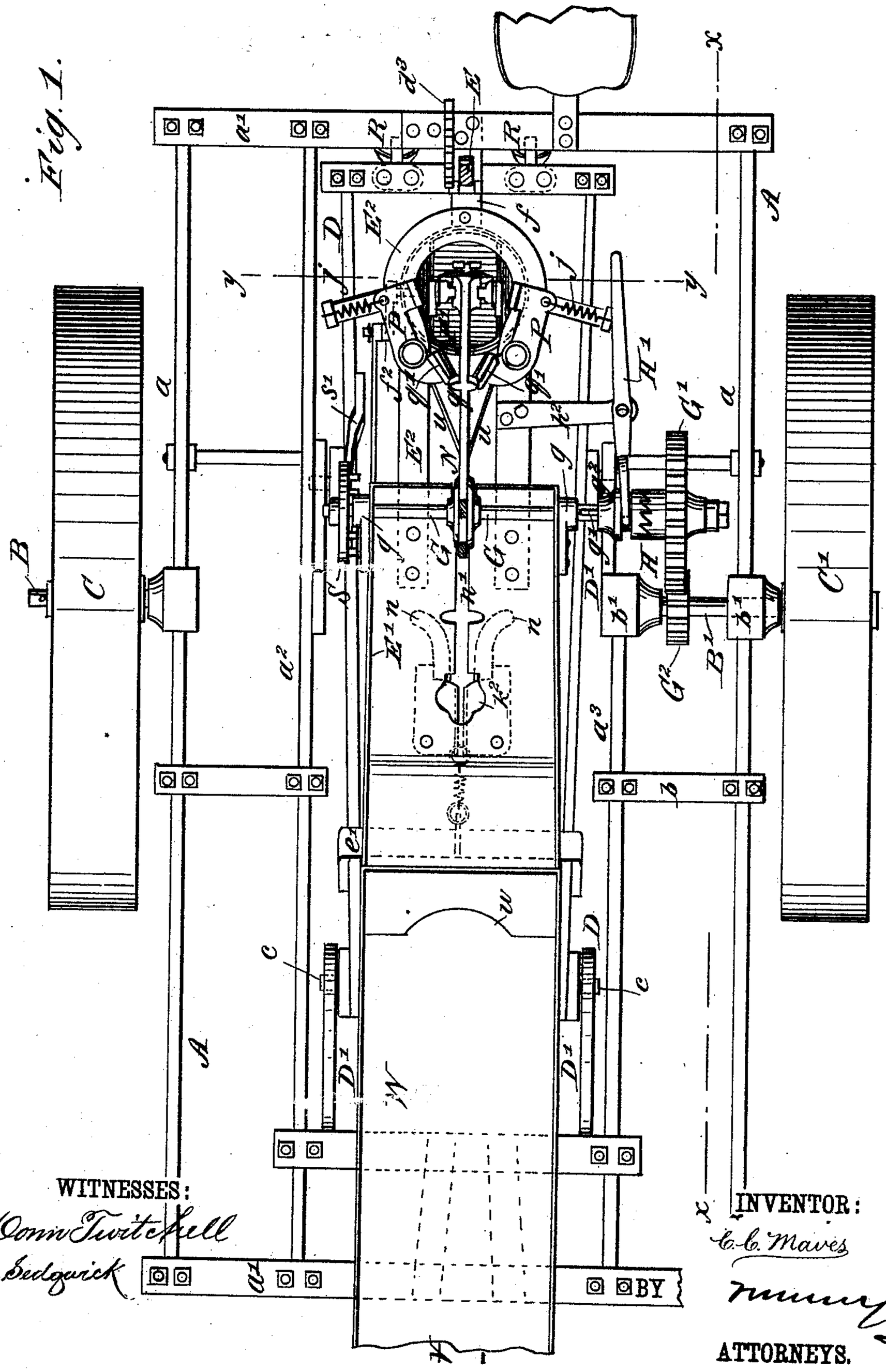
(No Model.) C. C. MAVES, Dec'd. 3 Sheets—Sheet 1.

J. H. MAVES, Administrator.

POTATO PLANTER.

No. 354,428. Patented Dec. 14, 1886.

Fig. 1.



(No Model.) C. C. MAVES, Dec'd. 3 Sheets—Sheet 2.

J. H. MAVES, Administrator.

POTATO PLANTER.

No. 354,428. Patented Dec. 14, 1886.

