KITE & NEWMAN.

Smut Mill.

No. 110,475. Patented Dec. 27, 1870.

Fig: 1.

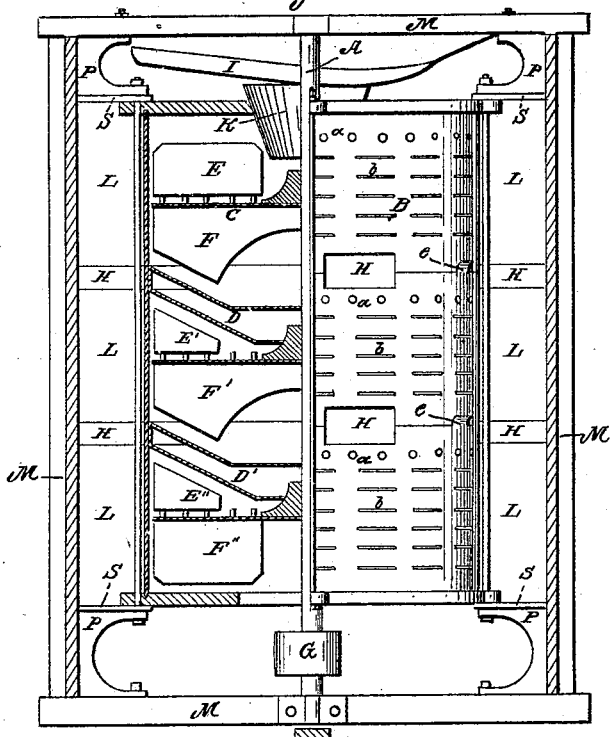
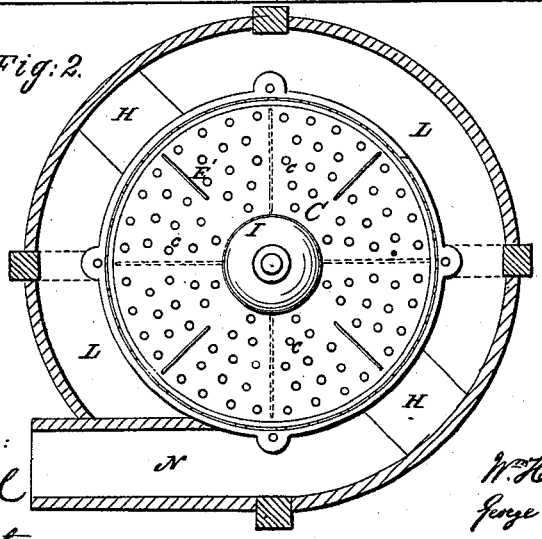


Fig: 2.



Witnesses:
S. M. Pool
H. H. Burton.

Inventor.
Wm. H. Kite
George S. Newman
by
W. N. Walton
Atty.

United States Patent Office.

WILLIAM H. KITE AND GEORGE S. NEWMAN, OF LIBERTY MILLS, VIRGINIA.

Letters Patent No. 110,475, dated December 27, 1870.

IMPROVEMENT IN SMUT-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, WILLIAM H. KITE and GEORGE S. NEWMAN, of Liberty Mills, Orange county, State of Virginia, have invented a new and "Improved Smut-Machine," of which the following is a full and exact description, reference being had to the accompanying drawing and letters of reference marked thereon, of which—

Figure 1 represents a part side and part sectional view of our machine.

Figure 2, a top view, showing also the discharging-spout.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A is a shaft or axle running through the center of the machine, and is made of iron.

B B B are perforated hoops or sections of plate-iron or other metal.

C C C are scouring-plates or disks, made of cast or plate-iron, truly balanced and hung, and firmly secured onto the axle A, in number and distance apart to suit the number and depth of sections B in the machine.

D D are concave double funnels or diaphragms, of plate-iron or other metal.

E E′ E″ are fans or wings, of plate-iron or other metal, and are secured to the scouring-plates C C C by pins or pillars, leaving space sufficient under the lower edge of the fan for wheat or other cereal to circulate freely over the scouring-plates.

