

C. J. C. Peterson,

Potato Planter & Tigger.

No. 86,442.

Patented Feb 21 1889.

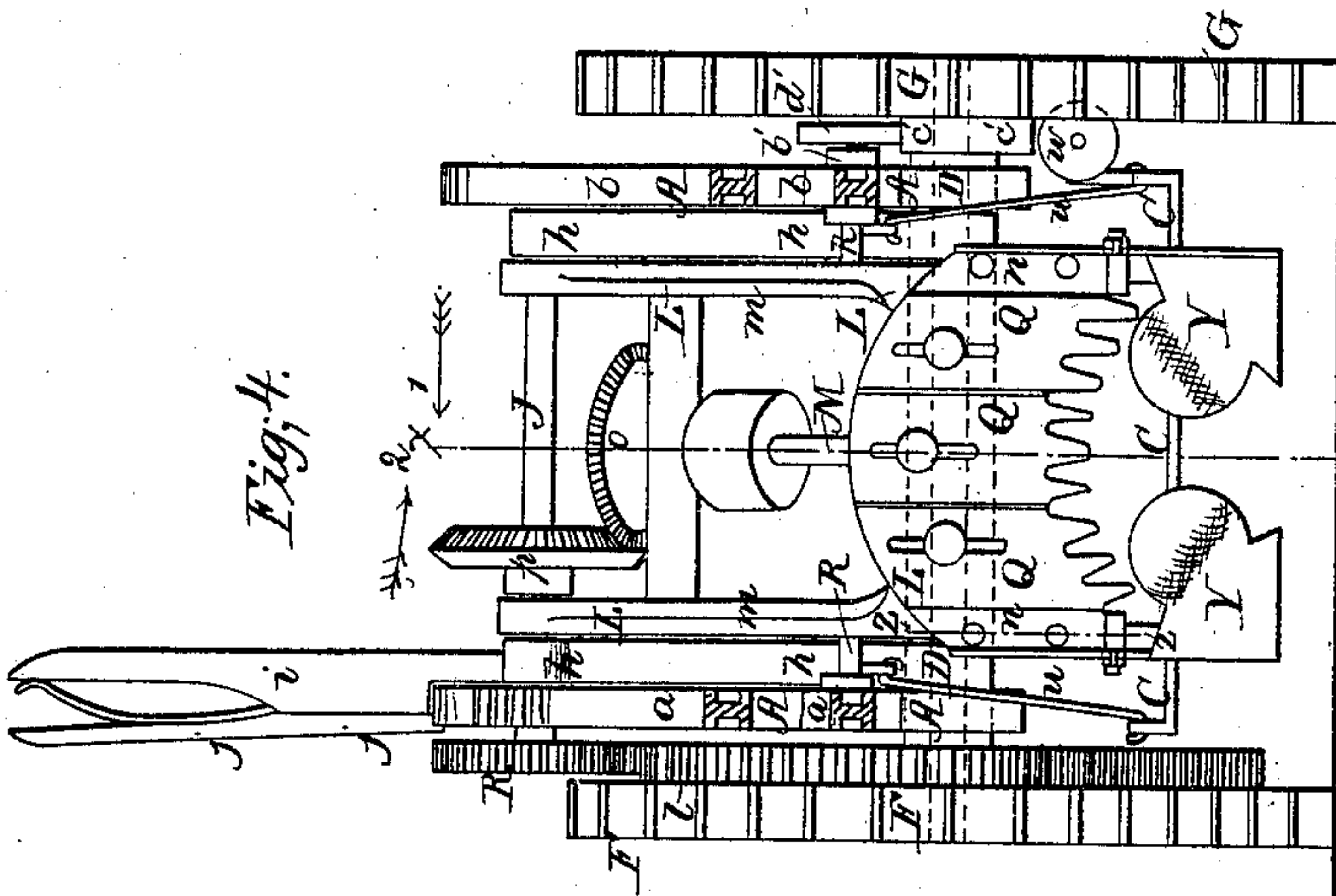


Fig. 4.

