

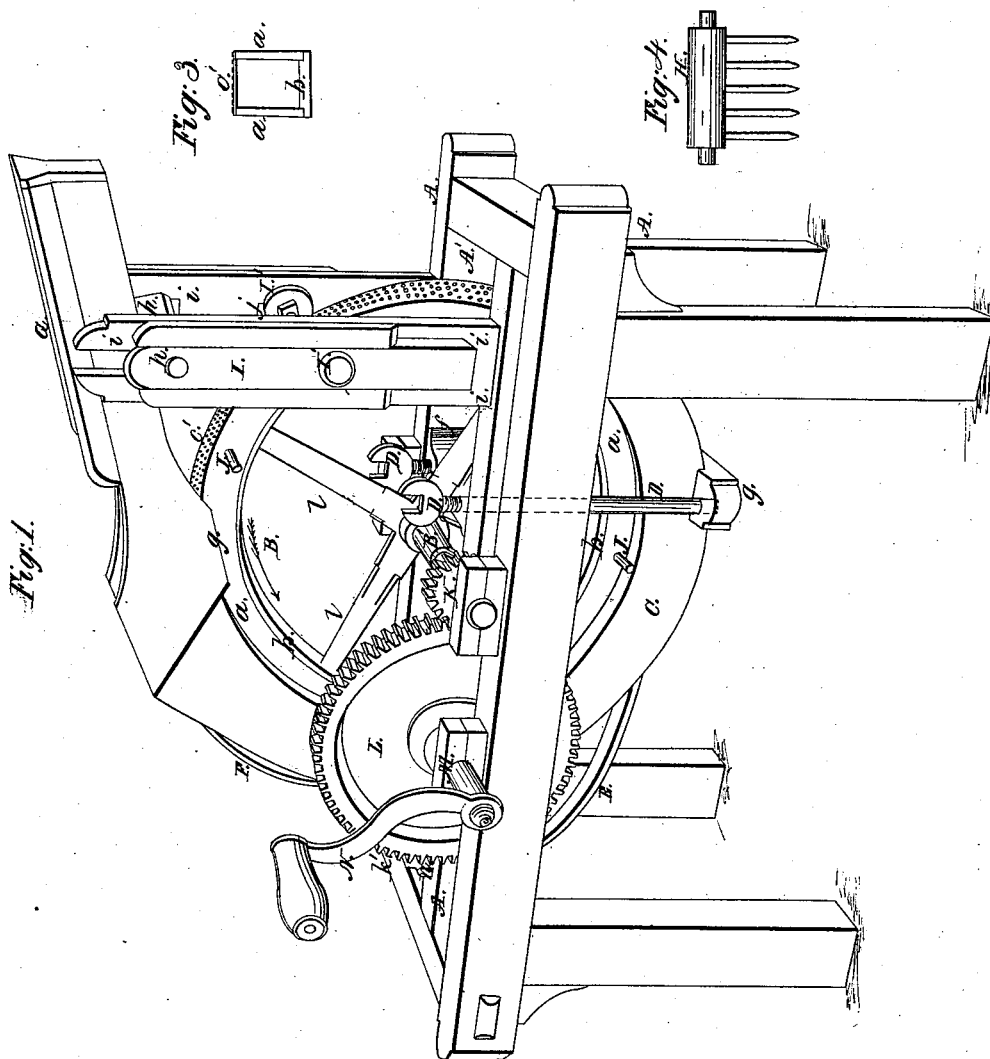
2 Sheets—Sheet 1.

J. BIRDSELL.

Clover Huller.

No. 5,599.

Patented May 23, 1848.



