

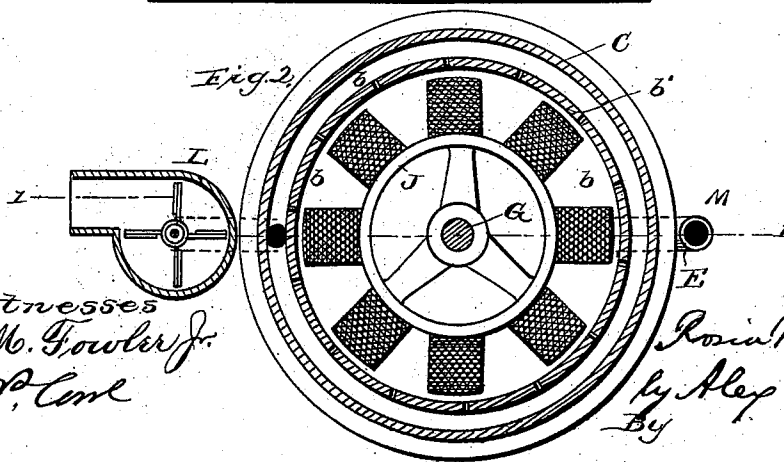
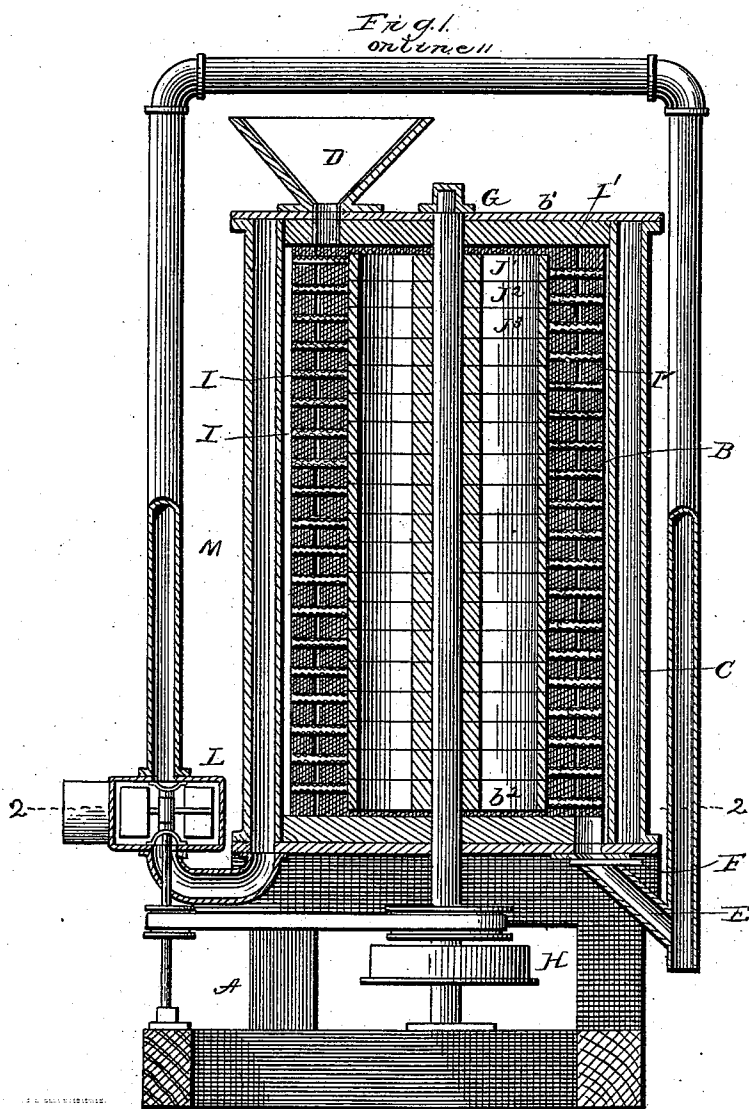
(No Model.)

2 Sheets—Sheet 1.

R. W. WELCH.
GRAIN SCOURING MACHINE.

No. 528,405.

Patented Oct. 30, 1894.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

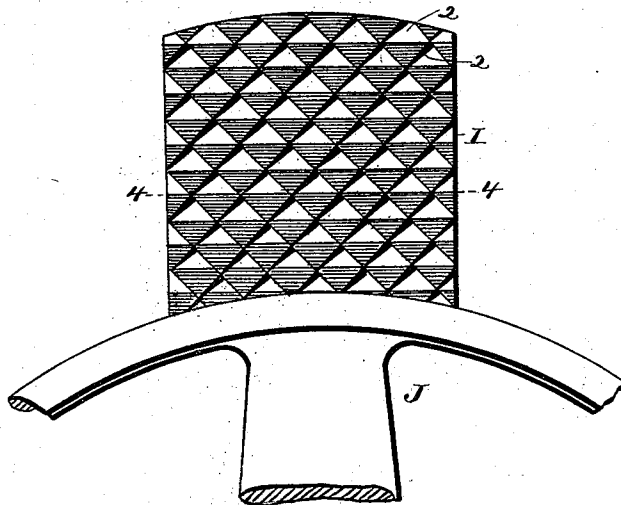
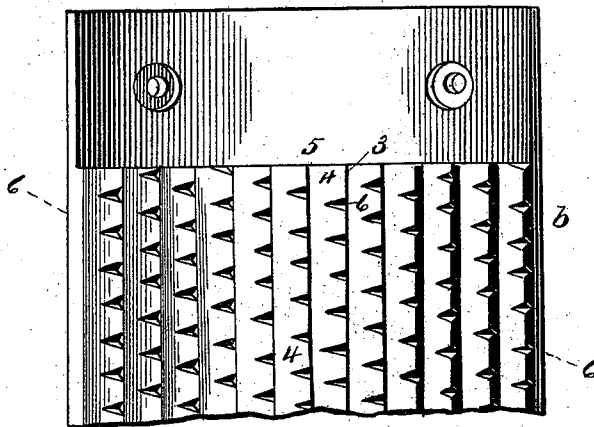


Fig. 4.
on line 4, 4

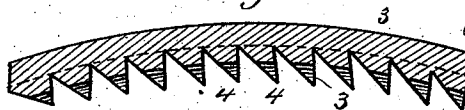


Fig. 5



on line 6, 6

Fig. 6



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UNITED STATES PATENT OFFICE.

