(No Model.)

J. M. SAILER.

THRASHING MACHINE.

No. 417,745. Patented Dec. 24, 1889.

Fig. 1.

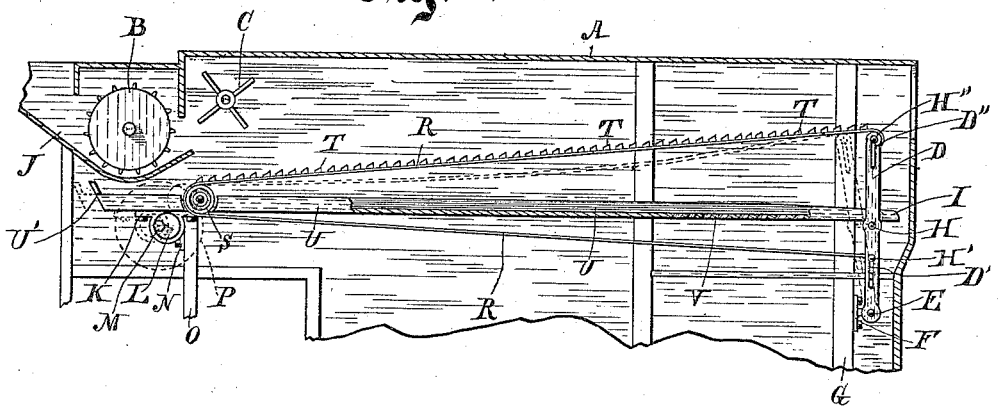


Fig. 2.

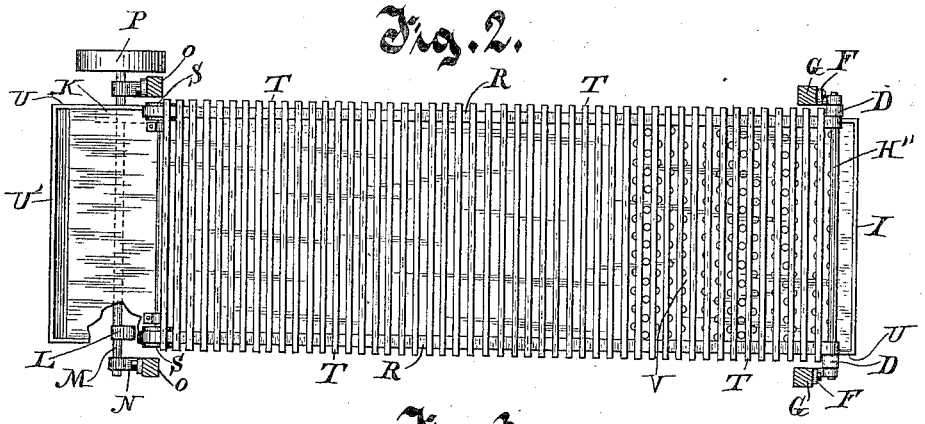
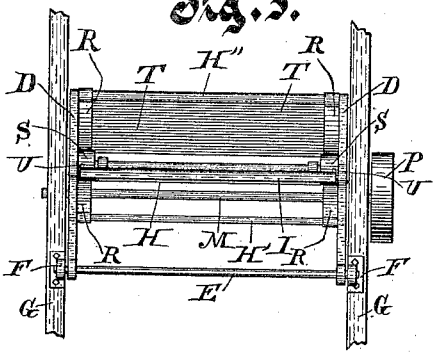


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN M. SAILER, OF MILTON JUNCTION, ASSIGNOR TO THE FLEXIBLE ENGINE AND THRESHING MACHINE COMPANY, OF ROCK COUNTY, WISCONSIN.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 417,745, dated December 24, 1889.

Application filed June 27, 1889. Serial No. 315,775. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. SAILER, of Milton Junction, in the county of Rock and State of Wisconsin, have invented new and useful Improvements in Grain-Separators; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a less expensive and more enduring device for separating the straw from the grain in a thrashing-machine than has been heretofore in use, which device is operated with comparatively a small amount of power, and by reason of its peculiar operation is especially adapted for thoroughly beating the grain from the straw and carrying the straw over the tail of the machine.

In the drawings, Figure 1 is a vertical longitudinal section of my improved device, shown in connection with so much of a thrashing-machine as is necessary to indicate its relations thereto. Fig. 2 is a top view or plan of my device, parts being broken away to show other parts. Fig. 3 is a rear end view of my device.

In the drawings, A is the case of the rear part of a thrashing-machine.

B is the toothed cylinder of the machine, and C is the beater.

