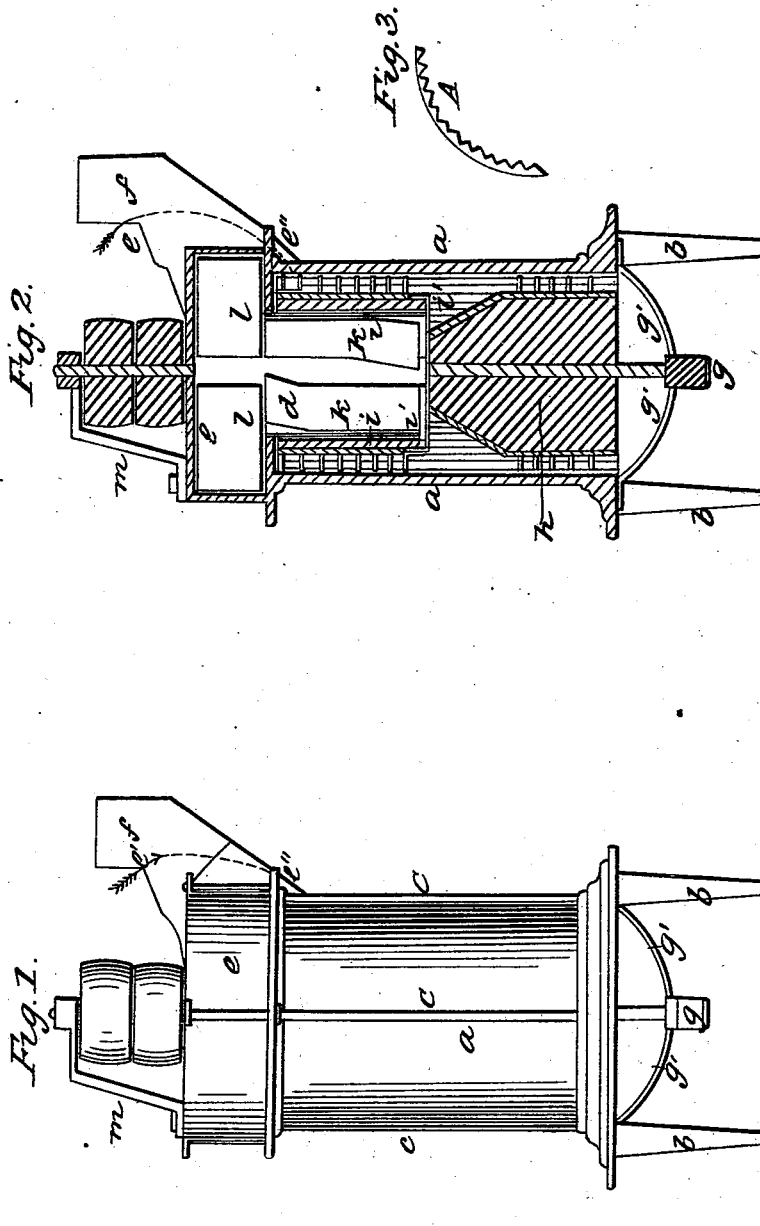


F. L. LEE.
Smut Machine.

No. 2,999.

Patented March 10, 1843.



UNITED STATES PATENT OFFICE.

FRED. L. LEE, OF WASHINGTON, NEW YORK.

SMUT-MACHINE.

Specification of Letters Patent No. 2,999, dated March 10, 1843.

To all whom it may concern:

Be it known that I, FREDERICK L. LEE, of Washington, in the county of Dutchess and State of New York, have invented a new and useful Improvement in the Smut-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which makes a part of this specification, in which—

Figure 1, is a side view; Fig. 2 a vertical section.

The nature of my invention consists in submitting the grain, after passing the wind of a fan, to the action of rubbing, by the spikes and beaters, out of the current of air; and again submitting it to the action of beaters in a current of air.

To construct my machine a cylindrical case of cast iron, or other suitable material is formed, with projections or ribs A, Fig. 3, running lengthwise of it, on the inside. At the bottom of this case (marked *a*) in the drawing) is a flange to which four legs (*b*) are attached on which the machine rests, at the top there is a head, secured to its place by rods (*c*) which pass up outside the case, through the flange, and the edge of the head which projects over the cylinders, this head has an aperture through its center, to the edge of which, all around, a cylinder (*d*) is affixed, which extends down about one third the length of the outside cylinder and concentric with it. Above the head just described is affixed the case (*e*) of a horizontal fan, from the rim of which a tangential spout projects upward at an angle of about 45° and terminates in a vertical one (*f*); the lower side of this spout extends a little below the head of the cylinder at (*e'*) and serves to conduct the grain into it, there being a hole through the head at this point. The grain is received into the spout through an aperture (*e'*) at the junction of the upright and inclined part through a tube that leads from a hopper not shown in drawing on the upper side. Shown in the drawing by an arrow. On an upright spindle, (which is sustained in an ink (*g*) attached to the case (*a*) by four curved arms (*g'*) and standing in the center), is affixed a cylindrical beater (*h*), the bottom of which, is about flush with the lower edge of the case.

The top of this cylinder (*h*) is tapered off conically, and the outside of it is armed vertically, with alternate rows of spikes and ribs, that project out nearly to the case; this cylinder extends up nearly to a level with the bottom of the inner case (*d*); at this point four arms (*i'*) extend out from the spindle, on which another beater (*i*) is fastened; this is a hollow cylinder and is armed like that below it; it reaches up between the outer and inner case to the head. Around the spindle, inside the case (*d*) there are spiral wings (*k*) and there is a common fan (*l*) also attached to the spindle, which revolves in the case (*e*) above named. Above this case is the driving pulley and end of the spindle runs in a box in a bracket (*m*) attached to the fan case (*e*).

When the runner is set in motion, the grain to be cleaned is fed in through the hole in the side of the spout, and follows down the spout, in the course marked by the dotted lines; while in the spout all the chaff and light dirt are blown out of the top by the current of air from the fan; the grain then falls against the beater (*i*) and is acted on without being influenced by the air; it then passes down to the second beater (*h*) up which there is a strong current of air passing which rushes into the interior of the case (*d*) and is caused by the revolution of the wings (*k*) on its inside; this current of air passes up into the fan above, and rushes out of the spout above carrying all the smut and dirt, &c., detached from the wheat with it; the clean wheat drops down through the bottom of the cylinder, out of the machine; by this operation the wheat is severed from all extraneous matter, in the most perfect manner.

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

1. The combination of the beaters (*h* and *i*) constructed and arranged as above set forth.
2. I also claim in combination therewith, the outer and inner cases (*a* and *d*), and the spiral wings (*k*) combined and arranged in the manner, and for the purpose herein described.

FREDERICK L. LEE.

Witnesses:

ALONZO H. MORY,
OBEDIAH TITUS.