No. 845,230. PATENTED FEB. 26, 1907.

L. P. GRAHAM.

CORN SORTER.

APPLICATION FILED MAR. 31, 1906.

Fig. 4.

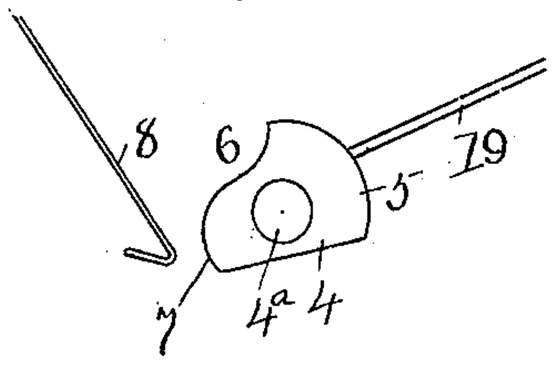


Fig. 1.

Fig. 2.

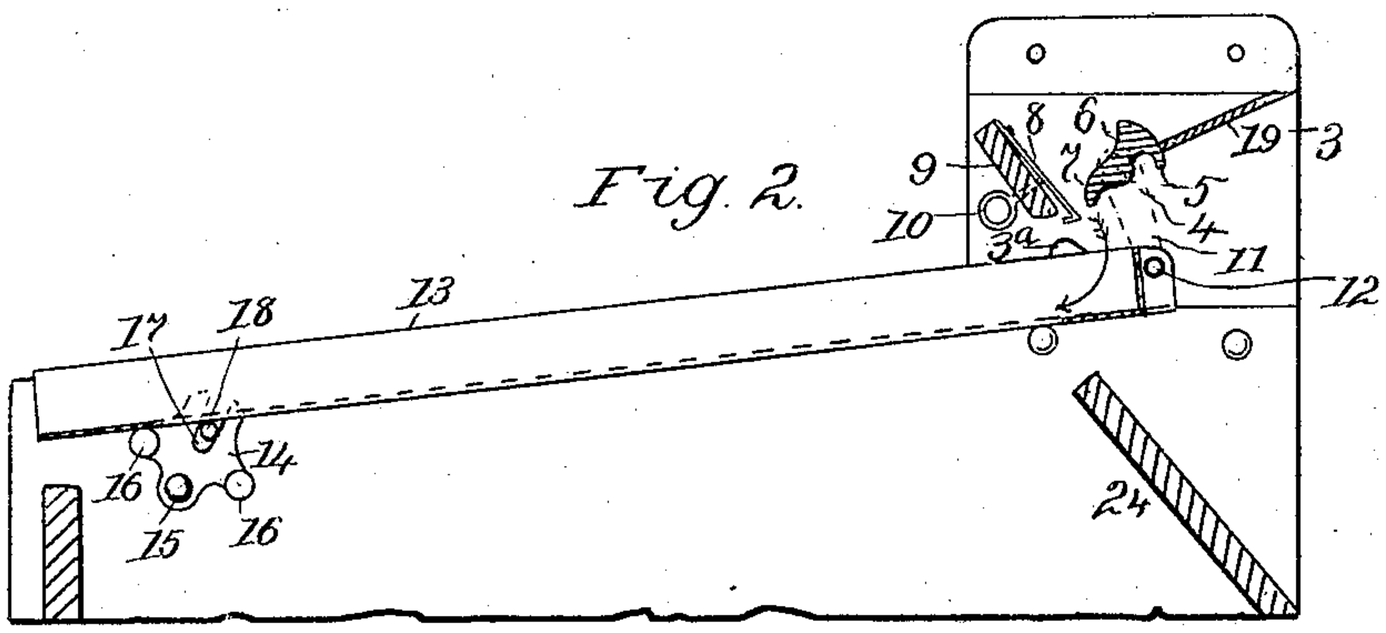
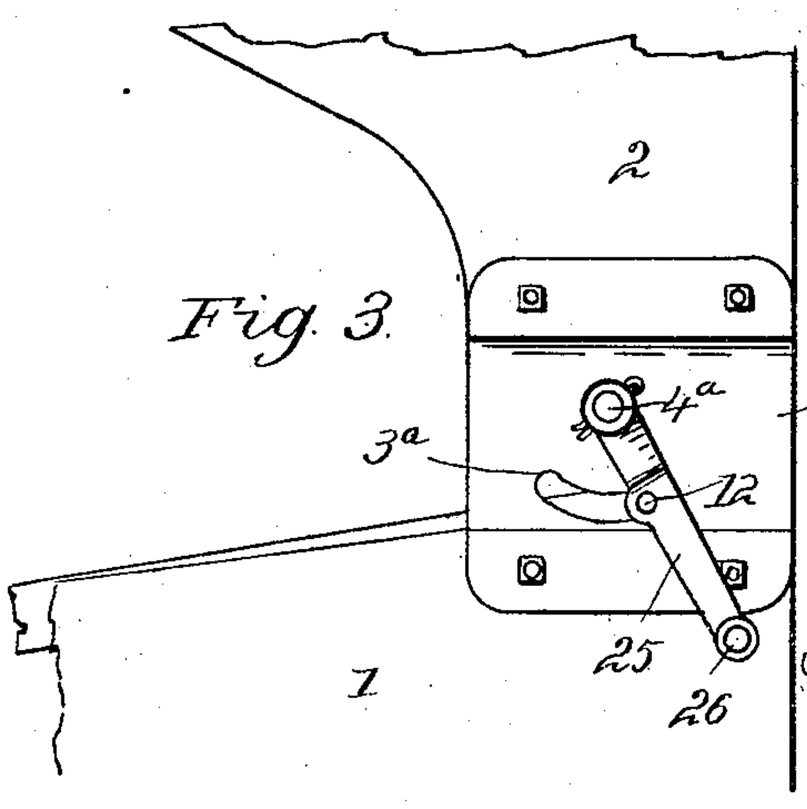


