2 Sheets—Sheet 1.

P. SEYMOUR.

Grain Drill.

No. 6,750. Patented Sept. 25, 1849.

Fig. 2.

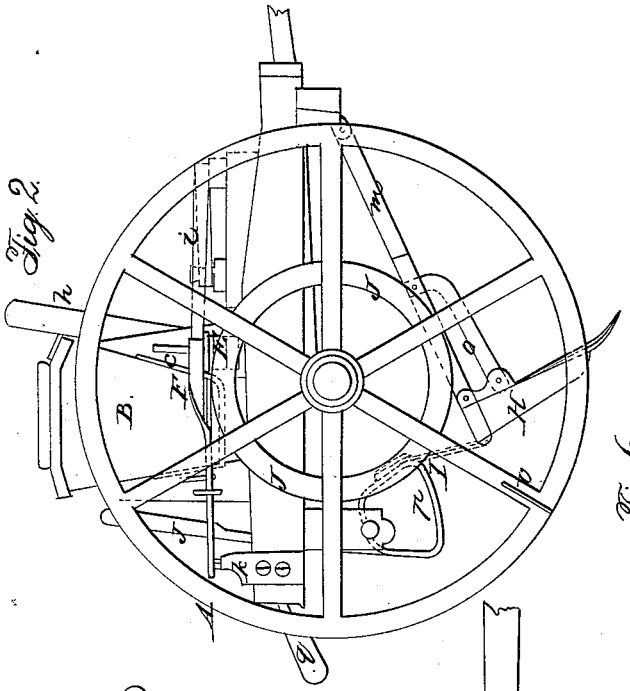


Fig. 6.

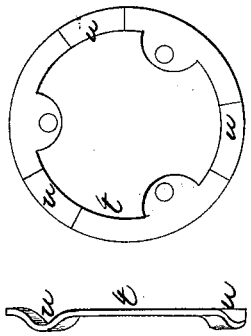
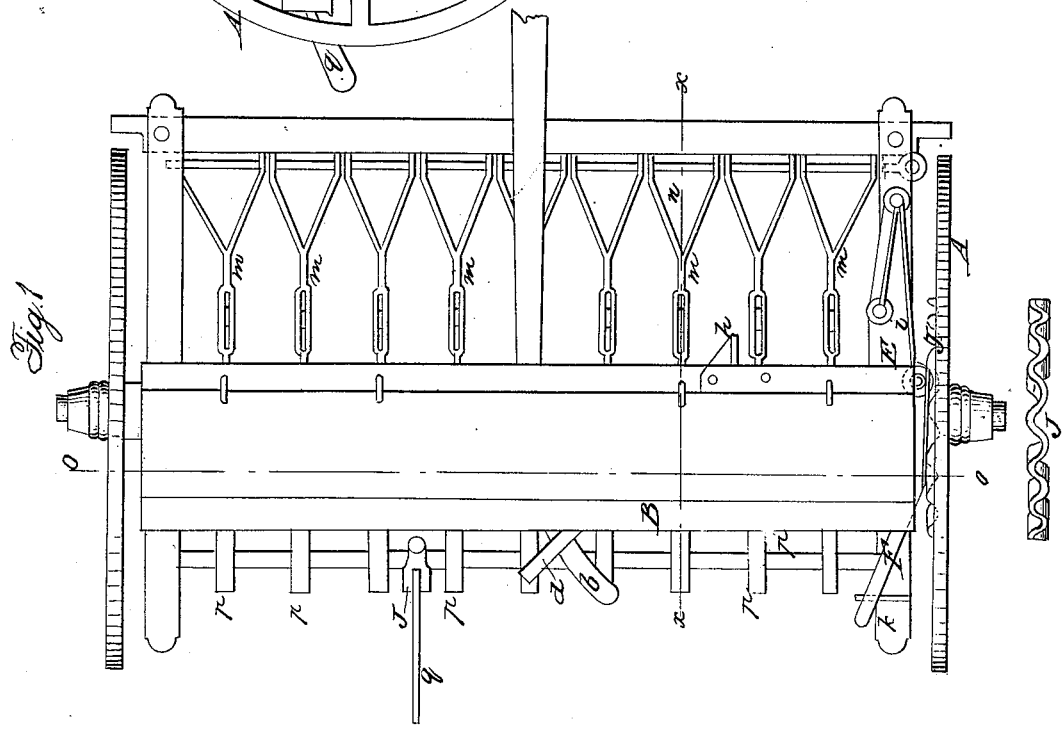


Fig. 1.



