A. HOUGH.

Grain Cleaners and Scourers.

No. 158,278. Patented Dec. 29, 1874.

Fig. 1.

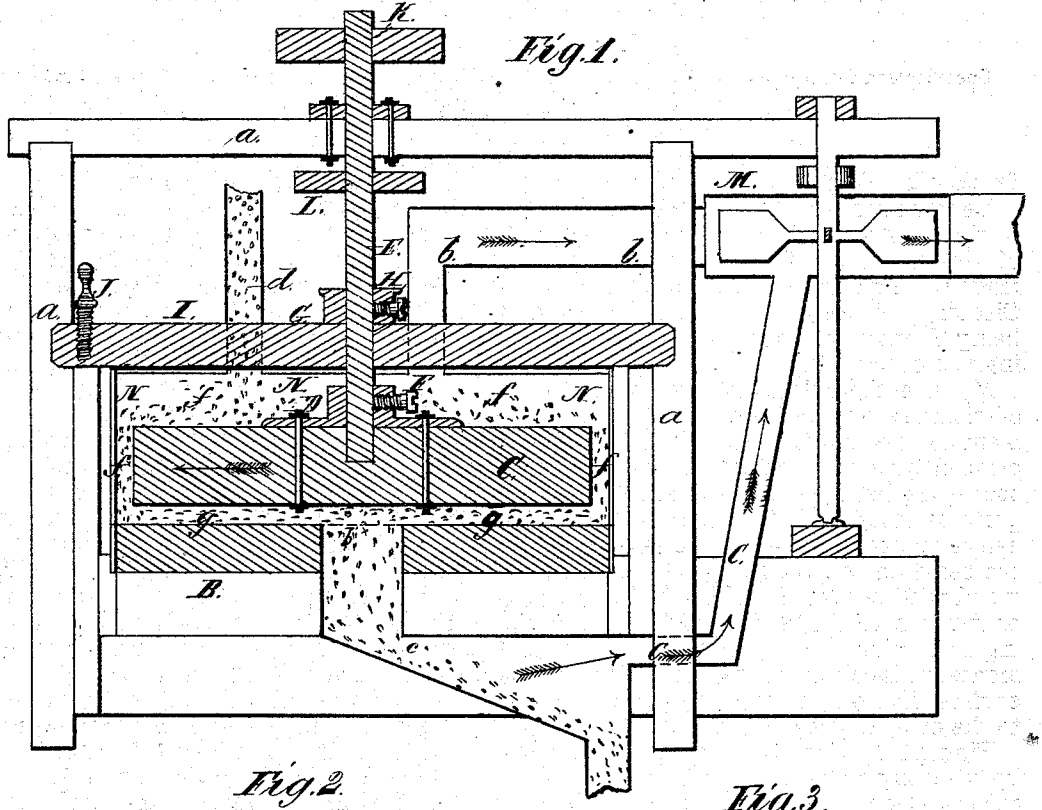


Fig. 2.

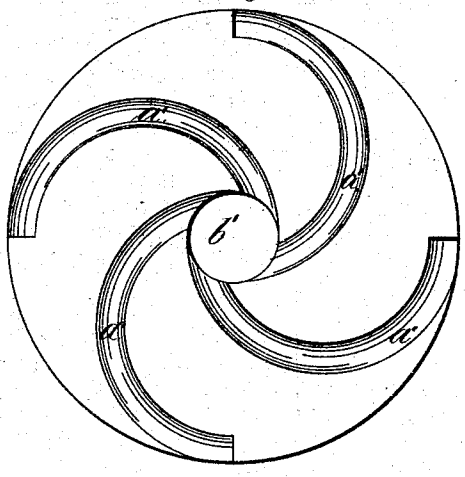
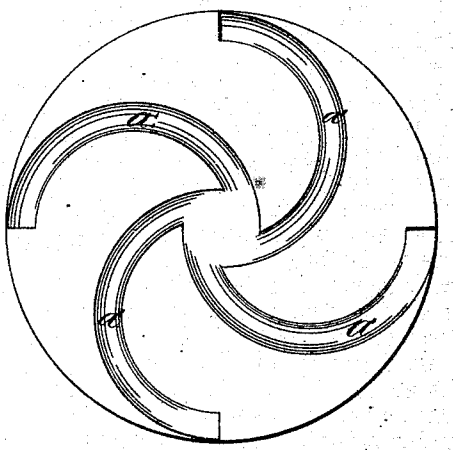


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALEXANDER HOUGH, OF BRANCHVILLE, NEW JERSEY.

IMPROVEMENT IN GRAIN CLEANERS AND SCOURERS.

Specification forming part of Letters Patent No. **158,278**, dated December 29, 1874; application filed March 24, 1874.

