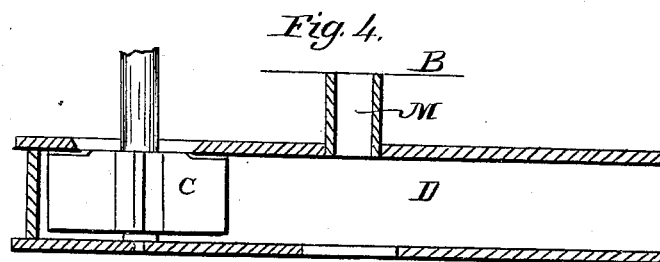
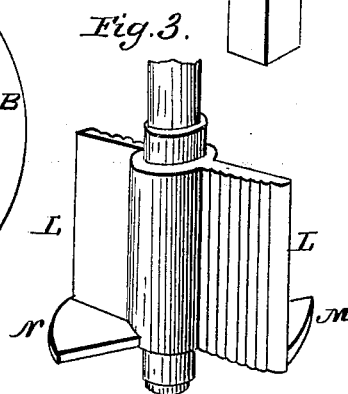
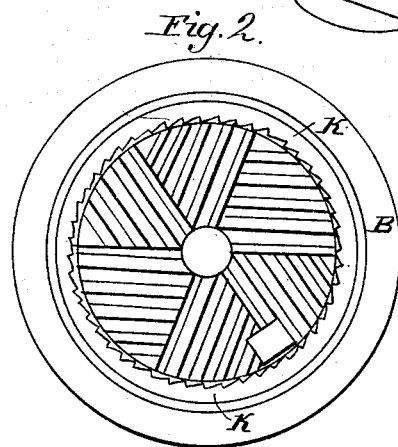
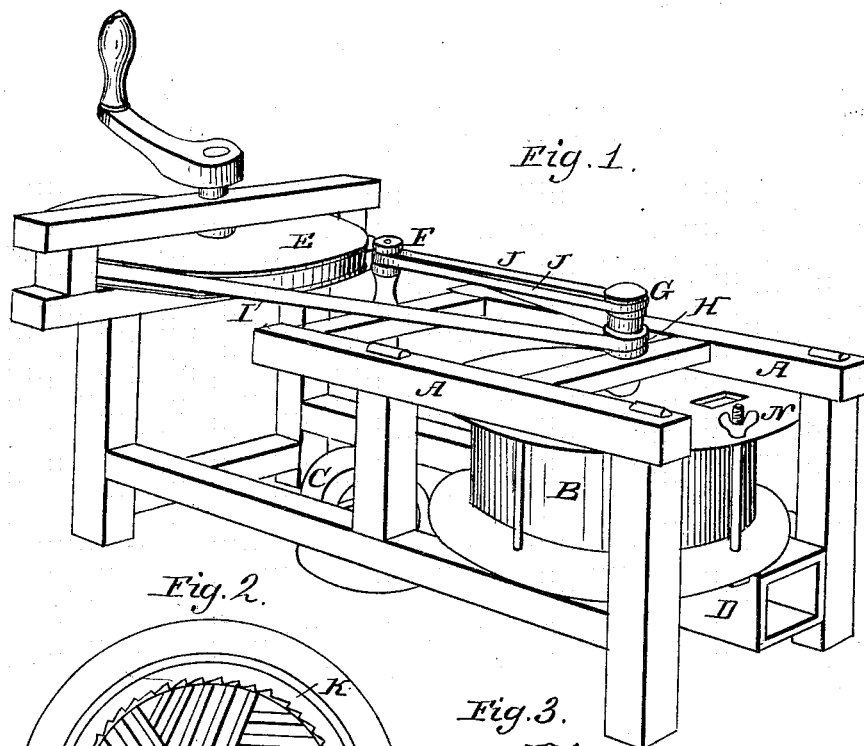


J. B. YATES.

Smut Machine.

No. 1,363.

Patented Oct. 12, 1839.



UNITED STATES PATENT OFFICE.

JOHN B. YATES, OF SPERRYVILLE, VIRGINIA.

