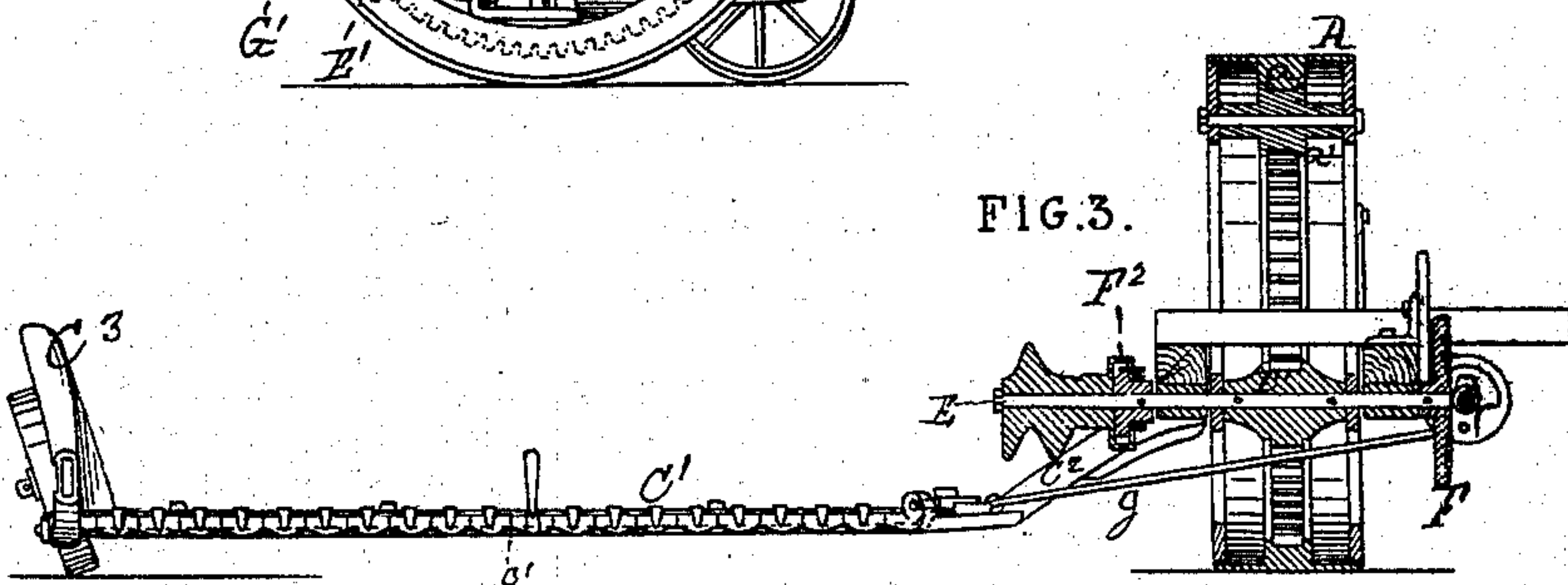