2 Sheets—Sheet 2.

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Fig. 5.

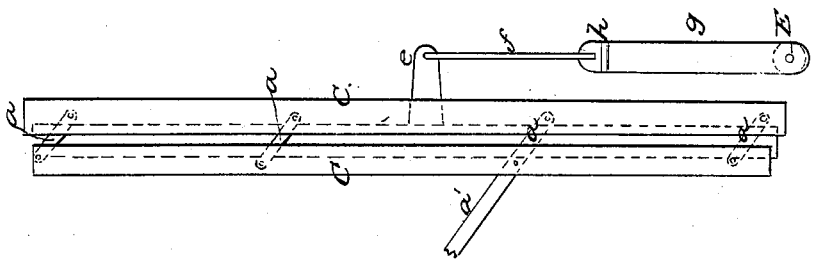


Fig. 4.

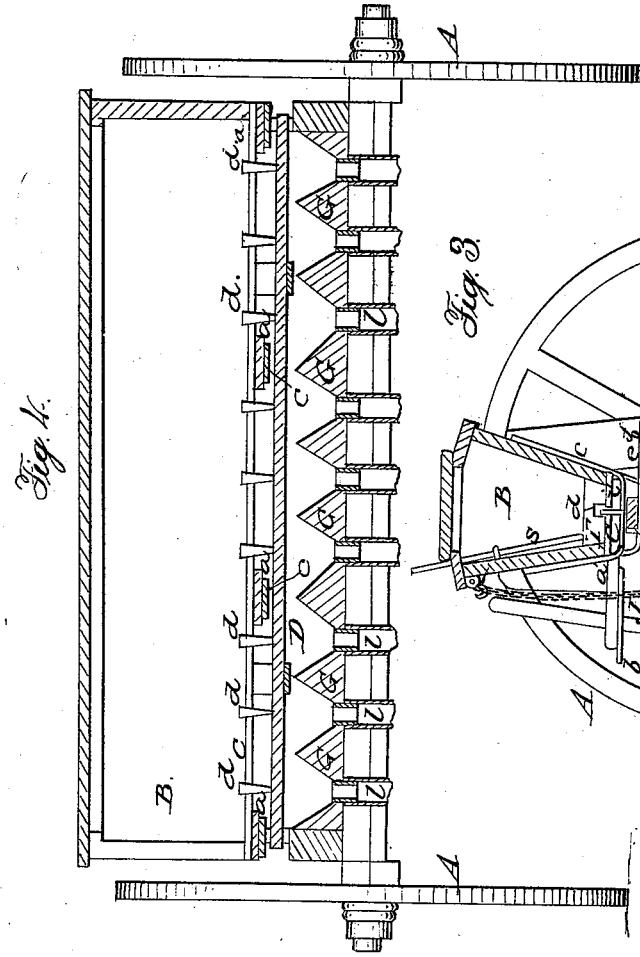


Fig. 3.

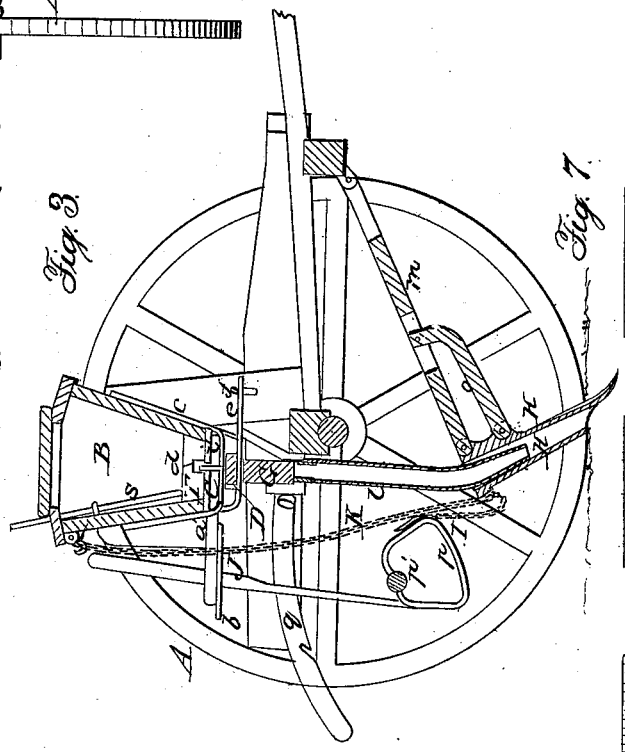
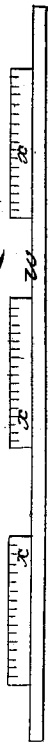


Fig. 7.