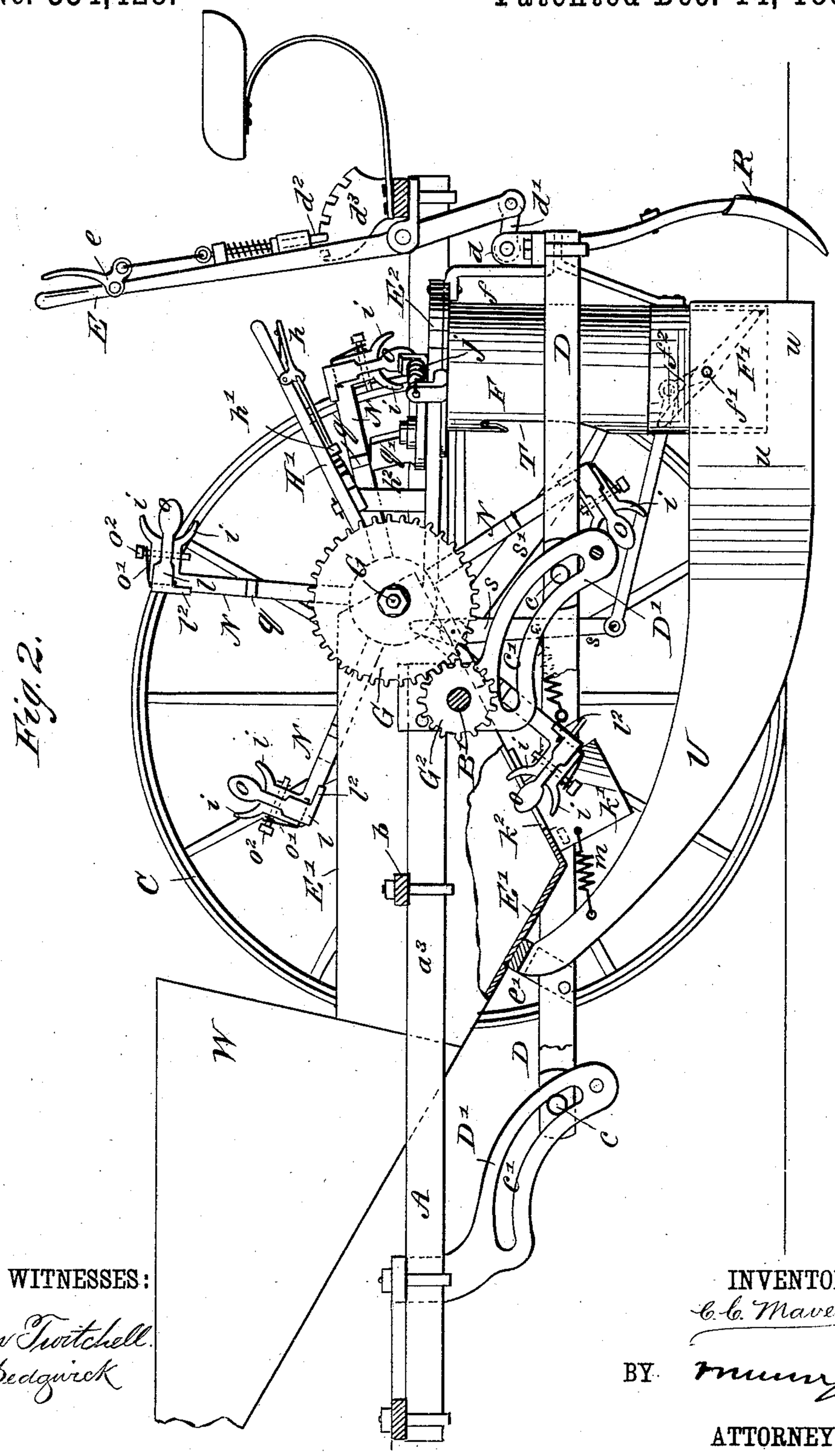


Fig. 2.

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C. Sedgwick

INVENTOR:

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C. C. MAVES, Dec'd.

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POTATO PLANTER.

