2 Sheets. Sheet 1.

Wheeler & Young,

Self Raker.

No. 113,475. Patented Apr. 4. 1871.

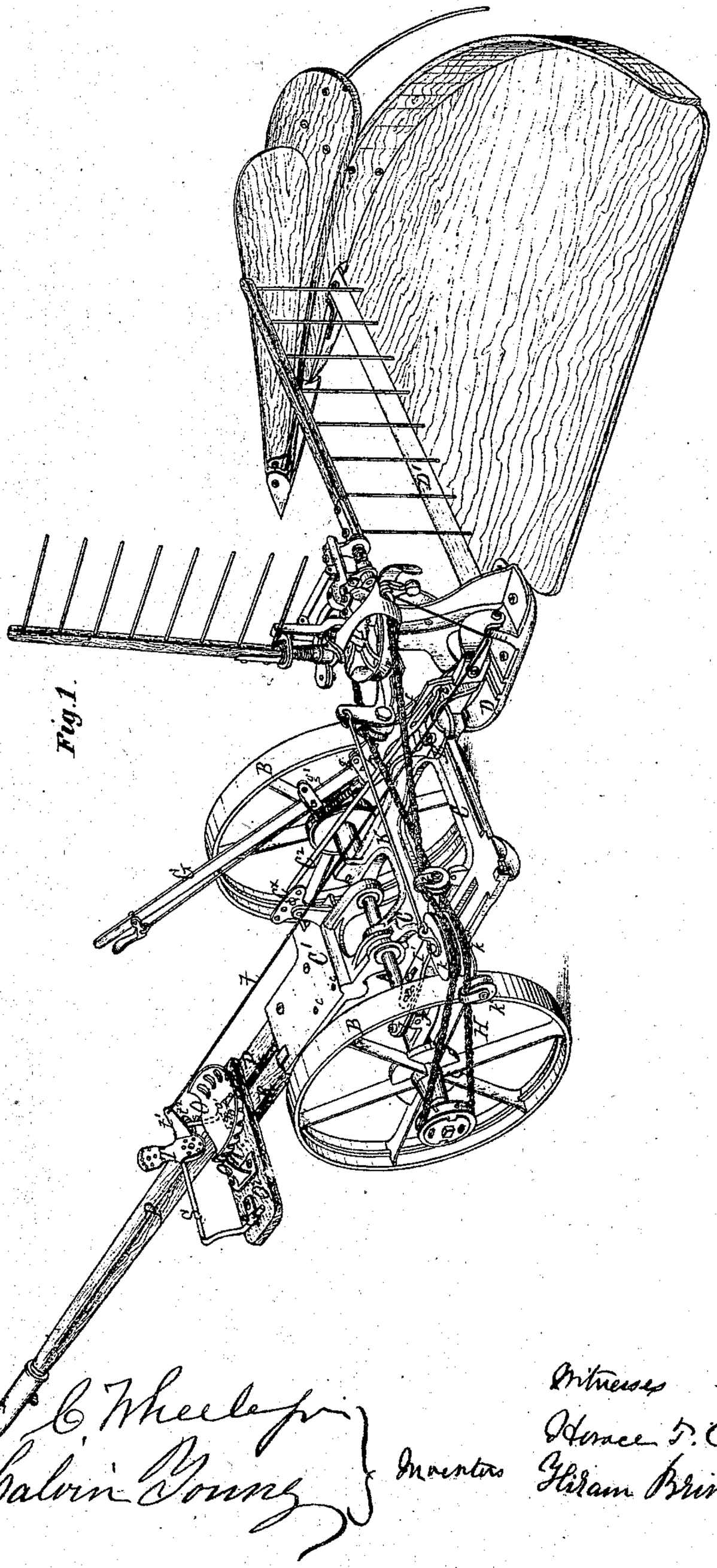

Fig. 1.

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2 Sheets. Sheet. 2.

Wheeler & Young.

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Fig. 1.

