

(No Model.)

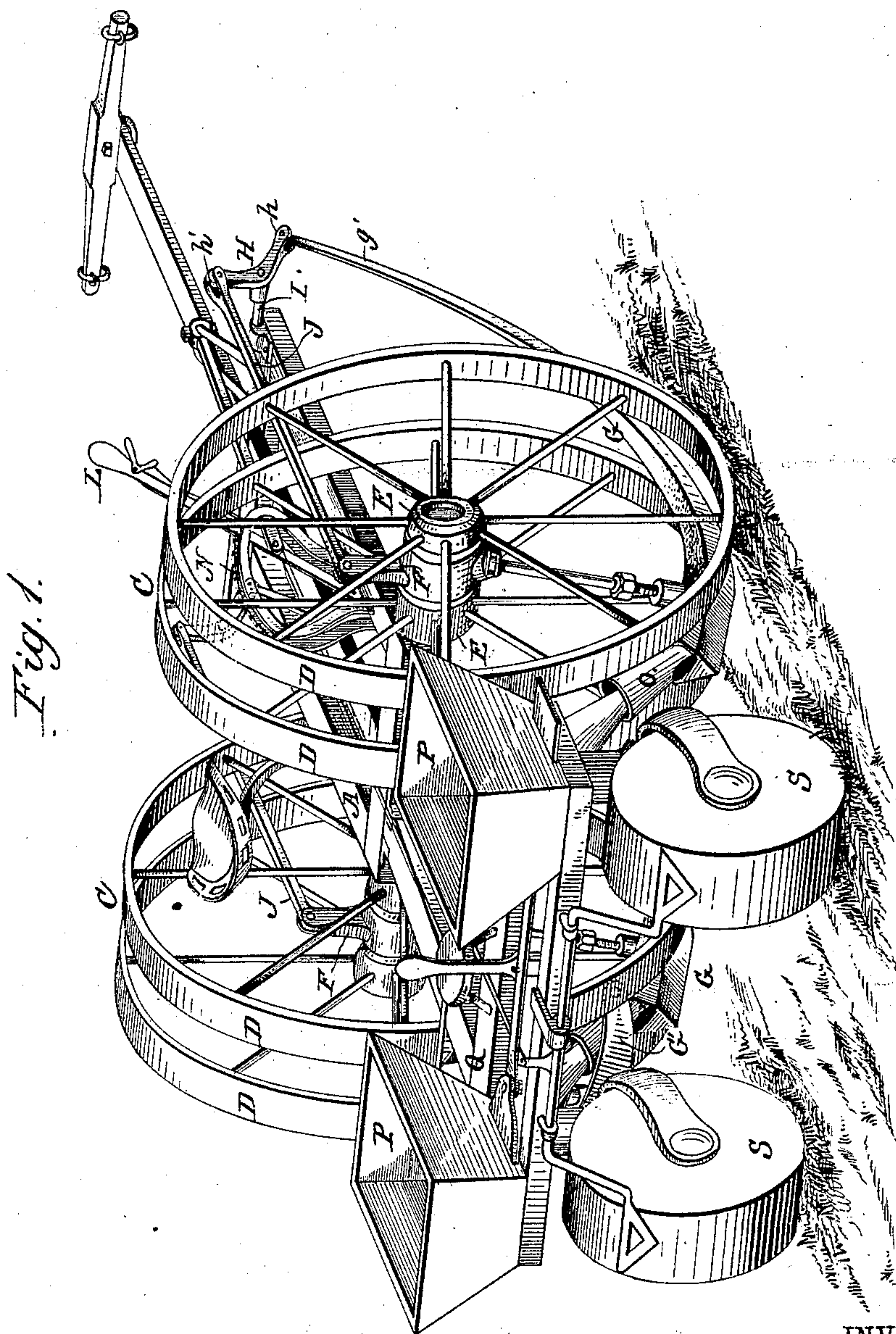
3 Sheets—Sheet 1.

E. W. VEST.

SEED PLANTER.

No. 285,184.

Patented Sept. 18, 1883.



WITNESSES:

Thos. Houghton
A. G. Levee!

INVENTOR:

Eugene W. Vest
BY *Munn & Co*
ATTORNEYS.

(No Model.)

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Fig. 6.

