

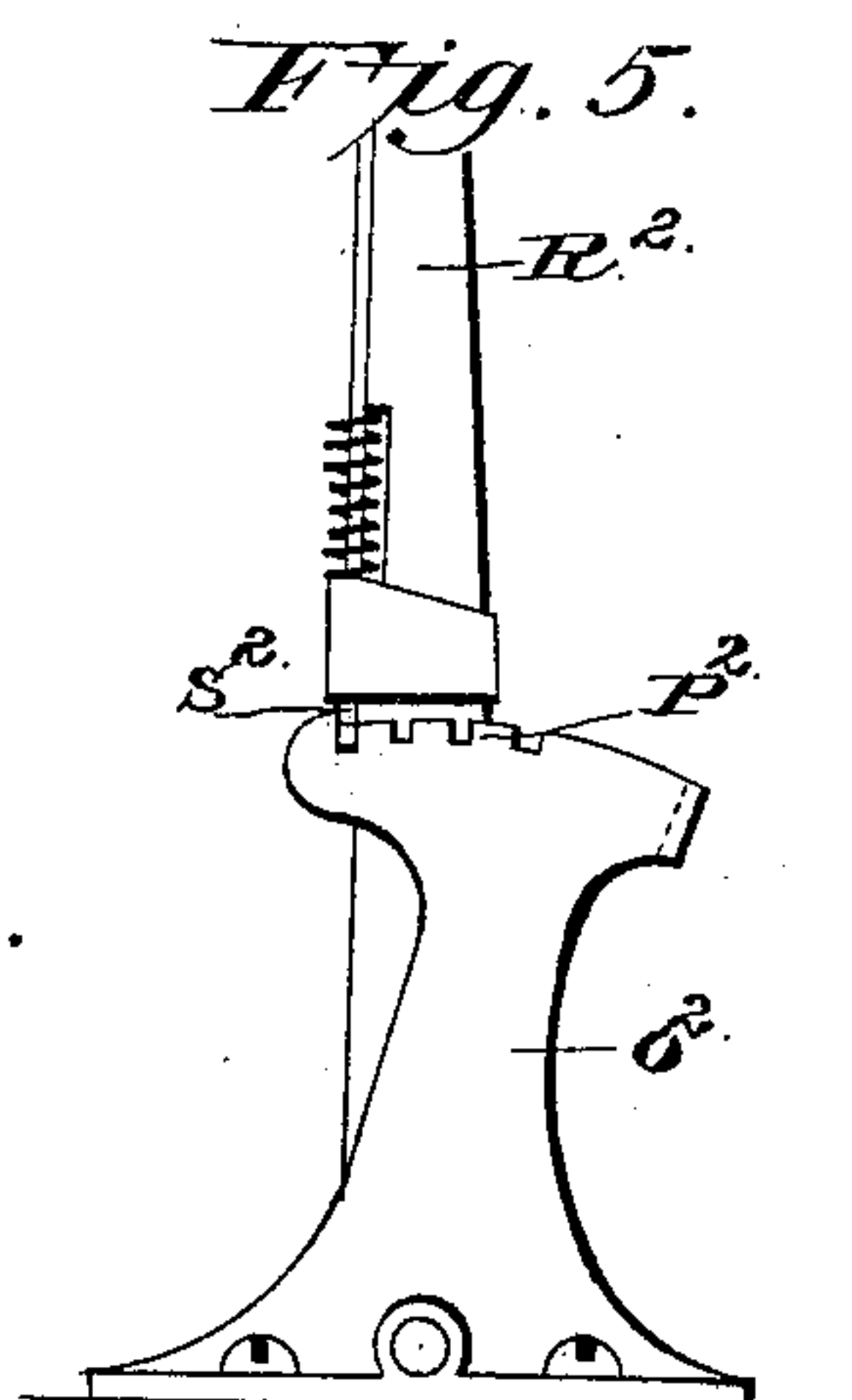
