S. C. McMASTER.

BRAN SCOURING-MACHINE.

No. 182,841. Patented Oct. 3, 1876.

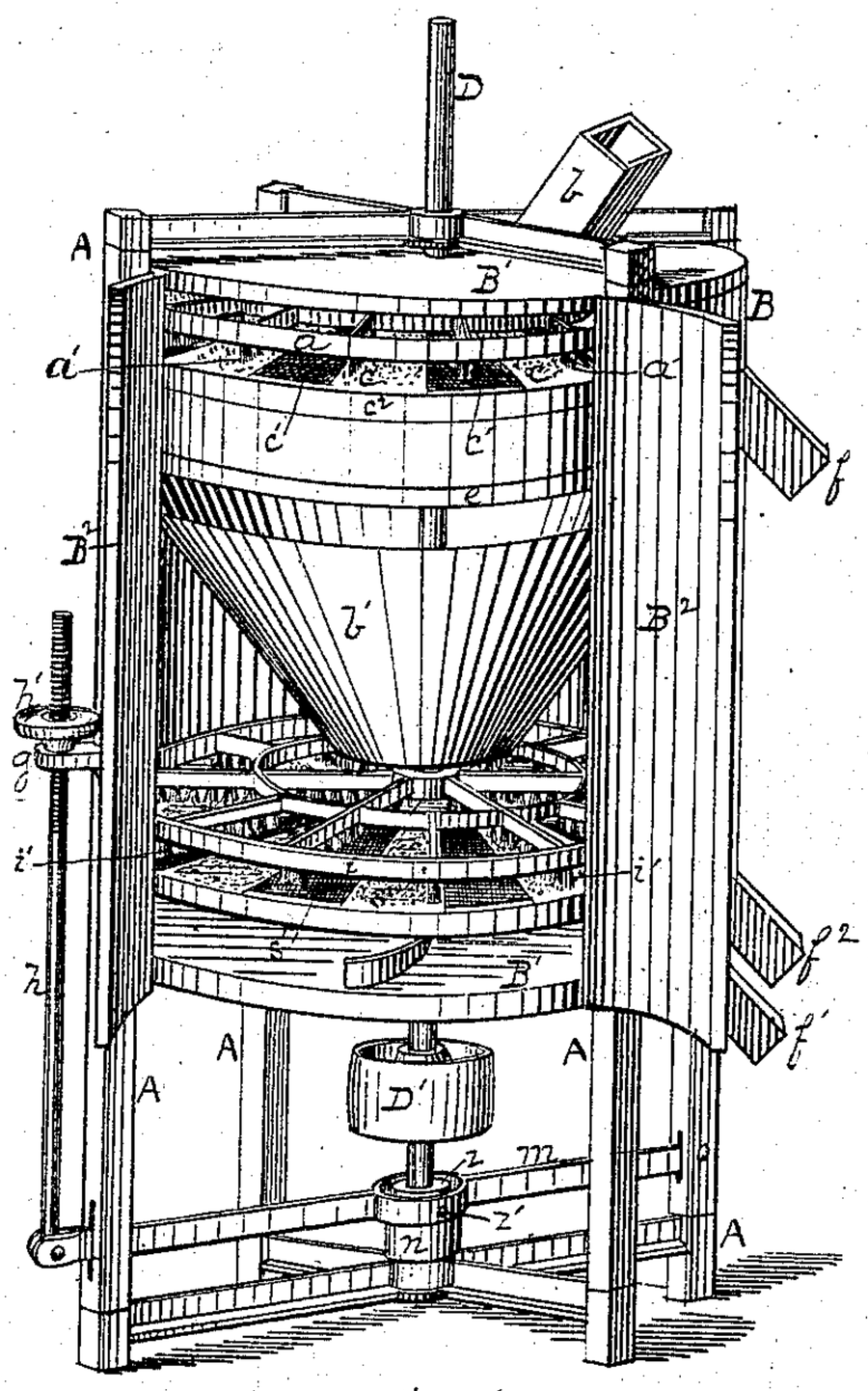

Fig. 1.

