(No Model.)

C. TOSTENSON.

THRASHING MACHINE.

No. 351,670. Patented Oct. 26, 1886.

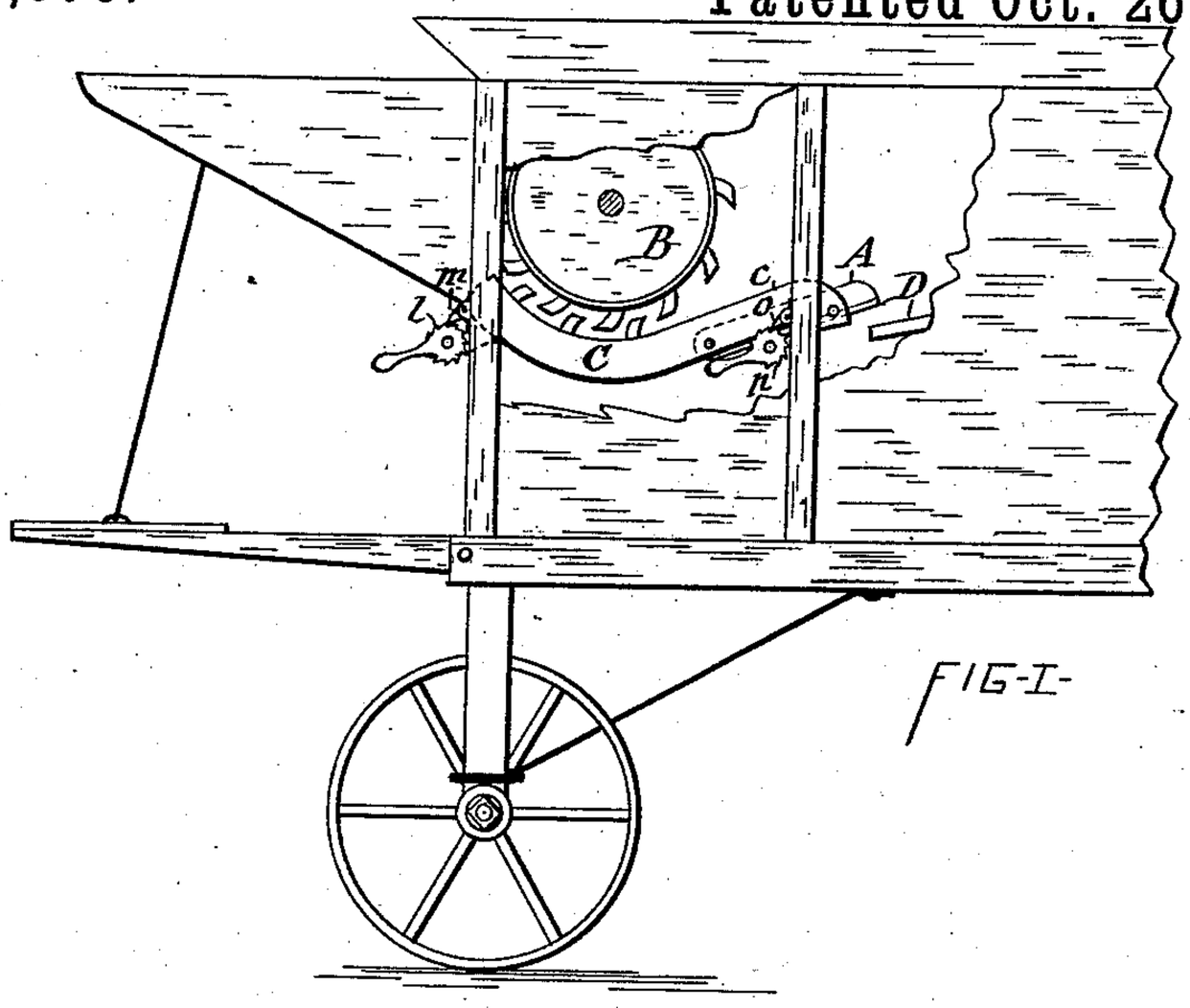

FIG-I-

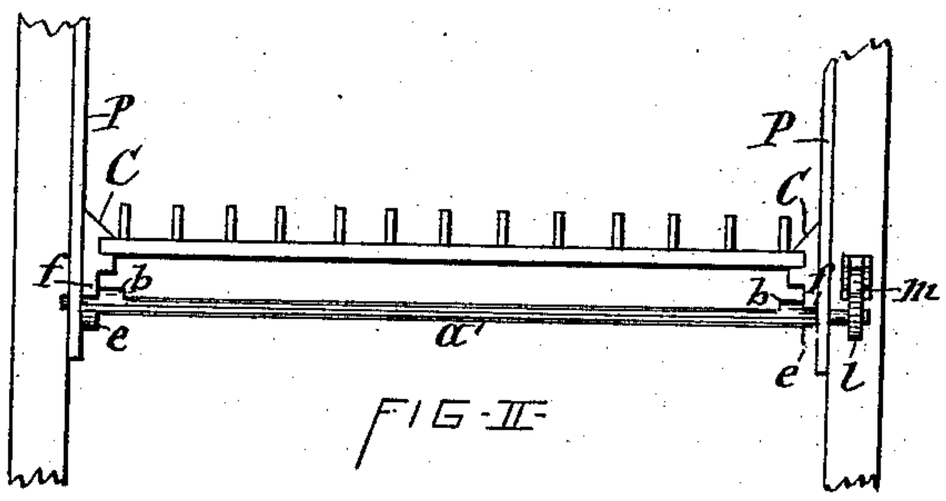

FIG-II-

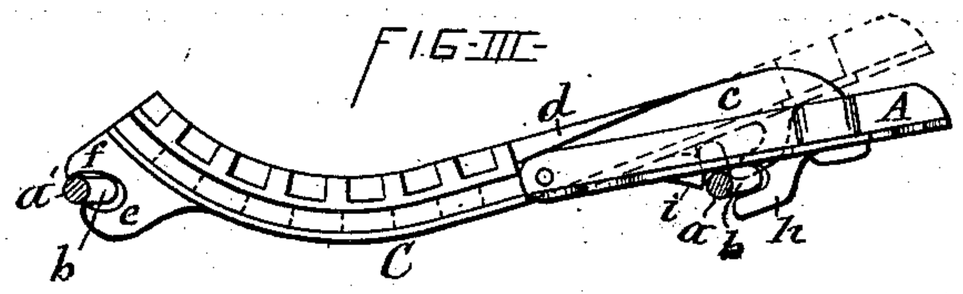

FIG-III-

