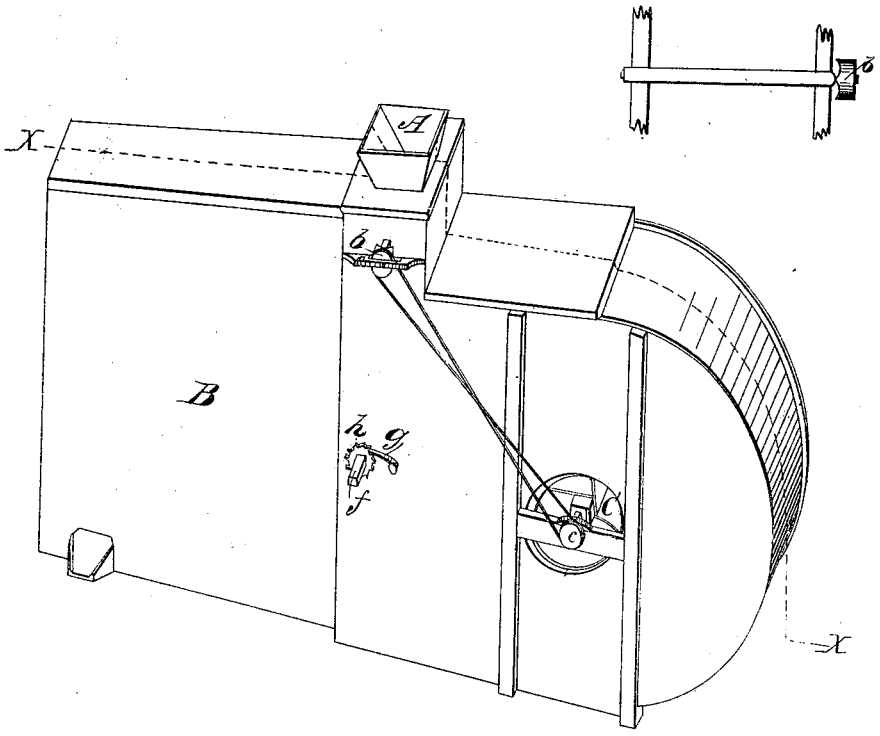
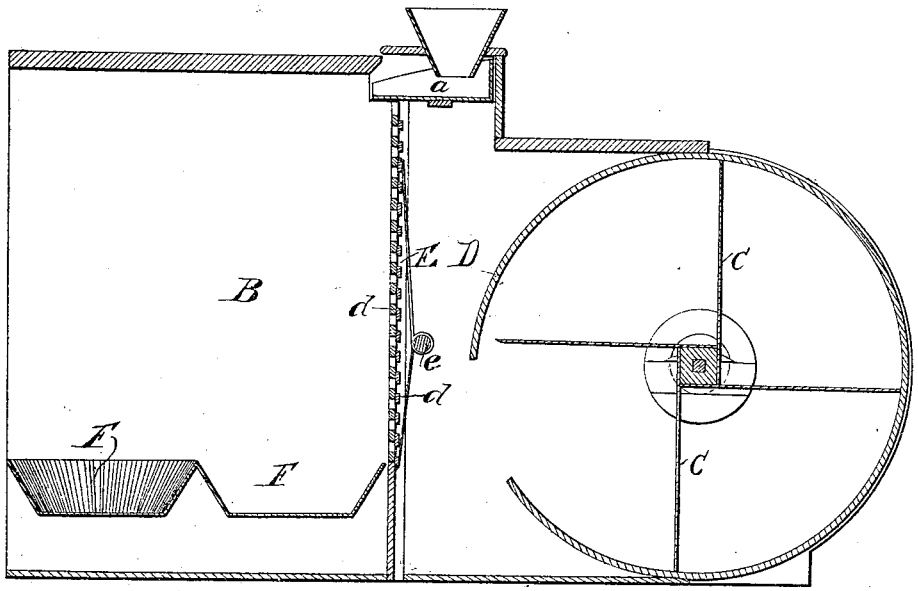
A. STRAUB.

