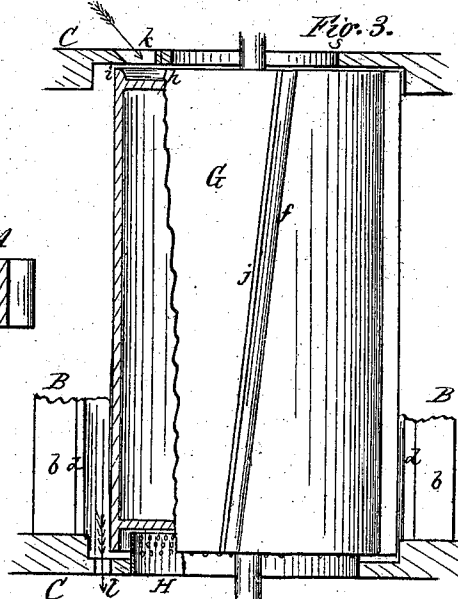
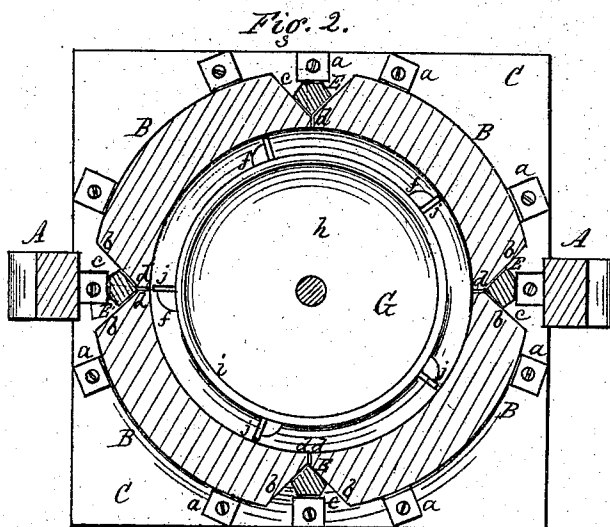
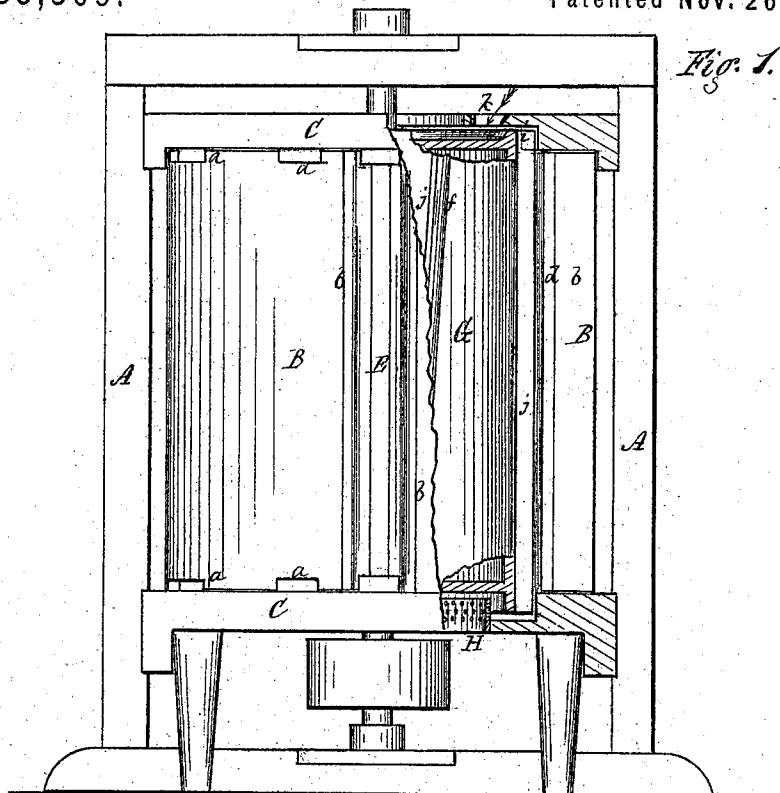


S. DODSON.
 Apparatus for Decortivating Grain.
 No. 133,309. Patented Nov. 26, 1872.



Witnesses.
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 atty.

UNITED STATES PATENT OFFICE.

SILAS DODSON, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO HIMSELF,
JAMES VAN VALKENBURG, OF BINGHAMTON, NEW YORK, AND GEO.
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IMPROVEMENT IN APPARATUS FOR DECORTICATING GRAIN.

Specification forming part of Letters Patent No. 133,309, dated November 26, 1872.

To all whom it may concern:

Be it known that I, SILAS DODSON, of Jersey City, in the county of Hudson and State of New Jersey, have invented a certain Improvement in Grain-Scourers, of which the following is a specification:

My improvement belongs to that class of machines which clean and scour the grain preparatory to grinding. The invention consists of a stone casing constructed in sections, as hereinafter described, and combined with an interior cylinder armed with beaters, in the manner and for the purpose specified. The invention further consists of a novel and improved process or mode for scouring or decortivating grain, the same consisting in projecting the grain, through the medium of beaters, upon a casing which is made up wholly or in part of stone, as will hereinafter more fully appear.

In the drawing, Figure 1 is an elevation, partly in section, of my improved machine; Fig. 2, a cross-section of the outer stone casing above the inner cylinder, which is shown in plan; Fig. 3, an elevation, partly in section, of the inner cylinder, showing also a portion of the outer stone casing at the bottom.

