

YOUNG & WILSON.

Smut Machine.

No. 3,610.

Patented June, 5, 1844.

Fig. 1

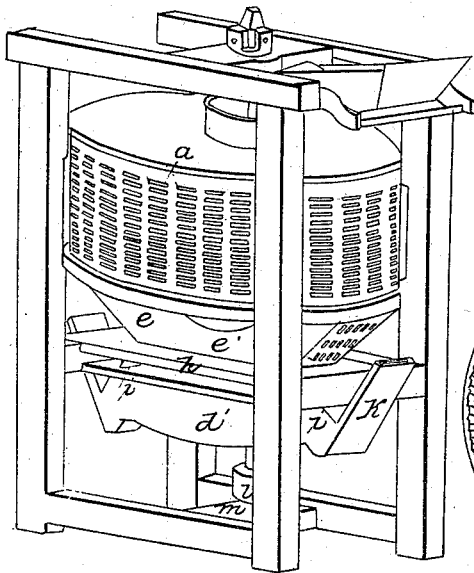


Fig. 5

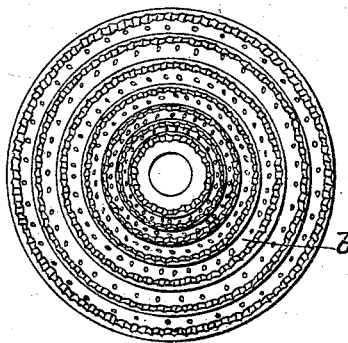


Fig. 6

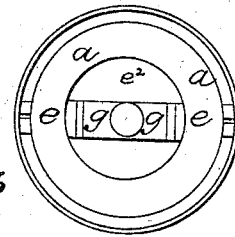


Fig. 2

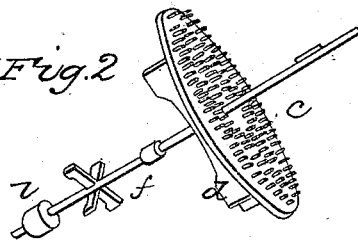


Fig. 7

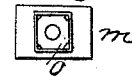


Fig. 4

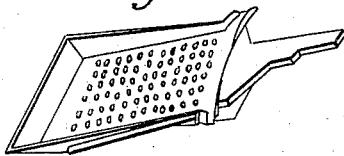
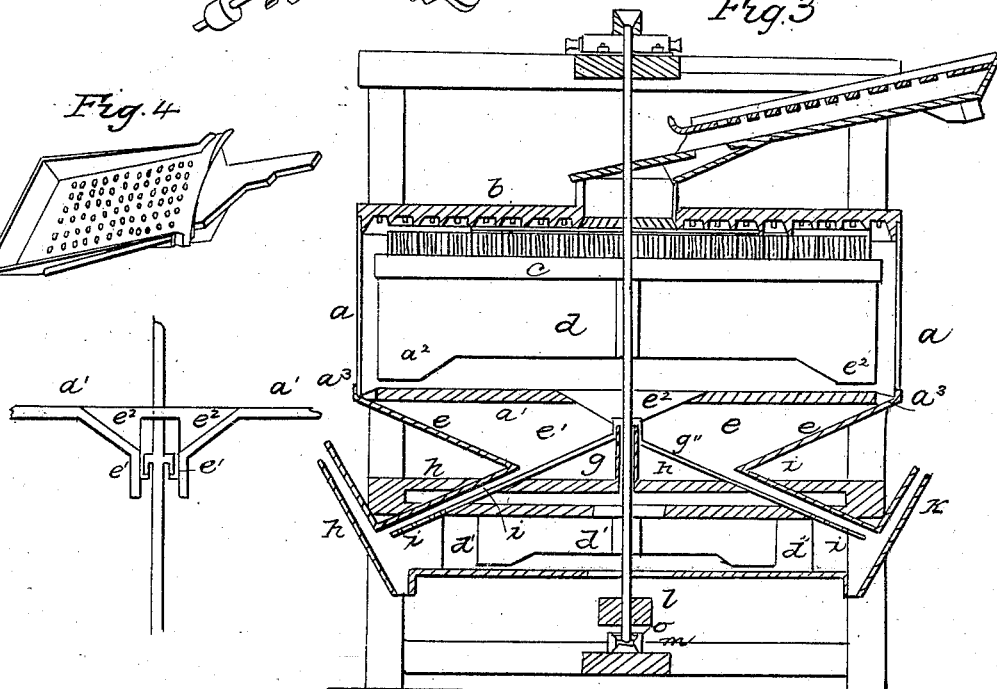


Fig. 3



# UNITED STATES PATENT OFFICE.

E. W. YOUNG, OF PARKMAN, OHIO, AND THOS. H. WILSON, OF HARRISBURG, PENNSYLVANIA.

## SMUT-MACHINE.

Specification of Letters Patent No. 3,610, dated June 5, 1844.

