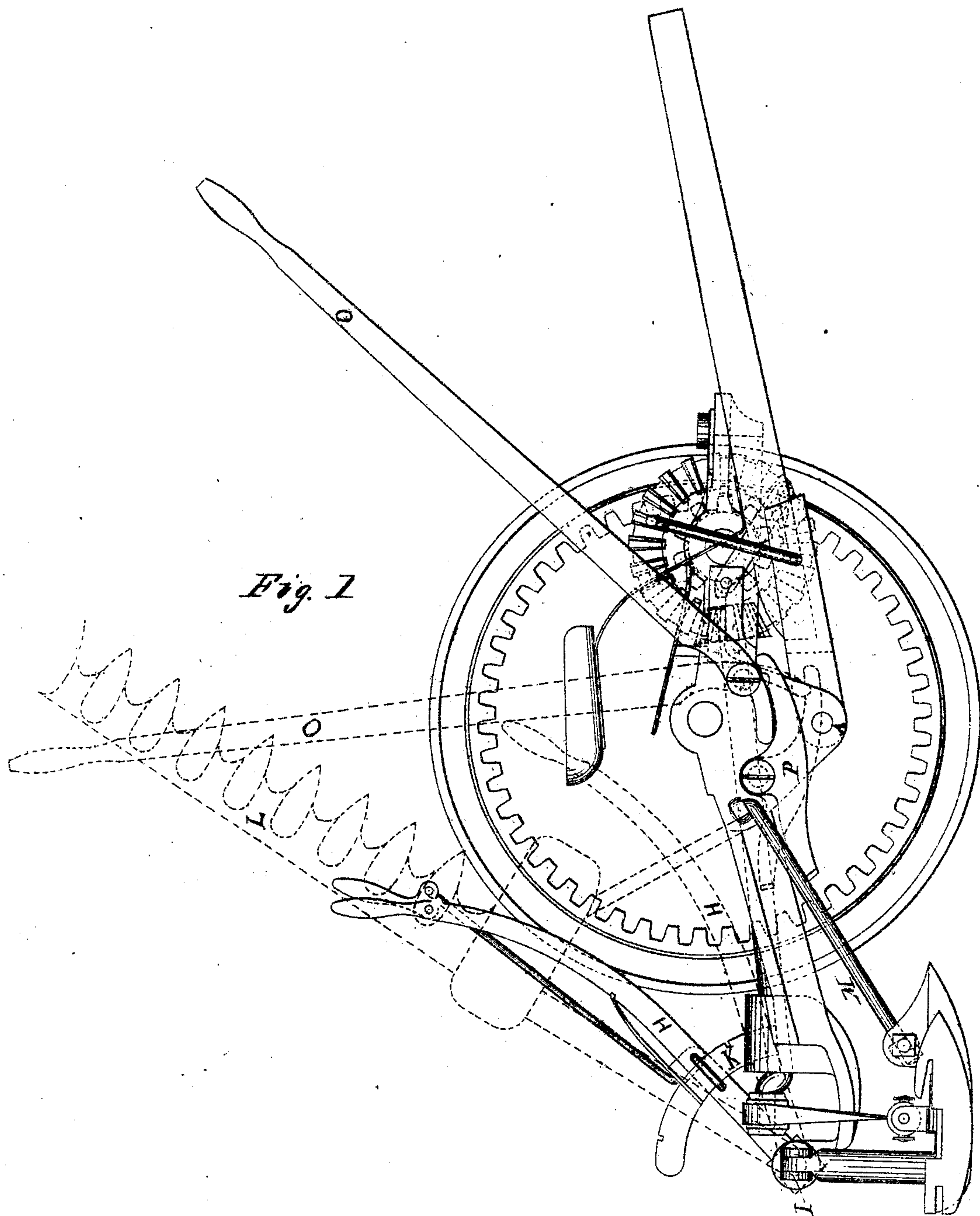


HARVEY L. HOPKINS.
IMPROVEMENT IN HARVESTERS.

No. 121,784.

Patented Dec. 12, 1871.



WITNESSES
A. W. Mone
L. D. White

Harvey L. Hopkins
INVENTOR

(74.)