Two upright arms D D—one at each side of the machine—are pivoted at their lower ends on a rod E, supported in brackets F F, which brackets are affixed to the case A of the machine conveniently to the uprights G G, which are a part of the case. At a distance above the rod E is a cross-bar H, inserted in and supported on the arms D D, on which cross-bar H is supported one end of the shoe I. The shoe I is hinged to the cross-bar H, so as to permit a movement of the shoe thereon. The shoe I extends forwardly to and beneath the place of the discharge of the straw and grain from the cylinder-concave J. At each side of the shoe, near its front end, there is secured to its lower surface a bracket K, having a central aperture adapted to receive therein and fit movably upon the rotating bearing L, which bearings L L are fixed eccentrically on shaft M, the shaft M having its bearings and rotating in brackets N N, affixed to the case A and conveniently to uprights O O of the case. The shaft M carries a band-wheel P, whereby motion is communicated to the shaft. Two flexible straps R R—one at each side of the machine—are secured at one end to a cross-bar H′, inserted in the arms D D, between the rod E and cross-bar H, and these straps R R are carried forward to and around pulleys S S, journaled on the shoe I, near its front end, the straps running rearwardly therefrom above the shoe to a cross-bar H″, secured in the upper extremities of the arms D D, at a distance above the cross-bar H, to which cross-bar H″ the other ends of the straps R R are attached. Transverse slats T T, running from one side of the machine to the other, are affixed to the straps R R at a little distance apart on their upper surfaces from the pulleys S S to the cross-bar H″.

The shoe I is provided with low upwardly-extending sides U U and a front end board U′, and its bottom is perforated at the rear part, forming a riddle V. It will be understood that the shoe I is reciprocated endwise by the rotation of the shaft M, and that as the shoe is carried forward from the position shown in Fig. 1 the arms D D will be tilted in the direction shown by the dotted lines, and thereby the straps R R above the shoe will be considerably loosened, and will sag down into the position shown in the dotted lines, only a small portion of the slack being taken up by the straps running over the pulleys S S to supply the slightly-additional length required in the straps below the shoe, on account of the greater endwise movement of the shoe than is given to the straps below, and that as the reverse movement of the shoe carries the arms D D back again into the position shown in Fig. 1 the straps above the shoe will be thrown up quickly into the taut position shown in that figure; that as these motions are repeated rapidly the straw and grain

thrown upon the separator and conveyer are thrown upward and rearwardly by the movement of the straps and slats forming the separator and conveyer, and the grain is thereby separated from the straw and falls between the slats upon the shoe, and the straw is tossed intermittingly to the rear and finally over the tail of the machine.

The foregoing description of my device has been entirely of the device as shown in Fig. 1, in which the cross-bar H″ is located at a greater distance above the cross-bar H than the cross-bar H′ is located below the cross-bar H, in which case the tilting of the arms D D gives a considerable amount of slack in the upper portion of the straps R R, as hereinbefore described; but as sometimes it is desirable to reduce that slack to a minimum, or even to so adjust the straps that the part of them above the shoe will have no more movement than the part below the shoe with reference to each other, the cross-bars H′ and H″ are inserted adjustably in slots D′ and D″ therefor in the arms D D, whereby the ends of the straps R R may be adjusted nearer to or farther from the cross-bar H, as desired, in order to provide for greater or less sag in the upper portion of the straps, as shall be desired.

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

1. The combination, in a grain-separator, of upright swinging arms, a shoe hinged and supported at one end on the arms centrally, and a separator and conveyer consisting of flexible straps attached at their ends to the upright swinging arms respectively above and below the point of attachment of the shoe to the arms and running forward to and around bearings on the shoe near its front end, and provided with transverse slats, with mechanism for reciprocating the shoe, substantially as described.

2. In a grain-separator, the combination, with upright arms D D, pivoted at their lower ends on the case, and flexible separator attached at one end to the arms D D, near their pivotal point, and at the other end at considerable distance from the pivotal point, of a shoe I, hinged at one end to the arms D D, between the points of attachment of the flexible separator thereto, and supported movably at its other end and provided with bearings near its other extremity, about which bearings the flexible separator passes movably, with means for reciprocating the shoe, substantially as described.

3. The combination, with the case of a grain-separator, of a shoe I, having rigid journal-brackets K K, eccentrics L L, fixed on a shaft M and running in the brackets K K, upright swinging arms D D, on which the shoe I is hinged at one end, and flexible separator-straps attached at their ends to the arms D D, respectively, above and below the shoe I, and running around bearings therefor on the shoe I near its other extremity, substantially as dscribed.

4. A flexible vibrating grain-separator and straw-conveyer, the ends of which are secured adjustably at a distance apart to swinging arms, and bearings on which the separator is supported medially movably, the adjustment of the ends of the separator being respectively toward or from the pivotal point of the swinging arms, whereby a variable throw of the separator may be obtained, substantially as described.

5. In a grain-separator, a pair of swinging arms pivoted at one end on a common axle-rod, and a shaking-shoe hinged to the arms medially and extending at or nearly at right angles therefrom, in combination with a flexible separator and conveyer secured at its ends to the swinging arms, and supported medially movably at a distance from the swinging arms on bearings therefor on the shoe, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN M. SAILER.

Witnesses:
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