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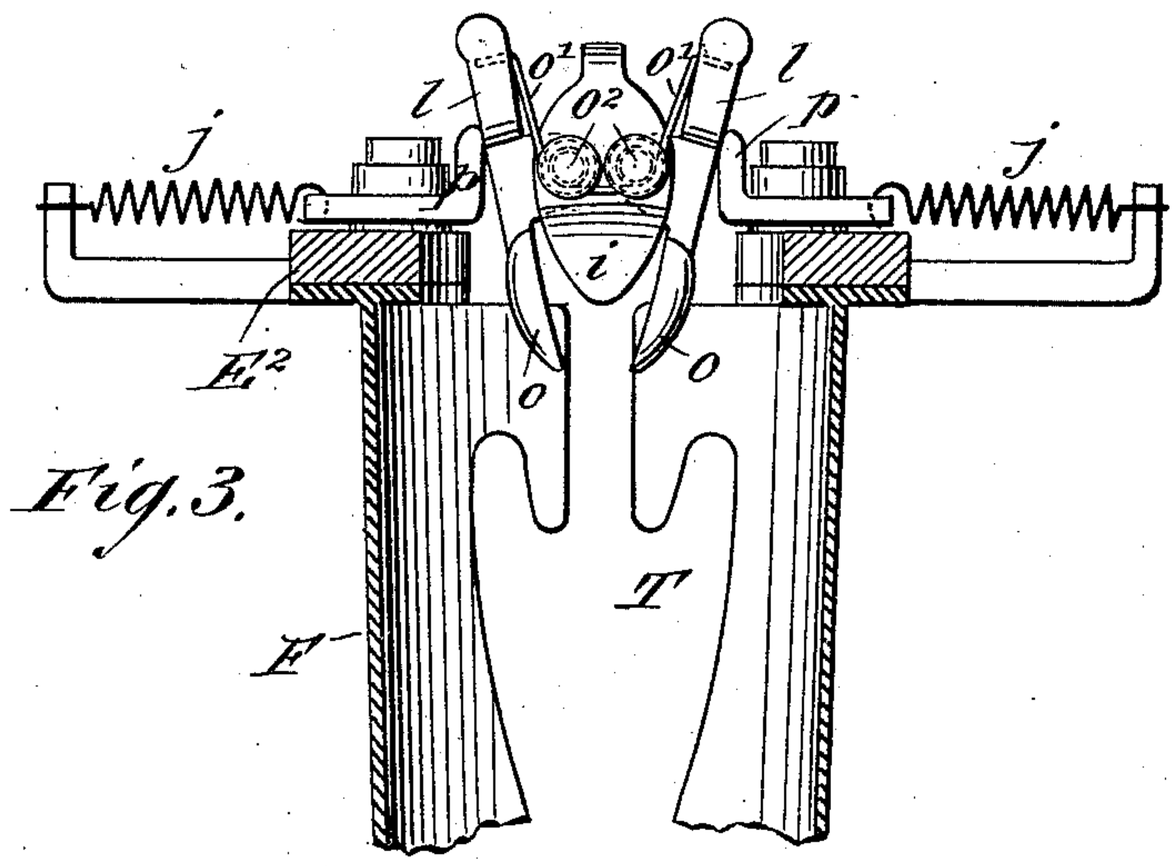

Fig. 3.

