(No Model.)

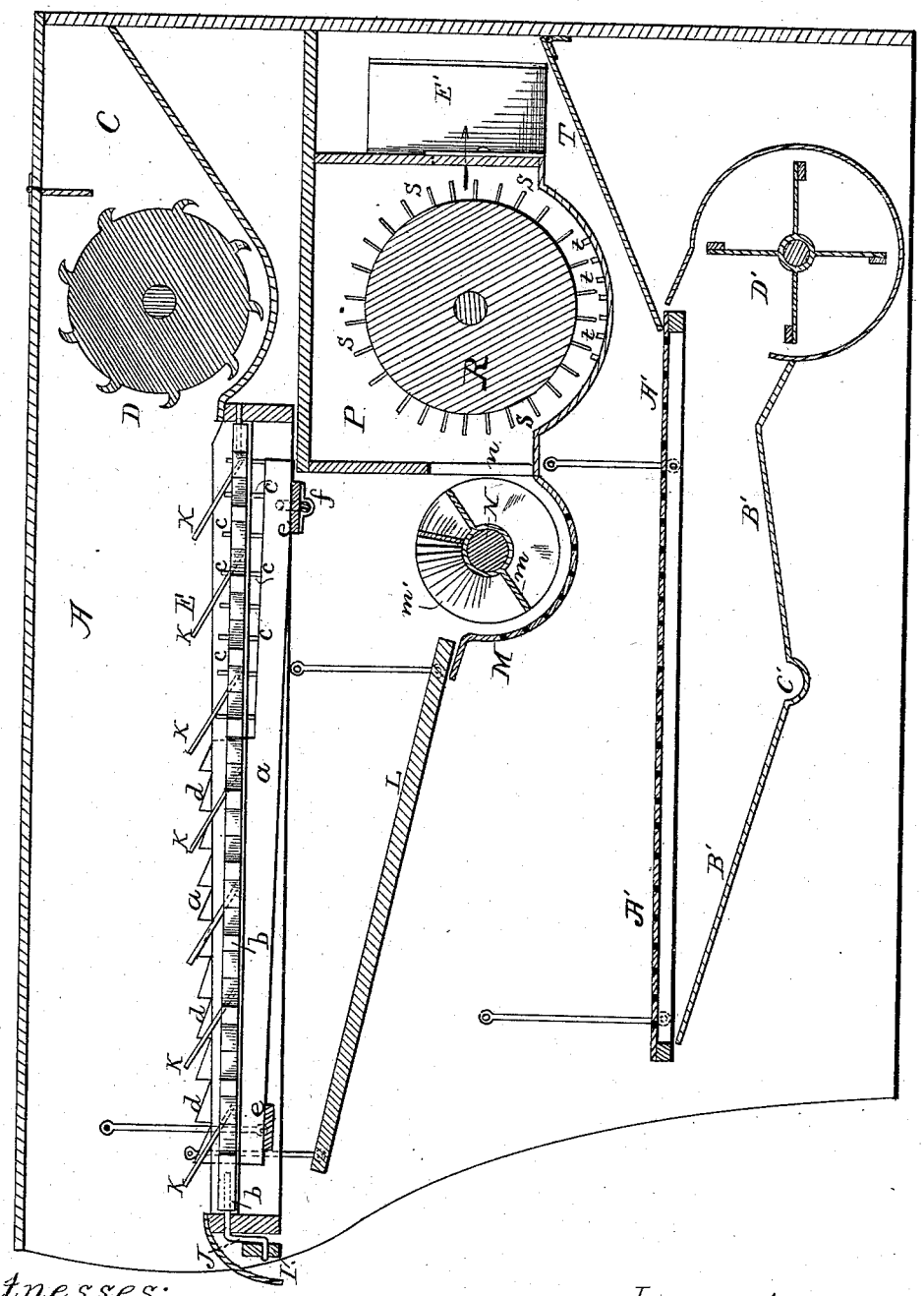
2 Sheets—Sheet 1.

D. LIPPY.

CLOVER HULLER.

