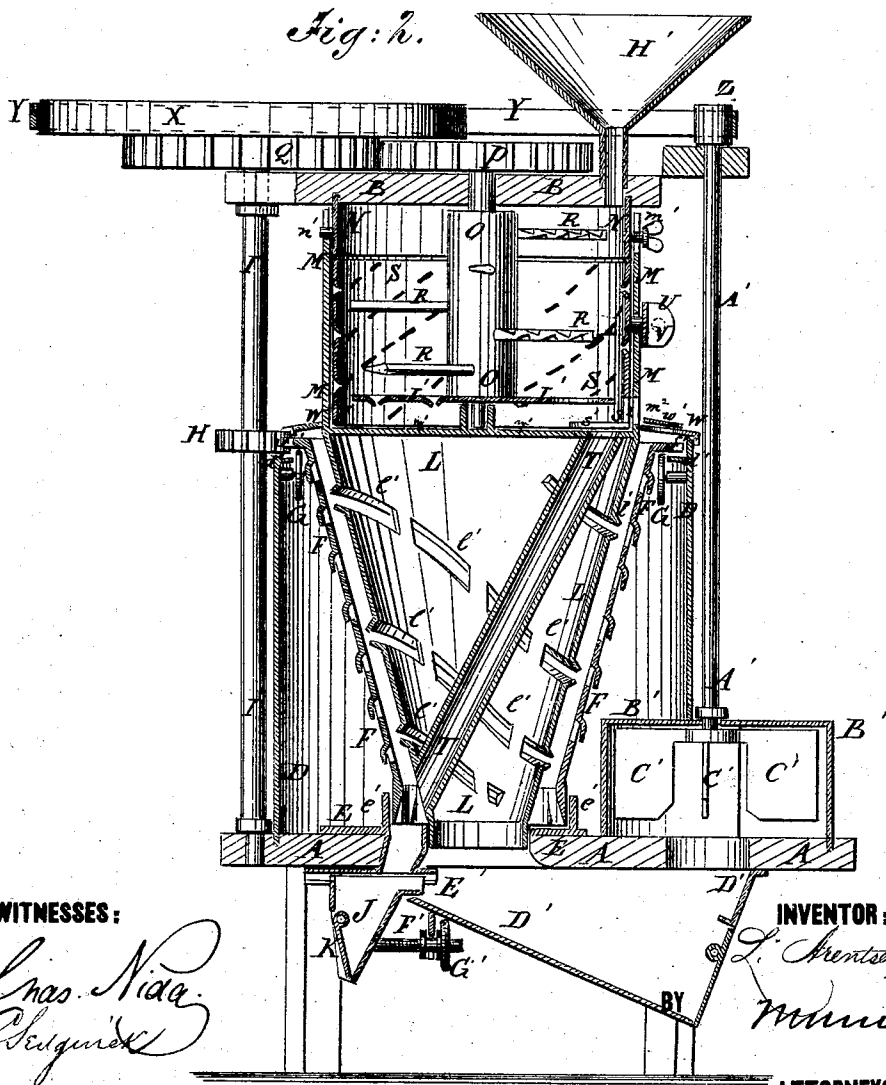
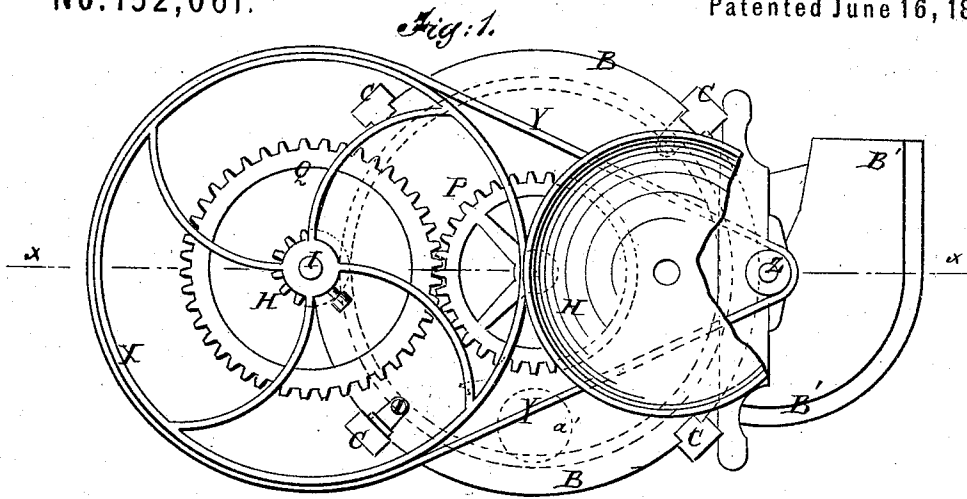


L. ARENTSEN.

Combined Wheat-Scourers and Cockle-Extractors.

