(No Model.)

C. MADSON.

HARVESTER.

No. 421,740. Patented Feb. 18, 1890.

Fig. 3.

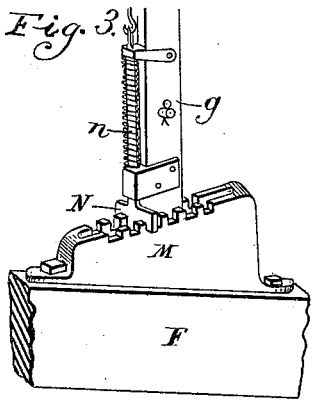
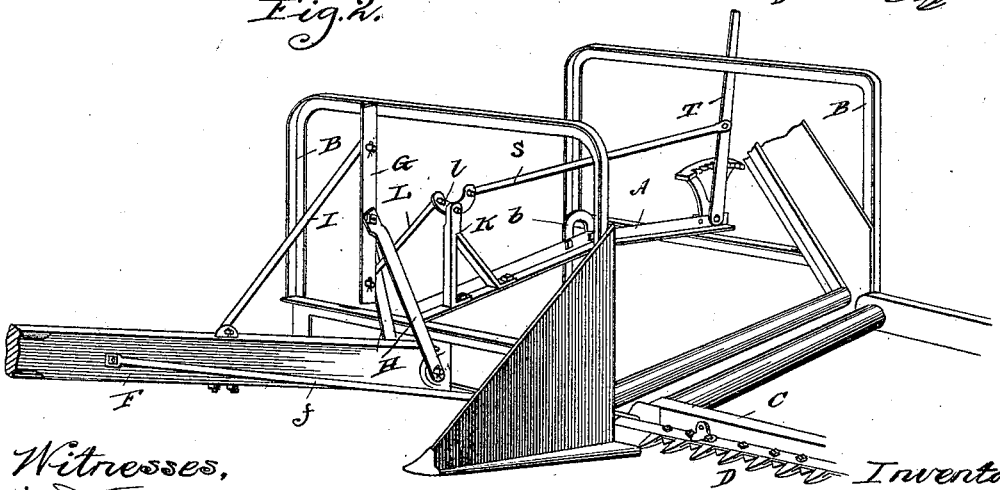


Fig. 1.

Fig. 2.



Witnesses,
D. G. Mann,
Frederick F. Goodwin

Inventor
Cornelius Madson
By Offield & Towle Att'ys.

UNITED STATES PATENT OFFICE.

CORNELIUS MADSON, OF MANITOWOC, WISCONSIN.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 421,740, dated February 18, 1890.

Application filed April 23, 1889. Serial No. 308,284. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS MADSON, a citizen of the United States, residing at Manitowoc, Wisconsin, have invented certain new and useful Improvements in Harvesters, of which the following is a specification.

My invention relates to certain improvements in tilting devices for grass and grain harvesters, whereby the cutter-bar may be lowered to cut lodged or fallen grain and raised to pass over an obstruction or set to cut different heights of stubble.

My invention comprises devices and combinations of devices, hereinafter described, whereby strain of the tilting operation comes upon the horizontal portion of the frame and the pole, thereby obviating the objections incident to the use of many forms of tilting devices, such as racking the upper frame and throwing the parts out of line. I prefer to use a system of compound levers, because of the fact that with such a construction the movement will only be one-half as great to effect a given variation of position of the bar as where a simple leverage is employed, whereby the tilting may be effected conveniently by the driver without raising himself from his seat.

In the accompanying drawings I have represented my improvements applied to a skeleton of a harvester-frame, only a sufficient number of the parts being shown to illustrate my invention and its method of operation.

Figure 1 is a perspective view showing my improvements in the preferred form of construction, and Fig. 2 is a similar view showing a modification. Fig. 3 is a detail.

Referring to said drawings, A represents horizontal and B the upright bars of the main frame of a grain-harvester—say, for example, a self-binder. This frame tilts over the main axle, the position of which is indicated by the side bracket *b*.

C is the platform-frame; D, the cutter-bar; E, the driver's seat, and F the pole, the latter being braced against lateral movement by the usual side rods *f*.

G is the tilting-lever, the preferred form being shown in Fig. 1. This form comprises an upright portion *g* and a rearwardly-extended member *g'*.

H is a brace, to which the tilting-lever is pivoted at *h*, and the lower end of brace H is pivoted to the pole-socket, preferably upon J, which also pivotally secures the tongue in its socket.

