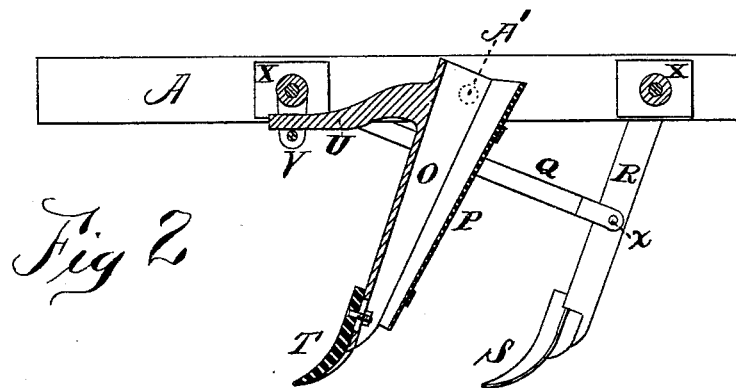
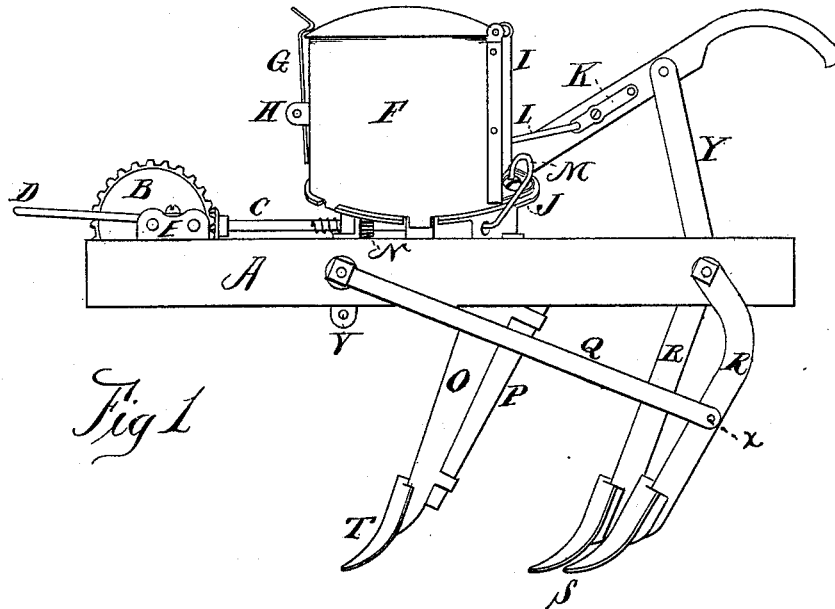


R. S. CARR.
Seed-Planter.

No. 218,160.

Patented Aug. 5, 1879.