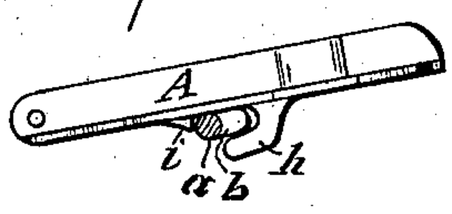

FIG-V-

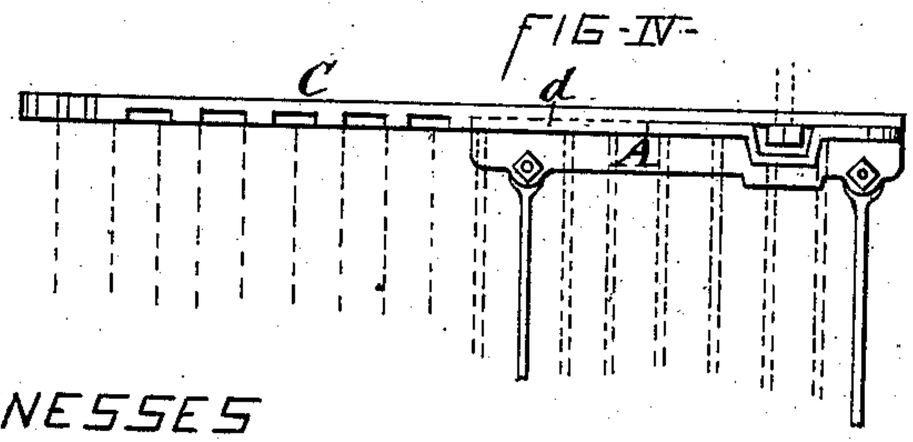

FIG-IV-

FIG-VI-

WITNESSES

C. Bendixson

A. F. Walz

INVENTOR

Christian Tostenson

per Church, Lacey & Hay

Attys

UNITED STATES PATENT OFFICE.