UNITED STATES PATENT OFFICE.

PIERPONT SEYMOUR, OF EAST BLOOMFIELD, NEW YORK.

IMPROVEMENT IN DEVICES FOR SOWING SEED IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **6,750**, dated September 25, 1849.

To all whom it may concern:

Be it known that I, PIERPONT SEYMOUR, of East Bloomfield, in the county of Ontario and State of New York, have invented a new and useful Improvement in Drilling-Machines for Sowing Seed, Planting Corn, &c., which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a top or bird's-eye view of the machine. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section of the same at the line *x x* of Fig. 1. Fig. 4 is a vertical section of the same at the line *o o* of Fig. 1. Fig. 5 is a top view of the parallel plates forming the bottom of the seed-box and the parts attached to the same.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in arranging immediately below the seed or grain box of the machine two horizontal parallel plates, forming the bottom of said box, connected together by links and provided with a lever for moving one nearer to or farther from the other, in order to regulate the quantity of seed or grain passing between the same, and placing beneath said plates a horizontal vibrating bar having pins on its upper surface extending through the space between the plates and connected to a vibrating plate or bar attached to springs, and provided with an anti-friction roller at its extremity, pressing against a zigzag plate or wheel secured to the driving-wheel of the drill in such a manner as to cause said bar under the box and its attachments to be moved to and fro during the progress of the machine, and the pins to agitate the seed or grain next the space between the plates and cause the same to pass through said space and descend between angular blocks, which conduct it into the leather tubes, from whence it passes through the drill-teeth; and also in attaching the drill-teeth to a windlass arranged at the back part of the machine, and operated by a lever in such a manner as to enable the operator to raise all the drill-teeth from the ground at the same time by simply raising said lever, and otherwise improving the machine to better adapt it to the purposes for which it is designed.

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

A are the wheels upon which the machine moves, turning on a horizontal axle secured to an oblong frame, so constructed as to contain and support the several parts.

B is the seed-box, of the usual form, arranged above the axle and supported by joists or uprights at either end rising from the frame.

C are the oblong plates, arranged immediately below the seed-box and flush with the bottom of the same, (one being secured permanently to said box,) connected together by links or bars *a*, after the manner of a parallel rule, and provided with a lever, *a'*, moving over a stationary curved plate, *b*, secured to the box, and marked to indicate the width of space between the plates.

D is the horizontal vibrating bar, arranged immediately below the plates C, moving on bent plates *c*, secured to the box, and having upright pins or plates *d* projecting from its upper surface and passing through the space between the plates C, and provided with a horizontal plate, *e*, secured at its center, extending toward the front of the machine, to which is hooked or otherwise affixed a rod, *f*, running parallel with the bar, and attached at its opposite extremity to a bent plate, *g*, secured at one end to a spring, *h*, fastened to the seed-box, and having an upright pin secured to its opposite end, projecting above and below the same, to the upper part of which is attached a spring, *i*, secured to the frame and springing, like the spring first mentioned, outward toward the driving-wheel.

E is an anti-friction roller, turning on the lower part of the upright pin, and resting, when the machine is operating, against the inner surface of a circular zigzag plate, *j*, or wheel secured to the driving-wheel.

F is a lever arranged at the end of the seed-box, between the same and the driving-wheel, so as to bring one end outside the upper part of the upright pin, and turning on a fulcrum fixed to the box at its center, in such a manner

as to allow the operator to remove the anti-friction roller from contact with the zigzag plate by moving the end of the lever next him outward and pressing the same in a notch formed in a plate, *k*, secured to the frame.

G is a series of right-angle triangular-shaped blocks, secured between parallel bars secured to the frame of the machine, immediately below the space between the plates C, the required distance apart to form hoppers for conducting the seed to the leather tubes *l*, and thence to the drill-teeth H.

H are the drill-teeth, made in the usual manner, and connected to drawing-bars *m* at their upper parts, extending forward to the front beam of the frame, where they are forked or provided with prongs, and suspended to a rod, *n*, passing through openings at their ends secured to the frame. These drawing-bars have slots formed in them near their centers, in which are inserted the ends of curved bars *o*, secured to the same by pins and attached to the drill-teeth below, where the drawing-bars are attached in like manner.