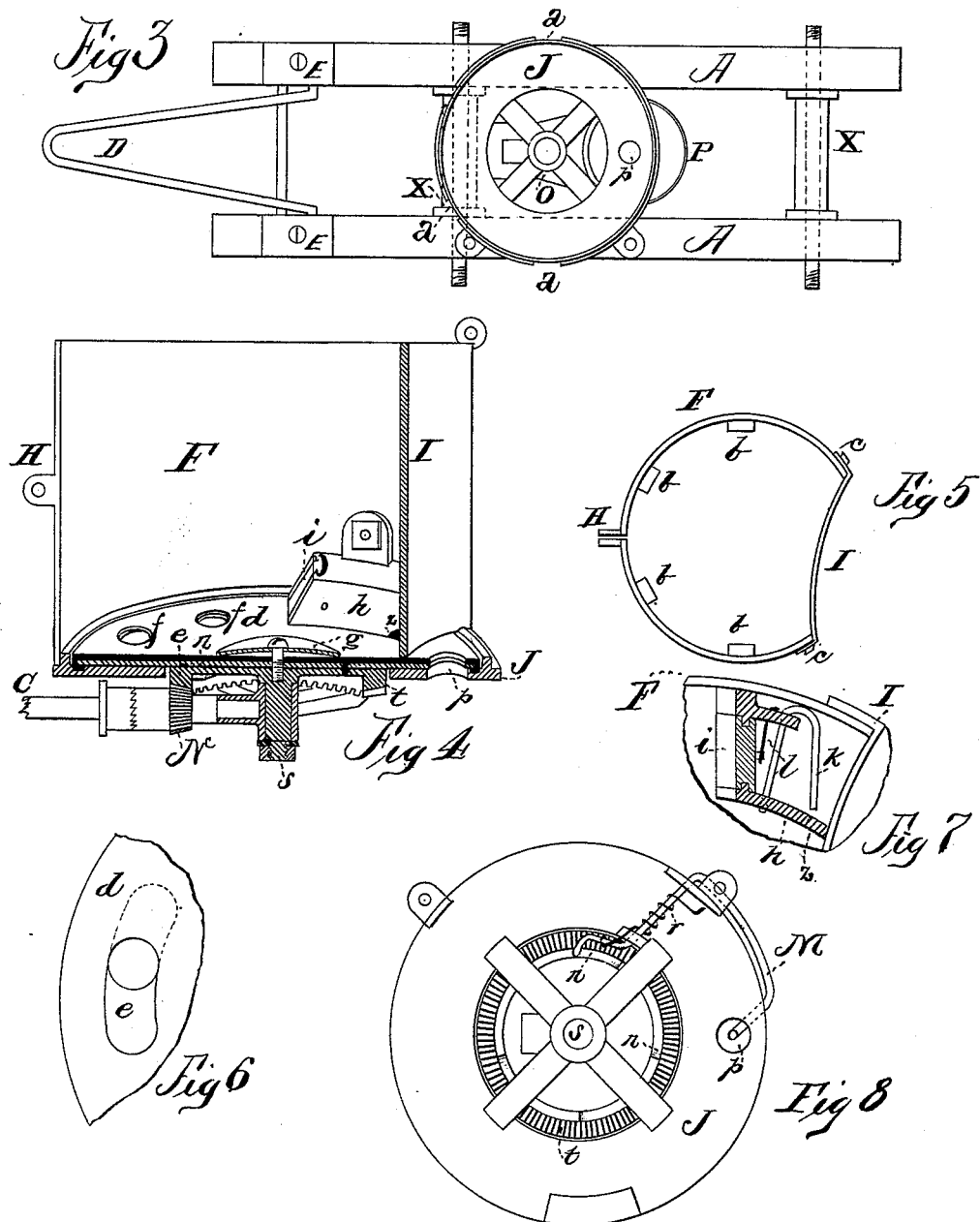
WITNESSES:
Robt. C. Snider.
Jno. R. Wood

Robert S. Carr INVENTOR
by James W. See ATTORNEY

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UNITED STATES PATENT OFFICE.

ROBERT S. CARR, OF HAMILTON, OHIO.

IMPROVEMENT IN SEED-PLANTERS.

Specification forming part of Letters Patent No. **218,160**, dated August 5, 1879; application filed December 17, 1878.

To all whom it may concern:

Be it known that I, ROBERT S. CARR, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Seed-Planters, of which the following is a specification.

This invention belongs to that class of seed-planters or drills in which the dropping is effected by means of a revolving perforated plate in the bottom of the seed-box, the plate being revolved by mechanism connected with the ground-wheel of the machine. In the general plan of construction and in the general mode of operation my machine does not materially differ from well-known ones of similar type, and in this specification and in the accompanying drawings I shall assume the reader to be posted in the art to which this invention belongs.

The object of my invention is to produce an economically-constructed seed-box; to so arrange the seed-plate that it will be subjected to comparatively little pressure, due to weight of grain above it, at the point where the sweeper acts; to provide a seed-plate, whose seed-orifices are adjustable, of a simple and substantial construction; to so arrange the seed-plate with reference to other parts that it may be easily removed and replaced without disturbing other parts of the machine; to provide devices for more thoroughly sweeping the plate, and to provide a device which will insure the dropping of the seed at the proper time.

My invention consists of a seed-box formed of pieces interlocking with each other in a novel manner; of a revolving seed-plate, arranged at an inclination, and combined with a secondary sweeper having a side outlet; of a double seed-plate, whose edges are joined by flanging the edge of one plate around the edge of the other; of a combination of a primal and secondary sweeper; of a seed-plate resting directly upon the upper surface of the driven gear, and so arranged that it may be removed, replaced, or another substituted without removing any other parts, and of a novel automatic seed-discharging device.

