2 Sheets—Sheet 1.

W. E. FRICKE.

Corn Planter.

No. 106,806. Patented Aug. 30, 1870.

Fig. 1

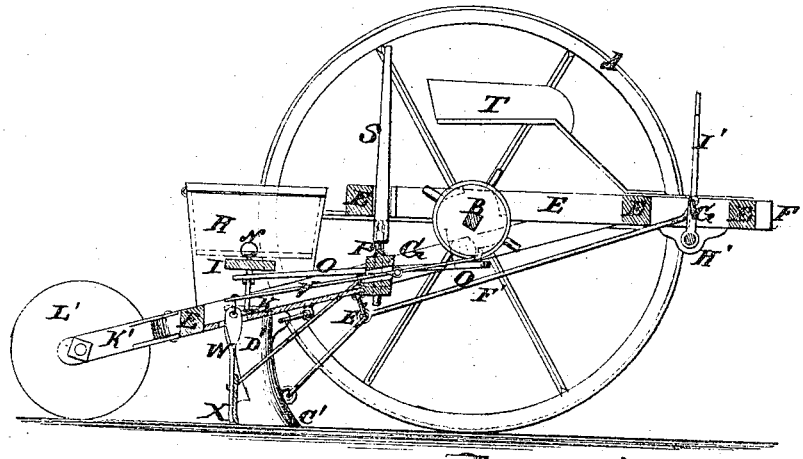
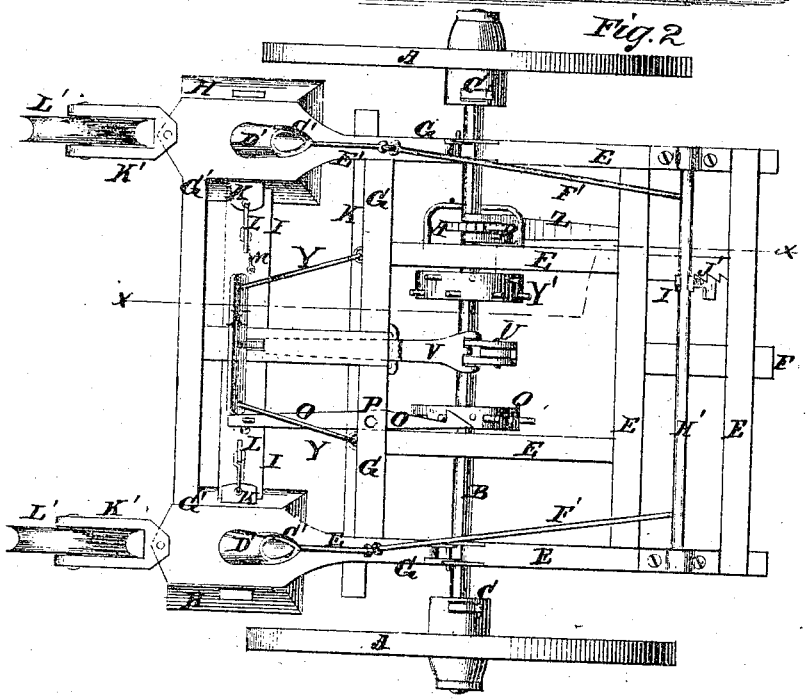


Fig. 2



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2 Sheets—Sheet 2.

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Fig. 3.

