

S. W. FOSTER.

Smut Machine.

No. 1,436.

Patented Dec. 21, 1839.

Fig. 2.

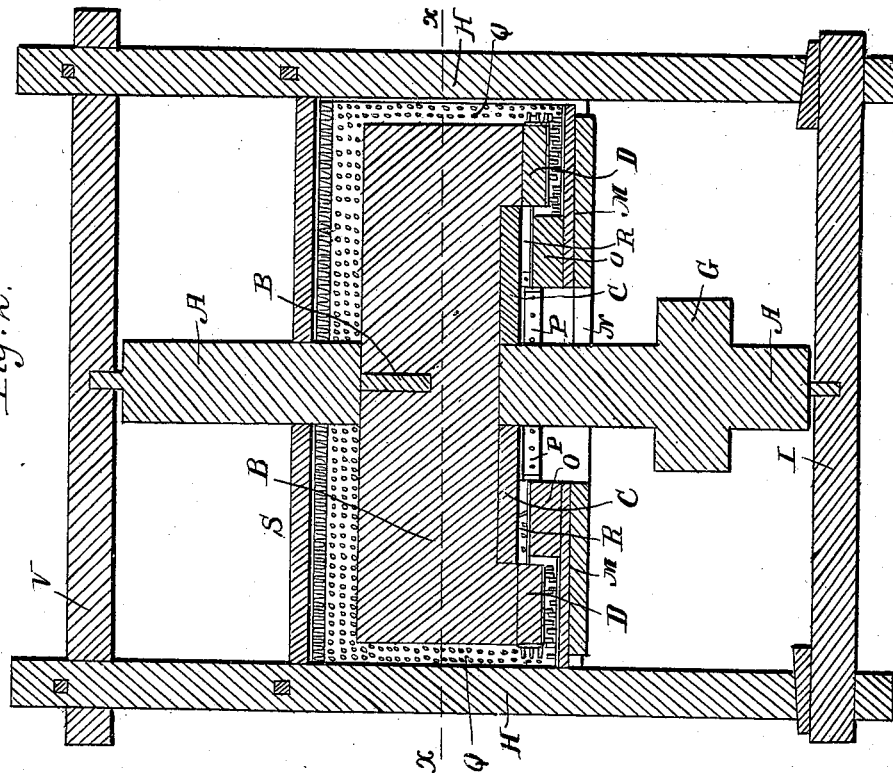
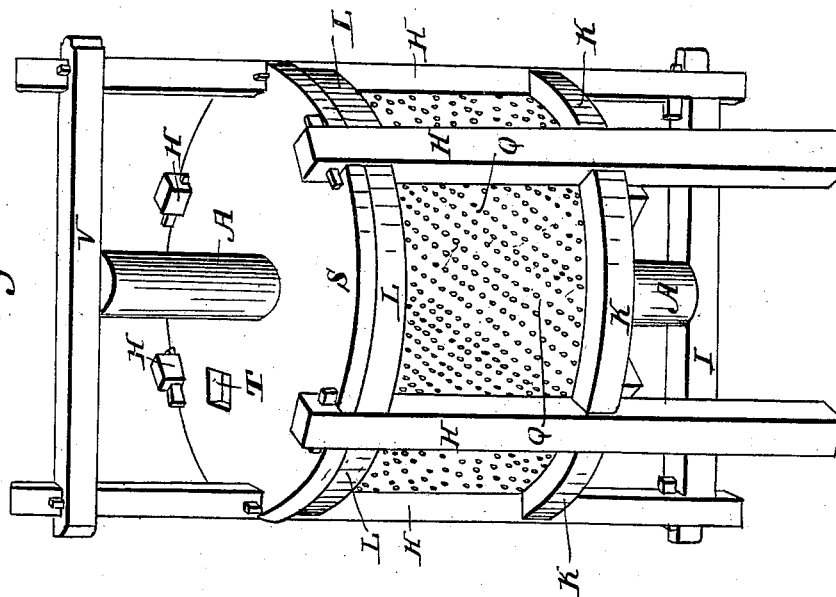


Fig. 1.



# UNITED STATES PATENT OFFICE.

SAMUEL W. FOSTER, OF SCIO, MICHIGAN.

## CONSTRUCTION OF SMUT-MACHINES.

Specification of Letters Patent No. 1,436, dated December 21, 1839.

*To all whom it may concern:*

Be it known that I, SAMUEL W. FOSTER, of Scio, in the county of Washtenaw, State of Michigan, have invented a new and useful Improvement in Machines for Cleaning Grain, called "Foster's Improved Smut-Machine," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

10 The nature of my invention consists in constructing a floor of the cylinder with a rim or collar around the shaft for the purpose of preventing the grain from passing out between the shaft and cylinder and in  
15 combination therewith adapting a disk to the aforesaid rim or collar by countersinking it, by which means a trough or channel is formed for the grain in which it is retained and operated with more effect than  
20 if the bottom of the cylinder were a perfect plane.

To enable others skilled in the art to which this invention appertains, I shall proceed to describe its construction and operation and then state what I claim as my invention.

