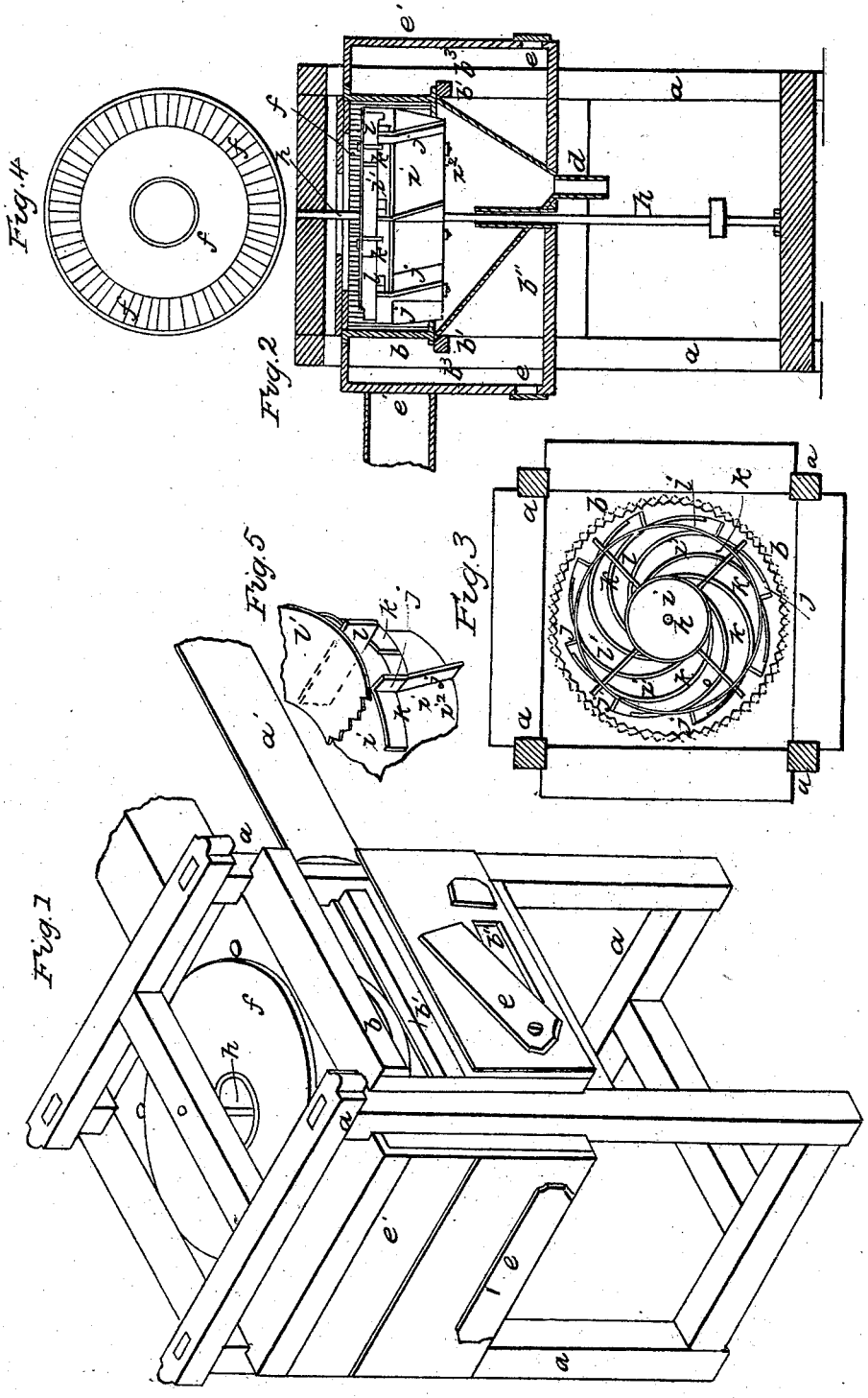
A. STRAUB.

Smut Machine.

