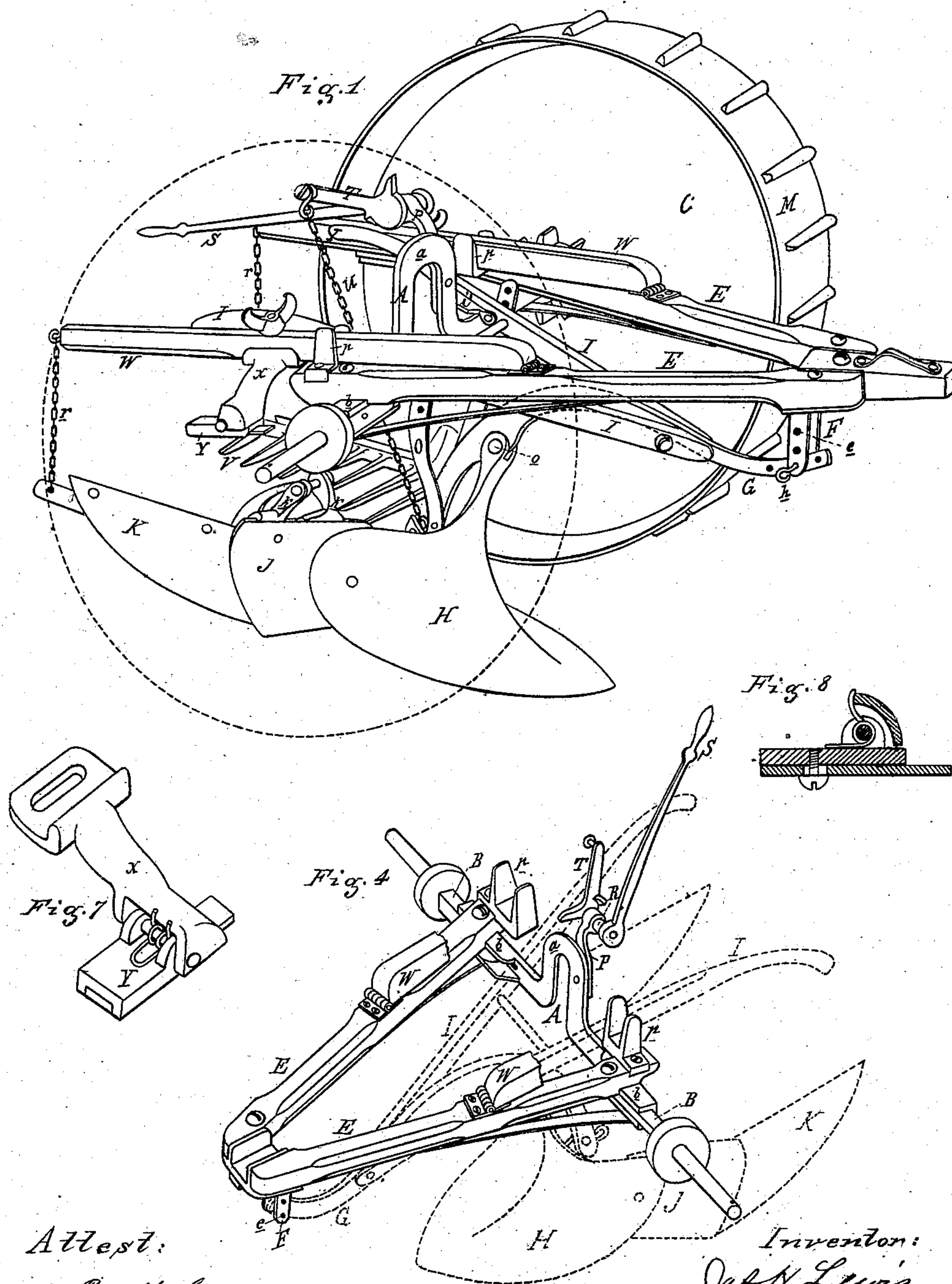


J. H. LEWIS.  
Potato-Digger.

No. 227,984.