SMUT-MACHINE.

Specification of Letters Patent No. 1,363, dated October 12, 1839.

To all whom it may concern:

Be it known that I, JOHN B. YATES, of Sperryville, in the county of Rappahannock and State of Virginia, have invented a new and useful Improvement in Machines for Cleaning Grain, called "Yates' Smut-Machine," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 represents a perspective view of the machine ready for operation. Fig. 2, top view of cylinder—the top being removed. Fig. 3, perspective view of the beaters. Fig. 4, longitudinal section of fan and trunk.

Similar letters refer to similar parts in the several figures.

This machine consists of suitable frame A of size and strength to contain and support the several parts of the machine hereafter described. In this frame is placed a cast iron cylinder B closed at the ends by circular plates in which are apertures for the admission and discharge of the grain and for the axle of the revolving rubbers (hereafter described). This frame also contains a horizontal revolving fan C, and straight trunk D placed below the cylinder B, and the necessary gearing consisting of pulleys E, F, G, H and straps I J for turning the rubbers and fan. The cylinder B is cast of any convenient diameter and length and thickness of metal; and is fluted inside in parallel flutes forming parallel ribs or projections K against which the grain is thrown by the revolving rubbers L which break the smut from the grain. The bottom of the cylinder is also fluted. It is perforated with two apertures—one of which is in the center for the axle of the rubbers to pass through—the other is square and is for a vertical spout M to convey the grain, &c., down to the horizontal trunk of the fan below. The top plate or head of the cylinder is made plain inside—it may however be fluted. This plate also contains two apertures—one of which (in the center) being for the upper part of the axle to pass through and the other is for the hopper which admits the grain to the inside of the cylinder. These two plates are held together by four screw rods and nuts N two of which pass through parts of the frame for securing the cylinder thereto. The before mentioned axle of the rubbers is a cylindrical bar of metal of suitable di-

ameter and length turning in an oil box supported on a cross piece of the frame, or on the point of a screw passing through the bottom of the oil box which may be raised or lowered at pleasure for regulating the space between the bottom of the cylinder and under side of the rubbers. The axle extends above the top of the cylinder sufficiently far to receive the pulley for the band by which it is turned and for another pulley.

The revolving rubbers for throwing the grain against the fluted sides of the cylinder and for rubbing it against the bottom thereof consists of a cylinder of suitable diameter and length—from the circumference of which radiate two vertically fluted wings M, N, turned at right angles at the bottom forming horizontal wings of nearly the shape of a quadrant fluted in parallel lines on the under side. This cylinder is put upon the before described axle and made fast to it by any convenient means.

The fan and trunk are constructed in the usual manner, an aperture being made in the bottom of the trunk directly below the vertical spout for the cleaned grain to pass through while the dirt is blown out at the end of the trunk.

Operation: The propelling power is applied to the large pulley which is turned horizontally—this turns the rubbers by means of the band passing around said large pulley and a small pulley on the end of the axle on which axle there is another small pulley around which passes a band leading to a small pulley on the axle of the fan which it turns creating a blast of air through the horizontal trunk. The grain to be cleaned is put into the hopper from which it descends into the cylinder where it is met by the revolving vertical wings which drive it against the ribs on the inside of the cylinder which break the smut—the grain, &c., then falls to the bottom of the cylinder where it is thoroughly rubbed between the horizontal fluted wings and the fluted bottom of the cylinder. The grain, &c., is then carried around by said horizontal wings and discharged into the vertical spout which conveys it to the horizontal trunk where the dirt and imperfect grain are separated from the good grain as soon as they meet the blast which blows the same out of the machine through the horizontal trunk being the

lightest while the good grain which is the heaviest falls through the blast and passes out of the machine perfectly cleaned through the aperture in the bottom of the trunk.

- 5 What I claim as my invention and desire to secure by Letters Patent consists in—
The before described beaters L, L, con-

structed with horizontal wings at their bottom in combination with the fluted cylinder as described.

JNO. B. YATES.

Witnesses:

ROBT. M. HETERICK,
OLIVER P. SMITH.