

CRISMAN & WHITMER.

Corn-Planter.

No. 45,139.

Patented Nov. 22, 1864.

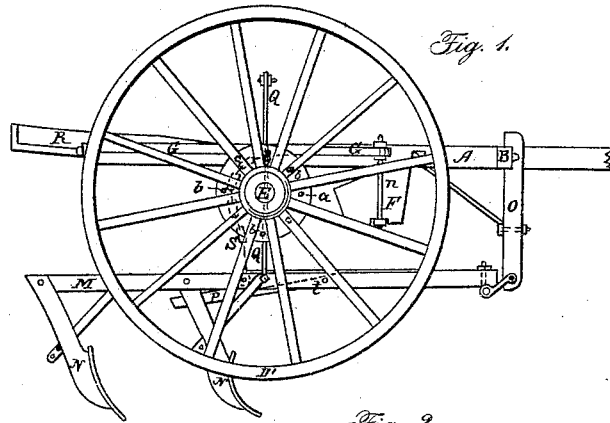


Fig. 1.

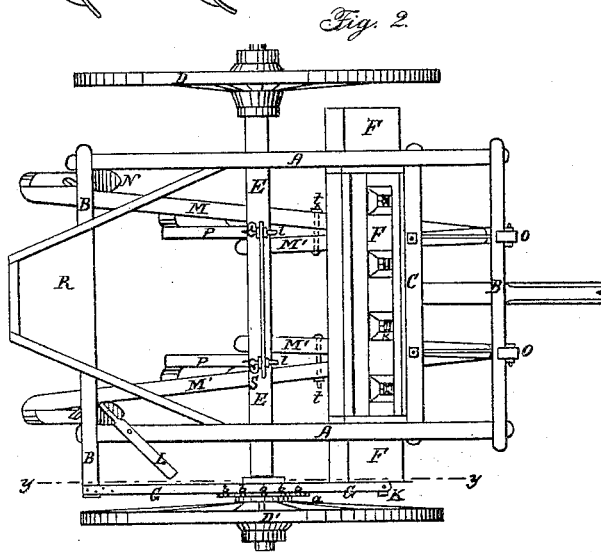


Fig. 2.



Fig. 3.

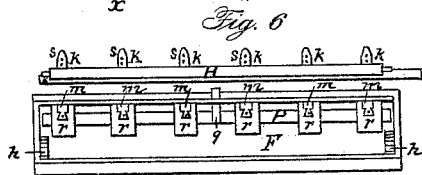


Fig. 6.



Fig. 7.

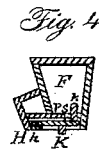


Fig. 4.

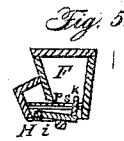


Fig. 5.

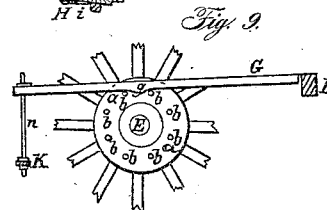


Fig. 9.

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UNITED STATES PATENT OFFICE.

AARON CRISMAN AND MICHAEL WHITMER, OF SUGAR CREEK TOWNSHIP,
CEDAR COUNTY, IOWA.

IMPROVEMENT IN SEED-PLANTERS.

Specification forming part of Letters Patent No. 45,139, dated November 22, 1864.

To all whom it may concern:

Be it known that we, AARON CRISMAN and MICHAEL WHITMER, both of Sugar Creek township, in the county of Cedar and State of Iowa, have invented a new and useful Improvement in Seeding-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and of which—

Figure 1 is a side elevation of our improved seeding-machine; Fig. 2, a top or plan view of the same; Fig. 3, a bottom view of the seed-box and dropping apparatus detached; Fig. 4, a section of the same in the line *x x* of Fig. 3, showing the dropping apparatus in its proper position when at rest; Fig. 5, a similar section, showing the dropping apparatus in its active position; Fig. 6, an elevation of the rocker-shaft and attached feeders as detached from the seed-box; Fig. 7, a bottom view of the same; Fig. 8, a bottom view of the seed-box with the rocker-shaft and feeders removed; and Fig. 9, a section in the line *y y* of Fig. 2, looking outwardly, and illustrating the relative arrangement and position of the cam upon the under side of the lever *G* with reference to the pins upon the annular plate on the hub of the wheel.