I are chains attached to the upper ends of the drill-teeth, and to hooks formed on bent plates *p*, secured to a horizontal shaft, *p'*, turning in suitable boxes in the frame. These plates are curved in the form of a segment of a circle at the parts farthest from the shaft to which they are secured, on which the chains rest when the drill-teeth are raised, and are otherwise shaped to suit the views of the constructor.

J is a lever or bar secured to the horizontal shaft *p'*, provided with a slot, through which is inserted a curved or segmental bar, *q*, connected to one of the bars between which the triangular blocks are secured, having a notch formed at its lower edge, in which a pin in the slot of the lever or bar fits.

K are other chains attached to the upper ends of the drill-teeth, and to a horizontal rod passing through eyes or staples fastened to the upper part of the seed-box.

Operation: The seed to be sown being placed in the box, and the horizontal movable plate C moved the required distance to form the desired space between its edge and the edge of the stationary plate C, by moving the lever *a'* over the index *b* the machine will be started over the field, which will cause the inequalities of the surface of the circular zigzag plate or wheel *j* and springs *h i* alternately to force the anti-friction roller E toward and from the box B, and the parts to which it is attached to receive a like vibratory movement, and the pins or plates *d* projecting from the upper surface of the vibrating bar D, to agitate the seed in the box next the passage between the plates C and facilitate its passage through the same, from whence it will descend into the hoppers formed by the blocks G and be conducted into the drill-teeth, as before stated. The operation will be continued in this manner until the machine arrives at the end of the field, when the operator will throw the anti-friction roller out of gear with the zigzag circular plate or wheel by the lever F in the manner before stated, and will raise the drill-teeth from the ground by drawing the lever J down and securing the same in a pendent position by inserting the pin in the slot formed in the same into the slot or notch in the curved or segmental bar *q*. The machine will then be turned and brought to the proper position for the next rows, and the segmental bar *q* detached from the lever J, so as to again lower the drill-teeth, and the lever F detached from the notch in the plate *k* to again gear the anti-friction roller with the zigzag plate, when another series of rows will be sown, as before. In this manner the operation will be continued until the required quantity of seed is distributed.

When it is desired to plant corn with this machine, or other grain required to be laid in rows, all the drill-teeth, except the two nearest the wheels and the one midway between the same, are raised a sufficient distance above the ground to clear the same, and suspended in that position by the chains K, and grooved slides *r* may be arranged in the box B above the raised teeth and moved by the levers or rods *s* attached to the same, passing through eyes in the box and extending a short distance above the top of the same, so as to bring them over the pins *d* projecting from the vibrating bar D immediately above said raised teeth, and to entirely cover the parts of the space which they traverse, to prevent the passage of the corn through the same. Another circular plate or wheel, *t*, Fig. 6, containing three or more semicircular depressions, *u*, will then be secured over the zigzag plate or wheel, which will cause a corresponding number of hills or rows of the grain used to be planted at each revolution of the driving-wheel during the progress of the machine, the lever *a* being previously moved to increase the space between the plates C sufficiently to allow the passage of the corn or other grain. The distance of the hills or rows from each other can be regulated by the number of drill-teeth used and the number of depressions in the circular plate *t* or the size of the driving-wheel. Before starting the machine at the beginning of the rows the driving-wheel is turned on its axis so as to bring the marker *v* on the same over the first hill or row in order that the grain may be dropped on the same lines with the rows previously formed.

In case it is desired to convert this machine into a broadcast-sowing machine, the drill-teeth, triangular blocks, and bars on the sides of the same, and vibrating bar D will be removed, and a vibrating bar, *w*, Fig. 7, will be inserted in place of the vibrating bar above mentioned, having split plates *x* rising from its upper surface and entering the passage

between the plates C for agitating the seed, plaster, or other material contained in the box, and facilitating its passage through the said space.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the springs *h i*, attached to the vibrating bar or plate *g*, to which the anti-friction roller E is affixed, zigzag plate or wheel *j*, and vibrating bar D, having teeth *d* on its upper surface for facilitating the passage of the seed or grain through the space between the parallel plates C, as described.

PIERPONT SEYMOUR.

Witnesses:
B. F. ADAMS,
E. W. FAIRCHILD.