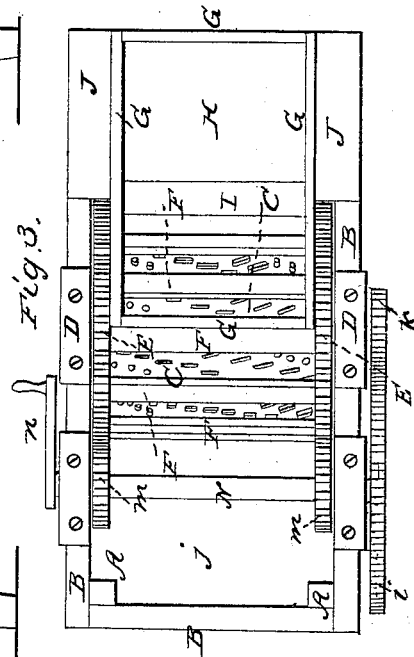
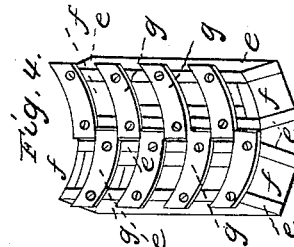


Corn Sheller.

Patented Aug. 12, 1839.



UNITED STATES PATENT OFFICE.

LESTER E. DENISON, OF SAYBROOK, CONNECTICUT.

MACHINE FOR SHELLING CORN.

Specification of Letters Patent No. 1,283, dated August 12, 1839.

To all whom it may concern:

Be it known that I, LESTER E. DENISON, of Saybrook, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Machines for Shelling Corn, and that the following is a full and exact description thereof, reference being had to the accompanying drawings and making part of this specification, in which the same parts are designated by the same letters of reference in all the different figures.

Figure 1, represents a perspective view of the machine. Fig. 2, a longitudinal section, showing its internal arrangement. Fig. 3, a top view of the machine and Fig. 4, two of the sections of the concave detached from the machine.

The principal feature of this machine, and in which it varies from those in general use, that use the revolving cylinder, is placing the cylinder within a revolving concentric cylindrical rest, formed with heads at its ends, and burs or rests extending the whole length of the cylinder and secured to the heads at their ends.

The hopper being filled with ears of corn placed parallel with the bars or rests of the cylindrical rest, each successive space in the rest receives an ear of corn, and the bar at the upper side of the space forces the ear of corn, into the machine, thus rendering the machine self-operating, as far as to regulate the feed. The frame of this machine consists of four posts A, Figs. 2 and 3, of such height as found most convenient to the operator and are of the same height of the body of the machine.

The width of the frame is about two feet or such other width as to admit the longest ears of corn within the hopper, and its length is about double its width.

The sides and ends of the body of the machine, or outer casing B, Figs. 2 and 3, are formed of plank, and secured to the posts by nails, or bolts. This frame may be made of joist framed, and firmly secured together, previous to applying the casing, or it may be formed of cast iron.

Transversely at the center of the machine is placed the shelling cylinder C, the axis of which is a little below the top of the frame; this cylinder is about two inches in diameter, having points or oblong pieces of metal projecting from its periphery on a line with the radius of the cylinder, and placed in

oblique or parallel rows, with the axle of the cylinder, as will best effect the object desired. The axle of the shelling cylinder, runs in suitable boxes D, secured in the sides of the frame. Within the boxes D, and the ends of the shelling cylinder, are placed the heads E, of the cylindrical rest, there being a sufficient space between the boxes, and the shelling cylinder to receive the heads, and to allow them to turn therein, and the axle of the shelling cylinder within that space forms the support, and axle of the heads E.

Through the center of the heads, a hole is formed correspondingly in size with the axle of the shelling cylinder, at the place where the heads E, turn.

There are connected to these heads E, about twelve bars or rests F, by inserting their ends into the heads or by projecting flanges formed on the inner face of the heads E, which receive the ends of the bars or rests F, and in either case are secured by bolts or screws.

The bars or rests F, may be formed of metal or wood, if the latter is used, their edges are protected from wear by a metallic plate; the inner faces of these bars are nearly in contact with the outer ends of the points on the shelling cylinder, and their width is such as to give the necessary support for the ears of corn that rest upon them, and also to graduate the distance between the ears, while they are passing through the machine, by increasing or diminishing the width of the bars or rests F, a greater or less number of ears will be admitted within the machine at a time, and a proportional amount of power employed accordingly. The width of the spaces between the rests is graduated to the size and kind of corn, the Northern or flint requiring a smaller space, than the gourd seed or Virginia corn, and the machine for the different kinds of corn are built with different sized spaces, each kind having the spaces sufficiently large to receive the largest ears, and not to admit two at a time; the thickness of the rests or bars also vary according to the size of the corn, but in all cases, they must be something less than the diameter of the smallest sized cob.

