(No Model.)

# E. C. ELLWOOD & F. BATEMAN.

## FEED REGULATING AND CUT-OFF MECHANISM FOR SEED DRILLS.

No. 373,585. Patented Nov. 22, 1887.

Fig. 1.

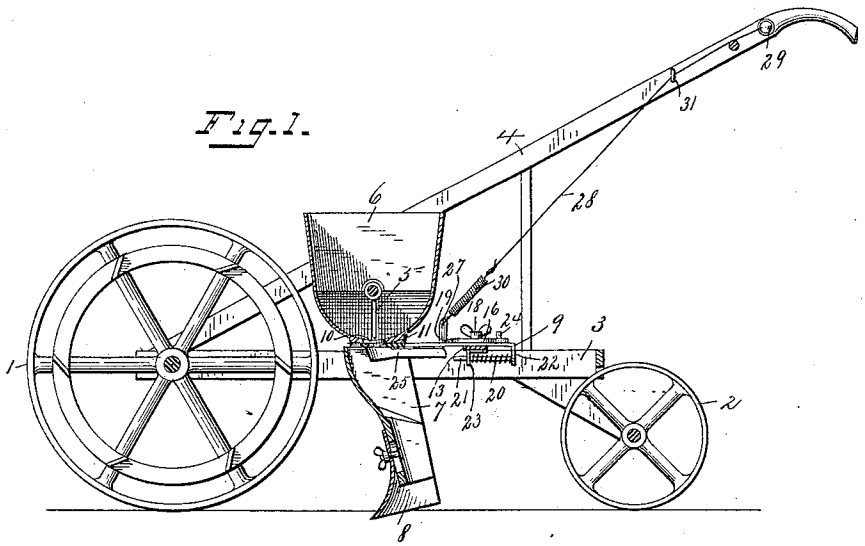


Fig. 2.

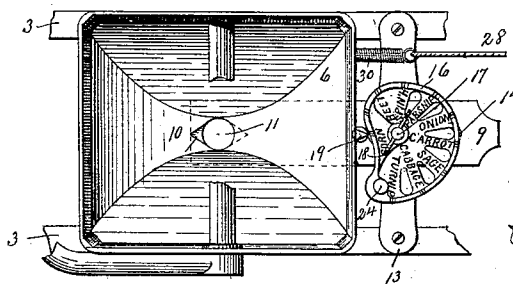


Fig. 3.

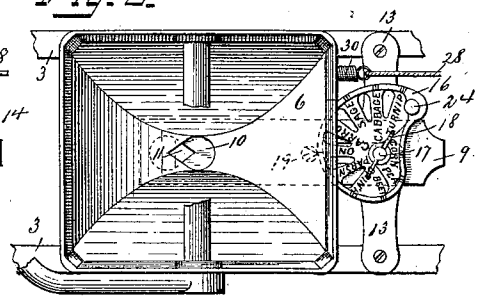


Fig. 4.

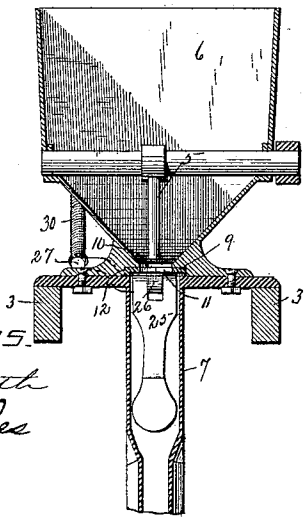
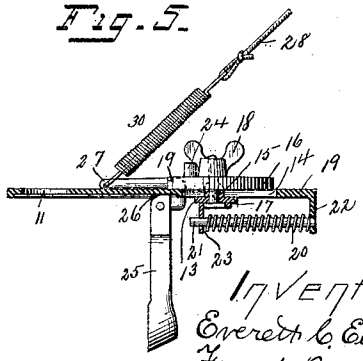


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## FEED-REGULATING AND CUT-OFF MECHANISM FOR SEED-DRILLS.

SPECIFICATION forming part of Letters Patent No. 373,585, dated November 22, 1887.

Application filed August 11, 1887. Serial No. 246,653. (No model.)

*To all whom it may concern:*

Be it known that we, EVERETT C. ELLWOOD, residing at Green's Farms, in the county of Fairfield and State of Connecticut, and FRANK BATEMAN, residing at Spring Mills, in the county of Camden and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Feed-Regulating and Cut-Off Mechanism for Seed-Drills; and we do hereby 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.

Our invention has for its object to simplify the construction of this class of mechanism and improve its operation in use.

With these ends in view we have devised the novel construction and arrangement of parts of which the following description, in connection with the accompanying drawings, is a specification, numbers being used to denote the several parts.

