

(No Model.)

L. GATHMANN.

2 Sheets—Sheet 1.

MACHINE FOR BRUSHING AND SCOURING GRAIN.

No. 297,782.

Patented Apr. 29, 1884.

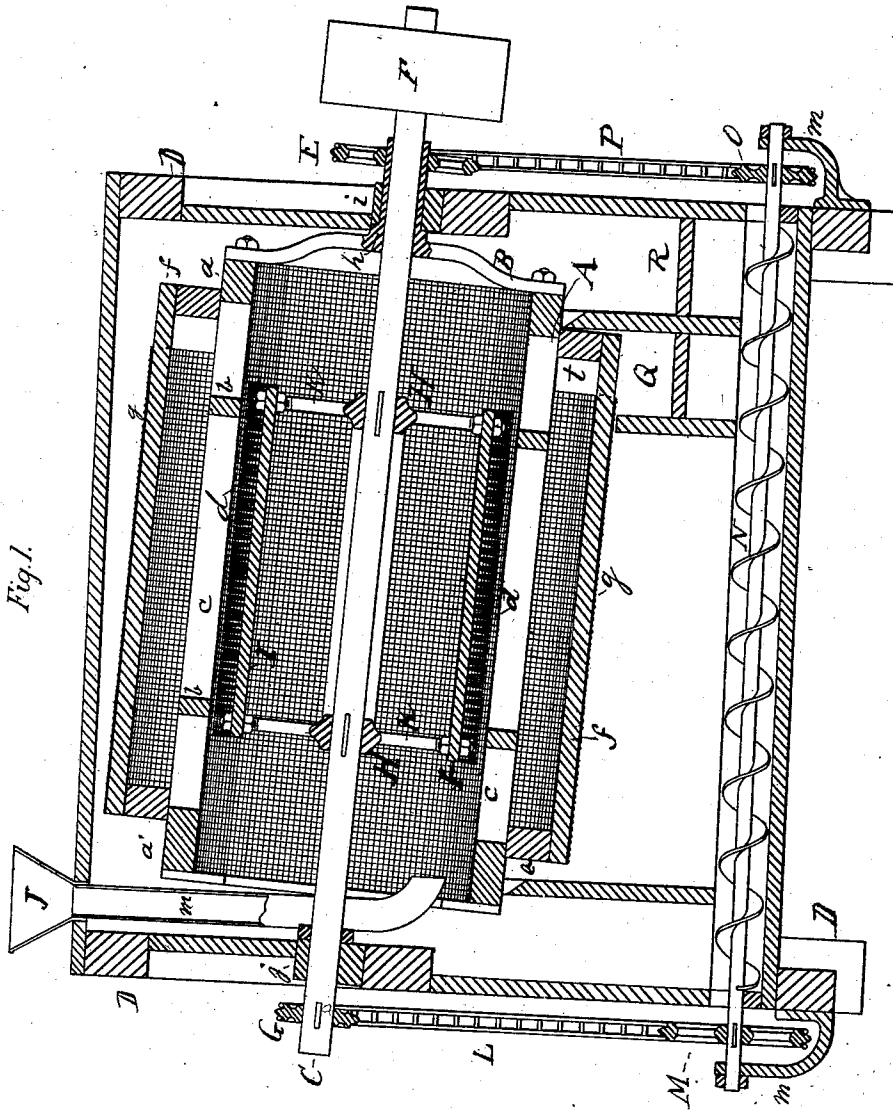


Fig. 1.

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Fig. 2.