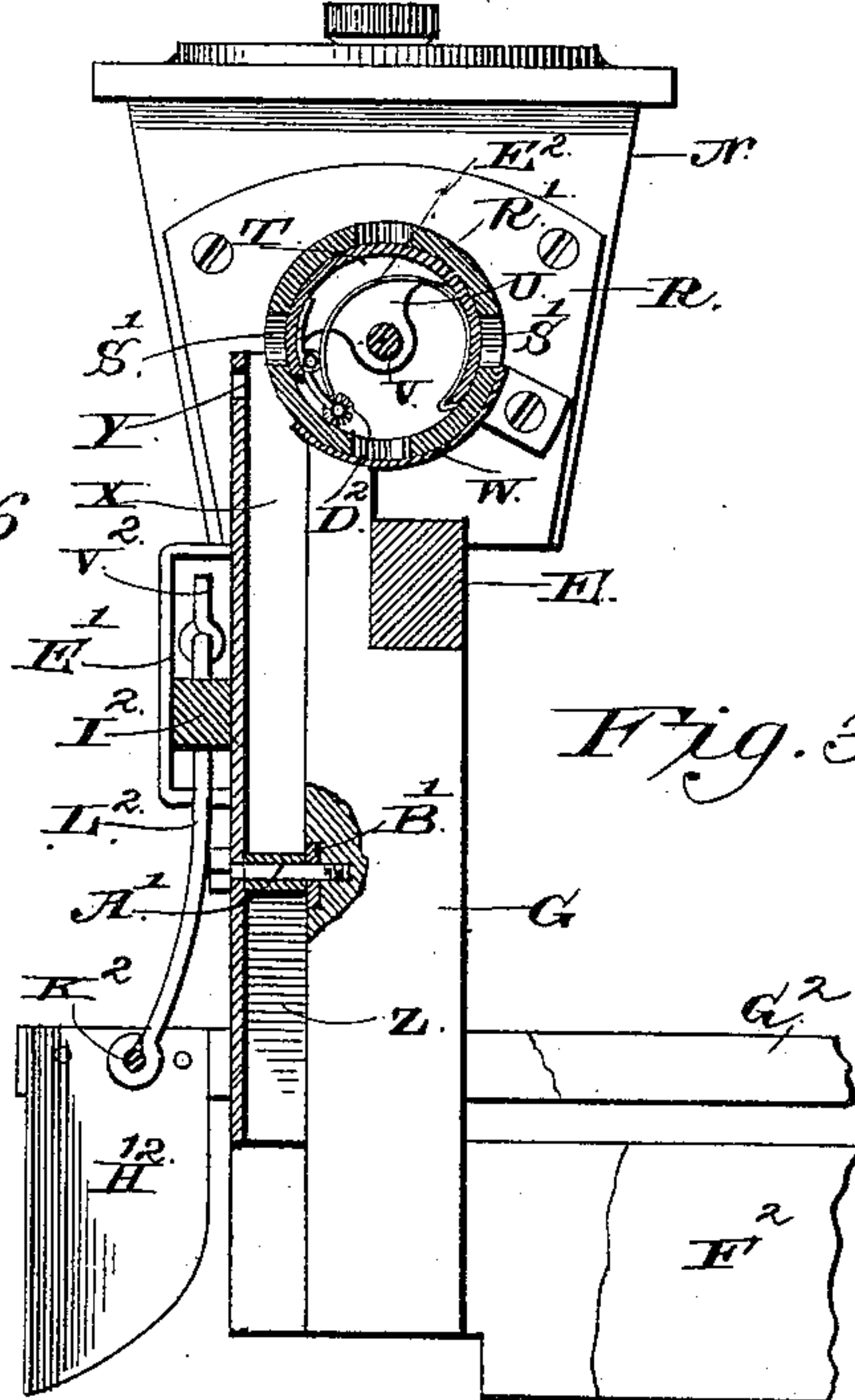
