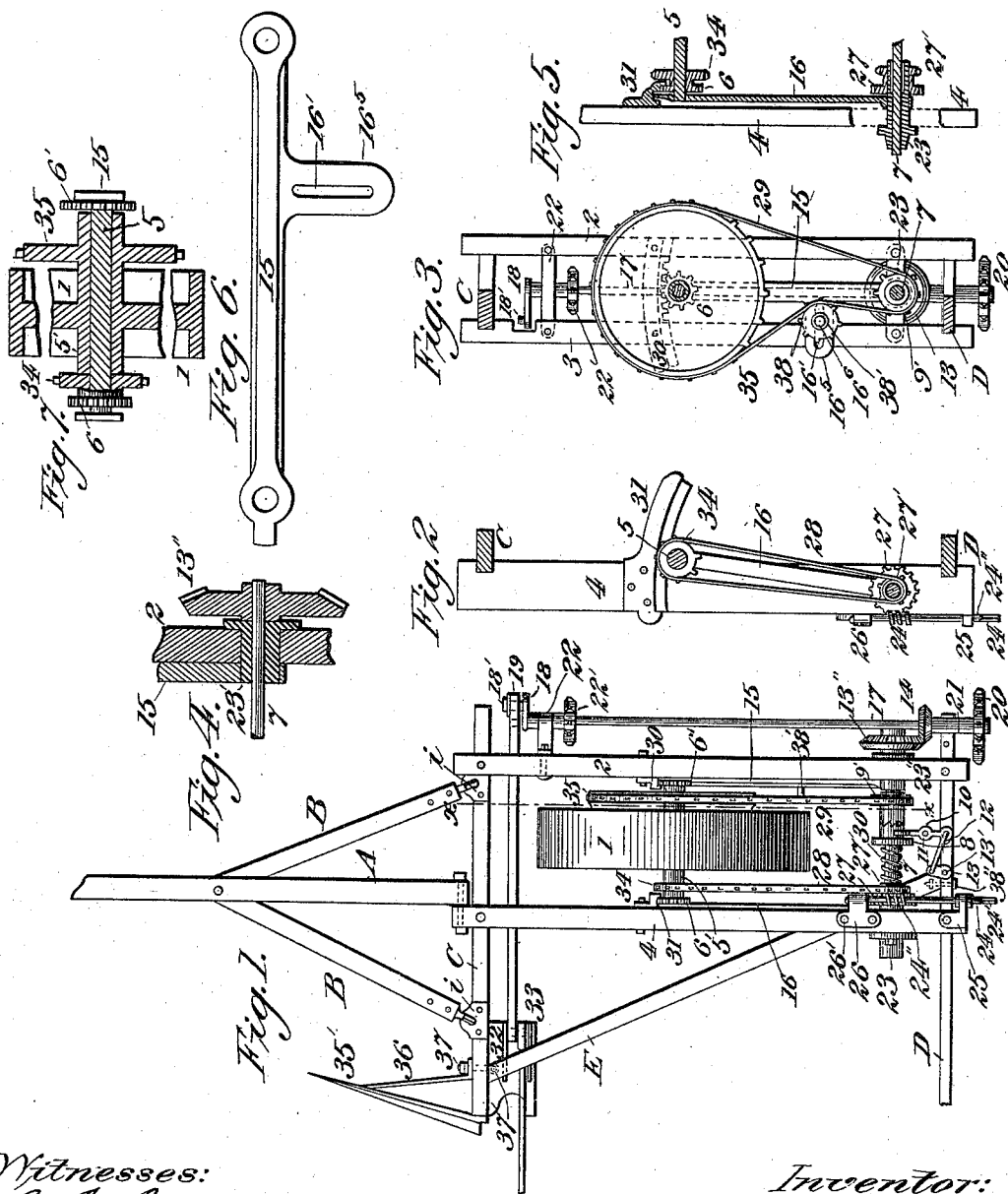


(No Model.)

G. G. HUNT.  
HARVESTER.

No. 526,352.

Patented Sept. 18, 1894.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## HARVESTER.

SPECIFICATION forming part of Letters Patent No. 526,352, dated September 18, 1894.

Application filed November 16, 1885. Renewed December 1, 1890. Serial No. 373,124. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE G. HUNT, of Bristol, in the county of Kendall and State of Illinois, have invented a new and useful Improvement in Harvesters, of which the following is a full and clear description, reference being had to the drawings accompanying this specification, in which the letters and figures of reference relate to identical parts in the several figures.

My invention relates to improvements in harvesters, the object of the same being to provide a cheap, simple and durable device for communicating motion from the driving wheel to the operative mechanism of a harvester.

A further object is to provide devices whereby the harvester frame may, by the application of a small amount of power, be adjusted to any desired height within the scope of the controlling parts, whereby the grain may be cut either high or low.

With these ends in view my invention consists in the parts and combinations of parts as will be more fully described and pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of a portion of a harvester, showing my improvement applied thereto. Fig. 2 is a stubble side view of the left hand, or main sill. Fig. 3 is a view on the line *xx* of Fig. 1 looking toward wheel 35, showing some of the attachments. Fig. 4 is a sectional view of the main shaft, bevel wheel, box and part of arm 15. Fig. 5 is a view partly in elevation and partly in section of the main sill and attachments. Fig. 6 is a view in side elevation of the arm 15, and Fig. 7 is a sectional view lengthwise through the axle.

