

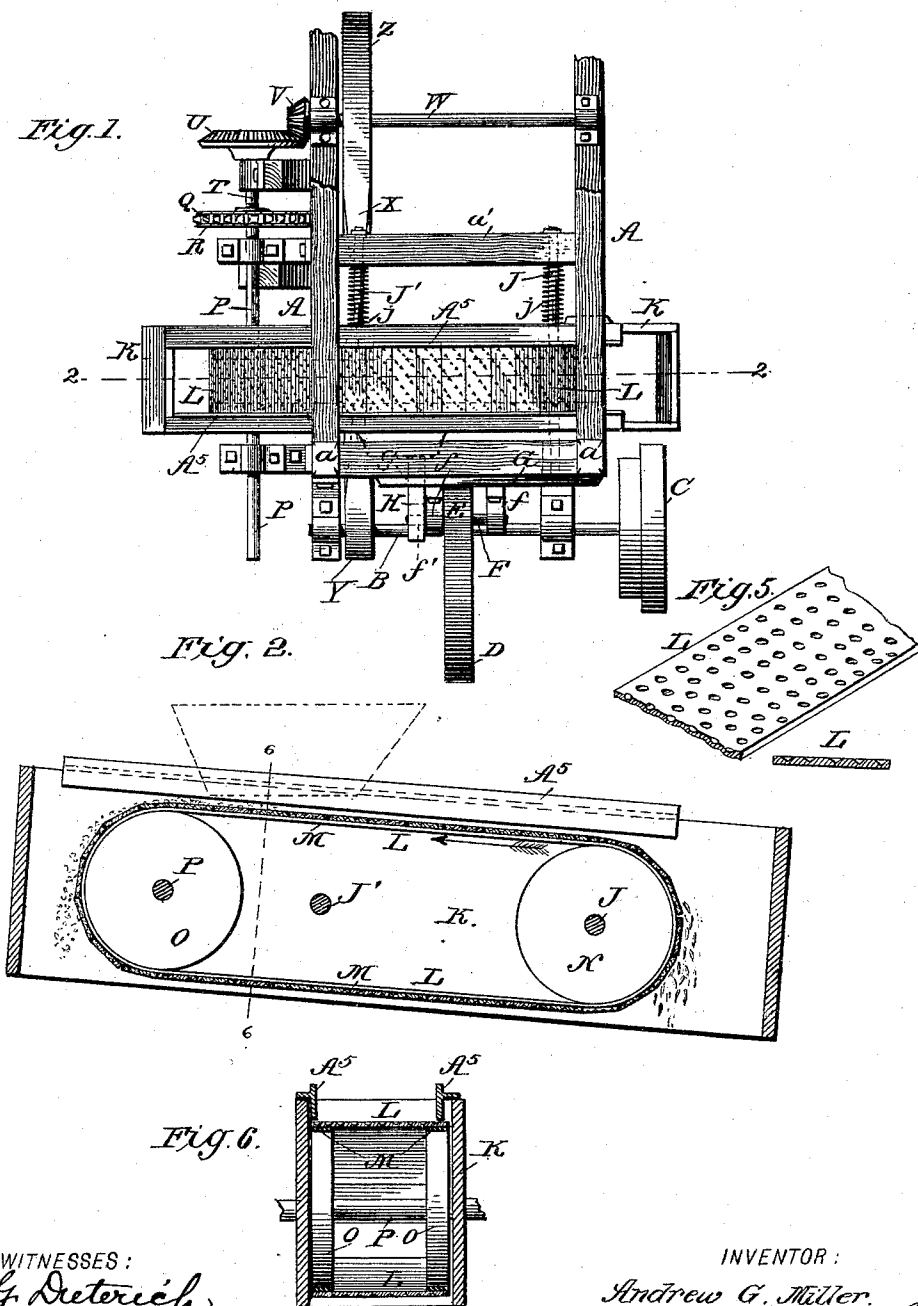
(No Model.)

2 Sheets—Sheet 1.

A. G. MILLER.
COCKLE SEPARATOR.

No. 488,443.

Patented Dec. 20, 1892.