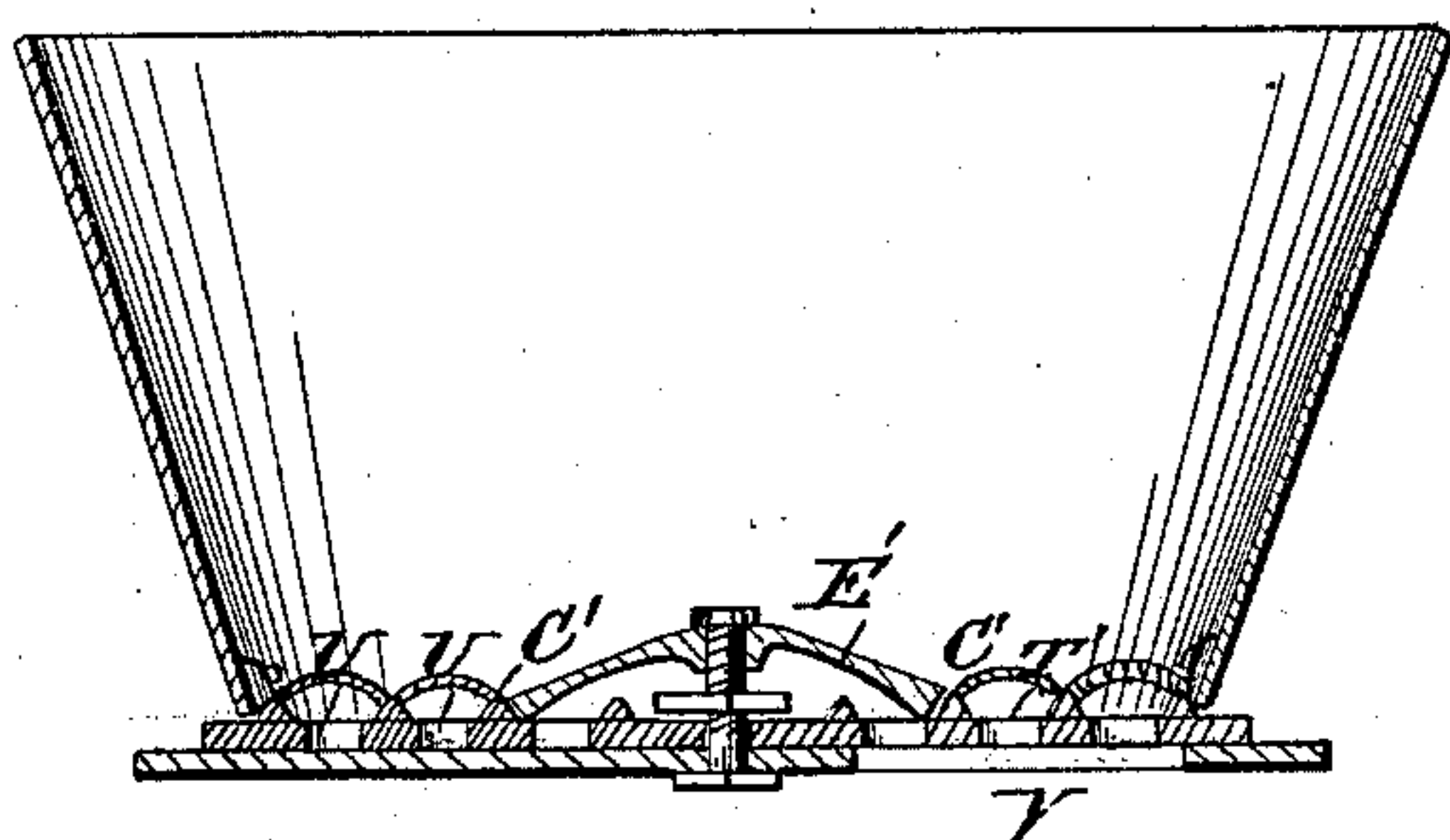


Fig. 7.

