2 Sheets—Sheet 1.

L. A. ASPINWALL.

POTATO-DIGGER.

No. 189,911. Patented April 24, 1877.

Fig. 1.

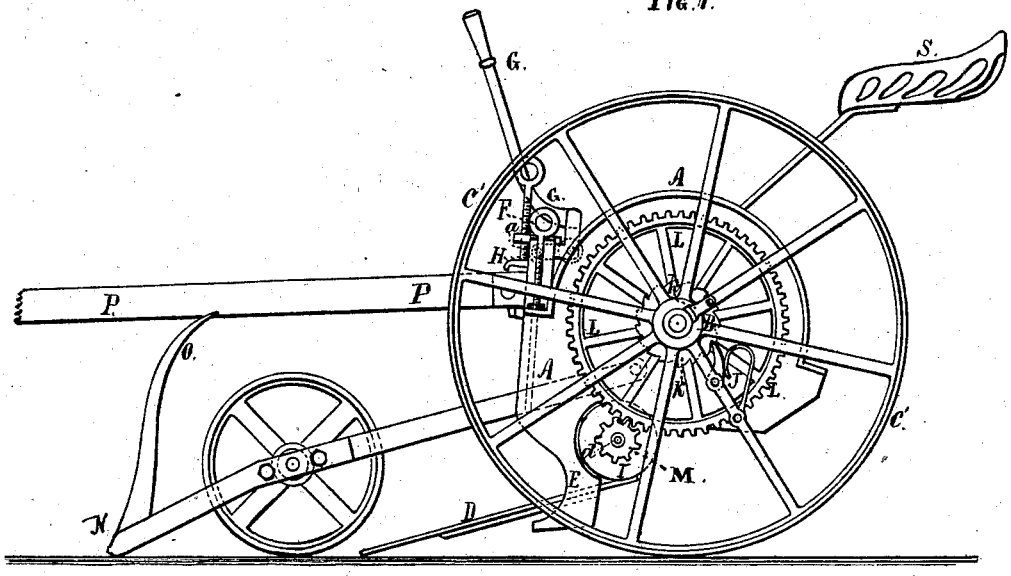


Fig. 5.

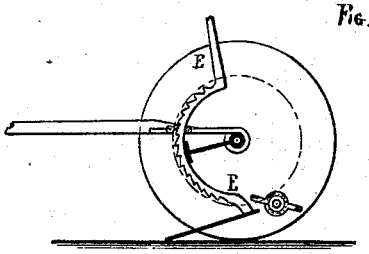
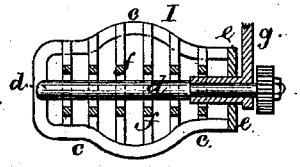


Fig. 4.



Witnesses

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2 Sheets—Sheet 2.

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POTATO-DIGGER.

No. 189,911. Patented April 24, 1877.

Fig. 2.

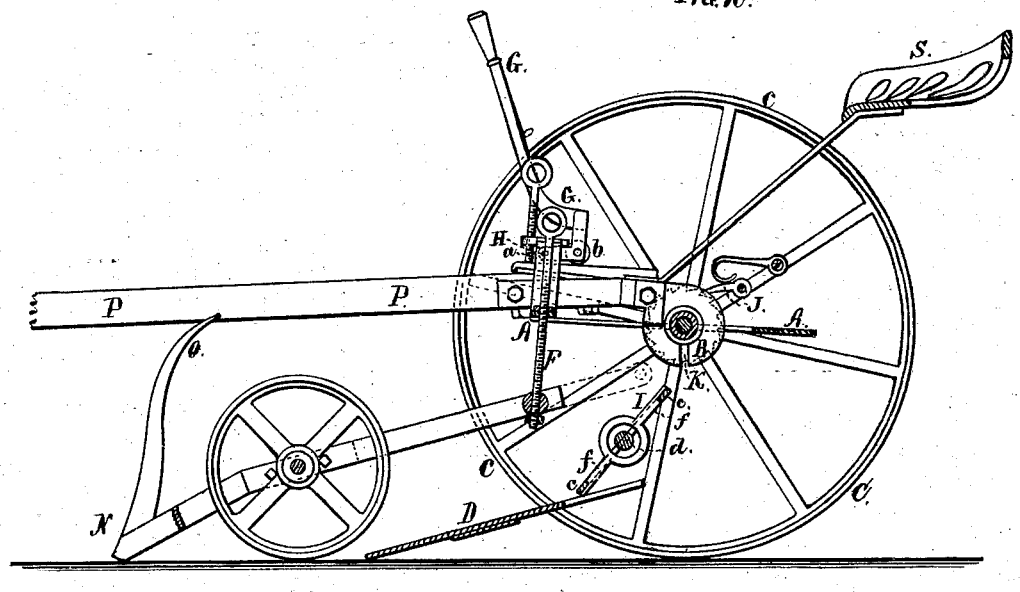
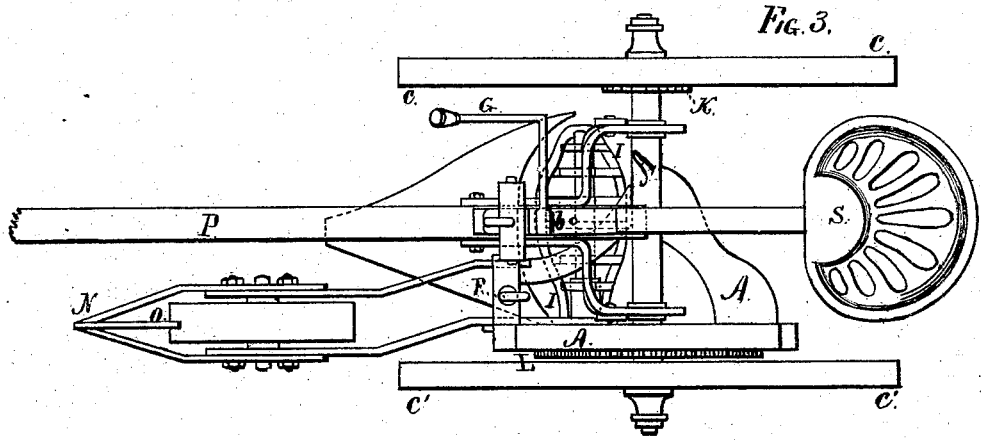


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

LEWIS AUGUSTUS ASPINWALL, OF ALBANY, NEW YORK.