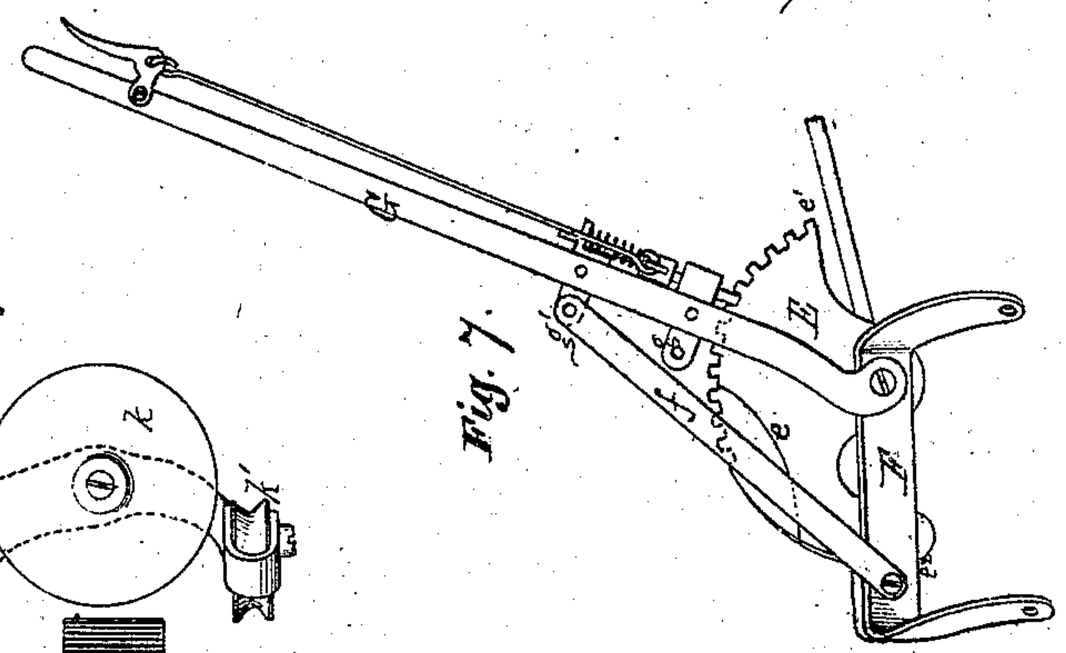

Fig. 2

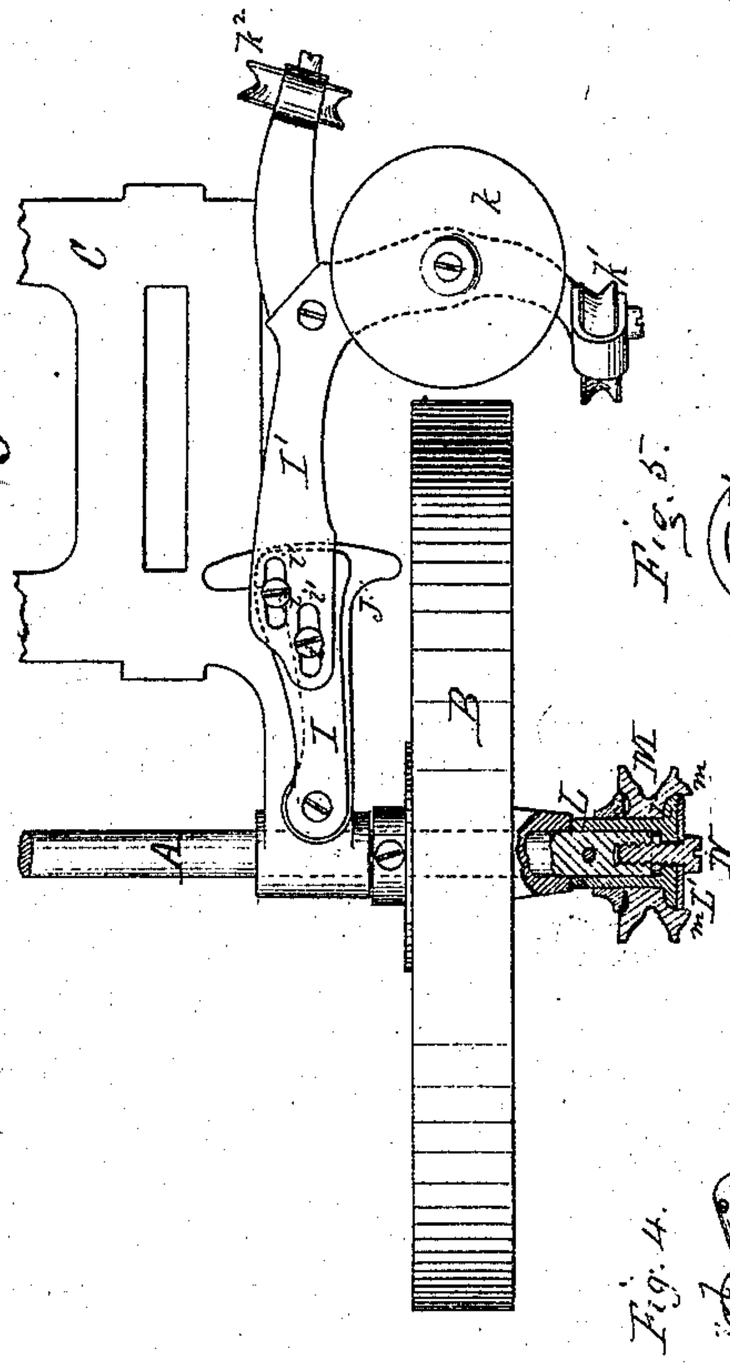

Fig. 5.

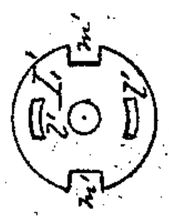

Fig. 4.

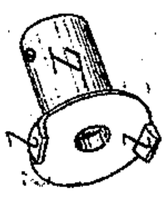

Fig. 3.

Fig. 3a.

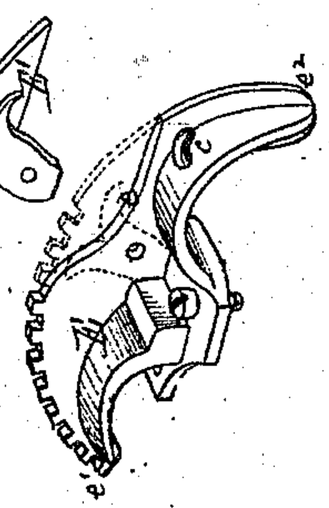

Fig. 6.

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UNITED STATES PATENT OFFICE.

CYRENUS WHEELER, JR., AND CALVIN YOUNG, OF AUBURN, NEW YORK.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **113,475**, dated April 4, 1871.

To all whom it may concern:

Be it known that we, CYRENUS WHEELER, Jr., and CALVIN YOUNG, both of Auburn, county of Cayuga, State of New York, have invented certain new and useful Improvements in Harvesting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a machine embracing the improvements. Fig. 2 is a plan view, partly in section, of a portion of the machine; and Figs. 3, 3ª, 4, 5, 6, and 7 are detached views of parts of the machine, hereafter referred to.

Similar letters of reference denote corresponding parts in all the figures.

The invention relates to a novel construction of the quadrant rack or plate which holds the lever for adjusting the angle of the cutting apparatus and platform, whereby the position of the lever may be changed to suit the different positions of the driver's seat in reaping and mowing; also, to the arrangement of means for keeping the rake-driving chain or belt under suitable tension in any position of the hinged adjustable platform or shoe upon which the rake is mounted; also, to the manner of clutching the sprocket wheel or pulley which drives the rake to, or unclutching it from, its driving shaft or axle, for throwing the rake into or out of action; also, to the construction of the treadle or foot-lever which operates the rake-latch; and to certain other details of construction and arrangement, all of which will be best understood from the following description.

