

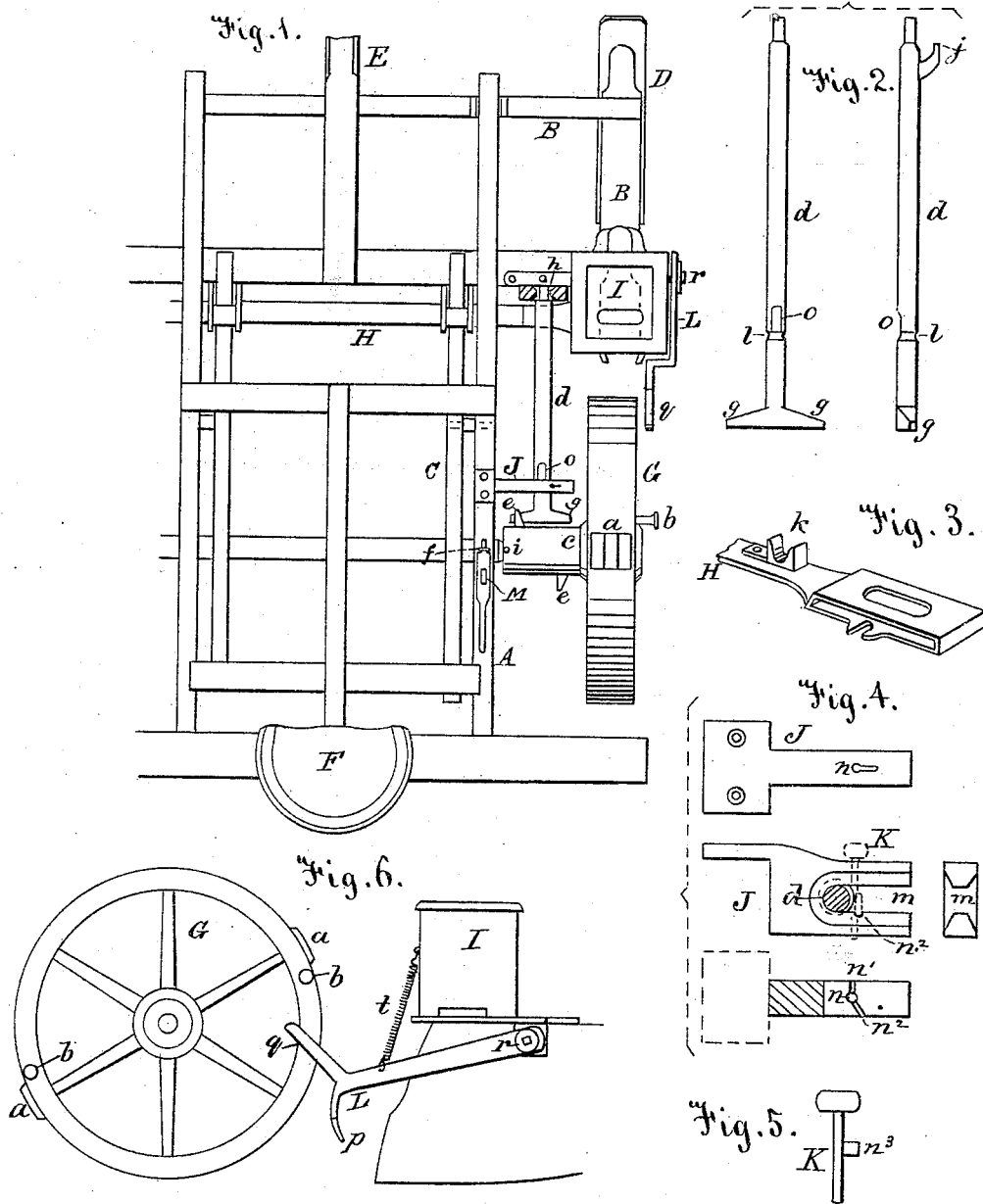
(No Model.)

2 Sheets—Sheet 1.

J. V. MITCHELL.
CORN PLANTER.

No. 265,692.

Patented Oct. 10, 1882.



Witnesses :

E. P. Goodwin
R. W. Campbell

Inventor

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By *G. B. Towles*.
Attorney.

(No Model.)