F F′ F″ are also fans or wings, made of cast or plate-metal, and are secured to the under surface of the scouring-plates C.

G is a pulley secured to the axle A, causing the whole machine to revolve when the belt is attached.

H H H H are chutes or spouts, also of plate-iron or tin, through and down which a continuous blast of clean air is caused to be rushed in order to assist in cleansing the wheat or other cereal.

I is a shoe at the top of the machine.

K is the hopper, in and through which all the wheat to be cleansed is to enter and pass.

L L L is the dust-chamber, into which the dust from the wheat passes from the apertures *a a* and *b b*.

M M is the frame of the machine, which is made of wood.

N is the discharging-spout or tangent, through which the dust passes.

O O are iron heads, with central openings, the top to receive the hopper K, and the bottom to admit air to the lower fans.

P P P are brackets to secure the cylinder in position.

R R are rods passing through the brackets P P.

S S are rims at top and bottom, by which the dust-chamber L is formed.

a a a are circular air-holes, punched through the top of sections B, in order that the dust may escape to the dust-chamber L.

b b b are also longitudinal cuts or long narrow transverse slots for the passage of dust to the dust-chamber L.

It will be observed that the perforated hoops or sections B B are larger in diameter than the scouring-plates C C C, so as to give space sufficient through which the wheat will pass downward.

c c c c is a series of pins or pegs, made of metal, and are firmly fixed to the top of the scouring-plates C C C, so that when the machine is in motion the wheat or other cereal is agitated, scoured, and cleansed from all impurities.

We do not confine ourselves to any particular number of sections or scouring-plates; we sometimes use only two, generally three, and sometimes four or five.

To operate our machine, the belt is placed on the pulley G, by means of which the axle or shaft A and all its attachments of scouring-plates C C, fans E and F, and pins *c c c*, are put in motion.

The wheat or grain is fed into the hopper K at top by means of the shoe I. It falls on center of the scouring-plate C, is agitated over the surface and among the pins *c c c*, and under the top fans E, and by centrifugal force is driven to the verge of the scouring-plate C, when it falls, meeting the action of the under fans F until it reaches the funnel-shaped diaphragm D; by it is conducted back to the center of the machine.

A blast enters the machine through hopper K being drawn in by the top wings or fans E, which drives it, with the dust, chaff, and light particles, through the surrounding upper portion of perforated hoops B, and through the apertures *a a a* and *b b b* into the dust-chamber L.

A fresh clean blast of air also enters the machine through the spouts H H H H, traversing the dust-chamber being drawn in by the combined power of the lower fans F of the first disk and the upper fans E of the next succeeding disk. This blast enters the machine through the hollow of the funnel D, meets the wheat or other grain as it falls from the upper and shorter to the lower plate of the diaphragm.

The larger portion of the blast then ascends and is driven by the wings or fans F through the sheet of

falling grain, and causes all loosened particles to pass through the perforations *a a a* and *b b b* of the hoop or sections B opposite these fans.

The remaining portion of this blast, with the grain thus scoured and fanned, then enters the next section or compartment of the machine at the center to be again subjected to similar operations in the same order, and so on in each successive compartment or section of the machine, whether there be two, three, or more sections.

After passing the wings or fans F in the last section, the wheat or other grain is deposited on the outer boundary of the lower head O, and by the action of the fans is carried around till it falls through the oblong openings in its verge.

The chaff, light grain, smut, and dust driven through the perforations *a a a* and *b b b* of the cylinder of hoops B B into the surrounding dust-chamber L is carried by the blast round this chamber to and through the tangent discharging pipe N.

Having thus fully described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

Claim.

The combination and arrangement of the cylinder B, having the perforations *a* and *b*, with the shaft A, provided with scouring plates C C, upper fans E E, and lower fans F F, double funnels or diaphragms D D, spouts H, and casing L, all constructed and operating substantially as shown and for the purposes set forth.

WM. H. KITE.
G. S. NEWMAN.

Witnesses:
THOS. W. KITE,
E. F. SPRINKEL.