(No Model.) 2 Sheets—Sheet 1.

M. A. SHELDON.

CORN PLANTER.

No. 311,382. Patented Jan. 27, 1885.

Fig. 1.

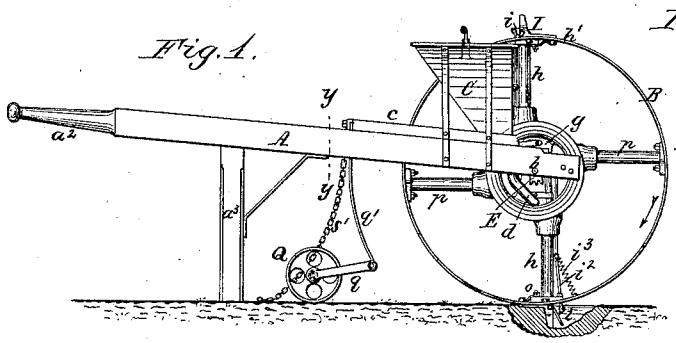


Fig. 2.

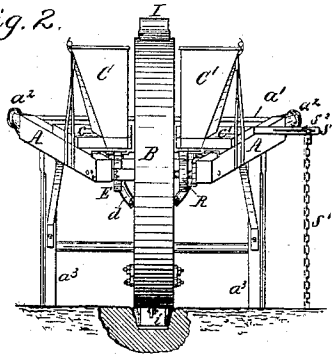


Fig. 15.

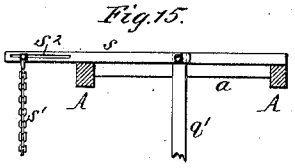


Fig. 3.

Fig. 5.

Fig. 4.

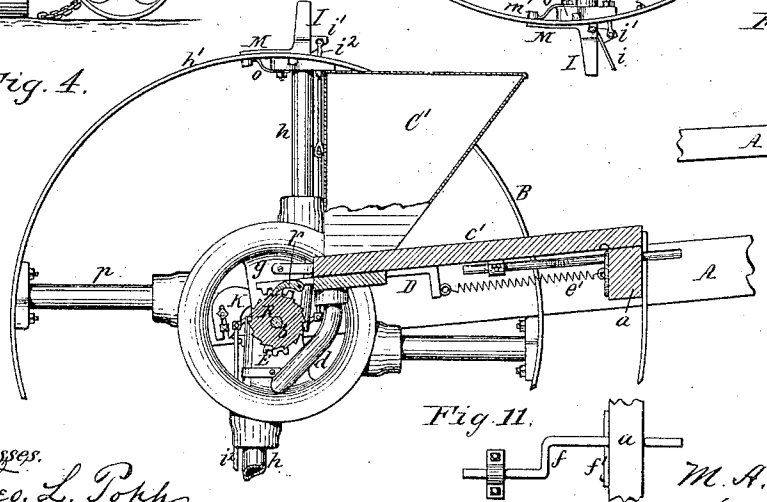


Fig. 12.

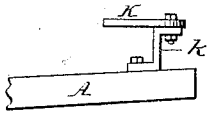


Fig. 11.

Witnesses.
Theo. L. Popp.
Geo. E. Pitman

Inventor:
M. A. Sheldon
By Wilhelm & Bonner
Attorneys.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

2 Sheets—Sheet 2.

M. A. SHELDON.

CORN PLANTER.

No. 311,382. Patented Jan. 27, 1885.

Fig. 6.

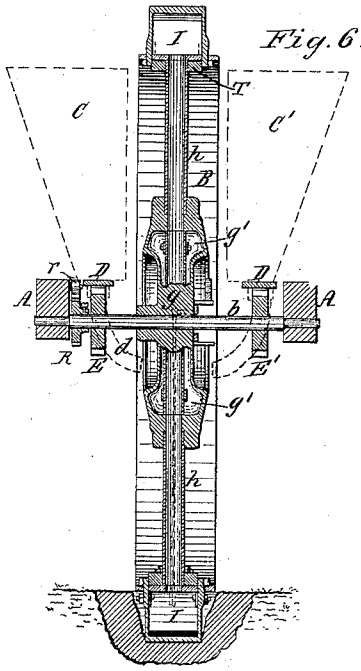


Fig. 7.