No. 265,111. Patented Sept. 26, 1882.

Fig. 1.



Witnesses;
Chas. C. Gill
Herman Gustav

Inventor;
David Lippy,
By his Attys.
Cox and Cox

(No Model.)

2 Sheets—Sheet 2.

D. LIPPY.

CLOVER HULLER.

No. 265,111. Patented Sept. 26, 1882.

Fig. 2.

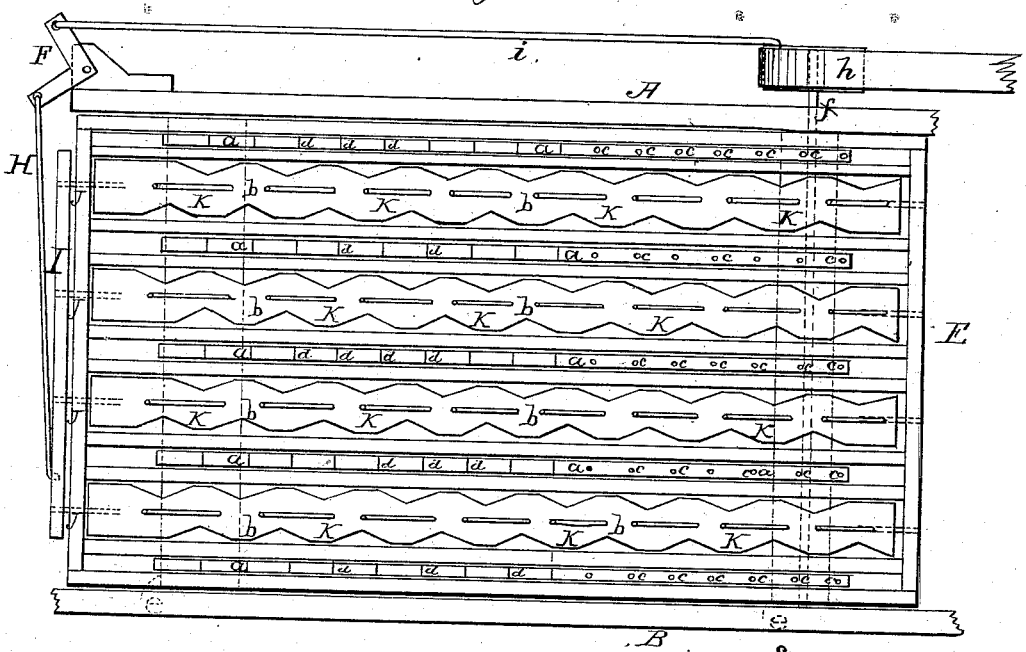
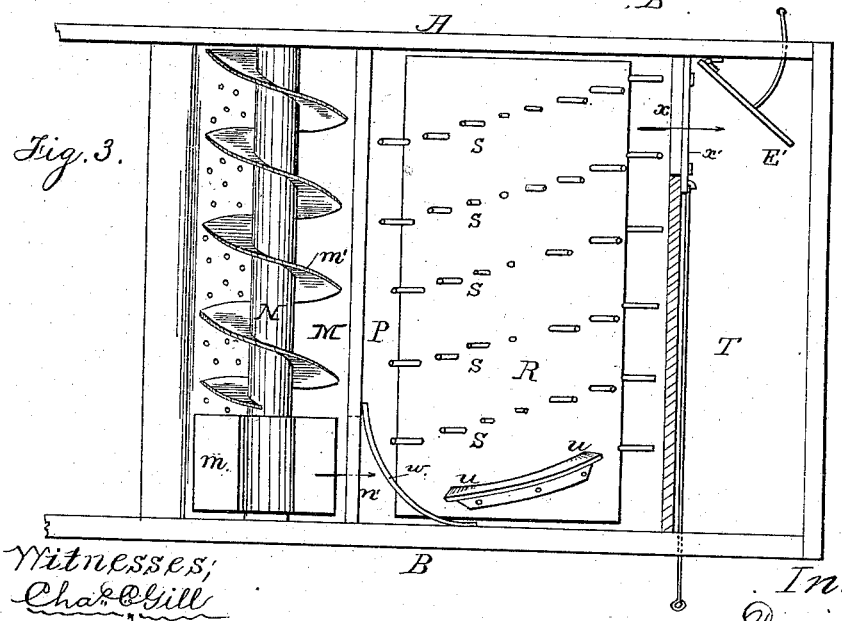


Fig. 3.



