J. SHAFER.

Seed Planter.

No 49,557. Patented Aug. 22, 1865.

Fig. 1.

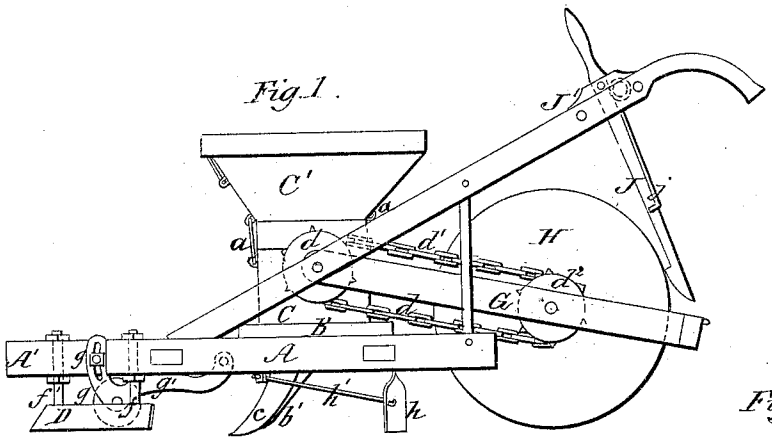


Fig. 2.

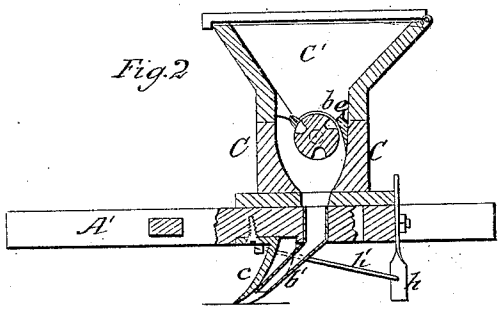


Fig. 4.

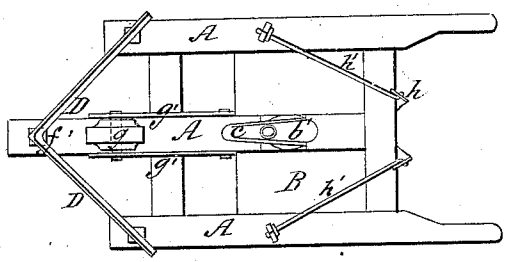


Fig. 3.

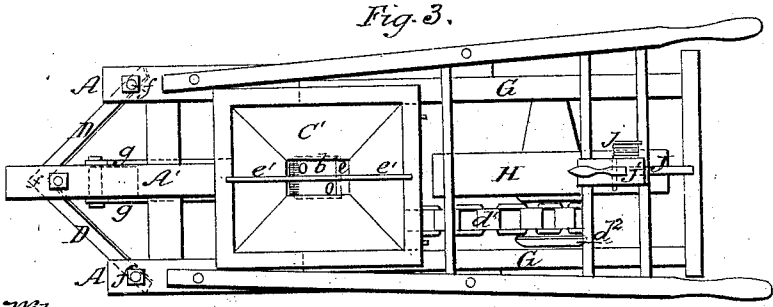
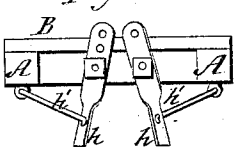


Fig. 5



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UNITED STATES PATENT OFFICE.

JOHN SHAFER, OF SPARTA, NEW YORK.

IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. **49,557**, dated August 22, 1865.

To all whom it may concern:

Be it known that I, JOHN SHAFER, of Sparta, Livingston county, State of New York, have invented a new and Improved Seeding-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of one side of my improved seeding-machine. Fig. 2 is a longitudinal vertical section through the hopper and seed-dropping contrivance. Fig. 3 is a top view of the machine. Fig. 4 is a bottom view of a portion of the machine. Fig. 5 is an end view of the coverers and their braces.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in the employment of a leveler, which is arranged in advance of the seed-dropping devices and so applied to the frame of the machine that it will leave the earth free from trash and in a good condition for receiving the seed, said leveler being so applied that it can be adjusted vertically and adapted to light or heavy soil; and, in conjunction with said leveler, it consists in the employment of a vertically-adjustable supporting-wheel for supporting the forward end of the frame of the machine, as will be hereinafter described.

It also consists in the employment of vertically-adjustable coverers arranged in rear of the seed-dropper in planes oblique to the line of draft, and braced by means of diagonal rods extending forward and connecting with the frame of the machine, as will be hereinafter described.

It also consists in the employment of a roller, in conjunction with a swinging frame, which is pivoted to the shaft of the seed-drum in such manner that a belt passing over the hub of the roller-shaft will give motion to the seed-drum and effect the dropping of the seed. Said roller being connected to a swinging frame, the latter can be lifted up from the ground and supported in this position when it is desired to move the machine without dropping the seed, as will be hereinafter described.

It also consists in a spring-hooked brake applied to the handles of the machine, and so arranged that it serves as a support for the roller-frame when the latter is elevated, and also as a brake upon the roller while planting seed, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The frame of the machine consists of three longitudinal beams, A A′ A, firmly braced by means of transverse beams, and a board, B, which constitutes the base of the seed-box C. The central beam, A′, is the draft-beam, and extends some distance in advance of the forward ends of the side beams, A A, as shown in Figs. 3 and 4.

