

P. S. STARNES.

Corn Planter.

No. 101,176.

Patented March 22, 1870.

Fig. 1.

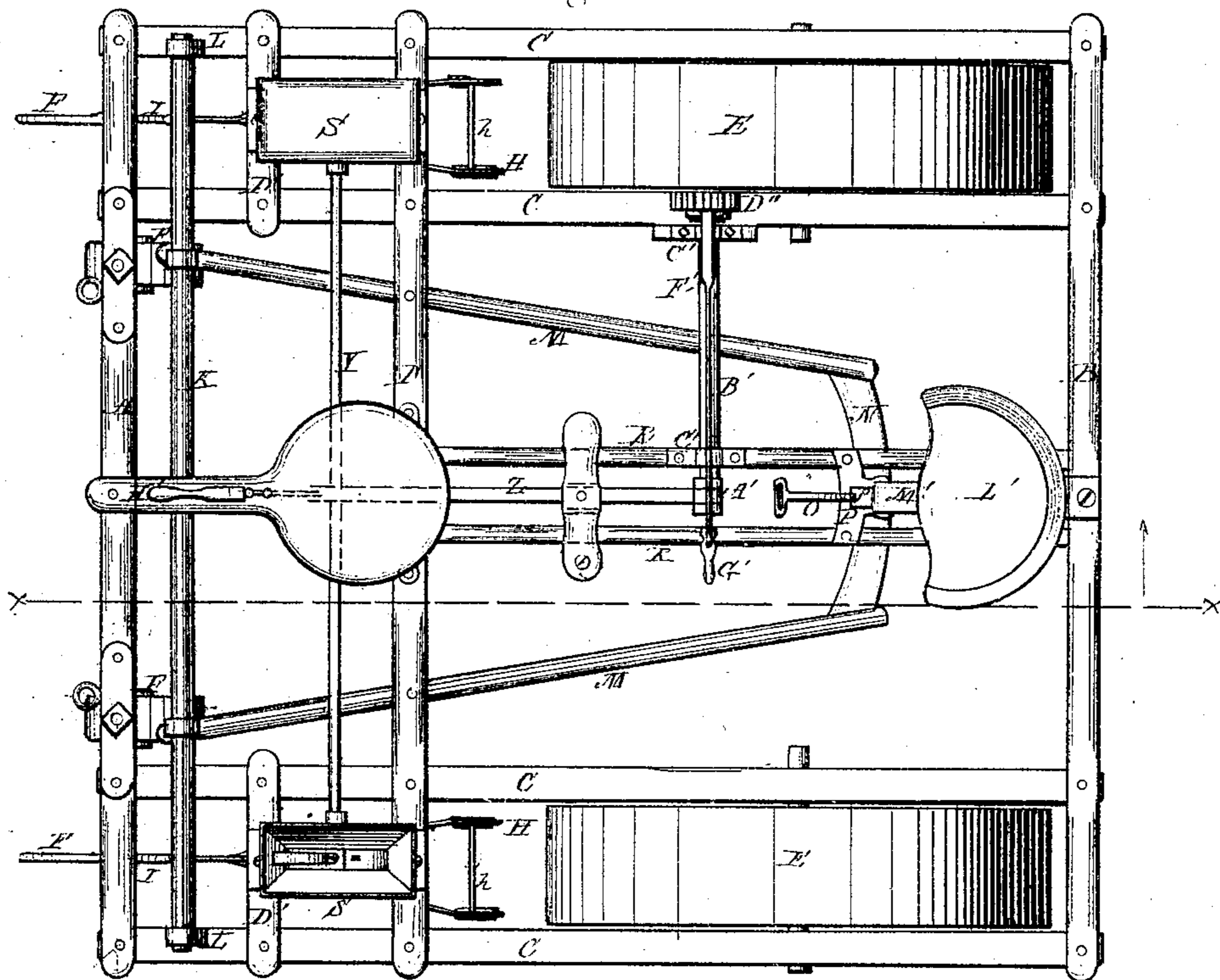
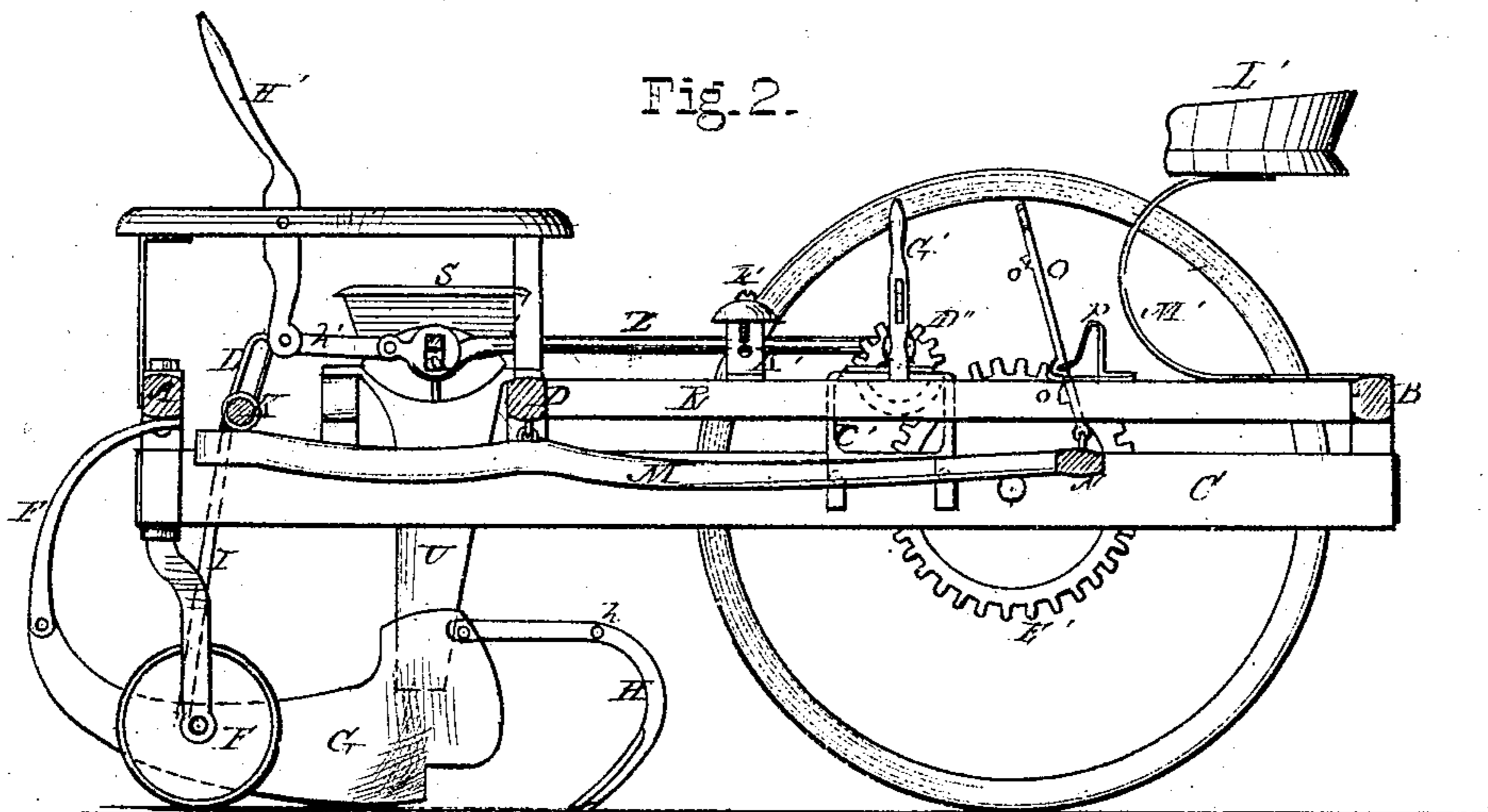


