

No. 742,785.

PATENTED OCT. 27, 1903.

L. P. GRAHAM.  
SEED CORN SORTER.

APPLICATION FILED MAY 23, 1903.

NO MODEL.

Fig. 1.

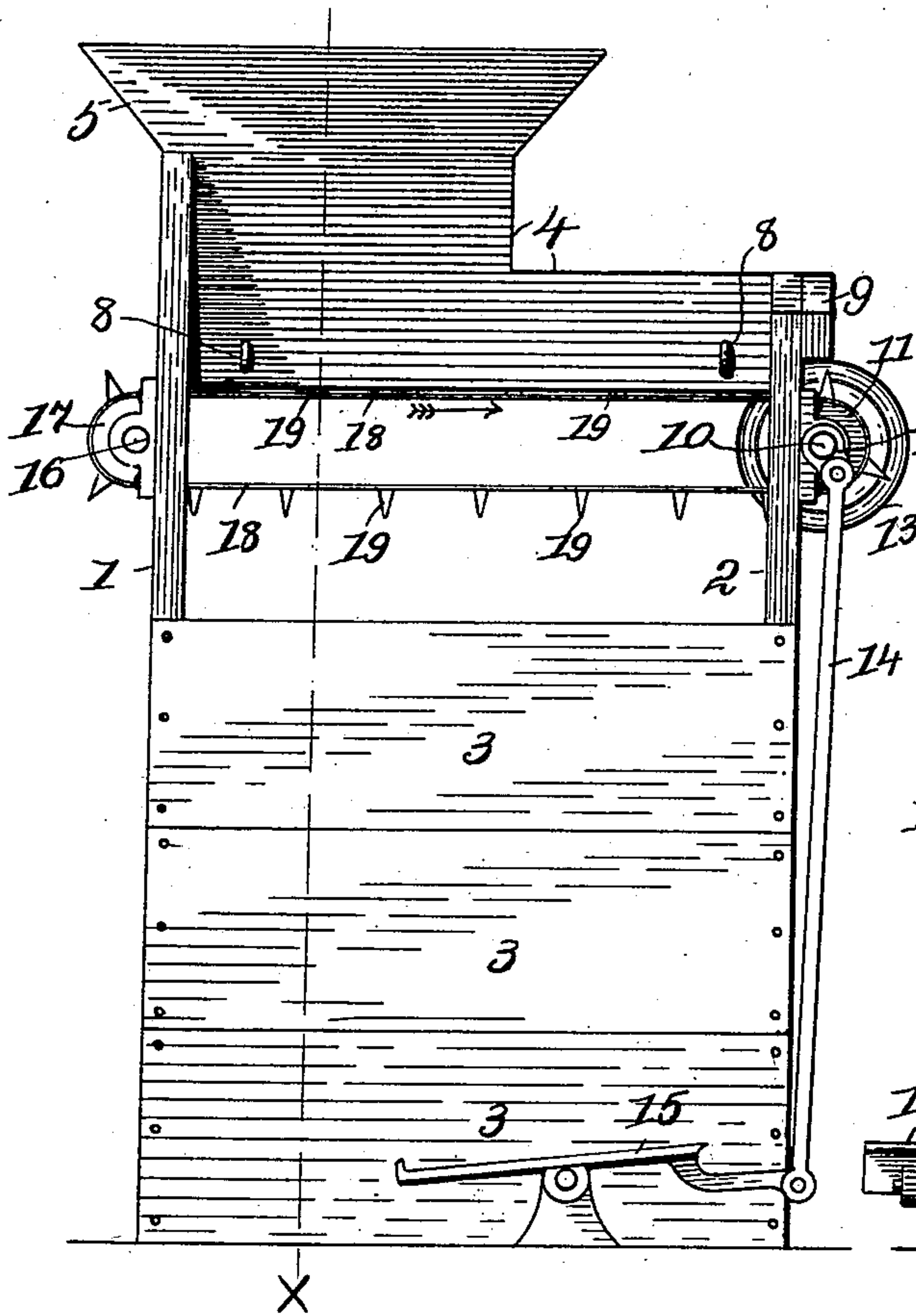


Fig. 2.