Figure 1 is a longitudinal section of a seed-drill embodying our invention, the cut-off arm being in the closed position; Fig. 2, a partial plan view, the agitator being removed and the feed-slide moved to the fully-opened position; Fig. 3, a similar view, the feed-slide being in a partially-opened position; Fig. 4, a transverse section of the hopper and seed-conveyer; and Fig. 5 is an enlarged detail sectional view of the feed-slide and cut-off arm, the latter being in the opened position.

1 denotes the main wheel; 2, the presser-wheel; 3, the side bars; 4, the handle, and 5 the agitator. These parts may all be of the ordinary or any preferred construction. Mechanism for operating the agitator is not shown, as it forms no portion of our present invention.

6 denotes the hopper, which is in form substantially the same as that shown in Patent No. 289,520, dated December 4, 1883.

7 denotes the seed-conveyer, and 8 a share secured thereto by a set-screw. These parts also may be of the ordinary or any preferred construction.

9 denotes the feed-slide, which in the present instance is substantially similar to the slide shown in Patent No. 319,211, dated June 2, 1885.

10 denotes a pear shaped seed opening in the bottom of the hopper, and 11 a similarly-shaped seed-opening through the feed-slide. The position of the opening through the slide is reversed relatively to that in the bottom of the hopper, so that when the slide is at the fully-opened position, as in Fig. 2, a perfectly-round opening is formed, through which the seed passes from the hopper down into the conveyer. When the slide is moved from this position toward the closed position, as in Fig. 3, the pointed end of the opening through the slide is moved toward the pointed end of the opening in the hopper, so that a diamond-shaped opening of any desired size is left, through which the seed passes from the hopper into the conveyer, as is clearly shown in Fig. 3. If preferred, openings 10 and 11 may be made diamond shape instead of pear shape. This is a mere detail of construction, not affecting the merits of the invention, which it was not deemed necessary to illustrate in the drawings. The forward end of the slide is guided in an opening, 12, made to receive it in the base of the hopper, as clearly shown in Fig. 4. The rear end of the slide rests upon a cross-piece, 13, the ends of which are secured, respectively, to the side bars. (See Figs. 2 and 3.)

14 denotes a slot in the slide, and 15 a boss upon the upper side of the cross-piece, which passes through the slot, serving as a guide for the slide and also as a center or pivotal point for the cam-plate 16, the functions of which will presently be more fully explained. A bolt, 17, passes up through the cross-piece, the boss, and the cam-plate, and the latter is locked in place by a thumb-screw, 18, engaging the bolt and bearing upon the top of the cam-plate.

19 denotes a lug upon the upper side of the feed-slide, one side of which is preferably made angular, one of the angles resting against the edge of the cam-plate, as clearly shown in Fig. 2. This lug is kept in engagement with the cam-plate by means of a spring, 20, upon a rod, 21, under the slide, one end of the

spring acting against a lug, 22, on the under side of the slide and the other against a lug, 23, on the under side of the cross-piece. The rear end of rod 21 is secured to lug 22 and its forward end passes through an opening in lug 23, as is clearly shown in Fig. 5. The cam-plate is so laid out as to have a varying semi-diameter—that is to say, every portion of its edge is at a different distance from the pivotal point than any other portion. It will thus be seen that as the spring acts to hold a lug, 19, in contact with the edge of the cam-plate rotation of the latter must cause forward or backward movement of the feed-slide. Notches are provided at the edge of the cam-plate adapted to register with lug 19, and the names of various kinds of seed are placed upon the top of the cam-plate in line with their corresponding notches, so that by turning the cam-plate until the notch corresponding with the seed which it is desired to sow is in line with lug 19 the feed-slide is so adjusted as to leave an opening of suitable size to permit a proper quantity of that class of seed to pass into the conveyer.

It is of course not necessary that the lug should register exactly with any one of the notches, but it may be set at any point between notches to allow for larger or smaller seed, or a greater or less quantity of any kind of seed. The ease with which this may be done is an important advantage of our present construction.

24 is a finger-piece upon the cam-plate for convenience in operating it. When the feed-slide has been adjusted correctly for the kind of seed that it is desired to sow, the cam-plate is locked in the desired position by turning down thumb-screw 18. In order to provide a perfect cut-off for the seed which may be used at all times without disturbing the adjustment—as, for example, in turning at the ends of rows, or in going to and from the field—we provide a swinging arm, 25, which is pivoted to a lug, 26, on the under side of the feed-slide, the forward end of said arm being adapted to register with and to wholly cover the apertures through said slide.