No. 152,061.

Patented June 16, 1874.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOURENS ARENTSEN, OF GIBBSVILLE, WISCONSIN.

IMPROVEMENT IN COMBINED WHEAT-SCOURERS AND COCKLE-EXTRACTORS.

Specification forming part of Letters Patent No. **152,061**, dated June 16, 1874; application filed May 9, 1874.

To all whom it may concern:

Be it known that I, LOURENS ARENTSEN, of Gibbsville, in the county of Sheboygan and State of Wisconsin, have invented a new and useful Improvement in Combined Wheat-Scourer and Cockle-Extractor, of which the following is a specification:

Figure 1 is a top view of my improved machine, part of the hopper being broken away to show the driving-gear. Fig. 2 is a vertical section of the same, taken through the line *xx*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for scouring wheat and clearing it from dust, and for taking out the cockle, and which shall be simple in construction, convenient in use, and effective in operation.

The invention consists in the combination of the stationary hollow cylinder, the shaft, the radial toothed arms, the perforated disk, and the adjustable toothed sleeve with each other, for scouring the wheat; in the revolving conical screen provided with perforated recesses, and the stationary hollow cone provided with slotted double spiral threads, in combination with each other, for separating the cockle-seed from the wheat; and in the combination of the adjustable wheat-spout, the air-spout, and the fan-blower with the scouring device and the separating device, as hereinafter fully described.

A B C is the frame-work of the machine, of which A is the bottom plate, and B is the top plate, which plates are attached to and supported by four posts, C. D is a cylindrical case, the lower edge of which is let into or otherwise secured to the bottom A. The case D is made of a height equal to about two-thirds the distance between the bottom plate A and the top plate B. In the center of the bottom plate A is formed a round hole, which is surrounded with a ring-plate, E, attached to the upper surface of the bottom A, and having an upwardly-projecting ring-flange, *e'*, formed upon it at a little distance from its inner edge, as shown in Fig. 2. F is a conical screen, the lower or smaller end of which fits into the flange *e'*, and rests and revolves upon the plate E. In the inner surface of the screen F are formed numerous small concavities or recesses, the lower sides of which are made

flat, and have small holes formed in them for the passage of air. The upper edge of the screen F is provided with an outwardly-projecting flange, *f'*, which overlaps a flange, *d'*, attached to the case D a little distance below its upper edge, and rests upon small friction-wheels G, pivoted to the said case D. Upon the edge of the rim or flange *f'* are formed gear-teeth, into which mesh, through a slot in the case D, the teeth of the small gear-wheel H, attached to the shaft I, to which motion may be given by the ordinary means from any convenient power. Upon the inner surface of the lower cylindrical end of the screen F are formed vertical teeth or flanges, by which the wheat is pushed into a hole in the plate E and bottom A, through which it falls into the wheat-spout J, whence it escapes through the valve-door K into any convenient receptacle. The door K is so formed as to be opened by the weight of the wheat, and closed by the pressure of the current of air drawn in by the fan-blower, as hereinafter described. L M is a hollow drum, the lower two-thirds of which is made conical, to correspond with the screen F. Upon the outer surface of the cone L are formed two or more double threads, *l'*, the lower parts of which are made a little lower than the upper parts, and between said parts are formed a series of spiral slots, as shown in Fig. 2. The threads *l'* are made of such a height as to fit against the screen F. The upper third M of the drum is made cylindrical in form, and its upper end fits upon a flange or collar, N, attached to the top plate B, and which is provided with two or more pins, *n'*, which enter inclined slots in the cylinder M, so that the drum L M may be raised and lowered to adjust it by turning it slightly in one or the other direction. One or all the pins *n'* should be provided with a hand-nut to lock the drum L M in place when adjusted. The parts L M of the drum are separated by a partition, *m'*, in the center of which is formed a step to receive the pivot formed upon or attached to the lower end of the shaft O, the upper part of which revolves in a hole in the top B, and has a gear-wheel, P, attached to its projecting end, the teeth of which mesh into the teeth of the gear-wheel Q, attached to the driving-shaft I. To the shaft O, within the cylinder M, are attached a series of radial arms, R, the forward edges of which are made thinner than