WITNESSES:
Fred G. Dietrich
Jos. A. Ryan

INVENTOR:
Andrew G. Miller.
BY *Munn*
ATTORNEYS

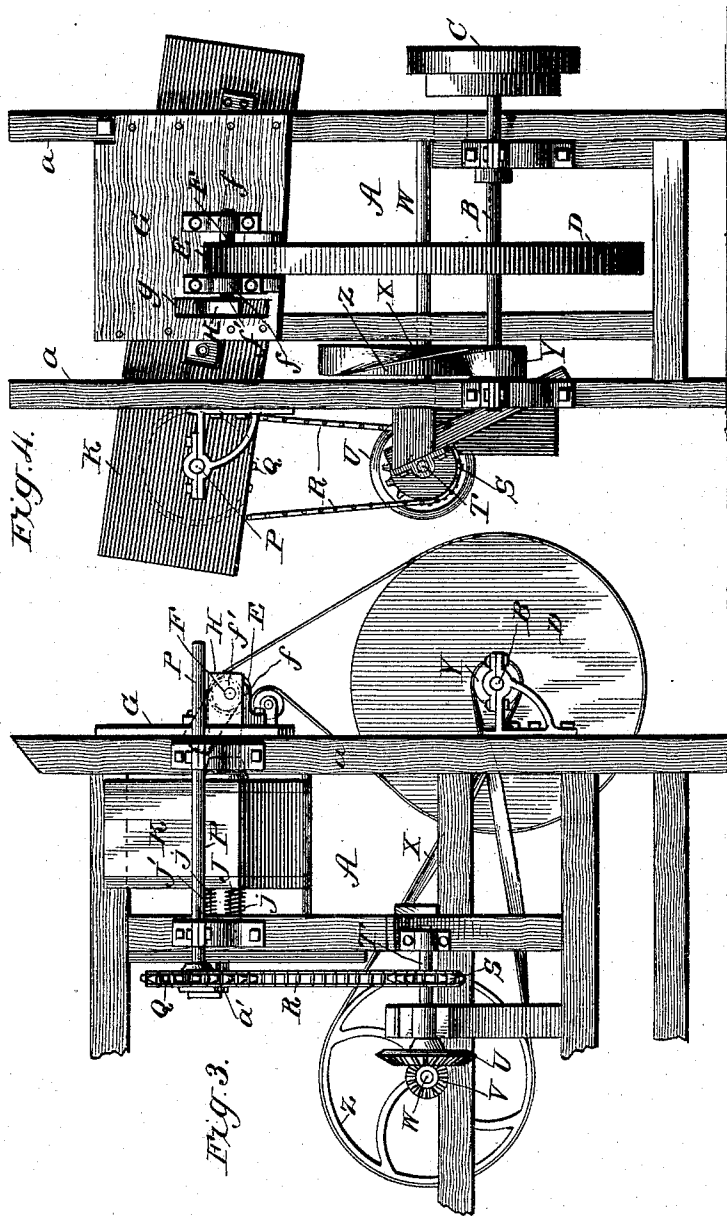
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UNITED STATES PATENT OFFICE.

ANDREW GARRETT MILLER, OF ESTILL SPRINGS, TENNESSEE.

COCKLE-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 488,443, dated December 20, 1892.

Application filed July 27, 1892. Serial No. 441,424. (No model.)

To all whom it may concern:

Be it known that I, ANDREW GARRETT MILLER, of Estill Springs, in the county of Franklin and State of Tennessee, have invented certain new and useful Improvements in Cockle-Separators, of which the following is a specification.

My invention relates to a machine for separating cockle from wheat, oats, rye &c. and it has for its object to provide a machine of this character, simple in construction, easily manipulated and effective for the desired purpose.

My invention consists in the peculiar combination and novel arrangement of parts all of which will be fully set forth in the specification and particularly pointed out in the claims, reference being had to the accompanying drawings in which

Figure 1 is a plan view of my improved separator. Fig. 2 is a longitudinal section of the combined vibrator and separator taken on the line 2—2 Fig. 1. Fig. 3 is an end elevation. Fig. 4 a side elevation of the same and Fig. 5 is a detail view of a portion of the separator belt detached. Fig. 6 is a cross section taken on the line 6—6, Fig. 2.