Witnesses;
Chas. O. Gill
Herman Gustow

Inventor;
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Cox and Cox

UNITED STATES PATENT OFFICE.

DAVID LIPPY, OF MANSFIELD, OHIO.

CLOVER-HULLER.

SPECIFICATION forming part of Letters Patent No. 265,111, dated September 26, 1882.

Application filed May 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID LIPPY, of Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Clover-Hullers, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in clover-hullers; and its nature and objects will be pointed out in the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of a machine embodying the elements of the invention. Fig. 2 is a detached view of the separator-frame E, and Fig. 3 is a detached top view of the troughs M and P and connections.

In the drawings, A B indicate the two sides of the machine, and C the trough through which the clover is fed to the machine. The trough has a concave floor, and is supplied with a thrashing or stemming cylinder, D, and has its outlet at the front end of the agitating-frame E, which consists of the longitudinally-reciprocating bars *a* and the rocking bars *b*, the latter bars being arranged alternately with the former. The bars *a* are provided upon their upper sides at their front portions with the spikes or pickers *c*, and at their rear ends with the ratchet-teeth *d*, which may be cut in the bars *a* or in separate bars to be applied to the bars *a*. The bars *a* are arranged parallel with each other, and are mounted on the cross-bars *e*, the forward cross-bar being secured upon the crank-axle *f* and the rear cross-bar being supported by the swinging bars, whereby when the machine is in operation the bars *a* have a simultaneous reciprocating movement. Upon one end of the crank-axle *f* is a band-wheel, *h*, to which is eccentrically secured the front end of the connecting-rod *i*, the rear end of which is pivoted on one arm of the bell-crank lever F, secured upon a block adjacent to the rear of the machine. In the other arm of the bell-crank lever F is pivoted one end of the rod H, the other end of which is secured to the bar I, connecting the crank ends of the pins J, upon which the rear portions of the rocking bars *b* are pivotally secured. The front ends of the bars *b* are also mounted upon pins or small rods of appropriate strength. Upon the upper surface of the bars *b* are provided the pickers or inclined rods K, which add to the effectiveness of the machine in hulling clover. When the clover is fed upon the agitating-frame E from the trough C the crank-axle *f* imparts to the bars *a* their reciprocating motion and causes the connecting-rod *i* to give the bell-crank lever F an oscillating movement on its pivot, whereby motion is communicated through the rod H, bar I, and crank-pins J to give the bars *b* a rocking motion. Thus the bars *a* and bars *b* have a simultaneous movement, the effect being to thoroughly agitate the grain, separating the pods from the straw, the pods falling through the notches cut in the sides of the bars *b* to and upon the swinging board L and being conveyed by the same to the trough M, while the straw and other refuse will work over the rear end of the agitating-frame and escape from the machine. The trough M is semi-cylindrical in form, and is perforated upon its rear side and floor, and has centrally mounted in it the shaft N, which has upon its right-hand end the fan or scraper *m*, and extending from said end to the left of the shaft the spiral feather or conveying-flange *m'*, which winds around the shaft and is of sufficient size to pass almost entirely across the trough between its two sides. The fan or scraper *m* is in the present instance composed of a sleeve encompassing the shaft and having two blades extending outward therefrom. In the front side of the trough M, directly opposite to the scraper *m*, is provided a door, *n*, leading to the hopper P, which is directly below the feed-trough C, though having no connection therewith. The hopper P is of appropriate size, and will preferably have a concave floor provided with spikes or projections *t*, extending across it from one side of the machine to the other. Centrally within the hopper P is mounted the cylinder R, having over its surface the series of spikes or pickers S. Upon the left-hand end of the cylinder R, opposite to the door *n*, are the radial blades *u*, as shown, and upon the rear of the hopper is secured the blade *w*, extending over the door *n*, as indicated in the drawings. At the right-hand end of the hopper P, upon its front side, is provided the door *x*, having an adjustable slide,

x', whereby the size of the door and the volume of grain passing through it may be regulated at will.

