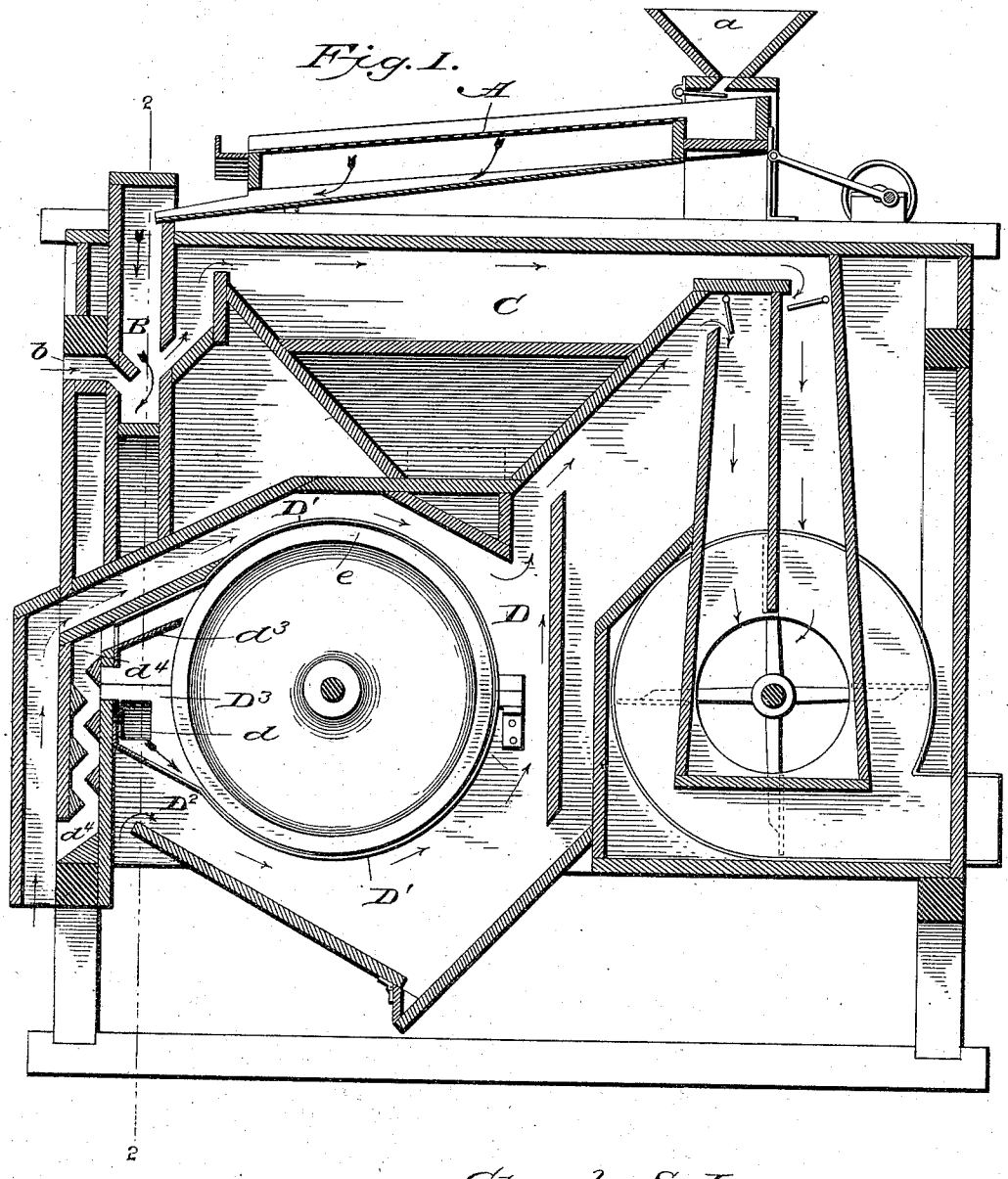
(No Model.) 2 Sheets—Sheet 1.

C. S. JACKSON.

GRAIN CLEANING AND SCOURING MACHINE.

No. 559,332. Patented Apr. 28, 1896.

Fig. 1.



Witnesses
L. S. Elliott.
C. F. Johnson.