Patented May 25, 1880.



Attest:

W. Barthel  
Charles H. Hunt

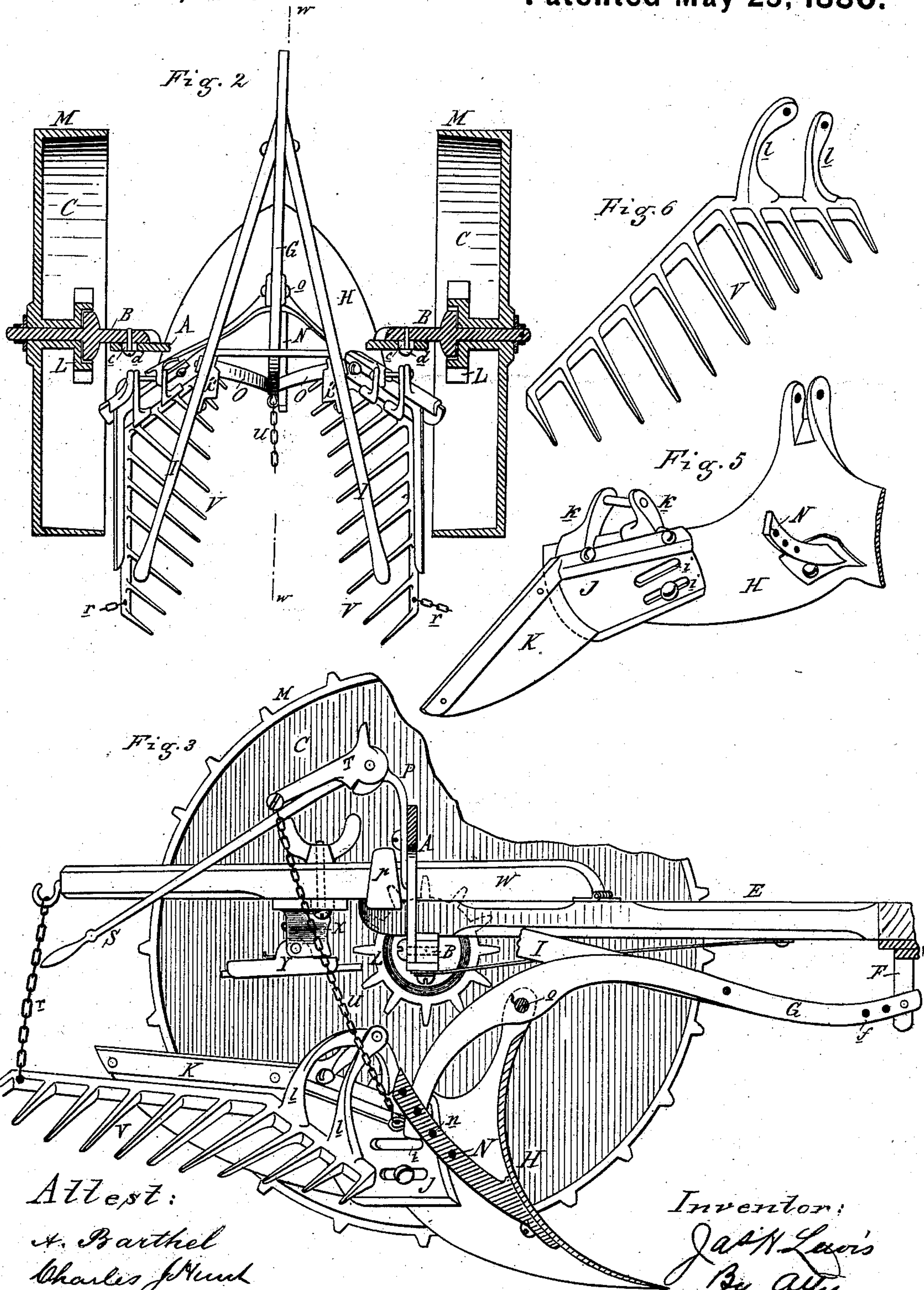
Inventor:

J. H. Lewis  
By atty  
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# UNITED STATES PATENT OFFICE.

JAMES H. LEWIS, OF DETROIT, MICHIGAN.

## POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 227,984, dated May 25, 1880.

Application filed January 8, 1880.

*To all whom it may concern:*

Be it known that I, JAMES H. LEWIS, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Potato-Diggers, of which the following is a specification.

The nature of this invention relates to certain new and useful improvements in devices particularly designed for digging potatoes, and which can also be employed as a shovel-plow for cultivating between rows.

The invention consists in the peculiar construction of the traction and carrier wheels, and in the novel construction and arrangement of parts whereby proper adjustments are obtained, all as more fully hereinafter set forth.

Figure 1 is a perspective view with one of the wheels removed. Fig. 2 is a top view, partly in section. Fig. 3 is a vertical central section on line *ww*, Fig. 2. Fig. 4 is a perspective view of the axle and its attachments. Fig. 5 is a perspective view of one of the wings and guards detached. Fig. 6 is a perspective view of one of the finger-racks. Fig. 7 is a similar view of one of the spring-dogs. Fig. 8 is a section of the same.

In the accompanying drawings, which form a part of this specification, A represents the main axle, which is arched, as at *a*. The ends of this axle are provided with the flanges *b* and slots *c*. Between these flanges *b* are inserted the ends of the arms B, which carry the wheels C, said arms being secured to place by a bolt or screw, *d*, which passes through the slot into the arm, as shown. This construction admits of a lateral adjustment of the wheels, so as to cause them to travel at the proper distance apart, as may be desired.

The webs of the wheels C are solid, and are provided with the flanges or rims M, for the purposes hereinafter described.

E represents the hounds, or a frame to which the draft is applied, the rear ends of which are rigidly secured to the axle. Pendent from the forward end of this frame E is a hanger, F, provided with a series of holes, *e*. The forward end of the plow-beam G, which carries and is pivoted to the shovel-plow H, as at *o*, is also provided with a series of holes, *f*, by means of which and a pin, *h*, the end of the beam is secured to and adjustable in the hanger F.

Handles I, secured to the beam G, extend to the rear end of the machine, and are provided with inwardly-projecting guide-plates *i' i'*, bearing loosely against the arched part *a* of the axle, and forming a guide for the plow, to prevent too much lateral movement.

Secured to each side of the shovel-plow H are wings J, made adjustable both vertically and laterally thereon by means of the slots and bolts *i*. To these wings J are secured the wings or guards K, which extend rearward therefrom, being adjusted so that they will travel or extend within the flanges M of the wheels C, while the wings K are close to the edges of such flanges.

An arm, N, secured to or near the toe of the plow H, extending rearward, is connected to the rear end of the beam G by means of a suitable bolt, and is capable of adjustment at that point by means of the holes *n* in the arm N, such adjustment being for the purpose of regulating the pitch of the plow, and in a measure to determine the depth and width of the furrow cut by the main plow H.

Rigidly secured at one end to the rear end of the beam G are braces O, which lead up and are adjustably secured to the handles I. In these braces O are a series of holes, by means of which the plow may be raised or lowered, as may be desired.

A bracket, P, rigidly secured to the arch of the axle, has properly journaled through its head a rock-shaft, R, carrying upon one end a lever, S, and upon the opposite end a bell-crank lever, T. The longer arm of this lever T is connected, by a chain, U, to the rear end of the beam G, while the shorter arm thereof strikes against the top of the arch when the lever is elevated, thus preventing the lever S from falling over to the front.

Secured to the top of the wings J are standards *k*, to which are pivoted the finger-racks V by means of the standards or lugs *l*. Hinged to the frame E are the bars W, which extend rearward between the guards *p* on the frame E over the axle, and the rear ends of the bars W are connected, by means of chains *r*, to the finger-racks V. Adjustably secured to the bars W are the outwardly-projecting arms X, which carry the spring-dogs Y, which latter engage with the ratchet-wheels L on the arms B in such manner that in the forward motion of the ma-



chine a shaking motion will be imparted to the finger-racks V.