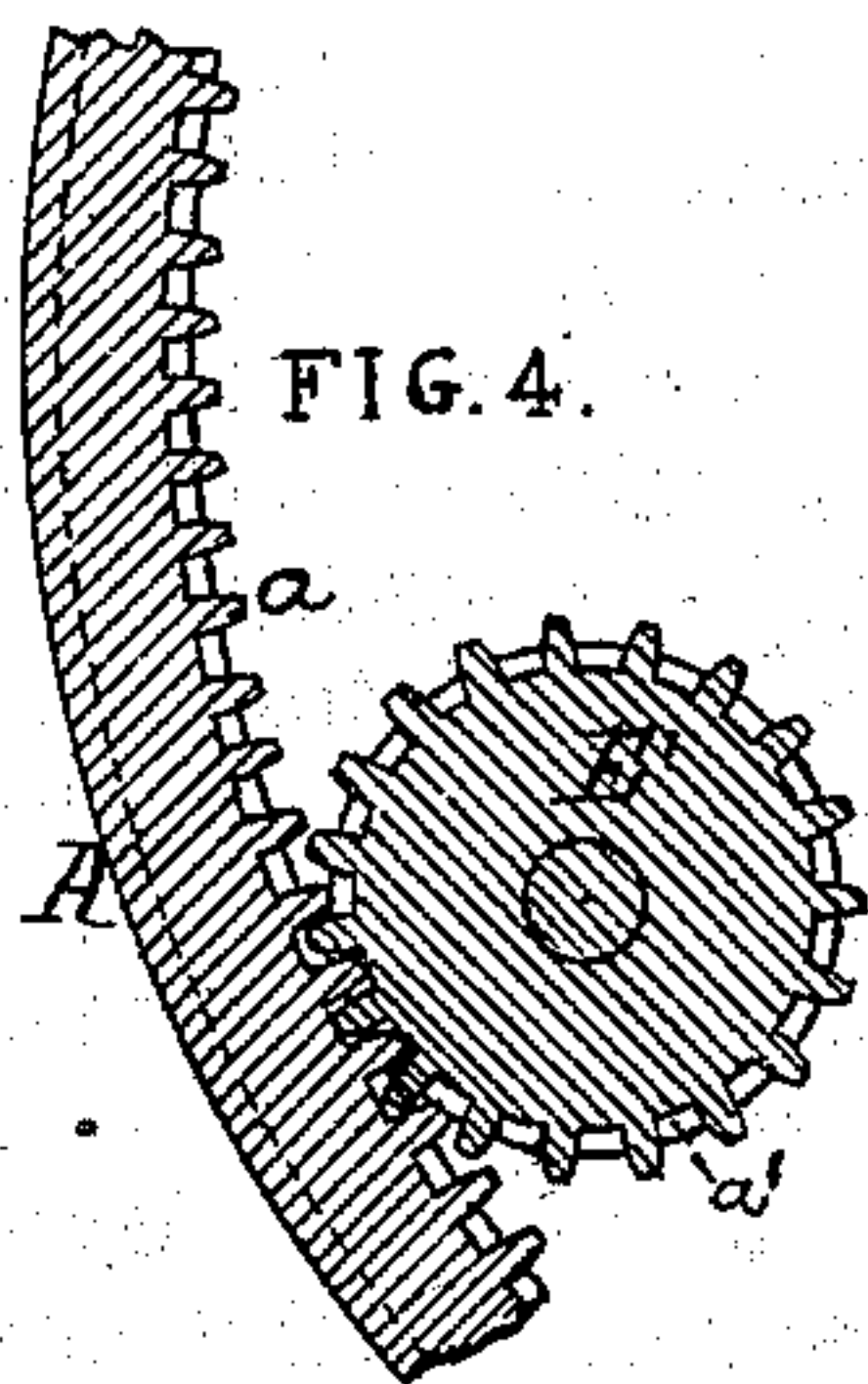
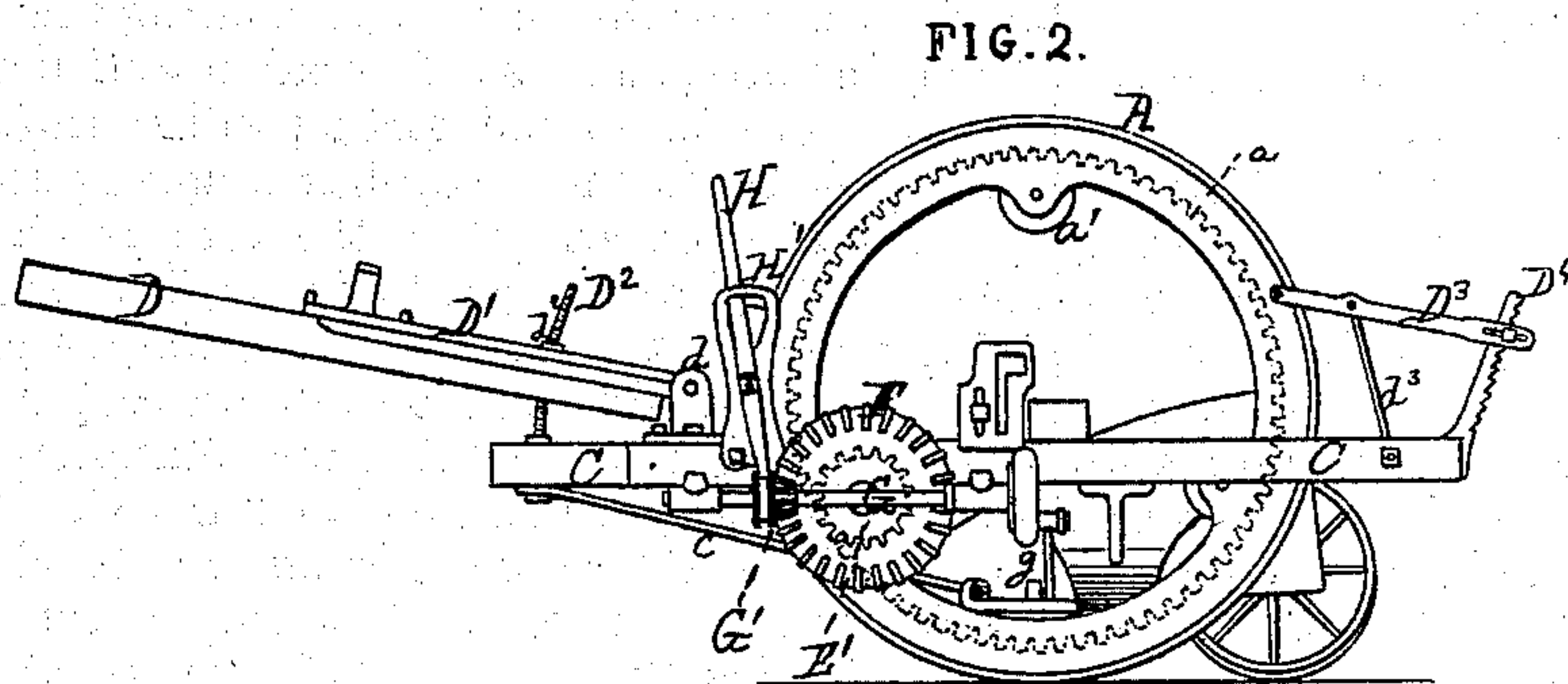