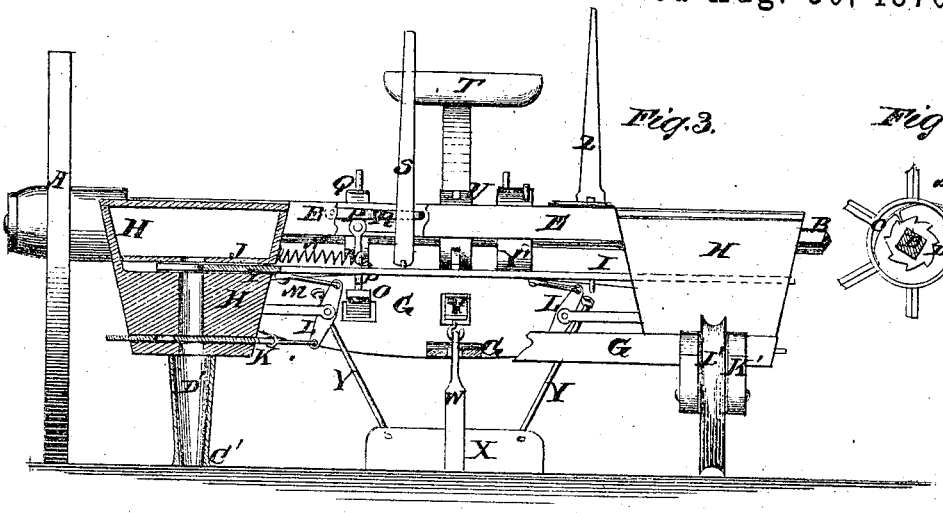


Fig. 8.

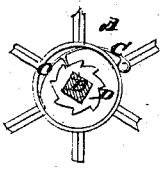


Fig. 4

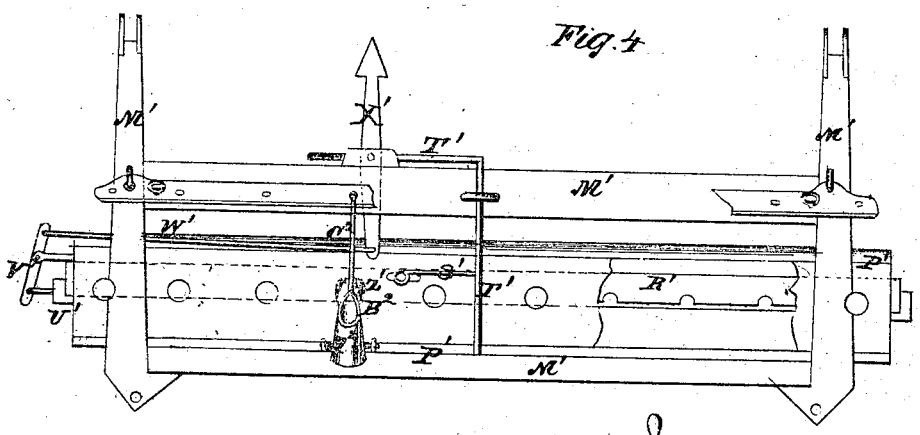


Fig. 5

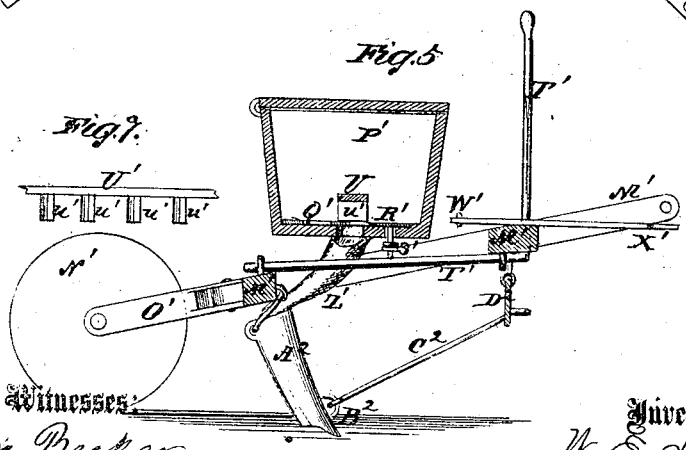
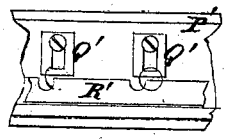


Fig. 7.

Fig. 6



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WILLIAM E. FRICKE, OF MEXICO, MISSOURI.

Letters Patent No. 106,806, *dated August* 30, 1870.