In operation I adjust the plow by means of the braces O so that it will, when lowered, enter the ground and pass below the potatoes, the wings J also being adjusted so as to carry the dirt within the flanges M of the wheels. In the forward travel of the machine the dirt and potatoes are carried by the flanges of the wheels up over the wings J onto and over the finger-bars V, the dirt falling through between the fingers to the ground, while the potatoes roll off of the fingers and drop to the ground in a row, following the center of the machine.

In case it is found that the furrow cut is not of sufficient depth or width, and that from such cause the potatoes are not all gathered, the wheels C can be adjusted outwardly and the wings J likewise adjusted, and the plow adjusted by means of the arm N so as to cause the same to dig deeper and throw up a wider furrow.

In some instances it may be desired to adjust the heel of the plow by means of the braces O, or to raise or lower the forward end of the beam to suit the adjustment of the other parts and to effect the more easy draft of the plow.

When it is not desired to use the machine, as when drawing it to or from the field, the plow, with its attachments, can readily be raised from the ground by raising the lever S.

This machine can readily be adapted, by adjusting the wheels or removing them altogether, to be used as a shovel-plow for cultivating between rows.

What I claim as my invention is—

1. In a potato-digger, the wheels C, provided with flanges M, in combination with the plow H, with wings and guards K, substantially as described.

2. In a potato-digger, the combination, with the wheels C, provided with the inwardly-projecting flanges M, of the plow H, having adjustable wings J, extending into the cavities of the wheels, and guards K, arranged close to the edges of said flanges, whereby the soil and potatoes are conducted to the cavities in the wheels and carried by the wheel-flanges upward, substantially as described.

3. In a potato-digger, the combination, with the wheels C, provided with the inwardly-projecting flanges M, of the plow H, having adjustable wings J and guards K, arranged with

regard to the cavities and flanges of the wheels as set forth, and adjustable hinged racks V, substantially as described, and for the purpose set forth.

4. In a potato-digger, the combination, with the wheels C, provided with the inwardly-projecting flanges M, of the plow H, having adjustable wings J and guards K, arranged as set forth, adjustable hinged racks V, bars W, provided with arms  $x$ , having spring-dogs Y, and pinion L, substantially as described, and for the purpose set forth.

5. The combination, with the wings J, guards K, and angular racks V, hinged to said wings, of the hinged shaking bars W, adjustable chains  $r$ , arms  $x$ , having spring-dogs Y, and pinion L, substantially as described, and for the purpose set forth.

6. In a potato-digger, the axle A, carrying the laterally-adjustable flanged wheels C, plow H, laterally-adjustable wings J and guards K, and adjustable finger-racks V, combined, constructed, arranged, and operating substantially in the manner and for the purpose set forth.

7. The combination of an arched axle with the inwardly-projecting guide-plates  $i' i'$ , attached to the handles I and bearing loosely against the arched portion of the axle, substantially as specified.

8. The combination of the plow-beam G, braces O, having adjusting-holes in their upper ends, handles I, supported by the axle A in their different adjustments, plow H, pivoted to the beam, and rearwardly-projecting arm N, having end adjusting-holes, whereby the plow may be adjusted bodily and supported in its different adjustments by the axle, and the angle of inclination of the point varied independently of each other, or both adjustments be made simultaneously, substantially as described.

9. In a potato-digger, the arched axle A, carrying the laterally-adjustable flanged wheels C, plow H, laterally-adjustable wings J and guards K, adjustable finger-racks V, bell-crank lever T, chain U, and handles I I, having plates  $i' i'$ , all combined, constructed, arranged, and operating in the manner and for the purpose set forth.

JAMES H. LEWIS.

Witnesses:

H. S. SPRAGUE,

CHARLES J. HUNT.