HARVEY L. HOPKINS. 2 Sheets--Sheet 2.

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Fig. 3

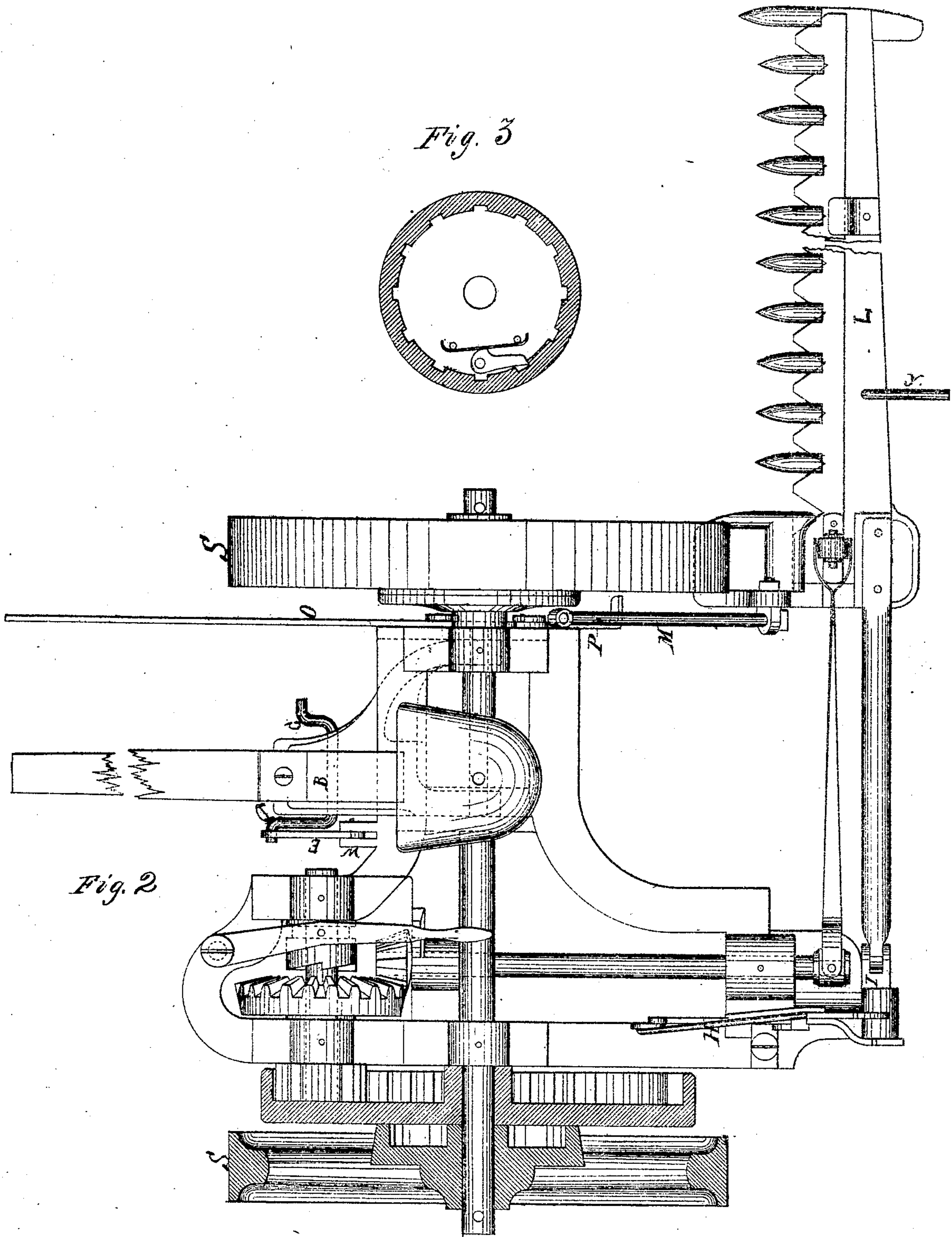
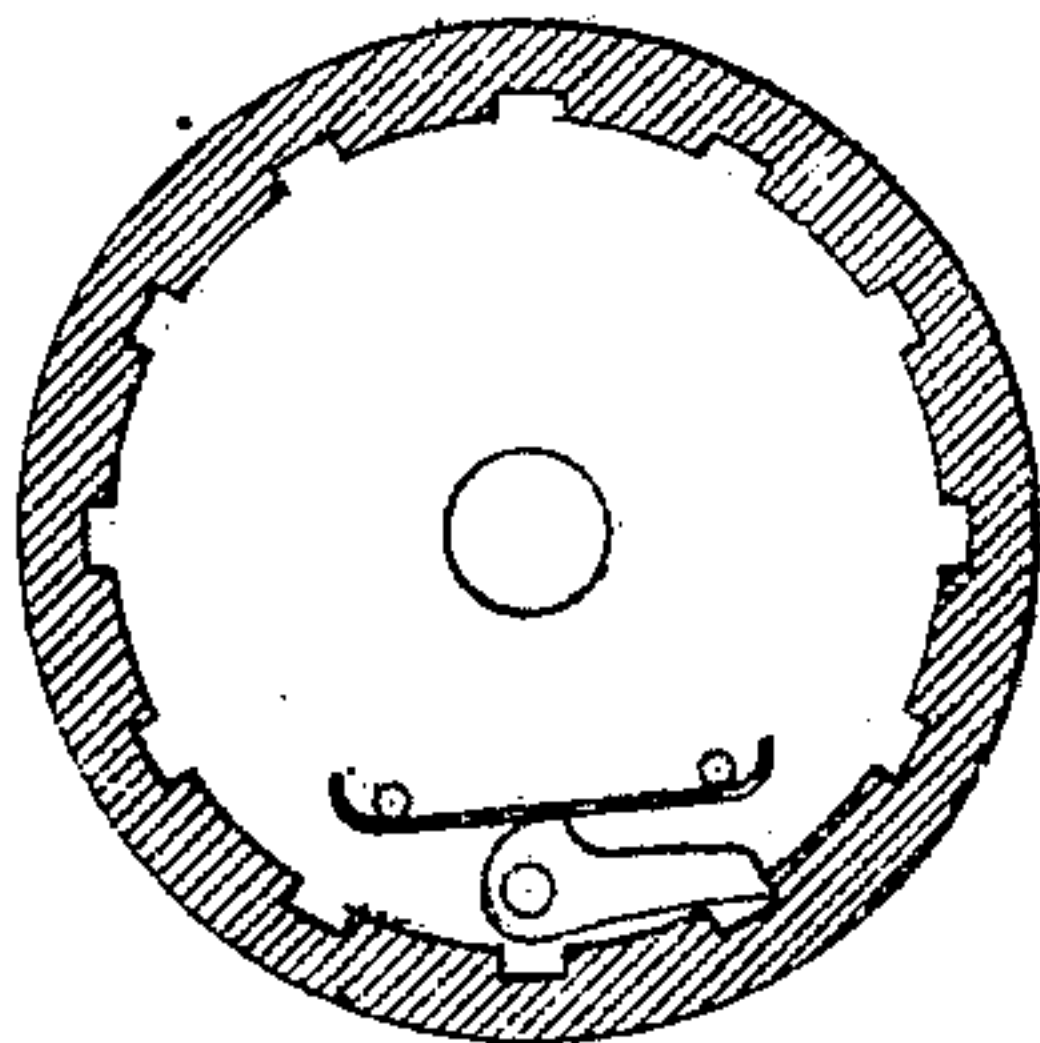


