(No Model.)

R. H. COON.

THRASHING MACHINE.

No. 313,299. Patented Mar. 3, 1885.

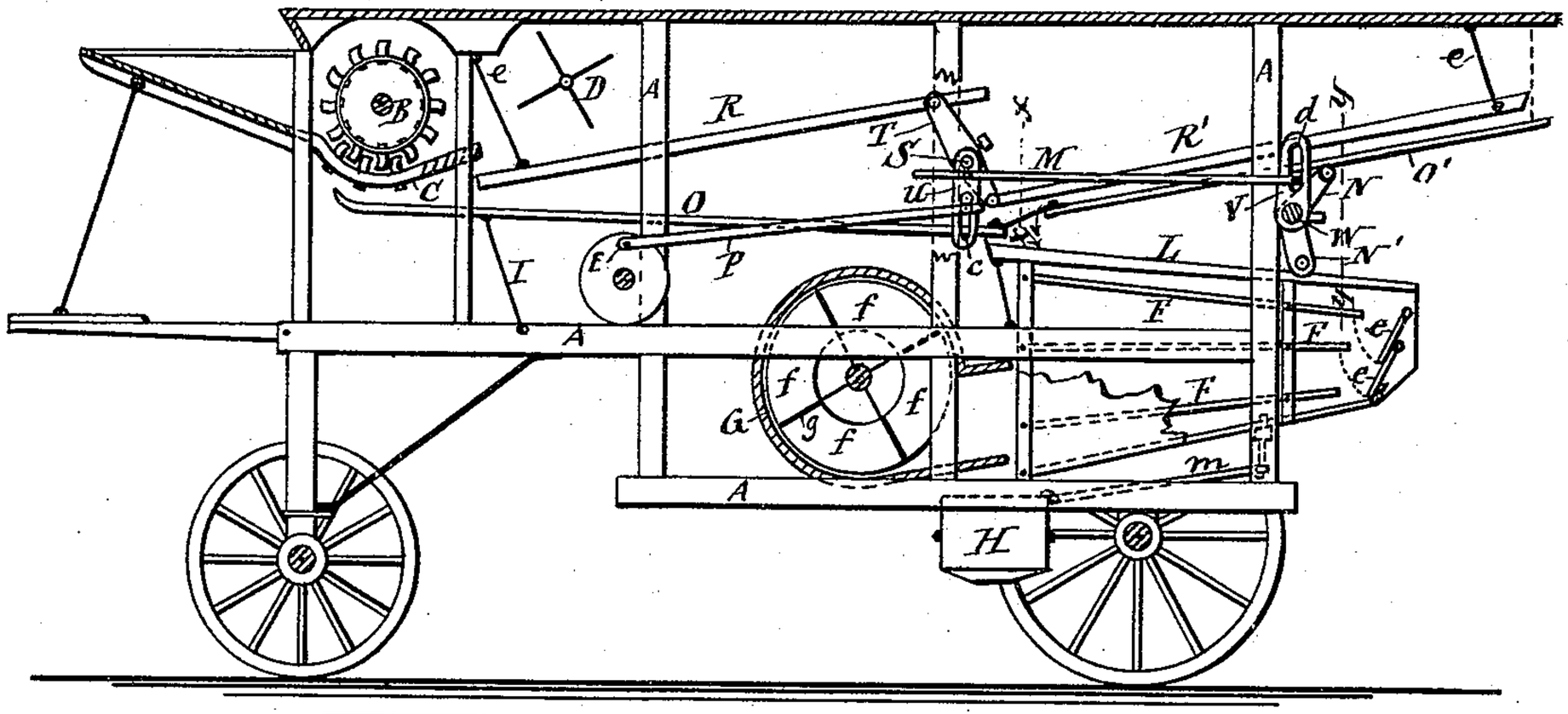


FIG-1-

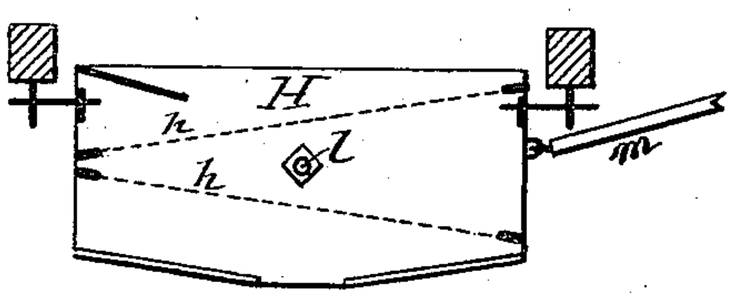


FIG-2-

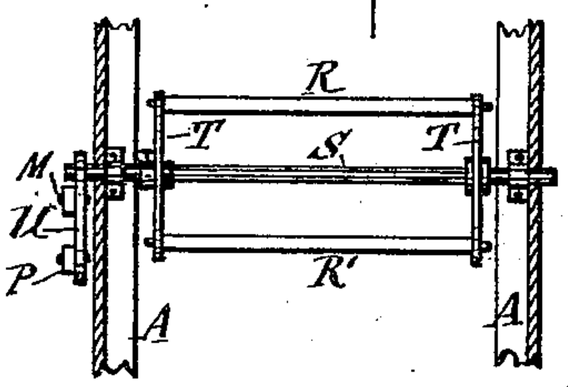


FIG-6-

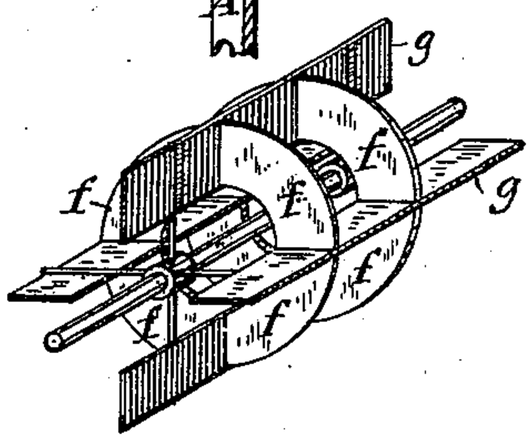
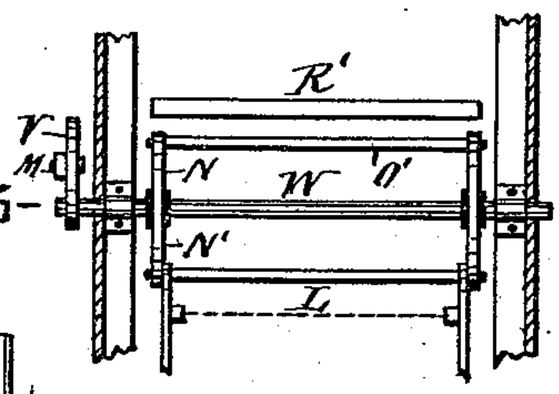


FIG-3-



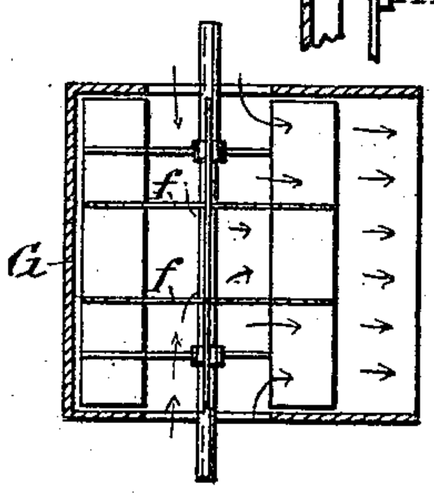


FIG-4-

FIG-5-

ATTEST—
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per Duell, Lacey & Hoyt
his Attys

UNITED STATES PATENT OFFICE.

RILEY H. COON, OF CANASTOTA, NEW YORK.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 313,299, dated March 3, 1885.