Figure 1 is a perspective view of the machine. Fig. 2 is a vertical section through the center of ditto; Fig. 3, horizontal section at the line *x x* of Fig. 2; Fig. 4, underside of the movable part of the machine or disk; Fig. 5, top view of the inside of the stationary part of the machine or circular trough. Fig. 6, section of one of the wings  
30 showing the bevel. Fig. 7 plan of the floor.

Similar letters refer to similar parts in the figures.

This machine is an improvement on Yates' smut machine patented during the  
40 present year 1839.

The moving part of this machine is described as follows: It consists of a vertical shaft A about four feet long and six inches in diameter with a steel pointed gudgeon in  
45 the lower end and a common cast iron gudgeon in the upper end; two arms B, Fig. 3, are put through the shaft near the middle and notched together and keyed tight; these arms are three feet and two inches long and  
50 twelve inches wide; but are notched in the lower side one inch and a half deep extending from the center toward each end eleven inches (see Fig. 2). These arms are made of plank one inch and a half thick and the  
55 upper side is cut away so as to be three quarters of an inch thinner than the lower

side, the slanting side of the arm being brought to a plane surface. This slant on the arm is made on opposite sides of the shaft so that each arm when it strikes the wheat will have a tendency to elevate it as well as to throw it horizontally forward (see B in Fig. 6). A circle of plank *c*, Figs. 2 and 3, one inch and a half thick, the diameter of which is equal to the length of the notches cut out of the arms in the lower side, which circle is now nailed on to the underside of the arms. A circular rim D of plank two inches thick and eight inches wide, the diameter of which is equal to the whole length of the arm (38 inches), is nailed on to the lower sides of the arms. The slanting side of the arms which first strike the grain are covered with sheet iron and the under side of rim D mentioned is also covered with sheet iron and the outer edge of the rim D is also covered with sheet iron and filled with small nails driven in close together and projecting from the surface of the iron about half an inch. There are three small pieces of wood E, Fig. 4, nailed on to the bottom of the first mentioned circle C and against these are nailed small pieces of leather F in such a manner as to strike the grains of wheat and prevent any of it from falling down around the shaft, the centrifugal motion throwing the grain from the center toward the periphery. On the shaft about a foot from the lower end is a whir G five inches thick and twelve inches diameter around which is passed a band for propelling the machine.

The framework or immovable part of the machine is constructed as follows: There are six posts H four of them about four feet long and two of them about five feet long three inches by four, in the lower end of the longest posts (which in the frame are opposite each other). There is a mortise in each an inch and a half by six inches; in these mortises rest the ends of a piece of timber I on which stands the lower end of the shaft; in this timber is placed a cast iron box with a steel step in it, to hold oil around the gudgeon. About two feet from the lower end of the posts there are six curved girts K, Figs. 1 and 3, framed in; three inches square; and 17 and a half inches above these girts is the upper side of another tier of girts L, Fig. 1, two inches by three inches; on the lower girts K is laid a circular floor M, Fig. 2, of planks two

inches thick with a hole N, Fig. 7, in the center thirteen inches diameter. Around this hole on the upper side of the floor is fastened a circular rim O, Figs. 2 and 5, of plank 2 inches thick and four inches wide; the top of this rim is covered with sheet iron R projecting one-fourth of an inch over and beyond the periphery of the wooden rim O to assist in preventing the wheat from flying down around the shaft. Within this hole which is thirteen inches in diameter and around the outside of it is nailed a piece of leather P extending around and above the hole three-fourths of an inch, this piece of leather and the last mentioned piece of sheet iron R, and the small pieces of leather and wood E and F nailed on to the moving part of the machine together with the projection of the last-mentioned rim of plank O and the cavity or countersink on the moving part or disk to receive it, effectually prevent the wheat from wasting around the shaft. The floor and the outside or periphery of the rim D is covered with sheet iron and driven full of nails projecting from the sheet iron about half an inch. Around the outside of the arms or wings is a covering Q of sheet iron nailed on to the inside of the posts seventeen and a half inches wide and nailed to the inside of the upper and lower tier of curved girts K and L. A covering S is then put over the top of the arms or wings resting on the upper tier of girts L made of inch boards with sheet iron on the lower side and filled with nails driven in near together and projecting down about half an inch. The wheat is let into the machine through an opening T in the top cover and is discharged at the bot-

tom through a spout V, Fig. 7, which must be placed in the bottom of the machine a little to the right or left from the spout through which the grain is admitted, according as the machine runs to the right or left; a cap V is placed on the top of the two long parts in which is fixed a wooden box for the upper gudgeon to run in.

In operating with this machine the wings B not only throw the grain against the inside of the circular case Q in breaking the smut from the grain, but they also drive the dust through the apertures in the circular case Q, while the clean grain falls down through the spout V.

What I claim as my invention and which I desire to secure by Letters Patent consists in—

1. Constructing the floor of the cylinder with a rim or collar O around the shaft for the purpose of preventing the grain from passing out between the shaft and cylinder and in combination therewith adapting the disk (B C) to the aforesaid rim or collar O in the manner herein described by which means a trough or channel is formed for the grain in which it is retained and operated upon with more effect than if the bottom of the cylinder were a perfect plane.

2. Also the arrangement of the strips of wood E and pieces of leather F on the underside of the disk C for throwing the grain from the center toward the periphery of the disk as described.

SAMUEL W. FOSTER.

Witnesses:

ED. MAHER,

WM. P. ELLIOT.