Fig. 2.



Witnesses.

*Ad. M. M.*  
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Inventor.

*Philip S. Starnes*  
*by Prindle & Dyer* Attys

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Fig. 3.

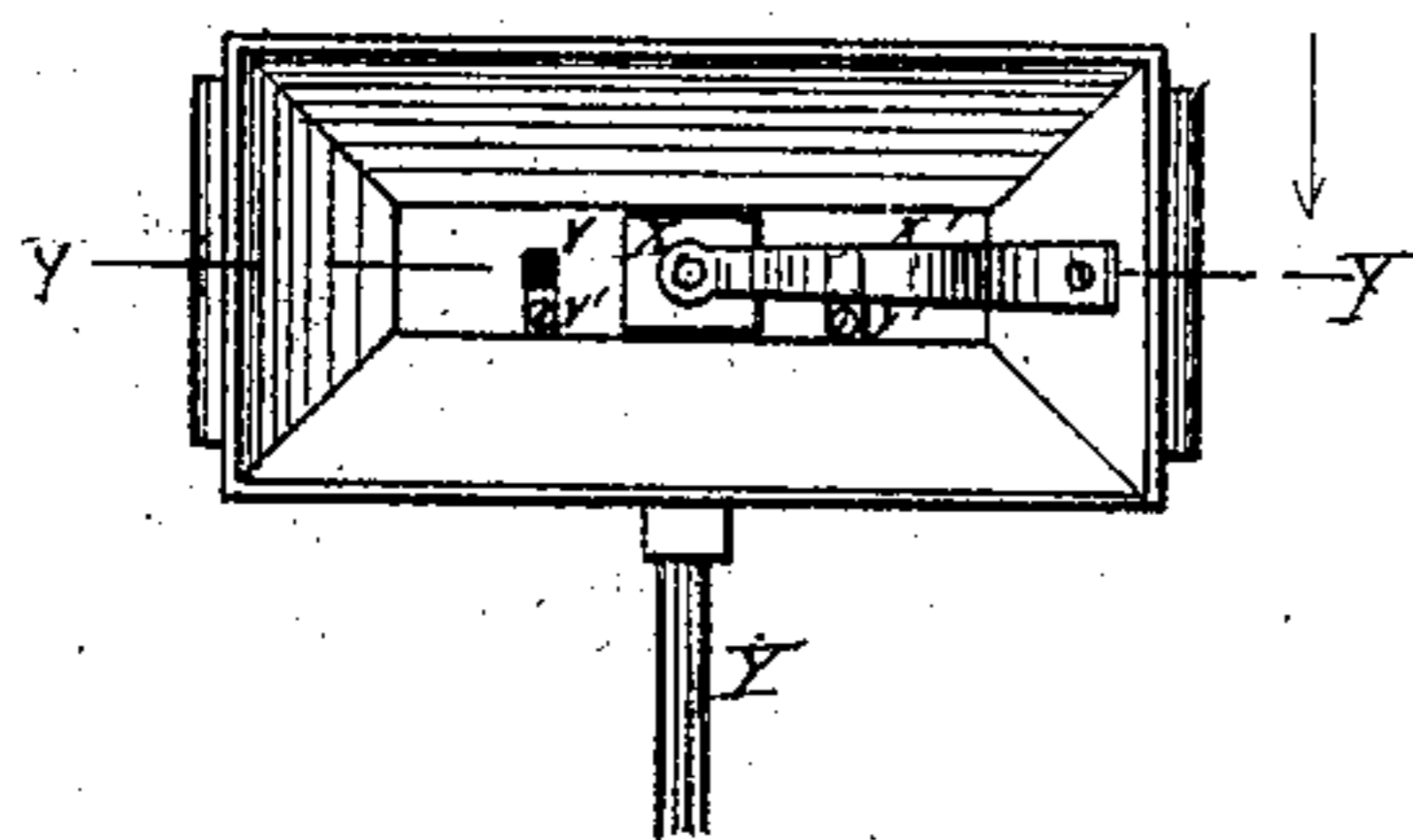


Fig. 4.

