(No Model.)

L. NORTON.

POTATO DIGGER.

No. 305,627. Patented Sept. 23, 1884.

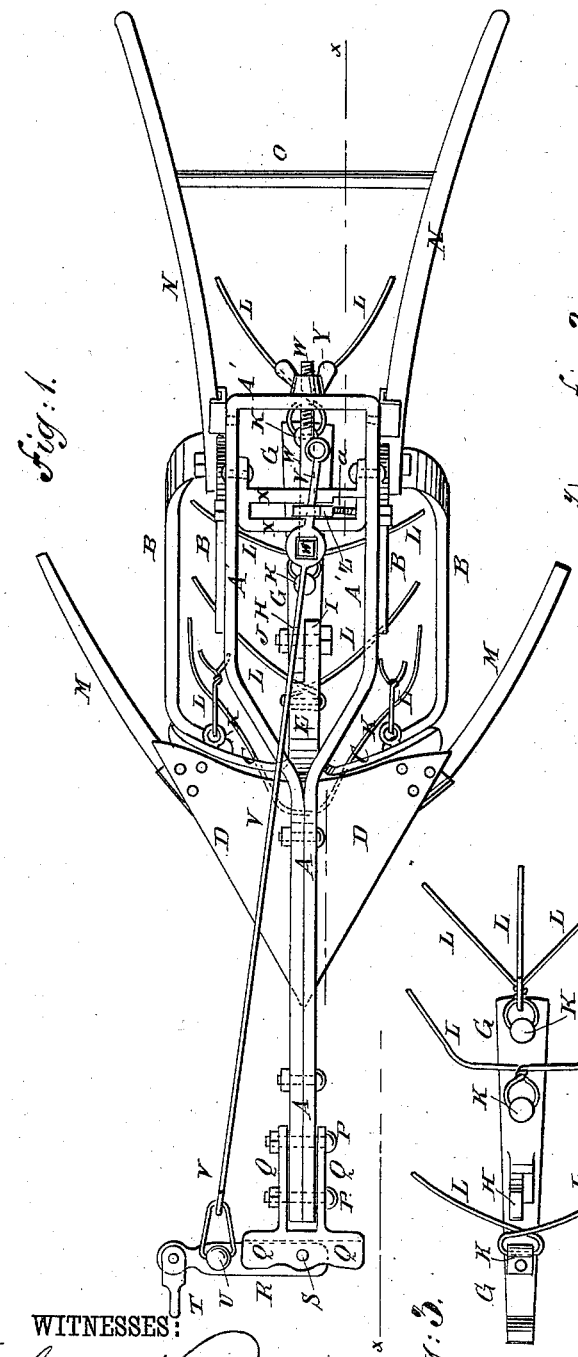

Fig. 1.

Fig. 3.

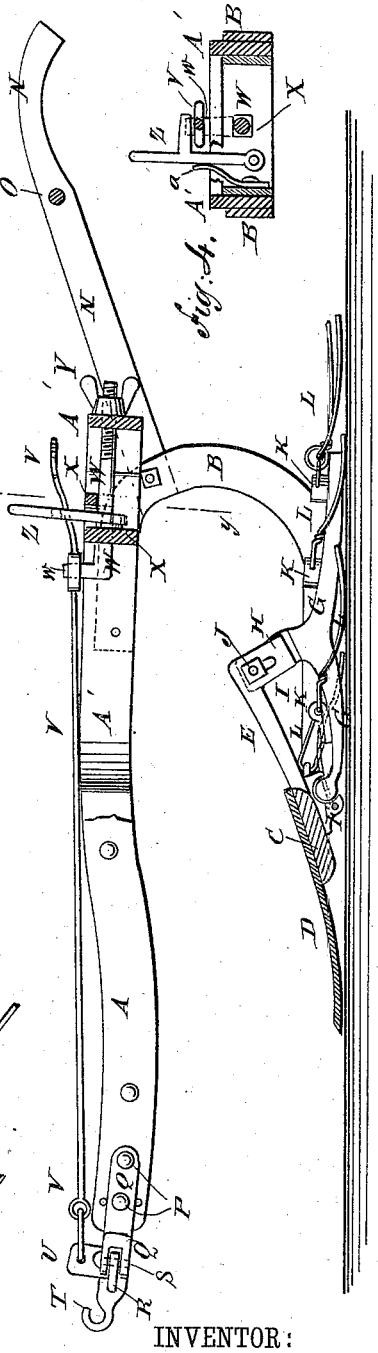

Fig. 2.