The hopper-box C is of a rectangular form externally, and is divided horizontally, so that the upper portion of this box, with its hopper C′, can be removed by loosening the hook-fastenings *a a* and the seed-cylinder *b* exposed. The lower section of the hopper-box C is secured permanently to the base-board B, and has a passage through it, as shown in Fig. 2, for the escape of the seed into the seed-tube *b′*. This seed-tube is inclined forward and partially inclosed by the tooth *c*, which opens the ground to receive the seed. The seed-cylinder *b* has its end bearings in the sides of the seed-box, and one end of the shaft of this cylinder extends out from the seed-box sufficiently far to receive upon it a chain-wheel, *d*, which, being keyed on its shaft, will rotate the seed-cylinder when motion is given to the flat chain *d′*, as will be hereinafter described.

The seed-cylinder has a number of perforations or seed-cups in its circumference of a capacity adapted to contain the proper number of seed to be dropped at one time. On the rear side of this cylinder is a guard, *e*, which prevents seed from escaping at this point, and on the front side of the cylinder a brush is applied, which serves as a "striker" to prevent more seed from being dropped than is desirable.

The object of dividing the seed-box, as above described, is to admit of the introduction and removal of the seed-cylinder when it is desired to change this cylinder for different kinds of seed. The removable partition *e′* in the hopper C′ is used for planting different kinds of seed at the same time. When desirable this partition can be removed.

At the forward part of the machine, and arranged beneath the beams A A′ A, is a leveler, D, which consists of two boards or plates arranged obliquely to the line of draft and united

together at their forward ends, so as to throw the loose earth and trash off from each side of the machine. These levelers are supported at three points by means of vertical screw-rods *f f' f*, which pass up through the three beams A A' A and receive nuts above and below said beams. By loosening the nuts on the rods *f f' f* the leveler can be elevated or depressed and secured rigidly in the desired position.

In rear of the forward end of the leveler is a supporting-wheel, *g*, having its axle-bearings in two plates, *g' g'*, which are pivoted at their rear ends to the central beam, A'. The forward ends of these plates curve upward and have slots through them which are concentric with the rear pivotal connections of the plates, and through these slots and the beam A' a bolt is passed, having a nut on one end, by means of which the forward ends of the plates can be fixed in any desired position.

The object of adjusting the wheel *g* is to regulate the rake of the leveler D, and to support this leveler so that it will not sink too deep into the ground, but skim over the surface and leave it in a good condition for receiving the seed. In rear of this wheel, and in the same line, is a tooth, *c*, which may be made of any suitable form found best adapted for forming a drill to receive the seed.

After the seed is dropped from the seed-tube *b'* it is covered by means of two plates, *h h*, which are secured to the rear side of the rear transverse beam of the frame, as shown in Figs. 1, 4, and 5. The lower ends of these covers *h h* are bent in planes obliquely to the line of draft, so that they will scrape the earth over the seed by filling up the drill which is left by the tooth *c*. These coverers are vertically adjustable, and they are stiffened by means of diagonal braces *h' h'*, which are attached at their forward ends to the side beams, A A, as clearly shown in Figs. 4 and 5.

A swinging frame, G, is pivoted at its forward ends to the handles of the machine at points which coincide with the axis of the seed-cylinder. This frame carries a large wheel or roller, H, the hub of which has a chain-wheel, d^2, on it to receive and drive the chain *d'*, and thus give motion to the seed-cylinder. This frame G is allowed to rise or fall and accommodate itself to inequalities in the surface over which the wheel or roller H moves.

When it is desired to stop the motions of the seed-cylinder the attendant behind the machine can elevate the rear end of the frame G and attach it to the hooked brake-rod J, as indicated in red lines, Fig. 1. The brake-rod J is pivoted to a block, J', which is secured to the handles of the machine, and this rod is acted upon by a spring, *j*, which forces its lower end forward. This wheel H is of sufficient weight to press the earth down upon the seed, which is dropped and covered by the contrivances in front of this wheel.

It is important to arrange the frame G so that the axis of the wheel H will describe an arc in its rising and falling movements concentric with the axis of the seed-drum, thus enabling me to make said wheel serve the double purpose of pressing down the seed and giving a rotary motion to the seed-cylinder.

The hooked rod J serves as a brake upon the wheel H by pressing against the circumference thereof when the parts are in the position shown in black lines, Fig. 1. The attendant can increase or diminish the pressure of lever J upon wheel H at pleasure by grasping the upper end of this lever.

I employ a chain, *d'*, for the reason that it is more positive in its action than a belt would be.

I contemplate arranging the seed-dropping devices in gangs, in which case they will be provided with levelers, coverers, and one or more rollers for preparing the ground to receive the seed, and then covering up and pressing down the seed, as above described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the leveler D, rear supporting-wheel, *g*, and coverers *h h'*, arranged substantially as described.

2. Mounting the wheel H in a frame, G, which is hinged at points coinciding with the axis of the seed-cylinder *b*, in combination with the driving-chain *d'*, or its equivalent, substantially as described.

3. The spring brake-lever J, applied to the handles of the machine, in combination with the swinging roller-frame G, substantially as described.

JOHN SHAFER.

Witnesses:
JOHN WILKINSON,
H. J. GRIFFITHS.