(No Model.)

W. AGER.

MACHINE FOR SCOURING AND POLISHING CEREALS.

No. 295,471. Patented Mar. 18, 1884.

Fig. 1.

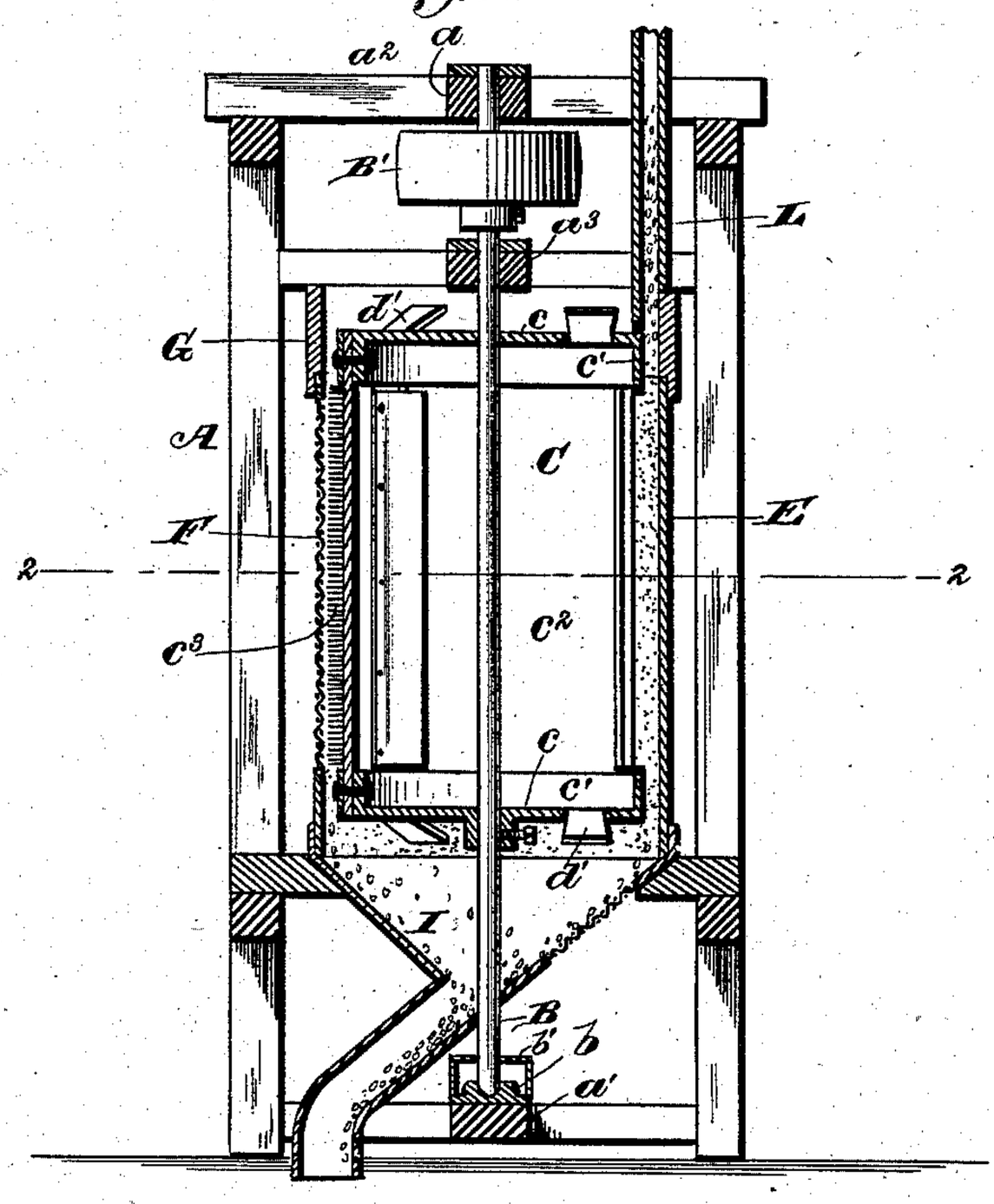


Fig. 3.