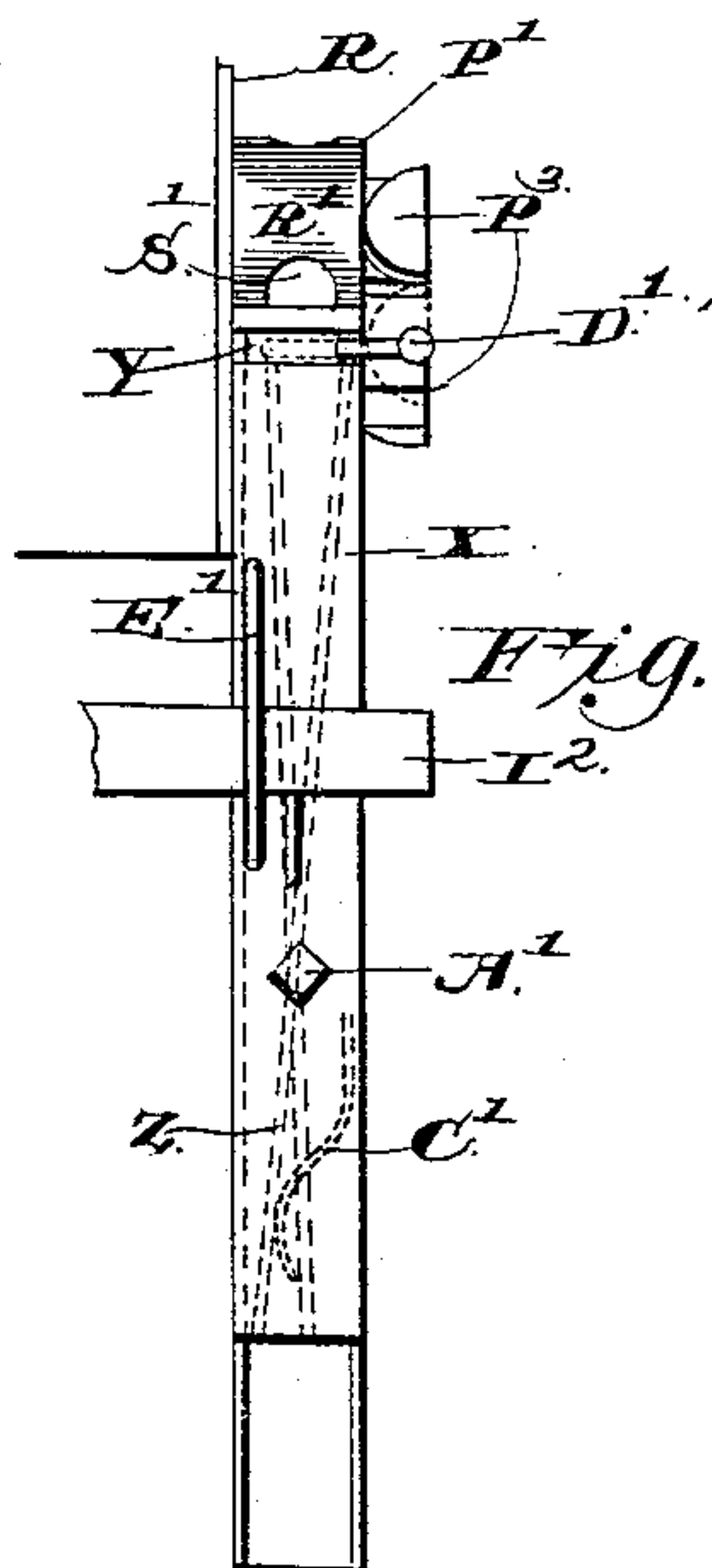