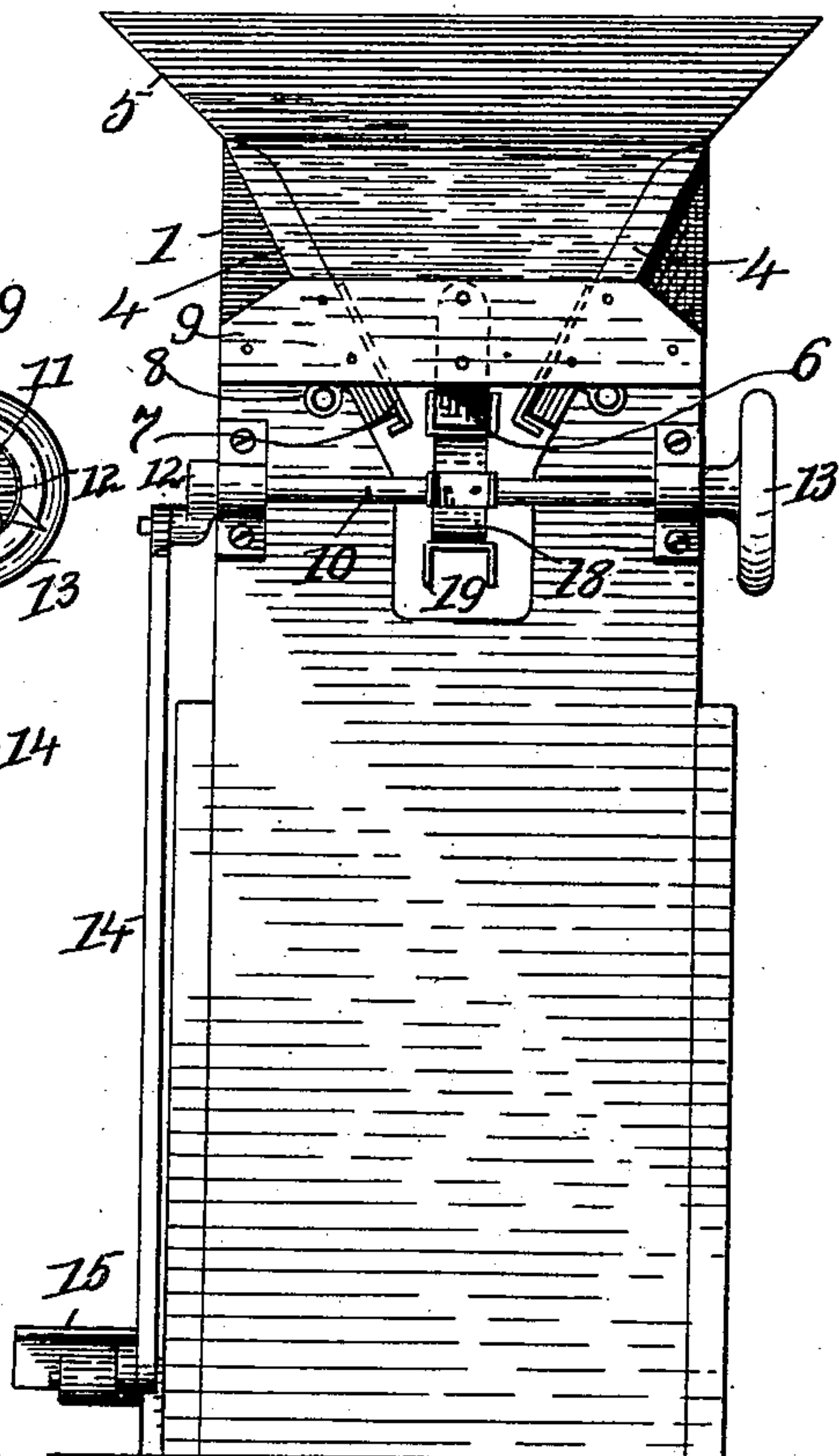
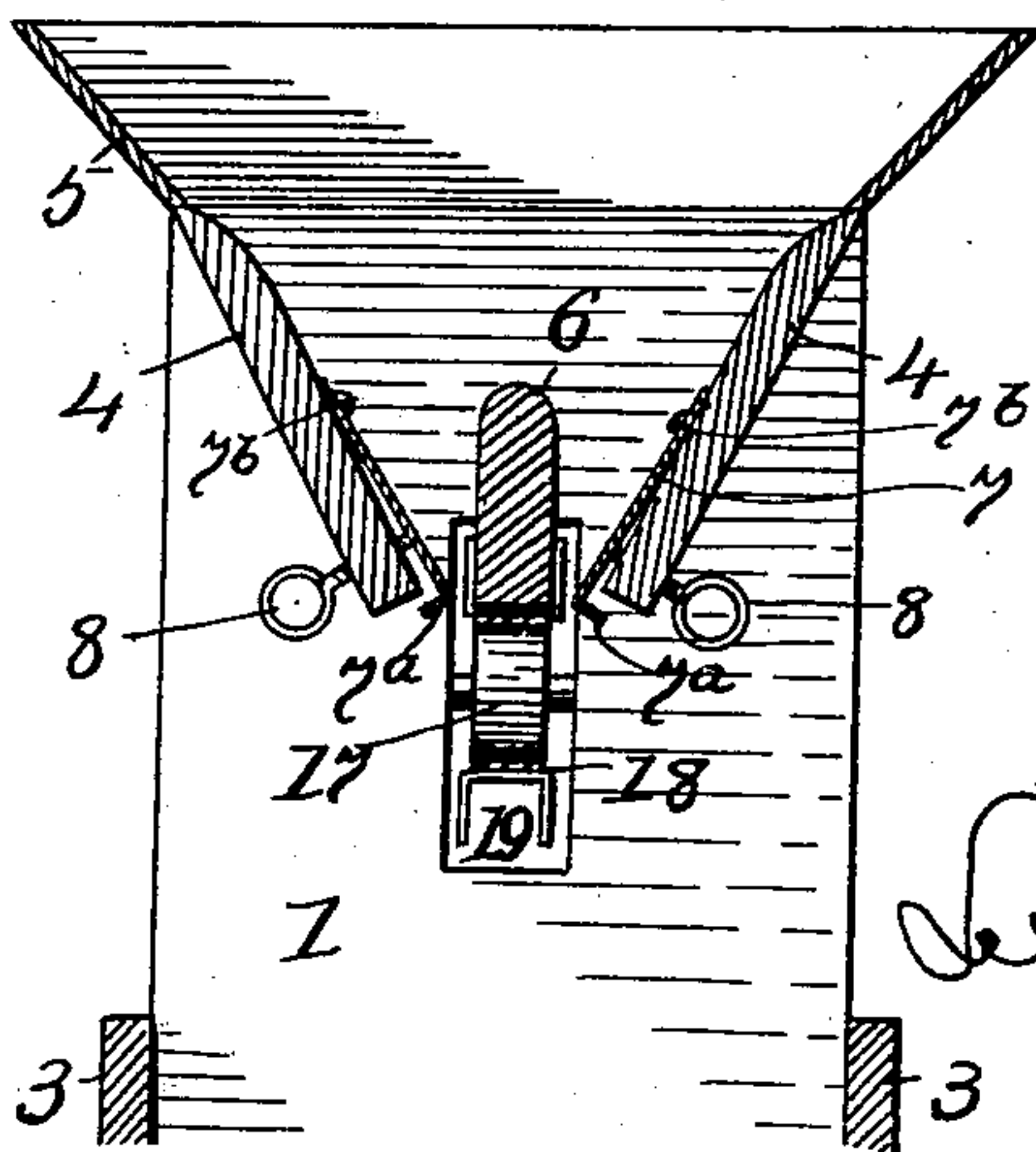


