(No Model.) 2 Sheets—Sheet 1.

# H. E. PRIDMORE.

## GRAIN WHEEL FOR HARVESTERS.

No. 343,544. Patented June 8, 1886.

Fig. 1.

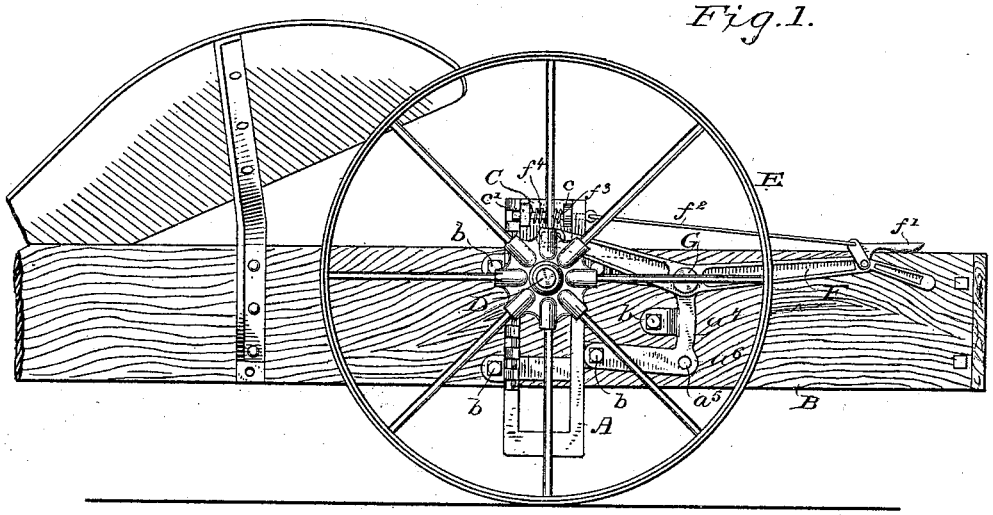
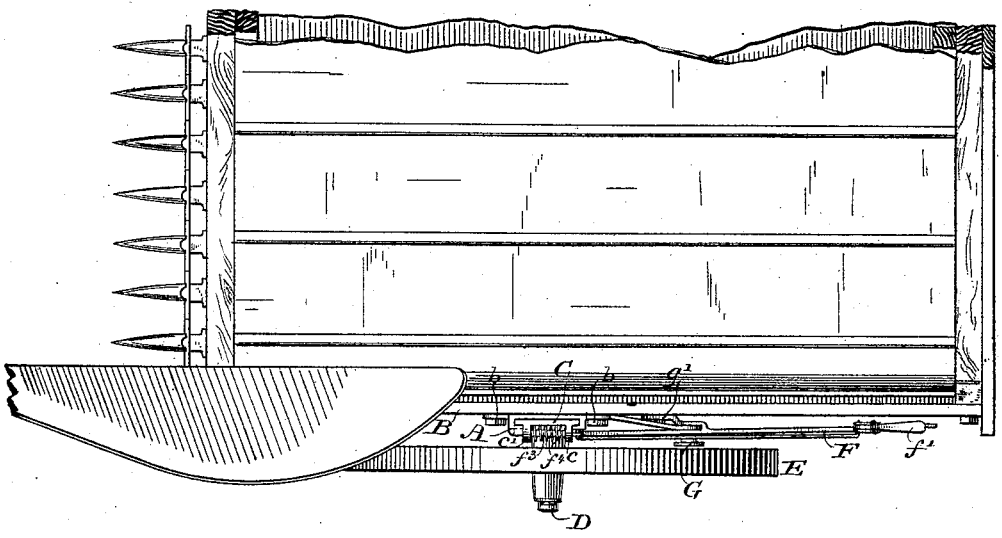



Fig. 2.




WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

# H. E. PRIDMORE.

## GRAIN WHEEL FOR HARVESTERS.

No. 343,544. Patented June 8, 1886.

Fig. 4.

