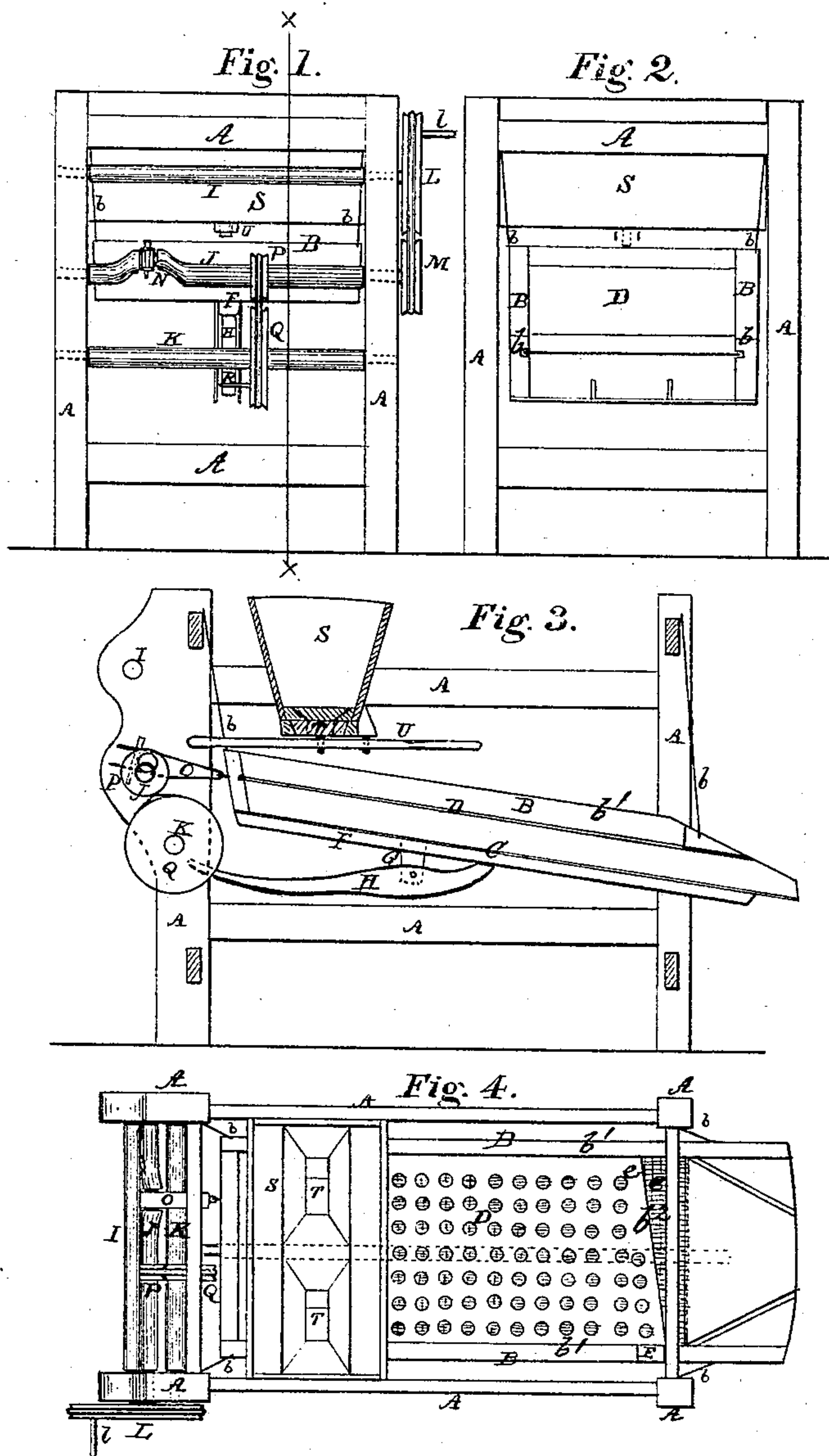


S. DAW.
Grain-Separators.

No. 144,836.

Patented Nov. 25, 1873.



WITNESSES

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SAMUEL DAW, OF CORVALLIS, OREGON.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. 144,836, dated November 25, 1873; application filed July 10, 1872.

To all whom it may concern:

Be it known that I, SAMUEL DAW, of Corvallis, in the county of Benton and State of Oregon, have invented a new and Improved Wheat-Cleaner, of which the following is a specification:

My invention relates to improvements in apparatus for cleaning wheat or other small grain, and separating from the same all useless and foreign matters.