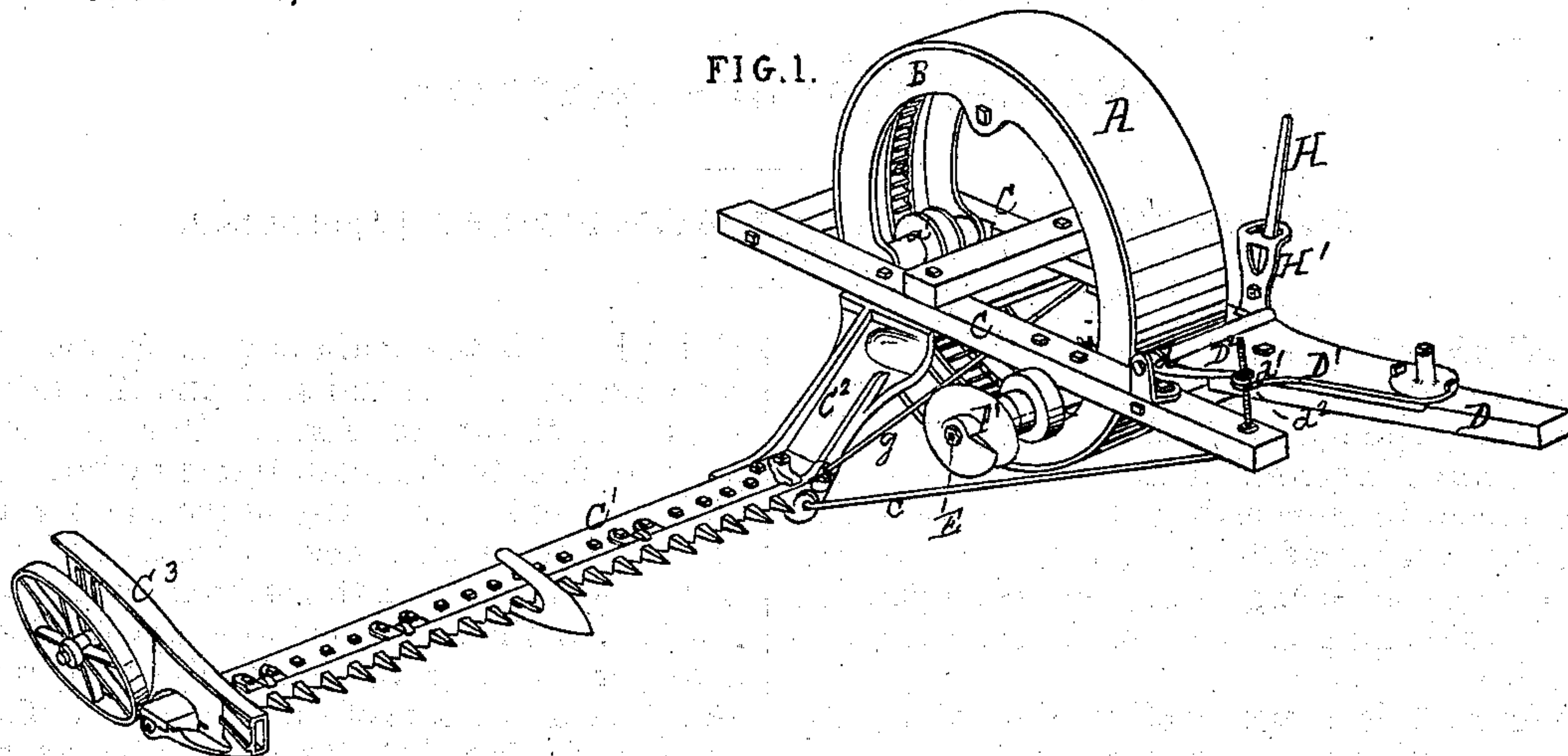