Charles S. Jackson,
Inventor

by [illegible]
Attorney

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

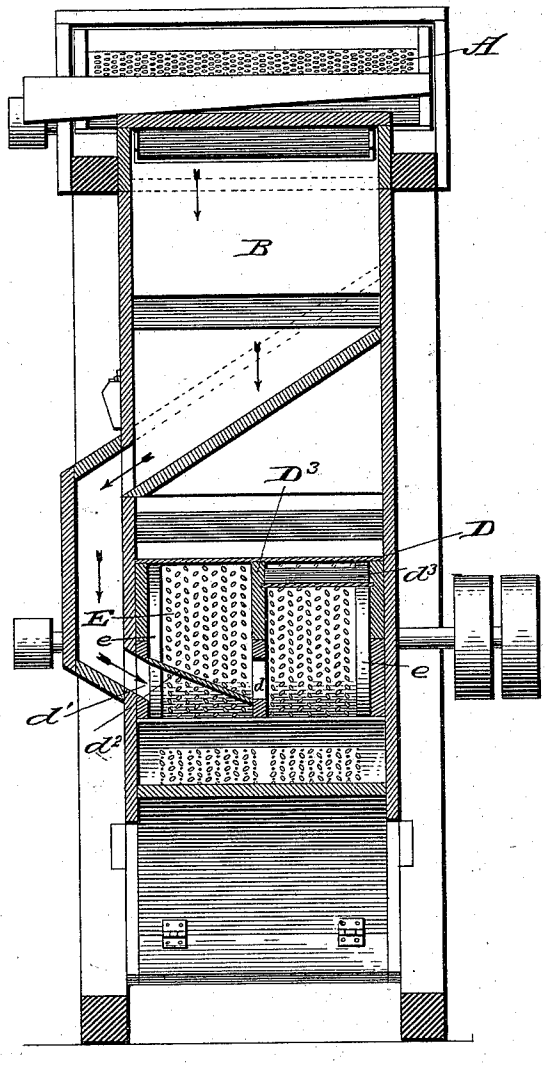


Fig. 3.

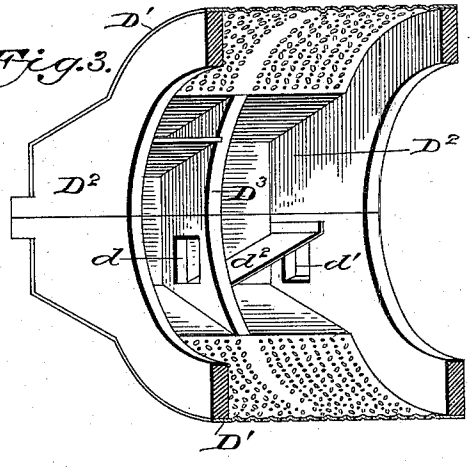
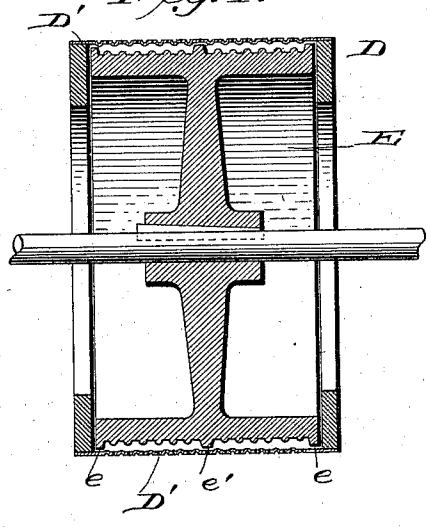


Fig. 4.



Charles S. Jackson
INVENTOR

WITNESSES
G. S. Elliott.
E. M. Johnson

by [signature]
Attorney

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

CHARLES S. JACKSON, OF PAULDING, OHIO, ASSIGNOR OF ONE-HALF TO JAMES M. NEER, OF WESTERVILLE, OHIO.

GRAIN CLEANING AND SCOURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,332, dated April 28, 1896.

Application filed January 25, 1895. Renewed March 26, 1896. Serial No. 585,018. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. JACKSON, a citizen of the United States of America, residing at Paulding, in the county of Paulding and State of Ohio, have invented certain new and useful Improvements in Grain Cleaning and Scouring Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same; reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a simple and compact machine which is adapted to separate impurities from the grain and then thoroughly scour or clean the same; and it consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claim.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical sectional view of a grain cleaning and scouring machine constructed in accordance with my invention. Fig. 2 is a vertical sectional view on the line 2 2 of Fig. 1. Fig. 3 is a sectional perspective view of the casing which contains the cylinder, and Fig. 4 is a sectional view through the cylinder and casing.

a designates the feed-hopper, in which the grain is placed to be fed upon the riddle or screens A, the grain passing from said riddle into a chute B, where it passes through a draft or blast of air, which enters at an opening *b*, being drawn by the action of a fan of ordinary construction. The light particles are separated from the grain by the draft and are collected in the chamber C. The grain after being subjected to the draft is conducted to the scouring-case D, the arrangement of the passage and travel of the grain being fully shown in Figs. 1 and 2 of the drawings.

The scouring-case D is made up of side pieces, to the outer edges of which is secured a sheet-metal plate D′, the inner side of which is provided with a suitable scouring-surface, which may consist of projections formed on or stamped from the sheet metal. The sides of the casing are provided with extensions D^2, between which and parallel therewith is a partition D^3, the partition having an opening *d*, which is substantially on a line with an opening *d′* in the extension of one of the side pieces of the casing. Above the opening *d′* is secured one end of a plate d^2, which inclines downwardly and is secured at its other end to the partition D^3 beneath the opening *d*, and on the other side of the partition is a plate d^3, which is secured between the partition and side piece of the casing above the opening *d* and inclines downwardly to form a passage or way to an opening d^4, which leads into a chute through which the scoured grain falls, and is subjected to an induced draft of air.

