

(No Model.)

G. ESTERLY.  
HARVESTER REEL.

No. 384,139.

Patented June 5, 1888.

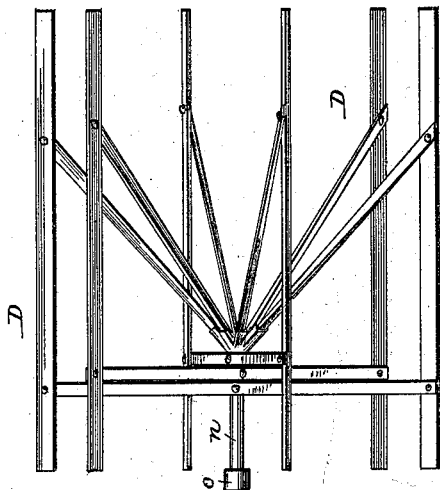


Fig. 4.

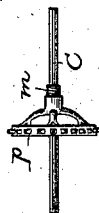


Fig. 3.

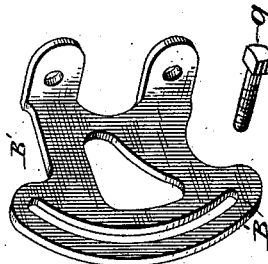


Fig. 1.

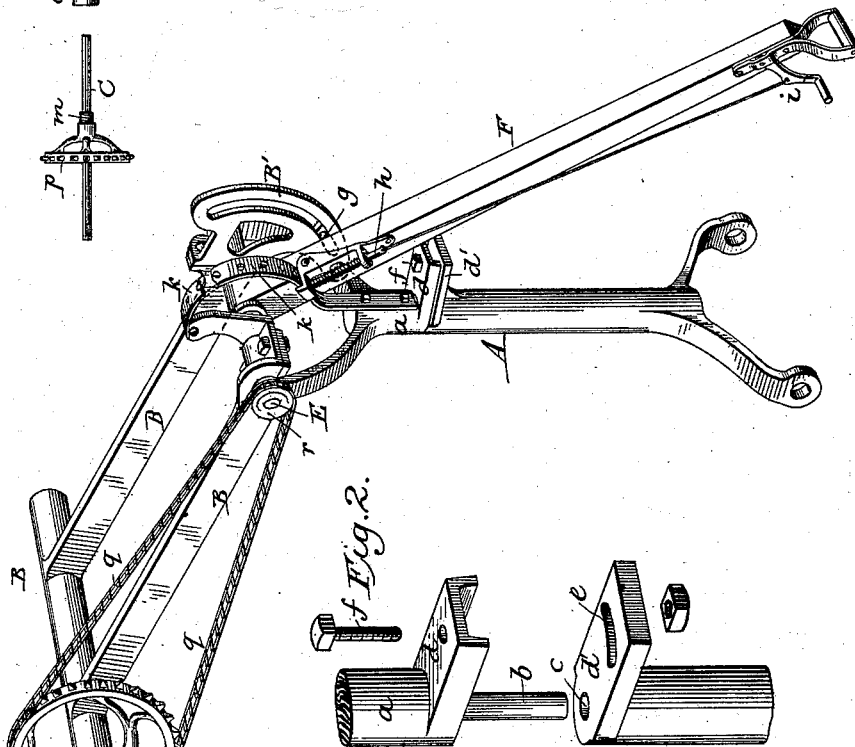
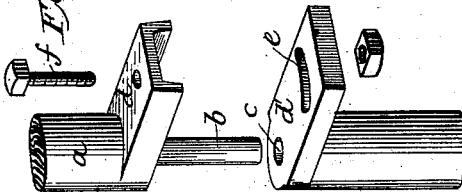


Fig. 2.



Attest:

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# UNITED STATES PATENT OFFICE.

GEORGE ESTERLY, OF WHITEWATER, WISCONSIN.

## HARVESTER-REEL.

SPECIFICATION forming part of Letters Patent No. 384,139, dated June 5, 1888.

Application filed March 7, 1887. Serial No. 230,019. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE ESTERLY, of Whitewater, in the county of Walworth and State of Wisconsin, have invented certain Improvements in Harvester-Reels, of which the following is a specification.

