig. 5.



Witnesses

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2 Sheets—Sheet 2.

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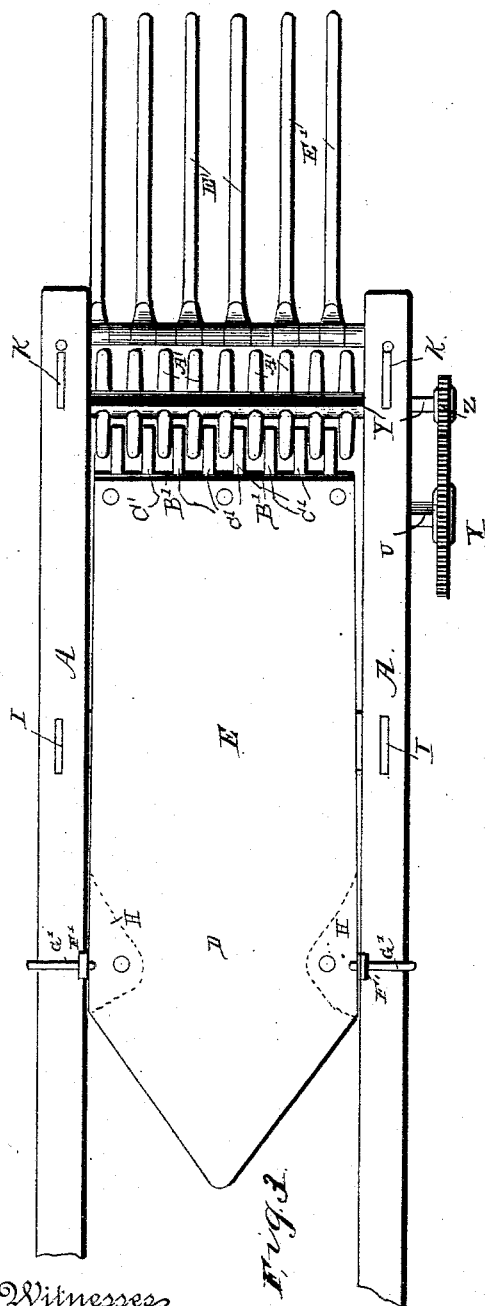


Fig. 1.

Witnesses
James Lee
J. W. Garner

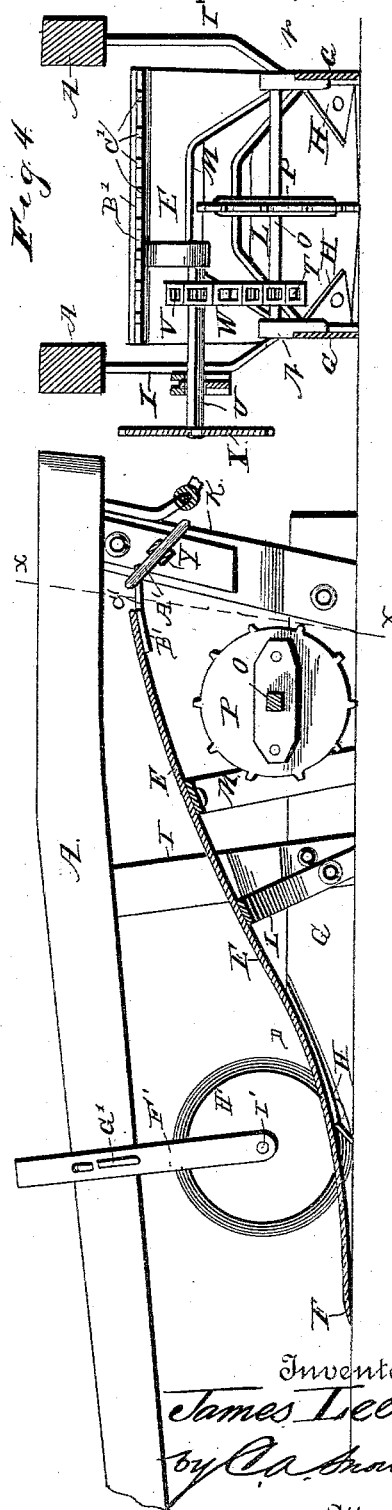


Fig. 2.

Inventor.
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UNITED STATES PATENT OFFICE.

JAMES LEE, OF LISTON, IOWA.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 381,706, dated April 24, 1888.

Application filed August 31, 1887. Serial No. 248,392. (No model.)

To all whom it may concern:

Be it known that I, JAMES LEE, a citizen of the United States, residing at Liston, in the county of Woodbury and State of Iowa, have invented a new and useful Improvement in Potato-Diggers, of which the following is a specification.

My invention relates to an improvement in potato-diggers; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a potato-digger embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a top plan view. Fig. 4 is a vertical transverse sectional view taken on the line *xx* of Fig. 2. Fig. 5 is a detail view.

A represents a pair of plow-beams, which are arranged parallel and at a suitable distance apart and have their front ends connected by a yoke, B, to the center of which is pivoted a clevis, C, for the attachment of the draft animals.

D represents the plow, the construction of which is as follows:

E represents an inclined mold-board having its front end beveled to the point on opposite sides and provided with sharpened cutting-edges F.

G represents a pair of landside-plates, which have their front upper corners bent inward at right angles to form blades or ears H, which bear under the inclined mold-board, near the front end thereof, and are riveted or bolted thereto.

I represents a pair of standards, which have their lower ends bolted to the inner sides of the landside-plates at a suitable distance from the front ends of the latter, and have their upper ends secured in vertical openings made in the plow-beams at a suitable distance from their rear ends.