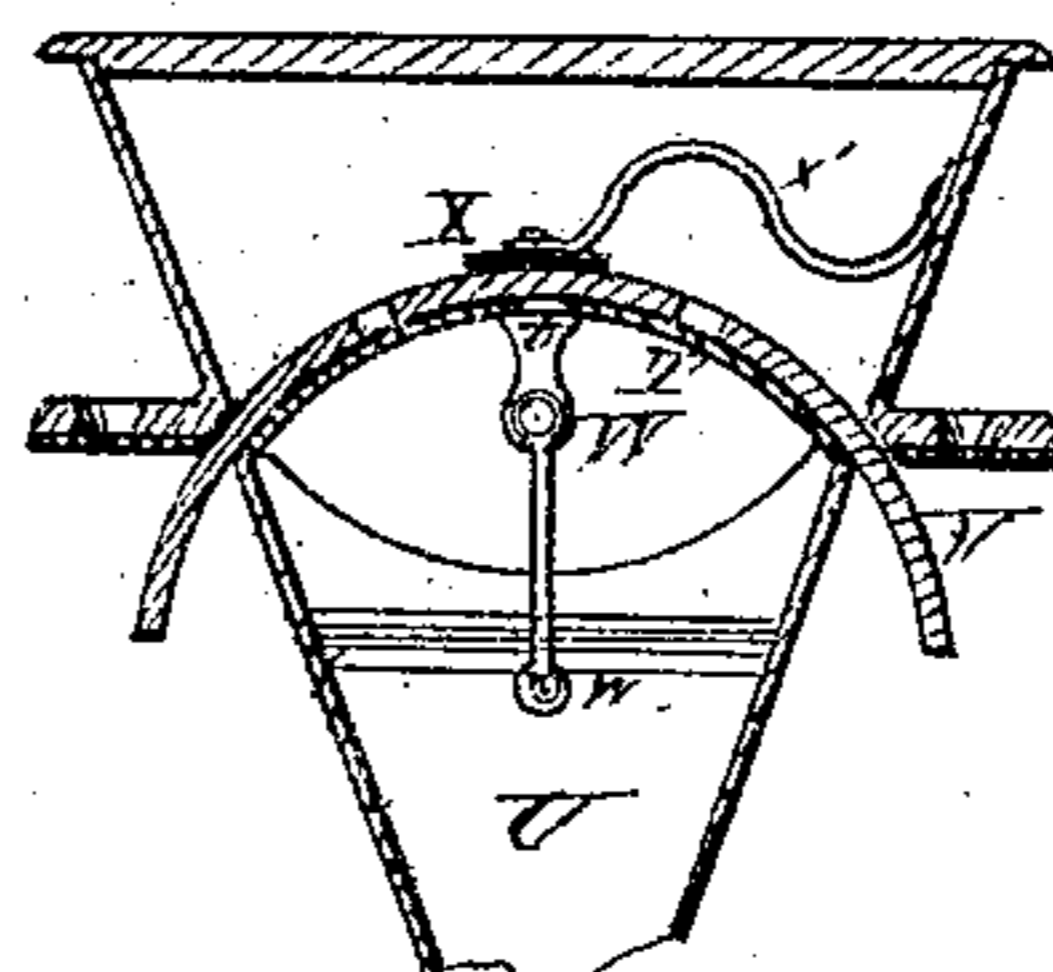


Fig. 5.

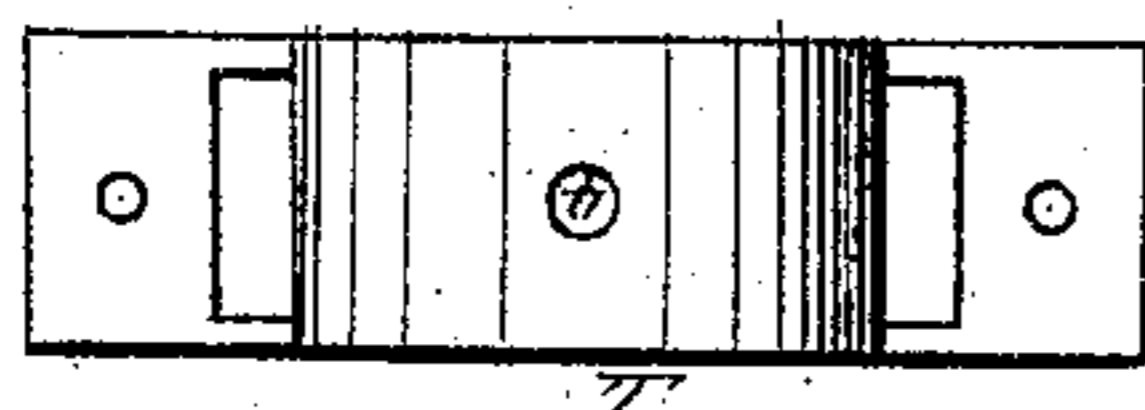


Fig. 6.

