2 Sheets—Sheet 1.

M. H. PITTS.
Grain Separator.

No. 202,863. Patented April 23, 1878.

Fig. 1.

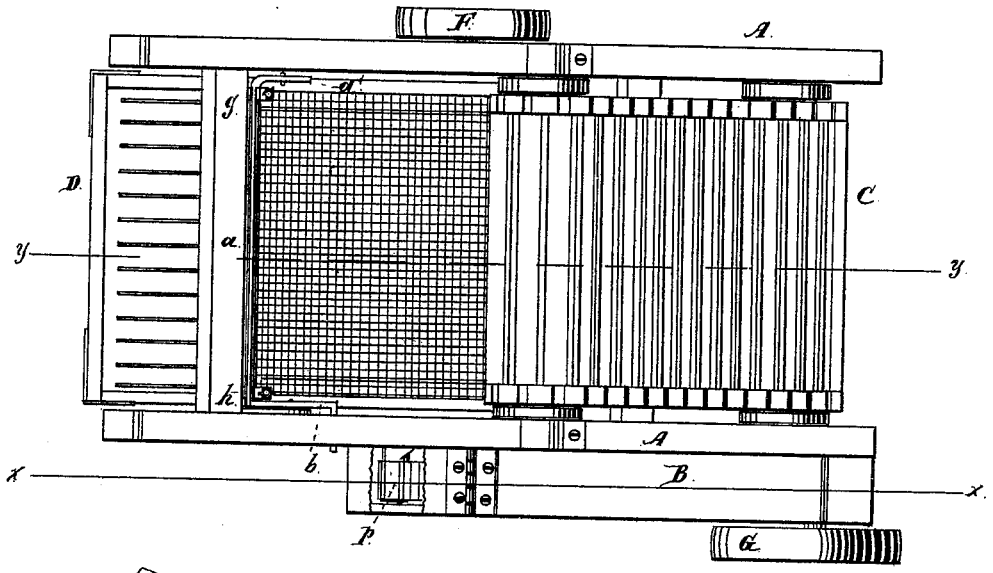
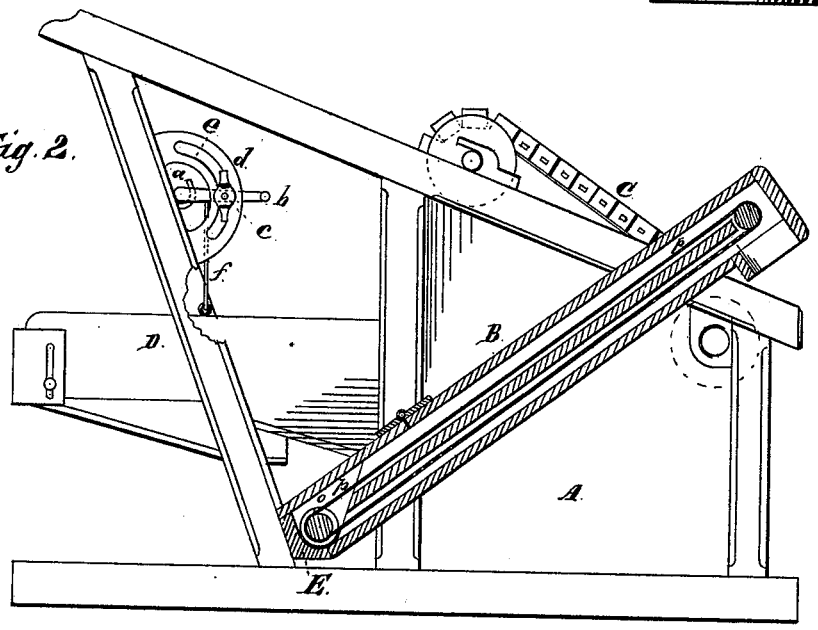


Fig. 2.



Witnesses:
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H. L. Bruns.

Inventor:
Marcellus H. Pitts.

2 Sheets—Sheet 2.

M. H. PITTS.

Grain Separator.

No. 202,863. Patented April 23, 1878.

Fig. 3.

