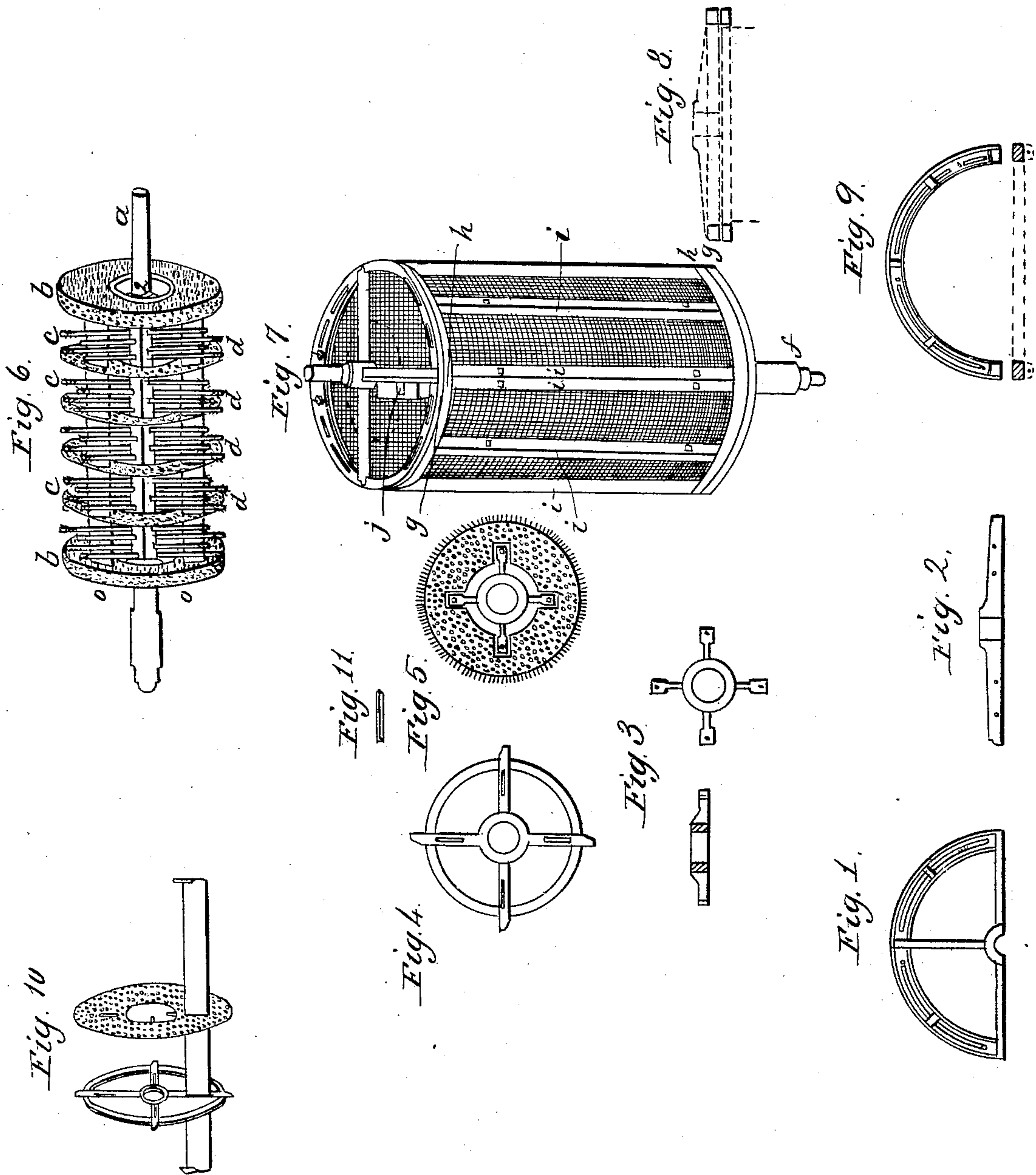


L. SMITH.
Smut Machine.

No. 1,373.

Patented Oct. 18, 1839.



UNITED STATES PATENT OFFICE.

LEONARD SMITH, OF PLATTSBURGH, NEW YORK.

SMUT-MACHINE.

Specification of Letters Patent No. 1,373, dated October 18, 1839.