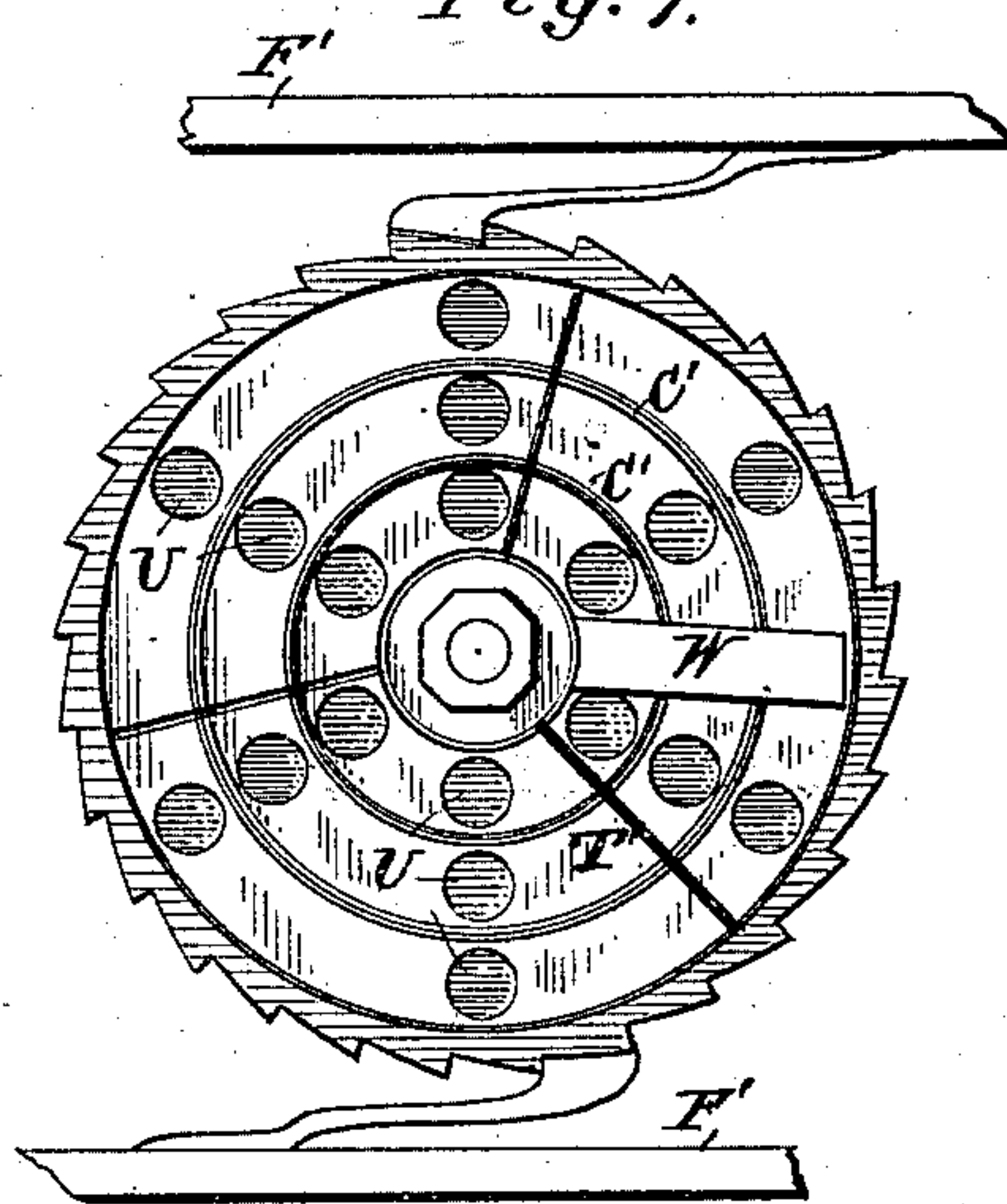
