W. & C. CURRIER.

Wheat Scouring and Polishing Machine.

No. 235,672. Patented Dec. 21, 1880.

Fig. 1.

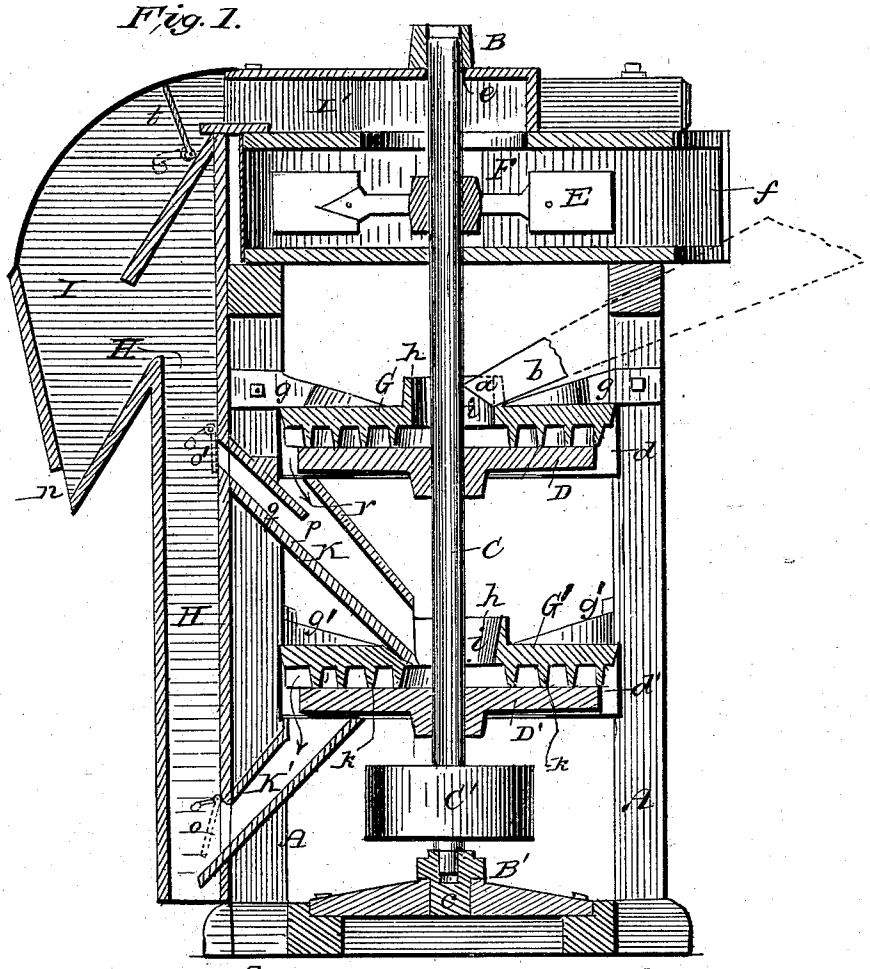
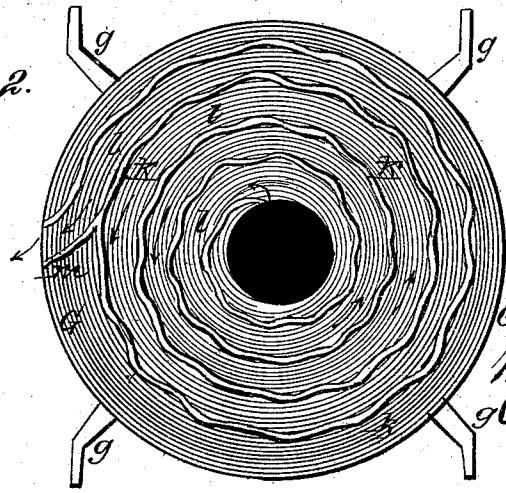


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM CURRIER AND CHARLES CURRIER, OF OSKALOOSA, IOWA.

WHEAT SCOURING AND POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 235,672, dated December 21, 1880.

Application filed February 21, 1880.

To all whom it may concern:

Be it known that we, WILLIAM CURRIER and CHARLES CURRIER, of Oskaloosa, in the county of Mahaska and State of Iowa, have invented certain new and useful Improvements in Machines for Scouring and Polishing Wheat; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a central vertical section, and Fig. 2 is a plan or face view, of the stationary scroll-disk which forms a part of our machine.

Similar letters of reference indicate corresponding parts in both the figures.