2 Sheets—Sheet 2.

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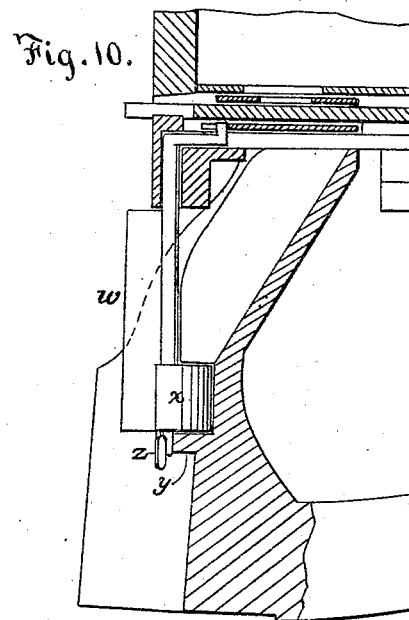
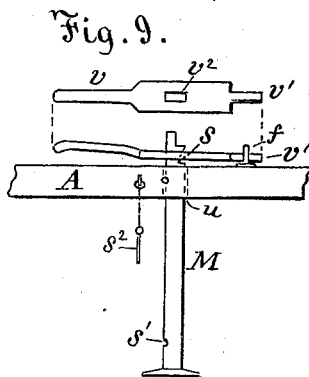
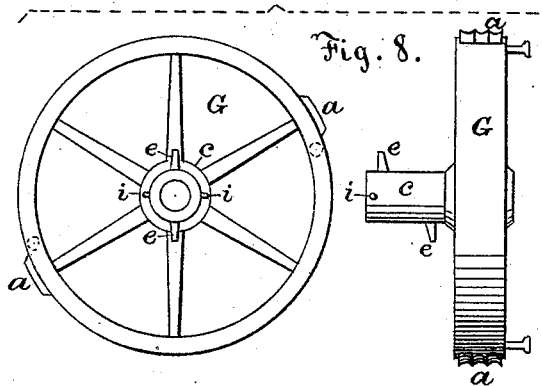
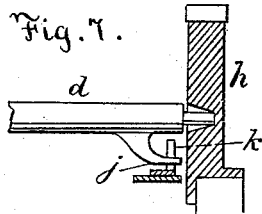


Fig. 12.

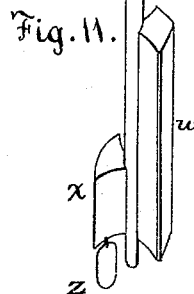
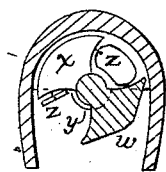
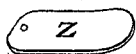


Fig. 13.



Witnesses :
Henry M. [Signature]
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UNITED STATES PATENT OFFICE.

JAMES V. MITCHELL, OF MARTINSVILLE, INDIANA.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 265,692, dated October 10, 1882.

Application filed December 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES V. MITCHELL, a citizen of the United States, residing at Martinsville, in the county of Morgan and State of Indiana, have invented certain new and useful Improvements in Corn-Planters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to corn-planters of that class described in United States Letters Patent No. 95,068 and No. 44,273; and it consists in certain improvements in the construction of the same, as hereinafter shown and described, the machine to which my improvements are shown as applied consisting chiefly of a main transporting-frame mounted on wheels, and having coupled thereto a secondary frame carrying the hoppers, the seed-dropping devices, the colters, and the runners and a treadle-frame for lifting the rear end of the secondary frame.

In the accompanying drawings, Figure 1 represents a partial plan view of a corn-planter with my improvements applied thereto. Fig. 2 represents in plan and side views the oscillating shaft for operating the seed-bar. Fig. 3 shows one end of the sliding seed-bar. Fig. 4 shows in plan, side, section, and end views the box and support for the rear end of the oscillating shaft. Fig. 5 represents the key used with the supporting shaft-box. Fig. 6 is a side view illustrating the automatic spotter. Fig. 7 illustrates in vertical section the chair in which the oscillating shaft connecting with the seed-bar has bearing. Fig. 8 represents a driving-wheel of the planter in side and edge views. Fig. 9 illustrates the lifting apparatus with which the frame of the planter is provided. Fig. 10 is a partial sectional view of seed-tube of planter with the oscillating valve in place. Fig. 11 is a detached view of the oscillating valve located in the seed-tube. Fig. 12 is a transverse section of seed-tube and valve. Fig. 13 represents one of the aprons, which are attached to the oscillating valve.

My improvements are designed to facilitate

the operation of the planter, which is so constructed as to combine the marking of the ground and planting in one operation, the parts being automatic in operation and the machine being easily managed by a single individual.

In the drawings referred to, A designates the main frame, usually mounted on two wheels, and having a secondary frame, B, coupled thereto, the latter being provided with a pivoted treadle-frame, C.

D indicates the runners, the same being of suitable construction, E the tongue of the planter, and F the driver's seat.