*To all whom it may concern:*

Be it known that we, ELISHA W. YOUNG, of Parkman, in the county of Geauga and State of Ohio, and T. H. WILSON, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented new and useful Improvements in the Smut-Machine known as "Young's Smut-Machine," for which Letters Patent were granted on July 2, 1839; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification, in which—

Figure 1, is a perspective view. Fig. 2 the wheel or runner detached. Fig. 3 a vertical section. Fig. 4, the shoe, or the hopper through which the grain passes on entering the mill. Fig. 5, inside lining of the cover. Fig. 6, the upper side of the bottom of the curve or concave. Fig. 7, plan of the step. Fig. 8, section through the center of the lower head of the concave at right angles to section Fig. 3, the shaft being made in red lines.

The nature of my invention consists in the modification of the runner and the inner facing of the top of the concave, the spouts that conduct off the grain and through which the blast from the lower fan passes and the step in which the fan runs.

The construction is as follows: The curb or concave (*a*) is like that of the machine above named and supported in a similar frame on the surfacing of the cover *d* is a series of eight rings, more or less, as represented in Fig. 5, and in section in Fig. 3 which project from the face and have their inner side ribbed and a little inclined; the middle ring of the series projects downward more than either of the others, and serves to arrest the grain more certainly. The spaces between the rings are filled with studs or points. The runner, *c*, is formed with one head instead of two as in the former machine and has the teeth projecting upward, the row under the center ring on the head of the concave being shorter than the others, so as to accommodate itself to the projection of said ring.

The fan *d* is placed on the under side of the head of the runner the same as in the patent above referred to. Below the lower head *a'* of the concave there is a fan, *d'*, on the shaft which is inclosed in a case *d''* for

the purpose about to be described. The lower head of the concave has a channel (*a<sup>2</sup>*) around it, from which two apertures (*a<sup>3</sup>*) on opposite sides of the head lead to inclined planes (*e*) that converge toward the center on each side, and incline down at an angle of 30°; the center of the head has a circular funnel shaped perforation (*e<sup>2</sup>*); an opening is made into this on each side about the width of the inclined planes above named; a partition (*e'*) connects the inclined planes and the opening thus made with the center forming a sort of hopper on each side of the shaft.

From the shaft around which there is a tube (*f*) near the lower part of the conical recess, inclined planes (*g*) project each way down nearly to meet the inclined planes (*e*); apertures being made at these points through the horizontal plank (*h*) of the frame that sustains them, leading to diverging spouts (*i*) that pass down by the openings of the fan case on each side; after passing below the top of which they are punched on the under side with holes *i'* for the air to pass through on each side of the case; there said spouts are met after reaching a point a little below the upper part of the case by other spouts (*k*) at right angles to, and crossing them which are open at both ends. The wind from the fan rushes up both of these spouts *i* and *k*, and frees the grain from all the dirt &c. that may have passed with it down through the mill.

The inclined planes (*e*) are grated or punched with oblong holes so as to admit air to supply the fan (*d*) which produces a current upward through the grain as it runs down over it. One plane (*e*) may be used instead of two, the change in the other parts being made to correspond.

The shaft is driven by a pulley (*l*) placed thereon below the fan case (*d'*) and runs in a step on the bridge tree of the following construction.

A square or other suitable formed box (*m*) Fig. 7, is screwed tight to the bridge-tree, in the center of the bottom is a hemispherical projection which is cast on a chill; into this box a hexagonal or other suitable shaped piece (*o*) is slipped, that has a hole through its center over the projection above named, this piece rests far enough from the bottom to have a space between the projection and it, through which the oil with which the

box is filled to flow freely, the flat end of the shaft rests on the projection and is steadied by the piece (o) the dirt, &c., that may get in is carried off into the corners and settled there; instead of chilled iron, steel may be substituted.

What we claim as our invention and desire to secure by Letter Patent, is—

1. The cover (b) having a series of concentric rings projecting therefrom with studs between them in the manner and for the purpose set forth.

2. We also claim in combination therewith the runner constructed and arranged as herein described.

3. We claim also the inclined planes (e) having thin lower sides punched with holes for admitting the air to the fan (c) in combination with the runner as herein specified and in combination with these the spouts (i and k,) for directing the blast from the lower fan and conducting off the grain and separating the cheat &c. therefrom.

4. Lastly, we claim the step constructed as herein described.

ELISHA W. YOUNG.  
THOMAS H. WILSON.

Witnesses:

J. J. GREENOUGH,  
LAFAYETTE CALDWELL.