Fig. 4.

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LYMAN NORTON, OF HARTFORD, NEW YORK.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 305,627, dated September 23, 1884.

Application filed December 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, LYMAN NORTON, of Hartford, in the county of Washington and State of New York, have invented certain new and useful Improvements in Potato-Diggers, of which the following is a full, clear, and exact description.

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

Figure 1 is a plan view of my improvement. Fig 2 is a sectional side elevation of the same, taken through the broken line *x x*, Fig. 1. Fig. 3 is a plan view of the shoe and its attached separating-rods. Fig. 4 is a sectional rear elevation of a part of the improvement, taken through the line *y y*, Fig. 2.

The object of this invention is to facilitate the digging of potatoes and the separating of the said potatoes from the soil, and also to construct potato-diggers in such a manner that they can be readily adjusted to allow the horse to walk at either side of the row.

The invention consists in a potato-digger constructed with a beam and frame provided with a pair of curved standards connected at their lower ends by a plate forming a seat for the scoop, and having an arm and a double socket to receive a curved separating-rod and a shoe provided with hinged flexible arms, whereby the potatoes will be separated from the soil as they pass together from the rear edge of the scoop. To the forward end of the beam is attached a grooved horizontal clevis provided with a hinged draft-arm having a draft-hook and a stud, with which is connected a rod having an aperture to receive the hook of a rod attached to a cross-bar secured to the frame of the beam, so that the draft-arm can be readily swung from one side of the beam to the other, and will be supported against the draft-strain. The draft and adjusting rod is locked in place by a catch pivoted to the slotted cross-bar, and held forward by a spring. To the rear corners of the scoop are attached outwardly-inclined guard-arms, to push the rubbish from the potatoes, and prevent the digger from becoming clogged by the said rubbish, as will be hereinafter fully described.

A represents the beam, which is made of a flat bar of iron or steel bent at its center to form a rear frame, A′, and having its end parts bolted together at the front, as shown in Fig. 1. If desired, the beam A and frame A′ can be cast in one piece.

To the rear parts of the sides of the frame A′ are secured by bolts or rivets the upper ends of the standards B, which are bent downward, outward, forward, and inward, and to their forward ends are secured by bolts or rivets the ends of a plate, C.

To the plate C is secured the plow-point or scoop D, which is made in triangular form, as shown in Fig. 1; or the standards B may be bent downward and forward before being bent inward, when it is necessary to raise the first-mentioned forward bend to keep the standards from riding on the soil, or to allow the separating-rods more room to work under the said standards.

To the under side of the middle part of the plate C is secured or upon it is formed a rearwardly-projecting arm, E, upon the lower side of the forward end of which, or on the plate C, is formed or to it is attached an eye or double socket F, to receive the rounded forward end of the shoe G, and a curved rod, L, which is held in its place by the round head of the said shoe. The shoe G also elevates the curved standards B, so that the digger will rest on the scoop and shoe, so that the driver can readily tip the digger to one side or the other to catch potato-hills that may be out of line.

Upon the middle part of the shoe G is formed an upwardly-projecting arm, H, which overlaps a downwardly-projecting arm, I, formed upon the rear end of the arm E, and is secured to the said arm I by a bolt, J. The arm I is slotted to receive the bolt J, so that by loosening the said bolt the shoe G can be adjusted higher or lower, as the character of the ground may require. The shoe G also serves to loosen the potatoes from the soil as the said potatoes and soil pass over it in passing from the rear end of the scoop to the ground. The adjacent sides of the arms H I can corrugated or roughened to prevent them from slipping upon each other when the digger is raised or lowered.