To all whom it may concern:

Be it known that I, ALEXANDER HOUGH, of the village of Branchville, in the county of Sussex and State of New Jersey, have made an Improvement upon an Invention for Cleaning, Scouring, and Preparing Grain for being Ground into Flour, of which the following is a specification:

My invention relates to two scouring-stones so situated and adjusted within an incasement as to admit the grain to be scoured and cleaned over the surface edges of, and into the space between, the stones, and, after the grain is scoured, discharging it through the eye or aperture in the circumference-center of the bed scouring-stone; the stones being provided with a number of half-circular grooves or furrows in the surface sides, directly facing each other. Said grooves or furrows commence in the circumference-center of the said surface sides of said scouring-stones and near to the outer edges of the same.

Figure 1 is a grain-scouring machine embodying my invention. Fig. 2 is the bed scouring-stone of said machine, with my improvement shown thereupon. Fig. 3 is the top or running-stone of said machine, with my improvement shown thereupon.

In Fig. 1, *a a a a* show sections of frame. B is the bed scouring-stone, placed in the frame on its back, presenting a horizontal face up. This horizontal face has curved grooves or furrows cut into it. These grooves begin at the outer edge of the said surface face of said stone, and run to the eye or discharging-aperture of the same. C is the top and running scouring-stone, placed over the bed-stone B, and with similar curved grooves upon its lower surface side. This stone C is placed a short distance, (say, one inch or less,) above the stone B, so as to leave an intervening space of about one inch between the grooved surface sides of said stones B and C. In this intervening space between these stones B and C the grain is admitted from between the outer edges of said stones, and is scoured and then passes out of the eye or discharging-aperture of the stone B. D is a flange-plate, bolted securely to the back or top of the scouring-stone C, and fitted to receive the spindle. E is a spindle, with pulley attached, for driving the scouring-stone C. F is a set-screw securing flange-plate D to spindle E. G is a collar-band secured on spindle E with set-screw H, immediately on bridge-tree I, to carry the weight of scouring-stone C. I is a bridge-tree above the scouring-stone, resting its ends on frame with set screw J at its end, to adjust the running-stone C. K is a pulley at the upper end of spindle E to receive the belt for running the scouring-stone C. L is a driving-pulley on spindle E, for carrying a belt to the pulley or band-wheel of suction-fan M. N N N is a sheet or plate iron hoop and case surrounding and completely incasing the outer edges of the scouring-stones B and C, and situated so far from the outer edges of said scouring-stones as to leave a sufficient passage-way for the grain to run down and enter the space *g g*, between the grooved surface sides of said stones.

The bed-stone B is made about an inch larger in diameter than the running-stone C, and the incasement N N N is intended to fit closely around the bed-stone B, in order to facilitate the entrance of the grain into the space *g g*, between said stones. *b b* is the suction-spout connecting with the case over the stones. *c c c* is the suction-spout connecting with the under side of the eye or discharging-aperture in bed-stone B. *d* is a grain-spout, admitting the grain to the scouring-stones through the top of case N N N. *f f f f* is the inclosed chamber inside the case N N N.

In Fig. 2 the drawing shows the bed scouring-stone B, with the half-circular grooves or furrows cut into it. This Fig. 2 also shows the eye or discharging-aperture in said stone. *a' a' a' a'* are the half-circular grooves or furrows in said stone. This Fig. 2 represents the stone B in its proper position, and also shows the direction and shape the curved grooves take. *b'* shows the eye or discharging-aperture in the bed-stone B. This aperture is about five inches in diameter, and is cut through the circumference-center of said stone. Through this aperture *b'* the grain is discharged after it has been scoured between the stones B and C.

The main advantage in having the discharging-aperture *b'* located in the center of bed-stone B is this: The grain is kept longer be-

tween the stones, the friction brought to bear upon the grain is longer continued, and, as a consequence, the scouring process is more thorough and perfect.

In Fig. 3 the drawing shows the face side of the running scouring-stone C, with the grooves and furrows cut into it. a' a' a' a' are the half-circular grooves in running-stone C. When the stone C is placed over the stone B, in its proper position for running, the outer ends of its half-circular grooves will traverse from opposite directions the outer ends of the half-circular grooves in bed-stone B.

The main advantage in having these half-circular grooves in the stones B and C is, to bring to bear the greatest amount of friction, and also to facilitate the passage of the grain to the discharging-aperture in bed-stone B. The main object in having these grooves of a half-circular shape, and in having the grooves in stone C, when in motion, to cross those in stone B, is to create and bring to bear on the rounded grain a rounded friction which may touch and scour every portion of the grain; also to hold and retain the grain between the stones for the longest possible time.

I claim—

The combination of the scouring-stones B C, provided with the half-circular grooves a', and discharging-aperture b', and the casing N, all constructed and arranged to operate substantially in the manner and for the purpose specified.

ALEX. HOUGH.

Witnesses:

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