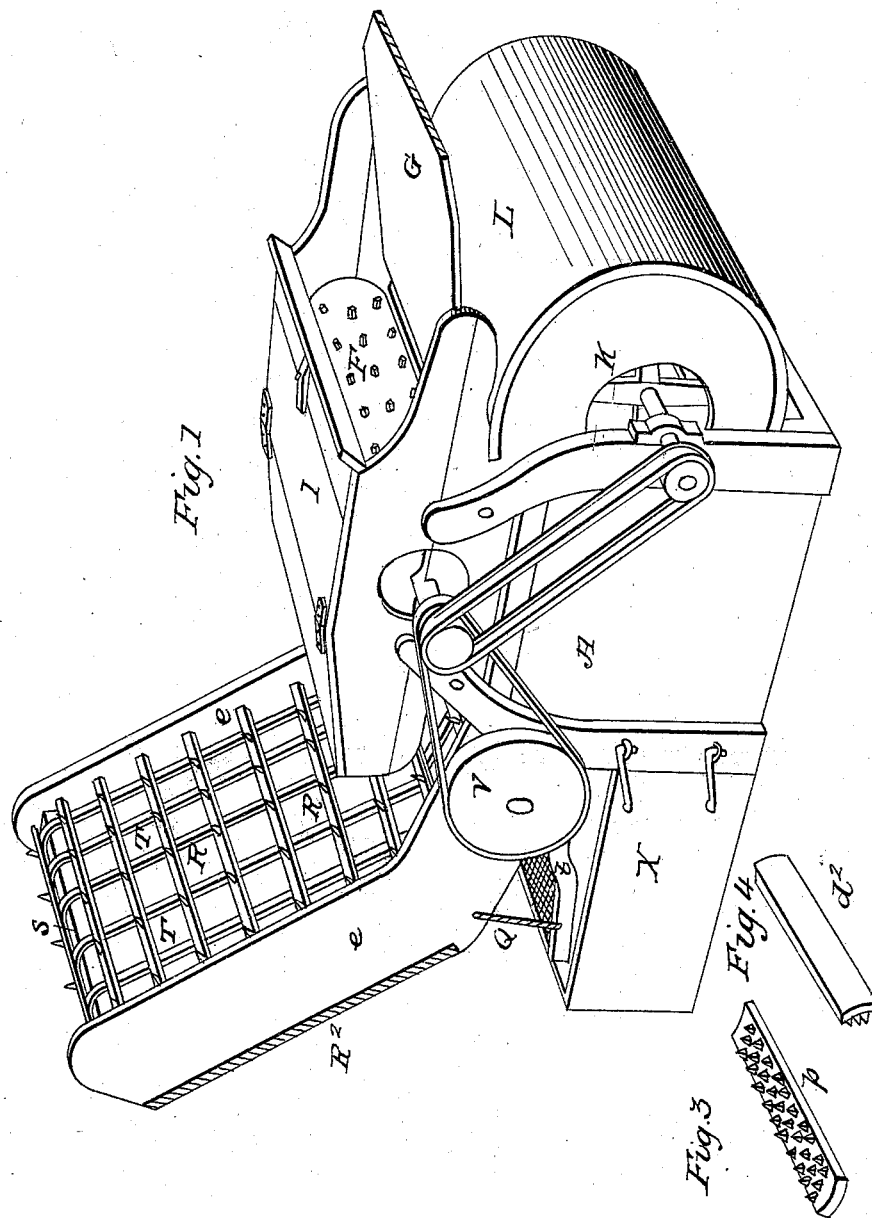


C. REIF.  
Clover Huller.

2 Sheets—Sheet 1.

No. 3,150.