In carrying out my invention, I employ a hopper for the reception of the grain to be cleaned, which, by preference, has two apertures formed in the lower part thereof, such apertures being regulated by a slide actuated by a lever or rod. The grain then falls onto a screen, which is suspended in an inclined position, by its four corners, by cords or chains from the main framing. This screen is provided with two sifting-surfaces, one above the other, the upper sifting-surface having very coarse holes formed therein, so that the grain may readily fall therethrough onto the lower surface, while all large matters will be retained on the upper surface. The under surface is formed of fine wire-cloth, the meshes of which are sufficiently large to allow of dirt and other small matters being freely sifted through, but at the same time small enough to prevent wheat or other grain from passing through it. A compound to-and-fro up-and-down and irregular sidewise motion is communicated to the combined screen by means of a lever-arm affixed to a cleat on the under side of the same, which is operated by a pin carried by a revolving wheel, and a connecting-rod actuated by a crank-shaft, such connecting-rod being eccentrically connected to the screen, and consequently giving an alternate sidewise motion to the same; but that my invention may be fully understood, I will proceed to describe the same in detail by aid of the accompanying drawings.

Figure 1 represents the front or receiving end; Fig. 2, the rear or discharge end; Fig. 3, a section through the line *xx* of Fig. 1, and Fig. 4 a plan of apparatus arranged according to my invention.

A A represent the main framing of the apparatus; S, a hopper for the reception of the grain to be cleaned, which is provided with

two apertures in the bottom thereof, through which the grain is fed to be operated upon. These apertures are regulated by a slide, T, actuated by a lever or rod, U. The grain falling through the apertures in the hopper S falls onto the screen B, which is suspended in an inclined position, as shown, by means of cords or chains *b b*, attached to it near its four corners, and suspended from the main framing A. This screen B is provided with two sifting-surfaces, C D, one above the other, the upper sifting-surface D having very coarse holes formed therein, so that the grain may readily fall through it onto the lower surface C, while all large matters will be retained on the upper surface D. The under surface C is formed of wire-cloth, the meshes of which are sufficiently large to allow of dirt and other small matters being freely sifted through it, but at the same time small enough to prevent wheat or other grain from passing through it. A compound to-and-fro up-and-down and irregular sidewise motion is communicated to the inclined combined screen B by means of the alternate action of the lever-arm H, which is supported in bearings G, carried by a cleat, F, fixed to the under side of the screen B, which is operated to give an up-and-down motion to the screen by means of a pin, R, carried by a wheel, Q, affixed on the shaft K, and the connecting-rod O, which is actuated by the crank N of the shaft J, the connecting-rod O being attached to the screen B eccentrically, as shown, and consequently giving an alternate irregular swinging sidewise motion thereto.

Motion is communicated to the apparatus by means of the handle *l* to the wheel L, carried by the main or driving shaft I, and from the wheel L, by means of a strap or band, to the pulley M, affixed on the shaft J, upon which is mounted a pulley, P, which, by means of a strap or band, communicates motion to the pulley Q on the shaft K.

In place of driving the apparatus by means of the handle *l*, a pulley may be affixed on the shaft I, to which motion may be communicated from a steam-engine, or other motive power.

The perforated surface D is set in grooves in the frame *b¹* of the screen B, and its lower edge *b²* is formed angular, as shown, in order that, with the aid of the combined motion imparted

to the screen B by the lever H and the connecting-rod O, the large matter carried down the surface D may be discharged at one side thereof.

The operation of the machine is as follows: The grain to be cleaned having been placed in the hopper S, the operator will stand by the side of the apparatus, and turn the shaft K by means of the handle I with one hand, while he operates the lever U with the other. The connecting-rod O being connected to the crank N on one side near to the edge, the screen B will be alternately pulled and pushed in a diagonal line, whereby the sides of the screen B are made to strike against the posts of the frame A at opposite corners, alternately on one side, and then the other. At the same time that the screen B is drawn backward and forward, as above described, by the rod O, the screen will be raised up and down once in every revolution of the wheel Q by means of the pin R striking the lever H and raising the screen B toward the sides, and such kernels

as may become lodged are freed or loosened, and the whole mass is continually agitated, and the grain discharged at the lower end of the screen will be found to be perfectly clean and free from cockle, chaff, dirt, and other foreign matters.

The quantity of grain fed to the screen is regulated by the movement of the lever U, and when it is desired to stop the apparatus the openings in the hopper are closed by the slide T.

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

In apparatus for cleaning wheat and other small grain, the combination, with a suspended screen, B, of the lever H, pin R, wheel Q, connecting-rod O, and crank N, arranged and operating as set forth.

SAMUEL DAW.

Witnesses:

GEO. W. TIBBITTS,
D. L. WOOD.