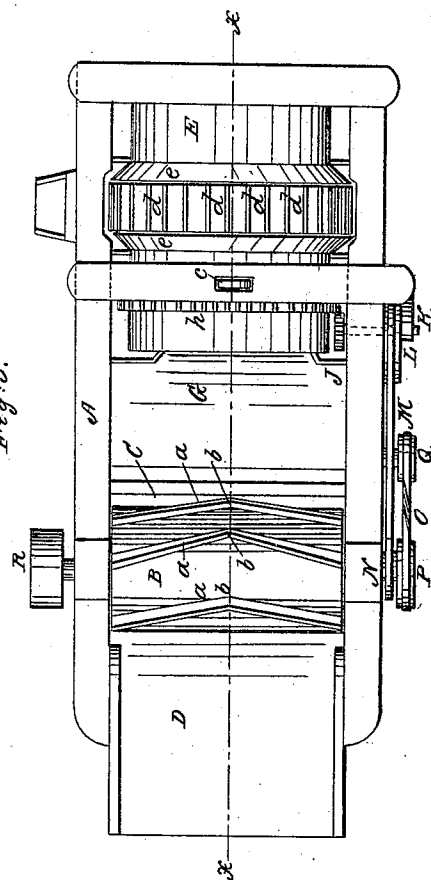
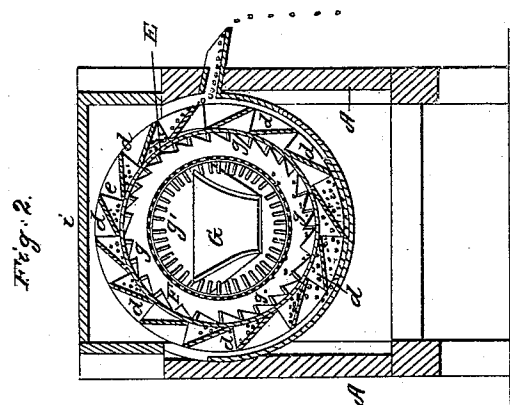
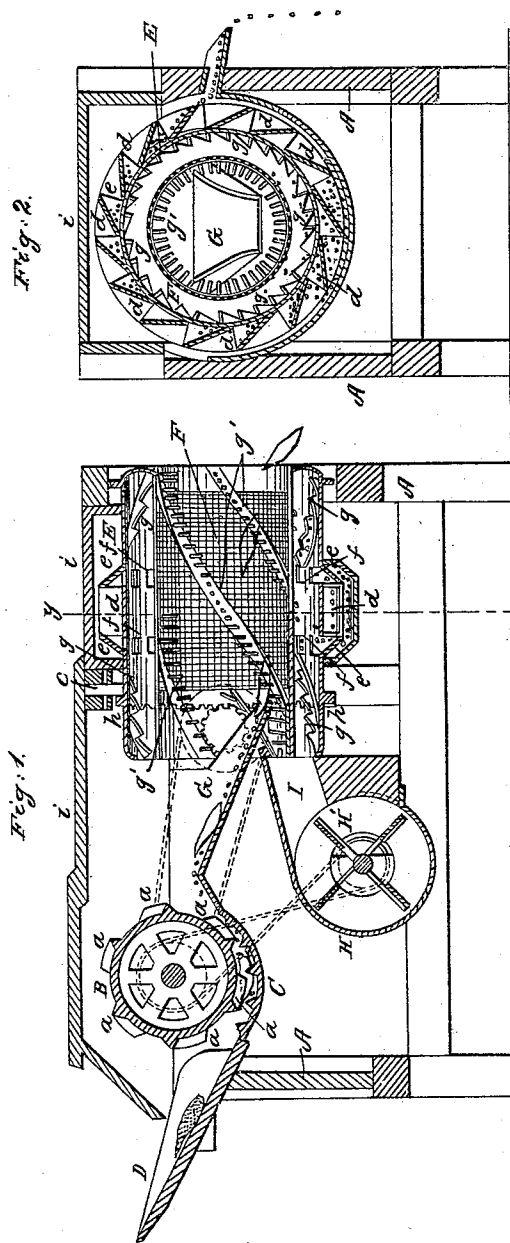


J. VAN HORNE.
Corn Sheller and Separator.

No. 13,532.

Patented Sept. 4, 1855.



UNITED STATES PATENT OFFICE.

J. VAN HORNE, OF MAGNOLIA, ILLINOIS.

GRAIN-SEPARATOR.

Specification of Letters Patent No. 13,532, dated September 4, 1855.

To all whom it may concern:

Be it known that I, J. VAN HORNE, of Magnolia, in the county of Putnam and State of Illinois, have invented a new and Improved Machine for Shelling Corn from the Cobs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of my improvement *x, x*, Fig. 3, showing the plane of section. Fig. 2, is a transverse vertical section of ditto, *y, y*, Fig. 1, showing the plane of section. Fig. 3, is a plan or top view of ditto.