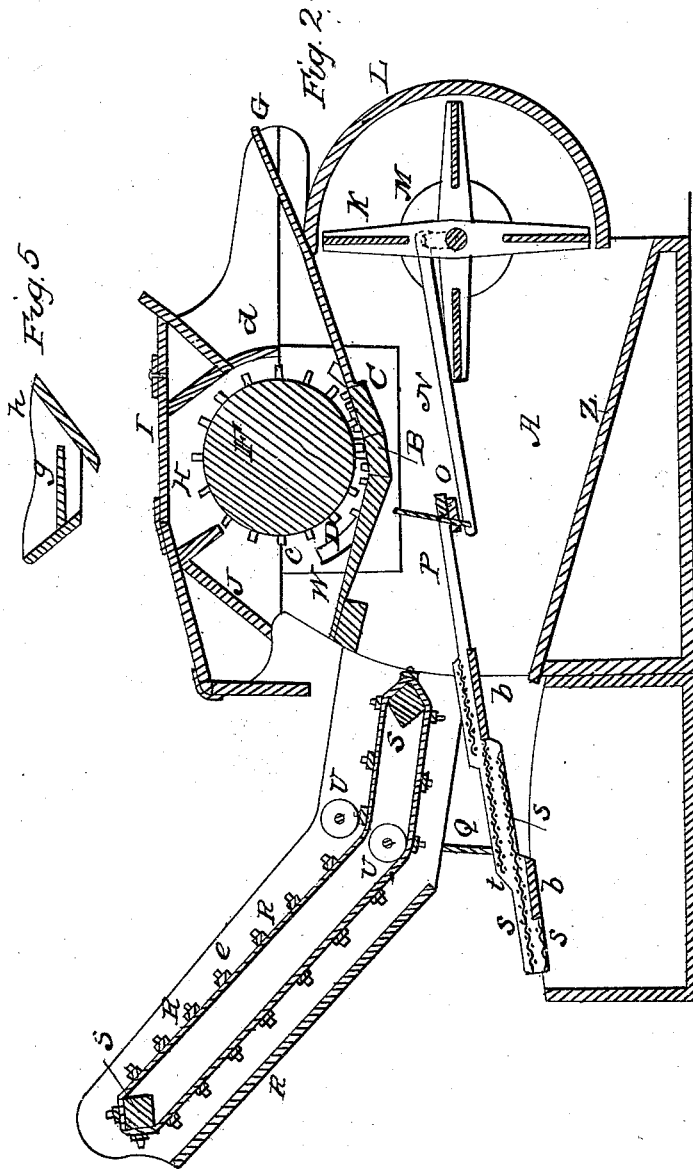
Patented June 24, 1843.



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# UNITED STATES PATENT OFFICE.

CHRISTIAN REIF, OF HARTLETON, PENNSYLVANIA.

## THRESHING-MACHINE.

Specification of Letters Patent No. 3,150, dated June 24, 1843.

*To all whom it may concern:*

Be it known that I, CHRISTIAN REIF, of Hartleton, Union county, State of Pennsylvania, have invented a new and useful Improvement in Machines for Threshing Grain, Hulling Clover-Seed, and for Cleaning the Same, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification:  
10 Figure 1 is a perspective view. Fig. 2 is a vertical longitudinal section; Fig. 3, one of the segment toothed plates used in forming the concave when the machine is to be adapted to hulling clover seed; Fig. 4 the  
15 spiked guard; Fig. 5, section of the hopper of the clover hulling machine.

Similar letters refer to corresponding parts.

20 The frame A is made of sufficient size and strength to contain and support the several parts hereafter described and in form resembles the frame of a fanning machine.

The concave B for threshing grain is made of bars of wood and armed with iron spikes  
25 the ends of said bars are inserted into segment grooves on the inside of the two end plates C. These end plates are cast with semi-circular grooves D on the inside to admit the ends of the aforesaid bars B forming  
30 the concave and those of the segment plates *p* when the machine is adapted for hulling clover seed. These end plates are also provided with flanges and bolt holes to admit bolts for securing them to the frame A and  
35 with concave seats for the journals of the cylinder to turn in. The bars forming the concave are prevented from descending too low in the grooves by stops placed therein.

40 The threshing cylinder E that turns in said concave is made and turned in the usual manner. The feeding hopper G by which the grain is introduced is made in the usual manner.

45 The cap H is likewise made in the usual manner except that it is provided with an opening closed by a hinged door I that is to be opened for the insertion of a hopper when the machine is to be altered and arranged for cleaning clover seed, and also with two inclined  
50 grooves for the introduction of an inclined board J for the purpose of directing the clover seed &c. downward upon the screens when the conducting board and conveyer are removed.