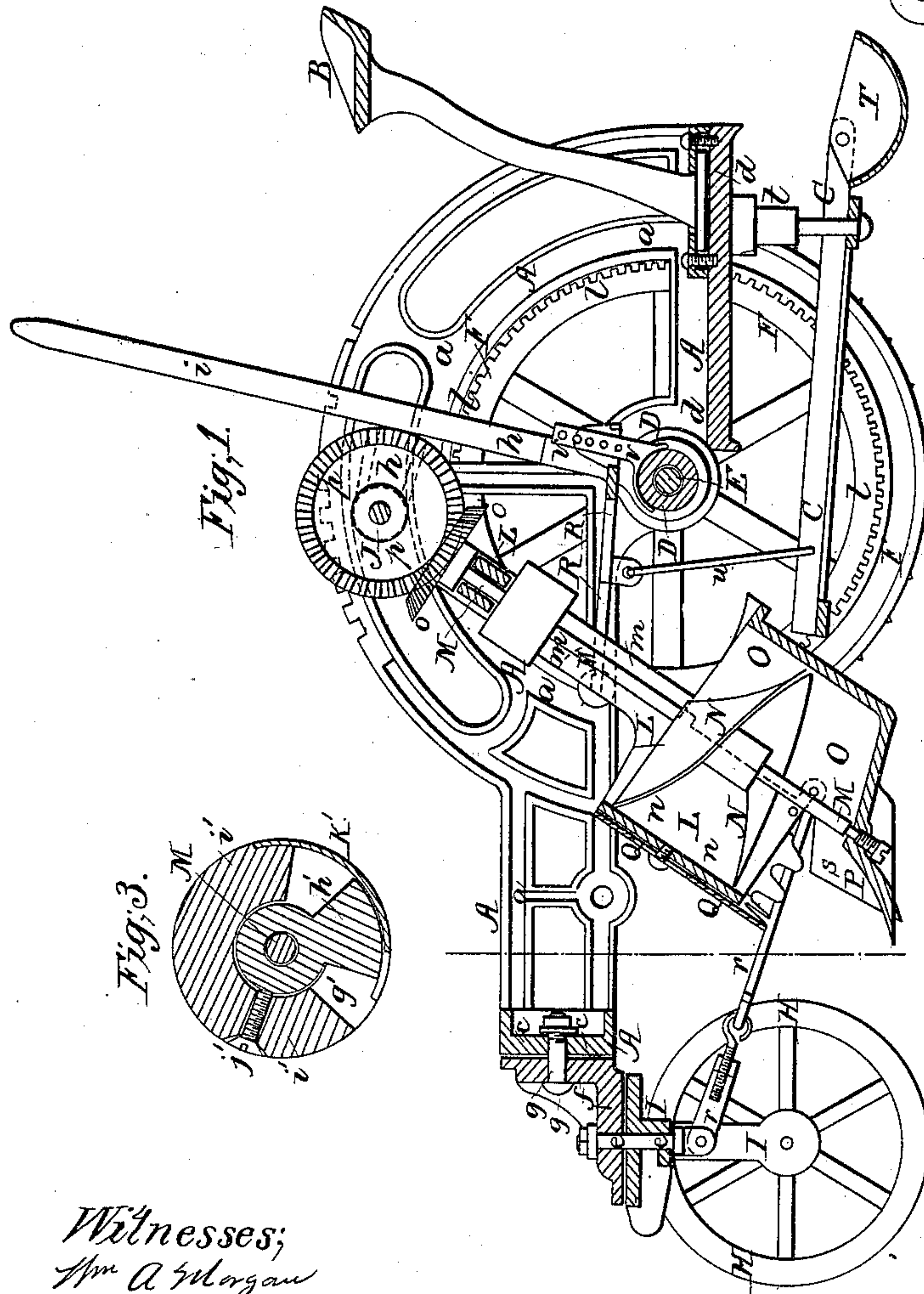


Fig. 1.