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

The nature of my improvement in corn shelling and cleaning machines, consists in furnishing a revolving cylinder or shell (placed exteriorly to a revolving screen) with a series of revolving cups or buckets placed upon its exterior, said cups in their revolution passing through a suitable trough placed below the cylinder, into which the shelled corn is dropped through holes in the cylinder having been conveyed to these holes by spirally placed flanges, situated on the interior of the cylinder. By this means the grain is separated and elevated to an upper delivery spout to which the bag for receiving the grain may be attached, while the cobs received with the grain from the thresher into the revolving wire screen will be delivered at the end of the machine. By my invention I dispense with the necessity of having separate elevators and driving gear &c. and thus reduce the cost of construction and greatly enhance the efficiency of the machine.

To enable others skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents the framing of the machine, which may be of rectangular form, and B, represents a cylinder placed transversely on the front or feeding end of the machine.

Directly underneath the cylinder B, there is placed a corrugated concave C, see Fig. 1. This concave may be formed of cast iron. On the periphery of the cylinder B, there are oblique ribs or projections, *a*, the form of which is clearly shown in Fig. 3. These ribs or projections extend obliquely from the ends of the cylinder to its center

where they form a point or angle at *b*, each rib or projection being of somewhat V-form.

D, represents a feed board placed at the front end of the framing A. This board is somewhat inclined and its inner end is secured to the outer end of the concave C, as clearly shown in Fig. 1.

In the back end of the framing A, there is placed a cylinder E. This cylinder is fitted between friction rollers, *e*, at its front and back ends, as shown in Fig. 1, the friction rollers being attached to the framing A. Around the center of the cylinder E, on its outer side there are placed a series of buckets, *d*. These buckets are placed between flanges *e*, *e*, which surround the cylinder and are concentric with the buckets. The outer edges of the flanges incline inward or toward each other, and holes *f*, are made through the cylinder underneath the flanges and at each side of the buckets, as clearly shown in Fig. 1. On the inner side of the cylinder E, there are attached spiral flanges, *g*, at each side of the holes, *f*, these flanges extend from the ends of the cylinder to the holes, *f*, and the spiral curves of the flanges on one side of the holes are in a reverse position to those on the other side.

Within the cylinder E, there is secured a cylindrical screen F, which is somewhat smaller in diameter than the cylinder so as to leave a space between the cylinder and screen, as shown in Figs. 1 and 2. The screen has spiral toothed flanges *g'*, on its inner surface also shown in Figs. 1 and 2.

G, is an inclined spout which leads from the inner end of the concave C, to the interior of the screen F.

At the lower part of the framing A, there is placed a fan box H, which has a blast spout I, attached to it, said blast spout communicating with the inner ends of the cylinder E, and screen F, as shown in Fig. 1. The box H, has a rotary fan H', within it. Around the inner end of the cylinder E, there is placed or attached teeth *h*, see Fig. 3, in which a pinion J, gears, said pinion being attached to the inner end of small shaft K, which works in suitable bearings in the framing A. To the outer side of the shaft K, there is attached a pulley L, around which a belt M, passes, said belt also passing around a pulley N, at one end of the shaft of the cylinder B; O, is a cross belt which

passes around pulleys P, Q, at the ends of the shaft of the cylinder B, and the end of the shaft of the fan H'. The driving pulley R, is attached to the opposite end of the shaft of the cylinder B.

The framing A, may be inclosed with proper sides, and boxes or covers, *z*, may be placed over the top of the framing.

Operation: Motion being given the driving pulley R, in any proper manner the cylinder B, fan H', and cylinder E, and screen F, rotate, the ears of corn are thrown upon the inclined feed board D, and pass down between the cylinder B, and corrugated concave C, and the corn is shelled from the cobs and in consequence of the oblique position of the ribs or projections, *a*, on the cylinder B, the shelled corn and cobs will be carried up to the inclined spout G, and discharged from between the cylinder and concave at the center of the cylinder. The shelled corn and cobs will be discharged from a single point without being at all scattered and will pass down the spout G, into the screen F, through which a blast generated by the fan H', passes. As the screen F, rotates the cobs will be carried by the spiral toothed flanges, *g'*, to the outer end of the screen F, and will be discharged therefrom, while the shelled corn will pass through the screen and fall

upon the inner side of the cylinder E, and will be conveyed by the flanges, *g*, to the holes, *f*, through which the corn passes into the buckets, *d*, and is carried around by them and discharged from the side of the framing, as shown in Fig. 2. Thus it will be seen that the corn is shelled from the cob and the corn and cobs discharged at separate points from the machine, the corn being also winnowed or cleansed from dirt at one operation. If the screen F, is slightly inclined the cobs may pass out of the screen without the aid of the spiral flanges, *g'*. I prefer however the flanges which render the ejection of the cobs certain.

I claim—

The revolving cylinder E furnished with buckets *d*, flanges *g*, and holes *f*, in combination with the revolving cylindrical screen F, constructed substantially as described for the purpose of cleaning the grain, separating the cob and elevating the grain and delivering it in the manner substantially as set forth in the foregoing specification.

J. VAN HORNE.

Witnesses:

A. E. BEACH,

R. T. CHAPMAN.