L. V. DAVIS.

GRAIN SEPARATOR.

No. 190,746. Patented May 15, 1877.

Fig. 2.

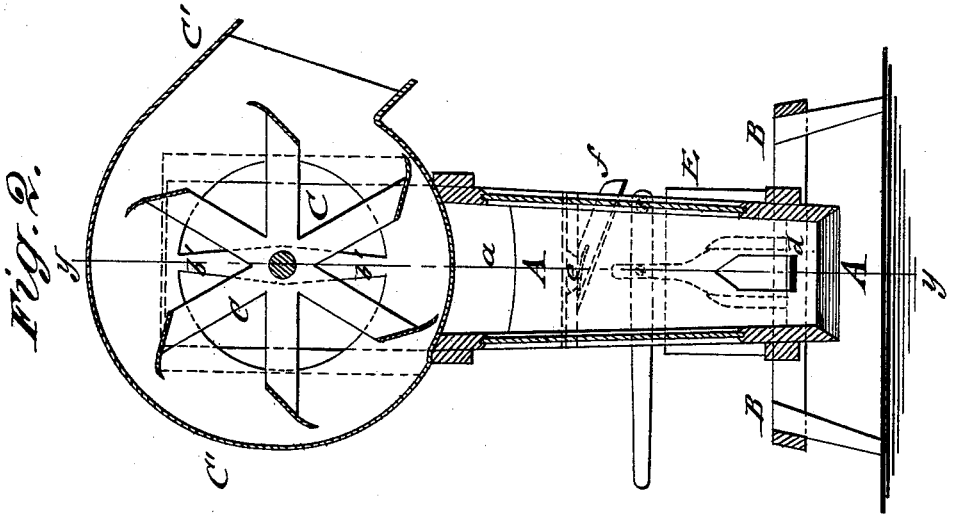
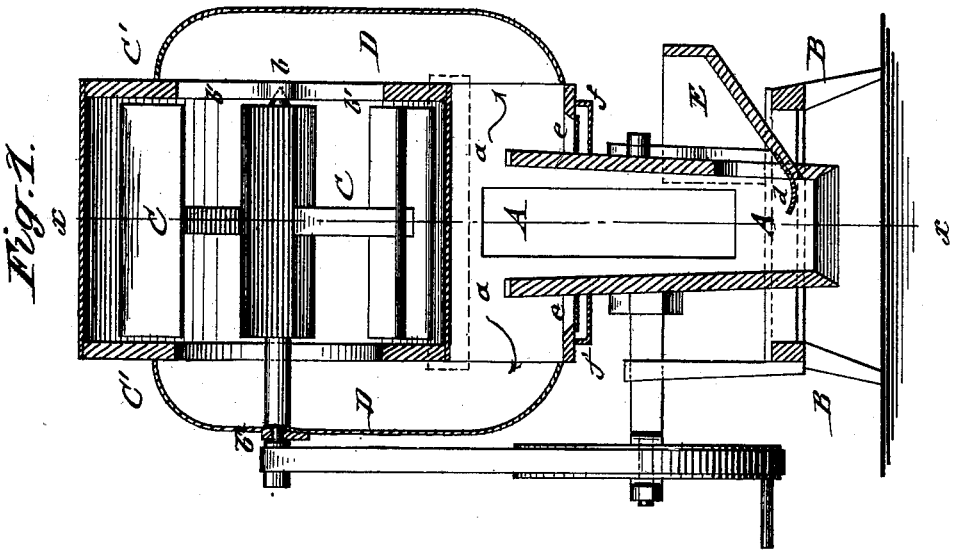


Fig. 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOUIS V. DAVIS, OF ELKADER, IOWA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **190,746**, dated May 15, 1877; application filed December 18, 1876.

To all whom it may concern:

Be it known that I, LOUIS V. DAVIS, of Elkader, in the county of Clayton and State of Iowa, have invented a new and Improved Grain-Separator, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical transverse section on line *y y*, Fig. 2; and Fig. 2, a vertical longitudinal section on line *x x*, Fig. 1, of my improved grain-separator.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved grain-separator of simple construction, which is mainly designed for the purpose of cleaning seed-grain, so that the best and heaviest grain only may be employed for seeding.

The invention consists in certain novel devices, which will first be described, and then pointed out in the claims.

In the drawing, A represents a suction air-trunk, secured in vertical position near its lower open end to a supporting-frame, B, of suitable construction. The air-trunk A is made tapering, being gradually enlarged toward the top, where it supports the casing C′ of a suction-fan, C.

Between the top of air-trunk A, at each side, and the fan-case proper C′ is left an interval, *a*, through which the ascending current passes to the fan C, through trunks D D, that project at each end of the fan-case. The fan-case C′ is thus made to serve as a deflector of the current, which is compelled to turn from a vertical to a horizontal course, and caused to deposit the heavier grains carried up to that point.

The shaft of the suction-fan is supported horizontally at one side in bearings *b* of a transverse piece, b^1, of the casing, and at the other side passed outwardly, turning in bearings b^2 of the side casing D. The fan is revolved by pulley-and-belt connection with a hand crank-wheel supported at the lower part of the separator.

The grain is fed to the air-trunk by a side hopper, E, near the lower end, having an upward-curved lip or extension, *d*, which conducts the grain into the middle of the draft, and imparts a slight upward tendency to the same, for being more completely acted upon by the fan-draft. The supply of grain is regulated by a slide-gate between hopper and spout.

The inside of the fan-spout may be provided with ribs or corrugations for directing the grain as much as possible toward the center of the draft. The action of the powerful draft separates the lighter grain, dust, and chaff from the heavier grain, which is deposited in receptacle below the spout, while the lighter grain is carried up through the spout, and deflected by the casing C′ laterally at each side through the side openings *a*, and dropped, on account of the divided current being of diminished power, in the pockets or settling-chambers formed by the lower parts of the side channels with the side walls of the spout. Valved discharge-openings *e* (the valves elastically yielding, so as to open only at intervals by the accumulated weight of grain) and spouts *f* conduct the grain to the outside, and to suitable receptacles placed on the supporting-frame. The weight of the grain opening automatically the valves from time to time, so as to discharge the grain, prevents the weakening of the air-current, as would be the case if the discharges were left constantly open.

The dust and chaff are drawn upward through the channels, and forced to the outside of the casing.

The air-trunk A is made to expand in diameter upwardly, and cause a gradual weakening of the blast, allowing the heavier and better grains to fall back.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with trunk A, of horizontal fan C, casing C′, and air-passages D, said fan being arranged directly above said air-trunk, so that its casing may serve to deflect and divide the ascending current, as set forth.

2. The combination, with air-trunk A, horizontal fan C, and case C′, and the air-passage D, of the settling-chambers at bottom of said air-passages, as set forth.

LOUIS V. DAVIS.

Witnesses:

S. K. ADAMS,

JAMES ADAMS.