G. S. GARDNER.

Grain-Drill.

No. 7,699. Patented Oct. 8, 1850.

Fig. 2.

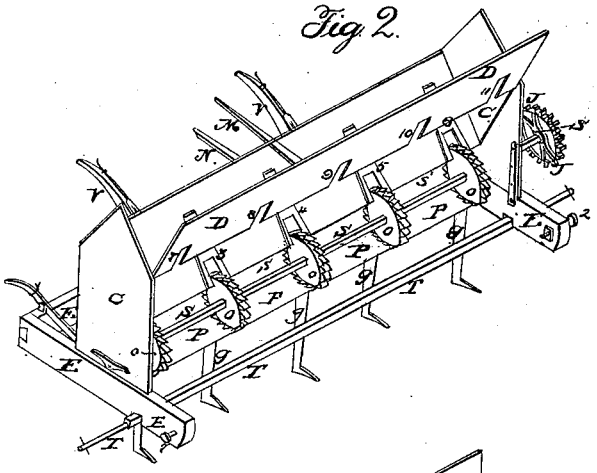


Fig. 4.

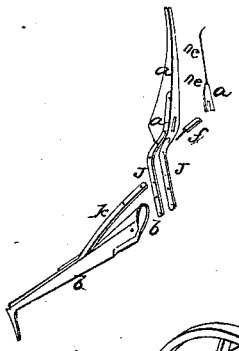
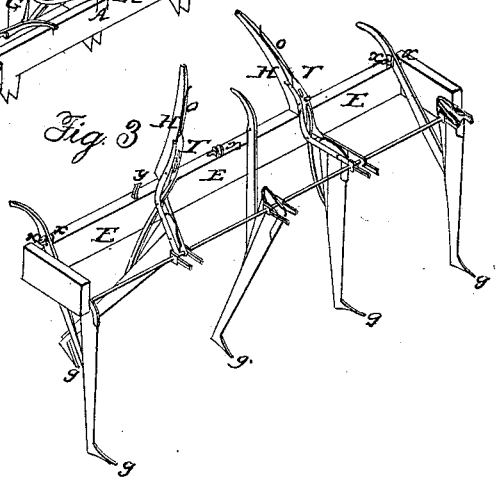


Fig. 1.

Fig. 3



UNITED STATES PATENT OFFICE.

GERVIS S. GARDNER, OF CHARLESTOWN, VIRGINIA, ASSIGNOR TO G. S. GARDNER AND G. ROHR.

IMPROVED SEEDING APPARATUS FOR A SEED-PLANTER.

Specification forming part of Letters Patent No. 7,699, dated October 8, 1850.

To all whom it may concern:

Be it known that I, GERVIS S. GARDNER, of the town of Charlestown, county of Jefferson, and State of Virginia, have invented and made certain new and useful Improvements on the Machine or Implement for Drilling Wheat and Planting Grain and other Seed; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical perspective view of the improved drill or planter, letters A A A A A showing the frame or body of machine; B B, driving or ground wheels; C C, hopper or seeding-fountain; D D, top of hopper, hinged at *v v v;* E E E, inside of hopper; F F F F F, vent-spouts; G G G G G, drill-spouts; H H H H H, lever-handles; I, driving cog-wheel; J J, pinion cog-wheel attached to axle of shaft of feeding-wheels, which shaft passes longitudinally beneath the bottom of seeding-fountain; K K K K, feeding-wheels' regulating plates; L L L L, nuts and screws of graduating slides to feeding-wheels; M, lever to throw drilling apparatus out of gear and to stop the seeding; N, lever to relieve drill-spouts and tine-points of impediments; O O, lever-rest; P P P P P, guard or stay-brace beam, to which the seeding-fountain and drill spouts and lever-handles are attached; R R R R, axle-fulcrum, to which the drill-spouts and lever-handles are also attached; S, stop-catch to prevent fountain or hopper from being lifted too far; T T, latch slides to keep down in their places the lever-handles; U U U U, vent-slits for grain or seed to pass out of seeding-fountain into the vent-spouts; V V V V, ratchet-shaped feeding-wheels, which revolve vertically from front to back, throwing or depositing the grain or seed into the vent-spouts in the rear or back part of the seeding-machine.

Fig. 2 is an isometrical perspective front view of drill-machine detached from wheel-frame part in order to show the internal arrangement of the feeding-wheels and the graduating slides; E E E E, moving or inside frame, to which the hopper is attached, and which inside or secondary frame is made to work on hinge-pin joints 1 2; C C, fountain or hopper; D D, handle-slide or rear lateral, drawn out of its end grooves in order to show the graduating or feed-regulating slides 3 4 5 6; Nos. 7 8 9 10 11, slit-vents on side or lateral of hopper, which slit-vents are opposite each feeding-wheel and vent-spout; O O O O O, ratchet-shaped vertically-revolving feeding-wheels attached to axle S S S S; T T T, driving or ground wheel axle; J J, pinion cog-wheel attached to axle of feeding-wheels; W, hinge-joint to hopper, which admits of the hoppers being raised up independently of the drill-spouts, &c.; V V V, lever-handles of drill-spouts; M, lifting or ungearing lever—relieving-lever used to lift the drill-spouts out of the way of impediments; P P P P, reverse side of guard or center brace or stay-beam to inside frame; *g g g g*, drill-spouts.