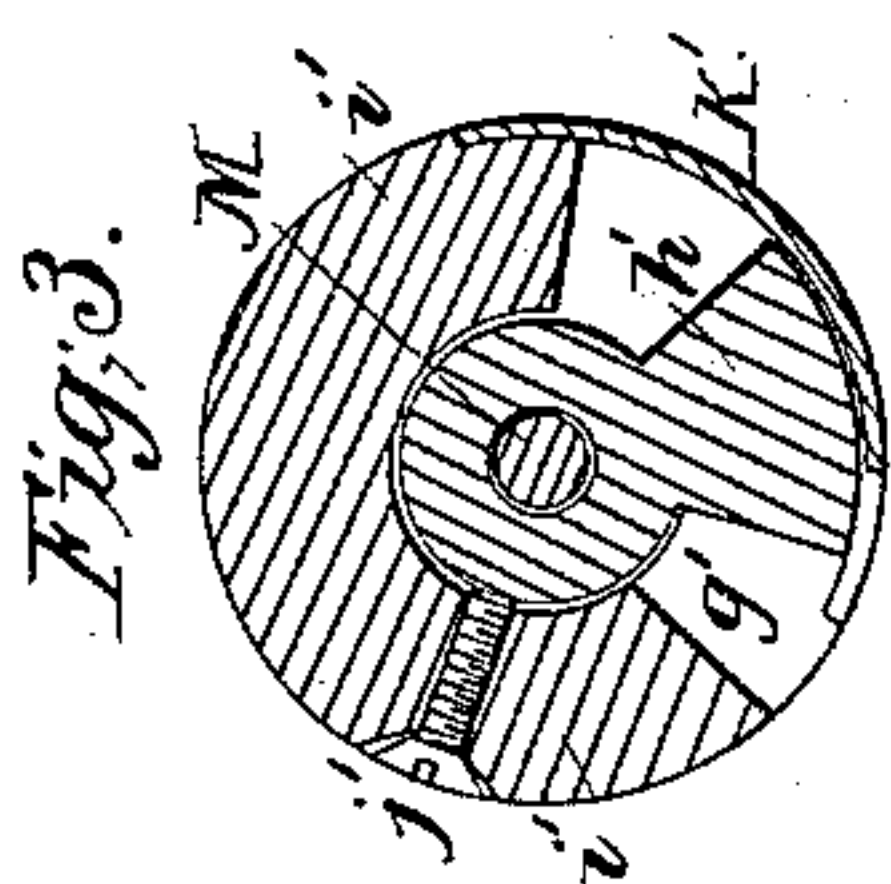


Fig. 3.