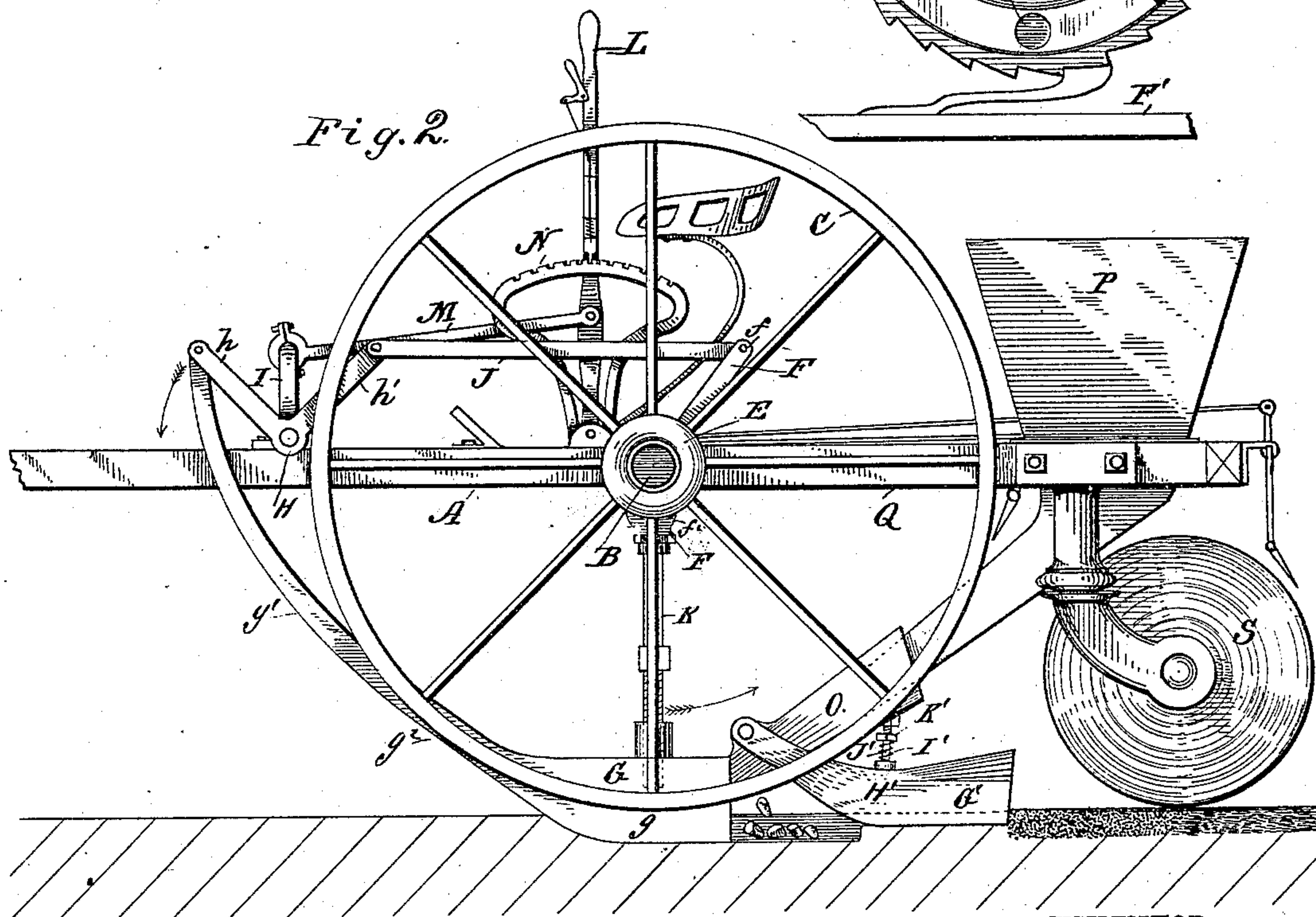