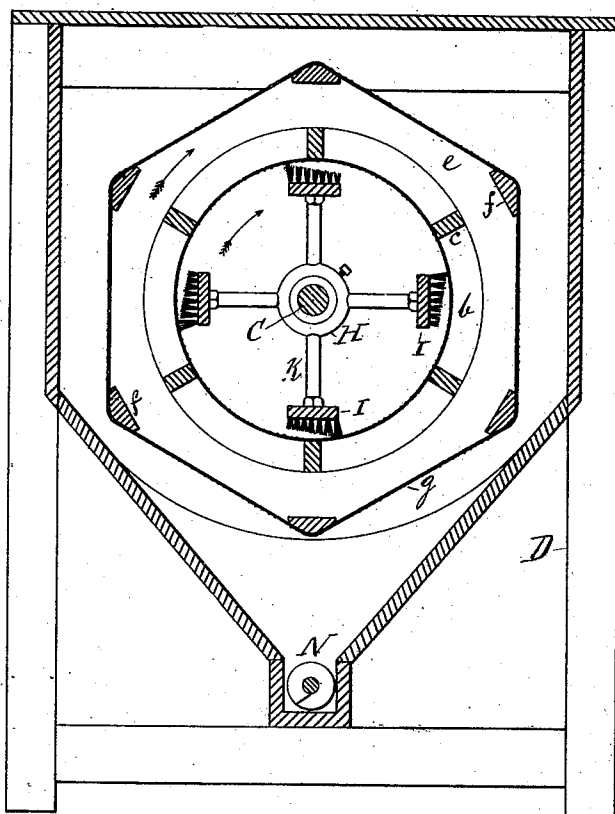
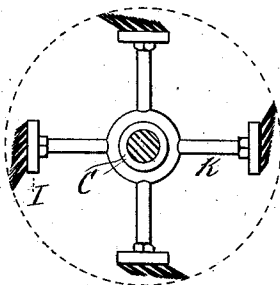


Fig. 3.



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LOUIS GATHMANN, OF CHICAGO, ILLINOIS.

MACHINE FOR BRUSHING AND SCOURING GRAIN.

SPECIFICATION forming part of Letters Patent No. 297,782, dated April 29, 1884.

Application filed December 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GATHMANN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Machines for Brushing and Scouring Grain; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of refer-
10 ence marked thereon, which form a part of this specification.

This invention relates to machines for brushing and scouring grain, and more particularly to machines for brushing, scouring, purifying,
15 and separating creased or lobated grain after the same has been split through its crease, the object and process of which being described in Letters Patent of the United States No. 250,436, that were granted to me on December
20 6, 1881.

My invention consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a longitudinal vertical section of the
25 entire machine, and Fig. 2 a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a modification of brushes at an angle.

Corresponding letters in the several figures
30 of the drawings designate like parts.

A denotes the cylinder, the skeleton frame of which is composed of end rings, $a a'$, and intermediate rings, $b b'$, connected by longitudinal ribs c . The interior of this skeleton is covered with wire screen or perforated sheet metal
35 d , jointed or lapped to form a true cylindrical surface. At a short distance from each end of the cylinder-frame are fastened hexagon-rings e , which are connected by triangular bars f ,
40 secured with their ends upon the corners of such rings e , and over these bars f are stretched sheets of bolting-cloth g .

To ring a , at one end of cylinder A, are secured the arms of a spider, B, having a hub, h , which
45 is sleeved or loosely mounted upon the main shaft C, and forms the journal that rests in box i of main frame D. A sprocket-wheel, E, is mounted upon the projecting end of hub h . The projecting portion of ring a' , at the oppo-
50 site end of cylinder A, rides and is supported

upon two or more rollers or wheels. (Not shown in the drawings.) One end of main shaft C is journaled in hub h of spider B, and its opposite end is journaled in a box, j , of frame D.

Upon the end of main shaft C, that projects
55 beyond hub h , is mounted the driving-pulley F, and upon its opposite overhanging end is mounted a sprocket-wheel, G.

Two spiders, H, are secured upon shaft C, each consisting of a hub having four round iron
60 arms, K, that are screw-threaded on their ends for adjustably securing by nuts the bars or plates I, that are provided with bristles to form the brushes. These brushes are only the
65 length of the space between rings b and b' of cylinder A, and the bristles on one edge of each bar I are longest and become shorter toward the opposite edge in such a manner that the face of each brush is on an oblique line to the
70 radial arms, and that the longer bristles of the brushes only come in close proximity with screen d . The bristles of the brushes are also set on angle, as shown in Fig. 3.