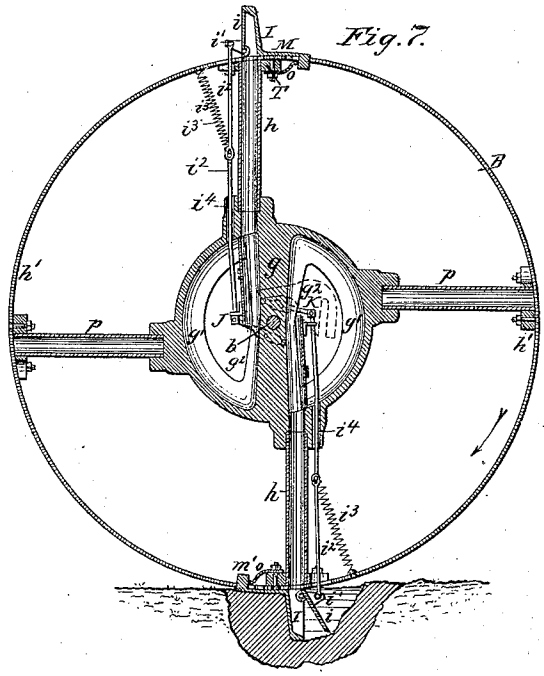


Fig. 8.

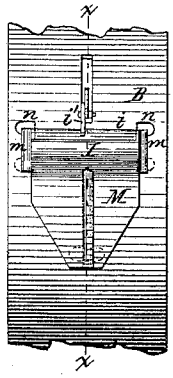


Fig. 10.

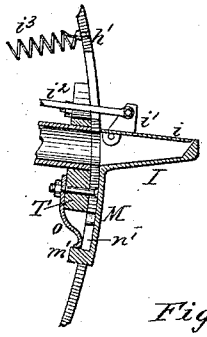


Fig. 9.

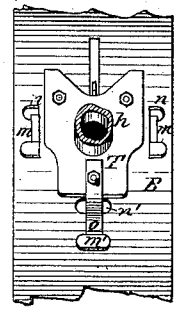


Fig. 13.

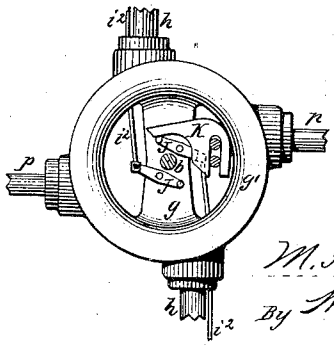
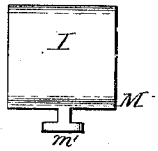


Fig. 14.



Theo. L. Popp.
Geo. E. Pitman. } Witnesses.

M. A. Sheldon Inventor
By Wilhelm & Bonner
Attorneys.

N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

MARK A. SHELDON, OF CORRY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WALTER H. STARBIRD, OF SAME PLACE.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 311,382, dated January 27, 1885.

Application filed June 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, MARK A. SHELDON, a citizen of the United States, residing at Corry, in the county of Erie, in the State of Pennsylvania, have invented a new and useful Improvement in Corn-Planters, of which the following is a specification.

This invention relates to an improvement in that class of corn-planters which are operated by hand, and which are provided with a wheel having hollow spokes, which receive the grain from the grain-receptacle and conduct it to discharge-chambers projecting from the periphery of the wheel. Heretofore such wheels have been provided with grain-receptacles, which formed part of the wheels or were secured thereto so as to turn therewith. This construction renders the wheels heavy and cumbersome and prevents the use of capacious grain-receptacles.

The object of my invention is to overcome these difficulties; and my invention consists to that end of the improvements which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation, and Fig. 2 is a front elevation, of my improved machine. Fig. 3 is a longitudinal vertical section thereof on an enlarged scale. Fig. 4 is a similar fragmentary view showing the opposite side of the machine. Fig. 5 is a rear elevation of the land-roller. Figs. 6 and 7 are vertical sections of the wheel at right angles to each other. Fig. 8 is an outside elevation, and Fig. 9 an inside elevation, of a portion of the wheel-rim with the seed-delivery device attached thereto. Fig. 10 is a sectional elevation in line *x x*, Fig. 8. Fig. 11 is a bottom plan view of the stop of the slide. Fig. 12 is a top plan view of a portion of the frame. Fig. 13 is a side elevation of the central portion of the wheel. Fig. 14 is an end view of the seed-receptacle on the rim of the wheel. Fig. 15 is a cross-section in line *y y*, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents the rearwardly-diverging side bars of the main frame, connected by cross-pieces *a a'*, and provided at the rear ends with handles a^2, which are seized by the operator in pushing the machine along.

a^3 are supporting-legs secured to the side bars, A.

B represents the supporting-wheel, arranged between the front ends of the side bars, A, and mounted on a shaft, *b*, which is journaled in the side bars.