CHRISTIAN TOSTENSON, OF OSWEGO, NEW YORK, ASSIGNOR TO THE AMES IRON WORKS, OF SAME PLACE.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 351,670, dated October 26, 1886.

Application filed January 25, 1886. Serial No. 189,578. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN TOSTENSON, of Oswego, in the county of Oswego, 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.

This invention has reference to the concave, which is arranged under the thrashing-cylinder, and is armed with teeth between which the teeth of the thrashing-cylinder play in the operation of thrashing; and the invention also relates to the grating, which is usually arranged vertically adjustable at the rear end of the concave, to properly deliver the thrashed substance from the concave to the shaking or oscillating racks, which are arranged back of said grating in the usual and well-known manner.

The object of the invention is to obtain a greater range of adjustment of the inclination of the grate back of the concave, and to provide more positive means for effecting such adjustment; and to that end my invention consists in the improved construction and combination of parts, hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure I is a side elevation of that part of a thrashing-machine to which my improvements are applied, a portion of the side of the inclosing-frame being broken away to better illustrate the invention. Fig. II is a front view of the concave. Fig. III is an enlarged detached side view of the metallic frame of the concave, with the grating pivoted therein and movable, as shown in dotted lines. Fig. IV is a top plan view of the same. Fig. V is a detached side view of the frame or side rail of the grating, showing its connection with its adjusting devices; and Fig. VI is a detached plan view of one of the shafts by which the concave and grating are adjustably supported.

Similar letters of reference indicate corresponding parts.

B represents the thrashing-cylinder; C, the concave, arranged under the thrashing-cylinder, and armed with teeth, between which the teeth of the latter play in the operation of thrashing. A denotes the grating, over which the thrashed product passes to the shaking-racks or straw-carriers D in the usual and well-known manner.

The construction and arrangement of all other parts of the machine being immaterial to my invention, and may be of any well-known style, a description of the same is therefore unnecessary here.

Heretofore the grate A has in the majority of cases been rigidly attached to the concave, and was therefore incapable of being adjusted independently of the concave, and although in some cases the grate has been arranged adjustable independently of the concave, yet it was pivoted to a stationary support and confined to a uniform elevation at its front, and the entire adjustment of the inclination had to be effected at the rear end of the grate, where it rested by gravity on a variable support. In attempting to lower the grate to a diminished inclination when required it was found that the grate did not respond to the adjustment of its support, owing to its being retained in its position by the chaff and dirt having become wedged between the sides of the grate and sides of the main frame of the machine. To obviate this defect as nearly as practicable, I form the metallic side bars or frames, C, of the concave with rigid rearwardly-extended arms *c*, and pivot the concave on the sides of the frame of the machine at the extremities of said arms. The front end of each frame C, I form with a hook, *e*, projecting from the bottom of said frame, and with a lug, *f*, projecting over the said hook and forming between them an elongated opening of proper dimensions, to receive through it the shaft *a'*, with its lug *b*, which projects laterally from the shaft into the aforesaid opening, as represented in Fig. III of the drawings. The shaft *a'* is extended across the front of the machine and journaled in stout metal plates P P, secured to the inner sides of the wooden frame of the machine, as illustrated in Fig. II of the drawings. On the end portion of the shaft *a'* is fastened a ratchet-wheel, *l*, from which projects a handle by which to turn the shaft, and to the corner-post of the frame of the machine is connected a dog, *m*, which engages the ratchet-wheel, to prevent the shaft from being turned back by the weight of the concave resting on the lugs *b b* of the shaft.