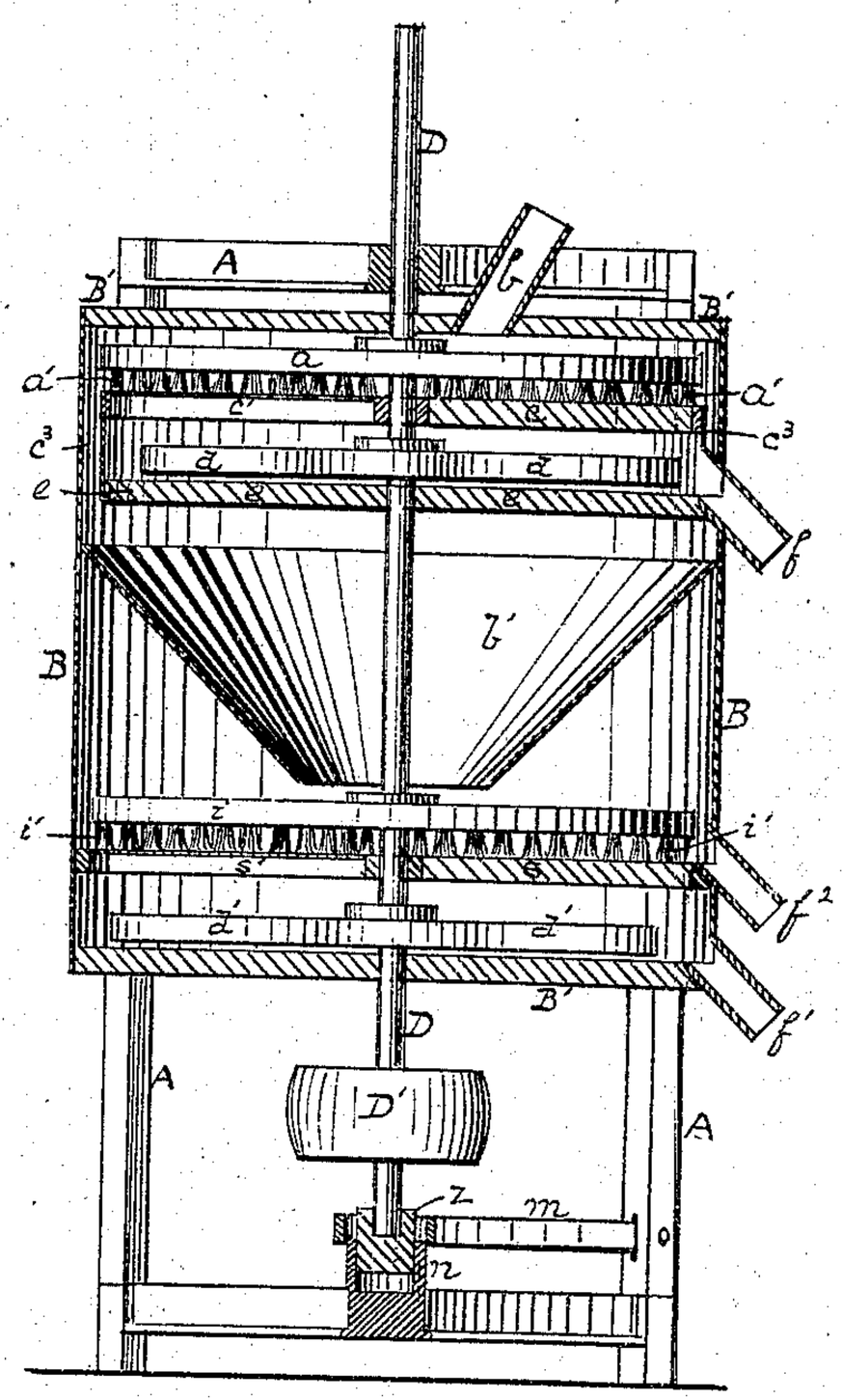

Fig. 2.