Application filed February 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, RILEY H. COON, of Canastota, in the county of Madison, in the State of New York, have invented new and useful Improvements in Thrashing-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The invention consists in the peculiar construction and combination of parts, all as hereinafter more fully described, and particularly pointed out in the claims.

In the annexed drawings, Figure 1 is a side elevation of my improved thrashing-machine, with the inclosing side sheathing removed to illustrate the internal arrangement of said machine. Fig. 2 is a detached side view of the grain-spout. Fig. 3 is a transverse section on line 7 7 in Fig. 1. Fig. 4 is a perspective view of the fan-wheel. Fig. 5 is a longitudinal section of said wheel and its inclosing-case, and Fig. 6 is a transverse section on line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the frame of the machine, mounted on the axles of the carrying-wheels in the usual manner, to render it portable.

B denotes the thrashing-cylinder, arranged across one end of the machine, and working over the usual toothed concave, C.

R and R′ are two transversely-slatted and longitudinally-oscillatory separating-racks, arranged one in advance of the other, to receive the thrashed substance from the thrashing-cylinder, and separate the straw from the chaff and grain.

D is the usual rotary beater, arranged over the first rack, R, near the thrashing-cylinder. The two racks R R′ are each suspended at their farthest extremity by rods *e*, connected to the side edges of the rack and to the frame A, and are supported ascendingly from the thrashing-cylinder by means of rock-arms T, which are secured to a rock-shaft, *s*, extended across the machine, between the two adjacent ends of the racks. The ends of said rock-arms are connected with the ends of the racks, and carry that of the first rack above the adjacent end of the succeeding rack, R′. The rock-shaft *s* receives its motion from an arm, U, fixed to the outer end of the shaft, and connected by a pitman, P, with the usual crank, E, which is actuated by the motor of the machine in the ordinary and well-known manner. (Not necessary to be here illustrated.) The connection of the pitman P with the rock-arm U is at a greater distance from the rock-shaft *s* than the crank E is from its center of motion, so as to produce an oscillatory or rocking motion on the arm U, which transmits said motion to the rock-shaft *s*. This motion I render adjustable by providing the arm U with a longitudinal slot, *c*, in which the connection of the pitman P is made, said slot allowing the connection to be shifted a greater or less distance from the rock-shaft, and thereby diminish or increase the motion of the latter.

In case it is desired to arrange the pitman P inside of the machine, the rock-arm U can be dispensed with, and the pitman connected to the rock-arm T, which in such a case is to be provided at its lower end with a slotted extension, for the adjustable connection of the pitman.

O and O′ designate the grain-tables, arranged underneath the racks R R′ to collect the grain and chaff therefrom and convey the same to the sieves F F, which, in conjunction with the usual fan-blower, G, eliminate the chaff and dust preparatory to the delivery of the grain through the spout H. The aforesaid grain-tables are coupled together, and have a space between their adjacent ends to allow the screenings to fall onto the subjacent sieves F, as indicated by arrows in Fig. 1 of the drawings. The joined grain-tables are supported at one end by vibratory rods I at opposite sides thereof. The opposite end of the grain-table is supported on the rock-arms N, which are fastened to the rock-shaft W, extended across the machine, as shown in Fig. 3 of the drawings. To the outer end of said rock-shaft is rigidly attached a rock-arm, V, having in its free end a longitudinal slot, *d*, in which is adjustably connected the end of a rod, M, the opposite end of which is connected with the rock-arm U, hereinbefore described, so that one and the same pitman, P, actuates the separating-racks R R′, grain-tables O O′, and sieve-shoe L, which latter is connected to the rock-arm N′, formed in one piece with the

rock-arm N, which moves the grain-table. Since the sieve-shoe receives its motion through the medium of the pitman P, rock-arm U, and rock-arm N′, said movement has two adjustments: first, by the shifting of the connection of the pitman P on the rock-arm U, varying the movement of the latter, and secondly, by shifting the end of the rod M in the slot *d* of the rock-arm V a greater or less distance from the rock-shaft W, the latter arrangement affording an independent adjustment to the movement of the grain-tables, inasmuch as they receive their movement through the medium of the rod M and rock-arms V and N.