This invention has reference to that class of overhung reels which are adapted for vertical adjustment at will by devices under the control of the driver; and the invention relates to various improvements in the construction of the same, designed to permit the reel to be turned horizontally in order to place its blades in positions oblique to the line of the finger-bar; to facilitate the wide vertical adjustment of the reel, while permitting the adjusting-lever to remain at all times within convenient reach of the driver, and to permit the ready detachment of the reel from its driving and supporting devices when required.

In the accompanying drawings, Figure 1 represents a perspective view of the reel-standard and the adjusting and driving devices. Fig. 2 is a perspective view showing the construction of the standard to admit of the horizontal motion of the reel. Fig. 3 is a perspective view of one of the parts of the reel-support. Fig. 4 is a side elevation of the reel and its supporting and driving shaft, showing the manner in which its quick disconnection is permitted.

Referring to the drawings, A represents the reel post or standard, forked at its upper and lower ends, as usual.

B is a rectangular reel-supporting arm, connected at its upper end by a horizontal axis to the standard, and provided at its forward end with a tubular bearing to receive the shaft C, by which the reel D is supported and driven.

The standard is pivoted at its lower end to the frame in the customary manner, so that its upper end may be thrown forward and backward to place the reel in front of or behind the cutter in the ordinary manner.

Instead of constructing the standard in one solid piece, as usual, I divide the same transversely at any suitable point in its height, so that the upper part may be turned in a horizontal direction independently of the lower part. These two parts I propose to connect in

any suitable manner which will admit of their being thus adjusted and firmly secured in the required position.

As shown in Figs. 1 and 2, the upper portion of the standard *a* is provided with a vertical wrist or journal, *b*, extending downward into a socket or bearing, *c*, in the lower part or foot of the standard. The adjacent ends of the respective sections are provided with flanges *d* and *d'*, the latter containing a slot, *e*, to receive the lower end of a clamping-bolt, *f*, which is passed through the upper flange, as shown. On loosening this bolt the upper part of the standard is set free, so that it may be turned to place the blades of the reel at an angle to or parallel with the line of the cutter-bar. In other words, the adjustment permits either end of the reel blades to be thrown ahead of the other, so that the blades may be placed in the positions best adapted to deliver the grain to the cutters. I commonly adjust the bolt to hold the upper section of the standard with such firmness that it will not change position when the parts are in action, but will admit of the top part being turned by the hand-lever to change the position of the reel, and this while the operator is in his seat and without special adjustment of the bolt. The advantages of thus changing the position of the blades in order to adapt them for operating in grain under different conditions are well understood by those skilled in the art, and heretofore it has been customary to secure this result by jointing the parts of the reel in such manner that its shape could be changed. My improvement permits the same result to be obtained when a rigid reel is used.

While I prefer to make use of the standard divided as shown in the drawings, it is to be understood that the essence of my invention resides in constructing and arranging the bearings which support the reel-shaft so that they may turn in a horizontal plane, and to this end the joints to permit the turning of the reel may be located at any suitable point and modified in construction at will, provided a mode of action such as herein described is secured. The vertical pivot may be at any point between the upper and lower ends of the standard.

Referring now to the devices for effecting

the vertical adjustment of the reel, attention is directed to Figs. 1 and 3. The reel-supporting arm B is connected to the upper end of the standard by a horizontal axis or journal in an ordinary manner and encircles the horizontal shaft E, which also passes through the standard, as usual.

F represents the hand-lever by which the arm B is turned upward and downward around its axis to raise and lower the reel. This lever is mounted to turn loosely around the shaft E, or an axis substantially coincident therewith, and is clamped by an adjusting-bolt, *g*, firmly to a slotted plate, B', which is in turn bolted rigidly to and forms a continuation of the reel-supporting arm B. When bolted to the plate B', the lever forms, in effect, a rigid continuation of the reel-supporting arm, so that by throwing its rear end upward or downward the reel will be lowered or raised. The slot in the plate B', through which the bolt passes, is curved, as shown, and permits the lever to be adjusted and secured in different positions with respect to the reel-support B.