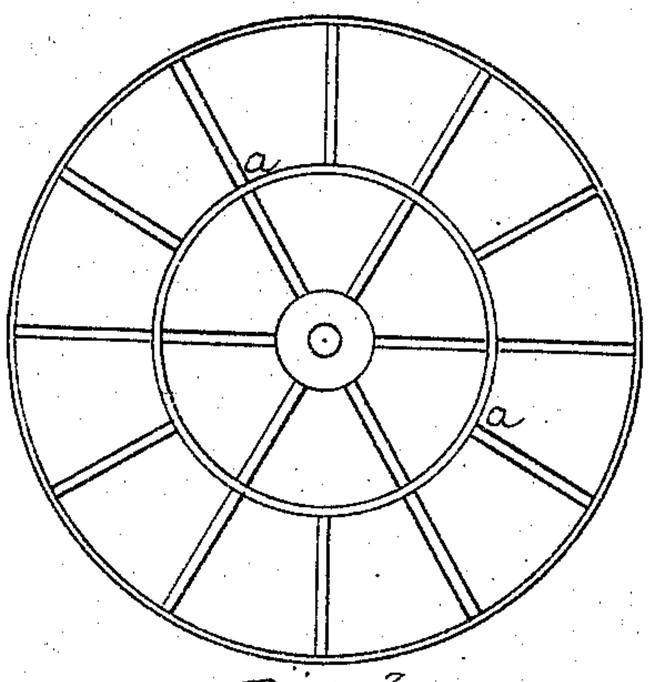

Fig. 3.

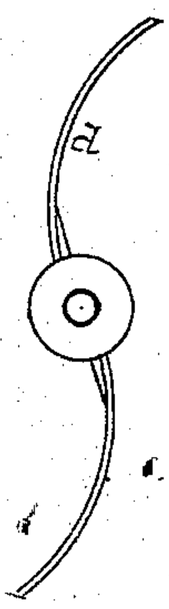

Fig. 5.

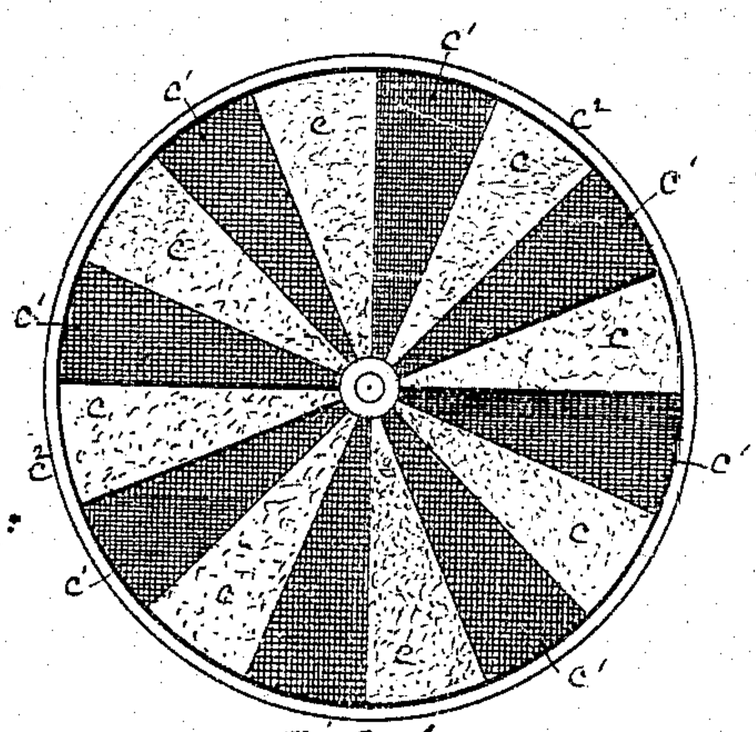

Fig. 4.

Witnesses
Robt. Ahrens
Claudius L. Parker

Inventor: Samuel C. McMaster,
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UNITED STATES PATENT OFFICE.

SAMUEL C. McMASTER, OF SEWICKLY, PENNSYLVANIA.

IMPROVEMENT IN BRAN-SCOURING MACHINES.

Specification forming part of Letters Patent No. **182,841,** dated October 3, 1876; application filed July 12, 1876.

To all whom it may concern:

Be it known that I, SAMUEL C. McMASTER, of Sewickly borough, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Bran Duster and Scourer; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a side view, in perspective, of my improved machine, with the side doors of the case open, the better to show its internal structure. Fig. 2 is a vertical sectional view thereof; and Figs. 3, 4, and 5 are views of detached parts, presently to be explained.

In milling operations, it is well known that portions of the nutritive and useful properties of the grain adhere to the bran with great tenacity. My improved machine is designed to effect the removal from the bran of such adhering properties, and the permanent separation of the same from the bran.