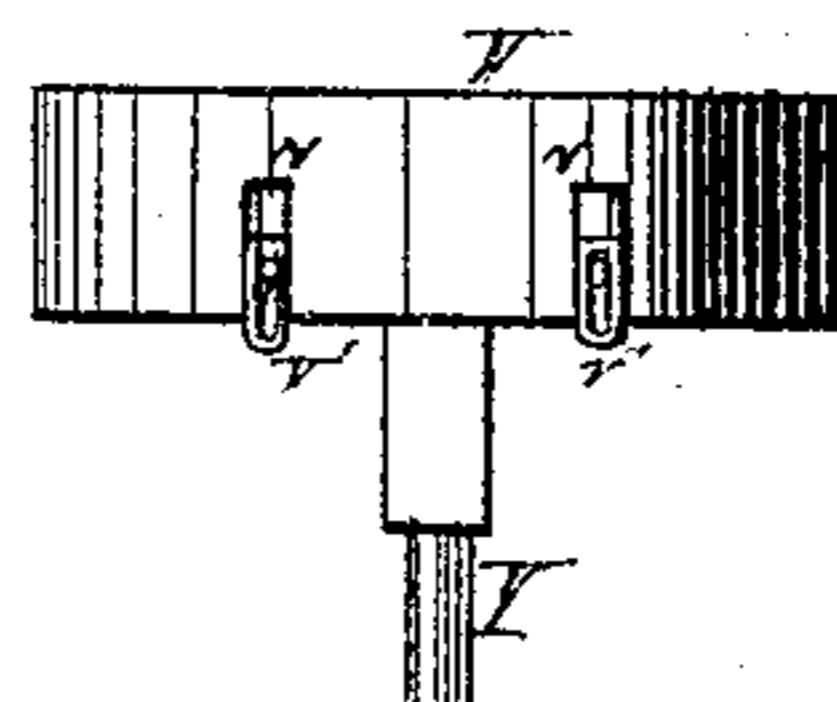


Fig. 8.

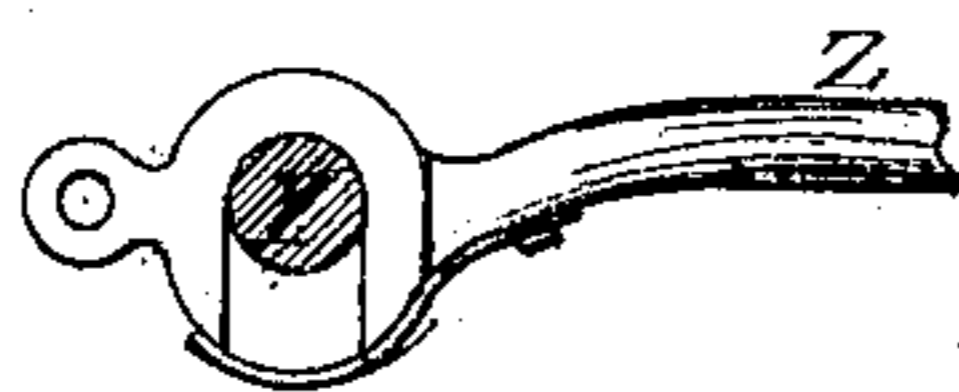


Fig. 7.