Referring to the accompanying drawings A indicates a suitably arranged frame work or support, on the end uprights *a a* of which is journaled, transversely, a main or drive shaft B, upon the outer end of which is secured the drive pulley C driven in the usual manner. About centrally of the uprights *a a* the shaft B has fixedly secured thereto, a large drive pulley D, which is belted to a smaller pulley E mounted upon a short shaft F journaled in bearings *ff* on the outer face of a board G secured to the uprights *a* as shown most clearly in Fig. 4 of the drawings. The end *f'* of the shaft F carries an eccentric or knocker H as most clearly shown in Figs. 1 and 3, which operates through a slotted opening *g*, in the board G for a purpose presently described.

J J' indicate shafts fixedly held at one end in the timbers *a* their opposite ends being held in parallelly disposed horizontal timbers *a'*. Upon these shafts J J' is disposed the vibrator or shaker box K open at the top and bottom but closed at the ends, such shafts being arranged in different horizontal planes

whereby to incline the box from the top to the bottom.

L indicates the separator which in practice is formed of a series of metallic plates, secured at their opposite edges to endless leather bands M, which pass over pulleys N on the shaft J, and similar pulleys O on a drive shaft P mounted transversely in the upper end of the box such shaft being projected to one side and has a sprocket wheel Q. The wheel Q is driven by the chain belt R which passes over the wheel Q and over a smaller sprocket wheel S on a short longitudinal shaft T upon the outer end of which is mounted a large bevel gear U which gears with a smaller bevel gear V on the end of a shaft W journaled in the main frame parallel to the main drive shaft, it being driven by such shaft through the twisted belt X which passes over a drive pulley Y on the main shaft and over a larger pulley Z on the shaft W.

As will be noticed by reference to Figs. 2 and 5 each separator section is formed of metal, which may be zinc, copper, or sheet iron, having a series of depressions concave, conical, diamond or other shape, which will admit of a proper seating therein of the cockle but, not of the wheat, oats or other kernel.

As will be seen in Fig. 1 the knocker arm on the shaft F is held for contact with the side of the vibrator box, and such is arranged for transverse motion on the shafts J J', repelling springs *jj* being interposed on the said shafts between the sides of the box and the horizontal timber *a'* therefor which serve to move it in the direction, opposite to the knocker arm thrust.

Guard members A⁵ are secured upon the upper longitudinal edges of the vibrator box which project down over such edges and serve to form side ways to hold the material from being thrown over the sides of the box.

In operation the material is fed into the vibrator box at its upper end, and the separator is caused to travel in the direction indicated by the arrow in Fig. 2. The cockle settles in the depressions or seats in the plates L and is carried upward and discharged over the upper end of the separator. As the wheat particles can only seat with their ends in the depressions, it will be readily seen that as the box is vibrated laterally such kernels as will

seat in the depressions will tumble over side-wise and be carried with the bulk of the kernels down to the lower end of the separator and tail over such end, into any suitable receptacle.

From the foregoing description taken in connection with the drawings the advantages of my improved separating machine will be readily understood by those skilled in the art to which it appertains. It will be noticed no air passages or sieves are used.

The cockle is carried backward and up over the receiving end of the box while the wheat or other kernels are carried down to tail over the lower end.

The construction of my machine is of a simple nature, it is of a very few parts, and can be constructed at a cost within the reach of every miller.

While I have shown and described the separator formed of a series of metal plates, I desire it understood that the same may be formed of an endless sheet metal band formed with cockle holding depressions.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a cockle separator, the combination with the supporting frame, the shafts J J',

the inclined shaker box K held to vibrate laterally on such shafts J J', said box extended at one end beyond the frame, the shaft P journaled on such end, the pulleys O and N, held on the shafts P and J respectively, the endless separator belt mounted on such pulleys, knocker devices adapted to engage one side of the box, and the buffer spring *j* on the shafts J J' all arranged substantially as and for the purposes described.

2. The combination of the frame, the shafts J J', the box K held for lateral vibration on such shafts, one end of such box projected beyond the frame, the shaft P, journaled in such end, the conveyer L, having cockle holding depressions, mounted to turn with the shafts J and P, the main drive shaft W, the counter shaft B and the shaft T, belted to the main drive shaft W, the shaft T also belted to the shaft P, the shaft F having a knocker arm *h*, adapted to engage the box K, the buffer springs *j j* and the belt connection between the shafts B and F all arranged substantially in the manner and for the purposes described.

ANDREW GARRETT MILLER.

Witnesses:

J. M. MILLER,
E. C. GARNER.