The frame A is of any suitable construction. It supports a case composed of a cylindrical part, B, and end disks B^1. This case may be made to open on one side, by means of doors B^2, for convenience of access to the inside for cleaning or repairs. The driving-spindle D passes vertically through the axial line of the case, and turns in suitable bearings in the disk B^1. Power is communicated to the spindle by a band-wheel, D′, or in other suitable way. A hopper or chute, *b*, for feeding the bran in, passes through the upper-end disk near its center. Just beneath this upper-end disk, and attached to the spindle D, is an open skeleton or spider frame, *a*, more fully represented in Fig. 3, on the under side of which is radially arranged a series of brushes, *a′*, in any desired number, which play on or in convenient proximity to the fixed or non-rotating combined scouring and sifting bed *c* c^1, more fully represented in Fig. 4. This bed is composed of radial sections of emery or sandstone blocks *c*, alternating with wire-cloth sections c^1, supported in any suitable frame, c^2. The bran when fed in at the chute *b* drops onto the bed *c* c^1, where it is acted on by the revolving brushes *a′*, so that in passing over the emery sections *c* it shall be scoured, and the finer qualities of the ground product loosened or detached therefrom, and, also, so that in passing over the wire sections c^1 such finer products shall be sifted through such wire sections, and so separated from the bran. These wire sections should be of the proper fineness of wire and mesh, such being well known in the art in other modes of use for kindred purposes.

The bran, by the centrifugal action of the brushes, is, after being scoured, dropped over the outer periphery of the bed *c* c^1, outside of which it passes down the annular space c^3, and is received and gathered to the center again by a hopper, *b′*. The finer particles of the grain, after passing through the wire sections c^1, are caught by a flat circular table, *e*, fixed in position, and over which a scraper, *d*, revolving with the shaft D, operates to discharge such fine flour, or other properties, laterally out of the machine by one or more chutes, *f*. The form of the scraper *d* is more fully shown in Fig. 5. The bran descending in the hopper *b′* is discharged onto a second scouring and sifting bed, *s s′*, similar in all material respects to that represented in Fig. 4, and already described. Here it is again subjected to the scouring and sifting operations above set forth by means of brushes *i′*, attached to a frame, *i*, similar to that shown in Fig. 3, and already described. The finer parts so scoured off and sifted through are gathered on the lower disk B^1, and by a scraper, *d′*, are discharged at the chute f^1. The bran is thrown off circumferentially, and is either dropped down an annular passage, as before, into another hopper, similar to that shown at *b′*, with a repetition, by a further duplication of the scouring and sifting devices of the operation described; or, if the bran is sufficiently scoured, it is forced out by the chute f^2.

In order to vary the adjustment of the brushes with reference to the beds below, I arrange the lower end of the shaft D in a movable step, *z*, and, by trunnions *z′* on its opposite sides, rest this step in a lever, *m*, and guide it vertically by causing its projecting lower end to move in a socket, *g*, both being accurately centered. One end of the lever *m*

is pivoted to the frame of the machine, and the other end is attached to a stem, *h*, which, passing through a lug, *g*, is adjusted up and down at pleasure by a screw-nut, *h'*.

Such changes in the apparatus described as do not materially change the mode of operation set forth may be made, as, for example, causing the scouring and sifting beds to rotate while the brushes remain stationary, or causing the brushes to revolve in one direction and the bed in the other. For the emery sections any fine-grained silicious stone may be substituted, or other suitable material having a like effect; also, the amount of brush-surface may be increased at pleasure; and the operative surfaces of the scouring and sifting beds may, perhaps, be made with their centers slightly raised above or depressed below the peripheries; and in describing them as horizontal I do not limit myself to a position mathematically horizontal, but use that term to distinguish them from scouring and sifting surfaces arranged vertically in the side walls of the case. It will be observed that the wire-cloth and emery sections extend each from the spindle radially outward, so that at all points, from the receiving-point to the periphery, the bran is subjected to both a scouring and sifting operation.

I claim herein as my invention—

In a bran dusting and scouring machine, a horizontal scouring and sifting bed, composed of alternate segments of wire-cloth and emery, or its described equivalent, extending radially from the spindle outward, in combination with a horizontal brush working thereon, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SAMUEL C. McMASTER.

Witnesses:

GEO. F. RUDISILL,

GEORGE H. CHRISTY.