I is a diagonal rod connected at its lower end to the pole and at its upper end to the lever in the preferred construction.

K is a bracket secured in an upright position on the main frame, and a link L is pivoted to the upper end of said bracket and to the upright member of the lever G toward its lower end. The lower end of lever G moves within a longitudinal slot formed in a ratchet-plate M, as shown in Fig. 3, and a locking-pawl N, which is normally depressed by a spring *n*, has an operating-rod O, connected to one member of an elbow-lever P, pivoted upon the angle of the lever G. To the other member of said elbow-lever is connected a rod Q, having a pivoted latch R at the hand end of lever G.

In this construction the operation is as follows: The driver first releases the pawl by pressure upon the latch, and then, if he desires to lower the guards, presses down upon the lever G, thereby moving the lower end of said lever forward along the rack, and by means of the described connections changes the position of the tongue with reference to the main frame, throwing the front edge of the latter downwardly and lowering the guards. A movement in the opposite direction would correspondingly elevate said guards.

In the modification shown in Fig. 2 the rearwardly-extended member of lever G is omitted, link L is connected to one member of an elbow-lever *l*, pivoted upon bracket K, and a rod S connects the other member of *l* to an operating-lever T, pivoted upon the main frame. In this construction, as well as that shown in Fig. 1, lever G, link L, brace H, and rod I furnish a compound lever, the tilting being effected by a downward strain on the front of the frame and an upward pull on the pole, and only a slight movement of the operating-lever is necessary to effect desired variations of position; but it is obvious that if rod I were secured at the pivotal axis of lever G the tilting would be mainly effected by the rocking of the main frame upon

its axis, and the described connections may be varied in other ways—for example, by pivoting link L to lever G above instead of below the pivotal axis of the latter.

It will be seen from the foregoing description that the strain is thrown entirely upon the horizontal portion of the main frame, and thereby the upright portion of said frame is relieved and the objections heretofore mentioned are obviated.

I do not desire to limit my invention to the specific forms of construction here shown, as it is obvious that the details thereof may be considerably varied—for example, the location of the locking mechanism may be changed and its construction modified. It is also apparent that the bracket K might be shortened or altogether dispensed with and the outer end of link L connected directly to the main frame B.

I claim—

1. In a tilting device for harvesters, the combination, with a lever pivotally supported between its ends upon a movable fulcrum and means whereby it may be rocked on its pivot, of a link or rod pivotally connected to said lever upon one side of its pivot and connected with the pole, and a link or rod pivotally connecting said lever on the opposite side of its pivot with the main frame, substantially as described.

2. In a tilting device for harvesters, the combination, with a tilting-lever pivoted between its ends upon a movable fulcrum and means whereby to rock said lever, of a rod pivotally connected at one end to the tilting-lever and secured at its other end to the pole, a bracket mounted upon the main frame, and a link pivotally connecting said bracket and the end of the tilting-lever opposite the connection of the pole-rod thereto, substantially as described.

3. In a tilting device for harvesters, the combination, with a lever pivotally supported between its ends upon a movable fulcrum and having its end above the pivot bent and projected within reach of the driver's seat, of a link or rod pivotally connected to said lever upon one side of the pivotal axis of the lever, the other end of said rod being connected to the pole, and a link pivotally connected to the tilting-lever on the opposite side of its pivotal axis from the pole-rod connection, said link being also pivotally connected to the frame, substantially as described.

4. A tilting device for harvesters, comprising, in combination, a tilting-lever pivotally supported between its ends upon a fulcrum movable about the pivotal connection of the pole with the main frame and means for rocking said lever upon its pivotal axis, a rod pivotally connecting said lever to the pole, and a link pivotally connecting said lever with the horizontal portion of the main frame, whereby the strain in tilting comes upon the horizontal portion of the main frame and the pole, substantially as described.

5. A tilting device for harvesters, comprising a tilting-lever pivotally supported between its ends upon a fulcrum movable about the pivotal connection of the pole with the main frame and means for rocking said lever upon its pivotal axis, a rod pivotally connecting said lever to the pole, and a link pivotally connected to the lever and to the horizontal portion of the main frame, whereby the strain in tilting comes upon said portion of the main frame and the pole, substantially as described.

CORNELIUS MADSON.

Witnesses:
FREDERICK C. GOODWIN,
C. C. LINTHICUM.