In the accompanying drawings, A represents the axle; B B, the driving-wheels mounted thereon; C, the vibrating cutter-frame; C′, the seat and tongue-frame; D, the inner hinged shoe, and D′ the finger bar, the construction and arrangement of which parts having been described in a patent granted to CYRENUS WHEELER, Jr., February 9, 1864, need not be further described here. Upon the rear right-hand corner of the cutter-frame C is a toothed quadrant or sector plate, E, shown in detached view, Fig. 3, and bolted or otherwise firmly secured to the frame. *c* is a spur or hook formed upon or attached to plate E, and C^2 is a rod provided at its rear end with an eye or loop, which couples the rear end of the rod with the spur *c*, the forward end of said rod being bent at right angles or thereabout, and connected with a perforated standard, $C^\times$, on the draft-frame C^1. The standard $C^\times$ is expanded at its upper end, and provided with a series of perforations, into any one of which the forward bent end of rod C^2 may be inserted and held, thereby serving to hold the frame C at any desired angle to frame C^1, to which it may be placed for regulating the height of the rear end of said frame C, and of the cutting apparatus and platform attached thereto. The standard $C^\times$ may be formed upon frame C^1, or it may be made separate and removable therefrom, and when removable, may be connected with the frame by means of bolts passing through the standard and through an upright ear or lug, *c′*, formed on the frame.

This quadrant E, when adapted for use on the machine in reaping, is made in form substantially as represented in full lines, Fig. 3, a portion of the upper face (at *e*) being cut away to accommodate the rake-standard mounted on the hinged shoe, and overhanging said plate E at its upper end, as shown in Fig. 1.

When the machine is used as a mower, or when the rake-standard is removed, the portion of the upper face of plate E cut away at *e* is supplied by piece E^1, Fig. 3ª, which is bolted to plate E in position shown in dotted lines, Fig. 3, and the upper face or edge of plate E then assumes the form of the arc of a circle, extending from e^1 to e^2, the center of which is coincident with the pivot which connects the shoe coupling-piece F with the frame, and upon which pivot also the lever G, for adjusting the angle of the cutting apparatus and platform, is supported. The upper edge of plate E is notched to receive a latch-slide applied to lever G, and serves to hold the lever at the desired point of adjustment. The lever is provided with two or more ears or

arms, *g g'*, and is connected with the pivoted coupling-piece F by a link, *f*, pivoted to arm *g'* when the machine is used for reaping, with the parts arranged as shown in Fig. 1.

When the machine is used for mowing, or the raking apparatus is removed, the driver's seat, instead of being set forward upon the tongue, as represented in the drawings, is set back, and the foot of the seat-standard O' is bolted to the seat and tongue plate or frame at *c c*, in which case, in order to bring the adjusting-lever G into convenient relation to the driver's seat, the link *f* is disconnected from arm *g* and connected to arm *g'* on said lever, thereby throwing the lever up into a more nearly vertical position, as shown in Fig. 7.