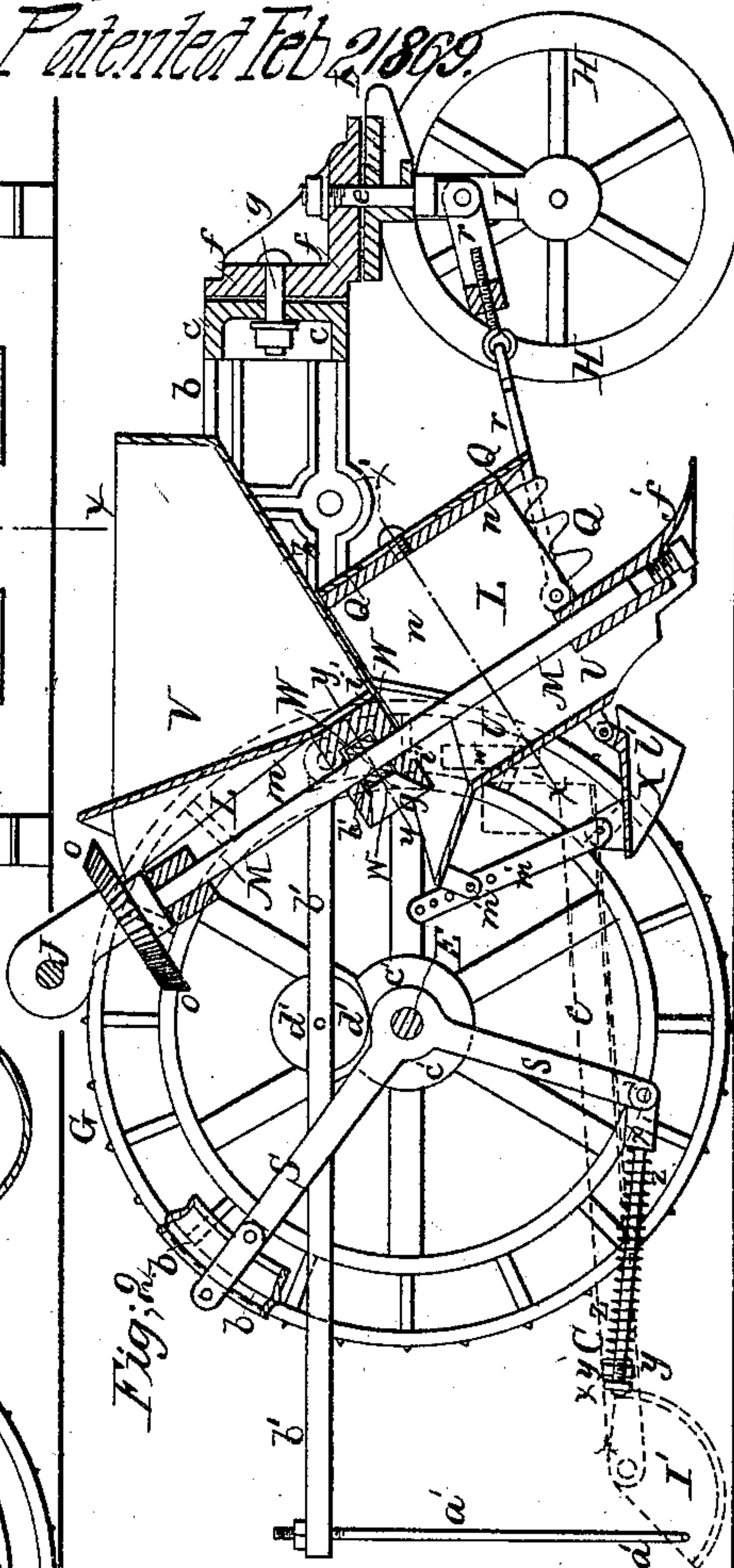


Fig. 2.

Fig. 6.

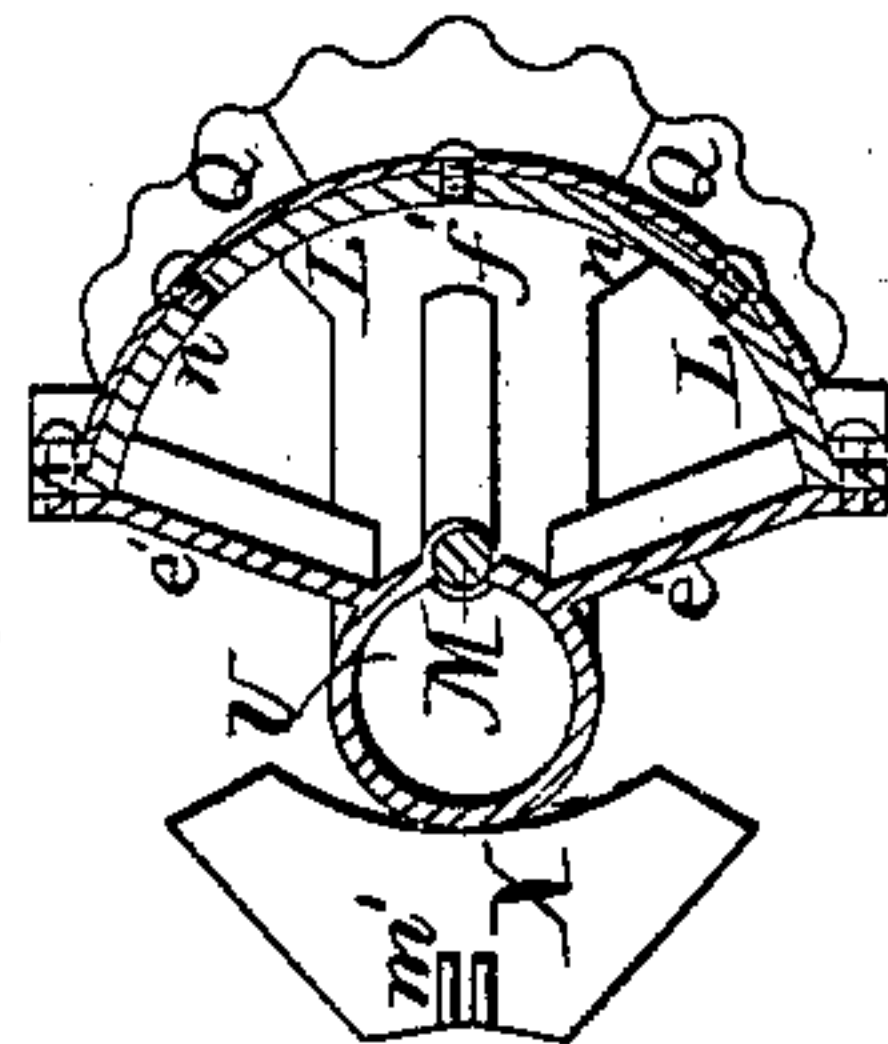
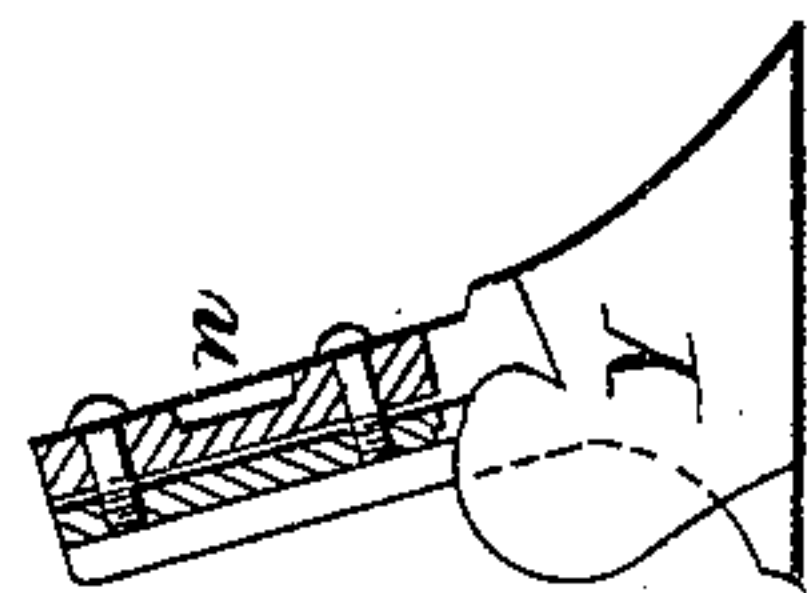