H. WELLS.

Improvement in Harvesters.

No. 125,711.

Patented April 16, 1872.



WITNESSES.

Alex. Mahon  
H. H. Doubleday

INVENTOR.

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# UNITED STATES PATENT OFFICE.

HARRISON WELLS, OF ERIEVILLE, NEW YORK.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 125,711, dated April 16, 1872.

*To all whom it may concern:*

Be it known that I, HARRISON WELLS, of Erieville, county of Madison, State of New York, have invented a new and useful Improvement in Harvesting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved harvester. Fig. 2 is a side elevation taken from the stubble side of the machine. Fig. 3 is a vertical transverse section, and Fig. 4 a detached view of the spur-pinion.

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

The invention relates principally to the combination and arrangement of frames in that class of harvesters known as open-wheel machines, in which the driving-wheel, or one of them in two-wheeled machines, is open in the center, through which space the pitman and sometimes the coupling-bar of the shoe passes. The first part of the invention consists in combining, with flanges or hub between or upon which the driving-wheel is mounted and the main or gear frame, a lifting device, whereby the rear end of said gear-frame can be adjusted vertically. The second part of the invention consists in combining, with the flanges or hub between or upon which the driving-wheel is mounted, the main or gear frame, and a hinged tongue, lifting devices, by means of which both ends of said main or gear frame may be adjusted vertically, or either the front or rear end may be adjusted independently of the other. The invention further consists in certain details of construction, as will be hereinafter fully explained.

In the drawing, A is the main carrying and driving wheel, provided with an internal-spurred rim, *a*. B are the supporting-flanges between which the wheel A is mounted. *a'* are friction-rollers journaled in flanges B and running upon axles fixed in the flanges. By preference I construct each of these rollers with a double tread, so that one disk of each shall bear upon the inner surface of wheel A on each side of spurred rim *a*. I usually employ three of these friction-wheels placed equidistant from each other, one of them being mounted upon the pinion-shaft, as will be ex-

