(No Model.)

J. F. PLATT.

SEEDING MACHINE.

No. 454,918. Patented June 30, 1891.

Fig 1

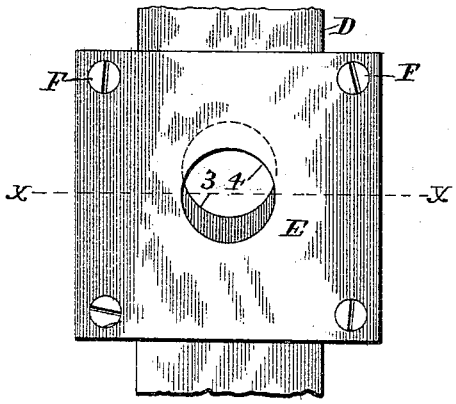


Fig 2

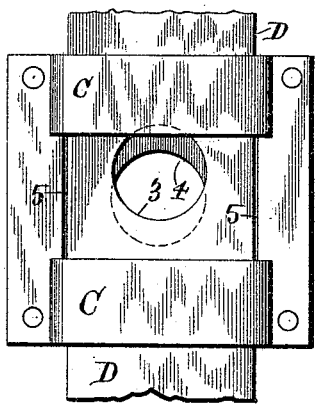
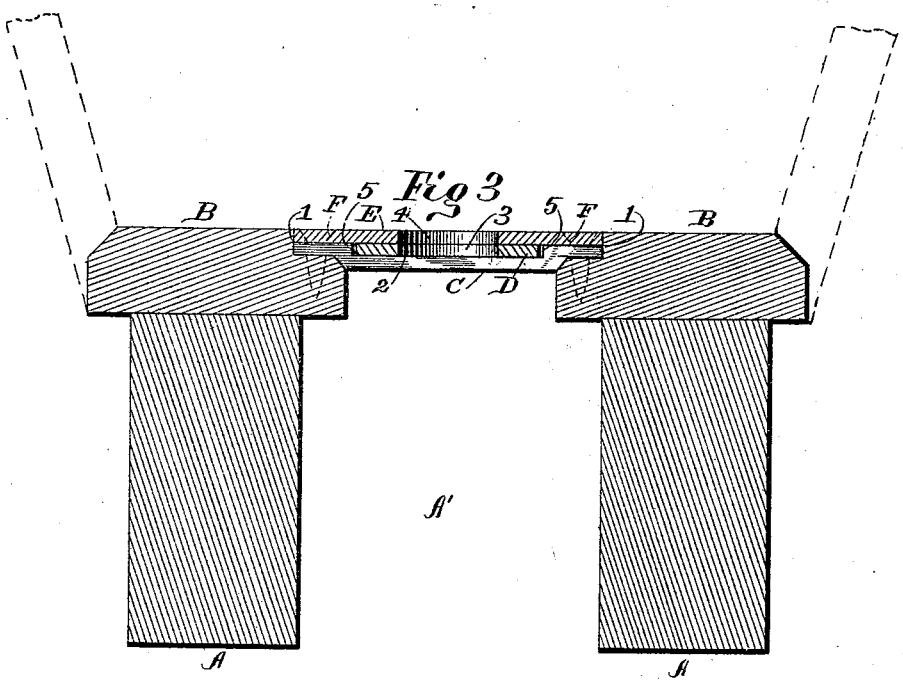


Fig 3



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UNITED STATES PATENT OFFICE.

JAMES F. PLATT, OF STERLING, ILLINOIS.

SEEDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 454,918, dated June 30, 1891.

Application filed March 9, 1891. Serial No. 384,366. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. PLATT, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Seeding-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in seeding-machines in which a horizontally-reciprocating seed-bar provided with a series of seed-cups or centrally-arranged seed-openings, and located in the bottom of the seed-hopper, operates, in conjunction with an upper stationary seed cup or opening, to measure and discharge the seed from said hopper; and the objects of my improvements are to provide such openings at the side of and below said reciprocating bar as will afford ready and constant egress to the dirt and refuse among the seed, and thus prevent the latter from wedging below or above said bar and impeding the operation of the mechanism and eventually destroying its efficiency.

It will be understood that this invention has reference to that class of seeders adapted for sowing small grain in which rotating or oscillating arms sweep their extremities across the upper surface of the seed-openings in the bottom of the hopper in order to continue and facilitate the exit of the seed. In this class of seeders the upper plate is a stationary one, through the holes in which the seed passes into corresponding holes in the reciprocating slide directly under said first plate, said slide being provided with holes adapted in one portion of the movement of said slide to register with the openings in said upper plate or bottom of the hopper.

The difficulty heretofore experienced in the construction of said parts has been that the small particles of refuse and the smaller seeds would be carried by the wall of the opening in said slide out under said plate—that is, between said plate and the upper surface of said slide—and the continuous action of said slide and the extremities of said stirring-arms would wedge such refuse material between the slide and upper plate to such degree as to sometimes bend or bulge said upper plate upward into the hopper until the ends of the seed-stirrers aforesaid would come in contact with the walls of the seed-openings in said upper plate and gradually cut out and irregularly enlarge said openings in such upper plate, and thus destroy the latter as a seed-measure. Again, such refuse and dirt would gradually work out at the edges of the slide and wedge in between said edges and the adjacent ways within which said slide was carried. These deposits were constant, and that fact, together with the impracticability of removing the same, except by taking the machine apart, made the difficulty one that was endured rather than sought to be removed, and where the seeder was left any length of time this wedging material would rust in with the adjacent parts and wholly prevent their operation.