Fig. 5.



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CHARLES J. C. PETERSEN, OF PORTCHESTER, NEW YORK.

Letters Patent No. 86,442, dated February 2, 1869.

IMPROVEMENT IN POTATO-PLANTER, CULTIVATOR, AND DIGGER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHARLES J. C. PETERSEN, of Portchester, in the county of Westchester, and State of New York, have invented a new and useful Improvement in Potato-Planters, Cultivators, and Diggers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet I, represents a vertical longitudinal section of my improved potato-digger, the plane of section being indicated by the line *x x*, fig. 4. and the visionary direction by the arrow 1, fig. 4.

Figure 2, Sheet I, is a vertical longitudinal section of my improved potato-planter, the plane of section being indicated by the line *x x*, fig. 4, and the visionary direction by the arrow 2, fig. 4.

Figure 3, Sheet I, is a detail horizontal section, taken on the plane of the line *y y*, fig. 2.

Figure 4, Sheet II, is a front elevation of my improved potato-cultivator.

Figure 5, Sheet II, is a detail vertical section, taken on the plane of the line *z z*, fig. 4.

Figure 6, Sheet II, is a detail longitudinal section, taken on the plane of the line *x' x'*, fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a new agricultural implement, which can be used for planting, cultivating, and digging potatoes. The whole apparatus is so constructed that it can be readily converted from a planter into a cultivator or digger, and *vice versa*.

The invention consists in such a construction of the various parts constituting the machine, that the various functions will be performed by simple and strong apparatus.

A, in the drawing, represents the frame of my improved machine.

This frame is made of cast-iron or other suitable material, and is composed of side plates or bars *a b*, of a front cross-bar, *c*, and of suitable other cross-bars or plates, of which one, *d*, in rear, supports the driver's seat, B, and the vibrating grate or sieve, C.

D is a horizontal tube, having its bearings in the side bars *a b* of the frame A.

E is the cylindrical rear axle. The same is fitted through the tube D, and has its bearings in the same.

The main wheels, F and G, are respectively mounted on the ends of the axle.

The front wheels, H H, are hung on an axle, I, which is, by means of a king-bolt, *e*, pivoted to an L-shaped plate, *f*, the upright arm of said plate being, by means of a horizontal pin, *g*, pivoted to the front bar, *c*, of the frame A. The front truck is thus perfectly flexible, it being able to swing horizontally around the king-bolt, and vertically around the pin *g*.

From the tube D project upward two or more arms,

h h, which, at their upper ends, form bearings for a horizontal shaft, J. One of the arms is extended upward, to form a lever or handle, *i*, by means of which the tube can be turned, said lever having a spring-projection, *j*, that fits into one of a series of notches, provided for that purpose, in the side board *a* of the frame A, so that, by means of this spring-projection, or its equivalent, the tube and its appendages can be locked in any desired position.

The shaft J fits through a slot in the side plate *a*, and has a toothed wheel, *k*, on its outer end, which meshes into a toothed wheel, *l*, formed on the wheel F.

