J. C. STODDARD.

MACHINE FOR DIGGING POTATOES.

No. 23,408. Patented Mar. 29, 1859.

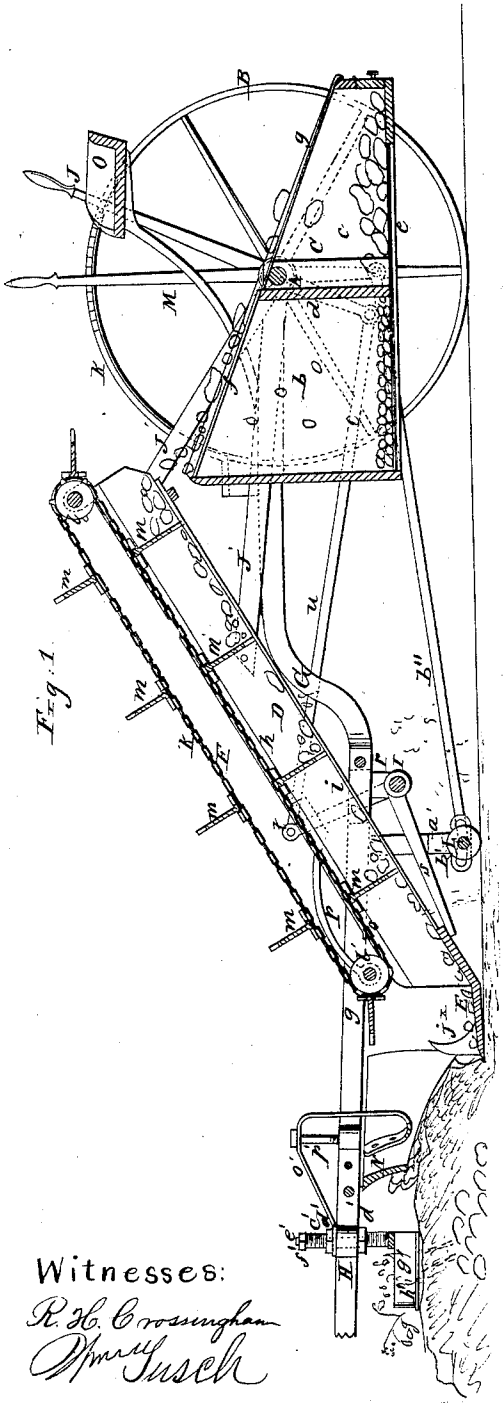

Fig. 1

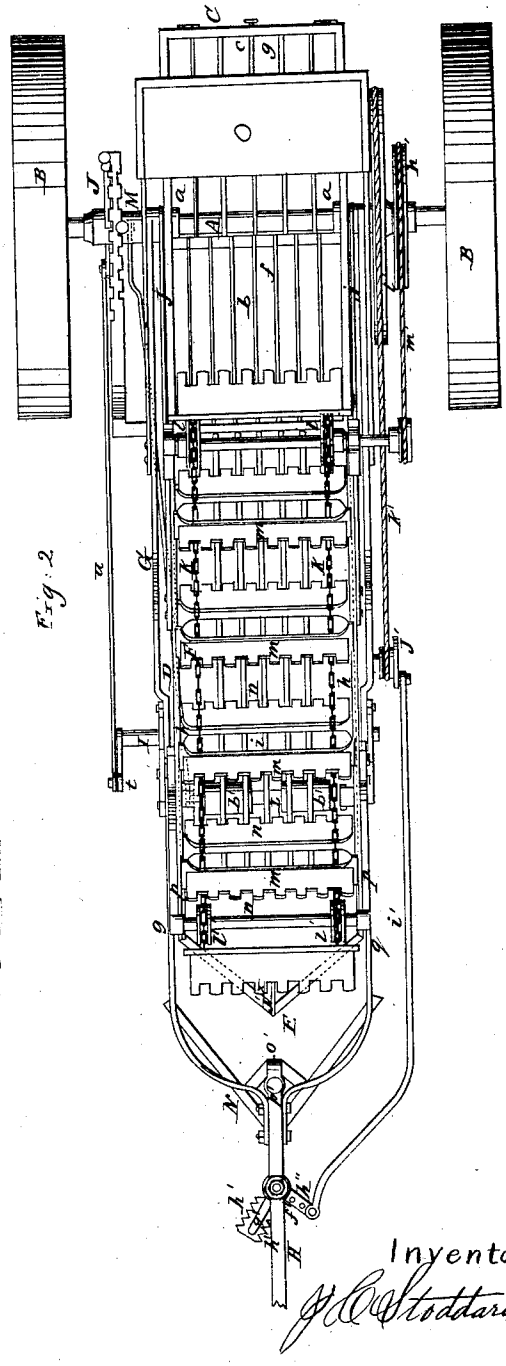

Fig. 2

Witnesses:

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J. C. STODDARD, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR DIGGING POTATOES.

Specification forming part of Letters Patent No. **23,408**, dated March 29, 1859.

To all whom it may concern:

Be it known that I, J. C. STODDARD, of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and Improved Machine for Digging Potatoes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention; Fig. 2, a plan or top of same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in the employment or use of an adjustable endless carrier attached to an inclined screen, a weed-eradicator, leveling and opening shares, and a receptacle provided with screens, the whole being mounted on wheels and used in connection with a peculiar grinding device, as hereinafter shown, whereby potatoes may be dug from hills or drills, thoroughly separated from dirt, and also assorted, the large from the small, and placed in proper receptacles.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents an axle; B B, wheels attached thereto, the axle turning with the wheels.

C is a box, which is suspended to the axle by hooks *a*, and is divided into two compartments, *b c*, by a partition, *d*. The bottom of the box C is formed by a screen, *e*, and the top of the box has two screens, *f g*, on it, the screen *f* being over the compartment *b* and the screen *g* over the compartment *c*, the screen *f* being rather finer than *g*. The screens *e f g* may be formed simply of longitudinal parallel rods placed at suitable distances apart, as shown clearly in Fig. 2.

D is an inclined screen-box, which is formed of two parallel side plates, *h h*, having a screen, *i*, at its bottom, constructed of parallel rods, as shown clearly in Fig. 1. This screen-box has arms *j* attached to its upper end, two at each side, and the axle A passes loosely through the ends of these arms, so that the screen-box may be raised and lowered on the axle as a center.