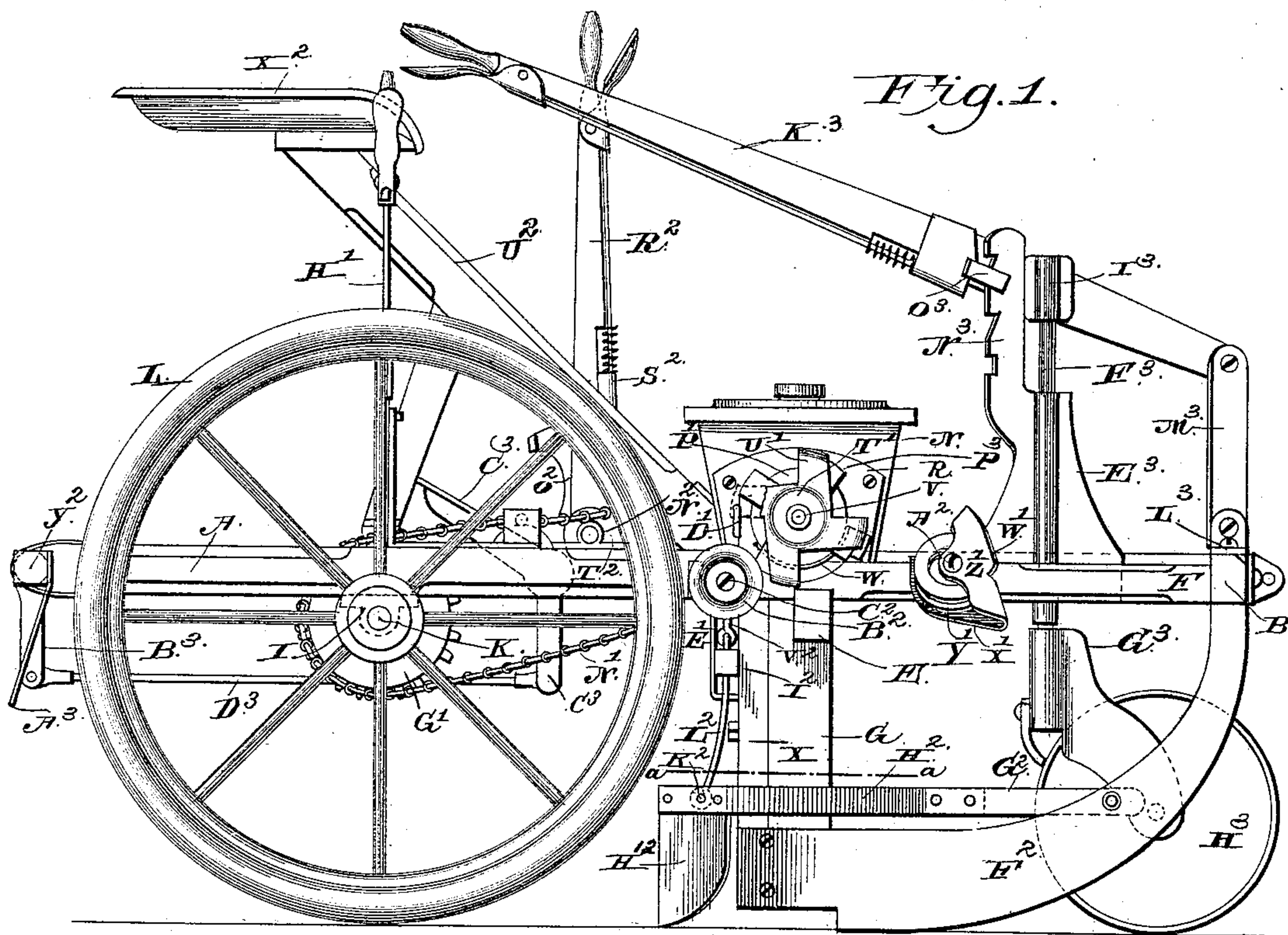
(No Model.)