Our invention has relation to machines for scouring and polishing wheat and other cereals; and it consists in the construction and arrangement of parts of a machine adapted to cleanse the wheat effectually and quickly without at the same time abrading or bruising the bran, which generally happens in this class of machines as heretofore constructed.

In the drawings, A A is the frame or standards of the machine, which is provided with cross-pieces or bridge-trees B B′, in which the central shaft, C, is journaled. The lower end of said shaft or spindle works in a step or box, *c*, which can be raised or lowered—that is, adjusted vertically upon its bridge B′.

Upon the spindle C are keyed or otherwise firmly secured two or more circular disks, D D′, made of stone or iron, with a perfectly smooth and true upper face, and also above the uppermost of said disks a fan, E, which works in a cylindrical casing, F, in the upper part of frame A A, and is provided with an outlet or discharge-opening. Each of the disks D D′ is inclosed in a cylindrical casing, *d d′*, the top or cover of each of which is formed by an iron plate of circular shape, G G′, having radial arms *g g′*, by means of which it is bolted upon and suspended between the vertical standards of frame A. The upper face of each of said plates G has an annular flange, *h*, surrounding the central aperture, *i*, through which the spindle C is inserted, and its under side, facing the revolving disk D or D′, is cast with a downward-projecting spiral flange, *k*, or scroll of undulating or wave-line form, as represented in Fig. 2 of the drawings, which, commencing at the open center or eye of the disk, gradually unwinds itself, forming a spiral wave-line channel from the center to the periphery, where the said channel (indicated by the letter *l*) has a wall or cross-flange, *m*, which, with the flange itself, forms the mouth or opening of the said continuous spiral-formed channel *l*.

Placed upon one side of frame A is a vertical chute or duct, H, which opens up into the valve-box I, an elongation, I′, of which extends up across the fan-chamber F, and is connected therewith by the central aperture, *e*. The valve-box I has an outlet, *n*, and the chute H is connected with the upper and lower casings, *d d′*, by branch ducts K K′, which are provided with air-valves *o o′*; and the upper duct, K, is divided by a diaphragm, *p*, into two parallel conduits, (denoted, respectively, by the letters *q r*,) one of which, *q*, is the air-duct and the other, *r*, the feed-duct or conduit.

The spindle C is operated by a pulley, C′, which may either be at its upper or lower end, as convenience shall dictate.

The wheat is fed to the machine through the feed-spout *b*, and enters the upper casing, *d*, through a hopper, *a*, that forms a continuation of its central flange, *h*.

For scouring purposes we prefer to make the rotating disks D D′ of stone, and for polishing of iron; hence one of them may conveniently be made of the former and the other of the latter material in the same machine. As the disks revolve the wheat falling upon them is, by the centrifugal force, thrown against the wave-line scroll or flange *k*, which reaches down very close to the face of the revolving disk, yet without touching this, so that the grains cannot escape under the flange, but must follow the channel *l* in the direction of the arrow, causing the grains to roll and tumble against the indented sides of the channel as they pass through and against each other until they finally reach the mouth or opening, where the wheat is discharged into the casing and through the upper branch duct, K, down upon the lower disk, D′, where it undergoes a similar process. Meanwhile the dirt and dust

which has been scoured off passes underneath the flanges *k*, not following the channel out into the casing, and is drawn off by the suction-blast created by the revolving fan up into the fan-chamber F and out through its discharge spout or outlet. The blast may be regulated and directed by the valves *t o o'*. After the wheat has been operated upon by the lowermost disk and scroll in the series it is discharged through the lower open end of the vertical chute H, and is ready for the burrs.

It is obvious that instead of feeding the grain to the revolving disks from the center it may be fed from a point on the periphery, and by rotating the disks in reverse direction it is worked through the channel *l* toward the center, where it is discharged; but as by this method of operation the benefit of the centrifugal force in propelling the grain through the scroll-channel *l* is lost, we prefer to feed the grain to the scouring and polishing disks in the manner hereinbefore described.

The several disks may be easily and simultaneously adjusted in their relation to the stationary scroll-disks by means of spindle C and its adjustable step or boxing *c*.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

The combination, with the shaft C, carrying the fan E and horizontal plain-faced disks D D', of the stationary horizontal undulatory-channeled plates or disks G G', chambers *d d'*, having their bottoms provided near their peripheries with grain-discharging openings for the exit of the grain under the centrifugal action of the scouring disks or plates G G', feed-chute *b*, and oppositely-conducting chutes K K', the chute K being subdivided, with one of its subdivisions communicating with the blast-tube, substantially as shown and described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

WILLIAM CURRIER.
CHARLES CURRIER.

Witnesses:
J. D. WILSON,
B. F. MCMILLEN.