

S. W. POWELL.

Clover Huller.

No. 4,146.

Patented Aug. 16, 1845.

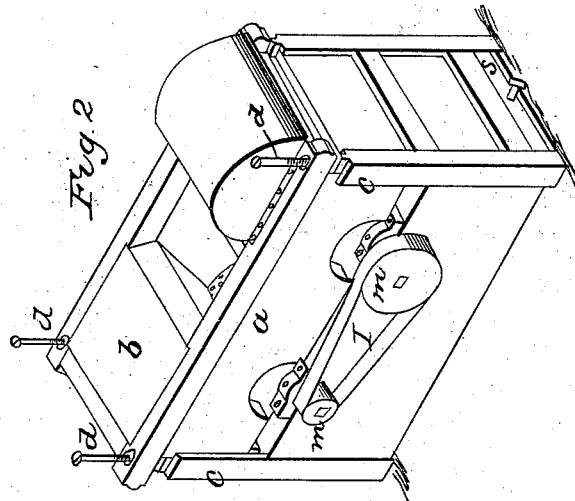
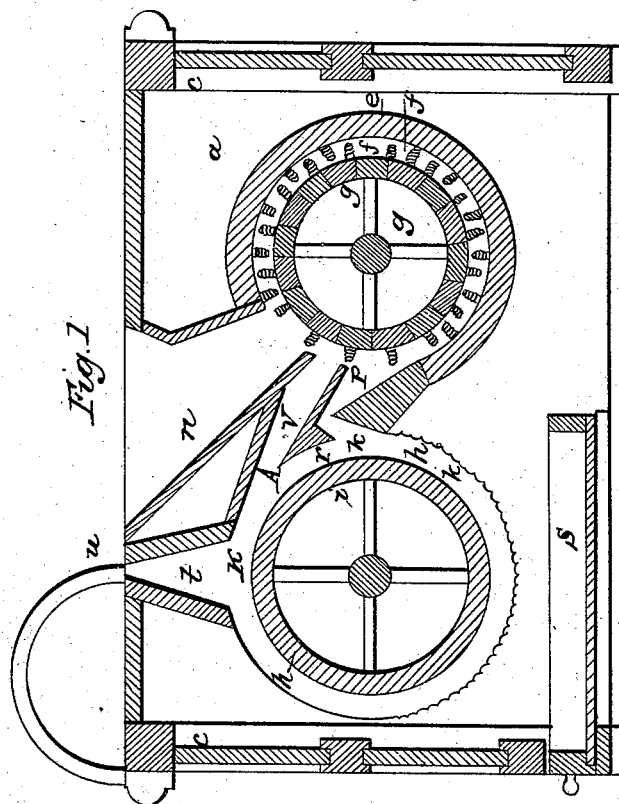


Fig. 3



UNITED STATES PATENT OFFICE.

SAML. W. POWELL, OF TURBET, PENNSYLVANIA.

CLOVER-HULLING MACHINE.

Specification of Letters Patent No. 4,146, dated August 16, 1845.

To all whom it may concern:

Be it known that I, SAMUEL W. POWELL, of Turbet, in the county of Juniata and State of Pennsylvania, have invented a new and Improved Machine for Hulling and Cleaning Clover-Seed; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 is a vertical longitudinal section, and Fig. 2 is a perspective elevation of the top being a little elevated above its proper position.

The same letters refer to corresponding parts in both figures.

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

I construct in the first place an oblong frame of posts, side, and cross-pieces in the usual manner; and close up the sides ends and top of the same. The ends and a little more than half of the lower part of the sides of the frame, are permanently closed up with plank morticed into the posts *c, c*. The upper portion of the sides of the frame *a, a*, are firmly fastened to the top frame work *b*, and their ends slide into grooves in the corner posts *c, c*. The perspective drawing represents the upper frame work (*b, b*), with the sides *a, a*, attached, a little elevated above their proper place, they are secured in their proper position by the screws *d, d*. In the interior of the frame thus formed, near one end I place a concave *e, e*, which is divided into two parts: the ends of the lower half are let into and secured to the lower portion of the sides of the frame, and the upper half of the concave is in like manner secured to the upper portion of the sides of the frame, so that when the two portions of the sides are brought together the upper and lower part of the concave will exactly match. Projecting from the inner side of this concave and firmly secured in the same, are circular metallic projections *f f* with thin sides grooved, either in circular grooves, as in Fig. 3 or in a spiral or screw form. Inside of this concave there is placed a cylinder *g*, of such a size as just to revolve clear of the projections, in the concave. The circumference of the cylinder is likewise covered with grooved metallic projections *f f* of the same form of those in the surrounding concave; and so arranged as to

pass between those in the concave, and as near to them as practicable. At the other end of the frame there is placed a sheet iron concave *h*, perforated with small holes. This concave is also in two parts, and secured to the upper and lower portions of the sides of the frame. Inside the perforated sheet iron concave, there is placed a revolving fan *i* or close drum with wings *k, k*, inserted into its circumference. I generally drive the beating cylinder *g* by horse power, and communicate motion from this cylinder to the fan by a band *l*, and pulleys *m, m*, so proportioned as to give the fan one revolution to the beating cylinders two—more or less. At the center of the top of the frame, there is a large opening *n*, leading down into the concave *e*, in which revolves the beating cylinder; into which the hulls and chaff containing the clover seed is placed to be separated and cleaned, it is thrown by the projections on the beating cylinder from this concavity up through the aperture *P*, and striking against the shoulder *r*, on the underside of the cross-piece *A*, which extends crosswise the machine, (the ends being made fast the movable sides *a*) falls into the perforated concave *h*. The clover seed which has been loosened from the hulls and chaff is forced by the action of the fan through the openings in the perforated concave, and falls into a drawer *s*, immediately under the same; the light chaff from which the seeds have been disengaged, is thrown upward and passes out through the aperture *t*, over the top of the fan, which leads into the semi annular outlet *u* through which the chaff escapes from the machine. That portion of the hulls or tailings, from which the seeds have not been disengaged are thrown by the fan down through the aperture *V*, on the upper side of the cross piece *A*, into the concave *e*, and are again acted upon by the beating cylinder; in this way they pass from one concave to the other until every seed is disengaged from the hulls, and no tailings (or hulls containing clover seed) escapes from the machine, as the speed of the fan is not sufficient to force any hulls containing seeds upward and out at the narrow semi circular aperture *u*. Much labor is saved by not having to put the hulls but once into the machine, and no seeds are lost from being blown out with the chaff, or crushed by the beating cylinder.

Having thus fully described my machine

for hulling and cleaning clover seed, what I claim as new and desire to secure by Letters Patent, is—

1. The grooved form of the projections
5 upon the beating cylinder and surrounding concave, the grooves being either circular as in Fig. 3, or spiral.

2. I also claim the manner in which the
10 beating and perforating concaves are connected, by the double apertures V and P, and in combination therewith the form of

the discharge aperture *u* for the chaff, all combined, arranged and operating substantially as herein set forth, not confining myself to the exact forms and proportions here- 15 in represented, but to the general principles of the machine.

SAMUEL W. POWELL.

Witnesses:

Z. C. ROBBINS,
T. C. DONN.