The wheels of the planter are preferably made about thirty inches in diameter. The right wheel G has two elevated sections, *a*, at opposite points on the face of the rim or tire, these being designed to come down upon the ground immediately over the corn, and thus mark the places where the corn has been dropped. At the outer edge, and at opposite points on the rim of the wheel, are two rigid lugs, *b*, having their edges rounded, and a rim or flange on the outer end of each. These lugs should be at right angles to the rim of the wheel and flush with the face of it. They are designed to impinge against the spotter, hereinafter described, and should project far enough to catch a projecting arm of the spotter and press it downward as the wheel G revolves when the machine moves forward. The driving-wheel G has its hub *c* elongated, as shown, and provided with two cogs, *e*, these being arranged on the hub, so as to impinge alternately against the arms of a shaft, *d*, and cause the shaft to oscillate, as hereinafter stated. The hub *c* is also provided with two points, *i*, which serve as guides in setting the machine for work, and are used in connection with the eye *f*, fixed to frame A. They are so placed that when the wheel is turned forward they alternately come to a line with the fixed eye, and when one of these points appears upward and directly opposite to the outer edge of the eye the planter will drop the corn at the instant the machine is moved forward. The oscillating lever-shaft *d* is designed to communicate motion to the sliding seed-bar H, which operates, as heretofore, in connection with the hoppers I, and has a movement to the

right and left alternately, such movement being imparted by the said shaft, dispensing with the dropper, his seat, and lever. The shaft *d* has two arms, *g*, projecting at right angles therefrom, near its rear end, and as the hub *c* revolves as the machine moves forward the cogs *e* alternately press downward the arms *g*, and thus give the shaft an oscillating movement. As shown in the drawings, the parts are so constructed that in turning or backing the machine the cogs *e* will press the arms *g* upward and out of the way. The forward end of the shaft *d* is journaled in a hole or box in the vertical chair *h*, which is fixed to the secondary frame B, near the hopper, the hole or box being beveled, as seen in Fig. 7, so as to allow the shaft to oscillate freely and prevent the rocking motion of frame B from causing the frame to bind or hinder the movement of the shaft. On its lower side and near the forward end the shaft *d* has a branch or finger, *j*, (see Fig. 2,) which is intended to form a connection with the seed-bar by means of a crotchet, *k*, formed on a plate fastened to the bar or made solid therewith. The crotchet is formed, as shown, to have a rounded seat or bearing for the finger within, the prongs extending upward sufficiently to allow the finger *j* to push the seed-bar the proper distance to the right and left. When at rest the crotchet is directly under the shaft-bearing in the chair *h*. The right-and-left movement of the seed-bar is thus effected by the finger *j* extending into the crotchet from the oscillating shaft.

J indicates a box or support for the shaft *d*, said box being bolted to the frame A. It has an open bearing or slot, *m*, with beveled edges above and below to receive the shaft at the beveled groove *l* near its rear end, these parts being beveled correspondingly to allow the shaft to rise and fall with the upward and downward rocking motion of the secondary frame. On the upper side of the lower arm of box J are two notches, *n'* and *n''*, connecting with the key-hole *n*, and intended to receive the wing *n''* of the key K. The notch *n'* runs directly forward, while the notch *n''* runs to the rear and right, as shown. The notch *n'* is used for locking the shaft *d* when out of gear, the shaft having a flat surface at *o*, and when it is turned with this flat surface outward and the key placed with its wing resting in notch *n'* and bearing against the surface the shaft is held out of gear. When the shaft is in operation the key is set with its wing resting in the rearward notch, *n''*.

L indicates the spotter, having the scoop *p* and arm *q*, and being pivoted at its forward end to the secondary frame, and provided with a broad washer and tap, *r*, which serve as a stay and guide. The spotter swings up and down on its pivot and is held out of the ground by a spiral spring, *t*. As the driving-wheel revolves forward the lugs *b* alternately bear down upon the arm *q*, pressing the scoop *p* into the ground at a point to the right and near

the spot where the seed is dropped, thus more plainly marking the ground where the corn is planted than it is marked by the elevated sections *a* on the rim of the wheel. The spotter need not be used except where great precision is required, as when nearing some obstacle, as a stump or rock, or when approaching "point-rows;" then its use, in connection with the sections *a* on the wheel, will more clearly indicate the corn-hill.

M is a lifting-jack connected with the frame A and provided with a foot to prevent it sinking into the ground. It has a lever-notch, *s*, in its front edge near the top, and a key-notch, *s'*, in the rear edge near the foot to receive a key, *s''*, which is used to hold the jack up when not in use. In the latter position the jack may be used as a hitching-standard. The jack slides up and down in a mortise, *u*, in frame A. The lever *v* has a point or tenon, *v'*, to enter the eye *f*, provided with shoulders; also, a ratchet-mortise, *v''*, through which the jack passes, the under edge and front end of which will rest, when in use, in the notch *s*. When the jack is not in use it is drawn up and made fast by key *s''*. The lifting device is used to raise the frame and driving-wheel G from the ground, so as to set the wheel in proper position for marking when the machine is about to start.