2 Sheets—Sheet 1.

J. MORAN.
CORN PLANTER.

No. 405,790.

Patented June 25, 1889.



Witnesses
M. C. Fowler
E. J. Suggs

Inventor
John Moran

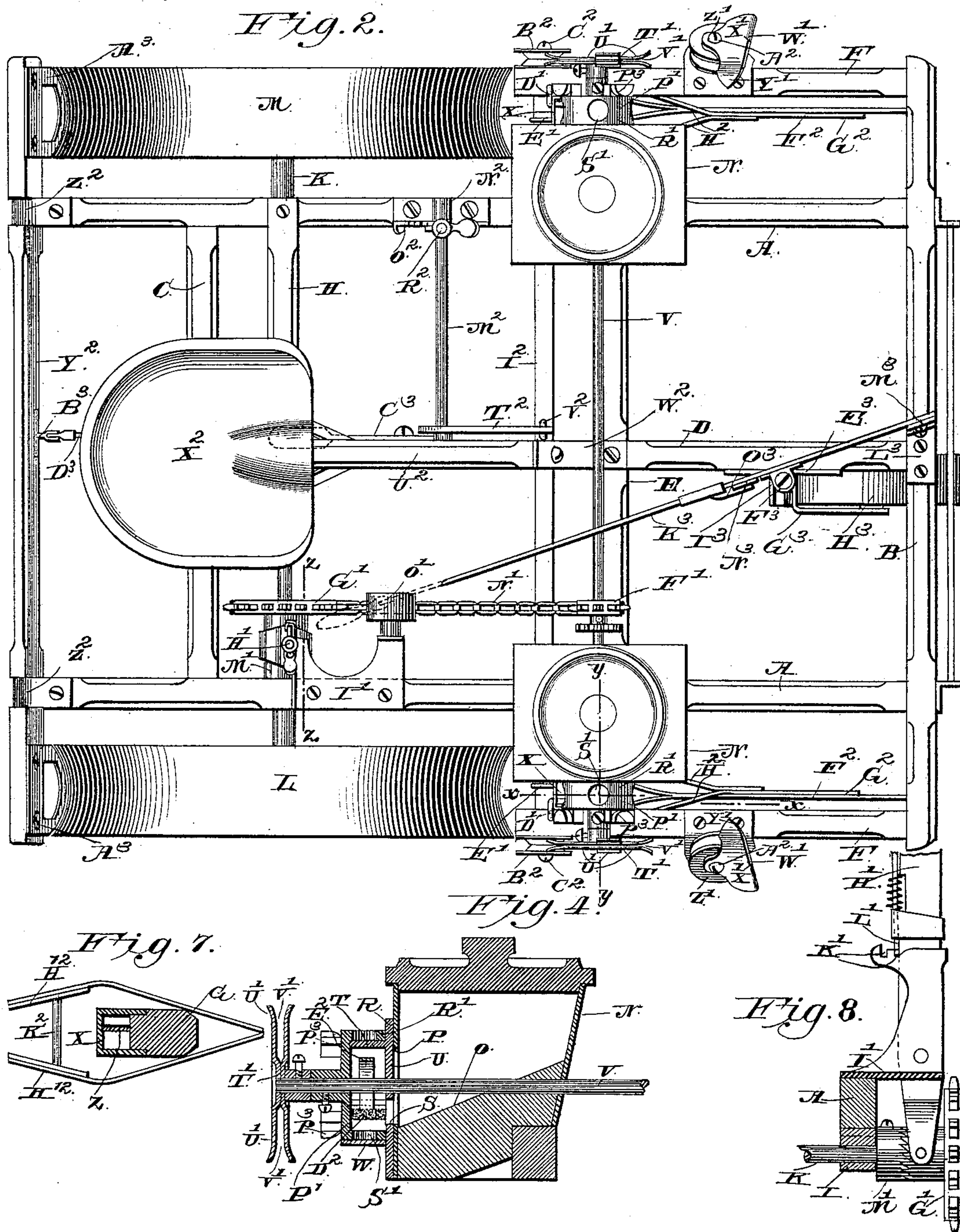
By His Attorneys

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Witnesses

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UNITED STATES PATENT OFFICE.

JOHN MORAN, OF ADAIR, MISSOURI.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 405,790, dated June 25, 1889.

Application filed March 8, 1889. Serial No. 302,425. (No model.)

To all whom it may concern:

Be it known that I, JOHN MORAN, a citizen of the United States, residing at Adair, in the county of Adair and State of Missouri, have
5 invented new and useful Improvements in Corn-Planters, of which the following is a specification.

My invention relates to improvements in corn-planters; and it consists in the peculiar
10 construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a corn-planter embodying
15 my improvement. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional view taken on the line *x x* of Fig. 2. Fig. 4 is a transverse sectional view on the line *y y* of Fig. 2. Fig. 5 is a detail side view. Fig. 6 is a detail
20 rear view of the seed-tube. Fig. 7 is a horizontal sectional view on the line *a a* of Fig. 1. Fig. 8 is a detail sectional view on the line *z z* of Fig. 2.

A represents a pair of longitudinal beams
25 connected at their front ends by a cross-beam B, the ends of the same projecting beyond the beams A, as shown.

C represents a cross-beam, which connects the beams A at a suitable distance from their
30 rear ends. A longitudinal beam D connects the beams B and C, and is arranged midway between the beams A.