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEVI P. GRAHAM, OF DECATUR, ILLINOIS.

CORN-SORTER.

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Application filed March 31, 1906. Serial No. 309,212.

To all whom it may concern:

Be it known that I, LEVI P. GRAHAM, a resident of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Seed-Corn Sorters, of which the following is a specification.

The object of this invention is to provide a simple, effective, and easily-operated sorter in which the butts or large round grains are first removed by edgewise selection and the thinner grains are afterward sorted by means of a screen.

The invention relates in part to the butt-sorting mechanism and in part to means for preventing grains from clogging in the screen.

In the drawings, forming part of this specification, Figure 1 is a vertical section lengthwise through a machine embodying my invention, the screen being thrown rearward and the butt-sorting rock-bar being raised to discharge the butts and receive a batch of corn for a subsequent operation. Fig. 2 is a vertical longitudinal section through the operative parts of the sorter, showing the rock-bar in position to sort the butts from the thinner grains and also showing the screen in position to receive the thinner grains from the sorting-slot. Fig. 3 is a side elevation of a fragment of the sorter, showing the crank-arm and handle by means of which the screen is reciprocated and the butt-sorting bar is rocked. Fig. 4 is a detail of the rock-bar, showing the preferred form thereof and representing the same in a slot-forming position.

The frame of the sorter is shown at 1, the hopper is shown at 2, and at 3 are shown cast-metal plates used to connect the hopper with the frame. A rock-bar 4 is journaled on trunnions 4ª in plates 3, and it extends crosswise of the machine beneath the hopper. The front edge 5 of the rock-bar is arc-formed, the upper surface is concaved, as shown at 6, and the nose 7 is rounded or convex. A plate 8, which is stationary in operation, extends obliquely downward and forward in the rear of the rock-bar, and it forms with the rock-bar a butt-sorting slot when the nose of the bar is in the position shown in Fig. 2. A strip 9, preferably of wood, extends in the rear of the plate 8. It forms a support for the upper edge of the plate, and it is provided with set-screws, as 10, by means of which the width of the butt-sorting slot may be varied or adjusted.

An arm 11 is attached to one trunnion of the rock-bar, as shown in dotted lines in Figs. 1 and 2, and a longer arm 25 is attached to the other trunnion, as shown in Fig. 3. The arms 11 and 25 are each provided with a pin 12, which extends through a slot 3ª and enters a hole in the receiving end of the screen-frame 13. The arm 25 has a handle 26, by means of which the rock-bar is rocked, and the oscillations of the arms impart a reciprocating motion to the screen-frame.

Brackets, as 14, are pivotally connected at 15 to the inner surfaces of the side boards of frame 1 near the discharge end of the screen, and they have laterally-projecting pins 16, which extend beneath the bottoms of the side strips of the screen-frame. The upper ends of the brackets are notched or slotted, as shown at 17, and rods 18, projecting from the screen-frame, engage the slots 17.

The hopper 2 has a bottom board or sheet 20 inclined downward and forward, and a slidable extension 21 of sheet 20 approaches the front wall of the hopper and forms therewith a contracted passage-way 23. The passage-way 23 is in front of the rock-bar 4, and a shelf 19 extends from below the contracted passage-way from the front wall of the hopper to the arc-formed edge of the rock-bar. Accumulation of corn on shelf 19 tends to check the flow through the passage-way 23, and the inclination of the shelf is so porportioned to the size of the passage way that some of the corn on the shelf will tend to travel over onto the concaved surface of the rock-bar.

