(No Model.)

J. FITZ.

SMUT MILL.

No. 325,066. Patented Aug. 25, 1885.

Fig. 1.

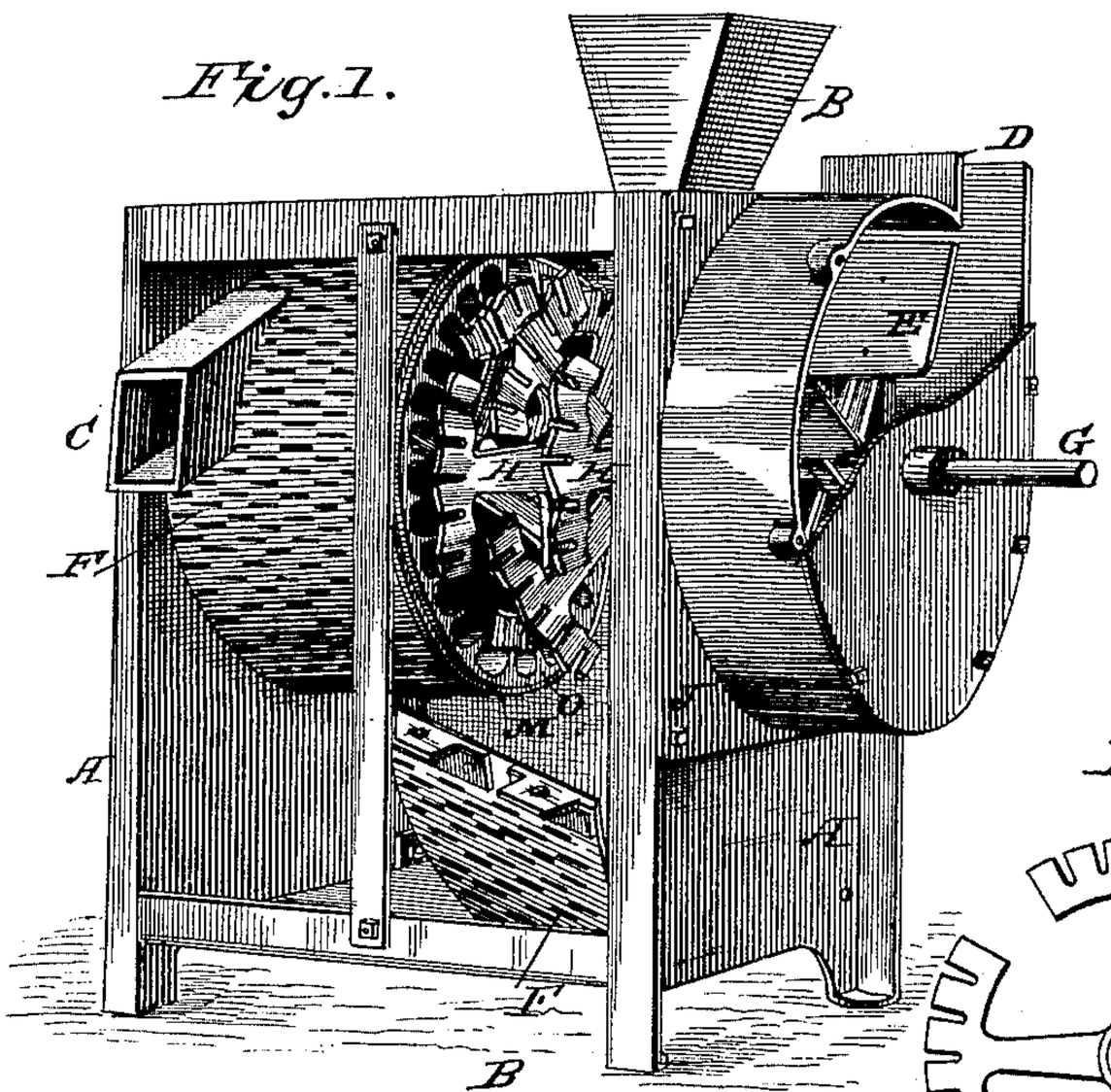


Fig. 2.

