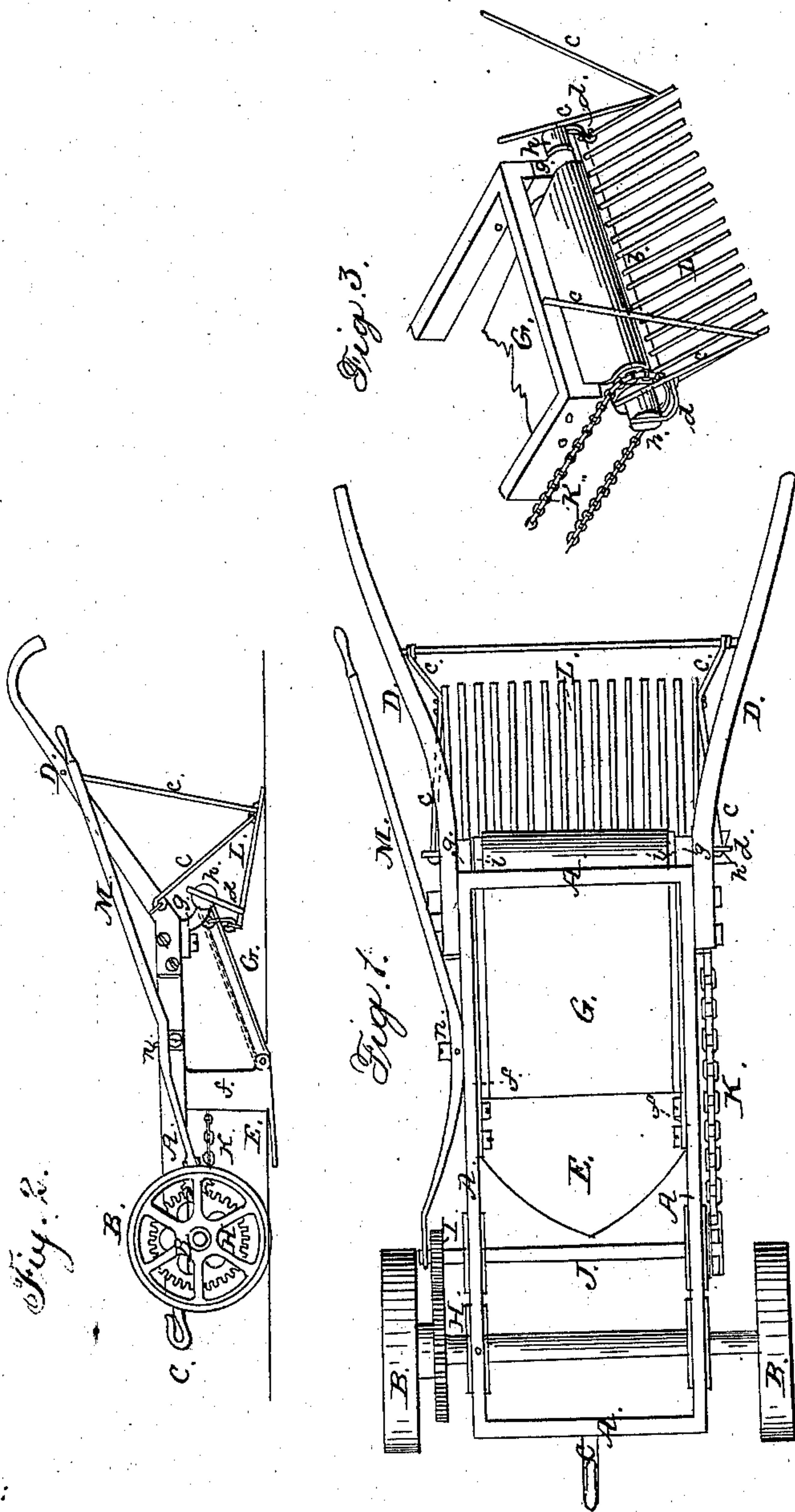


C. BLOOD.  
Potato-Digger.

No. 39,712.

Patented Sept. 1, 1863.



WITNESSES:  
D. C. Johnson  
Wm. Emerson.

INVENTOR:  
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# UNITED STATES PATENT OFFICE.

CHARLES BLOOD, OF MALTA, NEW YORK.

## IMPROVEMENT IN POTATO-DIGGERS.

Specification forming part of Letters Patent No. 39,712, dated September 1, 1863; antedated August 25, 1862.