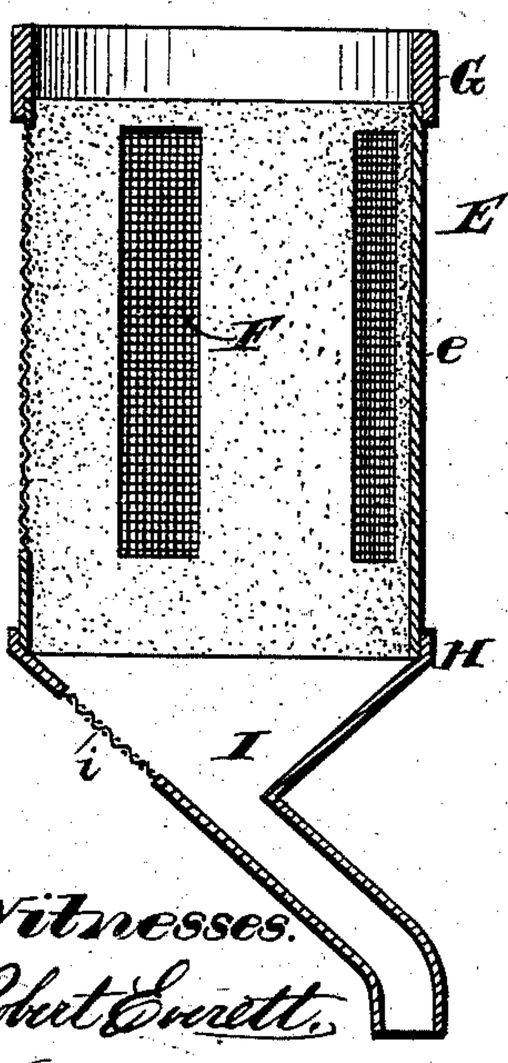


Fig. 2.

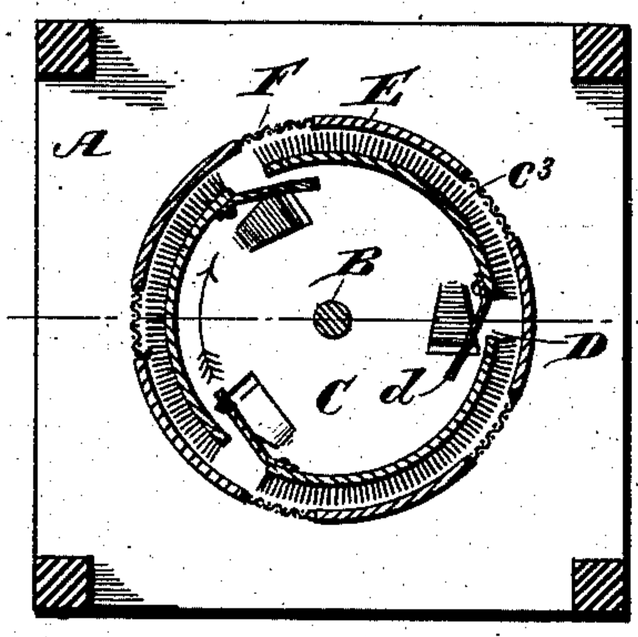
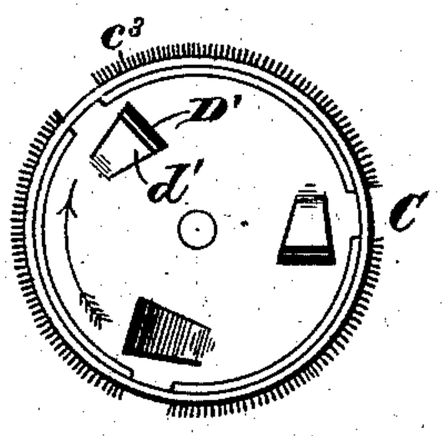


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILSON AGER, OF NEW YORK, N. Y.

MACHINE FOR SCOURING AND POLISHING CEREALS.

SPECIFICATION forming part of Letters Patent No. 295,471, dated March 18, 1884.

Application filed August 22, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILSON AGER, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Machines for Scouring and Polishing Cereals, of which the following is a specification.

My invention relates to machines for scouring and decorticating cereals; and it consists in the combination of an outer drum having its inner side constructed or provided with an imperforate abrading-surface, and with gauze sections at intervals in its wall, with an internal cylinder having its exterior surface constructed or provided with a surface of bristles, and with blast-apertures in its walls, and air-forcing devices at the end of the cylinder, whereby the cereals introduced between the drum and cylinder are scoured and decorticated upon the imperforate abrading-surface of the outer drum, and at the same time air is drawn into the inner cylinder and forced from the latter through its blast-apertures and the gauze sections of the outer drum, whereby the grain is deprived of its skin or husk and is thoroughly cleansed. Other features of the invention will be hereinafter specifically described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section taken through the machine. Fig. 2 is a horizontal section taken on the line 2 2, Fig. 1. Fig. 3 is a central vertical section of the outer cylinder, the other parts being removed. Fig. 4 is a plan of the end of the inner revolving cylinder.