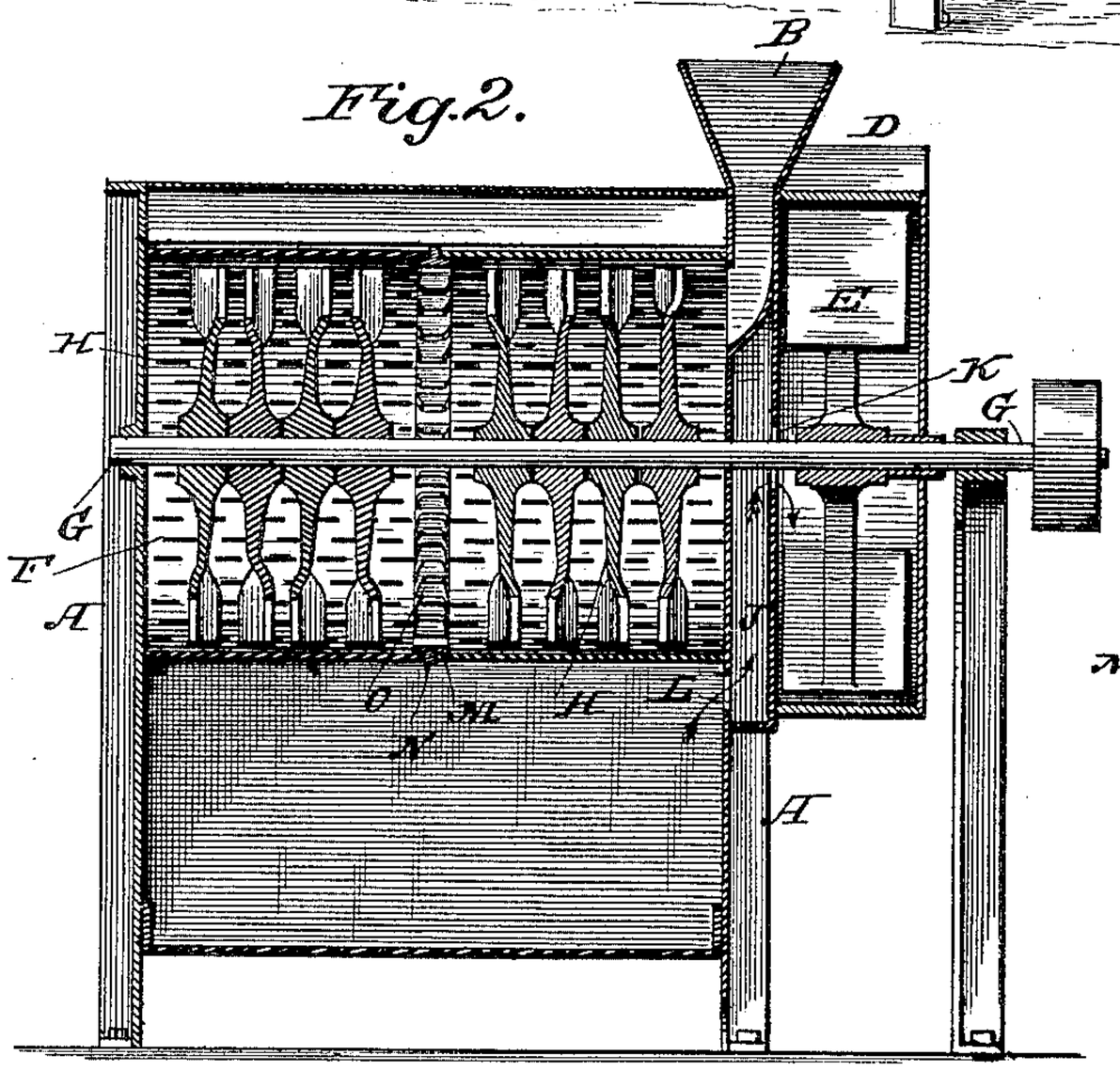


Fig. 3.

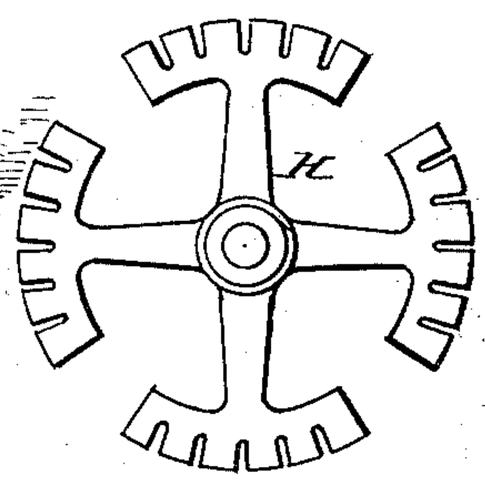
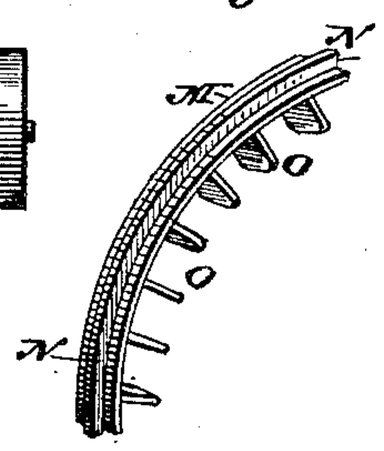


Fig. 4.