*To all whom it may concern:*

Be it known that I, CHARLES BLOOD, of Malta, in the county of Saratoga and State of New York, have invented a new and Improved Machine for Digging Potatoes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved machine. Fig. 2 is a side elevation thereof. Fig. 3 is a perspective view, showing a portion of the frame A, endless apron G, with the riddle L, and cams *h h*.

Like letters designate corresponding parts in all of the figures.

As shown in the drawings, A represents a rectangular frame, the forward portion of which rests on the shaft of a pair of truck-wheels, B B.

C is the draft-hook for attaching the team.

Two handles, D D, are secured to the rear end of the frame for the purpose of guiding and raising or lowering the share E, which is attached about midway of the frame by means of flanges *f f*, which are securely held by bolts. The share is placed in such a position in relation to the frame and wheels that when the handles D D are carried at a convenient height it will penetrate the soil below the potatoes and run in a horizontal direction, or nearly so, the truck-wheels passing meanwhile between the rows. As the hill of tubers is raised it passes over the share and onto the endless apron or carrier G, which revolves around rollers provided for the purpose, one being underneath the share at *e* and the other in the brackets *g g* at the rear end of the frame. The motion of this roller is derived from the driving-wheel H on the shaft of the truck B B, the teeth of which gear with a pinion, I, on the shaft J, which hangs below the frame A. On the opposite end of this shaft a spur-wheel drives the endless chain K, which is connected in like manner with the rear roller, *i*. Underneath the latter end of the endless apron a transverse bar, *b*, Fig. 3, carries the grate or riddle L. It is suspended by links from the brackets *g g* and by the rods *c c* from the handles D D, all of which are loosely connected, so as to allow it to vibrate freely. An arm, *d*, on each side of

the riddle rises vertically and lies closely against the face-cams *h h* on the end of the roller *i*.

The cams consist of grooves or hollows on the ends of the rollers, the direction of one being transverse to that of the other, so that the effect of their rotation on the arms *d d*, which rest against them, is to impart a lateral, reciprocating or vibratory motion to the riddle L, which separates the dirt from the tubers as they descend from the apron over the bars of the riddle while the dirt is shaken through, and are left in a trail behind the machine on the surface of the ground, where they can be readily picked up.

The apron G may be provided with ribs to prevent the potatoes from sliding on it, so that they will not fail of being carried up and dropped on the separator.

The shaft J has an endwise motion, by which it may be instantly thrown out of gear by means of the side hand-lever, M, which is pivoted to the frame at *n*. By this means the motion of the carrier-apron and riddle can be stopped when it becomes necessary from encountering obstructions or the work becoming entangled with the vines in less time than would be required to check the progress of the machine; and it is likewise convenient, when removing the machine from field to field, to have the operating parts disconnected from the motion of the truck.

The advantages of my machine consist in the superiority of its arrangement, it being intended to produce a light and easily-operated implement, which will work as rapidly as other or heavier machines, but with much less labor of the team and attendant, and at a greatly reduced cost of construction. In placing a light frame on a low truck which supports its forward end, with handles at the latter end, and the share, which meets the greatest resistance, intermediate and cleaving the ground horizontally when at the proper depth and tending upward to the right position when too deep, as well as tending downward to the same position when running too shallowly, the attendant has power to guide and control the operation with ease, gaging the depth of the



share as required, or raising it to escape stones or like obstructions, the frame turning on the axis of the truck as on a pivot. The arrangement of the driving wheel and pinion and the endless chain for operating the carrier and separator by the same motion (the rotation of the former and the shaking of the latter being accomplished by means of the same roller) simplifies the working parts and reduces the friction, so as to make the machine light and of easy draft; and the arrangement for throwing it in and out of gear renders its operation easily manageable by the attendant.

I am aware that shares, endless aprons, and riddles have been employed in machines for digging potatoes and therefore such simply I do not claim; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of a fixed horizontal share, E, together with an endless apron or elevator, G, and riddle L, behind the truck-wheels B B, said truck-wheels also communicating the necessary movements to the elevator and riddle, all as and for the purpose herein specified.

2. The combination of the elevator-roller *g*, having transverse or alternately-acting cam-grooves *h h* in the ends thereof, with the arms *d d*, projecting from the riddle L, as and for the purpose herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES BLOOD.

Witnesses:

STEPHEN BADGLEY,  
GEORGE MURRAY.