Similar letters indicate corresponding parts in each of the drawings.

The object of our invention is to simplify the operation of seeding-machines and render them more cheap in construction and efficient in operation.

The frame of our improved machine is made, as usual, of suitable side timbers, *A A*, united at their ends by transverse beams *B B*, and braced, if necessary, at any intermediate point of their length by a cross-beam, *C*, and is mounted upon an axle, *E*, and wheels *D D'*. A seat, *R*, is placed upon the rear transverse beam *B* for the driver.

The seed-box *F* is secured to the side beams, *A A*, about midway between the axle *E* and the front transverse beam *B*, its ends projecting beneath and beyond the beams, as seen in Fig. 2.

An annular plate, *a*, is secured upon the inside of the hub of the wheel *D'*, and a series of pins, *b b*, are driven in upon the inner face of this annular plate at equal distances apart in a circle concentric with the circumference of

the wheel, and are left to project out therefrom toward the center of the machine, as is illustrated by Fig. 2 and more distinctly by Fig. 9 of the drawings.

A lever, *G*, Figs. 1 and 2, hinged at one end to the projecting end of the rear transverse beam *B* of the frame and extending thence forward in a direction nearly parallel with the side beam, *A*, passes close against the face of the annular plate *a*, as seen in Fig. 2, and rests upon the pins *b b*.

A cam, *g*, is formed on the under side of the lever *G* immediately over the axis of the wheel *D'*, and the distance between the pins is so proportioned relatively to said cam as that when any two adjacent pins attain in the revolution of the plate the same horizontal plane at their greatest altitude the cam will drop down between them, all as clearly illustrated in Fig. 9. The cam and its lever will thus be raised up by each pin consecutively as the wheel revolves, and will also drop down between them in succession, obtaining thereby a vertical vibratory movement.

Upon the under side, *q*, of the seed-box, close to its rear edge and parallel thereto, is placed a rocker-shaft, *H*, Figs. 3, 4, and 5, whose ends are supported in suitable journal-boxes, *h h*, secured beneath the ends of the feed-box.

The bottom of the seed-box is pierced with a number of apertures, *m m m*, which are placed at suitable distances apart in a line parallel with the front of the box and quite close thereto. A series of short arms, *i i i*, equal in number to these apertures, are secured at one end to the rocker-shaft *H*, and extend from thence forward beneath each aperture, and upon the free ends of these short arms are placed upright feed-blocks *k k*, which pass up vertically through the apertures *m m m* into the seed-box, fitting closely within the same. These apertures *m m m* are provided with offsets or notches *o o*, cut evenly upon the inner side, through which the seed drops from the box. The size of these seed-openings is regulated uniformly by means of a thin metallic slide-plate, *p*, Figs. 3 and 8, which works along the whole length of the seed-box in a longitudinal groove formed in a line beneath the seed-openings, and which is retained in place by the metallic face-plates *r r*, secured to the bottom of the box around the dropping-holes to protect

them from wear or enlargement. Notches are cut similar in shape and size to the offsets *o o*, if the apertures *m m* are cut in the edge of the slide *p* at intervals equal to those between said openings, so as that they may be placed in exact register therewith. When so placed in register, the seed-openings are of their full size, but if the slide be drawn a little each seed-opening is partially covered by the one edge of the notch in the plate, and is to that extent contracted. The slide-plate is laterally adjusted, and the size of the seed-openings consequently regulated by means of a projecting handle, *q*, or by a suitable set-screw at one end thereof.

To the inner face of each of the feed-blocks *k k* one or more short wire pins, *s s*, are secured and left projecting out far enough to reach nearly across the seed openings or offsets *o o* and to pass freely through the same. The feed-blocks *k k* are made to play vertically in their respective apertures *m m*. When elevated the pins reach above the bottom of the seed-box, so that when falling they will draw down through the offsets the seed contiguous thereto. This play of the feed-blocks, and consequent vertical movement of the projecting pins up and down in the seed-apertures *o o*, is secured by means of a cross-bar, *k*, secured along upon the under side of the arms *i i* near their free ends, to which the feed-blocks *k k* are attached. The end of this cross-bar *K* projects out beyond the end of the seed-box, as seen in Figs. 2 and 3, and is connected with the vibrating end of the lever *G* by means of an upright connecting-rod or link, *n*. Hence when this end of the lever *G* rises it draws up with it the bar *K* with all the attached arms *i i* vibrating upon the rocker-shaft *H*, and these arms *i i*, when drawn up against the bottom of the seed-box, cover and consequently close the seed-openings *o o* therein, which otherwise remain open.