In the accompanying drawings, Figure 1 is a side elevation of a machine containing my improvements. Fig. 2 is a vertical longitudi-

nal section of the main frame and seed-spout; Fig. 3, a plan of the main frame with the bottom of the seed-box attached; Fig. 4, a vertical section of the seed-box and its mechanism; Fig. 5, a plan of the seed-box with top and bottom removed; Fig. 6, a plan of a portion of the seed-plate; Fig. 7, a horizontal section of the sweeper-box, and Fig. 8 a bottom view of the seed-box and discharging device.

By referring to Fig. 3 it will be seen that the main frame is composed of two timbers, A A, lying parallel. They are separated by two flanged sleeves, X X, through which pass studs having nuts on each end. To the projecting ends of these studs are attached the shovel-shanks R and the drag-bars Q, and to the timbers are fastened other parts of the machine. No wide wooden parts are used, and shrinkage distortions are avoided.

B is the usual bevel-gear, which communicates motion to the seed-plate, the ground-wheel (not shown) being, as usual, fastened upon the same shaft with this gear. The point of draft attachment is at E, a point in the rear of the ground-wheel shaft. The pitching attachment D is pivoted at this point. The usual lifting tendency of the draft is concentrated on the front or wheel end of the machine; but by my arrangement it is in a degree distributed over the whole of the machine, thereby detracting less from the traction of the ground-wheel, and permitting me to use a comparatively light wheel.

By referring to Fig. 2 it will be seen that the shovel-shanks R are pivoted to the stud which passes through the rear sleeve, X, and that they are held in proper position by the drag-bars Q, which reach from them to the stud in the forward sleeve.

At the point where the attachment is made between the shovel-shanks and the drag-bars the latter is forked to straddle the former, and is held in position by wooden pins *x*, passing through the shank R and the forked jaws of the bar Q. The pins *x* are sufficiently strong for legitimate work, but too weak to resist extraordinary strains. When the shovels catch upon movable obstructions the wooden pins shear off, relieve the shovels, and save from damage parts difficult to repair.

The seed-spout carries at its upper end the

trunnions A', by which it is pivoted to the main frame. A horizontal arm, U, projects forward from the spout under the forward sleeve, and there rests upon a safety-pin, V, sustained by lugs depending from the sleeve. This safety-pin holds the spout rigidly in position, but will yield under extraordinary strain, the same as the pins *x*.

Referring to Fig. 2, the grain-spout will be seen in section. The main portion or front half, O, has straps cast upon or attached to it to embrace the second half or back, P, which is slipped through the straps from the upper end. In practice, I make the back P of thin sheet metal, and aid the straps in its retention by seating the edges of the back P in rabbets cast in the edges of the front O. To the lower end of the front O is attached the furrowing-shovel T by means of a bolt passing through a slotted hole in front O. The depth of furrow is regulated by adjusting the shovel T, and the removal of the back P allows the adjusting-bolt to be easily reached.

The seed-box is composed of five pieces—the bottom J, the back I, the two side pieces, F, and the lid. Each side piece has inwardly-projecting lugs, *b*, at the bottom, and outwardly-projecting hook-shaped pins, *c*, at its back edge, and a lug, H, at its front edge. The back I is shaped to grasp the sides F, and is provided with holes to receive the pins *c*. These parts are plainly shown in Fig. 5. The side pieces have the usual hinge-ears for the lid cast upon them. The back being placed in position upon the bottom J, the sides are hooked to it, the lid placed in position, and the sides brought to place with the projections *b* under the bottom J. A single bolt, drawing together the lugs H, serves to bind the whole together.

p is the opening in the bottom J, through which the grains drop into the spout. The back I of the seed-box is depressed inward, so that the discharging-hole of the seed-plate is always outside the box within plain view.

The seed-plate does not lie horizontal, with the grain equally distributed over it, but is placed in an inclined position, so that one side of the box is deeper than the other. The bottom J of the box and all the box mechanism is adapted to this inclined position.

The edge of the seed-plate on which the sweeper acts is placed the highest. By this means the sweeping of the plate is accomplished under more favorable circumstances than if carried on under a heavier mass of grain. In fact, the plate becomes in a degree self-sweeping.

The seed-plate is composed of two disks, *d* and *e*. The lower one is doweled to the usual bevel-gear, and a central screw ties both plates and the gear together.

The two plates are coincidently perforated with the usual number of seed-holes; but the holes are oblong. When these holes coincide their full size is developed, and may be utilized; but if the upper plate be revolved slightly,

and then secured by the central screw, the resulting holes will have become smaller, as shown in Fig. 6, where the hole is contracted to a circle. By means of this adjustability the seed-holes may be varied in size to suit different sizes of grains of corn, &c.