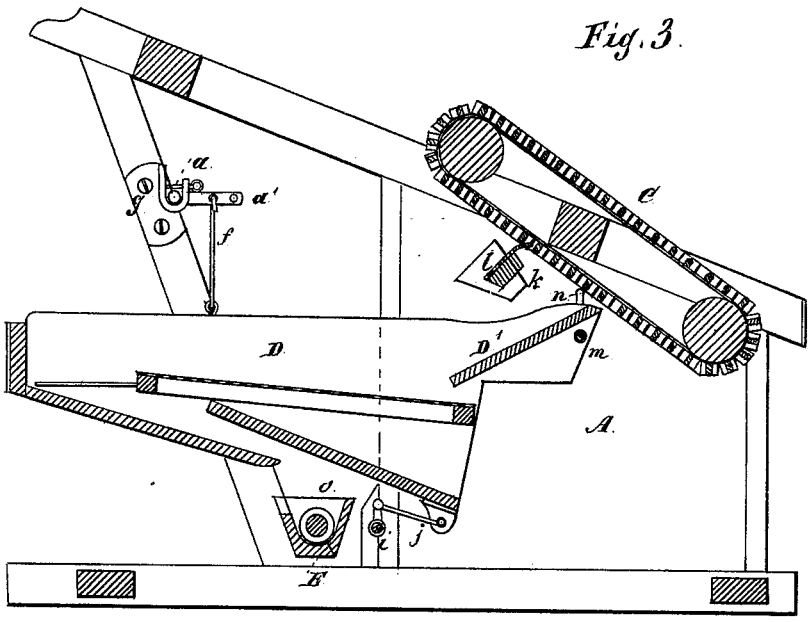


Fig. 4.

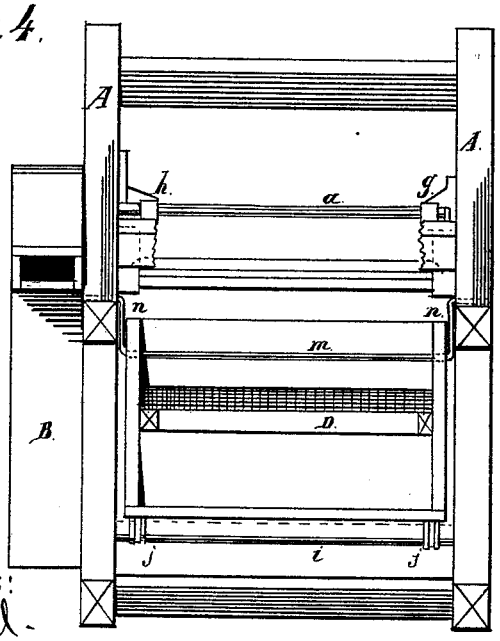
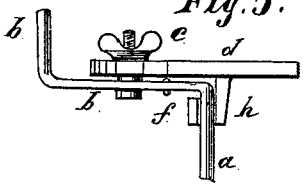


Fig. 5.



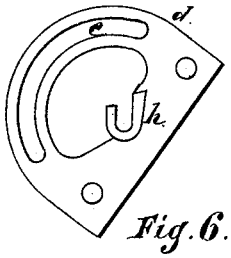


Fig. 6.

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UNITED STATES PATENT OFFICE.

MARCELLUS H. PITTS, OF CHICAGO, ILLINOIS, ASSIGNOR TO H. A. PITTS' SONS MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **202,863**, dated April 23, 1878; application filed July 3, 1877.

To all whom it may concern:

Be it known that I, MARCELLUS H. PITTS, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Elevators and Cleaners for Thrashing-Machines, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is top or plan view; Fig. 2, a side elevation, with the tailings-elevator in section; Fig. 3, a longitudinal vertical section; Fig. 4, a front elevation, with the straw carrier or elevator removed; and Figs. 5 and 6 details of the devices for adjusting the pitch of the shaker.

The object of this invention is to improve the construction and operation of the elevators of a thrashing-machine; and its nature consists in the application thereto of devices for arresting the dust and preventing its return to the thrasher.

In the drawings, A represents the frame; B, the tailings-elevator; C, the straw-carrier; D, the shaker; E, the conveyer-trough; F, the pulley or gear wheel for operating the shaker; G, the pulley for operating the tailings conveyer and elevator; *a*, the cross shaft or bar supporting the rear end of the shaker; *a' b*, the bent or crank ends of the shaft *a; c*, the set-screw for locking the shaker at any desired elevation; *d*, the plate attached to the side of the machine, for supporting one end of the shaft *a; e*, the curved slot in the plate *d*, in which the set-screw operates; *f*, the rods attached to the arms or cranks *a' b* and to the shaker; *g h*, the journal-bearings for the shaft *a; i*, the double crank-shaft for operating the shaker; *j*, the pitmen; *k*, the cross-bar located between the straw-carrier and the shaker, as shown at Fig. 3; *l*, the elastic strip secured to the cross-bar *k*, and projecting so as to come in contact with the under or return portion of the straw-carrier; *m*, the crank-rod upon which the inner end of the shaker is supported; *n*, the cranks of the rod *m; o*, the conveyer; *p*, the belt of the tailings-elevator.