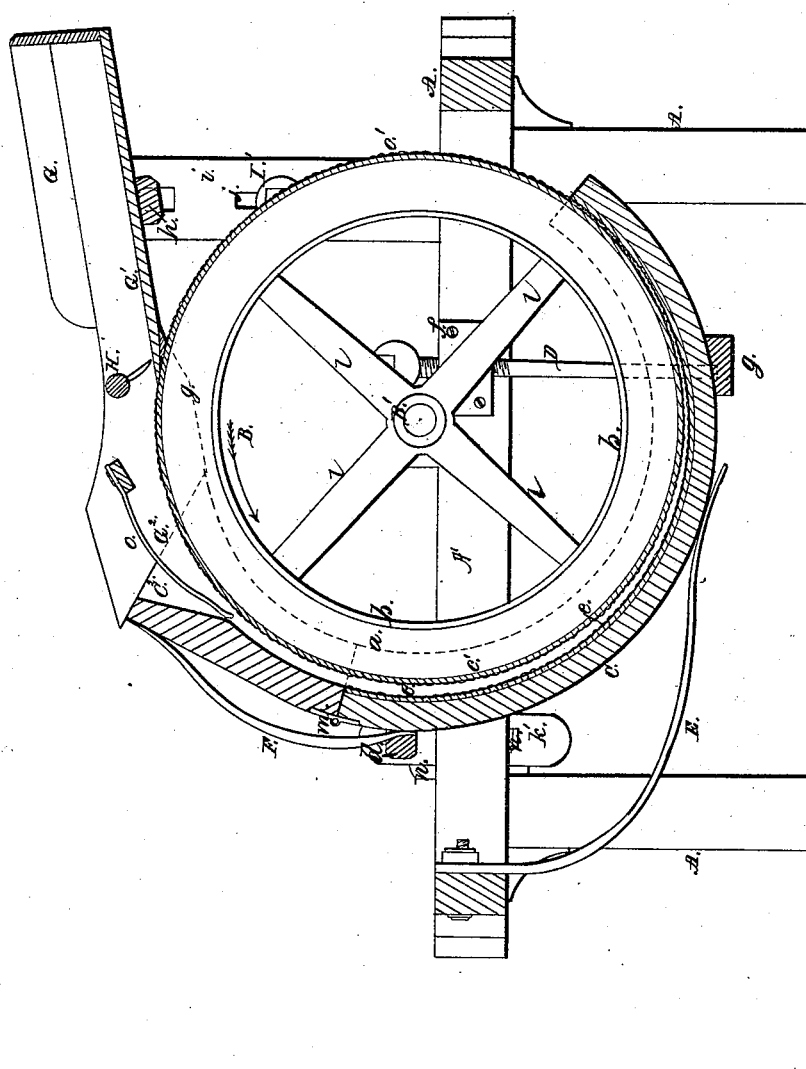
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Fig. 2.



UNITED STATES PATENT OFFICE.

JAMES BIRDELL, OF HAMORTON, PENNSYLVANIA.

CLOVER-HULLER.

Specification of Letters Patent No. 5,599, dated May 23, 1848.

To all whom it may concern:

Be it known that I, JAMES BIRDELL, of Hamorton, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in Machines for Hulling Clover-Seed, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1, is a perspective view of the machine. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a cross section of the rim of the wheel. Fig. 4 is an elevation of the guard or rack.

Similar letters in the figures refer to corresponding parts.

A is the frame of the machine, made of an oblong form of suitable size, strength, and material for the purpose designed.

B is a revolving cylindrical wheel, secured to a horizontal shaft B', turning in suitable boxes in the frame, composed of two circular upright rims *a, a*, arranged parallel to each other, and connected together at their inner edges or peripheries, by a circular rim *b*, extending from one to the other, and secured to the outer extremities of the radial arms *l* of the horizontal shaft, and covered at their outer edges with sheet iron *c'*, extending around their peripheries and from one to the other perforated with openings punched from the inside, so as to form protuberances on the periphery of the wheel.

C is a concave, hinged near its upper end at *m* and suspended at that part, on a rock shaft *d*, having journals on its ends, inserted in boxes, *k*, keyed to horizontal timbers A' of the frame by keys *n* so as to allow them to be moved horizontally, to regulate the space between the cylindrical wheel and concave. This concave extends about two thirds around the wheel B, commencing near the top of the same, its sides or rims overlapping the circular rims *a*, of the wheel, and is lined on the inner periphery of its lower hinged part with sheet iron *e*, perforated with openings punched from the outside, and extends outward from the wheel, on a tangential line, at its upper end, as represented in Fig. 2, at C².