27 is a crank-arm extending from one side of the cut-off arm, and 28 a cord connecting the crank-arm with one of the handles or any suitable portion of the frame-work, so that the cut-off may be readily operated by the person using the drill. We preferably provide a ring at the end of the cord adapted to engage a pin or hook, 29, upon one of the handles, as clearly shown in Fig. 1.

In order to insure that the cut-off arm shall be always pressed tightly against the under side of the feed-slide when in the closed position, and, furthermore, to compensate for the slight changes in position of the feed-slide relatively to the hook on the handle with which the other end of the cord is engaged, we interpose a coil-spring, 30, between the crank-arm and the hook. The closed position of the cut-off arm is clearly shown in Fig. 1 and the opened position in Fig. 5. The outer end of the cut-off arm should be weighted sufficiently to insure its dropping to the opened position the instant the cord is released from the hook upon the handle. The cord is passed through one or more eyes, 31, on the inner side of the handle, which prevent the ring from dropping down out of the way.

When from any cause it is necessary to stop the flow of seed, the ring is pulled up and engaged with hook 29, the effect being to draw the cut-off arm up firmly against the under side of the feed-slide, thus cutting off the flow instantly.

It will of course be understood that the various details of construction may be changed within reasonable limits without avoiding the principle of our invention.

We claim—

1. In a seed-drill, the combination, with the feed-slide and a spring adapted to throw it to one extreme of its movement, of a cam-plate engaging the feed-slide and acting in connection with said spring to place the slide at any desired adjustment.

2. In a seed-drill, the combination, with the feed-slide and a spring adapted to throw it to one extreme of its movement, of a cam-plate engaging the feed-slide to move it in the opposite direction, and means, as a thumb-screw, to lock the cam-plate in position after adjustment.

3. In a seed-drill, the combination, with the feed-slide and a spring adapted to throw it to one extreme of its movement, of a cam-plate engaging the feed-slide and acting in connection with said spring to place the slide at any desired adjustment, and a cut-off arm pivoted to said slide and adapted to wholly cut off the flow without changing the adjustment.

4. In a seed-drill, the combination, with the feed-slide and a cut-off arm pivoted to the under side thereof, of a cord extending to one of the handles, and a coil-spring interposed between said cord and the cut-off arm, whereby the latter is closed firmly against the feed-slide, substantially as described.

5. The feed-slide, in combination with the cut-off arm pivoted thereto and having a crank-arm, a cord extending from said crank-arm and adapted to engage a fixed projection on some portion of the drill, and a coil-spring interposed between the crank-arm and the other end of the cord.

6. In a seed-drill, a feed-slide, in combination with a cam-plate for controlling the movement of said slide to regulate the flow of seed, and a swinging arm pivoted to said slide, whereby the flow of seed is wholly cut off without changing the adjustment.

7. A feed-slide and a cam-plate whereby it is adjusted, in combination with a set-screw which locks the cam-plate in position and a swinging arm pivoted to the feed-slide, whereby the flow of seed may be cut off.

8. In a seed-drill, the hopper having a pear-shaped opening, and a feed-slide having a re-

versed pear-shaped opening, whereby at the fully-opened position a round opening is formed, and as the slide is moved toward the closed position a diamond-shaped opening is formed, in combination with a swinging cut-off carried by the feed-slide and engaging the opening, and a cross-piece upon which the feed-slide rests.

9. The feed-slide having lugs 19 and 22, and a cross-piece having lug 23, in combination with a cam-plate, substantially as described, and a spring engaging lugs 22 and 23, whereby lug 19 is held in contact with the cam-plate.

10. In a feed-regulating mechanism for seed-drills, the combination, with a feed-slide having a lug, 19, of a cam-plate of varying semi-diameter, having notches corresponding to the names of different kinds of seed appearing on said plate, and a spring acting to hold lug 19 against the cam-plate, so that the movement of the cam-plate will adjust the feed-slide to sow any desired kind of seed.

11. The combination, with the hopper and feed-slide, each provided with a seed-opening, of a cam-plate of varying semi-diameter, a lug, 19, upon the feed-slide, and a spring adapted to hold said lug in engagement with the cam-plate, so that rotary movement of the cam-plate will impart forward or backward movement to the slide to adjust the latter for various kinds of seed.

12. The hopper and feed-slide having reverse pear-shaped openings, said feed-slide having a slot, 14, and lug 19, in combination with a cross-bar having a boss engaging said slot, a cam-plate engaging the top of the boss, a bolt passing through the boss and cam-plate, and spring 20, acting to hold the lug in engagement with the cam-plate.

In testimony whereof we affix our signatures in presence of witnesses.

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