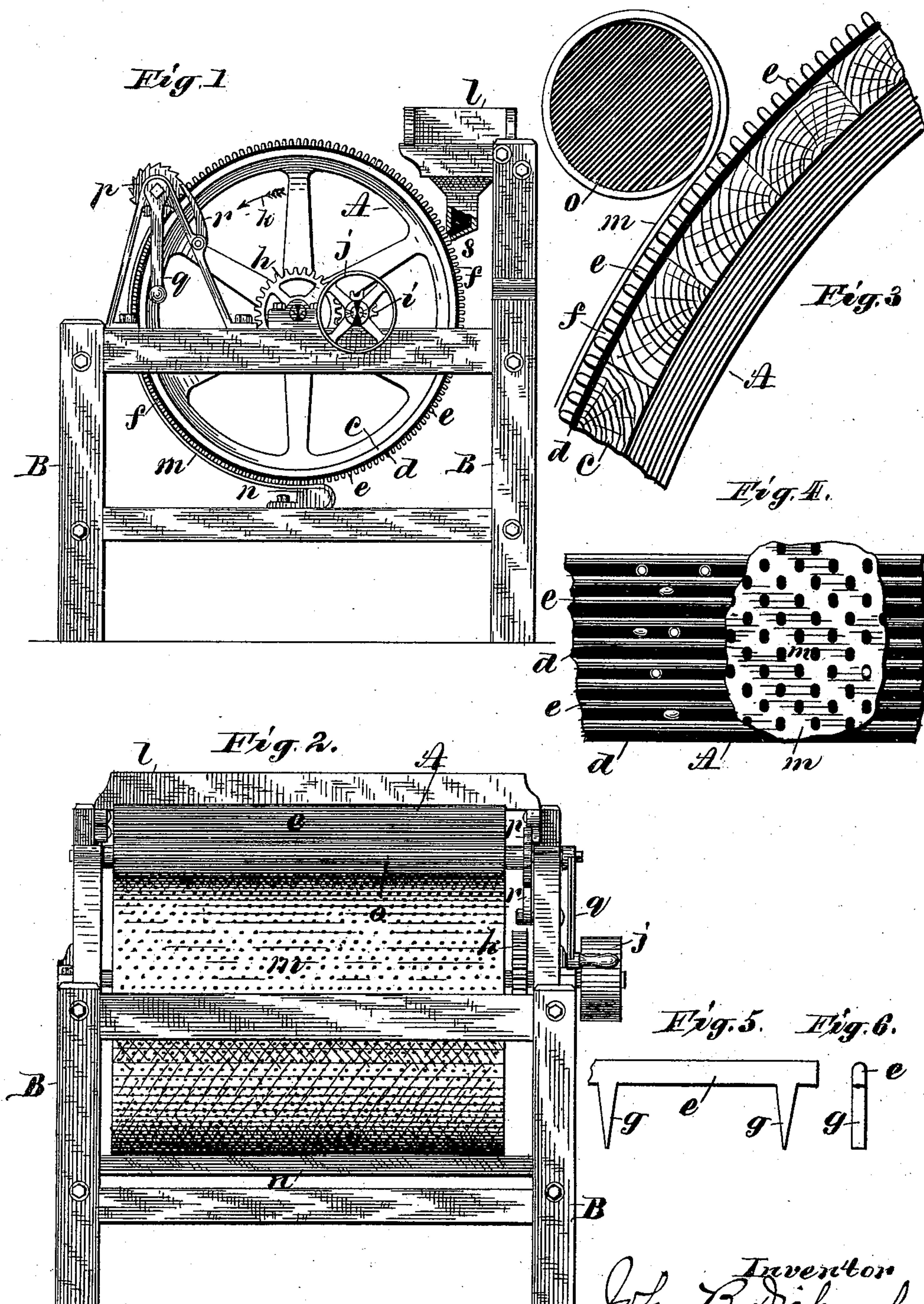


(No Model.)

J. B. DISHMAKER.  
COCKLE AND GRAIN SEPARATOR.

No. 337,051.

Patented Mar. 2, 1886.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN B. DISHMAKER, OF CARLTON, WISCONSIN.

## COCKLE AND GRAIN SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 337,051, dated March 2, 1886.

Application filed July 20, 1885. Serial No. 172,074. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. DISHMAKER, of Carlton, in the county of Kewaunee and State of Wisconsin, have invented new and useful Improvements in Cockle and Grain Separators; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention, to be hereinafter distinctly claimed, relates to that class of cockle and grain separators having a rotating cylinder, the object of my invention being to provide a more perfect means than has been heretofore known of separating cockle, small seeds, and broken kernels of grain from the larger and complete kernels of wheat or rye.

In the accompanying drawings, Figure 1 is an end elevation of my device. Fig. 2 is a side view of the same device. Fig. 3 is a cross-section of a small portion of the periphery of the cylinder and of the screen and its retaining and tightening roller. Fig. 4 is a front view of the surface of a small piece of the cylinder and the screen. Figs. 5 and 6 are details.