IMPROVEMENT IN POTATO-DIGGERS.

Specification forming part of Letters Patent No. **189,911**, dated April 24, 1877; application filed February 22, 1877.

To all whom it may concern:

Be it known that I, LEWIS AUGUSTUS ASPINWALL, of Albany, in the State of New York, United States of America, have invented new and useful Improvements in the Construction of Potato-Diggers, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

These improvements have chiefly reference to potato-digging machines having a spade in front and a revolving separator appliance behind.

According to this invention the said separator is composed of, say, two blades or paddles, converging and uniting at the outside end, and held at the other end by a ring. The central spindle, to which the blades are fastened, or from which they spring, is supported from the side frame in a long bearing-boss. The greatest diameter of the separator is, by preference, at its central part, and motion is communicated to it by suitable gearing from one or both of the road-wheels. Fingers, pegs, or ribs are fitted between the blades to render the action of the separator more efficient. The plowshare is supported from the same side as the separator, and a divider and fence are made use of at the same side of the machine to lift and separate the vines and weeds, and these pass unobstructedly at the other side of the machine; hence they do not drag or accumulate upon the machine.

Figure 1 of the accompanying drawings is a side elevation, Fig. 2 a longitudinal section, and Fig. 3 a plan, of a potato-digging machine constructed according to this invention. Fig. 4 is an elevation of the revolving separator, partially in section; and Fig. 5 is a diagram illustrating a modification in the frame carrying the spade.

The side frame A is supported by a long sleeve upon the main shaft B, whereon the road-wheels C and C′ revolve loosely. The spade D is fixed to the adjustable supporting-bar E, the height of the spade being regulated by a set-screw, F. When, however, it is desired to lift the spade quite clear of the ground, as is necessary when the machine is being traversed from place to place, the handle or lever G is drawn from a vertical into a horizontal position, thereby raising the part at *a*, and thus elevating the bracket H, frame A, bar E, and spade D. The knee of the cranked portion of the lever G is provided with a friction-roller, *b*, to render this raising operation more easy. Immediately behind the spade the separator I is situated. It is composed, as seen more particularly at Fig. 4, of two blades or paddles, *c*, springing at the outer end of the separator from a central shaft, *d*, and held in position at the other end by the ring *e*. The blades are preferably curved, as shown, and the greatest diameter of the separator is at its central part—that is to say, that part acting immediately over or upon the top of the ridge containing the potatoes. To insure a more perfect disintegration between the earth and the tubers, pegs, bars, or fingers *f* are fastened between the blades. It may also be here remarked that although the blades *c* may be set parallel with the central shaft *d*, I prefer to set them at an angle therewith, or somewhat spirally, so as to cause the potatoes to be thrown to one side as they are passed through the apparatus.

The separator is caused to revolve at the desired speed by suitable gearing actuated from one or both, but preferably both, of the road or carrying wheels C and C′. As has been said, the carrying-wheels revolve loosely upon the shaft B. Nevertheless, the said shaft can be caused to partake of the forward motion of the carrying-wheels by placing the ratchet-pawls J into gear with the teeth of ratchet-wheels K, which, being fixed to the shaft B, impart motion thereto. A spur-wheel, L, is also fixed upon the shaft B, and gears with a pinion, M, on the central shaft *d* of the separator, so that when the shaft B revolves the separator I is similarly actuated, but in a direction opposite to that of the carrying-wheels. The shaft *d* of the separator is carried in a bracket-bearing, *g*.

The potato-top divider N runs in the furrow, and is supported by a carrying-wheel. A fence, O, is likewise employed to elevate the potato-tops and assist the action of the spade.

As will be observed from the drawings, the driver's seat S is placed well to the rear of the machine, so as to assist in counterbalancing the down-drag in front caused by the lift-

ing action of the spade. The draft-power is attached, in the ordinary manner, to the pole P. The oil-holes whereby the shaft B is lubricated are covered by flexible covers *h*, made of india-rubber or other suitable material.

When a cover constructed as shown is placed over the oil-hole, dust and dirt are completely excluded, nor can the cover be jolted out of position.

Figure 5 is a diagrammatic view of a simplified arrangement for raising and lowering the spade. The carrying-bar E is here shaped like the segment of a circle, and is prolonged into a handle or lever for operating the same. Ratchet-teeth are also formed on one side of the said segmental supporting-bar E, and a pawl is provided to take into these teeth and support the spade at the desired height.

I claim—

1. The revolving separator I, made of the blades *c*, extending as bows, one at each side of the shaft *d*, and connected with the ring *e*, and provided with fingers *f* between the blades *c*, in combination with the spade D, for the purposes and substantially as set forth.

2. The revolving separator I, in combination with the bracket-bearing *g* at one side only of the separator, and the spade D, substantially as set forth.

3. The combination, in a potato-digger, of the divider N and fence O at one side, and the spade D and the revolving separator I, supported at the same side of the machine as the divider N, so as to allow the vines and weeds to pass through at the other side of the machine, substantially as set forth.

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