K represents a similar pair of standards, which have their lower ends bolted to the inner side of the landside-plates near their rear ends and their upper ends secured in vertical openings near the rear ends of the plow-beams.

L represents a brace, which has its central portion bolted to the under side of the mold-board at a suitable distance from the front end

thereof and its lower ends bolted to the inner sides of the standards I and at their lower ends by the said bolts that serve to connect the standards to the landside-plates.

M represents a similarly-shaped brace, which is bolted to the under side of the mold-board at a suitable distance in rear of the brace L and has its lower downturned ends bolted to the inner sides of the landside-plates.

N represents a pair of brackets, which are bolted to the inner sides of the landside-plates at a suitable distance from the end thereof and extend upward therefrom. In the said bracket is journaled a transverse driving-shaft, O, provided with a central driving-wheel, P, which has radial projecting spurs R. To the said shaft O, near one end thereof, is rigidly secured a sprocket-wheel, T.

U represents a horizontal shaft, which has its outer end journaled in a metallic bar and has its inner end journaled in a bearing which depends from the rear end of the mold-board. On this shaft U is rigidly secured a sprocket-wheel, V, that is connected to the wheel T by means of an endless sprocket-chain, W. To the outer end of the said shaft U is rigidly secured a spur-wheel, X.

Y represents a transverse shaft, which is journaled in openings made in the rear standards, K, at a point slightly below the rear end of the mold-board. One end of this shaft is provided with the pinion Z, that engages the wheel X, and from that portion of the shaft which is between the standards K project a series of oppositely-extending radial arms or fingers, A'.

B' represents a plate, which is bolted to the under side of the mold-board at the rear end thereof and is provided with a series of rearwardly-extending fingers, C', between which the fingers A' of the shaft Y are adapted to pass as the said shaft rotates when the machine is in operation.

D represents a transverse rod, which is secured to the plow-beams and is arranged in rear of the rotating shaft Y. To the said rod are pivoted the front ends of a number of screen-bars, E', the rear ends of which screen-bars rest upon the ground and are thereby vertically movable independently of each other, so as to pass over obstructions.

It will be observed by reference to Figs. 3

and 4 that the width of the mold-board is equal to the width of the space between the plow-beams.

F' represents a pair of colter-standards, which are secured to the inner sides of the plow-beams, at a suitable distance from the front ends thereof, by means of clip-bolts G'. The lower ends of the said colter-standards are bifurcated, and between the pairs of arms thus formed are secured revolving circular colters H', which are journaled on bolts I', that pass through central openings in the lower ends of the colter-arms.

The operation of my invention is as follows:
 15 The machine is drawn along the potato-rows by being attached preferably to a sulky and trailed in rear thereof, or the sulky may be dispensed with and the horse attached directly to the clevis of the potato-digger, in which event
 20 the beams A will be provided with handles similar to ordinary plow-handles. The front end of the inclined mold-board is caused to enter the ground and run therein at a depth below the potatoes, and the revolving colters
 25 serve to cut the sides of the furrow thus made by the plow. As the machine advances, the earth and the potatoes are caused to travel rearwardly over the mold-board, as will be readily seen. The spurs of the driving-wheel engage
 30 the earth at the bottom of the furrow, thereby causing the said driving-wheel to rotate and impart rotary motion to the shaft Y by means of the gearing hereinbefore described. As the earth and potatoes are discharged from the rear
 35 end of the mold-board, they are acted upon by the radial fingers of the rotating shaft Y, and thereby the earth and vines are dislodged from the potatoes. The revolving fingers A' serve to throw the potatoes on the inclined screen-bars which trail in the rear of the machine, and
 40 as the potatoes slide down the said screen-bars the earth and vines become dislodged therefrom and the potatoes are deposited on the top of the earth in rows and may be easily picked
 45 up.

Having thus described my invention, I claim—

1. The combination, in a potato-digger, of the plow having the inclined mold-board, the
 50 rotating shaft Y, arranged at the rear end of

the mold-board and having the fingers A', for the purpose set forth, and the downwardly-inclined independent screen-bars trailed in rear of the machine, having their upper ends pivoted, and on which the potatoes are thrown by the fingers A'.

2. The combination, in a potato-digger, of the plow or scoop, the rotating shaft Y, arranged at the rear end thereof and having the fingers A', the transverse bar arranged in rear of the
 60 said shaft, and the independent screen-bars having the front upper ends pivoted to the said transverse bar, the lower ends of said bars being adapted to drag on the ground, substantially as described.

3. The combination, in a potato-digger, of the plow-beams, the standards I K, depending therefrom, the landside-plates G, attached to the lower ends of said standards, the braces L M, arranged transversely between, connecting,
 70 and extending upward above the said landside-plates, and the inclined mold-board attached to the front ends of the landside-plates and having its rear portion supported upon and secured to the braces L M, substantially as described.

4. The combination, in a potato-digger, of the plow, the driving-shaft O, arranged under the mold-board thereof and having the wheel P, provided with the peripheral spurs R, the
 80 shaft U, arranged under the mold-board, having the gear-wheel X at one end, and provided with the sprocket-wheel connected to a similar sprocket-wheel on the shaft O by a sprocket-chain, the shaft Y, arranged at the rear end of
 85 the mold-board and having the arms or fingers A', and the pinion attached to the shaft Y and meshing with the wheel X, the transverse bar in rear of shaft Y, and the independent screen bars or fingers having their upper ends pivoted to the said bar and their lower ends trail-
 90 ing on the ground, substantially as described.

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

JAMES LEE.

Witnesses:

J. H. OSTROM,
 C. P. BOWMAN.