In my device, as shown in the drawings, the cylinder A is mounted and revolves with its axle upon the supporting-frame B. The outer shell or periphery, *c*, of this cylinder A, to make it as light and inexpensive as possible, I commonly construct of wood, over and about which is placed a sheet of rubber or other yielding material forming an elastic pad, *d*, covering the entire surface of the cylinder. To the outer surface of this cylinder I affix longitudinally outwardly-projecting bars or flanges *e e*, forming ribs parallel to each other. These ribs *e e* project outwardly from the surface of the rubber a distance about equal to the diameter of a kernel of wheat on its short axis and are so located on the cylinder with reference to each other that there is a space between them equal to the same diameter of a kernel of wheat, whereby when wheat falls upon this ribbed or corrugated surface of the cylinder the kernels will arrange themselves lengthwise within the grooves or channels *f f*, between said ribs *e e*, and will so remain until permitted to fall off the cylinder as it is ro-

tated. These ribs *e e*, for convenience of attachment to the cylinder, I preferably swage out of sheet metal in the form shown in Fig. 5, with wedge-shaped teeth *g g*—a longitudinal section of one of the teeth at right angles to the elevation in Fig. 5 is shown in Fig. 6—which are driven into the cylinder to attach the ribs thereto, but I do not wish to limit my invention to this particular method of attaching the ribs to the cylinder, as any other way would do equally well.

Rigid on the axle of the cylinder A is the spur-wheel *h*, which meshes with the spur-wheel *i*, supported on the frame B. On the axle of wheel *i* is set the band-pulley *j*, by and through which to connect my device with the driving mechanism.

For the pulley *j*, I substitute a crank-handle when the device is small and intended to be operated by hand for a limited amount of work. The cylinder A rotates in the direction indicated by the arrow *k*.

The hopper *l*, for receiving and discharging the grain and seeds on the cylinder, is located and supported on the frame B above and near to the front or upwardly-moving part of the upper half of the cylinder, and extends the entire length thereof, and is provided with a throat, *s*, opening at its side directly upon the cylinder A, and is so near to the outer edges of the ribs *e e* that no grain or seeds can escape from the hopper except such as fall into and lie within the grooves *f f* between the ribs *e e* as they pass the opening in the throat of the hopper when the cylinder revolves. The grain and seeds lying within said grooves are carried up over the top of the cylinder and down under the screen *m*. The screen *m* is a perforated sheet-metal apron, closely enveloping or covering the side and lower downwardly-revolving quarter-segment of the cylinder. The lower end of the screen is affixed to a longitudinal bar, *n*, rigid on the frame B, and the upper end of the screen is attached to a longitudinal roller, *o*, supported and having a rotating movement in bearings in brackets on said frame B. The apertures in the screen *m* are slightly elongated in the line of motion of the cylinder, and are sufficiently large to allow cockle to drop through them, but are not large enough to allow grains of wheat passing over the apertures crosswise to drop through. This



screen *m* is curved and located so as to hug closely against the outer edges of the ribs *e e* during all that part of the revolution of the cylinder that is within it, whereby kernels of wheat are, while passing the screen, retained in a horizontal position between the ribs, while cockle and small seeds drop through the apertures in the screen.

Rigid on one end of the roller *o* is a ratchet-wheel, *p*, and crank-handle, *q*, and there is a pawl, *r*, pivoted to the bracket on frame B, the free end of which takes into and engages the ratchet *p*. By means of this roller, ratchet, crank, and pawl the screen may be tightened up as desired against the ribs on the cylinder A.

The operation of this device is as follows: The cylinder A being caused to rotate slowly to the left, as indicated by the arrow *k*, while grain and cockle is discharging on it from the hopper *l*, the kernels of wheat will adjust themselves lengthwise in the grooves *f f* between the ribs *e e*, and the cockle will also lie in the grooves until the cylinder has made a part of its revolution, when, as that part of the cylinder passes below the horizontal center of the cylinder, the cockle, by gravity, dropping out of the grooves *f f*, will pass through the apertures in the screen *m*, falling upon the floor beneath, while the wheat lying lengthwise in the grooves *f f* will be retained there by the screen *m* while passing the screen, and fall out of the grooves when they have passed beyond the screen, thus separating the cockle from the wheat.

The rubber sheet *d* forms an elastic pad, which yields to the pressure of the larger kernels of wheat when forced deeper into the grooves *f f* by the screen when passing it, and thus saves the wheat from being crushed or broken by the pressure of the screen.

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

1. In a cockle or grain separator, a revolving cylinder provided with an elastic covering and grooves in its periphery, in combination with a partially-inclosing screen, substantially as set forth.

2. In a cockle and grain separator, a hopper, *l*, in combination with the rotating cylinder A, the longitudinal ribs *e e*, parallel to each other on the periphery of cylinder A, the rubber covering *d*, forming an elastic pad at the bottom of the grooves between the ribs *e e* on said cylinder, and the screen *m*, provided with elongated apertures of such size as to permit cockle and small seeds to pass through them and too small to allow the grains of wheat to pass sidewise through them, said screen being located underneath and against the cylinder, substantially as and for the purpose set forth.

3. The combination of the frame B, and cylinder A, supported and rotating thereon, the elastic covering *d*, and the ribs *e e*, with the screen *m*, affixed at one end to the bar *n* and at the other end attached to the roller *o*, and the roller *o*, provided with ratchet *p*, handle *q*, and pawl *r*, substantially as set forth.

4. In a cockle and grain separator, a hopper, *l*, extending the entire length of the cylinder, provided with a throat-opening on its side, in combination with a cylinder, A, having longitudinal grooves *f f* on its periphery, and an enveloping-screen, *m*, partly covering the surface of the cylinder, substantially as and for the purpose set forth.

5. In a cockle and grain separator, a rotating cylinder provided with longitudinal grooves in its periphery, such grooves being too narrow to allow kernels of wheat to enter them otherwise than lengthwise, in combination with a feeding-hopper above the cylinder, and a screen inclosing a part of the cylinder, which screen has apertures too narrow to permit kernels of wheat passing over it crosswise to go through them, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. DISHMAKER.

Witnesses:

FRED BACH,  
JOSEPH J. SCHULTZ.