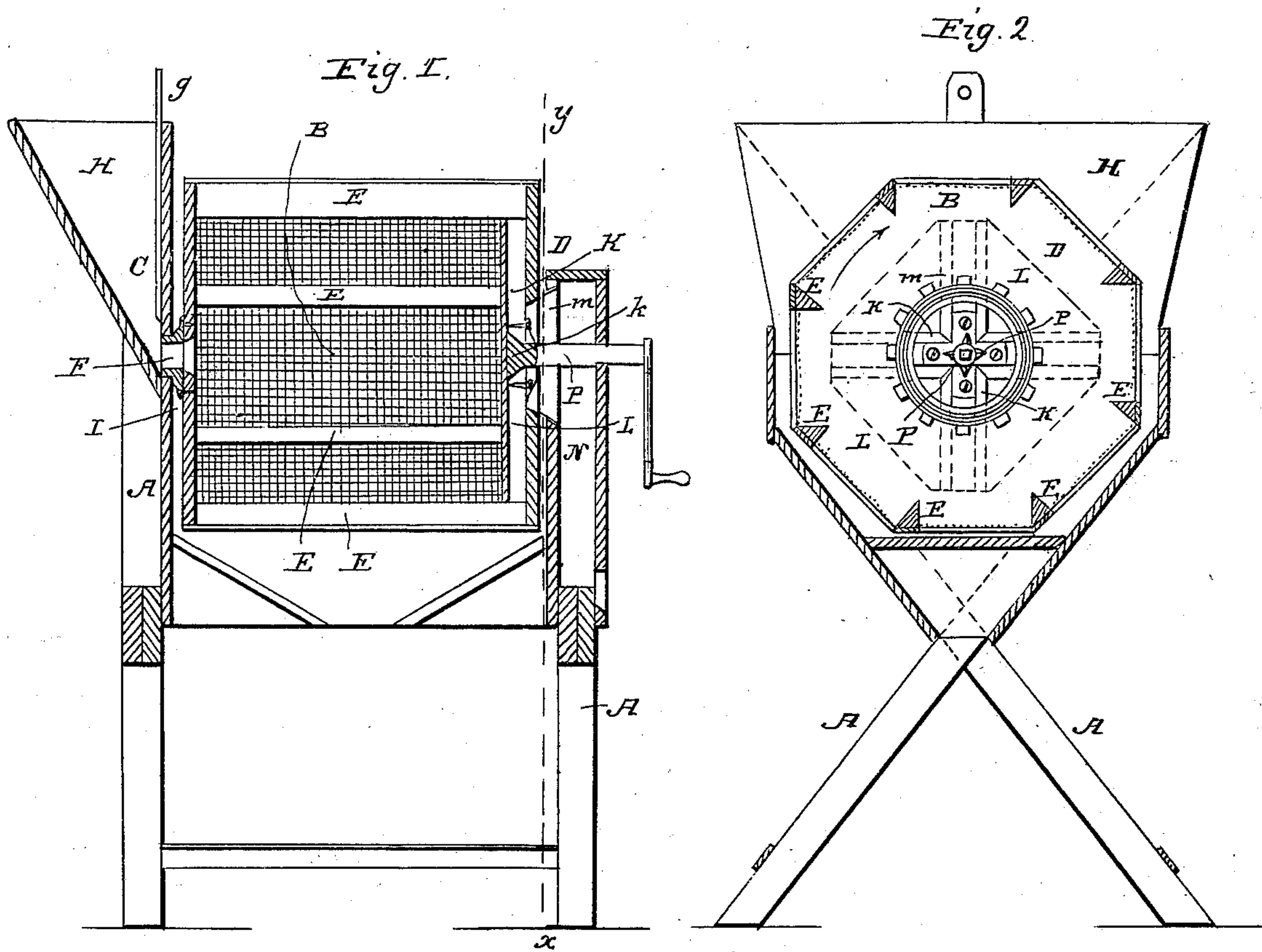


HATFIELD & WALL.

Grain Winnower.

No. 44,625.

Patented Oct. 11, 1864.