In some cases it is required to use the reel generally in a very high position and in other cases in a very low position. The adjustment of the lever with respect to the arm B permits its end to be maintained at all times within convenient reach of the attendant.

For the purpose of locking the reel at the proper height I provide the hand-lever with a dog or detent, *h*, connected with and operated by a thumb-latch or equivalent device, *i*, at the end of the lever, and arranged to engage a fixed perforated or notched plate, *k*, secured to the standard.

I am aware that it is not broadly new to connect a hand-lever adjustably with the rock-shaft by which the vertical adjustment of a reel is effected; but I believe myself to be the first to provide the means herein described for effecting such adjustment.

Passing next to the construction adopted to permit the removal of the reel, attention is directed to Figs. 1 and 4. The reel supporting and driving shaft C is extended at one end horizontally into or through a tubular bearing in the end of the arm B. At the opposite end it is projected a suitable distance beyond this arm and provided at any suitable point in its length with an external screw-thread, *m*.

The reel D, which may be in other respects of ordinary construction, is provided with a tubular shaft or socket, *n*, adapted to receive the end of the driving-shaft, and provided at its extremity with an enlarged internally-threaded collar, *o*, adapted to be screwed upon the thread *m*, for the purpose of retaining the reel in position and preventing it from sliding endwise upon the shaft. The screw-threads are cut in such direction that the forward rotation of the driving-shaft tends to keep the reel screwed tightly to its place. To effect its removal, it is only necessary to turn the reel bodily in a backward direction, the effect of which is to disconnect the thread, whereupon

the reel may be drawn from the shaft. The reel receives motion, as usual, from a sprocket-wheel, *p*, fixed upon its shaft and driven by a chain, *q*, from a second wheel, *r*, fixed on the end of the shaft E, which latter may receive motion in the ordinary manner.

It is to be noticed as a peculiarity of my construction that it permits the reel to be removed quickly without the use of tools and without disconnecting or disturbing in any manner the driving mechanism.

By the expression "reverse screw-thread" as herein employed is meant a screw-thread trending in such direction that the parts will be maintained in connection when turned in their ordinary operative direction, but disconnected by a reverse motion.

Having thus described my invention, what I claim is—

1. In combination with a harvester, a reel-standard jointed thereto to swing forward and backward, said standard consisting of an upper and a lower part connected by a vertical axis, that the upper part may turn horizontally, an arm, B, connected to the upper end of the standard by a horizontal axis, that it may swing upward and downward, a reel having its shaft mounted horizontally in the distal end of said arm, a hand-lever connected rigidly to said arm and extending rearward, for the double purpose of adjusting the reel vertically and turning it horizontally, and a locking device for said lever, also carried by the upper end of the standard, whereby the one lever is enabled to effect the horizontal and the vertical adjustment of the reel, each independently of the other, and the device for locking the lever caused to turn horizontally therewith.

2. A reel-standard divided horizontally into two parts, said parts provided with opposing flanges, in combination with a vertical pivot, and a clamping-bolt distinct from said pivot, as described, whereby the parts may be secured together with more or less firmness, as required, and held in position without the employment of external fastening devices.

3. In combination with the reel-standard, having its upper end pivoted to turn horizontally and combined with the clamping device, the reel-support sustained thereon by a horizontal axis, and the rearwardly-extending lever attached to said reel-support, whereby the lever is enabled to perform the double duty of adjusting the reel vertically and of turning it horizontally.

4. The reel-support B, mounted on a horizontal axis and provided with the slotted plate B', fixed thereto, in combination with the hand-lever, and the clamping-bolt passing through the slotted plate and seated in the lever, as described.

5. The reel-driving shaft C, provided with a reverse screw-thread, in combination with the reel having the tubular socket or shaft *n*, applied around and screwed upon shaft C, substantially as described.

6. In a harvester, an overhung reel, in combination with a supporting and driving shaft consisting of two members passing one over the other and united by a reverse thread, one  
5 of said members mounted permanently in its bearings and the other attached permanently to the reel, substantially as described.

In testimony whereof I hereunto set my hand, this 24th day of January, 1887, in the presence of two attesting witnesses.

GEORGE ESTERLY.

Witnesses:

J. Z. MERRIAM,

T. C. HOLLENBERGER.