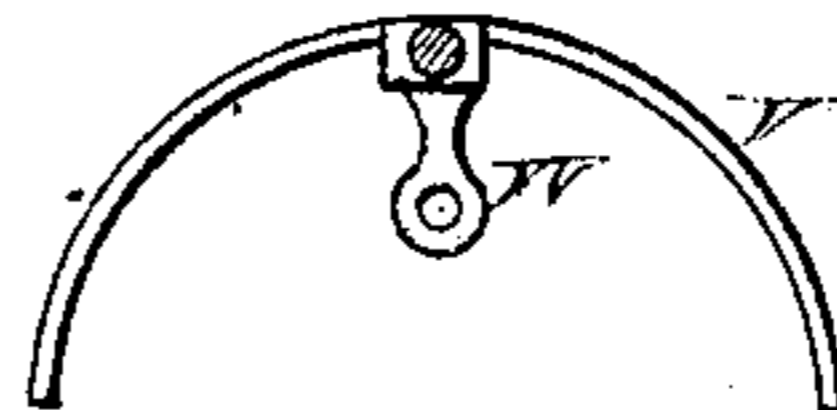
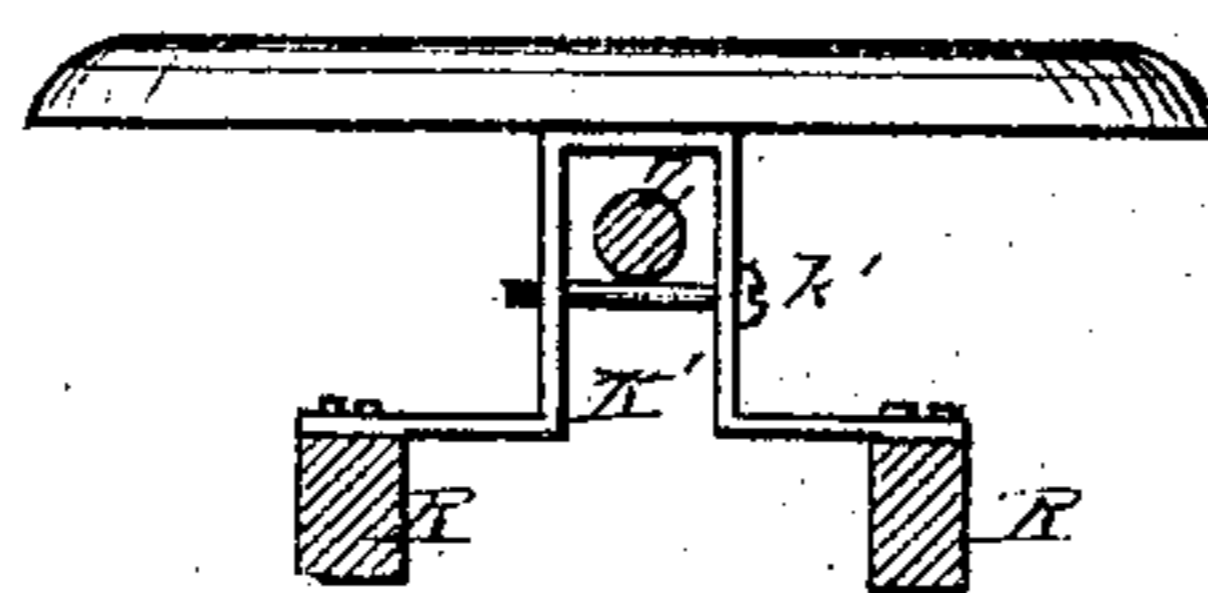


Fig. 9.



Witnesses.

*W. S. Starnes*  
*Carl J. Mann*

Inventor.

*Phillip S. Starnes*  
*by Charles S. Geyer*

Atty.

# United States Patent Office.

PHILIP S. STARNES, OF MAJORITY POINT, ILLINOIS.

Letters Patent No. 101,176, dated March 22, 1870.

## IMPROVEMENT IN CORN-PLANTERS.

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, PHILIP S. STARNES, of Majority Point, in the county of Cumberland, and in the State of Illinois, have invented certain new and useful Improvements in Corn-Planters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a plan view of the upper side of my device.

Figure 2 is a vertical longitudinal section of the same, on the line *x x* of fig. 1.

Figure 3 is an enlarged view of the seed-hopper.