The cylindrical portion of the casing is not only provided with projections or indentations which assist in scouring the grain, but it is also perforated to allow substances which are separated from the grain to pass through the casing into a dust-chamber beneath.

The scouring-cylinder E is provided with a suitable scouring-surface, preferably projections formed on metal strips, and this cylinder is mounted within the casing on a suitable shaft and is provided with annular projections *e e′* on its circumference, the edges of which are located near the sheet-metal plate D′, forming the scouring-surface of the casing.

The arrangement of the wind-trunks and passages for the grain are fully illustrated and will be readily understood by those skilled in the art when it is borne in mind that the light arrows indicate the directions of the induced air-currents and the dark arrows the travel of the grain.

For a full understanding of this invention it will only be necessary in describing the operation to refer to the grain after it enters the casing D from the chute B. The grain enters the casing through the opening *d′* in one side thereof and is fed between the scouring-surfaces of the cylinder and casing, by which it is carried around in the process of scouring until it reaches the inclined plate d^2, upon which it falls and is led into the next section of the casing through the opening *d*, where it is again carried around the scouring-surface of the casing and is caught by the inclined

plate d^3, from which it passes out of the opening d^4 into the discharge spout or chute.

Though in the accompanying drawings I have shown the cylinder divided into only two sections it is obvious it may be provided with a greater number of sections and the extended portion of the casing correspondingly divided.

As far as I am aware heretofore the grain has been fed from one end of the cylinder to the other by worms or inclined surfaces, but this method is objectionable for many reasons, among which may be mentioned that the grains are used to a greater or less extent to scour themselves, the space between the casing and cylinder being excessive, so that the grains are scoured more by rubbing against each other than by being acted upon by the metallic scouring-surfaces, and with such devices a greater or less amount of the grain escapes being acted upon. With my improvement it is intended to have the scouring-cylinder and scouring-surface of the casing in close proximity to each other and thereby insure each grain being properly scoured.

Another advantage of the construction set forth is that the scouring-surfaces may be straight and in strips, so that repairs can be readily made, and should one part of the scouring-surface become worn it can be readily replaced without entirely renewing the casing or cylinder. It may also be mentioned that the grain has an opportunity to cool in leaving one section of the casing and entering the other.

The casing D is preferably made in two parts, as shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grain cleaning and scouring machine, the combination, of a scouring-case provided with a projecting portion having a partition, and guide-plates arranged on opposite sides of the partition, one of the guide-plates being positioned above an inlet-opening in one of the side pieces of the scouring-case and extending to a point beneath an opening in the partition, together with a scouring cylinder or drum, substantially as shown.

2. In a grain cleaning and scouring machine, the combination, of a scouring-case provided with a projecting portion with openings for the inlet and outlet of the grain, a partition dividing the projecting portion of the casing into sections, and provided with an opening at its lower end, and a plate extending from above one of the openings in the casing to below the opening in the partition, substantially as shown and for the purpose set forth.

3. In a grain cleaning and scouring machine, the combination, of a horizontal scouring-case having a scouring-surface which does not extend entirely around the scouring-drum, to present an extension of the case, one side of the extension having an inlet-opening therein, a partition, or partitions, dividing said extension into chambers or sections, and provided with an opening in its lower end, a plate inclining from above the inlet-opening, to beneath the opening in the partition, and a plate on the other side of the partition above the opening therein and leading to an outlet-opening through the casing, the parts being organized substantially as shown whereby the grain is carried around one part of a cylinder deposited on the plate so as to pass through the opening in the partition and be acted upon by another part of the cylinder and so on until deposited on a plate from which it passes to the discharge-opening, substantially as shown.

4. In a grain-scourer, the combination, of a casing constructed substantially as shown to present an extension divided by a partition, or partitions, the extension having inlet and outlet openings and the partition an opening at its lower end, a deflector-plate inclining from above the inlet-opening to beneath the opening in the partition, and a scouring drum or cylinder having a circumferential projection on a line with the partition, substantially as shown, whereby the grain is led while being acted upon to different sections of the cylinder in succession, for the purpose set forth.

5. In a grain-scourer, the combination, of a scouring-case having a chamber or projecting portion with inlet and outlet openings, a partition dividing the chamber into compartments and inclined plates located in the compartments, one extending from above the inlet-opening to below the opening in the partition and the other leading to the outlet-opening, together with a scouring drum or cylinder having a circumferential projection on a line with the partition and similar projections at each edge, substantially as set forth.

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

CHARLES S. JACKSON.

Witnesses:
FLOYD ATWILL,
O. K. DICKINSON.