(No Model.)

J. S. OLIVER.

DISINTEGRATING AND GRINDING MILL.

No. 245,313. Patented Aug. 9, 1881.

Fig 1.

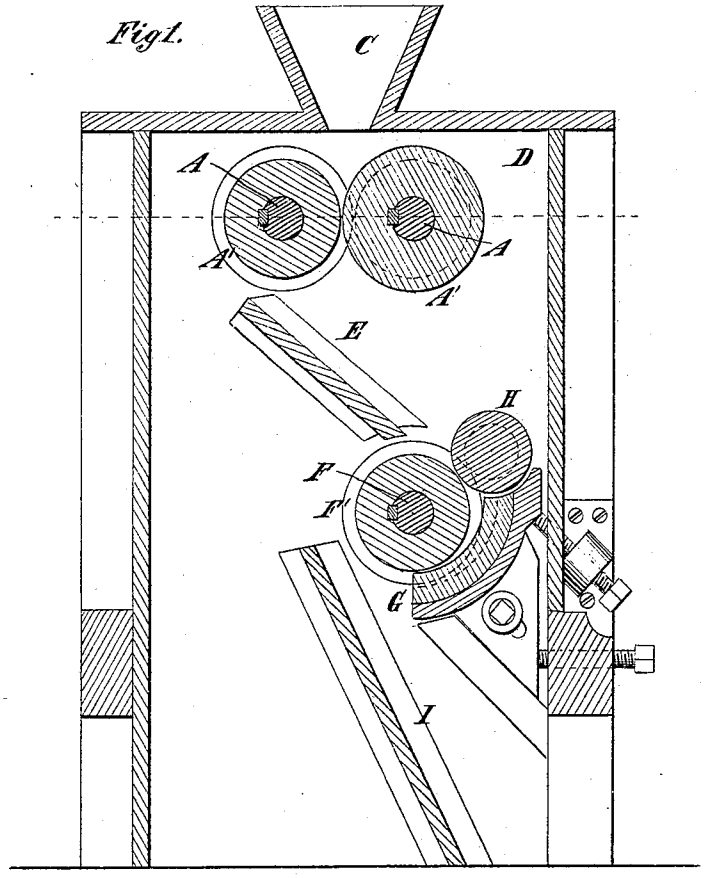
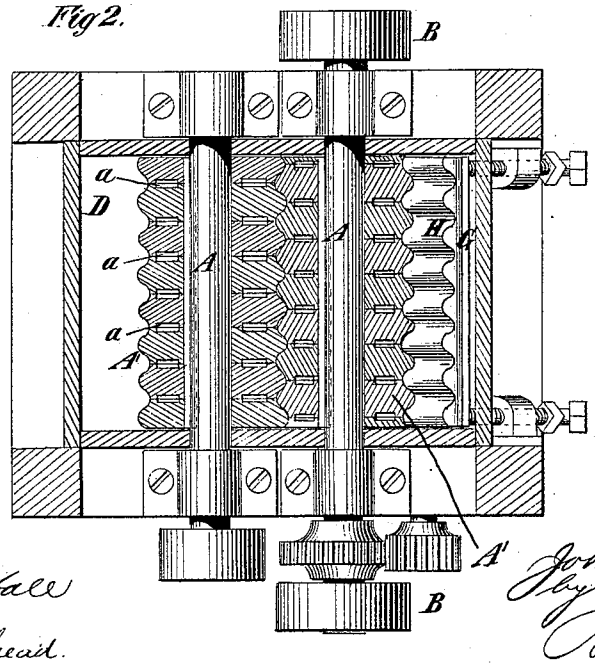


Fig 2.



Witnesses:
Chandler Hall
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Inventor.
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UNITED STATES PATENT OFFICE.

JOHN S. OLIVER, OF NEW YORK, N. Y.

DISINTEGRATING AND GRINDING MILL.

SPECIFICATION forming part of Letters Patent No. 245,313, dated August 9, 1881.

Application filed October 21, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. OLIVER, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Disintegrating-Machines, of which the following is a specification.

My improvements relate to machines for disintegrating wheat and other grain, comprising rollers rotating in close proximity to each other and at the same or different speeds.

The object of my improvements is to provide for easily and cheaply constructing such rollers with faces of porcelain, glass, or other vitreous material and, preferably, with circumferential grooves.

To this end the improvement consists in the combination, in a machine for disintegrating wheat and other grains and like substances, of rollers composed of cores of metal or other suitable material and faces of porcelain, glass, or other vitreous material composed of a series of independent rings, the divisions between these rings on each roller being opposite the integral portions of the rings on the adjacent roller.

In the accompanying drawings, Figure 1 is a central vertical section of a machine embodying my improvements; and Fig. 2 is a horizontal section of the same, taken centrally through the rollers.

Similar letters of reference designate corresponding parts in both figures.

A A′ designate rollers arranged in such close proximity that wheat and other grain and like substances passed between them will be crushed and disintegrated. They are represented as having a corrugated periphery from end to end, circumferential ribs or projections on one roller fitting into circumferential grooves in the adjacent roller. These rollers are designed to rotate in opposite directions, but preferably at different speeds, so that the adjacent surfaces of the rollers shall move in the same direction, but with a rubbing action, owing to their difference in speed. They may be driven in any suitable manner—as, for instance, through pulleys B.

The material to be disintegrated is fed through a hopper, C, erected on the top of the case D of the machine, and passing from the rollers A A′ falls on a chute, E, whereby it is conducted to a roller, F F′, and sector-shaped bed G. This roller F F′ may be constructed similarly to one of the rollers A A′, and in connection with the bed G may serve to further disintegrate the material being treated, and in the case of grain to separate the chaff. A small roller, H, may also be employed in connection with the roller F F′, if desirable, and the bed G may be made adjustable toward and from the latter. Passing from the bed G the disintegrated material is conducted from the machine over a chute, I.

The rollers A A′ are composed of cores A of metal or other suitable material provided with journals fitting in journal-boxes, whereby they are supported, and of faces A′, composed of independent rings of porcelain, glass, or other vitreous material fitting on said cores A. These rings composing the faces A′ are secured to the cores to turn therewith by means of splines, feathers, or keys, fitting within longitudinal recesses in the exterior of the cores and corresponding recesses in the interior of the said rings. Preferably the sides of these rings are hollowed out in the form of annular grooves, *a*, so as to reduce the portions necessary to be ground off in order to make the rings fit tightly together side by side.

It will be observed that the divisions between the rings composing the face of each roller are opposite the integral parts of the rings composing the face of the adjacent roller, and this is an important feature as it lessens the danger of the chipping of the edges of the rings and tends to obviate any cutting or shearing action between exposed edges on opposite rollers.

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

The combination, in a machine for disintegrating wheat and other grain and like substances, of rollers composed of cores of metal or other suitable material, and faces of porcelain, glass, or other vitreous material, composed of a series of independent rings, the divisions between these rings on each roller being opposite the integral portions of the rings on the adjacent roller, substantially as and for the purpose specified.

JOHN S. OLIVER.

Witnesses:
T. J. KEANE,
CHANDLER HALL.