Below and to the front of the hopper P and trough C is the board T, which inclines downward over the front edge of the screen A', below which are the boards B', inclining downward toward the center of the machine and terminating in the discharge trough or spout C'.

A fan, D', of suitable construction, is supplied at the front of the machine, whereby the chaff may be blown away during the operation.

Adjacent to the door x is provided a hinged board, E', adapted to be adjusted at an angle thereto, and the purpose of which is to cast the hulled seed (as it is thrown out of the hopper P by the velocity of the cylinder R) away from the door x and toward the center of the machine. When the pods or bolls leave the board L and enter the trough M any clean seed that may be therein will fall through its perforated bottom, while the pods or hulls and partly-cleaned seed will be carried to the left-hand end of the trough by the spiral shaft N, and is then scraped or knocked through the door n into the hopper P by the wings of the scraper m. After the grain enters the hopper P it is moved toward the right of the machine again by the cylinder R and blades u w, and on its passage to the right it is thoroughly agitated, and the pods broken and the seed hulled by the pickers S. The pods, seeds, &c., are driven from the hopper by the velocity of the cylinder R through the door x and fall upon the board T, whence they pass to the screen A' and are cleaned, the chaff and other light matter being blown out through the rear of the machine, while the seed falls through the screen upon the boards B', and is conveyed away by means of the spout C'. The tailings will be returned to the hopper P in the usual manner.

It will be observed that the pods, &c., enter the hopper P at one end, and are discharged therefrom at the opposite end. During their passage from one end to the other of the hopper they are effectually broken and the seed hulled.

The employment of the curved blades u upon the cylinder R is especially advantageous in that they keep the pods, &c., moving from the inlet-door n, and prevent the clogging of the machine. The movement of the clover pods or bolls from the inlet-door n is accelerated by the blade w, which prevents the seeds, &c., falling back over the cylinder in the same position they were in before. The blade w, being curved, acts to direct the grain toward the opposite end of the machine.

I do not limit myself to the exact construction I have described, as the same may be modified in many respects without departing from the essence of the invention.

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

1. In a clover-huller, the agitating-frame composed of the alternating longitudinally-reciprocating bars a and the laterally-rocking bars b, substantially as set forth.

2. In a clover-huller, the agitating-frame composed of the alternating longitudinally-reciprocating bars a and the laterally-rocking bars b, having space-notches cut upon their sides, and the crank-pins J and bar I for the purpose of giving the bars b a simultaneous rocking movement, substantially as set forth.

3. In a clover-huller, the combination of the trough M, having an outlet at one end, means for conveying the grain to that end and driving it through the outlet, the hopper P, and mechanism for moving the seed therein in an opposite direction to its movement in the trough M and hulling it, substantially as set forth.

4. In a clover-huller, the combination of the trough M, having an outlet at one end, the spiral shaft N and scraper m, the hopper P, and the hulling-cylinder R, provided with the blades u on its end opposite to the inlet to the hopper, the outlet for the grain being at the opposite end of the hopper, substantially as set forth.

5. In a clover-huller, the agitating-frame, the trough M, having a perforated bottom, an outlet at one end, and means for carrying the grain to said end and driving it through the outlet, in combination with the hopper P and the hulling-cylinder R, substantially as set forth.

6. In a clover-huller, the hopper P, having an inlet at one end and an outlet at the other, in combination with the blade w and the hulling-cylinder R, provided adjacent to the inlet with the blades u, and in combination with the blade w, substantially as set forth.

In testimony that I claim the foregoing improvement in clover-hullers as above described I have hereunto set my hand this 23d day of March, 1882.

DAVID LIPPY.

Witnesses:
THOS. E. BARROW,
JOSEPH P. HENRY.