We deem it necessary to combine with our improved seed-dropper, as above described, some suitable device for covering the grain after it has fallen on the ground. For this purpose we use a series of shovels or plows, *o o*, arranged on either side of suitable plow-beams, *M M*, placed at such an angle with reference to the frame of the machine and the intervals between the seeding-apertures *o o* as that the shovels will run between the rows of grain falling from these apertures and cover the seeds with earth. These plow-beams and their attached share-beams and shovels are hinged by links to the lower ends of bars or rods *N N*, hanging from the front transverse beam *B* of the machine, to which they are rigidly secured. These bars *N N* are properly stayed by diagonal braces extending from their lower ends to the cross-beam *c* of the frame, and these lower ends thereof hang low enough to bring the attached front ends of the plow-beams below the level of the axle. The rear ends of the plow-beams and the shovels

dependent therefrom are supported at the proper height by means of gage-bars *Q Q*, whose lower ends are so pivoted between the inner sides of the beams *M M* and of the short beams *M' M'*, which diverge therefrom, as seen in the drawings, as that their upper ends may pass up vertically through slots cut to receive them in the axle *E* of the machine. These gage-bars are pierced with a regular series of holes at equal intervals, so that by inserting pins or bolts *ll* therein above the axle the height of the plow-beams may be adjusted to regulate the depth at which the shovels shall work.

Treadles *P P* are pivoted to the shovel-beams by the pivots *t t*, Figs. 1 and 2, in the angle formed by the divergence of the beams *M M* from the short beams *M' M'*, and chains *S S* connect these treadles with the axle *E*. The driver by pressing upon the rear ends of these treadles can throw the shovels entirely out of the ground when desired.

The seed-box of our improved machine being properly charged with the dropping-holes adjusted to suit the size of the grain or seed to be sown, the machine will, when put in motion, operate as follows, viz: The annular plate *a* will revolve with the wheel *D'*, and its teeth *b b*, coming successively into contact with the cam *g* upon the under side of the lever *G*, will impart thereto a vertical vibratory movement. This reciprocating motion is communicated through the medium of the link *n* to the bar *K* and attached feed-blocks *k k k*, which are thus made to move up and down in the apertures *m m*. The extreme altitude and depression of these feed-blocks are illustrated in Figs. 4 and 5, respectively, from which it appears that when the blocks are elevated the arms *i i* cover and close the dropping-recesses *o o*, and that when they are depressed these recesses are opened. This reciprocating motion of the feed-blocks effects the proper delivery of the seed through the dropping-holes *o o*, a proper measure of seed being dropped at each downward movement of the feed-blocks. The pins *s s* serve to draw down the grain into the dropping-apertures, and act also to keep them open and free from straw, &c. The seed-openings may be at any time closed independently of the movements of the machine either by the slide-plate *p* or by means of a small hand-lever, *L*, pivoted upon the side beam, *A*, within reach of the driver's hand, as seen in Fig. 2. The outer end of this lever swings around under the lever *G*, and is so shaped as that it will raise up this lever, so as that the pins on the annular plate will not reach its cam, and consequently so as to close the seed-openings.

Having thus fully described our improvements, what we claim therein as new, and desire to secure by Letters Patent, is—

The combination of a hinged lever, *G*, cross-bar *K*, rocker-shaft *H*, short arms *i i*, and feed-blocks *k k*, or their equivalents, with the running-gear and seed-box of a seeding-machine,

for the purpose of effecting and controlling the discharge of seed therefrom when a regular vibratory movement is imparted to the lever G and its attachments by means of an annular plate, *a*, and pins *b b*, operating upon a cam, *g*, substantially in the manner herein set forth.

The foregoing specification of our improve-

ment in seed-planters signed by us this 14th day of July, A. D. 1864.

AARON CRISMAN.
MICHAEL WHITMER.

In presence of—

Q. Z. LEDGEWOOD,
JACKSON HIXON.