A in said drawings indicates any suitable frame-work by which the operative parts are supported. At the top and bottom thereof are placed cross-beams *a a'*, respectively, and upon the latter is placed a bearing, *b*, in which is stepped a vertical shaft, B, the bearing being covered by a hood, *b'*, to prevent the entrance of dust. The upper end of the shaft has support in the cross-beam *a*, which is further strengthened by a cross-tie, a^2, running at right angles to the beam *a*. The shaft B is provided with a band-pulley, B', and its extremity may be stepped in a second pair of cross-ties, a^3.

Upon the shaft B is keyed a cylinder, C, which is constructed in the following manner: Each cylinder-head *c* is flanged, as shown at *c'*, and the cylinder-body c^2 is bolted to these flanges. The body is composed of any suitable material, and is made in two, three, or more sections, with intermediate openings, D, which are partly covered by flaps *d*, secured to the body portions and bent inward, leaving space for the passage of air, the openings between the flaps and the body portions being in the direction of rotation. The outer surface of the cylinder is covered with short closely-set bristles c^3, or, instead thereof, tampico or an equivalent material may be employed. Each cylinder-head *c* is provided with two, three, or more openings, D', each being partly covered by a flap or inclined plate, *d'*. These openings are placed as near the periphery as possible, and the openings of the inclined plates face in the direction in which the cylinder rotates, whereby the air above and below is caught by the plates and forced into the interior of the cylinder.

E represents an outer drum surrounding the cylinder C and having support upon the frame A. It is composed of any suitable material, and it is constructed with an imperforate abrading-surface on its inside, composed of emery, Derbyshire stone, or other suitable abrading material. The outer drum is concentric with the inner cylinder, and has such diameter that the grain, when introduced into the intermediate space, will be subjected to friction by both the inner and outer cylindrical surfaces. In the wall of the outer drum, E, are formed two, three, or more vertical openings, extending to a point not far from the lower end, and covered by wire-gauze F. The construction of this portion of the apparatus is shown in the sectional view in Fig. 3, in which *e* represents the cylindrical body of said drum, having an imperforate scouring and decorticating abrasive surface of the kind described. The body of the drum is composed of a material suitable for the purpose, and is set within an upper hoop, G, and a lower hoop, H, the latter having a cone-shaped lower portion terminating in a chute, I, through which the grain, after being scoured and decorticated, is conducted to suitable receptacles below.

L indicates a hopper-trough, through which the cereal, of whatever nature, is fed from its

proper receptacles above down between the revolving cylinder C and the outer drum, E.

The operation of the device is as follows: As the grain descends through the chute or hopper-trough L it passes between the inner revolving cylinder, C, and the outer drum, E, whereby it is thoroughly cleansed, scoured, and polished, and is deprived of its outer husk or skin. The air-blast, which is created by the rotation of the inner cylinder through the hooded openings D' *d'*, drives the dust out through the wire-gauze-covered openings in the outer shell or drum, while the grain thus scoured or decorticated descends through the hopper-chute I. A gauze-covered opening, *i*, is formed in the latter to admit air to the lower head of the cylinder C, and at the same time exclude foreign matters.

Instead of using wire-gauze to cover the openings in the outer drum, I may employ zinc or steel plates having slotted openings, as they are less liable to clog or choke, and either material is within the scope of my present invention.

Having thus described my invention, what I claim is—

1. A grain scouring and decorticating apparatus, combining in its structure an outer drum having its walls constructed with an imperforate abrading-surface provided at intervals with foraminous sections, and an inner cylinder having its wall constructed with blast-openings and means for inducing air into the cylinder and driving it through the blast-openings therein and through the foraminous sections, substantially as described.

2. A grain scouring and decorticating apparatus, combining in its structure an outer drum having its wall constructed with an imperforate abrading-surface provided with gauze sections at intervals, an inner cylinder having blast-apertures, an external surface of bristles, and an air-opening at its end, and means for inducing air into the air-openings and forcing it through the blast-apertures and the gauze sections of the drum, substantially as described.

3. A grain scouring and decorticating apparatus, combining in its structure an outer drum having its wall constructed with an imperforate abrading-surface having gauze sections arranged therein at intervals, an interior cylinder, and means for driving air through the inner cylinder and the gauze sections of the imperforate abrading-surface of the outer drum, substantially as described.

4. A grain scouring and decorticating apparatus, combining in its structure an upright drum having its wall provided with vertical openings and an imperforate abrading-surface, gauze pieces arranged in the vertical openings, and an internal cylinder having vertical openings and bristles, and provided at its end with air-forcing hooded openings, substantially as described.

5. The combination, with the inner cylinder having air-forcing devices in its two heads, of the lower hopper and grain-chute having a gauze-covered air-opening to admit air to the lower end of the cylinder, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILSON AGER.

Witnesses:

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