To all whom it may concern:

Be it known that I, LEONARD SMITH, of Plattsburgh, in the county of Clinton and State of New York, have invented a new and useful Machine for Cleaning Smut and other Filth from Wheat and other Grain; and I do hereby declare the following is a full and exact description.

On a vertical shaft three inches diameter, of either cast or wrought iron, I place near each end wooden heads, with ten inch openings at the center to admit air, and large enough to fill the case within one and a fourth inches, and cover them with sheet iron on the upper sides and edges and fill them with nails projecting half an inch from the upper sides and edges. These heads I fasten to the shaft by a cast iron spider, a front and side view of which is seen in Figure 3. Fig. 5 is a front view of the same screwed on the head. Next to each of these heads I place in a spiral direction twelve horizontal wrought iron arms. The ends are turned and driven into drilled holes in the shaft and rusted in by some acid or alkaline fluid, and the outer ends are fluted and ragged. Next to these arms I place a cast iron having an eye and a rim, with four arms having openings through them to admit four vertical sheet iron fans, from four to six inches wide and as long as the mill between the heads. For a view of casting see Fig. 4. On the upper side of this casting I screw a sheet iron grater, open at the center like the wooden heads and of the same size and punched with a small round punch. I then fill the shaft alternately with arms and graters, as before described, screwing my middle graters to four wrought iron arms placed horizontally around the shaft, until my machine is of sufficient length to do the work desired—from two to six feet long and three feet diameter, and smutting for one to eight run stones.

For a perspective view of the machine without the case see Fig. 6; *a*, shaft; *b*, wooden heads; *c*, arms; *d*, graters; *e*, fans; *o*, scrapers.

For the case or covering, I cast the outside ends in two segments having a hub for the shaft to revolve in and a rim supported by arms, with openings in the rim to let the smut fall through. The two segments are screwed together by the twin arms and are shown by Fig. 1, a side view by Fig. 2. I

also cast two rims similar to the rims of the ends, with flanges at the ends to screw them together, and on the inner sides of which I form ten flanges to hold the ends of the eight wooden posts, which distend the ends of the case. On the inside of these posts, I nail the wire or sheet iron covering, turning it outward at each end, together with the end coverings, between the two castings, which form the ends of the case, and which are screwed to each other, as seen by Fig. 8, and to the ends of the wooden posts. Fig. 8, is a sectional view of the two castings; the red lines the wire covering; Fig. 9, inside rims. The covering may be of sheet iron, punched by a beveled chisel, half an inch wide, in such a manner that the lip will be all on one side, and turned at an angle of about 45 degrees and in a proper direction to let the smut escape, or of No. 16 wire woven eight meshes to an inch of warp and six of filling, and cloth nine inches wide and rolled so as to bind the filling equally to the warp, to prevent slipping and leakage, or half of each kind of covering may be used alternately. The ten inch openings at the center should be covered with woven wire in all cases for free admission of air. In the opening of the upper wooden head is nailed a three inch wide sheet iron curb to prevent the grain falling inwardly on first entering, which is admitted near the periphery at the upper end and is forced out by four scrapers, twelve inches long and one inch wide, of iron, and by nailing attached to the lower head, at the lower end. Letter Q, Fig. 6, curb; Fig. 11, scraper.

The machine revolves on a cast steel point, stepped in a bridge pot of oil, by a band, from 400 to 500 revolutions a minute.

Fig. 7 is a perspective view; *f*, shaft; *g*, ends of case; *h*, circular rims; *i*, wooden posts; *j*, opening; Fig. 10, grater, fan and No. 4.

By the operation of my machine the smut and other filth is reduced to powder by the combined action of the nails in the wooden heads, the arms and graters, the arms whipping the grain and the graters weaving the small fibers from the ends of the grain, the filth being blown through the case as fast as disengaged, and when slowly fed it takes off almost the entire covering of the grain, the centrifugal force keeping it near the outside, allowing large openings at the center, and consequently a strong blast. The

covering does not allow grain to escape or
choke up with grain or dust, and if the
machine stops by accident the grain stops
as soon as the wooden head is partially cov-
5 ered.

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

The combination of the beaters with the

fans, graters and heads constructed and op-
erating as described.

Plattsburgh, October 2, 1839.

LEONARD SMITH.

Witnesses:

PETER J. ROBERTS,
EDGAR A. McLAUGHLIN.