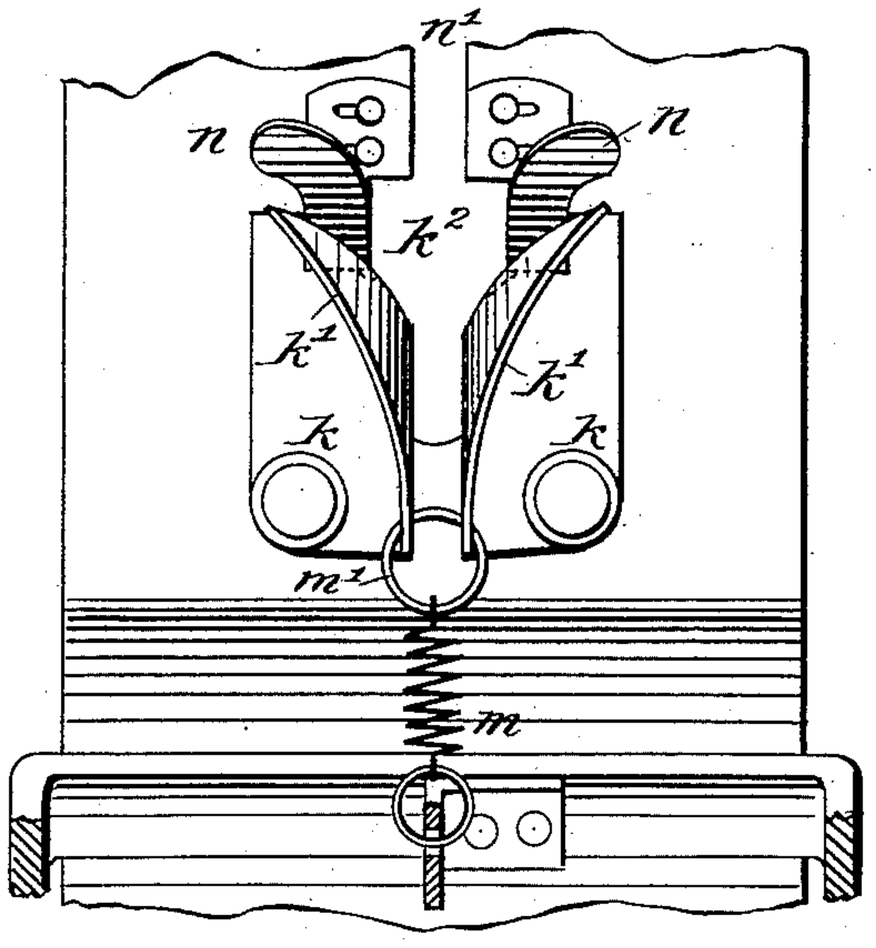

Fig. 4.

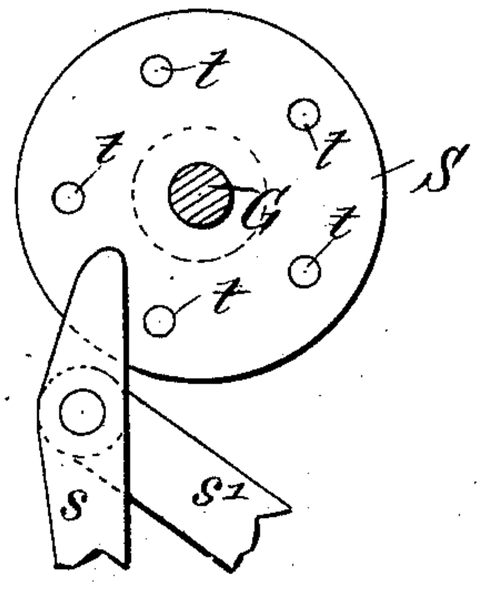

Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLIES C. MAVES, OF EAST DAVENPORT, IOWA; JOHN H. MAVES ADMINISTRATOR OF SAID CHARLIES C. MAVES, DECEASED.

POTATO-PLANTER.

SPECIFICATION forming part of Letters Patent No. 354,428, dated December 14, 1886.

Application filed April 1, 1886. Serial No. 197,431. (No model.)

To all whom it may concern:

Be it known that I, CHARLIES C. MAVES, of East Davenport, in the county of Scott and State of Iowa, have invented a new and Improved Potato-Planter, of which the following is a full, clear, and exact description.

My invention relates to the construction of a machine designed to be used as a potato-planter, the said machine being so constructed that the potatoes may be planted either in hills or drills, and being also so constructed that the space between the hills may be varied, as may also the distance between the seed when the potatoes are planted in drills.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my potato-planter, parts being in section. Fig. 2 is a sectional elevation of the same, taken on line *x x* of Fig. 1, parts being broken away. Fig. 3 is an enlarged detail view taken on line *y y* of Fig. 1. Fig. 4 is a view of a portion of the under side of the supply-box, and Fig. 5 is a detail view illustrating the construction of the mechanism employed to trip the shutter that is arranged in the delivery-cylinder.

In constructing such a machine as is illustrated in the drawings above referred to I provide an appropriate supporting-frame, A A, consisting of outer longitudinal bars, *a*, end cross-bars, *a' a'*, an inner longitudinal bar, *a''*, which runs the full length of the machine upon the right-hand side thereof, and a second inner longitudinal bar, *a'''*, which extends to a point just beyond the rear of the main axle of the machine, and is supported and held by a cross-strip, *b*, as clearly shown in Figs. 1 and 2.

The main axle of the machine is formed in two parts, the part B being rigidly secured to the outer bar, *a*, on the right of the machine, while the part B' is mounted in bearings *b' b'*, that are arranged as best shown in Fig. 1, the wheel C being free to turn upon the fixed portion of the axle, while the wheel C' is fixed to the movable section B' of said axle.

