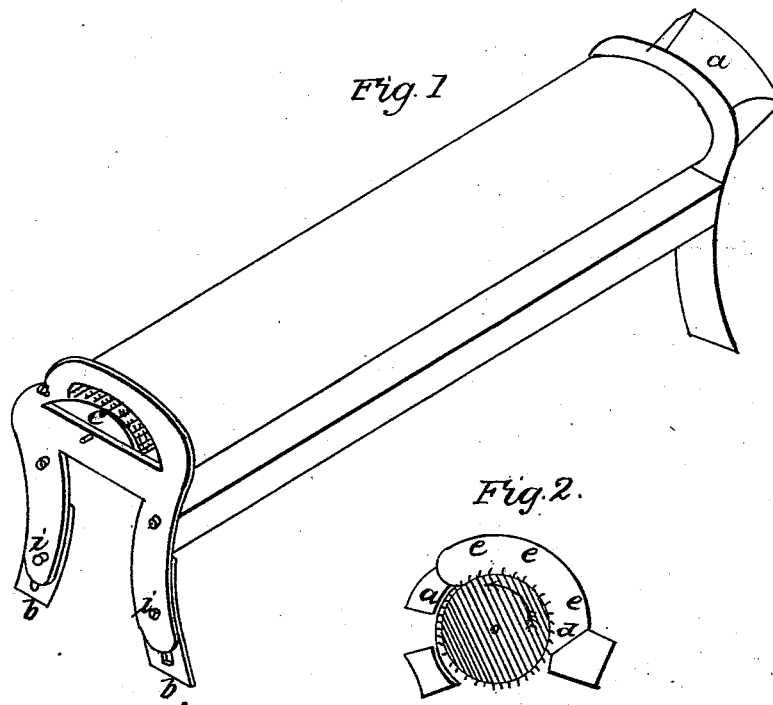


F. N. SMITH.

Corn Sheller.

No. 3,114.

Patented June 1, 1843.



UNITED STATES PATENT OFFICE.

FRANCIS N. SMITH, OF KINDERHOOK, NEW YORK.

IMPROVEMENT IN CORN-SHELLERS.

Specification forming part of Letters Patent No. 3,114, dated June 1, 1843.

To all whom it may concern:

Be it known that I, FRANCIS N. SMITH, of Kinderhook, in the county of Columbia and State of New York, have invented a new and useful machine (denominated a "corn-sheller") for shelling and separating Indian corn from the cob; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical perspective view; Fig. 2, a transverse section; Fig. 3, an isometrical perspective view of the cylinder and driving-pulley connected as in machine.

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

I construct of wood and iron a frame of convenient size—say six feet long, two feet high, and two feet wide—provided with slide-legs at one end (the slides represented at *b b*, Fig. 1) for producing an inclined plane at pleasure. These slides I, in general, make of iron one foot long, three inches wide, and three-eighths of an inch thick, with a mortise or opening in the center nine inches long and half inch wide, and confine them to the main legs by means of screw-bolts passing through said mortise, and also said main legs. (Represented at *i i*, Fig. 1.) Within this frame at any proper height (say one foot six inches) I have a cylinder (a part of the end represented at *c*, Fig. 1) of suitable size—say six feet long and one foot three inches in diameter—supported at each end by bearings or iron shafts, the shaft (at the end opposite that having the slide-legs and known as the hopper end of machine) being fitted to attach driving-pulley of suitable size. (Said pulley represented at *P*, Fig. 3.) The cylinder aforesaid is toothed similar to the cylinders of thrashing-machines in general, except that these teeth are shorter and sit nearer each other. These teeth should not exceed in height five-sixteenths of an inch, nor be inserted at distances apart (longitudinally) to exceed one inch. The number of the teeth may be discretionary with the maker. (Said teeth represented by the dots, Fig. 3.) Near the upper extremity of this cylinder, (say three inches in a horizontal direction therefrom,) and parallel with it, I have an angular piece of wood or iron, (the end represented at *a*, Fig.

2,) with the angle as near the teeth as may be, (say one sixteenth of an inch,) so as to admit the cylinder to revolve freely, thereby preventing substances larger than shelled corn to pass under it. This piece I, in general, make of joist three inches square and six feet long, the front of which is made concave, conforming to a part of a four-inch circle. Said front and angle, being covered with iron to prevent wear, and placed to reverse the action of the ears of corn brought in contact with it by the cylinder, is attached permanently to the frame at each end, being a support, and forming a part of the concave hereinafter described. The upper part of the cylinder, and also including that side which rises when in motion, is now properly incased to confine the corn with a concave, which I, in general, make of iron six feet long and one foot three inches wide. Said concave, being joined to aforesaid angular piece, curves over the cylinder, (the curve represented at *e e e*, Fig. 2,) leaving a space between it and the cylinder of three inches at discharge end, said space gradually increasing to four inches at opposite or hopper end until it reaches its given width—viz., one foot three inches—so that the longest ears of corn may reverse ends (horizontally) to prevent clogging, when it draws gradually toward the cylinder, reducing the aforesaid space to about three-fourths of an inch, (represented at *d*, Fig. 2,) leaving a crevice sufficient for the shelled corn to pass, and is attached to the frame. The end designated as the hopper end is now provided with a hopper fitted to conduct the ears of corn on the end of cylinder and under said concave, as represented at *a*, Fig. 1. Said hopper I, in general, make of iron, and of size suited to concave—viz., the bottom one foot three inches wide, and of any convenient length, say one foot six inches—and slope said bottom toward the cylinder at an angle of about forty degrees. The depth of hopper may be discretionary with the maker. That part of the cylinder now exposed may be covered, to prevent the grain scattering or falling in any other direction than under the machine.

There is nothing peculiar about the construction of this machine. The supporting-frame may be of any convenient form, size, or material. The cylinder is of size suited to frame, and may be toothed in any of the known forms of teething cylinders. The concave and

angular piece may be of any convenient form, so as to confine the operation to a part of the upper and rising side of the cylinder, and admit the grain on either side. The frame being provided with slide-legs or other means, the machine may be brought to an inclined plane at the option of the operator, causing it to discharge the cobs fast or slow, and of course operate more or less on them. Said inclination is to be varied according to the operation required to finish the work.

This machine may be attached to a common horse-power, and driven at the rate of from three to four hundred revolutions per minute, (the rate of speed being varied and limited to that which will secure the grain from being broken by the teeth in dislodging it from the cob.) The ears of corn being shoveled in aforesaid hopper, and conducted on the end of cylinder and under aforesaid concave, are brought

in contact with the cylinder in every form except endwise, and the cylinder operating on them the corn is shelled by the teeth, and, being admitted on either side, falls immediately under the machine, while the cobs pass gradually with the inclination aforesaid and fall unbroken on the end of cylinder outside of frame and separate from the shelled corn.

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

The arrangement of the inclined concave and toothed cylinder, as described, and in combination therewith the angular piece *a*, the whole being constructed and operating as above described.

FRANCIS N. SMITH.

Witnesses:

JOHN TRIMPER,
G. W. BULKLEY.