IMPROVEMENT IN COMBINED PLANTER AND SEEDER.

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, WILLIAM E. FRICKE, of Mexico, in the county of Audrain and State of Missouri, have invented a new and useful Improvement in Combined Corn-Planter and Seeder; 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 drawing forming part of this specification.

Figure 1, sheet 1, is a detail vertical section of my improved machine arranged as a corn-planter, taken through the line *x x*, fig. 2.

Figure 2, sheet 1, is an under-side view of the same.

Figure 3, sheet 2, is a rear view of the same, part being broken away to show the construction.

Figure 4, sheet 2, is an under-side view of the seeder attachment, part being broken away to show the construction.

Figure 5, sheet 2, is a vertical cross-section of the same.

Figure 6, sheet 2, is a detail top view of a portion of the bottom of the seed-box of the seeder.

Figure 7, sheet 2, is a detail side view of a part of the stirrer.

Figure 8, sheet 2, is a detail view of the inner end of one of the drive-wheel hubs.

Similar letters of reference indicate corresponding parts.

This invention relates to corn-planters, and to improvements therein, whereby they are made more effective and convenient in operation than they have hitherto been.

A are the drive-wheels, which revolve upon the journals of the axle B, and which are made to carry the said axle with them in their revolution, by the spring pawls C, attached to the inner ends of the hubs of said wheels, and which take hold of the teeth of the ratchet-wheels D, attached to the said axle B, said pawls passing in through the mud-bands of said hubs, and the said ratchet-wheel being placed within said mud-bands.

The axle B revolves in bearings attached to the frame E, to the center of the forward part of which the tongue F is attached.

G is the rear frame, the forward ends of the side-bars of which are pivoted to the axle B, or to supports attached to the side bars of the frame E.

H are the seed-hoppers, in grooves in the bottom of which work the ends of the sliding bar I, which has holes formed in it, in such positions that, when the said bar is moved or slid in one direction, the said holes may be brought directly over the holes in the bottoms of the hoppers H, and allow the corn to pass through into the hole in the bottom of the hoppers.

The ends of the bar I, and the bottoms of the hoppers H, are covered with a plate, J, of rubber, or other suitable yielding material, having a hole through it corresponding, in position, with the hole in the bottom of the hopper, and which is designed to keep the kernels from being injured by the movements of the sliding bar I. The bottoms of the hoppers H are made of such a thickness that the holes through them will contain enough seed for a hill.

In the lower parts of the bottoms of the hoppers H are placed slides, K, having holes formed through them, in such positions that, when the said slides are moved in one direction, the holes in the said slides K will coincide with the slides in the bottoms of the hoppers H, and allow the seed to drop into the conductor-spouts, by which it is conveyed to the ground; and, when the said slides are moved in the opposite direction, they will close the lower end of the holes through the bottoms of the said hoppers.

The outer ends of the slides K are pivoted to the lower ends of the short levers L, which are pivoted to supports attached to the hoppers, and the upper ends of which are connected with the sliding bar I by means of short connecting-rods, M. By this construction, as the bar I is moving in one direction, the slides K will be moving in the opposite direction, so that the upper and lower ends of the holes through the bottoms of the hoppers H can never be both uncovered at the same time.

The sliding bar I is drawn into and held in position to cover the upper ends of the holes in the bottoms of the hoppers H by a coiled, or equivalent spring, N, one end of which is attached to one end of said hopper, and its other end is attached to the said sliding bar, as shown in fig. 3.

The sliding bar I is operated to drop the corn by the lever O, the rear end of which is pivoted to the said sliding bar I.

The lever passes through a wide slot in the longitudinal front bar of the frame G, in which slot it is pivoted by the pin P, which passes through the said bar and lever, and to which the said lever is so attached, by a cross-pin or otherwise, that, while the said lever may be free to oscillate, it may be raised and lowered by and with the said pin.