Fig. 8.



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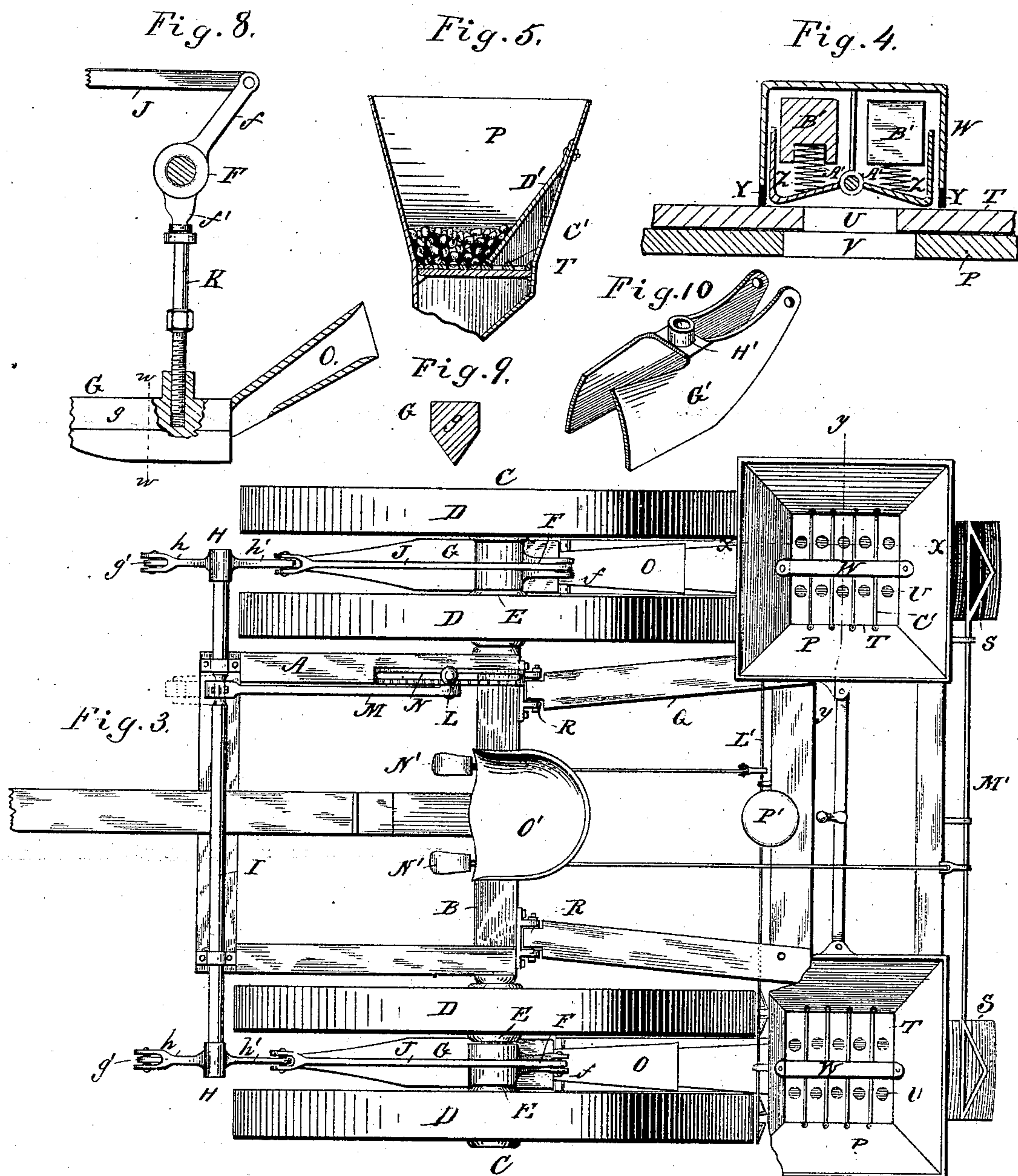
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Thos Houghton.

A. G. Lyne.

INVENTOR:

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BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EUGENE W. VEST, OF SEDALIA, MISSOURI, ASSIGNOR OF ONE-HALF TO
EDWARD WESTON STEVENS, OF SAME PLACE.

SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 285,184, dated September 18, 1883.

Application filed August 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, EUGENE W. VEST, of Sedalia, in the county of Pettis and State of Missouri, have invented a new and useful Improvement in Seed-Planters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The primary object of this invention is to provide a seed-planter in which the depth of the furrow or drill shall be controlled by the weight of the machine; and the invention consists of the novel construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of my seed-planter. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view of the same, partly broken away. Fig. 4 is a section on line *yy* of Fig. 3. Fig. 5 is a section on line *xx* of Fig. 3, showing a plate for regulating the quantity of drop. Figs. 6 and 7 are respectively a section and plan view, showing a modification of the dropper. Fig. 8 is a detail sectional view, partly broken away. Fig. 9 is a section on line *ww* of Fig. 8, and Fig. 10 is a perspective view of the coverer.