The mechanism employed for the purpose of gathering and depositing the potato-seed is carried by an auxiliary frame, D, which said frame is provided with pins or lugs *c*, that ride in curved grooves *c'*, that are formed in downwardly-extending arms D', that are rigidly secured to the main frame A, as indicated, and the position of the frame D is controlled by means of a lever, E, that is pivotally connected to the rear cross-bar, *a'*, of the frame A, and arranged so that the lower end of the lever is connected with a bracket, *d*, carried by the frame D by means of a link, *d'*. The lever E carries a catch, *d''*, which engages with a toothed rack, *d'''*, that is fixed to the frame A, the catch *d''* being operated by a hand-piece, *e*, from which arrangement it will be seen that as the lever E is thrown toward the rear of the machine the frame D will be forced forward and upward, so as to raise the seed-dropping mechanism clear of the ground.

The frame D carries a forward cross-bar, *e'*, and upon this cross-bar there is secured a delivery-box, E', to the under side of the rear upwardly-inclined face of which there is bolted a yoke, E'', which in turn is supported by an upwardly-extending bracket-arm, *f*, fixed to the rear cross-bar of the frame D. To the under side of the yoke *e''* there is secured a cylinder, F, in the bottom of which there is arranged a tripping-plate, F', that is mounted on a crank-shaft, *f'*, the crank-arm of which is shown best in Fig. 2 at *f''*.

The main shaft G is mounted in bearings *g g*, that are secured to the side walls of the delivery-box E', and this shaft G carries a gear, G', which engages with a gear, G'', that is carried by the section B' of the axle, the gear G' being loosely mounted on the shaft G, and being formed with one half of a clutch, H, the other half being, as usual, formed with a groove that rides on a feather, *g'*, formed on the shaft G, and the movable portion *g''* of the clutch H being operated by a lever, H', provided with a hand-piece, *h*, that operates a catch, *h'*, which engages with a rack carried by the bracket *h''*, to which the lever is pivoted.

The shaft G carries a number of radial arms, N, five of such arms being shown in the drawings, and upon the ends of these arms there are two fixed jaws, *i i*, and two movable jaws, *o*, are pivotally mounted between the fixed jaws and arranged so that their points closely approach or meet between the said jaws *i i*, being nor-

mally held in the closed position by means of springs *o' o'*, that are coiled about the pins *o''*, by which the movable jaws *o* are held. The jaws *o* have rearwardly-extending arms *l*, each of which arms is provided with a lug, *l''*, which projects inward toward the shaft G.

Upon the bottom of the delivery-box E' there are pivotally connected two leaves, *k*, arranged so that they will fold together to close the aperture *k''*, formed in the bottom of the said delivery-box. The wings *k k* are normally held in the closed position by means of a spring, *m*, which is fixed to the outwardly-folding wings *k'* by means of a ring, *m'*, and also fixed to a stationary support, as indicated in Fig. 4.

Just to the rear of the wings *k'* there are arranged arms *n n*, that are adjustably connected to the under side of the delivery-box E', and this delivery-box is formed with a narrow opening, *n'*, which extends upward toward the shaft G.

The potato-seed, having been properly cut, is placed in the box E', and as the machine advances the arms N will be rotated, and as the jaws carried upon their extending ends approach the opening *k''* in the bottom of the box E' the wings *k'* will be forced apart to allow the jaws to enter the said box E', and as the leaves are so forced apart the jaws *o* will be opened by the action of the arms *n n*, which at this time come in contact with the lugs *l''* of the jaws *o* and act to force said lugs toward each other, thus opening the jaws and permitting a single piece of the seed-potato to enter in the space between the two fixed and the two movable jaws of each arm as it passes into the box. As the arm continues to revolve, the lugs *l''* will pass from engagement with the arms *n n*, so that the jaws *o* will be forced down, and a piece of potato will be held in the space between the jaws, to be carried to the rear by the continued rotation of the shaft G. When the arm reaches a position just above the cylinder F, two projecting lugs, *q q*, that are formed upon the arms, as best shown in Fig. 1, strike against upwardly-projecting and outwardly-flaring ears *q' q'*, formed upon the jaws P, that are pivotally connected to the upper face of the yoke E'', the said jaws being normally held in the position shown in Fig. 1 by springs *j j*. Now, as the arm advances and is carried down within the cylinder F, (the forward side of which is formed with an aperture, T, as best shown in Figs. 2 and 3,) the jaws P P are advanced so that they strike against the arms *l* of the jaws *o*, thus forcing said arms together and separating the jaws *o*, so that the seed-potato held in the space between said jaws will drop within the cylinder F and upon the shutter F', arranged in the bottom of said cylinder, and this operation is repeated for each piece of potato gathered from the box E' and deposited within the cylinder F.