In Figs. 10, 11, and 12 is illustrated the oscillating valve in the seed-tube under the hopper of the planter, the said tube being divided into two channels by a partition. The said valve is chiefly constructed as heretofore used, being provided with a segment, *x*. To this valve *x*, I attach two dropping-aprons, *z*, in such a manner as to allow them to move freely with the valve over the shelf *y*, in which the lower stem of the valve has bearing. As the segment-valve oscillates each apron is alternately brought to a horizontal position on the shelf *y* to receive the falling seed, and then pushed from the shelf, when the apron falls to a vertical position, dropping the seed. The outward part of each apron is slightly inclined upward; or, if preferable, the edge of each apron may have a slight rim or upward flange at its outer edge to aid in retaining the seed.

The several parts being in place and the machine being out of gear, it is driven along the edge of the field to be planted, allowing that the wheels will mark two rows from one end of the field to the other. It is then to be turned to cross the end of the field. Before commencing to plant the heel of the seed-tube is placed at the point in one of the rows where it is desired to plant the first hill. The key K is then turned backward until the wing drops into the notch *n''*, which allows the shaft K to fall into gear. The spotter is then dropped and the lifting-jack unlocked, when it slides to the ground. The lever *v* is then raised and drawn back until it catches in the notch *s*, and the lever, being pressed downward, the wheel G will be raised sufficiently

to admit its being turned forward. The wheel is then turned forward until one of the points *i* is directly opposite the outer edge of the eye *f*, and the scoop of the spotter will then have reached the ground. The wheel *G* being now held to its place, the lever *v* is raised and the wheel comes to the ground. The jack is drawn up and keyed to the frame. The driver now mounts his seat and starts the machine. He will drive across the field and turn to go back. Before starting he will reset the machine, as before, being careful to have the heel of the seed-tube directly opposite to the point where the last hill was planted. The wheel *G* can be readily lifted without the aid of the jack by taking hold of the corner of the frame *A* with the left hand, adjusting the wheel as before.

I am aware that the seed-bar of a planter has been heretofore operated by means of an oscillating shaft having right-angled arms at one end, to which motion is imparted from the driving-wheel; but in such devices, as heretofore used, the means have been indirect, requiring additional intermediate mechanism; but in my construction the connection between seed-bar and driving-wheel is more direct by means of the shaft *d*.

Having described my invention, I claim—

1. In a corn-planter, the driving-wheel having its hub elongated and provided with the cogs *e*, in combination with the oscillating shaft having arms *g*, and connecting at its forward end with the seed-bar by means of the finger *j* and crotch *k*, as herein set forth and described.

2. The adjustable key provided with a wing or flange, *n*³, in combination with the slotted bearing *J* and shaft *d*, whereby the wing of the key may be adjusted in a groove or recess, *n*¹ *n*², of the bearing, to either hold the shaft in position for operating or hold it out of gear, substantially as set forth.

3. The slotted bearing *J*, attached to the frame of the planter, and provided with the grooves *n*¹ *n*² and key-hole *n*, in combination with the adjustable key having wing *n*³, and the shaft *d*, having the flat surface *o*, substantially as set forth.

4. The chair *h*, fixed to the frame *B* of the

planter, in combination with shaft *d*, the said chair having a beveled or flaring aperture, as shown, forming a bearing for the oscillating shaft to prevent the rocking motion of frame *B* from binding the shaft, as herein set forth.

5. In a corn-planter, the combination of the oscillating shaft *d*, provided with arms *g* and the finger *j*, to work in the crotch *k* on the seed-bar, the elongated hub *c*, provided with cogs *e*, slotted bearing *J*, provided with adjustable key *K*, and chair *h*, having a beveled aperture to receive the end of the shaft, substantially as set forth.

6. In a planter, the spotter *L*, pivoted to the side of the machine, and provided with a lifting-spring, the scoop *p*, and arm *q*, in combination with the driving-wheel having the impinging lugs *b*, the parts being constructed as shown, for the purposes set forth.

7. The wheel of a planter, having an elongated hub, *c*, provided with guide-points *i*, in combination with an eye, *f*, or other indicating-point on the side beam of the frame, substantially as and for the purpose set forth.

8. The side beam of frame *A*, provided with an eye, *f*, to afford a bearing for the lever *v* of the standard *M*, and at the same time serve as an indicating-mark for the guide-points *i* on the hub of the driving-wheel *G*, substantially as set forth.

9. In combination with the frame of a planter, having its side beam provided with eye *f* and slot *u*, the notched standard *M*, slotted lever *v*, and fastening-pin *z*², the parts being constructed as shown, for the purposes set forth.

10. In combination with the oscillating valve in the seed-tube of a planter, the aprons *z*, connected with the segment-valve *x*, constructed substantially as shown, for the purpose set forth.

11. In combination with an oscillating valve in the seed-tube of a planter, the shelf *y* and aprons *z*, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES V. MITCHELL.

Witnesses:

JONATHAN WILLIAMS,
J. C. COMER.