A represents the tongue, pivotally attached at its rear end to front end of the main sill 4, and strengthened by the braces B the rear ends of which are loosely secured to the plates *i* secured to the front sill C. The sill 4, together with the sill 2, is attached to the front sill C, and to the rear sill D, and the frame thus formed is strengthened by the diagonal brace E firmly secured at its front end to the front sill C by bolt 37, to the under side of the sill 4 by the bolt 26, and to the sill D by the bolt 38. This brace is also connected at its front

end to the shoe 32 by the bolt 37'. Located immediately below the sill 2, and attached to the sills C and D, is the sill 3 which latter assists the sill 2 in supporting the mechanism to be hereinafter described.

7 is a shaft journaled at one end in box 23 rigidly secured to the sill 4, and at the other end in box 23' secured to the sills 2, 3. This shaft is provided at its outer end with a bevel wheel 13'' rigidly secured thereto and meshing with the smaller bevel wheel 14 on the shaft 17 journaled in boxes 21 and 22, the former of which is secured to the sill D while the latter is secured to sills 2 and 3. The front end of the shaft is provided with a crank 18 and wrist pin 18' to which the pitman 19 which actuates the cutter bar 33, is attached. This shaft 17 is also provided at its rear end with the sprocket wheel 20 for imparting motion to the conveying mechanism (not shown), and near its front end with sprocket wheel 22' which imparts motion to the binding mechanism. (Not shown.)

9 is a clutch section loosely mounted on the shaft 7, and provided at one end with clutch teeth and near its other with a sprocket wheel 9', around which the drive chain 29 to be hereinafter referred to passes. The teeth of the clutch section 9 are adapted to be engaged by the teeth of the clutch section 8 which latter is free to slide longitudinally on the shaft 7 but is prevented from rotating independently of said shaft by spline and groove connection. This section 8 is moved longitudinally by the lever 10 pivoted at 11, and connected at its rear end to the crank 13 by link 12. The crank 13 is secured to shaft 13' which latter is operated by a crank or other device (not shown) located within convenient reach of the driver. The box 23 which as before stated forms an end bearing for the shaft 7, projects beyond the outer face of sill 4 and forms a bearing for the sprocket wheel 27' which latter is integral with or rigidly secured to the worm gear 27. This worm gear is rotated by the worm and shaft 24, 24'' journaled in boxes 25 and 26, and provided with an angular end 24' for the attachment of a crank or lever by which the shaft is turned. The wheels 27, 27' together with clutch section 8 are held in place on the shaft

7 by the spiral spring 30' which latter embraces shaft 7 between the wheel 27' and said clutch section.

16 is an arm the rear end of which is journaled on the box 23 between the sill 4 and wheel 27, and 15 is a similar arm journaled on the box 23'. The front ends of these arms rest respectively in grooves formed in the guide plates 31 and 30, the former of which is secured to the sill 4, and the latter to the sills 2 and 3. These arms are connected near their front ends by the axle 5 which latter forms a bearing for the sleeve or hub 5' of the ground wheel 1. Rigidly secured to the ground wheel 1 is the sprocket wheel 35, which latter is connected to the sprocket wheel 9' on the clutch section 9 by the chain wheel 29. Hence when the machine is moving forward the motion of the ground wheel is transmitted to the clutch section 9, and when the latter is engaged by clutch section 8, the rotary motion is communicated to the shaft 7 and from thence through the shaft 17 and pitman 19 to the cutter bar.

6 and 6' are pinions secured to axle 5 as shown in Fig. 7 and engaging the teeth formed on the inner faces of the curved plates 31 and 30 respectively, and 34 is a sprocket wheel rigidly secured to the axle 5 and connected or geared with sprocket wheel 27' by the chain 28. Thus it will be seen that any motion imparted to worm gear 27 by means of the worm shaft 24 will cause a corresponding motion of the sprocket wheel 34 and pinions 6, 6' and as they work in the teeth or racks on the plates 31 and 30 the frame formed by the arms 16, 15, axle 5 and sleeve 5' will rise or fall corresponding to the direction in which the chain 28 moves.

32 is a shoe secured to the front sill C and provided with a groove in which the cutter bar 33 works. Located in front of the shoe and the sill C, is the inside divider 35' which latter is secured to the sill C and strengthened and supported by brace 36.

With the construction of parts as above described, the driving chain 29 will be of the same tightness when the frame is high or low. It is found in practice not expedient to use a drive chain of a certain fixed length,

that is a length which will just reach around the driving and driven sprocket wheels, and which, between the wheels, passes in lines tangentially common to each wheel, but rather to have considerable slack in the chain, preferably so much that in a detachable chain the same may be doubled on itself enough to be unhooked and thereby easily removed or put on as the case may be. When a slack chain is used a tightener must necessarily be employed to take up the slack, and in the present instance I use a wheel 38 mounted on a stud 38' adapted to move in the slot 16' formed in the projection 16<sup>5</sup> on the arm 15. The stud 38' together with the wheel are secured to the projection 16<sup>5</sup> by the bolt 16<sup>6</sup>. By this arrangement, the stud with the tightener may be adjusted up or down so that the chain 29 may be suitably tightened.

It is evident that numerous changes in the construction and relative arrangement of the several parts of my device might be resorted to without departing from the spirit of my invention. Hence I would have it understood that I do not confine myself to the exact constructions shown and described but consider myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination with a frame carrying fixed curved racks, of an axle having fixed pinions on its ends the latter meshing with the fixed curved racks, the driving or ground wheel loosely mounted on said axle, the driving sprocket wheel fixed to turn with the driving ground wheel, the driven shaft, arms mounted at one end on bearings concentric with the axis of the driven shaft, and carrying the axle at their opposite ends, the driven sprocket wheel 9' mounted on the driven shaft, driving chains 29, and devices for turning the axle to raise and lower the pinions in the racks.

GEORGE G. HUNT.

Witnesses:

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