C represents the seed-hopper, and C' the fertilizer-hopper, arranged on opposite sides of the wheel B, and supported on boards or planks *c c'*, secured to the front portions of the side bars, A.

d represents the discharge-tube, extending downwardly from the seed-hopper C.

D represents the seed-slide, arranged on the bottom of the seed-hopper C and provided with an opening, *d'*, which receives the quantity of seed to be delivered at a time. This opening is preferably formed in a removable piece, so that a piece with a larger or smaller opening can be placed in the slide, as may be required.

d^2 is a brush secured to the inner side of the seed-hopper and bearing upon the seed-slide, to remove any excessive quantity of seed from the slide.

e represents cogs or teeth formed on the under side of the front end of the seed-slide D, and E is a gear-segment secured to the shaft *b* and engaging with the cogs *e*, so as to open the slide or bring its opening *d'* over the discharge-tube *d*. The teeth of the segment E continue backwardly beyond the teeth of the slide, so that the slide is caught by the rear tooth of the segment after it has been released by the front teeth, thereby producing a jar, which causes the grains to drop out of the opening *d'* into the tube *d*.

e' is a coiled spring connecting the rear end of the slide D with the cross-piece *a* of the main frame, so as to draw the slide backwardly. When the segment E moves the slide D forward, the spring *e'* is extended, and when the front teeth of the segment release the slide the spring draws the slide backward until the cogs *e* strike against the rear tooth of the segment. The slide is then again moved forward by this rear tooth meshing with the teeth *e* until the latter disengage themselves

from the rear tooth of the segment, when the slide is returned to its closed position by the spring *e'*.

f represents an adjustable rod attached to the under side of the plank *c*, and forming a stop against which the slide D is held by the spring. In the position of the stop represented in Fig. 3 the slide, when resting against the stop, is held in the proper position to be engaged by the gear-segment E. When it is desired not to deliver any seed while the machine is moved along, the slide D is placed in a position in which it is not operated by the segment. This is accomplished by moving the stop *f* backward to the position represented by dotted lines in Fig. 3. In this position of the stop the front end of the slide is located in rear of the segment E, so that it cannot be engaged by the same. The stop is held in its forward position by a spring, *f'*, secured to the under side of the plank *c* and engaging in a notch, f^2, in the bar *f*, and in its backward position by a bend formed in the bar and bearing against the front side of the cross-piece *a*.

g represents a cross-head arranged centrally on the wheel B, and *g' g'* are two semicircular channels arranged on opposite sides of the cross-head *g*, and cast, preferably, in one piece therewith. The cross-head *g* and channels *g' g'* form together the hub of the wheel, which is secured to the shaft *b*.

h h represent tubular spokes, opening with their inner ends into the channels *g'* on opposite sides of the cross-head *g*, and extending to the rim *h'* of the wheel, which is provided with openings in line with the spokes, so that unbroken passages are formed from the channels *g'*, through the spokes *h*, to and through the rim of the wheel. The discharge-pipe *d* of the seed-hopper is bent inwardly to deliver the seed into the channels *g'*. The cross-head *g* is provided on both sides with side flanges, g^2, whereby channels or chutes are formed on each side of the cross-head, each of which communicates at one end with the channel *g'*, and at the opposite end with one of the spokes *h*. The latter are extended inwardly nearly to the center of the wheel.

I represents seed-receptacles, which are secured to the outer side of the rim *h'* in line with the spokes *h*, and which receive the seed from the latter. Each receptacle I is provided on its rear side with a hinged door or valve, *i*, which is kept closed until the receptacle I has entered the ground, when it is opened to discharge the seed. Each door *i* is provided with an arm, *i'*, from which extends a rod, i^2, inwardly through the rim *h'* and one of the channels *g'*.

i^3 is a coiled spring connecting the rod i^2 with the rim *h'*, so as to hold the door *i* closed. The inner portion of each rod i^2 is guided in an opening, i^4, in the channel *g'*, and is attached to a lever, J, which is pivoted to the cross-head *g*.