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SMUT-MILL.

SPECIFICATION forming part of Letters Patent No. 325,066, dated August 25, 1885.

Application filed June 24, 1885. (No model.)

To all whom it may concern:

Be it known that I, JACOB FITZ, a citizen of the United States, residing at Hanover, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Smut-Mills, of which the following is a description.

This invention relates to that class of mills which are used for cleansing smut from wheat and for scouring off the thin cuticle which gives the brown color to the grain. The object of the invention is, first, to violently agitate the grain to scour the kernels thereof against each other; second, to retard the progress of the grain in its passage through the mill in order that it may be thoroughly cleaned and to withdraw from the grain the dust which is the offal of the scouring process.

To this end my invention consists in the construction and combination of parts forming a smut-mill hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my smut-mill, the front of the casing and a portion of the screen-cylinder being removed to expose the interior. Fig. 2 is a longitudinal section of the same. Fig. 3 is a side elevation of one of the segmental scouring-wheels, and Fig. 4 is a perspective view of a portion of my check-ring.

A represents the frame of the machine, which is provided with closely-fitted top, bottom, sides, and ends, forming an air-tight chamber, having communication with the outer air through three apertures—to wit, the hopper B, whereby the dirty grain is admitted, the spout C, whereby the cleaned grain is discharged, and the pipe D, whereby the dust and other offal are blown away by the fan E.

F is a cylindrical case fixed within the frame and perforated to allow dust, but not grain, to escape.

G is a shaft journaled in the frame and carrying the fan E, and a series of segmental corrugated wheels, H. The fan is of any usual form, located at the end of the frame, and communicating with the dust-chamber therein through an intermediate compartment, J, by means of apertures L around the case F leading from the dust-chamber to the said compartment J, and an aperture, K, around the shaft G leading from the said compartment to the fan. Each of the wheels H is a series of segments notched in the circumference, corrugated in the plane of the wheel, and provided with radial arms connected by a hub which is mounted on the shaft G. There are two series of the wheels H on the same shaft, between which is a ring, M, having a central external flange, N, by which it is secured to the frame A and inwardly-projecting radial blades O. The case F is in sections, which are secured upon the ring at each side of the flange. In Fig. 1 a segment of one section is shown at the bottom of the frame-chamber. The hopper B communicates with the interior of the case at the end near the fan. The spout C enters the case near the opposite end.

In operation the wheat to be cleaned is poured into the hopper B, whence it runs into the case F. The shaft G, being rapidly revolved by any usual means, drives the segments of the wheels H through the grain. The corrugations and the notches, rubbing against the grain, quickly scour the sides of the kernels clean and free from the brown cuticle, and ultimately set the whole body of grain revolving. This revolving further scours the sides of the kernels, which arrange themselves longitudinally in the direction of motion; but it does not scour the ends of the kernels. The grain, continually entering at one end of the case, forces itself along through the case, aided by the revolving segments. On this account I have devised the ring M, which projects bodily a little within the case to form a slight dam against the advancing motion of the grain, and I have provided the circle of radial blades O to intercept its circular motion. By this means I interrupt the circular currents of the grain and tumble it end over end every way, thereby scouring the ends as well as the sides. The fan draws air from the chamber around the case, which must be supplied through the perforations therein, thus drawing dust not only from the

chamber around the case but also from within it, the air entering it at the hopper and spout.

There may be more than one ring M if it is found necessary.

It is not supposed that the frame A, the perforated case F therein, the segmental wheels within the case, or the fan at its end are new.

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

The combination of a cylindrical perforated case in sections, a flanged radially-bladed ring fixed between adjacent sections, and a series of segmental wheels secured within the case on a shaft journaled concentrically therewith, the sections of the case being secured upon the ring at each side of the flange thereof, and the body and blades of the ring extending inward from the circumference of the case, substantially as shown and described.

JACOB FITZ.

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