D are vertical thumb screw rods, passing through female screws in projections *f*, on the sides of the horizontal timbers of the frame, on each side of the cylindrical wheel, and terminating opposite the lower part of the concave, and are designed to regulate

the distance between the lower part of the concave and the wheel, by their lower ends forming stops, against which a block *g*, projecting from the sides of the lower part of the concave, rests.

E is a curved spring, secured to one of the transverse end timbers of the frame, and extending downward in a curved direction, and resting against the under side of the concave, for keeping the projections *g* on the sides of the concave, against the ends of the thumb screw rods, and forcing the concave upward toward the wheel as far as the stops D will allow it to rise. F is another curved spring, inserted in an opening in the upper surface of the rock shaft *d*, and extending upward from the same, and resting against the upper tangential part of the concave for keeping it in its proper relation to the lower part of the same.

G is an inclined hopper and spout, arranged above the cylindrical wheel, its bottom being tangential to the periphery of the same as at G' and resting against the inclined end of the upper part of the concave, at one end as at G² and secured on a horizontal rock shaft *h*, near the other end, said rock shaft having journals on its ends, turning in sliding boxes I in the frame, so as to allow of the upper end of the hopper and spout being raised and lowered to alter its angle of inclination. H are inclined pins, or bars, secured to a transverse bar in the hopper and spout, and extending to near the lower part of the same, forming a guard or rack for preventing the entrance of straw, and like matter, into the machine.

I are the dovetailed sliding boxes, in which the journals of the rock shaft turn, moving between guides, secured to uprights *i*, of the frame, said uprights having grooves in their upper ends to admit of the rise and fall of the shaft.

I' are screw bolts, passing through the sliding boxes and grooves *j*, in the uprights *i*, and provided with nuts, for sustaining the sliding boxes in their proper positions.

J are pins projecting from the rims of the cylindrical wheel, at such points on their surfaces as to strike the inclined lower edges of the sides of the hopper and spout at *g*, in their passage around with the wheel, and cause it to be rocked on its shaft *h*.

K is a pinion or cog wheel secured on the shaft of the cylindrical wheel B. L is a

larger cog wheel, meshing in gear with the pinion or cog wheel just mentioned, secured on a horizontal shaft M, turning in boxes in the frame, and provided with a crank N, on its outer end, for giving motion to the machine.

O is a spring, secured to a cross bar in the hopper and spout, and resting against the inside of the upper part of the concave, C, for assisting to bring the hopper and spout, back to its position, when raised by the pins J.

Operation: The hopper and spout G, and concave C being properly adjusted by the screw bolts I', thumb screw rods D, and keys, *n*, and power applied to the crank N, so as to turn the cylindrical wheel B with great velocity, causing the pins J, projecting from the sides of the same, to strike the lower edge of the hopper and spout, and shake the same. The clover seed to be hulled is introduced to the hopper and spout, and is conducted between the upper hinged part of the concave C, and cylindrical wheel, B, being separated, in its passage through said concave and spout, from the straw and other extraneous matter, by the inclined pins, or bars H, and is drawn violently between the roughened sheet iron surface *c*, *c'*, of the concave, and cylindrical wheel, and effectually

hulled and discharged from between the same, at the lower end of the concave, into a proper receptacle placed there for its reception, the springs E, F, pressing against the upper and lower hinged parts of the concave, allowing those parts to yield to the seed in its passage through, and when it becomes choked in the same.

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

1. The combination of the adjustable hinged concave and rotary roughened hulling wheel in the manner and for the purpose herein set forth.

2. I claim the combination and arrangement of the screw rods or stops D, springs E, F and keys *n* for adjusting the concave C in relation to the wheel B as described.

3. I likewise claim the manner of combining the hopper and spout and spring O with the tangential portion of the concave and pins J for giving a shaking motion to the hopper and spout as described.

In testimony whereof I have hereunto signed my name before two subscribing witnesses this 26th day of January 1848.

JAMES BIRDSSELL.

Witnesses:

WM. P. ELLIOT,
EDMUND MAHER.