plained. C is the main or gear frame. It is rectangular in form and surrounds the driving-wheel, as shown in Fig. 1. C<sup>1</sup> is the cutter-bar attached to the main frame by bracket C<sup>2</sup> and draft-rod *c*, or in any other manner usual in one-wheeled machines. C<sup>3</sup> is the outer shoe and divider, to which the ordinary grain-wheel is attached when the machine is to be used as a reaper. *c'*, Fig. 3, is a girt-rod extending along the under side of the finger-bar. The inner end of this rod is attached to the inner end of said finger-bar, the outer end passing through the shoe and divider, where it is provided with a screw-nut for the purpose of holding the shoe firmly in place, and also of imparting such a degree of tension to the girt as will counteract any tendency in the cutter-bar to spring downward in the center. D is the tongue. D<sup>1</sup> is the tongue-plate hinged to frame C by means of lug *d*, one at each side. The tongue-plate is expanded upon one side into an ear, *d'*, for the reception of a screw-threaded standard, D<sup>2</sup>, rising from a projecting end of frame C. This standard should be made in an arc of a circle, of which the tongue-pivot is the center, and is provided with two nuts, *d''*, one above the tongue and one below it, by means of which the relation of the tongue and frame may be adjusted. D<sup>3</sup> is a lifting-lever pivoted to one of the flanges B. *d''* is a link connecting lever D<sup>3</sup> with the rear end of frame C. D<sup>4</sup> is a ratcheted standard rising from frame C, and to which lever D<sup>3</sup> is secured by means of a spring-catch of any desired or suitable construction. E is the pinion-shaft. It is mounted in suitable boxes or bearings in or upon frame C, as shown in Fig. 3. E' is a spur-pinion keyed to shaft E and gearing with spurred rim *a*. Pinion E' is made in one piece with one of the double friction-rollers *a'*, as shown in Fig. 4, and is arranged between the two disks. By this construction and arrangement of the pinion the rollers not only serve to support wheel A in the proper position in flanges B and save friction between the wheel and flanges, but regulate the depth of mesh of rim *a* and pinion E' and sustain most of the draft of the machine. Pinion-shaft E, in addition to being mounted in or upon frame C, as above described, passes through bearings or perforations in flanges B, so arranged that pinion E' shall be always in gear with spurred rim *a*;



and it will be readily seen that by this arrangement of parts the drive-wheel A is free to vibrate vertically in frame C about shaft E as a center, and that the frame C can also vibrate about said shaft as a center, for a purpose which will be explained. F, Figs. 2 and 3, is a bevel-wheel keyed to shaft E. G (see Fig. 2) is the crank-shaft mounted in suitable bearings in frame C. g is the pitman driving the cutters through the open wheel. G' is the crank-shaft pinion. It is feathered to the shaft so as to slide thereon, and is thrown in and out of gear with bevel-wheel F by means of shipping-lever H pivoted to and locked in position by lever-standard H'. F<sup>1</sup> is a screw or worm mounted loosely on the inner or grain end of shaft E, and connected therewith by means of a backing-ratchet F<sup>2</sup>. This screw is only employed for driving the rake when the machine is used as a harvester, and hence may be dispensed with when the machine is used for mowing. In fact, the inner end of shaft E may be made in a separate piece, to be connected with the other portion by a sleeve or other suitable coupling when it is needed for driving the rake, and the girt-rod c' and divider should be removed when mowing, and replaced by a suitable track-clearer.

The driver's seat should be located on the stubble side of the machine, within convenient reach of the shipping-lever H.

It will be seen that, by my construction and arrangement of frame and the combined spur-pinion and friction-wheel E', said pinion is made to sustain the draft upon the tongue, and when the machine is used as a mower the weight of the gearing and frame is also supported upon this combined wheel. For this reason there is little or no wear either upon the shaft-bearings in the flanges or upon the shaft at these points.

When it is desired to rock or tilt the points of the guard-fingers in mowing in order to vary the height of cut, it can be done by means of nuts d<sup>2</sup> on the screw-standard D<sup>2</sup>, the cutting apparatus and the rear end of frame C remaining free to rise and fall to conform to the undulations of the ground.

When the machine is to be used as a reaper the grain-platform is attached to the cutter-bar by means of any devices ordinarily employed for that purpose, and I usually further support it (the platform) by a brace from the rear end of frame C. I then raise the main frame and platform to the desired height by lever D<sup>3</sup>, link d<sup>3</sup>, and ratcheted standard, and when it is necessary the platform can be tilted to any desired inclination by means of the standard D<sup>3</sup>.

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

1. In combination with the open drive-wheel A, provided with the spurred rim a, the flanges B and rectangular frame C, hinged to each other by means of the pinion-shaft E and the hinged adjustable tongue D, operating substantially as set forth.

2. The combination of the main open drive-wheel A, the flanges B, the frame C and pinion-shaft E, the hinged adjustable tongue D, and the lifting devices D<sup>3</sup> d<sup>3</sup> D<sup>4</sup> for supporting and adjusting the frame and grain-platform upon the flanges B, substantially as described.

3. The combined pinion and friction-wheel E', in combination with shaft E, frame C, and drive-wheel A, substantially as described.

In testimony whereof I have hereunto set my hand this 2d day of May, A. D. 1871.

HARRISON WELLS.

Witnesses:

THOMAS PRUDEN,  
LOUIS MAYCRINK.