To the lower end of the screen-box D a share, E, is attached. This share is simply a pointed plate slightly inclined from a horizontal line, and having an upright spur, j^{x}, at its point.

F is an endless chain of carriers, which is placed and works on the screen-box D. This endless chain of carriers is constructed as follows: Two chains, *k k*, pass over pulleys *l l'* at the upper and lower ends of the screen-box, and these chains have cross-plates *m* attached, one edge of each of which is notched or toothed, as shown clearly in Fig. 2 at *n*. The ends of the cross-plates *m* fit in grooves *o* in the inner surfaces of the plates *h h*, and the lower pulleys, *l'*, have their bearings at the ends of springs *p*, which are attached one to each side of the screen-box D. The upper pulleys, *l*, have their bearings rigidly attached to the upper and back part of the screen-box D.

G is a frame, which is formed of two parallel bars, *q q*, curved and connected together at their front ends, forming a bow, and attached to a draft-bar, H. The back ends of the bars *q q* have the axle A passing through them. To each bar *q* a pendant, *r*, is attached. These pendants form bearings for a shaft, I, on which two arms, *s s*, are placed, and on which the lower part of the screw-box D rests. On one end of the shaft I an arm, *t*, is placed, said arm having a rod, *u*, connected to its upper end, the back end of the rod *u* being attached to the lower end of a lever, J, which has its fulcrum on the axle A. The lever J is secured in any desired position by a notched bar, K, which is attached to one of the bars *q* of the frame G. To each bar *q* of the frame there is also attached a pendent bar, *a'*, the lower ends of which form bearings for a shaft, L, having two rollers, *b'*, attached to it, one near each end, and on which the front part of the machine rests. The bearing in one of the pendants *a'* is oblong, as shown clearly in Fig. 1, to admit of an oblique movement of the shaft L, said shaft being moved or adjusted by a rod, *b''*, which has a lever, M, attached to its back end, said lever having its fulcrum on the axle A and secured at any desired point by the notched bar K.