In carrying out the primary object of my invention, as above stated, I provide for the arrangement of the runners or furrow-openers directly under the supporting-axle of the machine, in order that the weight supported by the axle shall be adapted to force the said runners into the ground, while the wheels which carry the axle shall limit this effect of the weight to prevent sinking the runners into the soil beyond the depth for which they may be set. With such a construction the depth of the furrow will always be uniform, no matter how uneven the surface of the ground may be, since the wheels, which always move on the surface of the ground, serve as gages for the runners and compel them to move up or down, according to the undulations or unevenness of the ground. The advantages of such a construction are obvious. The entire crop of corn or other grain will be planted the same depth, producing uniformity of growth, and as the runners are to be made adjustable, the depth of the planting may be regulated according to the requirement of each particular kind of

grain, without the danger of planting too deep, and thus in some seasons necessitating the re-planting of whole fields.

Referring to the drawings illustrating this particular part of my invention, A indicates the frame-work proper; B, the supporting-axle, and C the wheels carrying the axle. Each wheel C is preferably formed of two parallel disks, rims, or fellies, D connected to a single hub, E, in such manner as to leave an open space between the parts D from the periphery to the hub. On the central part of each hub E is journaled a lever, F, having an upper arm, *f*, and a lower arm, *f'*, and between the parts D of each wheel is arranged the runner G, which is connected to the two arms of the lever F, and is thus adapted to oscillate on the hub E.

The runner G is formed with a tapering body, *g*, having vertical sides and a V-shaped bottom in cross-section, as shown in Fig. 9, and with a long curved arm, *g'*, which is pivoted to the arm *h* of a bell-crank, H, connected to a rock-shaft, I, which is journaled on the forward part of frame A. A pivoted bar, J, connecting the arm *h'* of the bell-crank with the arm *f* of the lever F, completes the connection of the runner with the upper end of said lever. In the end of the arm *f'* of the lever F is swiveled a rod, K, which screws into the body *g* of the runner, and forms the main connection of the runner with the lever. This rod serves by its screw-connection with the runner to adjust and hold the runner at the desired position for making the furrow. The connection of the arm *g'* of the runner with the lever F by means of the bar J is not essential to the operation of the device, since the runner is rigidly connected to the said lever by the rod K; but the bar J adds strength to the connection and gives increased power in lifting the runner by means of the rock-shaft I. This rock-shaft is connected to a hand-lever, L, by a bar, M, and is to be set by means of the rack N, with which a pawl on the lever engages. The lower part of the curved arm *g'*, at the point *g''*, where it unites with the body of the runner, is made straight, in order that when the bell-crank is oscillated in the direction of the arrow, Fig. 2, the body and arm of

the runner may swing rearward out of contact with the ground, the said straight part g^2 being then brought into a horizontal position along the surface of the ground.

5 To connect the runner or furrow-opener with the spout of the hopper, the former is provided with a chute, O, which is rigidly attached to the rear end of the body of the runner, and forms a sliding joint with the spout. In such
10 case the hoppers P will be supported on a supplemental frame, Q, hinged to the frame A at R, and supported on casters S, as shown in Figs. 2 and 3. Instead of this arrangement, however, I may support the hoppers on the
15 runners by means of the chutes O, and brace them by arms connected to levers F in such manner that they shall move with the adjustment of the runners; but where the sliding connection is made by the chute and spout by
20 making the chute slightly larger than the spout, which is arranged therein, the chute will have sufficient play thereon to accommodate the movement of the runners when the latter are lifted out of the ground. The hoppers are pro-
25 vided with my improved dropper, by which I provide for dropping an exact number of grains of corn in each hill. This dropper consists of a slide, T, or rotary disk T', having a given number of cups, U, each large enough to con-
30 tain one grain only, and arranged in rows, which rows are adapted to deliver their grains in turn at separate movements of the dropper.

Over the delivery-opening V in the bottom of the hopper, and above the slide or disk, is
35 secured a guard or cut-off, W, having openings Y in its sides, which register with the cups U. Inside this guard, which is box-shaped, is arranged opposite to each opening Y a scraper or valve, Z, consisting of an angular
40 plate pivoted at one end near the center of the guard, with its center or angle opposite to the opening, and held down in a yielding manner upon the upper surface of the slide or disk by a spring, A', and a weight, B', resting on the
45 spring. Suitable partitions are to be arranged in the guard W, for holding the weights in position. The plates or valves serve to brush off any second or third grain that may be partially held by any of the cups, the angle of the valves
50 and their yielding character preventing any cutting or cracking of the grains. To guide the grains into the cups the hoppers are provided with longitudinal or circular ribs C', according to the character of the dropper, which
55 ribs have their sides sloping to the cups. These ribs are secured to the hoppers just above the slide or disks of the dropper. When the number of grains planted to a hill is to be lessened, a number of the cups are to be covered by se-
60 curing a plate over them. Where the slide-dropper is used, a plate, D', as shown in Fig. 5, is to be bolted to one side of the hopper, with its lower end braced against one of the ribs C'. By means of a suitable slot in the
65 plate, it may be adjusted to cover any number of holes or cups desired. Where the rotary