E represents the cross-beam, which is secured to and arranged under the beams A D
35 at a suitable distance from the front ends thereof, and has its ends projecting beyond the outer sides of the beams A.

F represents a pair of longitudinal bars, which have their front ends secured to the
40 ends of the cross-bar B and have their rear portions secured on the ends of the beam E. Secured to and depending from the beam E near its ends are vertical standards G.

H represents a cross-bar, which is secured to
45 one of the beams A and to the central beam D at a slight distance in advance of the cross-beam C. The said beams A, B, C, D, E, F, and H constitute the frame of the machine.

I represents a pair of bearing-blocks, which
50 are secured under the beams A at a suitable distance from the rear ends thereof, and in

the said blocks is journaled a shaft or axle K. Rigidly secured to one end of the shaft is a wheel L, and loosely mounted on the opposite end of the shaft is a wheel M.

N represents a pair of hoppers, which are secured on the beams A above the ends of the beam E, and are provided with downward and outward sloping bottom plates O. In the
55 outer sides of the said hoppers are circular openings P, the lower sides of which are on a level with the lower sides of the bottom plates.

R represents plates which are bolted to the outer sides of the hoppers, and have openings S therein which register with the openings P,
60 and projecting from the said plates R and arranged about the upper sides of the said openings are segmental flanges T. Arms U depend from the upper sides of the openings S, and are provided at their lower ends with
65 bearings which are concentric with the said openings, and in the said bearings is journaled a shaft V.

W represents a pair of curved flange plates, which are bolted to the outer sides of the
75 plates R below and concentric with the openings S.

On the rear sides of the standards G are vertical tubes X, which are rectangular in cross-section and are provided in their rear sides
80 at their upper ends with transverse slots Y.

Z represents valves, which are arranged in the tubes X, and are provided near their centers with pivotal bolts A', which have their
85 bearings in the rear sides of the tubes X and in transverse plates B' on the front sides of the said tubes. Springs C' are arranged in the lower ends of said tubes and pressed against the lower inner sides of the valve, the function of the said springs being to nor-
90 mally retain the valve in the position indicated in Fig. 6, and thereby cause them to close the lower end of the tube. To the upper end of the said valve are secured arms D', which extend through and operate in the
95 slots Y.

It will be observed that the upper ends of the tubes X are arranged opposite the opening formed between the rear side of the flanges T W.

E' represents a pair of vertical guide-loops, which are arranged on the rear sides of the

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tubes X. Keyed to the shaft V near the right-hand hopper is a chain-wheel F'.

G' represents a larger sprocket-wheel, which is loose on the shaft K, and is provided with a hub which is engaged by the bifurcated ends of a lever H', the said lever being pivoted on the bracket I', that is secured on one of the beams A, and having notches K' at the upper end of its standard, which are adapted to be engaged by a spring-pressed bolt L' on the lever, whereby the latter may be locked to the brackets at either adjustment.

Keyed to or otherwise rigidly secured on the shaft K is a clutch-section M', which is adapted to engage the hub of the wheel G' when the latter is moved in contact therewith by the lever, whereby the said wheel may be secured to and caused to rotate with the shaft. An endless sprocket-chain N' connects the wheels G' and F', and the upper side thereof is in contact with a tightening-pulley O'. By this means rotary motion may be transmitted from the shaft K to the shaft V when the machine is in motion.

P' represents seed-wheels, which are secured on the projecting ends of the shaft V and have inwardly-extending circular flanges R', which extend over the flanges T and above the curved plates W, the said flanges R' being concentric and in contact with said flanges T and the curved plates. In the flanges R' are openings or seed-cups S', which are arranged at equal distances apart, there being four of the said seed-cups in the flange of each seed-wheel. Secured to the ends of the shaft V and arranged on the outer sides of the seed-wheels are operating-wheels T', each of which is provided with a series of four tangential arms U', the said arms being bifurcated, and thereby provided with notches V', the depth of which is about equal to the length of the arm.

On the beams F, at a suitable distance from their front ends, are secured angle-plates or brackets W', each of which is struck up from a single piece of plate metal and has an inclined arm X', the lower front side of which is open and the upper side of which is provided with a curved inclined guard or shield Y'.