In the draft-bar H a vertical screw-rod, *c'*, is placed, and secured in any proper position by jaw-nuts *d'*. The screw-rod *c'* is hollow, and a spindle or arbor, *e'*, is fitted loosely

within it and allowed to turn freely. The arbor or spindle is retained within the screw-rod c' by a nut, f', on its upper end, and to the lower end of the arbor a plate, g', is attached, having a serrated flange, h', at each side of its lower part. To the lower part of the arbor g' an arm, h'', is attached at right angles to the arbor g', and this arm is connected by a rod, i', with a crank-pulley, j', which is rotated by a belt, k', from a pulley, l', on the axle A. The endless chain of carriers is operated by a belt, m', from a pulley, n', on the axle A.

To the draft-bar H an elastic curved bar, o', is attached. This bar extends down back of the bar H, and has a scraper or leveling-share, N, attached. This share is formed of two plates placed obliquely with each other, and gradually increasing in depth from their front to their back ends. (See Fig. 1.) Through the elastic bar o' a bolt, p', passes, said bolt passing into the back part of the bar H, and serving as a check or stop to the share N.

O is the driver's seat, which is attached to elastic bars q', that are secured to the frame G.

The operation of the machine is as follows: As the machine is drawn along, the share E, with its spur $j^{\times}$, opens the row of hills or the drill, and the potatoes are carried up the screen-box D by the endless chain of carriers F, the plates m, which are the carriers, raising or lifting the potatoes, while the earth passes through the screen i. The springs p give a kind of scoop or dipping motion to the plates m as they commence moving up the screen-box D, the lower ends of the grooves o being somewhat flaring. The share N levels the hills or drills so as to render the work of the share E and plates or carriers m as uniform as possible, and the plate g', which has a vibrating movement given it by the crank-pulley j', rod i', and arm h'', eradicates all weeds on the drill or row of hills, the serrated flanges h' catching the weeds, drawing them out of the earth, and casting them at either side of the drill. This removal of the weeds is an important feature of the invention, for it insures the perfect operation of the other parts of the machine—to wit, the shares E N and the plates or carriers m. The opening-share E may be elevated to any desired height by adjusting the lever J. The potatoes are dropped on the screen f of box C, and all that are sufficiently small pass through said screen into the compartment b, while the larger ones pass through screen g into the compartment c. The machine is guided by moving or adjusting the shaft L, said shaft having a position parallel with the axle A when the machine is moving in a direct line, and turned more or less obliquely with it when the machine is to be turned or guided either to the right or left.

I do not claim an inclined screen with a share attached to its lower end for the purpose of digging potatoes, for such device has been previously used; nor do I claim a receptacle attached to the machine for the purpose of receiving the potatoes; but,

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

1. The weed-eradicator formed of the vibrating plate g', with serrated flanges h' attached, and arranged to operate as and for the purpose set forth.

2. The inclined adjustable screen-box D, provided with a share, E, and spur $J^{\times}$ at its lower end, in combination with the endless chain of carriers F, arranged to operate in grooves o o, substantially as and for the purpose set forth.

3. The combination of the weed-eradicator, leveling-share N, inclined adjustable screen-box D, with share E attached, and endless chain of carriers F, with or without the receptacle C, arranged for joint operation substantially as and for the purpose set forth.

4. The adjustable or movable roller-shaft L, applied to the machine, and arranged to operate as and for the purpose set forth.

J. C. STODDARD.

Witnesses:
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