Fig. 3.



Witnesses.

Anna Graham.

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# UNITED STATES PATENT OFFICE.

LEVI P. GRAHAM, OF DECATUR, ILLINOIS.

## SEED-CORN SORTER.

SPECIFICATION forming part of Letters Patent No. 742,785, dated October 27, 1903.

Application filed May 23, 1903. Serial No. 158,531. (No model.)

*To all whom it may concern:*

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

This invention is intended to provide means for expeditiously preparing seed-corn for edge-drop planters by separating from average seed all grains that will not readily enter the cells of edge-drop seed-plates, and it may also be used to separate from the seed grains that are abnormally or undesirably thin.

The invention is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of an embodiment of my invention. Fig. 2 is an elevation of the discharge end of the sorter, and Fig. 3 is a section on line X in Fig. 1.

End boards 1 and 2 form supports for the operative parts of the sorter, and side boards 3 are preferably used to brace the end supports and form therewith a receptacle for the sorted corn. Boards 4 form a trough for the corn to be sorted. They extend from the inner surface of end board 1 to the outer surface of end board 2, and they converge from their upper edges downward. A partition-board 6 extends from the inner surface of end board 1 to the outer surface of end board 2, and it is secured at one of its ends to a cross-strip 9 on end board 2. The lower edge of the partition-board is about in line with the lower edges of trough-boards 4, and there is more than enough space between the partition-board and the trough-boards to permit passage of corn. To provide means for varying the space for the passage of corn, I attach plates 7 at their upper edges to the inner surfaces of the trough-boards, permit the lower edges of the plates to extend to or beyond the lower edges of the trough-boards, and provide means for moving the lower edges of the plate toward and from the partition-board. The plates 7 are preferably made of metal, their lower edges are preferably bent at right angles to form a stiff straight edge, and they are secured to the trough-boards at 7<sup>b</sup> by screws or the like.

Simple means for adjusting the lower edges of the plates consists of screws 8, set through the trough-boards with their points in contact with the lower parts of the plates.

A shaft 10 is journaled in bearings outside board 2, and a shaft 16 is journaled in bearings outside board 1. A wheel 11 is mounted on shaft 10, a wheel 17 is mounted on shaft 16, and an endless belt 18 runs around the wheels or pulleys immediately beneath the partition-board 6. Lugs 19 are secured to the outer surface of the belt, and from the upper run of the belt they extend upward into the spaces between the plates 7 and the partition-board 6. A crank-arm 12 is fastened onto an end of shaft 10, a fly-wheel 13 is fastened onto the same shaft, preferably on the opposite end thereof, and a pitman 14 connects the crank-arm with a treadle 15.