When the rock-bar is in the position shown in Fig. 1, grains of corn will pass from the shelf to the concaved surface 6 and arrange themselves flatwise thereon. When the bar rocks to the position shown in Fig. 2, the nose 7 will form with plate 8 a sorting-slot, and the grains on the rock-bar will travel flatwise around the convex surface of the bar and approach the slot edgewise. All grains except those too thick to be desirable for planting may pass through the slot and onto the screen, as shown by the arrow in Fig. 2, and the large round grains will be temporarily detained. When the sorting-slot is formed, the nose of the rock-bar stands approximately at right angles with the plate 8 and the initial upward movement of the nose is practically parallel with the plate. This gives the screen time to move from under the slot before the slot is materially

widened, and when the butts are finally released by the upward part of the swing of the nose they are discharged clear of the screen, as shown by the arrow in Fig. 1. While the rock-bar is in a slot-forming position, the arc-formed edge 5 is raised above shelf 19 to prevent flow of corn therefrom.

A set-nut 22 may be used to hold sheet 21 in different positions and the passage-way may be varied in width, with consequent variation of the corn-supply, by shifting the sheet 21 edgewise.

As the screen-frame is started on a movement in either direction the rods 18 settle to the bottoms of slots 17 and rock the brackets on their pivots, and as the movement is completed pins 16 strike the bottom of the screen-frame and throw the frame upward with considerable force. The striking of the rods 18 against the bottoms of the slots causes some jar, which aids the separating action of the screen, and the upward toss by pins 16 will jar out of the perforations any grains that show a disposition to clog therein.

The inclined board 24 forms a chute to carry the butts outside the body 1.

I claim—

1. In a corn-sorter, the combination of an inclined wall and a rock-bar shaped to receive corn on its upper surface and having a salient part which lowers toward and raises from the inclined wall as the bar is rocked, the rock-bar being parallel with the inclined wall and directly opposed thereto at a distance to form therewith a sorting-slot when the salient part is lowered.

2. In a corn-sorter, the combination of an inclined wall, a rock-bar having its upper surface depressed, its front edge arc-formed and its rear edge rounded, the rock-bar being parallel with the inclined wall and directly opposed thereto at a distance to form therewith a sorting-slot when the salient part is lowered, and a supply-shelf in front of the front edge of the rock-bar.

3. In a corn-sorter, the combination of an inclined wall, a rock-bar having its upper surface depressed, its front edge arc-formed and its rear edge rounded, the bar being so located with relation to the inclined wall that the rear edge of the rock-bar will lower toward and raise from the wall as the bar is rocked and form with the wall a sorting-slot when lowered, and a supply-shelf in front of the front edge of the rock-bar.

4. In a corn-sorter, the combination of an inclined wall, a rock-bar having its upper surface shaped to receive corn, a salient extension of the rock-bar which lowers toward and raises from the inclined wall, as the bar rocks, and forms with the wall a sorting-slot when lowered, and a screen carried by the rock-bar and swung with its receiving end under the sorting-slot when the slot is formed and out from under the slot when the salient extension is raised.

5. In a corn-sorter, the combination with a screen, of a bracket pivoted below the screen and having a slot in its upper end, a rod from the screen resting in the slot of the bracket and pins projecting from the bracket under the screen on opposite sides of the pivot and the slot.

6. In a corn-sorter, the combination of a pair of opposing surfaces constituting a variable-width sorting-slot, a reciprocating screen the receiving end of which moves back and forth under the slot and clear thereof, and means for widening the sorting-slot as the screen is swung clear thereof.

7. In a corn-sorter, the combination of a rocking shaft having a salient longitudinal surface and a comparatively depressed longitudinal surface, a plate opposing the shaft and forming therewith a sorting-slot, and a screen swung from the shaft with its receiving end extending under the slot when the salient surface of the shaft is opposed to the plate; the receiving end of the sieve being swung clear of the slot when the shaft is rocked to bring the depressed surface thereof opposite the plate.

8. In a corn-sorter, the combination of a pair of opposing surfaces constituting a variable-width sorting-slot, a reciprocating screen the receiving end of which moves back and forth under the slot and clear thereof, means for widening the sorting-slot as the screen is swung clear thereof, and means for supplying batches of corn to the sorting-slot between widening movements thereof.

9. In a corn-sorter, the combination of a pair of separated downward-converging parallel surfaces forming a sorting-slot in which the corn is arranged edgewise and through which grains of certain thickness may fall, a screen below the slot, means for feeding batches of corn to the slot at intervals, and means for widening the slot between feeding operations and discharging the corn therein clear of the screen.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

LEVI P. GRAHAM.

Witnesses:
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INA C. GRAHAM.