The main shaft C, as well as the cylinder A, is a little inclined to cause the grain to move
75 from one end to the other, the spider-support and driving-pulley end being the lower. On ring a' of cylinder A is secured the inwardly-projecting ring-flange l , inside of which the half-kernels of the grain are fed through a
80 spout, m , from a hopper, J. The main shaft C, which carries the brushes, and the cylinder A, are rotated in the direction indicated by the arrow in Fig. 3, the shaft C at about one
85 hundred revolutions per minute, and the cylinder A at about twenty-five revolutions per minute, the motion being transmitted to A from sprocket-wheel G on shaft C by an endless
90 chain, L, and sprocket-wheel M, that is mounted upon the end of the shaft of a screw-conveyer N, and again from a sprocket-wheel, O, mounted upon the opposite end of such screw-conveyer shaft by an endless chain, P,
95 to sprocket-wheel E, that is secured upon the hub h of spider B. By this arrangement the screw-conveyer is not only rotated itself, but also forms the intermediate or counter shaft for transmitting motion from shaft C to cylinder A. This conveyer is arranged within a trough
100 in the bottom of frame D, and is journaled in

bracket-bearings m' , bolted against the outside of frame D.

The split grain being fed into the end of cylinder A, inside of flanges l , the middlings, germs, and other small particles that become separated during the process of splitting the grain will pass through the perforations of screen d , between rings a' and b' before the half-kernels come into contact with the brushes I, and will drop through upon the bolting-cloth g . The meshes of the bolting-cloth g are to be large enough to allow the germs and other small impurities to pass through and drop into the conveyor-trough, whence they are carried off and discharged through one end of the machine. In the same manner will be discharged and carried off all dirt and impurities that are removed from the half-kernels by the brushes. The bolt-cloth g is not stretched over the entire length of bars f , but leaves an open margin, t , between its edge and the lower hexagon ring, e , through which the middlings that passed through screen d , but were too large for the meshes of the bolting-cloth, are discharged into the spout Q. The half-kernels of grain rolling down in the inclined rotating screen d will now be swept upward again and again by the brushes I, that are rotated with a greater velocity than the cylinder A, and by their peculiar oblique faces and angular positions of their bristles they will hold the grain in the wedge-shaped spaces between the bristles and the screen, and will rub and roll the several kernels against such screen until such kernels have moved beyond the brushes, thereby loosening and separating all the dirt and foreign matter that adhered to the kernels of the grain and that particularly collected in the crease of the same. After the half-kernels have been thus brushed and scoured, they have yet to pass over the portion of screen d between rings a and b of cylinder-framing A, where all im-

purities still mixed with or partly adhering to the grain will be sifted out, while the half-kernels are discharged from the lower end of cylinder A into spout R, and are now in condition for further reduction. 45

It is not essential that the main shaft and cylinder A should be inclined, since by arranging the brushes on a spiral line such cylinder can be placed horizontally and still the grain will be moved from end to end in such cylinder; or the screen d can be made conical for feeding the grain into the small end and discharging it from the larger end. 50 55

What I claim is—

1. In a wheat-brushing machine, the interior cylindrical metallic screen, d , and an exterior bolting-cloth screen, g , both applied to the one rotating frame A, in combination with the rotating brushes I, substantially as and for the purpose set forth. 60

2. In a wheat-brushing machine, the interior cylindrical screen, d , and the exterior bolting-cloth screen, g , in combination with the rotating brushes I, extending through the middle section of such screen d only, all substantially as and for the purpose set forth. 65

3. In a wheat-brushing machine, the rotating cylindrical metallic screen d and the exterior bolting-cloth screen, g , in combination with the rotating brushes I, extending through the middle section of screen d only, and the bristles of such brushes forming surfaces that are oblique to the radial lines of the screen, all substantially as described and shown, for the purpose specified. 70 75

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

LOUIS GATHMANN.

Witnesses:

LOUIS NOLTING,
R. G. SCHMID.