A hopper 5 may be formed on or attached to the receiving end of the corn-trough.

In operating the sorter the plates 7 are set as close to the partition 6 as the width of the cells in the seed-plate for which the corn is intended. The operator sits in front of the hopper 5 with a foot on treadle 15, and as he shells the corn into the hopper he works the treadle and runs the belt in the direction indicated by the arrow in Fig. 1. The corn in the receiving end of the trough is turned on edge in the bottom of the trough by the inclined side walls 4, and all grains of sufficient thinness to enter the cells of the seed-plate of the planter tend naturally to fall through the slots or spaces into the receptacle formed by boards 1, 2, and 3. Grains of irregular shape or of more than average size will not pass between plates 7 and the partition-board, and grains of proper size and shape are likely to pack in the trough and prevent each other from passing through the slots if left undisturbed and permitted to accumulate. The lugs 19 project upward through the slots and into contact with the corn in the trough, and as they travel toward the discharge end of the trough they perform the double function of agitating the corn in the trough to prevent packing and of carrying off grains incapable of passing through the slots and discharging them beyond end board 2.

The belt is covered by the partition-board, so that it does not interfere with the passage



of corn through the slots, and the lugs project sidewise before turning upward. Between lugs the slots are unobstructed to the passage of grains suitable for planting, and all grains that are unable to pass through the slots are carried off by the lugs. The suitable grains fall by gravity alone; but the unsuitable grains are carried off by mechanical force applied lengthwise of the slots.

After the large and irregular grains are separated from the corn intended for planting the plates 7 may be set so close to the partition-board as to retain all grains of normal thickness, and a second sorting may be made to throw out abnormally thin grains. In the second sorting the desirable grains are carried off by the action of the lugs, and the thin grains fall through the slots by action of gravity.

The hopper is set to one end of the sorter, so that the grains carried off by the lugs may travel along the slot after being separated from the mass of corn in the hopper. This travel is intended to prevent suitable grains being carried off with the unsuitable, and the travel beyond the hopper should be long enough to assure that result.

The provision for sorting while shelling is a convenience merely, and it is obvious that the result will be the same if the corn is placed in the hopper after being shelled. In the latter case, however, the treadle is superfluous, and the crank may as well be turned by hand. By using foot-power to run the belt and shelling the corn into the hopper while the belt is running some time is saved, and in case the second sorting is made by using the treadle the hands of the operator will be free to feed the corn gradually into the hopper and to pick out such grains as show by their color their unfitness for planting.

It is obviously a matter of mechanical selection to determine the material of which the belt 18 shall be made and to determine whether it shall be integral or of link formation, and it is also obvious that there is a complete operative sorter on each side of partition 6. The capacity of the sorter is doubled without adding materially to the expense by sorting on both sides of the partition; but a single slot will work as well as two, except for the matter of speed.

The partition 6 and the plates 7 should be perfectly straight where the slots are formed, so that the slots may be of equal width

throughout their entire lengths, and the required straightness may best be maintained by making these parts of metal.

I claim—

1. In a corn-sorter, the combination of a trough having a slot in its bottom for the passage of grains of certain edgewise thickness, walls converging downward to the edges of the slot and forming inclines to guide the grains edgewise to the slot, and means movable in the slot lengthwise thereof, for carrying off grains too thick to pass through the slot.

2. In a corn-sorter, the combination of a trough having a slot in its bottom for the passage of grains of certain edgewise thickness, walls converging downward to the edges of the slot and forming inclines to guide the grains edgewise to the slot, an endless belt under the trough and lugs on the belt extending upward into the slot.

3. In a corn-sorter, the combination of a trough divided into two compartments, by a lengthwise partition, and having slots through its bottom on each side of the partition through which grains of certain edgewise thickness may pass, walls converging downward to the edges of the slots and forming inclines to guide the grains edgewise to the slots, an endless belt beneath the partition and lugs on the belt extending upward into the slots.

4. In a corn-sorter, the combination of a trough the side walls whereof converge downward and are adjustably separated at their lower edges to form a slot of variable width for the passage of corn, and means movable in the slot lengthwise thereof, for carrying off grains too thick to pass through the slot.

5. In a corn-sorter, the combination of a trough with converging sides having a slot in its bottom, a supplementary wall, or plate, hinged at its upper edge to the inside of a side wall of the trough and extending below the side wall, means for adjusting the lower edge of the supplementary plate, an endless belt below the trough and lugs on the belt extending upward into the slot.

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

LEVI P. GRAHAM.

Witnesses:

E. S. McDONALD,  
ROSA VOELCKER.