Witnesses:

James C. Barritt.
J. C. McGowan

Inventors:

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UNITED STATES PATENT OFFICE.

JAMES HATFIELD AND JOHN WALL, OF OGDEN, INDIANA.

GRAIN-SCREEN.

Specification forming part of Letters Patent No. **44,625**, dated October 11, 1864.

To all whom it may concern:

Be it known that we, JAMES HATFIELD and JOHN WALL, of Ogden, county of Henry, and State of Indiana, have invented new and useful improvements in machines for separating cheat, cockle, smut, &c., from grains; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of the same, in which—

Figure 1 is a vertical longitudinal section through the center of the machine. Fig. 2 is a section view in line X Y, Fig. 1, showing the discharge-head of the reel.

The nature of our invention consists in providing a grain-screen that will be cheaply and easily constructed, and that will be effective in separating the good grain from cheat, cockle, smut, &c.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

Similar letters of reference indicate corresponding parts in both the figures.

A are the frame-timbers, to which all the other parts are attached, the upper portion being covered with boards on the sides and ends, so as to form a box, as shown. The lower ends of the frame-timbers form the legs. The reel B is made with two octagonal heads, C D, at the angles of which notches are cut, as shown in Fig. 2, which receive the ends of the triangular ribs E, which are firmly secured therein. The head C of the reel at the feed end has a beveled hole cut in its center, against which on the outside, the hollow axle F is secured. This hollow axle connects directly with the hopper H, and has its bearing in the end board, I, the back board of the hopper serving as a cap to the hollow journal. The discharge-head D of the reel is of peculiar construction. A large circular opening is cut in its center, which is beveled outward. Across this opening two pieces of wood, K K, shaped as shown, and halved together at right angles, are secured to the head on the inside, and against the other face of the pieces K a thin board, L, is fastened, the shape of which is shown by the dotted line L in Fig. 2. A strip of thin sheet metal, M, is bent around the opening in the discharge-head, and is secured to the head. This ring projects from the head far enough to

enter the chamber N, formed by boarding up the inside and outside of the frame-timbers, as clearly shown in the drawings. The hopper H is formed as shown, and is securely held in its proper position by the back board of the hopper resting against the inside of the frame and the lower part or apex of the hopper resting against the outside of the head-board of the box, as shown. Its own weight keeps it firmly in place. A sliding gate, G, serves to close the passage from the hopper to the reel at pleasure. The reel is covered with wire, as shown. The crank pin or shaft P is secured to the cross-pieces. K K at the discharge end of screen, and serves also as a journal for that end of the reel, and has its bearing in the board that forms the outside of the chamber N. The triangular shape of the ribs E, and the position they are let into the octagonal heads C D, we consider of much importance. The notches that receive the ribs are formed by cutting into the head from each angle in a line at right angles to each side the depth of the widest side of the rib, and on the left of this cut (as you face the discharge end of the machine) and at a distance equal to one of the narrow sides of the rib make another cut at right angles to the side, to meet the cut made from the angle. The object of making these cuts in this way is to secure the greatest possible strength in the head, while the ribs are secured in the best position to carry up the grain. At the same time they do not prevent the grain, as it falls from the rib, striking full upon the wire, thus virtually making every inch of the screen effective.

The operation of the machine is as follows: The grain to be screened is placed in the hopper H, a rotary motion being given to the reel in the direction of the arrow. The grain passes through the hollow journal F into the reel, and is carried up by the ribs E E, &c., so that it falls with such force against the wire in the lower part of the reel as to cause all the cockle, cheat, and light grains of wheat to pass through the meshes of the woven wire, and also to break open and pass through the screen the smut-balls, retaining only the plump, sound wheat, thus thoroughly cleansing it, while the sound grain is conveyed to the discharge, finding its way gradually between the thin board L and head D, whence

it is discharged into chamber N, and is thence discharged into any convenient receptacle.

Having thus fully described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

The hopper H and reel B, when constructed and arranged substantially as shown and de-

scribed, and operating in the manner and for the purpose set forth.

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Witnesses:

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