55 A fan K for cleaning the grain is placed below the aforesaid inclined feeding board G

surrounded partly by a semi-circular case L made like that of a common wheat fan, the axle of which fan turns in boxes in the frame and extends beyond the sides thereof to receive a pulley for a band and a fly wheel M  
60 on the opposite end which also serves as a band wheel, said axle having likewise a crank formed in it from which extends a pitman rod N leading to the end of a vibrating rod O attached by a loose joint at one  
65 of its ends to the inside of the frame on which joint it vibrates or moves horizontally the segment of a circle to the middle of which bar the vibrating or swinging frame  
70 P of the screens is attached said screen frame P being suspended by cords Q, from the frame of the conveyer or from the extremities of two arms projected outward from the rear of the frame when the conveyer is removed  
75 by which arrangement less power will be required to vibrate the screens than by the old method.

A straw conveyer R for conveying off the straw and for allowing the grain to descend  
80 through its meshes while the strap passes over them is placed at the rear of the threshing cylinder. The frame of this conveyer is composed of two bent pieces of timber or knees *r* connected together by a bottom board  
85 R<sup>2</sup> between which knees are placed two revolving square bars whose gudgeons turn in said knees around which is passed a series of endless parallel straps or bands T, crossed at right angles by a series of parallel straight  
90 bars R secured to said straps or bands through which at their intersection are inserted spikes or pins for taking hold of the straw said bars being made to pass under small wheels or short rollers U turning  
95 on pins inserted into the sides of the aforesaid frame of the conveyer for shaking it. On the outer extremity of the journal of one of the revolving square bars is a pulley V  
100 for a band by which it is turned. The inclined board below the conveyer is placed at a sufficient distance therefrom to prevent the teeth touching it and also to admit the grain to descend to the receiver.

A horizontal conducting board W is placed  
105 against the lower edge of the concave for conducting the straw to the conveyer.

The machine is fed and operated in the usual manner.

An oblong receiver X for receiving the  
110 cleaned grain is placed below the conveyer.

The machine to be adapted for the clean-

ing of clover seed requires that the aforesaid concave B should be removed—also the straw conveyer R—and a concave of plates *p* substituted that will be adapted to the getting out of clover seed or separating it from the hulls made in the following manner. Six segment plates *p* are cast with teeth on the concave surfaces and tenons on the ends which fit into the semi-circular grooves D on the inner sides of the before described end plates C. The clover seed is separated from the hulls by the teeth of cylinder and concave and ribbed on the sides for the purpose of increasing the rubbing surfaces. The door in the cap is raised and turned back out of the way and a hopper *h* is inserted for feeding the machine or conducting the clover heads or hulls to the concave and cylinder for undergoing the rubbing operation in which is placed a horizontal board or guard *g* for preventing the escape of the seed. The inclined board *J* is also added for the purpose of directing the seed and chaff to the screens. This is inserted into grooves made on the inner sides of the cap and in front of the threshing or rubbing cylinder. A spiked guard is also added to the cap at the front of the concave inserted in the segment grooved forming a continuation of the concave to prevent hard substances entering the concave. Boards *b* and fine screens *s* are inserted into the screen frame *t* below the

sieves in grooves in alternate order first a board and then a screen for the purpose of more effectually separating the chaff and dirt from the grain. The clover heads are put into the hopper *h* and descend between the cylinder and concave where they undergo the rubbing operation and when the seed is separated from the hulls. The whole seed, chaff, dust, and dirt are then carried out at the rear of the concave—the lighter particles being blown away by the fan *K* while the heavier portions with the seed descend upon the vibrating screens the seed falling through the meshes thereof into the receiver *X* while the chaff and straw are shaken off at the rear of the screens. The inclined board *z* is for directing the blast from the fan more directly to the screens.

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

1. The combination of the conveyer agitated in the manner described with the threshing machine as set forth.

2. Also the arrangement of the screens constructed with boards placed under them in the manner set forth.

CHRISTIAN REIF.

Witnesses:

SHEM SPIGELMYER,  
MICHAEL PETERS, 2d.