In my invention I provide a ready escape for such refuse matter, so that it never can accumulate in sufficient quantity at any locality to form an impediment to the operation of the machine or effect the action of any of its parts. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a portion of the bottom of the seed-hopper, exhibiting a section of said reciprocating slide. Fig. 2 is a view of the same parts, looking at them from the opposite direction. Fig. 3 is a transverse vertical section in the line $x\ x$ of Fig. 1, the hopper being shown in dotted lines.

Similar letters and figures refer to similar parts throughout the several views.

As my invention pertains only to the mutual arrangement and operation of the parts involved in the discharge of the seed from the seed-hopper, and is adapted to any of the common types of seeders, and the general construction and operation of the latter are well known, I do not deem it necessary to show or describe any more of the implement than is sufficient to render intelligible the location, operation, and purpose of my invention.

Referring to Fig. 3, A A are transverse suitably-sized wooden plates extending across the seeding-machine perpendicular to its line of movement with a suitable interval A′ between said plates.

B B are similar plates placed upon and supported by the plates A A and provided, respectively, with recesses 1 in their upper inside corners for the reception of the seed-plate-supporting cross-plates C. The space A′ between the respective plates A and B is the interval through which the grain drops from the discharging apparatus to the earth, and in some instances is conveyed by means of hollow teeth from the seed-discharging mechanism to and within the ground. The cross-plates C are seated at each end of the recesses 1 of plates B, and extending across the upper end of the interval A′ serve as supports and ways for the reciprocating seed-plate D. Plates C are bent downwardly at their central portion, so as to form a recess or bed 2 of a depth equal to the thickness of the plate D, so that when the latter is in said recess its upper surface is on the same horizontal plane with the upper surface of the end of the plates C, which latter ends are placed in the recess 1, as aforesaid, and fastened to the plates B in any suitable manner.

The plate D is provided with a series of seed-holes 3, arranged longitudinally therein, and said plate is reciprocated from either or both ends thereof by any suitable mechanism, which forms no part of the invention and is therefore not shown. The plates C are placed in pairs—one on each side of the opening 3—when the plate D is at the center of its stroke, and each pair of plates C may be connected at their ends, as shown in Fig. 2.

E is a substantially square plate placed in the bottom of the seed-hopper and above the reciprocating plate D, and is provided with the seed-openings 4, with which the openings 3 in the plate D are adapted to register. The plate E extends over the space occupied by one pair of the cross-plates C, and is fastened at each corner to the plates B B by vertical screws or bolts F extending downwardly through the corners of plate E and the ends of plates C into plates B, as shown in Fig. 3. The lower face of the plate E is parallel with the upper surface of the plate D and contiguous therewith over all the area of the plate D, that passes under the plate E. The seed from the hopper passes down through the opening 4 of plate E into and through opening 3 in plate D, and the quantity of seed discharged is regulated by adjusting the stroke of plate D, so as to limit the area of the opening 3 to pass under the opening 4, as may be desired. The plate E and underlying cross-plates C are placed at desired intervals in and under the bottom of the seed-hopper; but between the members of each pair of plates C and between the several pairs of plates C there is more or less of space, through which the plate D reciprocates without anything beneath it, so that there is no place to receive and hold refuse matter under the plate D, except upon the cross-plates C, and as the latter are of less width than the length of the stroke of the plate D each action of the latter tends to sweep accumulated refuse on plates C over the edge of the latter to drop down into the interval A′. The recess 2 in plate C is slightly longer than the width of the reciprocating plate D, creating a slight vacant interval 5 at each side of the plate D, and such of the aforesaid refuse as may be carried under plate E by the action of plate D and not discharged transversely of the plate C is gradually moved over into the lateral intervals 5 and discharged therefrom by the reciprocating action of plate D. It will be noticed that the cross-plates C are seated about equidistant from and near to the opening 4 in plate E, and therefore tend to hold the plate D up closely against the lower face of the plate E, and thus preclude, as far as practicable, the existence of any space between the lower edges of the opening 4 and the upper surface of the plate D, within which such refuse would be liable to enter. Of course, some of such refuse is of such a fine comminuted nature as to be impossible of exclusion from any interval where one surface moves upon another, and it is such fine particles (the accumulation of which makes the trouble) that are ejected, as before described.

My invention has been reduced to practical operation, and in such tests has demonstrated the absolute efficiency of its operation in preventing any collection of refuse or injury to the parts from the source heretofore mentioned.

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

1. In a seeding-machine, the combination of the plate E, provided with seed-openings 4, two suitably-supported cross-plates C for each opening, each plate being provided with recess 5, reciprocating bar D, adapted to be carried in said recess, said plate or bar being as thick as the recess is deep, but of a less width than the recess, and said plate C being placed under and respectively on each side of and near the openings 4, substantially as shown, and for the purpose described.

2. In a seeding-machine, the combination, with the recessed supporting-plates C, arranged in pairs and connected at their ends, of a longitudinally-reciprocating plate D in the recess, provided with an opening for each pair of plates C, the top of the plate D being even with the top of the plates C and each opening being equidistant between the plates of its respective pair of plates when at the center of the stroke, and a superposed plate E over each pair of plates C, provided with an opening to register with the opening in the

bar D, the lower surface of the plate E resting upon the tops of the plates C and D, substantially as described.

3. In a seeding-machine, the combination, with a hopper, of a series of pairs of plates C, secured in the bottom thereof, each plate having a recess in its upper face, a longitudinally-reciprocating plate or bar in the recesses, having an opening for each pair of plates, and a superposed plate over each pair of plates and having an opening to correspond and register with the opening in the bar, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES F. PLATT.

Witnesses:
JOHN G. MANAHAN,
ADDA E. WARD.