ROSIA W. WELCH, OF BALTIMORE, MARYLAND, ASSIGNOR TO JOSEPH S. TAYLOR, OF SAME PLACE.

GRAIN-SCOURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 528,405, dated October 30, 1894.

Application filed January 13, 1894. Serial No. 496,831. (No model.)

To all whom it may concern:

Be it known that I, ROSIA W. WELCH, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Grain-Scouring Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of machines for cleaning and scouring wheat, rice, and other grains, embodying an upright cylinder and a series of internal agitating blades.

The present invention consists, first, in the peculiar formation of the interior of the cylinder; second, in the combination therewith of agitating blades of peculiar formation, and, third, in the details of construction and combination of parts hereinafter described.

In the accompanying drawings,—Figure 1 is a vertical longitudinal section through a machine embodying my invention on the line 1—1 of Fig. 2. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a top plan view of a portion of the scourer blades. Fig. 4 is a vertical cross-section through the same on the line 4—4. Fig. 5 is an elevation of the inner surface of one of the sections composing the upright cylinder. Fig. 6 is a horizontal section through the same on the line 6—6.

Referring to the drawings,—A represents a frame which may be of any form or material adapted to sustain the operative parts of the machine hereinafter described.

B represents an upright cylinder sustained by the frame, the construction of which will be more fully described hereinafter.

C represents a fixed jacket surrounding the cylinder in such manner as to leave between them a space closed at the top and bottom.

D represents the hopper delivering the grain into the top of the cylinder, and E, a discharge spout for the escape of the cleansed grain at the bottom of the cylinder. This discharge spout is provided with a gate F for regulating the escape of the grain and the consequent duration of the scouring action to which it is subjected in the cylinder.

G represents a shaft extended centrally

through the cylinder and mounted in suitable bearings in the top of the casing and in the frame. At its lower end this shaft is provided with a driving pulley H by which motion is imparted to the shaft from any suitable source.

I, I', &c., represent a series of scouring blades projecting alternately from the upper and lower edges of a series of hubs J, J', &c., fixed one upon the other on the shaft G, the arrangement being such that the blades on each succeeding hub will cover the space between those on the preceding hub. These blades have their upper and lower surfaces peculiarly formed so that they present a series of teeth each having an upright active face 1, standing in the direction of rotation, the upper surfaces 2 of the same inclining backward and outward, as clearly shown in the several figures.

The cylinder B consists of a series of upright plates *b*, preferably of sheet metal, secured at their upper and lower ends to disks *b'*, *b''* fixed respectively at the top and bottom of the casing. These strips are placed a slight distance apart, so that a series of vertical openings will be formed in the cylinder for the escape of dust and other foreign objects. The inner faces of the plates composing the cylinder are provided with teeth adapted to act with a scouring effect on the grain which is thrown outward against the same by the rotation of the blades. Each tooth is formed with a vertical active face 3, and has its upper surface 4 flat and inclined backward and downward, and its sides 5 and 6 sloping downward and outward, as shown.

An exhaust fan L is mounted on the side of the machine and communicates with the air space surrounding the cylinder and also through trunk M with the discharge spout.

In operating the machine, the grain is fed through the hopper D, into the cylinder, and the blades rotated at a high rate of speed. By centrifugal force the grain is thrown outward by the blades and forced against the toothed surface of the cylinder, which acts to cleanse and polish the same in an effective manner. In addition to the scouring action of the cylinder, the grain is subjected to a further cleansing action by the upper and lower

roughened faces of the blades, so that three scouring surfaces act on the grain.

It is to be understood that I do not confine myself to the use of the toothed cylinder in connection with any particular form of blade, as any blade or agitator may be employed which will cause the grain to be thrown out and forced against the cylinder. It has been found that owing to the peculiar formation of the teeth on the cylinder and on the blades that the grain will be thoroughly cleansed and a high polish imparted thereto.

Having thus described my invention, what I claim is—

1. In a grain scourer, the combination with the fixed vertical cylinder adapted to receive the grain, and provided with vertical rows of teeth having the upright active forward faces and downwardly inclined upper surfaces, of means for forcing the grain forward against the vertical faces of the teeth.

2. In a grain scourer, the combination with the fixed vertical cylinder provided with vertical rows of teeth having upright forward active faces, backwardly-inclined upper faces

and downwardly and outwardly inclined sides, of means for forcing the grain outward against the vertical faces of the teeth.

3. In a grain scouring machine, the combination with the vertical cylinder adapted to receive the grain, of the series of rotating scouring blades provided with teeth formed with upright angular faces standing in the direction of rotation, and inclining backwardly and away from the line of rotation.

4. In a grain scouring machine, the combination with a cylinder having its inner surfaces provided with teeth formed with upright active faces, of the rotating scouring blades having teeth formed with upright active faces standing in the direction of rotation and adapted to force the grain against the active faces of the teeth of the cylinder.

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

ROSIA W. WELCH.

Witnesses:

THOS. KELL BRADFORD,
LEE PURCELL.