GARLIC FAN.

No. 6,597. Patented July 17, 1849.





UNITED STATES PATENT OFFICE.

ABRAHAM STRAUB, OF MILTON, PENNSYLVANIA.

WINNOWING-MACHINE.

Specification of Letters Patent No. 6,597, dated July 17, 1849.

To all whom it may concern:

Be it known that I, A. STRAUB, of Milton, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Winnowing-Machines Particularly Applicable to the Separation of Garlic, Cheat, and Smut from Wheat; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a perspective view of the machine complete; Fig. 2, a longitudinal section at the line *x x* of Fig. 1, and Fig. 3 is a plan of the damsel of the hopper shoe.

My invention consists in the combination of a wind-chest and register, by which the grain to be cleansed is exposed to a uniform current of air, the amount of which may be regulated at pleasure.

My machine is mainly composed of a hopper A with its distributing shoe *a*, for the reception of the foul grain, a separating chamber B in which the grain is exposed to the action of the blast generated by the fan C, received in the wind chest D, and uniformly distributed through the register E; at the bottom of the separating box are the receptacles F, F, for receiving the fractional products of the operation.

The hopper shoe extends the whole width of the separating box, and receives a vibratory motion from the face damsel *b*, to which a rotary motion is given by a belt running on a pulley *c* attached to one extremity of the fan shaft or the vibratory motion may be given to the shoe by means of a horizontal damsel, lying beneath it and driven in the same manner as a face damsel. The separating chamber B is high and narrow, the end nearest the wind chest can be closed by the register E, the opposite end is open for the discharge of the lightest products of the operation. The bottom of the box is fitted with receptacles for the different heavy products, the varieties of which can be kept separate by increasing the number of receptacles.

The blast generated by the revolution of the fan C, is received in the wind chest D, extending the height and breadth of the separating box B. It is distributed uniformly by means of the register E. I prefer to make this of two frames *d d'* each composed of a series of slats, the former being fixed, and the latter sliding upon it. The sliding frame or register *d'* is moved by means of two straps or cords attached to its opposite extremities and coiled upon the shaft *e* extending transversely across and beyond the case of the windchest. Motion is given to this shaft *e* by a crank or wheel applied to its extremity *f*, and it is retained in any desired position by the pawl *g* falling in the teeth of the ratchet wheel *h* attached to the shaft. Or the movable frame may be raised or lowered by means of a set screw the head of which passes through the top of the machine. The slats of the movable register *d'* are broader than the spaces between the slats of the fixed frame *d*, so that the spaces for the admission of the blast into the separating box may be increased, diminished, or wholly closed, the blast corespondingly increasing, diminishing, or stopping without altering the speed of the fan, by which arrangement the regulation of the process is wholly independent of the prime mover.

The various members of the machine may be made of such materials as the builder may deem suitable to the purpose.

My invention rests upon the fact that wheat is denser than the garlic, or other impurities with which it is generally mixed, if therefore the foul grain be allowed to fall in a current of air sufficient to deflect it from the vertical, the denser or good wheat will be deposited nearest the point from which the current proceeds, and the other matters at distances respectively proportioned to their respective densities. But in order to produce a complete separation it is necessary that the mixture be long enough exposed to the action of the blast, and that the latter be uniform throughout the whole vertical distance through which the grain falls. The former object is effected by making the separating chamber B high and narrow, and by distributing the mixture in a thin sheet across the whole breadth of the separating box by means of the hopper shoe *a;* the latter is attained by receiving the wind from the fan in a wind-chest when it is uniformly distributed

throughout the height and breadth of the separating chamber, by the adjustable register E.

I do not claim as my invention the application of a fan blast to cleanse grain; but

What I do claim as my invention and desire to secure by Letters Patent is—

The combination of a windchest D and adjustable register E with a separating box B, substantially in the manner and for the purpose herein set forth.

ABRAHAM STRAUB.

Witnesses:
JNO. MILLER,
SOLOMON DIEFFENDERFER.