In turning the shaft *a'*, the lugs *b b* of said shaft are caused to either pry up the front portion of the concave by pressing on the lug *f* thereof, or draw it down by pressing on the hook *e*, according to the direction in which the shaft is turned. The lug *f*, projecting over the hook *e*, as before described, serves as a guard to prevent the shaft from turning too far and throwing its lugs *b b* out of the opening between the hook *e* and lug *f* of the concave, thus forming a positive connection of the concave with the shaft *a'*; and this connection is essential, inasmuch as the chaff, broken straw, and dirt accumulate between the concave-frames C and plates P, and become so packed thereat as to require considerable force to draw the concave down when desired to enlarge the space between it and the thrashing-cylinder.

On each of the arms *c*, at or near its junction with the concave-frame C, I pivot the front portion of the metal frame A of the grating. Said portion of the grating is thus made to rise and fall with the adjustment of the concave, and is maintained at the same elevation as the rear portion of the concave.

The rear portion of the grating has, prior to my present invention, been supported adjustably vertically by various means. In some cases the grate has been adjustably secured to the frame of the machine by bolts adapted to be connected to said frame at different elevations. Such means of adjusting the grate, however, are very slow, laborious, and tedious in their operation. In other instances a rock-shaft has been extended across the under side of the grate and provided with cams or eccentrics, by which the shaft, when rotated, was caused to raise the grate; but the rock-shaft and its cams or eccentrics had no positive connection with the grating to draw it down and hold it down to its adjusted position, the grating being held down merely by its gravity; and, inasmuch as the grating is usually quite short, it does not possess sufficient gravity to follow the movement of its support when lowered, but is held in its position by the chaff and dirt that usually accumulate between the sides of the grate and sides of the main frame. This defect I overcome by the following improved construction and combination of parts: The frame A of the grating I form with a hook, *h*, projecting from the under side thereof, forward and underneath the grating. I extend a rock-shaft, *a*, across the frame of the machine and journal it either in eyes in the rear ends of the plates P P, heretofore referred to, or in boxes secured to the frame of the machine. This rock-shaft has projecting from it laterally two lugs, *b b*, one under each of the side bars of the frame A of the grating and entering into the hooks *h h* thereof, so as to form a positive coupling between the grating and lugs *b b*. The end of the shaft has affixed to it a ratchet, *n*, from which projects a handle, by which to turn the shaft, and by doing this the lugs *b b* are caused to either lift the frame A or draw it down, according to the direction in which the shaft is turned. To prevent the shaft from turning completely around and swinging the lugs *b b* away from the grating, I provide the frame A with a guard, *i*, in the form of a shoulder, in front of the hook *h*, which guard arrests the movement of the lug *b* when it has attained a vertical position and raised the grating to its maximum inclination, as represented in Fig. V of the drawings.

The described positive coupling of the grate-frame A with the lugs *b* of the shaft serves to hold the grating down to its adjusted position.

A pawl or dog, *o*, connected to the frame of the machine, engages the ratchet *n* and prevents the shaft *a* from being turned back by the weight of the grating resting on the lugs *b b*. The arm *c* of the concave-frame C, I provide with a rib, *d*, above the grate-frame A, for two purposes—viz., to serve as a stop for limiting the elevation of the rear portion of the grating and to re-enforce the arm *c*.

Having described my invention, what I claim is—

1. The combination of the metallic concave frames C C, formed with the rearwardly-extended arms *c c*, and with the combined stops and re-enforcing ribs *d d* on said arms, the grate-frame A, pivoted on the arms *c c* near their junction with the frames C and under the stops *d d*, and a vertically-adjustable support for the rear portion of the frame A, all constructed and combined substantially as described and shown, for the purpose set forth.

2. In combination with the thrashing-cylinder and the rock-shafts *a a'*, provided with lugs *b b*, the metallic concave frames C C, formed with the hooks *e* and guards *f* at the front, and with the rearwardly-extended arms *c c*, and pivoted at the extremities of said arms, and the grate-frame A, pivoted on the arms *c c* at their junction with the concave-frames, and formed with the hooks *h* and guards *i*, all constructed and combined to positively adjust the grate at either end, substantially in the manner specified and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Oswego city, in the county of Oswego, in the State of New York, this 9th day of January, 1886.

CHRISTIAN TOSTENSON. [L. S.]

Witnesses:

ALLEN AMES,

E. P. KENIFIC.