The shutter F' is tripped by means of a lever, *s*, that is pivotally connected to an arm, *s'*, which projects upward from the frame D, the upper end of this lever extending within the paths of pins *t*, that are carried by a pin-disk, S, that is keyed to the shaft G, there being as many of the pins *t* as there are arms N upon the shaft G.

In order that a proper furrow may be formed, within which the seed may be deposited, I provide an opener, U, the forward end of which is rigidly secured to the cross-bar *e'*, and which is gradually curved downward, and as it approaches the cylinder F branches out in two wings, *u u*, which wings pass one on each side of the lower portion of said cylinder, the cylinder and the wings being rigidly connected, as will be readily understood. At the rear and upon each side of the cylinder there are covering-shovels R R, so arranged that after the seed has been dropped in the furrow formed by the opener U they will throw the earth inward to cover such seed.

In addition to the box E', I provide an auxiliary box or storage-receptacle, W, in the lower portion of the rear wall of which there is an opening, *w*, as clearly shown.

V represents the tongue of the machine, and from its location it will be seen that there will be no side draft upon the machine, all parts being arranged in a line directly to the rear of the tongue.

Now, although I have represented the machine as being provided with five radial arms, N, it will of course be understood that this number could be increased to ten or even more, or could be reduced in number, the number of arms depending upon the distance required between the seed to be deposited; and it will of course be understood that the number of arms would depend upon the relative proportions of the gears G' and G'', and from the peculiar arrangement and formation of the slotted arms D' and the frame-manipulating lever E it will be readily appreciated that the size of the gear G' could be varied, the proper meshing of gears of varying size being brought about by varying the position of the frame D.

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

1. A gathering apparatus for a potato-planting machine, consisting of an arm provided with fixed and movable jaws, substantially as described.

2. A gathering apparatus for a potato-planting machine, consisting of an arm provided with fixed jaws, movable jaws pivotally mounted between said fixed jaws, and a spring, *o'*, substantially as described.

3. In a potato-planting machine, the combination, with a delivery-box formed with a lower opening, of folding leaves *k*, provided with wings *k'*, flaring arms *n*, and a gathering mechanism carried by the main shaft of the machine, and consisting of an arm provided with fixed and movable jaws, the movable jaws being formed with arms *l*, lugs *l''*, and springs *o'*, arranged substantially as described.

4. In a potato-gathering machine, the combination, with a delivery-box formed with an

aperture closed by normally-folded leaves that are provided with wings *k'*, of a gathering mechanism carried by the main shaft of the machine, consisting of an arm, N, having rigid or fixed jaws *i i*, movable jaws *o o*, mounted on pivot-pins *o'' o''*, arranged to fold between the fixed jaws, arms *l l*, formed in connection with the jaws *o*, lugs *l''*, projecting from said arms *l*, and springs *o'*, substantially as described.

5. In a potato planter, the combination, with a main frame mounted on wheels, of a movable frame mounted in curved ways formed in brackets carried by the main frame, and a manipulating-lever carried by the main frame and connected to the movable frame, substantially as described.

6. In a potato-planter, the combination, with a main frame mounted on wheels, of a movable frame mounted in curved ways formed in brackets carried by the main frame, a delivery-box, a gathering mechanism, and a depositing shutter or trap, said box, gathering mechanism, and trap being carried by the movable frame, and an operating-lever mounted on the main frame and connected to the movable frame, substantially as described.

7. In a potato-planter, the combination, with a box, of leaves *k k*, pivotally connected to the bottom of said box and formed with flaring wings *k' k'*, a spring, *m*, and arms *n n*, and a series of gathering-arms, N, provided with gathering attachments, substantially as described.

8. In a potato-planter, the combination, with a depositing cylinder or tube formed with a forward opening, T, and provided with a trap or shutter, F', of a shutter-tripping mechanism and a gathering and depositing mechanism, consisting of arms N, carrying jaws *i i o o*, the jaws *o* being provided with arms *l*, having lugs *l''*, and having a spring, *o'*, jaws P P, and springs *j*, substantially as described.

9. In a potato-planting machine, the combination, with a fixed frame mounted on wheels and carrying shovels R R, of a movable frame, D, mounted in ways formed in brackets D', an opener, U, carried by the movable frame, and a gathering and depositing mechanism, substantially as described, and a lever mounted on the stationary frame and connected to the movable frame, all as hereinbefore set forth.

CHARLIES C. MAVES.

Witnesses:
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FRANK KESSLER.