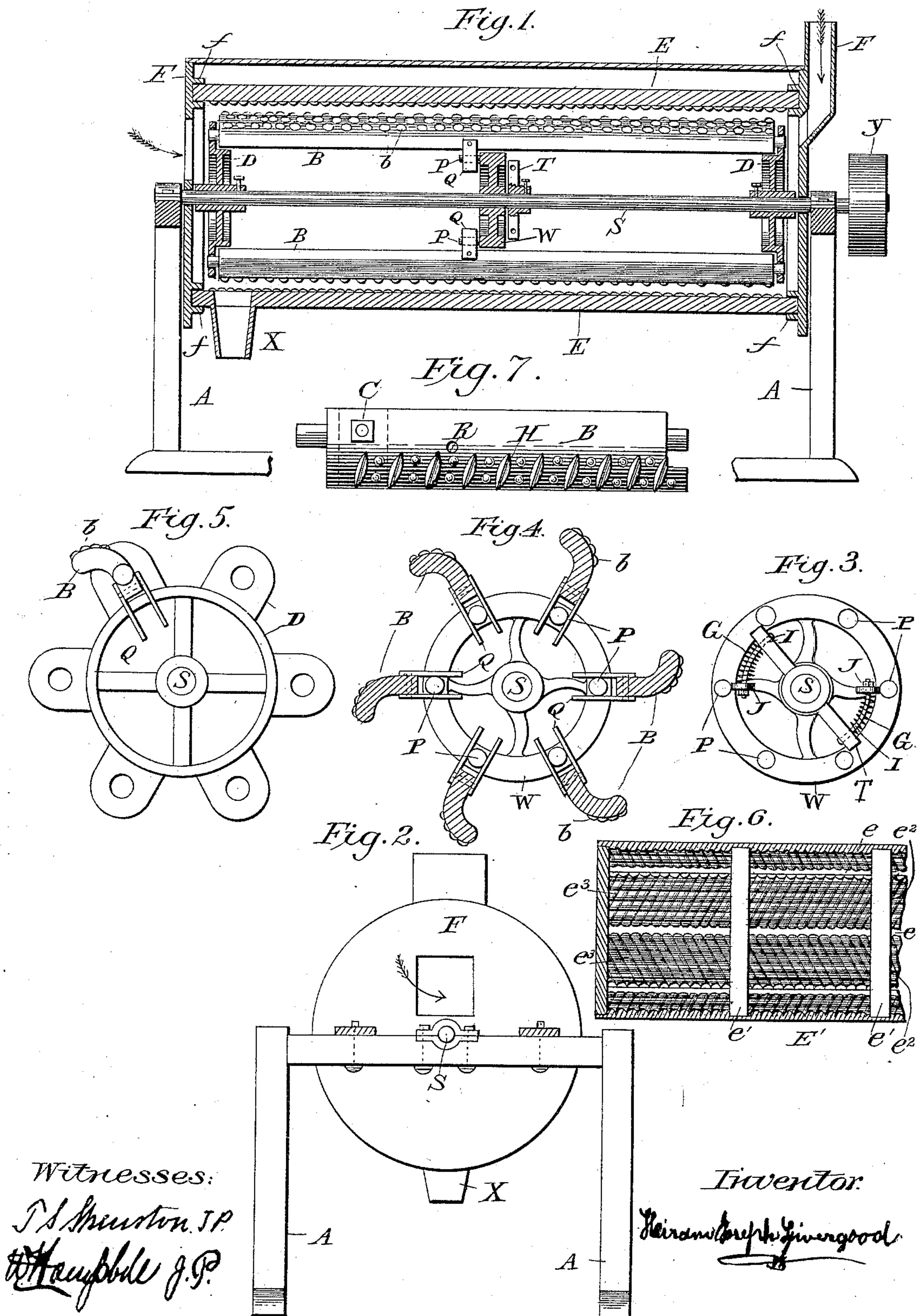


(No Model.)

H. J. LIVERGOOD.
WHEAT SCOURING MACHINE.

No. 427,585.

Patented May 13, 1890.



UNITED STATES PATENT OFFICE.

HIRAM JOSEPH LIVERGOOD, OF BRANTFORD, ONTARIO, CANADA.

WHEAT-SCOURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 427,585, dated May 13, 1890.

Application filed July 21, 1886. Serial No. 208,675. (No model.)

To all whom it may concern:

Be it known that I, HIRAM JOSEPH LIVERGOOD, a citizen of the Dominion of Canada, residing at the city of Brantford, in the county of Brant and Province of Ontario, Canada, have invented a new and useful Wheat-Scouring Machine, of which the following is a specification.