The forward end of the lever O is beveled off, and has a shoulder formed upon it something like a half arrow-head, as shown in fig. 2, so that, when the lever O is raised, the pins, spurs, or teeth of the spur-wheel Q, attached to the axle B, will strike against the inclined end of the lever O, and push it to one side, operating the sliding bar I to drop the corn. As the teeth, spurs, or pins of the wheel Q pass beyond the shoulder of the lever O, the sliding bar I is again drawn back to its place by the spring N.

To the upper end or head of the pin P is pivoted the end of the short arm R, the other end of which is formed solidly upon or is rigidly attached to, the lever S, the lower end of which is pivoted to the front cross-bar of the rear frame G, and said lever passes through a long keeper, attached to the rear cross-bar of the frame E, where it is held in place by a spring, when adjusted to hold the lever O in gear or out of gear with the spur-wheel Q.

The upper end of the lever S extends up into such a position that it may be conveniently reached and operated by the driver from his seat T. The distance apart of the hills is regulated by the distance apart of the pins or spurs of the spur-wheel Q.

U is a wheel attached to the axle B, the face of which is deeply grooved, and in said groove are secured, at equal distances apart, blocks, inclined upon one side, and straight upon the other.

These blocks must be arranged to correspond with the arrangement of the spurs of the spur-wheel Q, and are designed to operate the lever V, the forward end of which is provided with a central projection, to slide upon the blocks of the wheel U, and with side projections, which overlap the sides of the wheel U, and keep the end of the lever in proper position upon it. The lever V passes back through a slot in the forward cross-bar of the rear frame G, and is pivoted to said bar.

To the under side of the rear end of the lever V is pivoted the upper end of the arm W, the lower end of which is rigidly attached to the plate X.

The ends of the plate X are steadied and supported, and the said plate kept in line with the hoppers H, by the bars or rods Y, the rear ends of which are pivoted to the ends of the said plate, and the forward ends of which are pivoted to the forward cross-bar of the frame G, as shown in figs. 1, 2, and 3.

By this arrangement, as the seed is dropped to the ground, the plate X is also lowered to the ground, and marks the ground between and in line with the said hills, to enable the driver to plant the corn in perfect check-row.

Z is a lever, the lower end of which rides upon the axle B, and is slotted, to receive a ratchet-wheel, A^1, attached to said axle B.

To the slotted lower end of the lever Z is attached a spring pawl, B^1, the lower end of which rests upon the teeth of the ratchet-wheel A^1.

The lever Z passes up through a keeper attached to a bar of the frame E, and its upper end projects into such a position that it may be conveniently reached and operated by the driver from his seat, so that, when starting in at the side of the field, the driver, by operating the lever Z, can so adjust the dropping apparatus that the hills will be in line with the hills previously planted.

C^1 are the plows, by which the furrows are opened to receive the seed, and which are formed upon or attached to the lower ends of the standards D^1, which are made hollow, to serve as conductor-spouts for the seed, and the upper ends of which are hinged, at their forward edges or sides, to the bottoms of the hoppers H, or to the frame G.

The draft-strain upon the standards D^1 is sustained by the draft-chains or jointed rods E', the forward ends of which are connected with the front cross-bar of the frame G, and to which, at a little distance from their forward ends, are attached the rear ends of the rods or chains F', the forward ends of which are attached to the outer or free ends of the arms G,' to the other ends of which are rigidly attached to the shaft H'.

The shaft H' works in bearings attached to the frame E, and to it is rigidly attached the end of the lever I', which extends up into such a position that it may be conveniently reached and operated by the driver, with his foot, to raise the plows from the ground.

The lever I' is held in place, when adjusted, by the toothed bar or plate J', attached to the frame E, as shown in fig. 2.

To the rear cross-bar of the frame G, directly in the rear of the hoppers H, are pivoted the forward ends of the slotted arms K', to the slotted rear ends of which are pivoted the wheels L', which are made broad, and the faces of which are grooved or concaved, so that, as the machine is drawn forward, the said wheels may press inward the sides of the furrows opened by the plows C^1, and thus cover the seed.