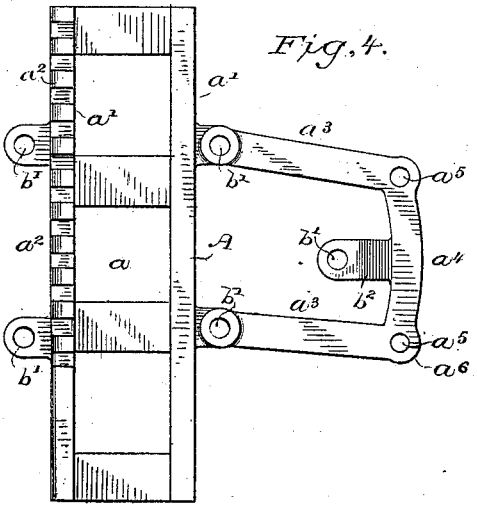



Fig. 3.

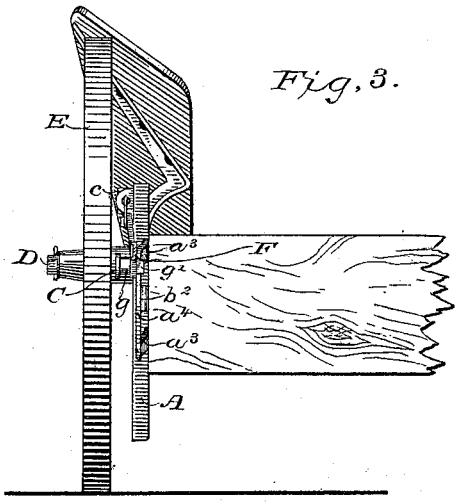



Fig. 5.

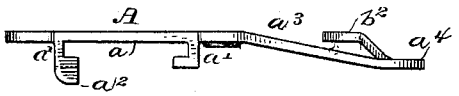



Fig. 8.

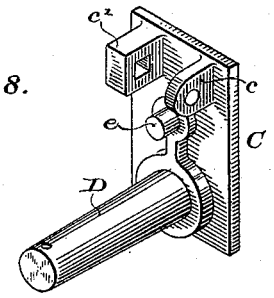



Fig. 6.

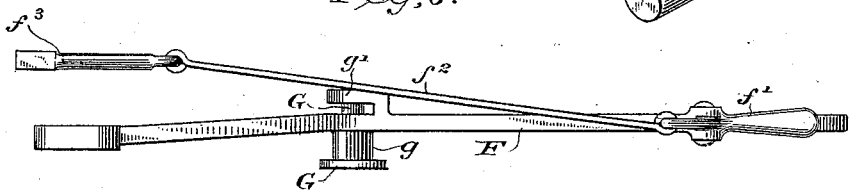



Fig. 7.

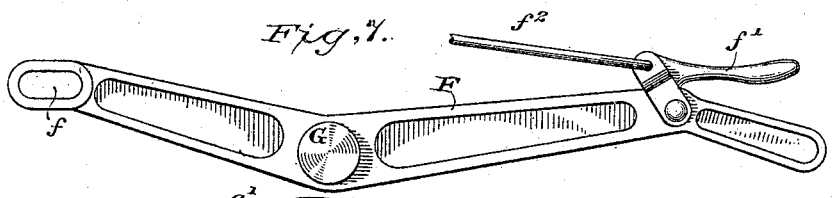
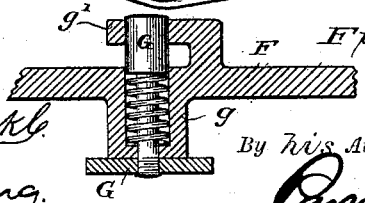



Fig. 6a.




WITNESSES

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# UNITED STATES PATENT OFFICE.

HENRY E. PRIDMORE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE McCORMICK HARVESTING MACHINE COMPANY, OF SAME PLACE.

## GRAIN-WHEEL FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 343,544, dated June 8, 1886.

Application filed March 12, 1885. Serial No. 158,561. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. PRIDMORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Wheels for Harvesters, of which the following is a specification.

My invention relates particularly to the mechanism for adjusting the grain-wheel to raise or lower the outer end of the platform. Heretofore there have been numerous devices for the adjustment of this wheel at will; but in such of them as employed permanently-attached levers the handle of the lever would at some point of adjustment project above the grain-board and obstruct the grain falling from the cutters, and in all of them, so far as I am aware, the distance to which the wheel could be adjusted was circumscribed and limited, either by the danger of throwing the platform off its balance, as in cases where the wheel is mounted at the end of a crank-arm from a rock-shaft or pivot-pin, or else by the necessarily limited effective play of the lever which controls the adjustive movements of such wheel.