To eyes or studs K, attached to or formed upon the forward and rear parts of the shoe G and the end parts of the plate C, are hinged flexible rods L, as shown in Figs. 1, 2, and 3. The rods L, that are fastened to the plate C,

are made with slots or eyes to receive the arms of the rod L, that is secured in the double socket F, to prevent the said rod L from dropping to the ground when the digger is raised, and also to prevent the said rod from being whipped too much to one side or the other, as it is the leading separating-rod, and thus first meets all hard substances passing with the potatoes and soil from the rear end of the scoop D. With this construction as the machine is drawn forward the soil and potatoes of the hills pass over the scoop D to the rods L, that are resting upon the ground, so that the digger is relieved immediately from carrying the soil, and adapting the digger to dig rows that run down hill. The potatoes are separated from the soil by the action of the flexible rods L, which, as they are drawn forward through the said soil, have a tendency to level the soil from under the potatoes and the said potatoes are left upon the top of the ground. The separating-rods are nearly on a horizontal line with the line of draft, which causes the potatoes to roll over the said rods and out of the soil, instead of passing lengthwise of the rods, and thus prevents the rods from making grooves in the soil in which the potatoes might lodge and be covered with soil.

To the rear corners of the scoop D are secured by sockets, clips, or other suitable means the forward ends of two guard-rods, M, which incline outward, so that any rubbish that may pass back along the side edges of the scoop D will be guided to the sides of the row, and thus prevented from covering the potatoes or catching upon the bends of the standards B and clogging the machine, while the potato-hills pass over the rear edge of the scoop and drop between the said arms M to the separating-rods and the ground.

To the upper parts of the standards B and the rear corners of the frame A′ are attached the forward ends of the handles N, the rear parts of which are connected and held in proper relative position by a round, O.

To the opposite sides of the forward end of the plow-beam A are secured by bolts P the arms of a horizontal clevis, Q, which is made with a horizontal cross-head. Several holes are formed in the beam A to receive the forward bolt, P, so that the point of draft attachment can be raised and lowered, as may be required. The forward side of the clevis Q is grooved to receive the arm R, the inner end of which is hinged to the middle part of the said grooved clevis by a bolt, S, so that the outer end of the said arm R can be swung to either side of the beam A. To the outer end of the arm R is hinged the hook T, to which the draft is applied.

To the draft-arm R, at a little distance from its outer end, is attached or upon it is formed a stud, U, to which is hinged the forward end of a rod, V. The rod V passes back along the plow-beam A, and has an eye formed in it at a little distance from its rear end to receive the right-angled hook, *w*, formed upon the forward end of the rod W, which rod passes back through a slotted bar, X, and through the rear end of the frame A′, and has a hand-nut, Y, screwed upon its rear end, so that the said hook-rod can be readily adjusted as the clevis Q is adjusted higher or lower, so that the said rod will always be held taut. The rod V is locked in place upon the hook of the screw-rod W by a lever-catch, Z, hinged to the slotted bar X, and held forward by a spring, *a*, attached to the said slotted bar X. The ends of the bar X are bent to the rearward, and are bolted to the side bars of the frame A′. The end of the rod V projects to the rearward to serve as a handle in adjusting the said rod. With this construction the rod V will hold the draft-arm R against the draft-strain, and will enable the driver from his place at the handles N to swing the said draft-arm R from one side of the plow-beam A to the other, according as it is desired to have the horse walk at one or the other side of the row of hills. When two horses are to be used, the arm R and the rod V can be detached, and the draft-hook T secured to the grooved clevis Q by the bolt S, giving a center draft.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a potato-digger, the combination, with the beam and frame A A′, of the pair of curved standards B, the connecting-plate C, provided with the arm E and double socket F, the scoop D, the adjustable shoe G, and the flexible rods L, substantially as herein shown and described, whereby the potatoes will be separated from the soil as they pass together from the rear edge of the scoop, as set forth.

2. The combination of the shoe G and the series of perforated studs K on the upper surface of the same, with the series of rods L, each of said rods being pivotally secured to one of the studs by bending or twisting the said rods to form pivotal eyes, substantially as shown and described.

3. In a potato-digger, the combination, with the beam A and frame A′, of the horizontal grooved clevis Q, the hinged draft-arm R, having draft-hook T and stud U, the rod V, the hook-rod W, and the cross-bar X, substantially as herein shown and described, whereby the draft-arm can be readily swung from one side of the beam to the other, and will be supported against the draft-strain, as set forth.

4. The combination, with the slotted bar X and hooked bar W, of the rod V, connected to the clevis and slotted to engage the hook-rod, and a pivoted spring-latch, Z, constructed to hold the rod V in engagement with the hook-rod, substantially as set forth.

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