Figure 4 is a vertical longitudinal section of the same, on the line *y y* of fig. 3.

Figure 5 is a plan view of the valve-seat.

Figure 6 is a like view of the seed-valve.

Figure 7 is a side elevation of the same.

Figure 8 is a side elevation of the hook upon the end of the connecting-rod for operating the seed-valves.

Figure 9 is a front elevation of the device for sustaining the valve-connection when detached from the crank.

Letters of like name and kind refer to like parts in each of the figures.

My invention is designed for furrowing the ground and planting and covering the corn; and to this end

It consists, principally, in the peculiar construction and arrangement of the combined coulter and plow, as is hereinafter set forth.

It also consists in the means employed for connecting the plows to the main frame, and for rendering said plows vertically adjustable with relation to said frame, as is hereinafter specified.

It also consists in the peculiar construction and operation of the seed-valves, and, in connection therewith, of the means employed for adjusting the size of the opening through the same, as is hereinafter set forth.

It further consists in the construction and arrangement of the devices for operating the seed-valves, and, in connection therewith, of the means employed for throwing out of gear and operating the same by hand, as is hereinafter described.

It finally consists in the general construction and arrangement of the several parts of the hereinafter-described device, substantially as and for the purpose specified.

In the annexed drawings—

A and B represent the front and rear bars, respectively, of the frame, connected together by means of four side-rails, C, and further strengthened by means of a third bar, D, secured to said rails at a point about

one-third of the distance from their front ends, and by two short bars, D', extending inward midway between and parallel with said bars A and D, the whole being supported by means of two ground-wheels, E, suitably journaled within the rails C, and by two castor-wheels, F, pivoted to and beneath the bar A.

Secured to the under-side of the bar A, in a line with the center of tread of the wheels E, are two bars of iron, G, which from thence curve outward and downward, and have pivoted to their lower ends the forward ends of the combined coulters and plows G.

As seen in fig. 2, the coulter G curves downward and rearward, and at its rear end is spread outward so as to form a double share, having the form of that ordinarily used in shovel-plows.

A coverer, H, is formed of two flat bars of iron, pivoted at their front ends to the upper rear corners of the shares, from whence they extend rearward for a short distance, when they are connected by a brace, h, and then curve downward and forward so that their ends rest upon the ground in rear and just outside of the wings of the shares, said ends being bent or twisted outward and forward in opposite directions, so as to bring the inner face of each bar at an angle of forty-five degrees, or thereabouts, with the line of draft.

By this construction and attachment of the coverer it is caused to pass over the surface of the unbroken ground, and at the same time turn inward such soil as has been thrown out by the plow.

In order that the plows may be adjusted to any desired position vertically, they are each pivoted to the lower end of a rod, I, which is secured to and extends downward from a bar, K, passing across the front end of the main frame, with its ends working within two guides, L, which are secured upon and project upward and slightly rearward from the outward side rails C.

Attached at their front ends to the bar K are two rails, M, which extend backward and inward, and are connected together, at their rear ends, by means of a cross-bar, N.

The rails M are suspended from or pivoted to the under side of the bar D, so that if their rear ends are depressed, their front ends, the bar K, and the plows G will be correspondingly elevated.

Hinged to the upper side of the cross-bar N, at its center, lengthwise, is a metal bar, O, having upon its front edge, near its lower end, a series of ratchet-teeth, o, which rake downward, while a single tooth, o', raking upward, is placed near its upper end.

A metal plate, P, attached to two parallel rails, R, connecting with the bars B and D of the main frame, is provided with a slot, through which the ratchet-bar O passes, its front or toothed edge being pressed against the front of said slot by means of a spring, p, secured to said plate and bearing against the rear edge of said

bar, in which position the teeth upon the latter are caused to engage with said plate and hold the frame and plows in the position to which they are adjusted.

Resting upon the bars D and D' is the hopper S, of the usual form, immediately beneath which is the valve seat T, having the form of an arc of a circle, with one central opening, *t*, for the passage of grain into the spout U, immediately beneath.