The frame A, elevator B, straw-carrier C, shaker D, and trough E are made as shown, which is one of the usual and well-known methods of constructing such devices, and is not therefore particularly described, as the construction will be obvious from the drawings.

The inner end of the shaker D is supported upon a rod, *m*, which passes entirely across the shaker, and its ends *n* are cranked upward, as shown. By making both of the cranks *n* on the same rod, the movement of the shaker is uniform, and is prevented from throwing from side to side and getting irregular motion, the shaker belonging to that class which is known as "end shakers."

The outer end of the shaker is supported by the rods *f*, which are attached freely to the cranks *a' b* of the shaft *a*, as shown, so as to give the shaker a free movement. The arm or crank *b* of the shaft *a* has an outward turn, as shown at Fig. 5, so as to form a handle for use in adjusting the shaker. This arm *b* operates in conjunction with the plate *d*, and is provided with a bolt which passes through the slot *e* of said plate *d*, and on the opposite side thereof is provided with a set-screw, so as to lock the arm *b* in any position in which it may be placed within the limits of the slot. By this arrangement the outer end of the shaker can be raised or lowered at pleasure, and adjusted while the machine is in operation.

For damp or heavy grain the shaker is let down so as to be nearly level, or the outer end may be even lower than the inner.

For light grain or grass-seed, a high adjustment is necessary to prevent the seed or light grain from being blown out.

The shaker D is provided with an adjustable tail-board with sieves, and with guide-boards for depositing the grain and tailings in the desired places in the usual manner. The tailings are deposited in the trough E, and are carried from thence to the elevator B by the conveyer *o*.

The bar *k* passes across the frame A, and is located sufficiently far below the straw-carrier to prevent interfering with its operation, even though the carrier should be somewhat slack. At the rear side of this bar *k* the dust-arrester is applied, which is made of leather, rubber cloth, or other suitable elastic material, and projects up so as to come in contact with the under surface of the straw-carrier, to prevent said carrier from returning any straws or dust,

and to prevent a return movement of the fan-blast at that point, which return movement is induced by the movement of the straw-carrier, and returns the dust to the thrasher unless prevented.

It is well known that in all thrashing-machines there is a current from the sieve or shaker back into the machine under the elevator, said current being caused by the rapid travel of the elevator. The application of the elastic dust-arrester *l*, as shown and described, prevents such suction or return current of air, and forms a very important feature of my invention.

The conveyer *o*, which is located in the trough E, extends across the frame A, and also across the lower end of the tailings-elevator, and is journaled at that end on the outer side of said elevator. The conveyer is provided with the usual spiral flight or projections.

By extending the conveyer across the frame and elevator the double purpose of supporting the lower end of the elevator-belt in position and driving the conveyer is attained.

The elevator-belt *p* is provided with cups or cleats in the usual manner, for carrying up the tailings and returning them to the thrasher.

In operation the usual thrasher is to be applied at the front end, and also a fan within the frame A, by any of the well-known methods.

Power is applied to the shaker-shaft *i* by means of the pulley F, which operates the shaker D; and also to the pulley G, which operates the tailings conveyer and elevator.

The straw-carrier C is driven in the usual manner. The straw is taken up the carrier C, and at the rear or upper end receives a blast. The grain and heavier substances fall upon the shaker D, the grain is cleaned, passing down the guide-board beneath the sieves, and, by a suitable device for that purpose, is discharged. The tailings and unthrashed heads pass over the sieves and between the rods, down a second guide-board, to the trough E, from which trough they are fed to the elevator B, in which, by the belt *p*, they are returned to the thrasher.

What I claim as new, and desire to secure by Letters Patent, is—

The elastic dust-arrester *l*, in combination with the frame A and carrier C, for preventing a return air-current by the movement of the under portion of the carrier, substantially as described.

MARCELLUS H. PITTS.

Witnesses:
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O. W. BOND.