K represents a cam, which is secured to a bracket, *k*, attached to one of the side bars, A, in such position as to depress the inner end of the lever J when the receptacle I has entered the ground, thereby opening the door *i* and discharging the seed from the receptacle I. The under side of the cam K is so formed that the lever J is held in this position until the receptacle I has risen above the ground to a suitable height, when the lever J clears the cam, and the door *i* is closed by the reaction of the spring. The cam K is attached to the bracket *k* by bolts passing through a slot in the cam, so that the latter can be adjusted as may be necessary. The outer end of each spoke *h* is held in a perforated plate, T, which is secured to the inner side of the rim *h'*. The seed-receptacle I is provided with a plate, M, which rests against the outer side of the rim, and is provided with studs *m m'*, which project inwardly through elongated openings *n n'* in the rim. The studs *m m'* are constructed with enlarged heads, and the openings *n n'* are constructed with corresponding enlargements, so that the heads of the studs can be passed through the enlargements of the openings *n n'* to the inner side of the rim, when, by moving the studs into the narrow portions of the openings *n n'*, the receptacle I is secured to the outer side of the rim. The receptacle is locked in position with the studs *m m'* bearing against the ends of the narrow portions of the openings *n n'* by a spring, *o*, which is secured to the plate T, and bears against the stud *m'*.

p represents spokes, which simply serve to connect the rim with the hub of the wheel.

The movements of the parts are so timed that the slide D is opened and a predetermined quantity of seed is discharged from the hopper C when one of the channels *g'* has arrived opposite the lower end of the tube *d*. The seed falls from the latter into the channel *g'*, and as the wheel B revolves in the direction of the arrow in Fig. 7 the seed passes from the channels *g'* into the channel formed on the side of the cross-head *g*, and thence into the spoke *h*, and from the latter into the receptacle I. The door *i* of the receptacle is opened when the latter has entered the ground, thereby depositing the seed in the depression formed in the ground by the receptacle I. The fertilizer-hopper C' is provided with a slide, which is operated by a gear-segment, E', in the same manner as the slide of the seed-hopper, and simultaneously therewith, so that a quantity of fertilizing material is deposited with the seed, if desired. The slide of the fertilizer-hopper is preferably provided with a pin or other projection, whereby the material in the hopper is stirred up. The segment E is provided with two gear-sections, whereby the slide D is opened twice at every revolution of the wheel to deliver the proper quantity of seed into each of the channels *g'*. Q represents a wheel which runs on the land in the rear of the wheel B, and which fills up the depressions formed by the seed-receptacles I, and covers the seed deposited therein. The

wheel Q is mounted in hangers q, which are pivoted to a bar, q', depending from the cross-piece a.

R is a ratchet-wheel secured to the shaft b, and r is a pawl engaging with said wheel and pivoted to one of the side pieces, A, of the frame, so as to prevent the wheel B from turning backwardly, which would result in a disarrangement of the operating mechanism.

s represents a bar which is pivoted centrally to the frame of the machine, and which rests on one of the side pieces, A, when in a horizontal position, its end projecting laterally beyond the machine, and carrying a chain, s', which drags on the ground and marks the next row parallel with that in which the seed is being dropped. The bar s is preferably provided with a longitudinal slot, s^2, in which the chain is fastened, so that the drag-chain can be adjusted at the desired distance from the machine. The bar s is pivoted so that it can be swung from one side of the machine to the other.

I claim as my invention—

1. The combination, with a supporting-frame, of a seed-hopper secured to said frame, a seed-slide, whereby the delivery of seed from the hopper is regulated, a spout extending below said slide, a supporting-wheel provided with an annular seed-conduit, which receives the grain from the discharge-spout, a hollow spoke, which conducts the seed from the annular conduit to the periphery of the wheel, a seed-chamber arranged at the periphery of the wheel, and a valve whereby the discharge of the seed from said chamber is controlled, substantially as set forth.

2. The combination, with the seed-hopper and frame, of a wheel, B, a seed-slide, D, provided with cogs e, and a gear-segment, E, having its teeth extended rearwardly beyond the teeth of the slide to jar the latter, substantially as set forth.

3. The combination, with the supporting-frame, of a seed-hopper, C, secured thereto, a seed-slide, D, and spout d, a segment, E, whereby the slide is actuated, a wheel, B, provided with the annular seed-chamber g', hollow spoke h, peripheral seed-receptacle I, hinged valve i, a cam, K, and a spring, i^3, whereby said valve is actuated, substantially as set forth.

4. The combination, with a wheel, B, having its rim provided with elongated holes n n', having enlarged end portions, of the seed-receptacle I, constructed with studs m m', having enlarged heads, and a spring, o, whereby the receptacle I is locked in position, substantially as set forth.

5. The combination, with the seed-hopper and frame, of the wheel B, composed of a cross-head, g, semicircular channels g', hollow spokes h, peripheral rim h', and peripheral seed-receptacles I, substantially as set forth.

Witness my hand this 31st day of May, 1884.

MARK A. SHELDON.

Witnesses:
W. ED MARSH,
CLARENCE R. HAMMOND.