Z' represents anti-friction rollers, which are peripherally grooved and are arranged between the parallel inclined sides of the plates W' and the outer sides of the arms X', and are journaled on bolts A². On the outer sides of the bars F, near the rear ends thereof, are similar anti-friction rollers B², which are mounted on bolts C². The upper sides of the rollers A² B² are in line with the arms of the operating-wheels T'.

The check-row wire, stretched across the field in the usual manner, passes over the rollers A² and B² on one side of the machine and through the lowermost arms of the operating-wheels T', so that when the machine is drawn forward the tappets secured on the

wire at regular distances apart will successively engage the lowermost arms of the said operating-wheel, and thereby rotate the shaft V intermittently through one-fourth of a revolution.

It will be understood that the seeds are fed by the inclined bottoms of the hoppers through the openings in the outer sides thereof upon the lower sides of the flanges of the seed-wheels, and are caused to fill the seed-cups which chance to be lowermost, and that when the shaft V and the seed-cups thereon are rotated intermittently through one-fourth of a revolution each seed-cup in succession, after it has been filled, will have its contents discharged over the rear edge of the curved plate W into the seed-spout X. Brushes D² are hinged to the lower rear edges of the curved flanges T, and are depressed by springs E², and are thereby kept in engagement with the upper sides of the lower portion of the seed-wheel flanges and serve to brush and clear away superfluous seeds from the seed-cups, as will be readily understood.

When the machine is used for check-rowing corn, the sprocket-wheel G' is thrown out of gear with the clutch-section on the shaft K, so that rotary motion will not be imparted to the shaft V of the seeding mechanism, excepting by the check-row wire and the check-row attachment hereinbefore described. When the said wheel G' is in gear with the shaft K and serves to impart continuous rotary motion to the shaft V, the check-row wire will be dispensed with and the machine be adapted for planting corn in drills.

F² represents furrow-opening runners, of the usual construction, which connect the cross-beam B with the lower ends of the standards G.

G² represents arms, which are pivoted to the said furrow-opening runners, extend rearward therefrom, and have their rear ends bifurcated to form arms H², which are arranged on opposite sides of the standards F. The extreme rear ends of said bifurcated arms are bent and caused to converge rearwardly, and to the same are secured vertical covering-plates H¹², the lower front edges of which are curved, as shown.

I² represents a cross-bar, which has its ends guided and adapted to move vertically in the guide-loops E', and the ends of the said cross-bar are connected to the rear portions of the arms H² by means of bolt-rods K², which connect said arms, and link-rods L², which depend from the said cross-bar and have their lower ends attached to the said bolt-rods.

M² represents a rock-shaft, which is journaled in bearings N², secured on the central beam B and on one of the beams A, the latter bearing having a vertical standard O², at the upper edge of which is a rack-segment P², as shown in Fig. 5. A lever R² is secured to the rock-shaft, and is provided with a spring-actuated bolt S², adapted to engage the rack-segment, and thereby secure the lever at any de-

sired adjustment, and projecting forward from the rock-shaft is an arm T^2 , which is connected to the center of the bar I' by a link V^2 ; hence it follows that by operating the lever R^2 the

5 covering devices H^{12} may be raised or lowered.

U^2 represents a seat-bar, which has its heel secured on the central beam B by an angle-plate W^2 . To the upper end of the said seat-bar is secured a seat X^2 , the same being arranged within convenient reaching distance of the levers R^2 and H' .

Y^2 represents a rock bar or shaft, which is journaled in bearings Z^2 at the rear ends of the beams A , and is provided with a pair of scraper-plates A^3 at its ends, which are adapted to engage the concave peripheries of the driving and supporting wheels. Attached to the said rock bar or shaft is an arm B^3 , and the said arm is connected to an angle-lever C^3 by means of a rod D^3 , the said angle-lever being pivoted on one side of the beam D and adapted to be operated by one of the driver's feet.

E^3 represents a standard, which is secured to the beam D , near the front end thereof, the said standard having a vertical tubular bearing, in which is journaled a vertical shaft F^3 . To the lower end of the said shaft is swiveled a bifurcated caster-frame G^3 , between the arms of which is journaled a wheel or roller H^3 , having a broad tread.