L is a metal or other frame, consisting of two up-rights, *m m*, which are, at their upper ends, hung on the shaft J, while their lower ends are connected by means of a semi-cylindrical plate, *n*, that projects forward, as shown.

In the frame L are the bearings for an upright shaft, M, which has a bevel-wheel, *o*, on its upper end, the same meshing into the teeth of a bevel wheel, *p*, on the shaft J.

Thus, as the wheel F revolves, when the machine is moved over the ground, the shaft J will also be turned, and, with the same, the shaft M.

By means of the lever *i*, the arms *h* can be swung forward or backward, to raise or lower the frame L, or to bring them into a more or less inclined position.

The lower part of the frame L should, by means of a flexible or jointed bar or chain, *r*, be connected with the front axle I, as shown in figs. 1 and 2.

N is a screw, mounted on the lower end of the shaft M.

When the apparatus is to be used as a potato-digger, a semi-cylindrical plate, *o*, is secured, by means of bolts or otherwise, to the rear of the semi-cylindrical part *n* of the frame L, so as to form a complete cylinder, *n O*, in which the screw N works, as shown in fig. 1.

A shovel, P, is formed on or attached to the plate O, and projects forward from the same, and side cutters *s s* are arranged on each side of the shovel, as in fig. 1.

When the frame L is lowered, so as to bring the shovel into the ground, and as the machine is drawn forward, the potatoes, as well as the earth around them, will be taken up by the shovel, and will, by the screw N, be taken from the shovel.

The screw N deposits its load in a continuous supply upon the vibrating sieve or grate C, which is directly in rear of the shell O.

The shovel can, by means of the lever *i*, be adjusted up and down, so as to take up potatoes at any desired depth.

Q Q are a series of bent plates, with corrugated sharpened lower edges. The plates are attached to the front of the cylinder *n O*, so that their corrugated edges project below the edge of the plate *n*, as shown in figs. 1 and 4.

The plates Q are up-and-down adjustable, either by being slotted or otherwise.

The object of the plates Q is to cut the vines at a certain desired height above the ground, to prevent their entering the machine.

The sieve or grate C is a frame, having a perforated bottom, and is suspended by a pin, *t*, from the rear part of the frame A.

The front end of the sieve is suspended, by means of rods *u u*, from a T-shaped bar, R, which is, with its two opposite ends, pivoted to the sides of the frame A, while its projecting arm is pivoted to a perforated rod, *v*, resting on the tube D.

By its connection with the post *v*, the height of the front end of the sieve can be regulated.

In an arm, projecting from the sides of the sieve, is hung a wheel, *w*, which does, with its edge, come in contact with the face of the wheel G, or F, the said face being toothed or roughened, as shown in fig. 2.

S is an elbow-crank, hung to the axle E, and fitting, with the upper arm, against the plate *b* (or *a*) of the frame A, so that it can be clamped thereto by means of a set-screw, or be otherwise fastened.

To the lower arm of the crank S is pivoted a rod, *x*, which fits through a lug, *y*, projecting from the rear part of the sieve C, a spiral spring, *z*, being fitted around the rod *x*, between the lug *y* and a shoulder on the rod.

By the action of the spring, the wheel *w* is always held against the wheel G, and if the sieve should be moved to one side by a projection on the wheel G, it will at once be thrown back by the spring. In this manner the sieve is oscillated around its pivot *t*.

By means of a nut, *y*, on the rod *x*, the power of the spring *z* can be regulated.

To the rear end of the sieve C is secured a trough or semi-cylindrical vessel, T, which is at its ends pivoted to arms projecting from the sieve. The potatoes from the oscillating sieve fall into this vessel T.

To one end of the vessel T is secured the lower end of a rod, *a'*, which rod is, with its upper end, fitted through the end of a lever, *b'*, as shown in fig. 2. The opposite end of the lever *b'* is pivoted to the side of the frame A.

The lever is supported by the cam-shaped hub *c'* of one of the wheels F G, or by some cam-shaped projection of the axle E, a friction-roller, *d'*, being pivoted to the lever, and resting on the cam *c'*. As the cam *c'* revolves, it causes the lever *b'* to be oscillated, and by the same motion the rod *a'* is alternately raised and lowered; thereby the vessel T is also oscillated.

In this manner the contents of the vessel T are discharged once during every revolution of the driving-wheels F G, but one depression being for that purpose formed on the cam *c'*.