These parts are all mounted in a frame, A, which may be of any desired or convenient construction. The outer cylinder is composed of stone, or of stone and, in part, of other material, in a series of segments or staves, B B, set up endwise between the head-plates C C of the frame and clamped fast in place; or the casing may be built up in blocks of any convenient form. They are retained against outward movement by lugs or blocks *a a* attached both to the upper and lower plates, as shown in Figs. 1 and 2. This arrangement allows the segments to be removed or replaced at any time. The edges of each of these segments are beveled off, as shown at *b b*, Fig. 2, thereby leaving a triangular notch, *c*. A square bearing, *d*, is left, however, on each edge, which, abutting with the next, makes a continuous bearing all around the inner periphery, so that no grain or dust can escape. In each of the triangular notches *c* is located an upright batten, E, which fits closely in the joint, and thereby assists in excluding dust and closing the passage through. These battens are held by

the lugs *a a*, as before described. I build these machines with the casing either in cylindrical or conical form. The advantage of making the segments with the notches *c c* between and having the square bearings *d d* at the edges is that, as the inside of the casing wears away from the action that takes place, the segments can be set up to compensate for the wear by simply dressing off said bearings *d d*. By this means the maximum amount of wear may be secured from the stones. In such case it will be noticed that the angles of the notches *c c* will always remain the same, and, therefore, there will always be an accurate fit of the battens E E to close the joints. Within the hollow space inclosed by the stone casing is located a cylinder, G, or equivalent, which is provided at its periphery with a series of beaters, wings, or other devices, *j j*, which will answer the same purpose; or a combination of the beaters with brushes may be used. The cylinder is preferably covered with sheet metal, and a sufficient space is left between its surface and the sides of the case for the passage of the grain down, and for the running of the beaters. These beaters, as shown in the drawing, consist of strips of metal stayed by angle-bearings *f f*, and may be placed on a line with the spindle or arranged in a spiral or inclined line, so as to hold or retain the grain in its downward passage to get the best effect of the scouring action, and preventing too rapid a discharge. The grain, entering at the top, is carried around in the annular space by these beaters and subjected to an intense scouring action by the rapid projection of the grain singly against the stone casing, which removes the outer cuticle and cuts off the refuse end of the berry, and the grain comes through in a perfectly-clean state, and containing only that portion which is suitable for grinding into flour. On top of the cylinder is a depression or hollow, *h*, with a raised rim, *i*, at its margin. The grain is fed in through a suitable aperture, *k*, into this depression, and the centrifugal action spreads it equally over the top of the cylinder and discharges it in a thin and uniform sheet over the rim *i* and into the space between the cylinder and casing. This arrangement forms one feature of my invention. The clean grain is discharged at the bottom

through an aperture, *l*, into a suitable receptacle. The refuse may either be discharged with it, and the whole subsequently screened, or an exhaust-fan may be located above the machine for drawing off the dust and refuse as the process of scouring goes on. In the bottom plate *C* is located a perforated ring or thimble, *H*, open at both ends and resting under the cylinder. The perforations open into the space between the cylinder and casing, and thereby allow the air to enter in an equal and uniform current all around, and at the same time the body of the ring prevents the escape of any portion of the grain, except through the proper exit. It has the advantage of preventing any choking or clogging, while it distributes the air. This also forms one feature of my invention.

This machine is found more effective than those generally in use for scouring the grain, as the stone presents a fine grained surface for the frictional action, which removes the covering of the berries without breaking them or subjecting them to undue wear. The construction of the casing in segments, by which they may be removed or replaced at any time, is also of great advantage; and the cutting away or notching of the edges, leaving only a thin bearing, *d*, to preserve the contact, enables the proper adjustment to be produced to compensate for wear.

The result produced by the frictional action to which the grain is subjected in my machine is different in character and far more satisfactory than has been heretofore attained. The grain while passing through the machine is projected, whipped, or beaten rapidly back and forth against the stone casing. The peculiar nature of this frictional action against the sharp granular surface of the stone casing removes entirely the outer cuticle of the berry and cuts off the woody fibrous substance adhering to the ends of the grain. The results of the removal of these substances previous to grinding is, that the motive power required for grinding is lessened, the capacity of mills is increased, the quality of the flour is very materially improved, and its market value correspondingly

enhanced. The removal of this outer cuticle and the woody fiber without heating or otherwise injuring the grain has never been accomplished by any of the machines in use. The usual method of cleaning grain in machines with metallic casings of different kinds simply removes the loose foreign substances—such as smut, dust, &c.—while the few experiments made to clean grain by subjecting it to a rubbing process between an inner surface running in close contact with a stone casing have failed in consequence of heating the grain and the immediate glazing over of the working surface of the stone, thereby rendering them useless. I overcome these difficulties entirely, and secure the advantages named, by constructing the outer casing of stone, and keeping it clean and sharp by the rapid trituration of the grain, in an open space, against the granular working surface of the casing.

Having thus described the construction and operation of my improved machine, what I claim, and desire to secure by Letters Patent, is—

1. In a grain-scourer, a casing, *B B*, composed wholly or in part of stone, for the purpose specified, and used in connection with interior beaters, substantially as described.

2. In a grain-scourer, I claim the combination of the revolving cylinder *G*, armed with a series of beaters, *j j*, or their equivalent, with a stone casing, *B B*, in the manner and for the purpose specified.

3. In a grain-scourer, I claim the combination, in the segments, of the bevel-edges *b b* and the square bearing-edges *d d*, so arranged as to compensate for the wear of the interior of the casing, by a redressing of said square edges, as herein described.

4. The mode herein described of scouring grain, the same consisting in projecting the grain upon the inner periphery of a stone casing, by means of interior wings or beaters, substantially as described.

SILAS DODSON.

Witnesses:

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