Swiveled to the upper end of the shaft F^3 is a sleeve-bearing I^3 , which is secured to a lever K^3 , the front end of which is connected to an angle-plate L^3 , secured to the cross-beam B by means of a link M^3 , and the said lever operates against a vertical arm N^3 , which extends upward from the standard E^3 , and has a series of notches on its rear edge adapted to be engaged by a spring-pressed bolt O^3 guided on the lever, whereby the latter may be secured to the arm at any desired angle.

Inasmuch as the sleeve-bearing, which is swiveled on the upper end of the shaft F^3 , is attached to the lever K^3 , it follows that by operating the latter the front end of the frame may be raised or lowered, and hence the furrow-opener may be caused to operate at any desired distance in the ground, or may be raised entirely therefrom when the machine is traveling and is not in operation.

The valves in the seed-tubes X serve to collect the seeds momentarily in the lower ends of the said tubes, and just before the next succeeding seed-cup discharges its contents into the seed-tube one of a series of cams P^3 , with which the seed-wheels are provided, engages the arm D' of the valve and operates the latter, so as to cause it to open the lower end of the seed-tube and discharge the seeds in a bunch into the furrow. The grooved driving and supporting wheels travel immediately in rear of the standards F , and serve to form ridges over the deposited seeds and to compress the earth above them.

65 When it shall be desired to increase the distance between the hills, one or more of the seed cups or openings in the seed-wheels—

say every alternate one—may be closed by means of nicely-fitting plugs secured in position by means of set-screws, or in any other suitable manner.

Having thus described my invention, I claim—

1. The combination, with a corn-planter, of the standard E^3 , secured to the front part of the frame and having the tubular bearing and the notched arm N^3 , the shaft F^3 , journaled in the tubular bearing, the supporting wheel or roller journaled in a bearing at the lower end of said shaft, the swiveled sleeve at the upper end of said shaft, and the lever attached to said swiveled sleeve connected to the frame operating on the arm N^3 and having the devices to engage the notched edge thereof, whereby the front end of the frame may be raised and lowered and secured at any desired adjustment, substantially as described.

2. The combination, in a corn-planter, of the hoppers having the discharge-openings in their sides and provided with the curved flanges T W above and below said openings, respectively, and the seed-wheels having the flanges concentric with and operating between said curved flanges T W , the said seed-wheels being further provided with the seed cups or openings in their said flanges, substantially as described.

3. The combination, in a planter, of the hoppers having the discharge-openings in their sides, the plates R , bolted to the sides of the hoppers and having the openings S registering with the discharge-openings, and provided, further, with flanges T , the spring-pressed brushes hinged to the rear lower sides of said flanges, and the flange-plates W , attached to the plates R and below the discharge-openings and concentric with the flanges T , the revolving shaft and the seed-wheels secured thereon and having the flanges bearing against the flanges T W and provided with the seed cups or openings, substantially as described.

4. The plates W' , having the arms X' and guard-plates Y' , the same being struck up from a single piece of plate metal, and the guiding-pulley arranged between the parallel sides of the plate and the arm and journaled on a transverse bolt connecting the same, substantially as described.

5. The combination of the seed-boxes having openings in their outer sides, the plates secured thereto and having openings registering therewith, depending arms or brackets, and curved concentric plates or flanges or cut-offs, the transverse shaft journaled in the arms or brackets, the seed-wheels mounted on said shaft and having annular perforated flanges bearing against the concentric flanges or cut-offs, and the check-row wheels mounted on said shafts adjacent to the seed-wheels, substantially as set forth.

6. The combination, with the seed boxes or hoppers having openings in their outer sides and the transverse shaft extending through

said hoppers, of the exteriorly-arranged seed-wheels having annular flanges provided with perforations or seed-cups bearing against curved concentric flanges or cut-offs attached
5 to the seed-boxes, said seed-wheels being constructed with cams adapted to operate the drop-valves or cut-offs arranged in the seed-tubes, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN MORAN.

Witnesses:

H. C. FARRINGTON,
WILLIAM T. PORTER.