For the purpose of maintaining the rake-driving chain H at a nearly uniform tension under all the varying positions of the rake, which conforms to the movements of the hinged cutting apparatus and platform, a vibrating guide-pulley, block, or arm, shown in plan view, Fig. 2, is employed. Said arm is made in two parts, I I', the former of which, I, is pivoted at one end upon a suitable supporting block or plate, J, on the frame C, and the other, I', is connected adjustably by means of slots and set-screws *i i'*, with the vibrating end of part I forming an adjustable extension of said arm, by means of which the proper tension may be given to chain H passing over guide-pulleys *k k k*^{1} *k*^{2}. The outer or swinging end of arm I I' is connected by a rod or link, K, with the upper end of the rake-standard, and the vibrations of the latter are communicated through said rod to arm I', and the pulleys mounted thereon, which are thereby made to maintain the rake-driving chain H at a nearly uniform tension. The chain H which drives the rake passes from the sprocket-wheel on the rake-shaft over the several guide-pulleys on arms I I', and thence to a driving sprocket wheel on the outer end of the main axle A, and connected therewith as follows: L is a hub or sleeve, mounted on the end of the axle, and keyed or otherwise fastened, so as to turn with the axle, and M is the driving sprocket-wheel mounted loosely on sleeve L, and held in place thereon by means of a head or collar, *l*, on the outer end of the sleeve. (See Figs. 2 and 4.) L', Fig. 5, is a coupling or clutch plate, provided with slots *l'* and notches *m'*, and secured to the outer end or face of sleeve L by means of a set-screw, N, passing through the plate and head into the end of axle A, as shown in Fig. 2. The outer face of the sprocket-wheel is provided with spurs *m*, one or more, and the head or collar L is also provided with spurs *l*, the purpose of which is as follows: The notched and perforated plate L' being secured to the face or end of sleeve L by the set-screw N is caused to rotate therewith, and when it is desired to operate the rake the plate is turned until the spurs *m* and *l* enter the slots *m'* and perforations *l'*, when by tightening the set-screw the sleeve and sprocket-wheel M are coupled together, causing the rotation of the sprocket-wheel with the sleeve and axle.

When it is desired to throw the rake out of action for transportation or other purpose, the screw is loosened, and the plate L' withdrawn and turned so as to rest upon the spurs *l*, which are made a little longer than spurs *m*, so that the plate is held disengaged from the sprocket-wheel and rotates with the sleeve without rotating said wheel.

The driving-wheels B being connected with the axle by the usual backing-ratchets, the axle and the sprocket-wheel and rake operated therefrom will, of course, remain stationary when the machine is backed.

The driver's seat O, when the machine is used for reaping with the automatic rake applied, is mounted upon a seat-board, O^2, attached to the pole or tongue P of the machine, and is supported by the tongue and a seat bar or strap, R, extending back from the board to the seat and tongue plate or frame C', as represented in Fig. 1.

With this arrangement of the seat a longer pole is required than when the seat is applied directly to the seat and tongue plate or frame C', as described, and to provide for this requirement an extension socket-piece, P', is used, the construction and manner of applying which are shown in Figs. 1 and 6.

S is an angular rod or bar, attached at both ends to the seat-board O^2 by clasps *o;* and T is a treadle mounted on the transverse horizontal portion of rod S in convenient position to be actuated by the foot of the driver for operating the rake-tripping device connected therewith by means of a cord, *t*. The treadle T may be either cast or stamped up in one piece provided with the arm *t*^{1}, to which the cord *t* is connected, and also with the loop *t*^{2}, which embraces one of the supporting ends or arms *s* of rod S, and serves as a stop to limit the throw of the treadle, and also to hold it always in proper position to be operated by the driver's foot. The clasps *o* are provided with a semicircular socket at *o'*, which firmly clasps the ends of rods S to the foot-board or other support, and obviates the necessity of flattening and perforating, or otherwise weakening the rod, as is done in the ordinary mode of uniting such rods with the machine, besides permitting a ready adjustment of the rod longitudinally when such adjustment is found desirable.

Parts of the machine not herein particularly described may be of any usual construction.

Having now described the invention, what is claimed as new, and sought to be secured by Letters Patent, is—

1. The sector plate or quadrant E, provided

with the removable part E′, and arranged in the described relation to the overhanging rake-standard, substantially as set forth.

2. The adjusting hand-lever G, provided with the arms or spurs *g g′*, in combination with the adjustable link *f* and quadrant or rack, as described.

3. The guide-pulley arm I and link K, in combination with the rake-standard, substantially as described.

4. The sprocket wheel or pulley M, mounted loosely on the end of the axle, and connected therewith for operating the rake by means of the sleeve or hub L and clutch-plate L′, substantially as described.

5. The treadle T, provided with the arm *t* and loop *t*², constructed as described.

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