dropper is used, as shown in Fig. 6, a disk, E', is to be bolted to the center of the disk, with its edge resting against one of the circular ribs. The disk is to be made somewhat convex on top 70 to guide the grain outward to the open cups. Each hopper is to be provided with a series of such plates of different sizes, a larger or smaller one being used, according to the number of cups to be left open. In Fig. 7, F' indicates the 75 usual means for rotating the dropper.

The coverer G' consists of two plates or shares, which are set in an approximately vertical position and connected by a cross-bar, H', arranged near their centers. The forward 80 ends of the plates are pivoted to the runner or chute, as shown in Fig. 2, with the chute arranged between them to convey the grain to the furrow just in the rear of the runner. The plates are to be arranged sufficiently far apart 85 to stride the furrow, and they incline slightly toward each other at the rear, in order that they shall rake the soil inward to the center, forming a continuous mound, which is pressed by the casters following at the rear of the 90 planter.

To hold the coverer down in the soil at the desired depth, the cross-bar H' is provided with an opening, in which a rod, I', connected to the chute, is loosely arranged, and a spring, 95 J', is arranged on the rod between the bar H' and a nut, K', screwing on the rod. The spring, the tension of which is regulated by the screw and nut, serves to hold the coverer down in a firm but yielding manner, so that it will pass 100 over obstructions without danger of breakage.

L' M' are rock-shafts carrying scrapers for the wheels and casters, and N' N' are treadles for operating the same. O' P' are seats for the 105 operators.

What I claim is—

1. The combination, with the main axle in a seed-planter, of the runners or furrow-openers arranged underneath the said axle and at- 110 tached thereto, whereby the weight of the machine shall sink the runners into the ground, and the supporting-wheels on said axle shall serve as gages for the runners to regulate the depth of furrow, substantially as specified.

2. The combination, with the main axle in 115 a seed-planter, of the runners or furrow-openers arranged underneath the said axle, and pivoted on said axle or the hubs of its wheels, and the supporting-wheels formed with two rims each, which stride the runners to serve as 120 gages for the same while the weight of the machine forces the runners into the ground, substantially as specified.

3. The combination of the wheels, each formed with two rims secured to a single hub, 125 the levers journaled on the central part of the said hubs, and the runners arranged under the axle, between the rims of the wheels, and journaled on a rock-shaft at their forward ends, and means for connecting the forward and rear 130 ends of the runners to the ends of the said levers, substantially as specified.

4. The combination of the wheels, formed as described, the levers journaled on the central part of the hubs of the wheels and having upper and lower arms, the runners connected to a rock-shaft at their forward ends and arranged to extend back under the hubs, the bars connecting the rock-shaft with the upper arms of the said levers, and means for operating and controlling the rock-shaft, and the swiveled screw-rods connecting the runners at their rear ends with the lower arms of the said levers, substantially as specified.

5. The combination, with the runners formed with chutes for conveying the grain from the hoppers or hopper-spouts to the furrows, of the coverers, each consisting of two approximately-vertical plates or shares connected together and pivoted to the runners or chutes, and the adjusting springs and screws arranged between the chutes and coverers, substantially as specified.

6. The combination, with the hoppers, of the dropper having the seed-cups arranged in rows, the cups of each of which deliver their grains together, the guard made box-shaped, with openings at the sides, and having pivoted angular valves arranged to close said openings, and springs and weights for controlling the valves, substantially as specified.

7. The combination, with the hoppers and the droppers having the seed-cups arranged in rows, which rows in turn deliver their grains together, of the ribs for guiding the grain into the cups, and the plate or plates for covering a number of the cups to lessen the quantity of drops, substantially as specified.

EUGENE W. VEST.

Witnesses:

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SOLON C. KEMON.