This machine may be easily adapted to operate as a sceder by removing the frame G and its attachments, and substituting the frame M', the rear part of which is supported by the wheels N', which are pivoted to the slotted rear ends of the arms O', the forward ends of which are pivoted to the rear cross-bar of the frame M, near its ends.

To the rear part of the frame M is attached the long seed-hopper P', which has a line of openings in its bottom, through which the seed escapes, and the sides of which are regulated by the small plates Q', adjustably secured in place by screws passing through slots in said plates Q', as shown in figs. 5 and 6.

R' is a narrow plate or bar, placed in a groove in the bottom of the hopper P', the edge of which, that runs along the edges of the gauge-plates Q', is notched at distances apart equal to the distance apart of the holes through the bottom of the hopper P', so that the said openings through the bottom of the hopper P' may be closed and opened, at will, by the longitudinal movement of the bar R'.

To the under side of the bar R' is attached a projection or pin, which projects through a short slot in the bottom of the hopper P', and to the lower end of which is attached one end of a short connecting-rod, S', the other end of which is attached to the lever T'.

The rear end of the lever T' is pivoted to the rear cross-bar of the frame M', and its forward part is bent upward, and projects into such a position that it may be conveniently reached and operated, to open and close the discharge-orifices of the hopper P', by the driver, from his seat.

U' is a bar, extending longitudinally through the hopper P', and the ends of which pass through and work in holes in the ends of the hopper P', in such positions that the said bar U' may be a little above the bottom of the hopper P'.

To the under side of the bar U' are attached small plates, u', in an inclined position, which, as the said bar is moved longitudinally, push the seed forward, so that it may drop through the holes in the bottom of the hopper P.

To one of the projecting ends of the bar U' is pivoted one end of the short lever V', which is pivoted to a support attached to the end of the hopper P', and to its other end is pivoted the end of the rod or bar W', which extends along the forward side of the hopper P', and its other end is pivoted to the rear end of the lever X'. The lever X' is pivoted to the forward cross-bar of the frame M', and its forward end is beveled off upon both sides, and has shoulders formed upon both sides, as shown in fig. 4, giving it somewhat the appearance of an arrow-head.

To the axle B is rigidly attached a wheel, Y', the face of which is made broad, and is provided with two rows of pins, arranged alternately, so that, as the machine is drawn forward, the said pins may strike alternately against the inclined end of the lever X', and thus operate the stirrer-bar U.

To the bottom of the hopper P, over each discharge-hole, is attached the upper end of a canvas or other flexible tube, Z', the other ends of which are

inserted in the upper ends of the hollow standards A^2, which are hinged to the bottom of the hopper P', and to the lower ends of which are attached, or upon them are formed, the plows B^2, that open the ground to receive the seed.

The draft-strain upon the standards A^2 is sustained by the draft-rods C^2, the lower ends of which are pivoted to the lower parts of said standards A^2, and their forward ends are attached to the lower edge of the bar or plate D^2, which is hung at its upper edge from the forward part of the frame M'.

To the plate or bar D^2 are attached the rear ends of the rods F', hereinbefore described, so that the driver, by operating the lever Z with his foot, can raise the plow-standards and plows A^2 B^2 from the ground, at will.

Having thus described my invention,

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

1. The combination of the wheels A, pawls C, ratchet-wheels D, axle B, frame E, spur-wheel Q, lever O, frame G, bar I, hoppers H, slides K, lever L, spring N, and grooved wheels L', slotted arms K' with each other, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the wheel U, constructed as described, lever V, arm W, plate X, and rod Y with each other and with the axle B, frame G, and seed-dropping device, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the hinged hollow plow-standards D^1, draft-rods or chains E', rods F', rigid arms G', shaft H', and foot-lever I', provided with a catch-bar, J', with each other and with the hoppers H, frame G, and frame E, substantially as herein shown and described, and for the purpose set forth.

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