their rear edges, and upon the upper and lower sides of which are formed inclined teeth or notches. To the lower part of the shaft O, at a little distance above the partition m^1 , is secured a circular plate or disk, I' , through which are formed holes for the passage of the wheat, and upon its lower side are formed teeth to assist in scouring the wheat. Upon the inner surface of the cylinder M is fitted a sleeve, S, having spiral rows of small teeth formed upon its inner surface. To the bottom edge of the sleeve S is attached a small cap-plate, s^1 , to cover a hole in the partition m^1 . In the lower edge of the sleeve S and in the cylinder M are formed two or more pairs of holes, $s^2 m^2$, which are so arranged as to be opposite each other when the cap-plate s^1 is over the hole in the partition m^1 , and to be covered or closed when the plate s^1 is moved off the said hole, so that by shifting the sleeve S the wheat, after being scoured, may be allowed to escape through the hole in the plate m^1 , and pass through the spout T to the plate E, and out through the wheat-spout J when there is no cockle mixed with it; or may be allowed to pass through the holes $s^2 m^2$ into the space between the cone L and screen F, where the cockle is separated from it. The sleeve S is shifted by a bar, U, placed upon the outer side of the cylinder M, and connected with the sleeve S by a pin passing through a slot in the said cylinder M. The movement of the bar U, and consequently of the sleeve S, is limited and regulated by set-screws V, which pass through lugs attached to the cylinder M, so that the ends of said bar may strike against the ends of the said set-screws. The upper ends of the case D and screen F are covered with a ring-plate, W, which has holes formed through it for the entrance of air, which holes may be covered with caps w' , to enable the entrance of air to be regulated as desired, or wholly prevented. To the driving-shaft I or gear-wheel Q is attached a pulley, X, around which passes a band, Y, which also passes around a small pulley, Z, attached to the upper end of the fan-shaft A', the lower end of which enters the fan-case B', and has fans or wings C' attached to it. The fan-case B' is connected with the lower part of the case D, and rests upon and is attached to a projecting part of the bottom plate A. In the projecting part of the bottom plate A is formed a hole leading into the air-tight spout D'. The inner end of the spout D' covers and opens into the central hole through the bottom A and the lower ends of the screen F and drum L. The outer end of the air-spout D' is provided with a valve-door, held closed by the inward pressure of the air until said pressure is overcome by the weight of the cockle-seed, &c., accumulated upon its inner side, when it will open and allow said seed to escape, and will be again closed by the pressure of the air. A passage, E', leads from the air-spout D' to the wheat-spout J, so that the draft of air will draw the dust and other light

particles away from the wheat as it falls into said wheat-spout. The top of the wheat-spout J is placed in ways, and is provided with a screw-rod, F', and swiveled nut G', so that it may be readily adjusted to bring the falling wheat more or less directly within the sweep of the current of air.

In using the machine, the wheat flows from the hopper H' into the cylinder M, where it is cleaned from dust and other substances that may adhere to it. If the wheat is free from cockle the sleeve S is adjusted to uncover the hole through the partition m^1 , and allow the wheat to pass through the tube or spout T to the wheat-spout J, where the dust is withdrawn through the spout D' by the air-blast. If the wheat contains cockle-seed the sleeve S is adjusted to close the hole in the partition m^1 and open the holes $s^2 m^2$, allowing the wheat to pass into the space between the screen F and cone L. As the wheat passes down through the said spaces the cockle-seeds enter the recesses in the screen F, where they are held by the pressure of the air, which passes in with the wheat and through the openings in the ring-plate W. As the cockle-seeds come opposite the openings between the parts of the double threads they are forced through said openings by the current of air passing through the holes in the screen F, and through the said openings between the parts of the threads as it makes its way through the spout D' to the fan. The cockle-seeds drop through the interior of the cone L to the air-spout D', whence they escape through the valve-door, as hereinbefore described.

In the bottom plate A is formed a hole, a' , to allow the air to pass directly to the screen F when desired, which hole is provided with a pivoted or sliding cap or cover, to enable the entrance of the air to be regulated or entirely prevented when desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the stationary hollow cylinder M, the shaft O, the radial toothed arms R, the perforated disk I', and the adjustable sleeve S with each other, for scouring the wheat, substantially as herein shown and described.

2. The revolving conical screen F, provided with perforated recesses, and the stationary cone L, provided with slotted double spiral threads, in combination with each other, for separating the cockle-seed from the wheat, substantially as herein shown and described.

3. The combination of the adjustable wheat-spout J, the air-spout D', and the fan-blower A' B' C' with the scouring device M O R S and the separating device F L, substantially as herein shown and described.

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Witnesses:

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