My object is in part to furnish an improved adjusting mechanism irrespective of such objections, and in part, by going a step farther, to overcome these objections; and to this end it consists, primarily, in combining with the grain-wheel and the guides along which it is adjusted, a locking device, whereby it is held in any given adjustment, and a permanently-attached lifting-lever, which may be detached from its bearing on the harvester and permitted to drop alongside the grain-board after completing the adjustment; secondly, in an adjusting device composed, in general terms, of a guide and rack way, a plate traveling in the guide, a grain-wheel supported upon a stub-axle from said plate, a lever pivoted to one side of the guideway and connected at its weight end with the plate, and a dog or bolt supported on and carried by the plate engaging with the rack and link connected to a thumb-piece near the hand-hold of the lever, and, thirdly, in providing two pivot-bearings on the harvester for the lever which controls the up-and-down adjustment, one above the other, and means whereby the lever may be instantaneously disengaged from one bearing and carried into engagement with the other without unlocking the wheel from the position in which it happens to be at the time, thus enabling an additional adjustment to be immediately imparted to the wheel from the new fulcrum.

In the drawings, Figure 1 is a side elevation of the divider end of a harvester-platform, showing a grain-wheel and adjusting mechanism embodying my invention. Fig. 2 is a top plan view thereof, and Fig. 3 a rear elevation; Fig. 4, a detached view, on an enlarged scale, of the guide and rack way for the wheel, showing also the pivot-bearings for the lever. Fig. 5 is a top plan view of said guide and rack way; Fig. 6, a top plan view; Fig. 6$^a$, a central section through a portion of the lifting-lever, showing details of construction of the spring pivot-pin; Fig. 7, a side elevation of the adjusting-lever and accessory parts enlarged, and Fig. 8 a detached view, enlarged, of the supporting-plate and stub-axle for the grain-wheel.

A is a casting, preferably of skeleton form, as shown, having a vertical guideway, $a$, formed by its two parallel undercut flanges, $a'$, and in the front flange, which is higher than the rear, a rack, $a^2$, exterior to the guide-groove in that flange. From that portion of the casting forming the guideway two arms, $a^3$, extend rearwardly and slightly outwardly from the plane of the guideway, these two arms being connected at their extremities by a curved or segmental bar, $a^4$, and at the upper angle or at both of the angles formed with this bar being provided with a pivot-bearing, $a^5$, for the adjusting-lever, and at the lower angle having a protuberance or stop, $a^6$, for said lever.

The casting is secured to the end sill, B, by means of bolts $b$, passing through suitable bolt-holes, $b'$, on each side of the guideway, and also through a like bolt-hole on a foot, $b^2$, which bends inward from the segment-bar to the plane of the guideway, thus making a strong and reliable attachment for all parts of the casting. A plate, C, of sufficient length to be finally steadied against all ordinary strains brought upon it is arranged to slide in the guideway—that is to say, its lateral edges