The valve V, shown in figs. 6 and 7, corresponds with and fits over the valve-seat T, and is pivoted to the center *w* of the circle, of which it forms a part, by means of a connection, W, so as to have a semicircular movement upon said seat.

Two openings, *v*, are provided within the valve V, one of which corresponds with the opening *t* within the valve-seat T when said valve is turned in either direction.

In order that the openings *v*, within the valve V, may be varied in size, so as to correspondingly vary the amount of grain passing through the same, a slide, *v'*, is fitted into a corresponding groove within the face of the valve V, immediately opposite each opening, and held in position by means of a set-screw passing through a slot in said slide into said valve, so that by loosening said set-screw the slide may be adjusted to or from the center, and the opening correspondingly diminished or increased.

It being designed that no more grain shall be dropped at one time than can be contained within one of the openings *v* within the valve V, a cover, X, secured upon the end of a spring, *x'*, is caused to rest upon the valve over the central opening *t*, within the seat T, whereby the surplus grain is scraped off as said valve passes beneath said cover.

In order that the valves may be operated simultaneously and automatically by the motion of the machine, a bar, Y, is connected at its ends to and extends between said valves, and has pivoted to its center, longitudinally, one end of a connecting-rod, Z, the opposite end of which is journaled upon a crank, A', secured upon the end of the shaft B'.

The shaft B' is journaled within suitable bearings C', attached to the rails C and R, and has upon its outer end a pinion, D', which meshes with and receives motion from a gear-wheel, E', secured to and revolving with one of the ground-wheels, so that a movement of the whole machine is communicated through said ground-wheel, the shaft B', the crank A', the connecting-rod Z, and the bar Y, to the valves, so as to cause the latter to pass grain from the hopper into the spout and through the latter into the ground.

The pinion D' is fitted upon a squared portion of the shaft B', so that while compelled to revolve with said shaft it may slide freely thereon longitudinally, for the purpose of being removed from engagement with the gear-wheel E' when desired.

In order that the pinion D' may be more readily caused to mesh with the gear E', or removed from engagement therewith, a rod, F', is provided, having at

one end a clutch or fork which is caused to embrace the hub of said pinion within a suitable groove, while the other end of said rod is pivoted within a lever, G', the lower end of which is in turn pivoted to or upon one of the rails R, so that if the upper end of said lever be moved to or from said pinion the latter will be correspondingly moved upon the shaft.

It being desirable that the valves should be capable of operation by hand, a lever, H', is pivoted at its lower end by means of a short connection, K', to the front end of the connection Z, and at or near its center, longitudinally, to the seat I', so that if the valves be disengaged from their operating devices, they can be easily operated by means of said lever H'.

To disengage said valves, the connection Z is disconnected from the crank A' and raised until a bolt, K', can be passed through suitable openings within a forked standard, K', when said bolt sustains and furnishes a bearing for said connection, which moves freely back and forth thereon.

A seat, L', secured to the upper end of a spring, M', attached to the rear of the main frame, completes the device, the operation of which has been sufficiently explained hereinbefore.

It is believed that this device combines, in a great degree, simplicity of construction, lightness of draft, ease and thoroughness of operation, and durability, and that its introduction will prove a public benefit.

Having thus fully set forth the nature and merits of my invention,

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

1. The combined coulter and plow G, constructed and arranged to operate substantially as and for the purpose specified.

2. The means employed for connecting the plows to the main frame and rendering them vertically adjustable therewith, consisting of the rods I, the bar K, the rails M, the cross-bar N, the ratchet-bar O, and the detent plate P, substantially as shown, and for the purpose set forth.

3. The valves V, constructed and arranged as described, in combination with the valve-seat T and cover X, substantially as specified and set forth.

4. The devices employed for operating the seed-valves, V, consisting of the bar Y, the connecting-rod Z, the crank A', the shaft B', the pinion D', and the gear-wheel E', all constructed and arranged substantially as shown, and for the purpose specified.

5. The lever H', in combination with the bar Y, and seed-valves Z, substantially as and for the purpose set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 23d day of December, 1869.

PHILIP S. STARNES.

Witnesses:

B. F. BOWEN,  
JOEL SMITH.