In practice, I make the upper plate very thin, and to prevent its being lifted by the wedging of grains under it I turn its edge around and under the edge of the lower plate. By having the main or lower plate in plain disk form I am able to make it of wrought-iron, and dispense with the usual lathe-work upon it.

The bevel-gear *t*, unlike the gear in other machines, has no upper bearing, and is not connected to the seed-plate by a shaft. This bevel-gear in my machine has its journal projecting from its lower surface, and presents its flat upper surface to the interior of the seed-box.

The seed-plates lie directly upon the gear-face, and are attached by a central screw and dowel, as shown.

The plate may be readily removed, &c., without disturbing any other portions of the machine.

In the back upper corner of the seed-box I place a small box, *h*, resting close to the top of the seed-plate. It is seen in Fig. 4. Its front is beveled and closed by a sliding door, *i*, held down by the spring *l*, as shown in the horizontal section in Fig. 7. The sliding door *i* is the sweeper. It scrapes surplus grains from the seed-plate, but rises in case a surplus grain becomes wedged in a seed-hole and closes after its passage. A surplus grain wedged in place will generally be loosened by its passage under the sliding door; but of course the door cannot sweep the loosened grain away.

Within the box *h*, and beyond the main sweeper *i*, I place the secondary sweeper *k*. (Shown in Fig. 7.) This is simply a piece of wire loosely pivoted within the box *h* and dragging lightly upon the seed-plate. It will sweep any loose projecting grains from the seed-holes, and thus prevent the passage of such grains to the dropping-point.

An opening, *z*, in the side of the sweeper-box permits the loosened surplus grain to be carried out by the motion of the plate.

Where the back I of the seed-box approaches the seed-plate at the point of issue, sufficient space is left above the plate for the passage of grain projecting slightly from the seed-holes.

As before stated, the dropping-point is outside the seed-box in the alcove formed by the depression of the back I.

When the grain arrives at the dropping-point it is struck by the driver M. (Shown in Figs. 1 and 8.) This driver is caused to strike a blow at the passage of each seed-hole. Its mechanism will be plainly understood from Fig. 8. The bevel-gear *t* carries inclines *n*, one for each seed-hole, upon its under surface. The driver M is a simple bent lever, whose

upper end tends to enter the seed-holes, the tendency being increased by the spring *r*. The general level of the inclines *n* supports the short end of the driver-lever *M*, and keeps its upper end out of the seed-holes and above the surface of the seed-plate; but as the bevel-gear revolves, a termination of an incline reaches the short end of the lever *M*, and the lever instantly strikes its blow. The succeeding incline then engages with the lever and raises it, holding it in position for a new blow.

I claim as my invention—

1. In a seeding-machine, a seed-box composed of the side pieces, *F*, with their lugs *H*, hook *C*, and bottom inward projections, *b*, the bottom *J*, and the back *I*, constructed substantially as described, whereby all the elements of the seed-box are bound together by a single bolt.

2. In a seeding-machine, the combination, with a secondary sweeper having a side outlet, of a revolving perforated seed-plate having its surface arranged at an inclination, for the purpose of aiding the escape of grains swept loose by the secondary sweeper.

3. In a seeding-machine, the driven gear *t*, having a rigid journal projecting from its lower surface, and presenting within the seed-

box a flat top surface, in combination with the flat seed-plate *e*, attached to its flat top surface by screws and dowels, substantially as specified.

4. In a seeding-machine, a double seed-plate composed of a plate, *e*, and a thinner plate, *d*, the two being bound together at their peripheries by means of a flange on the thinner plate turned over the edge of the thicker plate, substantially as specified.

5. In a seeding-machine of the general character specified, a duplex sweeper, consisting of a box with its front closed by an inclined sliding spring-door, and containing a secondary sweeper, *k*, as shown, whereby extra grains which may have passed the primal sweeper are prevented from reaching the dropping-hole.

6. In a seeding-machine, the automatic discharge device, consisting of the spring-lever *M*, whose one end is located as a striker over the dropping-hole, and whose other end engages directly with inclines *n* upon the under surface of the bevel-gear *t*, arranged and constructed substantially as specified.

ROBERT S. CARR.

Witnesses:

NELSON WILLIAMS,
JAMES W. SEE.