are fitted into the guide-grooves, so that it will be retained by them and allowed to move up and down within the limits of said way. At one end, preferably the upper end, this plate has two ears, *c* and *c'*, the latter, which is next the rackway when the plate is in its proper position, being thick and strong, since it is intended to take the strain of the connection between the locking dog or bolt, and the rackway, as hereinafter explained, while the other ear, which is simply to serve as a guide for the shank of said bolt, and as a seat for the spring which presses it into engagement, need not necessarily have more than sufficient strength for its purpose, or may be dispensed with by a slightly different construction. To this sliding plate or traveler is secured a stub-axle, D, which supports the grain-wheel E, and between the stub-axle and the ears, or in any other convenient position upon the plate, is arranged a small lug or pin, *e*, which affords a means by which the forward or weight end of the lever is connected with said plate. Now, coming to the lever F, this has at its forward end an elongated slot, *f*, which takes over the just-mentioned pin on the sliding plate or traveler and permits the necessary play between said lever and pin due to the eccentricity or divergence of their motion. The lever has also adjacent to its hand-hold a pivoted thumb-piece, $f'$, connected by a link, $f^2$, with the dog or bolt $f^3$, which, as already stated, plays back and forth in the ears on the traveler and takes into the rack on the casting to hold the plate against movement, being given constant stress in the direction of the rack by means of the spring $f^4$, interposed between it and the ears and seated against the rear or guide ear at one end and against any suitable pin or collar on the bolt at the other end. By forming the rack with ratchet-teeth and facing the opposite flange, instead of outwardly, a spring-pawl may be substituted for the sliding bolt, but with not so great security to the fastening. The lever may have a fixed pivot on the harvester, as with levers in other organizations designed for the same end, and it will be understood that for this purpose the pivot-pin G, shown in Fig. 1 as engaged with the upper pivot-bearing, may be regarded as fixed; but in order to accomplish the second and third objects of my invention I form the pivot-pin G as a spring-bolt, constantly urged into engagement by a spring inclosed in the cylindrical boss *g*, but capable of being instantaneously withdrawn from the bearing by means of its enlarged head, thus releasing the lever and permitting it to be dropped down alongside the grain-board until checked by the stop at the lower end of the segment-bar, in which position it can offer no obstruction to the grain, or until the pin comes into line with the other bearing or one of the other bearings, (since the bar may be perforated at regular distances along its length,) into which it will immediately snap. The main arm of the lever rests on the outer face of the already mentioned segment-bar on the casting, and a short arm or keeper, *g'*, from the lever embraces said bar on the opposite side, and right opposite the spring-bolt, which it may receive in a perforation, so as to make the connection with the casting more secure whenever the bolt is let into one of the pivot-bearings. With this arrangement and construction of parts it is evident that whenever the locking-bolt is released from the rack the grain-wheel may be depressed or allowed to rise relatively to the platform by properly controlling the lever, in the first case raising the platform and in the other lowering it. Whenever the lever has swung in such movement to the extreme of its effective limit, or whenever the platform has reached the position desired, the locking-bolt will be let into the rack again, and will secure the parts in fixed position. Now, supposing that the lever is engaged with the upper pivot-bearing, and that by depressing the grain-wheel the platform has been raised to or nearly to the extreme limit permitted by the effective play of the lever on such bearing, and no further adjustment is deemed necessary, the handle of the lever will probably rise so far above the edge of the grain-board as to interfere with the falling grain. It will therefore be released from its pivot-bearing by withdrawing the spring pivot-pin and allowed to drop along the segment-bar, which is curved in reference to said movement, and which, being embraced on one side by the main arm of the lever and on the other side by the keeper extending therefrom, will serve as a guide or retainer. When the lever has thus been dropped until it lies alongside the grain-board, out of danger of interference, its further progress will be barred either by the stop on the segment or by the pivot-pin entering another bearing in said segment, when it will be left at rest. Meanwhile the locking-bolt will be left in engagement with the lug, retaining the sliding plate and grain-wheel in fixed relation thereto; but if it is desired to still further lift the platform, the pivot-pin will be set into the lower bearing, or one of the lower bearings, and the lever may then be operated from this lower bearing to still further depress the grain-wheel and raise the platform, thus giving a second adjustment of equal range with the first. Should it be desired, on the other hand, to depress the platform from its highest to its lowest limit, or to any limit greater than permitted by the play of the lever on a single pivot, the movement of the lever on its change of position will simply be reversed—that is, it will be lifted from the lowest bearing to the highest after the platform has descended to the limit permitted by the lowest, and if at the completion of the adjustment its handle projects so as to interfere, it may be dropped from the upper bearing, as already explained.

It is evident that this mechanism may be applied to the adjustment of other wheels than grain-wheels, and wherever I refer to grain-wheels in the claims I do not mean to be un-

derstood as thereby limiting myself to such wheels alone, but rather as taking them as exponents of the class.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, with the grain-wheel and the guides along which it is adjusted, of a locking device whereby it is held in any given adjustment and a permanently connected lifting lever adapted to be detached from its pivot or fulcrum on the harvester and brought alongside the grain-board, after the completion of the adjustment, without affecting said adjustment.