No. 3,592. Patented May 17, 1844.



UNITED STATES PATENT OFFICE.

A. STRAUB, OF MILTON, PENNSYLVANIA.

SMUT-MACHINE.

Specification of Letters Patent No. 3,592, dated May 17, 1844.

To all whom it may concern:

Be it known that I, ABRAHAM STRAUB, of Milton, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Improvement in Machinery for Cleaning Grain of Smut, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of my specification, in which—

Figure 1, is an isometrical view; Fig. 2 a section.

The nature of my invention consists in forming an involuted conductor for the grain, from the center to the periphery, under the fan upon the runner, at which point it is subjected to the action of the beaters and wind from the fan at the same time, and is cleared of all the loose dirt and smut, as fast as it is broken; and the wheat falls down into the fan below.

The construction is as follows: A suitable frame (a, a,) is made, in which a concave, or lantern (b) is put; this is formed of square bars of iron, set vertically, and in a circle; and rests on a platform (b') supported by the posts, below which a conical hopper (c) is affixed that conducts the grain down to a tube (d) below. Another platform (b'') is placed underneath that above named (b') and the space between them is inclosed by four sides, which are put on outside the posts of the frame; the lower platform is connected with these sides, but the upper one has a space (b^3) between it and the four sides, through which dirt can fall and from which it can be taken through doors (e) on the sides; above platform (b') the lantern is inclosed in the same way as the box below with which it communicates by means of the opening (b^3) around the platform (b'); doors (e') are also made in this partition on the four sides, to open into the concave. Over the top of the concave there is a cover (f) shown separate in Fig. 4. This cover is furnished with a ring of segments of metal near the outer circumference, which project a little into the concave and are ribbed radially. The runner is affixed to a vertical shaft (h) that runs through the axis of the concave; it is composed of a short cylinder (i) with flat heads i' i^2 on the top of which are involute wings or conductors (k) that extend from the periphery of the cylinder inward half way to the center; over these radial fans (l) are feet, which extend across and are connected with said conductors, see Fig. 5. They commence about the same distance from the center as the conductors and project out nearly to the inner surface of the concave. Just beyond the ends of each of the involutes (k) there is a beater (j) that reaches from the one just behind it to beyond the periphery of the cylinder in a vertical position; this extends down the outer circumference of the cylinder at an angle of about 70° to the bottom thereof. There is a flat ring (l') that extends over the fans nearly from the outer circumference of the cylinder to their inner ends; this in Fig. 3 is shown by red lines, and is more clearly represented at Fig. 5. The grain is fed in through the central space of the cover (f) and falls onto the cylinder and is then carried out nearly in a radial line to the periphery by the involutes; when it reaches this point it is struck by the beater (j) and the smut balls &c. broken, and as soon as disengaged, is all blown out through the interstices of the machine; the inclination of the beaters serve to keep up the grain, and cause an upward current of air. The grain is forced against the ribbed segment ring (f') on the cover, and also the bars of the concave or lantern where it is scoured, and gradually falls down into the conical part of the lantern (c) and out through the tube to the fan.

The action of this machine is to carry the grain from the center out to the periphery nearly in a radial line, the involute conductors serving that purpose without imparting to it much of the revolving motion of the runner or in any way breaking the smut balls. When it arrives at the end of the conductor it is struck by the beater (j) with great force and put suddenly into motion in a tangent line; this effectually breaks the smut balls just at a point where all the smut, dirt and other extraneous matter can be driven out through the lantern or concave, before it has time to attach itself to the wheat which then falls downward, the blast being produced by the fans above the conductors. By this construction the revolutions of the machine may be much slower

than ordinary ones for the same purpose, and consequently will require less power to drive it.

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

Constructing the runner in the manner set forth having involute conductors on it, intersected at the periphery by beaters and surmounted by a fan, the whole being arranged substantially in the manner and for the purpose herein described.

A. STRAUB.

Witnesses:
JOHN HITZ,
J. J. GREENOUGH.