A hopper G, Figs. 2 and 3, extends from one end of the frame to the center of the cylinder, in width equal to the distance between the heads E, and the under edge of the center end piece, and the sides that project over the cylinder, are fitted to the cylin-

drical rest F, and this part of the hopper is open at the bottom and communicates with one half of the cylindrical rest on shelling cylinder over which the hopper is placed, and through this open space the ears of corn fall within the spaces of the cylindrical rest.

The hopper may be made of any desired height, according to the quantity of ears it is to contain at a time. At the outer part of the hopper a bottom H, is inserted in an oblique position and extends from near the center of the back end piece to the concave I, Figs. 2 and 4, being thus placed the corn from the back end of the hopper passes down this inclined bottom to the concave and cylinder. The width of the hopper being less than the frame of the machine projecting flanges J, Fig. 3, are attached to the bottom of the hopper, and extend outward to the edge of the machine and are secured thereto. The concave I, Fig. 2, is formed of more or less separate pieces or sections, each piece operating independent of the others, by this arrangement each ear of corn between the burs of the cylindrical rest, and within the concave, receives a uniform amount of pressure, and a great and small ear may follow each other alternately, without affecting the operation of the machine. These sections have wooden frames, consisting of two longitudinal pieces, and two end pieces *f*, connected together, and at their inner or concave face, are placed metallic plates *g*, fitted to the curvature of the section, with an open space between each piece equal to the width of the same as shown at Fig. 4. These frames or sections are inserted in grooves or recesses *h*, formed in the side of a projecting piece K, within the frame of the machine, and the sections are caused to act against the ears of corn while they are within the machine, by spiral or other springs *i*, operating against the back or under part of the sectional frame I, at *f*, as seen at Fig. 2.

As the kernels of corn are shelled from the cob, they pass out through the apertures between the metallic plates *g*, in the concave, and thence through the bottom of the machine at the opening L, Fig. 2, while the cob is carried by the cylindrical rest out of the concave onto an inclined, top or cover *j*, of the frame K, and pass out of the machine at the opening M, at the end of the frame, as shown at Fig. 2.

The longitudinal pieces *e*, of the sections are not in close contact with the opposite section, when they are near the cylindrical rest, but are separated to allow the ends of the plates of metal to project beyond the pieces *e*, and interlocate; when the frames

are depressed, and diverge, these interlocated ends are drawn apart, and prevent an open space the length of the frames, which would be formed were they on a line at their inner position. The different velocities of the rest and cylinder, are such as to give about four or five revolutions of the cylinder while the ear of corn is within the machine. This arrangement is effected by a pinion *k*, attached to the outer end of the cylinder arbor and communicates with, and gives motion to the large wheel *l*, secured to the counter shaft N, at the outside of the machine, Figs. 2 and 3.

Within and near each side the frame are two pinions *m*, firmly secured to the shaft N, and give motion to the wheels on the periphery of the heads E, and the variation of the wheels is such as to give the proportional velocities between the shelling cylinder and cylindrical rest as seen at Fig. 3. At one end of the shaft N, without the frame of the machine, a crank *n*, is applied to give motion to the machine, or it may be applied to the shelling cylinder if preferred. In the operation of the machine the ears of corn are placed in the hopper parallel to the bars of the cylindrical rest, and the machine put in motion, the ears of corn fall within the spaces of the rest and are thus carried through the machine, by the bars of the rest. While the ear of corn is passing through the machine, and the concave pressing it against the shelling cylinder, which moves with a greater velocity than the rest and in the same direction, the pressure formed which the rest receives from the pressure of the cylinder against the ear, is transferred to help propel the machine, and the downward pressure upon a stationary rest, which is lost, is here converted into a propelling power nearly equal to the whole pressure formed.

Having thus fully described the construction and operation of my improved corn sheller, I now proceed to point out those parts that are new and of my own invention.

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

1. The shelling cylinder placed within, and in combination with the revolving concentric cylindrical rest and the segment concave, in the manner and for the purpose as before described.

2. I also claim the revolving concentric cylindrical rest, the same being constructed in the manner and for the purpose substantially as herein before described.

LESTER E. DENISON.

Witnesses:

GEO. READ,
DIADATE A. CHURCH.