My invention relates to improvements in a wheat-scouring machine in which a rotating scouring-cylinder operates in conjunction with a scouring-case; and the objects of my improvements are, first, to provide a scouring-cylinder that will be self-adjusting and controllable; second, to afford facilities for the proper adjustments of the scouring-plates simultaneously in respect to the scouring-case; third, to construct a machine that will eliminate the dirt, fuzz, germ, and cuticle from the wheat without breaking it, and, fourth, to provide a retarding chilled scouring-case with longitudinal openings and zigzag corrugations between the openings. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the entire machine. Fig. 2 is an end view of the machine. Fig. 3 is a side view of wheel and yoke with bolts attached and springs slipped on the bolts, also showing pins attached to wheel. Fig. 4 is a view of the same wheel on the opposite side, showing the oscillating scouring-plates in position and connected with the pins. Fig. 5 is a view of one of the cylinder-heads, showing the scouring-plates in position. Fig. 6 is a view showing one section of the scouring-case with longitudinal corrugations and openings, zigzag retarding corrugations, and transverse strengthening-bands. Fig. 7 is a view of oscillating scouring-plates, showing the raised pimpled surface and oblong angle conveying-flights.

Similar letters refer to similar parts throughout the several views.

A is the frame composed of four posts, two sills, and two girts, on which is mounted the scouring-cylinder, which consists of the case-heads, case, and cylinder proper. The case-heads F F have lugs on them, so that they can be fastened to the girts, as shown in Fig. 2. One of the heads F has a spout on it,

through which the wheat is fed to the scouring-cylinder. The case-head F (shown at the left hand in Figs. 1 and 2) has an opening which admits air to the scouring-cylinder. Each head has on its inner face two parallel curved ribs *ff*, for holding the scouring-case E in its place.

The scouring-case E is made of cast-iron, made in sections concave and convex. On the concave surface there are longitudinal corrugations and openings, zigzag corrugations, and transverse strengthening-bands. The zigzag arrangement of the corrugations causes the grain to be thrown back and forth as it passes through the machine, and hence an increased scouring action is obtained. The grain in passing through the scouring-machine travels in a continuous circle around on the inside of the case. On one of the sections of the case E a spout X is cast, through which the grain passes from the cylinder. The cylinder-shaft S is journaled in bearings on the girts A, and to it are fastened the pulley Y, cylinder-heads D D, and yoke T. These heads D D are each composed of a central hub, through which the shaft S passes, spokes radiating from said hub and supporting a rim, and flattened perforated extensions secured to said rim, in which are loosely journaled the oscillating scouring-plates B B. These scouring-plates B B have round journals on their ends, and are each made concave on the inside and convex on the outside, which is a surface studded with small round pimples *b* and oblong angle projections H, which greatly further the scouring action.

On the cylinder-shaft S, near the center, is mounted loosely the wheel W, provided on one side with projecting pins P, each of which is engaged by two metal strips Q, fastened to each of the oscillating scouring-plates B B, so as to allow a free rotatory motion of the latter. On the other side the wheel W is provided with two lugs J J, through each of which loosely passes a bolt I. These bolts are surrounded by spiral springs G G. The bolts I I are slipped loosely through a hole in each end of the yoke T, which in turn is fastened to the shaft S by a set-screw. It will be seen the metal strips Q form a connection between the oscillating plates B B and the wheel W. The bolts I I form a connection

between the wheel W and yoke T, and by this means the whole is connected. If sufficient wheat is fed into the machine, the centrifugal force of the plates B B and the pressure of the spiral springs G G will be overcome, the plates B B will turn back on their journals and turn the wheel W the opposite way, compressing the springs G and bringing the angle-flights H in contact with the wheat, which passes through without clogging the machine. As the quantity of wheat becomes less the centrifugal force and the expansive force of the springs G bring back the plates B to their original positions. These plates can be set and held in any desired position by loosening the set-screw in the yoke T and turning the yoke one way or the other, rendering the action of the said plates simultaneous and automatic.

The operation is as follows: The shaft S is set in motion, the wheat is fed through the spout F, and at the same time is forced to move around on the inside of the case back and forth between the oscillating scouring-plates and the corrugated cylinder, and gradually passes to the discharge end of the machine, from whence it escapes through the spout X into a suitable receptacle, while the dirt and fuzz escape through the openings in the cylinder-case.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a wheat-scouring machine, the scouring-case E, made in sections, each section having on its concave inner surface rows of corrugations which run longitudinally of the sections and in zigzag lines transversely of the sections, and each section being provided with longitudinal openings for the escape of the refuse and with transverse strengthening-bands, the said scouring-case E being provided with an outlet-opening, substantially as shown, and for the purpose described.

2. In a wheat-scouring machine, the combination of the shaft S, the yoke T, rigidly fastened thereto, the wheel W, loosely journaled on said shaft S and provided with pins P and brackets J J, the curved bolts I I, connecting said brackets with said yoke T, the spiral springs G G, encircling said bolts I I, the cylinder-heads D D, having perforated brackets, the oscillating scouring-plates B B, having journals loosely journaled in said brackets on cylinder-heads D D, and having strips Q engaging with the pins P, said scouring-plates B B being made concave and convex above said journals, and having on the convex surface raised pimples b and oblong raised conveyer-flights H, substantially as shown, and for the purpose described.

HIRAM JOSEPH LIVERGOOD.

Witnesses:

T. S. SHENSTON,
W. S. CAMPBELL.