e e represent the so-called "tailings-board," heretofore arranged to slide up and down on the discharge end of the sieve-shoe L, and disposed at such an angle of inclination as to cause the chaff and dust to be carried up and over the top of the tailings-board by the blast received from the fan G, arranged at the opposite end of the sieve-shoe. Inasmuch as said tailings-board is confined to a uniform angle of inclination, it is incapable of effectually controlling the direction of the issuing air-current, and frequently presents such a barrier at the exit of the sieve-shoe as to excessively retard the air-current, and cause more or less dust and fine chaff to remain with the grain. To obviate this defect, I form the tailings-board of one or more sections extended across the sieve-shoe, and hinged so as to allow them to be turned into different angles of inclination. By swinging the free edge of said tailings-board openings are formed across the end of the sieve-shoe, to allow the dust and chaff to escape therefrom as freely as may be desired.

Some difficulty has been experienced in the distribution of the air-blast from the fan G, the air-currents entering through the central ports at opposite sides of the fan-case, and meeting each other as they approach the spout of the fan, produce a concentrated current of air from said spout and an irregular divergence of said current toward the discharge end of the sieve-shoe. To overcome this defect, I apply to the fan-wheel two or more annular diaphragms in the form of segmental plates *f f*, standing in a plane transverse or at right angles to the axis of the fan-wheel, and secured between the successive vanes or wind-boards *g g*, which latter are carried parallel with the axis of the fan-wheel.

The diaphragms *f f* are arranged equidistant from the center of the length of the wheel, and are provided with a central aperture, affording a limited communication between the compartments formed by said diaphragms.

I am aware that fan-wheels have been constructed with a solid central partition; but such construction divides the air entering the fan-case from opposite ends into two separate currents, and the abrupt deflection of said currents at the center of the wheel prevents a proper distribution of the air-blast over and between the sieves, and therefore does not accomplish the object of my invention. The effect of the interposition of the diaphragms *f f*, when constructed and arranged as herein described and shown, is to intercept a portion of the air-currents as they enter the fan-case, and to uniformly distribute said currents as they emerge from the fan, as represented by arrows in Fig. 5 of the drawings.

H denotes the grain-spout, arranged under the grain-delivering end of the sieve-shoe L, to receive the grain therefrom, and deliver the same into the bags or other receptacle. I make this spout serve the additional function of further cleaning the grain, and separating the coarse from the fine grain by placing sieves *h h* across the interior of said spout, two opposite sides of the spout being open, and the sieves being inclined in opposite direction to the open sides of the spout.

In order to admit of adjusting the sieves in their angle of inclination, I sustain them in their position by the ends of the spout being clamped against the edges of the sieves by a bolt or bolts, *l*, passing horizontally through the spout, and provided with a nut or key on the end, by which to tighten the ends of the spout against the sieves. To this spout H, I impart a shaking motion by a rod, *m*, connecting the spout with the shaking sieve-shoe in any suitable or convenient manner. The upper sieve *h* is coarser than the lower sieve, and graduated, to allow the small grain to pass through, while the coarse grain passes over it and out at one side of the spout. The lower sieve *h* eliminates the dust and foul seed from the fine grain, the latter passing out of the spout at the side opposite to that which delivers the coarse grain, while the dust escapes through an opening in the bottom of the spout.

Having described my invention, what I claim as new is—

1. In combination with the racks R R′, grain-tables O O′, sieve-shoe L, and rock-arms T and U, the rock-arm V, rod M, and the rock-arms N and N′, connected, respectively, with the grain-table and sieve-shoe, substantially as described and shown.

2. The combination, with the fan-wheel, of the diaphragms *f f*, arranged equidistant from the center of the length of the wheel, and formed with central apertures, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 14th day of February, 1884.

RILEY H. COON. [L. S.]

Witnesses:
FREDERICK H. GIBBS,
C. H. DUELL.