The potato-digger has now been fully described. It will be seen that the potatoes are dug by means of the shovel P, the depth of which in the ground is regulated by means of the lever *i*.

From the shovel P, the potatoes and the earth are transferred, by means of the screws N, to the vibrating sieve C, upon which the earth is separated from the potatoes.

From the sieve the potatoes fall into the vessel T, and are from the same discharged at regular intervals, so that they can be easily formed in heaps, and picked up.

When the apparatus is to be used as a potato-planter, the rear half cylinder O, with its shovel-attachment P, as well as the screw N, will be removed.

Instead of the semi-cylinder O, a tube, U, provided with projecting plates *e' e'*, is screwed or otherwise fastened to the rear of the semi-cylindrical part *n* of the frame L, in the manner shown in figs. 2 and 6, and so that the tube U is directly in rear of the shaft M.

A shovel, *f'*, is formed in front of the lower part of the tube, as in fig. 2.

A hopper, V, is attached to the frame A in front of the shaft M, and above the semi-cylinder *n*.

The hopper has an aperture, close above its bottom, in its inclined rear wall, said aperture being closed by a cylindrical block, W, mounted on the shaft M.

The block W has a hole or seed-receptacle, *g'*, which, as the block revolves, is filled with seed from the hopper. By the further revolution, the block carries this seed away from the hopper, and discharges it into the tube, the upper part of which is enlarged, for the purpose of more securely receiving the seed, as in fig. 2.

Through the tube U the seed is dropped to the ground, into a furrow formed by the plow *f'*, and is then covered by a coverer, X, arranged in rear of the tube, as shown.

The block W consists of two parts, *h'* and *i'*. The part *h'* is a sector, secured to or fitted loosely around the shaft. *i'* is a shell, open on one side, fitted around *h'*, and adjustable, either alone or in connection with *h'*, so that the size of the seed-opening may be regulated by setting the part *i'*, or both parts, by means of a set-screw, *j'*.

The ends of the opening in the shell *i'* should not come in contact with the part *h'*, to allow adjustment.

Two spaces or seed-receptacles are thus formed, of which one may be closed by means of a plate, *k'*, attached to either part.

Instead of having one seed-opening, the block W may be differently constructed, so as to have two or more.

The coverer X is a plate, with laps or projecting plates *l'* at the ends. It is pivoted in front to the lower part of the tube, while in rear it is suspended from the upper part of the tube U by means of a bar, *m'*, which is adjustable as to length. The coverer is thus yielding and adjustable.

For a cultivator, the tube U is taken off, as well as the hopper, and, instead of the tube, two plows, Y Y, are secured to the two projecting flanges of the semi-cylinder *n*, either by means of bolts, as in fig. 5, or otherwise, their mould-boards being on the inside, as in fig. 4, so that they both throw the ground to the middle, thereby forming a hill between them.

The depth of the cultivators, as well as that of the plow *f'*, is regulated by means of the lever *i*, in the manner described for the potato-digger.

The cultivator, when arranged as described, can be used for potatoes, as well as for corn, rice, and other plants.

The shape of the plowshares Y does not form part of this invention.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The combination of the screen N with the digging-shovel and vibrating sieve, substantially as described, for the purpose specified.

2. The up-and-down adjustable plates Q, arranged above the shovel of a potato-digger, substantially as herein shown and described, for the purpose of cutting the vines, as specified.

3. The L-shaped plate *f*, introduced between the front axle and the frame A, substantially as described, for producing a jointed front truck, the said plate being, by means of a vertical and horizontal pin, respectively pivoted to the axle and frame, as specified.

4. The frame L, for supporting the planting, digging, or cultivating-implements, when it is suspended from a rotating shaft, J, which has its bearings in arms, projecting from a tube, D, that is fitted around the axle E of the driving-wheels, as specified.

5. The combination of shovel P, screw N, vibrating sieve C, and oscillating scoop T, with each other, sub-

stantially in the manner described, for the purpose of producing a potato-digger and separator, as set forth.

6. The vibrating sieve C, when suspended from and oscillating on a pin, *t*, in combination with the rods *u*, bar R, and support V, and with the lever S, rod *x*, spring *y*, and roller *w*, all made and operating substantially as herein shown and described.

7. The oscillating scoop T, arranged in rear of the

sieve C, and connected, by means of a rod, *a'*, with the oscillating lever *b'*, which is operated by means of a rotating cam, *c'*, substantially as herein shown and described.

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