2. The combination, substantially as hereinbefore set forth, of the guide and rack way, the plate sliding in the guideway, the wheel borne on a stub-axle from said plate, the spring-dog carried by said plate and engaging with the rack, the lever connected with the plate, and the link-connection between the lever and dog.

3. The combination, substantially as hereinbefore set forth, of the guide-and-rack way, the plate sliding in the guideway, the wheel borne on a stub-axle from said plate, the locking bolt or dog reciprocating in ears upon the plate and taking into the rackway adjacent to one of said ears, the lever connected to the plate, and the link-connection between the hand-hold of the lever and the locking-bolt.

4. The combination, substantially as hereinbefore set forth, of the guide and rack way, the plate sliding in the guideway, the wheel borne on a stub-axle from said plate, the locking bolt or dog reciprocating in ears upon the plate and taking into the rackway adjacent to one of the ears, the lever connected to the plate by slot and pin, and the link-connection between the hand-hold of the lever and the locking-bolt.

5. The combination, substantially as hereinbefore set forth, of the guide and rack way, the plate sliding in the guideway, the wheel borne on the stub-axle from said plate, the locking dog or bolt carried by said plate and engaging with the rack, the lever connected with the rack, and the spring-pivot-pin by which said lever is attached to its bearing, whereby the lever may be released from its bearing or fulcrum after adjustment is completed and allowed to drop alongside the grain-board.

6. The combination, substantially as hereinbefore set forth, of the guide and rack way, the plate sliding in the guideway, the wheel borne on the stub-axle from said plate, the locking bolt or dog upon the plate engaging with the rack, the lever-link connected with the locking-bolt, the removable pivot-pin for said lever, whereby it may be detached from its bearing, and the segment-bar and its stop serving as a guide and retainer for said lever.

7. The combination, substantially as hereinbefore set forth, with the grain-wheel and the guideway in which its supporting-plate travels, of the lever permanently connected with said plate and the grain-board, and a shiftable bearing for said lever adapted to be transferred from an upper to a lower point upon the grain-board, or vice versa, for the purpose of increasing the distance through which the wheel may be moved.

8. The combination, substantially as hereinbefore set forth, of the guide and rack way, the grain-wheel borne on a stub-axle from a plate sliding in said guideway, the dog carried by said plate, the lever connected with the plate and with said dog, the two pivot-bearings for said lever, and the spring pivot-pin engaging with said bearings.

9. The combination, substantially as hereinbefore set forth, of the guide and rack way, the grain-wheel borne upon a stub-axle from a plate sliding in the guideway, the dog carried by said plate and engaging with the rack, the lever connected with the plate and with said dog, the segment-bar secured to the sill in rear of the guideway and having a plurality of pivot-bearings, and the spring pivot-pin on the lever engaging with either of said bearings.

10. The combination, substantially as hereinbefore set forth, of the guide and rack way, the plate sliding in the guideway, the wheel borne on a stub-axle from said plate, the rearwardly-extending arms from the guideway connected by a segment-bar, the pivot-bearings at top and bottom of said bar, the spring-dog borne by the plate and engaging with the rack, the lever connected with the plate by slot and pin, the keeper from the lever embracing the inner side of the segment-bar, and the spring pivot-pin on said lever engaging with the pivot-bearings.

11. The combination, substantially as hereinbefore set forth, of the guide and rack way, the plate sliding in the guideway, the wheel borne upon a stub-axle from said plate, the locking-dog reciprocating in ears from said plate and engaging with the rack, the segment-bar supported upon the sill in the rear of the guideway, and having pivot-bearings at top and bottom, and the lever connected with the locking-dog by a link and with the sliding plate by slot and pin, formed with a keeper which embraces the segment-bar, and carrying a spring pivot-pin which engages with the pivot-bearings on said bar.

12. The casting A, formed substantially as hereinbefore set forth, with a vertical guideway, a rack at one side of said guideway, two rearwardly-extending arms flaring outwardly from the plane of the guideway and united at their extremities by a curved bar and a foot bent inwardly from said bar into the plane of the guideway.

HENRY E. PRIDMORE.

Witnesses:

W. R. BAKER,

PAUL ARNOLD.