Fig. 3 is an isometrical perspective view of section of drill apparatus, to show how each lever-handle and the respective drill-spouts are connected, and also to show how each drill-spout separately may be thrown out of position at will in order to be relieved of clods or other impediments; E E E E, end beam of inside frame; H T *o o*, lever-handle, latch-slide, and staples; *x x x*, clutches for holding levers; *y y*, slide-catch; *g g g g g*, drill points or tines.

Fig. 4 represents detached parts of drill apparatus, showing lever-handles *a a*, drill-spouts *b b*, vent-spout *c*, latch-slide *d*, staples *e e*, catch *f*, lever-rest *g*, spout-brace *h*, handle side plates, *j j*.

The nature of my improvements consists in my using, in combination with an outside or wheel frame, another frame, which I term a "secondary" or "inside" hopper-frame, having a center brace-beam or stay. This inside frame works on hinge bolts or pins, so as to be elevated or depressed at pleasure, and in order to throw feeding apparatus and drill-spouts off the ground simultaneously, if necessary. To this inside frame I attach a longitudinal form of hopper, and also attach thereto the drill-spouts and other apparatus. I also use a succession of vertically-arranged ratchet-shape wheels, attached to an axle running parallel with the hopper or seeding-fountain, and which wheels I designate as "feeding-wheels," which work or revolve vertically and partly inside of

bottom of hopper, each wheel opposite a drill-spout.

My machine is so arranged and adapted that the drill-spouts may be held up separately or all simultaneously from the ground, in order to escape or pass any impediment, yet without stopping the depositing of the grain or seed.

To enable others to make, operate, and use my improved drilling and seed-planting machine, I will proceed to describe the construction and operation of the same.

I use a frame-work to which is attached two propelling or ground wheels, one of which works loose on its spindle or axle, the other attached and fixed permanently to the axle and revolving therewith. This wheel I term (as is ordinarily the case) the "driving" or "motive" wheel. Attached to this wheel, on the large or butt end of hub, is a master cog or driving-gear wheel. The propelling or ground wheels, as is usually the case, are fixed or arranged to a frame-work, to which frame-work may be attached shafts or a tongue, to which horses or other motors may be hitched or harnessed. To the wheel-frame I attach a secondary or inside frame-work, to which the seeding fountain or hopper and drill-spouts and lever-handles are arranged. I also have a seeding-fountain or hopper of a longitudinal form. On one side of this hopper are slits or seeding-vents, into each of which a feeding ratch-shaped wheel revolves vertically, the revolution of which delivers at every ratch-notch a certain or regulated quantity of grain or seed, which quantity is regulated by what I term "graduating" and "movable" slide-plates, with nuts and screws. The grain escaping from the hopper at every notch of the wheels is emptied into conducting or vent spouts, from which the grain or seed falls through the drill-spouts and in full view of the seedsman or manager of the machine, and the grain is deposited in the rear of the drilling apparatus. The feeding-wheels, as before stated, are attached permanently to a horizontally-working axle, which axle has attached to one of its ends a pinion cog-wheel, which works into the driving-cog or master-wheel, attached to ground or propelling wheel. The seeding-fountain or hopper and drill-spouts are all attached to the center brace or stay beam. The drill-spouts and lever-handles are held in place by a succession of side supports or staples, through the eyes of which passes a connecting fulcrum-rod or axle, which keeps each drill-spout opposite its respective slit-vent and drill-spout, and which axle also answers as a hinge-joint or fulcrum to each of the lever-handles. These lever-handles I have arranged to the drill-spouts so that when necessary each drill point or tine may be raised out of the way of any impediment, and this, too, without stopping the delivery of the grain or seed. I have also arranged to each lever-handle a latch-slide and catch, for the purpose and use of keeping the handles to their proper places, unless otherwise used. These lever-handles are connected to the drill-spouts and axle-fulcrum by connecting side plates. Attached also to the seeding-fountain or hopper and inside frame are a lifting-lever and an ungearing-lever; also, attached to wheel or outside frame is a curvilinear-shaped notch-rest for support of the lifting-lever and the confining of the ungearing-lever.

Having fully described the construction and operation of my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

The ratchet-shaped vertically-revolving feeding-wheels, arranged and operated in the manner and for the purpose herein set forth.

I do not claim the originality of the invention of wheat-drilling or grain-planting implements, but only the improvements that are specifically described and claimed.

G. S. GARDNER. [L. S.]

Witnesses:

J. B. SMALL,

JNO. L. THOMPSON.