Fig. 2

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HARVEY L. HOPKINS, OF EATON, NEW YORK.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 121,784, dated December 12, 1871.

To all whom it may concern:

Be it known that I, HARVEY L. HOPKINS, of Eaton, in the county of Madison and State of New York, have invented certain Improvements in Harvesters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making part of this specification, in which—

Figure 1 is a side elevation of the machine, one of the wheels being removed. Fig. 2 is a plan view, representing the machine arranged for operation. Fig. 3 is an elevation of the hub of one of the carrying-wheels, showing also the pawl engaging with ratchets in the hub, to revolve in the driving-wheel in the forward movement of the machine.

The same letters are used in all the figures in the designation of identical parts.

This invention relates to the class of harvesting-machines in which the cutting apparatus is arranged in rear of the wheels; and my improvements consist—First, in a mechanism for connecting the forward end of the oscillating frame to the tongue, which, though ordinarily permitting the frame and tongue to move independently of each other while the machine is at work, may be employed by simply operating a foot-lever to hold the one rigidly to the other. Second, in attaching the cutting apparatus to the frame of the machine in such a manner that it may be folded in an oblique direction, to be carried between the driving-wheels over the frame in transporting the machine from one place to another, as hereinafter described.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

It will be readily understood that if the pole be hinged to the frame of a harvester, which is merely balanced upon the axle which supports it, at or above such axle, the action of the gearing in imparting motion to the cutter-bar would tilt the frame forward and at once interrupt the proper action of the machine. To obviate this difficulty a third wheel is usually employed, supporting the forward end of the frame. I dispense with the use of this third wheel by hinging the pole to or between downwardly-projecting lugs A of the frame, so that the team will draw on the frame at a point some distance below the axis upon which it turns, usually from

five to eight inches, more or less, and counteract the tendency of the gearing to tilt it forward. This manner of attaching the pole to a frame admits of balancing the latter with its appendages nicely upon the axle, so that the cutting apparatus may readily accommodate itself to the undulations of the field. At W the forward end of the frame has two ears, between which a link, E, is pivoted. The other end of this link is attached to the crank D of a shaft, B, which, passing horizontally and transversely through the tongue, in which it is supported, terminates at the opposite end in a crank or foot-lever, C. The axis of the shaft B and that of the pivot of the link at W are in a vertical plane, or nearly so, and the cranks stand nearly at right angles to each other. While the machine is at work the position of the cranks and link will be about that shown in Fig. 1 of the drawing, and the frame in its oscillations will simply vibrate the shaft without further affecting the tongue. Should it become desirable to elevate the inner end of the cutting apparatus the front end of the frame can be depressed by turning the foot-lever in the direction of the arrow in Fig. 1, and the tongue and frame may be rigidly connected together by turning it until the crank-pin D, the shaft B, and the pivot at W arrange themselves in a straight line, in which position they are easily maintained either by the foot of the driver or a suitable detent. To the inner end of the finger-bar a stout bar of iron is rigidly secured, which connects it with a swiveling-bolt, I, to one end of which it is pivoted in close proximity to the crank which imparts motion to the cutter-bar. The bolt I is arranged in an elongation of the frame in line with the cutting apparatus, so that on turning it on its axis it will tilt the cutting apparatus so as to elevate or depress its front edge, as the case may be, to leave either a short or long stubble, as may be required. The bolt I is operated by a hand-lever, H, which can be easily reached by the driver while on his seat, and stationed at any desired point on a notched arch, K, by means of a spring-latch, or in other suitable manner. The inner end of the finger-bar is connected by a diagonal brace, M, to the side of the frame, the brace being coupled to the two in such manner as to admit of the tilting of the former already described, and also allow the cutting apparatus to be folded up in a diagonal direction to assume the po-

sition shown in dotted lines in Fig. 1, over the frame between the wheels. To fold the cutting apparatus in this manner the lever H is first borne down by the driver to incline bolt I—pivot on which it turns. The cam-lever O, which operates through the medium of a cranked lever upon the brace M, is then drawn toward the driver, whereby the cutting apparatus is elevated from the ground, so that a handle Y can be reached by the driver after the forward end of the frame has been depressed by the foot-lever C in the manner explained. The driver can then easily fold the cutting apparatus up by simply drawing it toward him, and it can be held in this position by him or by some mechanical means. All this can be done while the machine is in mo-

tion, and without throwing the crank-shaft out of gear, as the cutter-bar will be reciprocated equally well in any one of the several positions. What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the frame, hinged tongue, cranked shaft B C D, and link E, substantially as and for the purpose set forth.

2. The combination of the cutting apparatus, swiveling-bolt I, lever H, brace M, intermediate lever P, and cam-lever O, all arranged and operating substantially as set forth.

HARVEY L. HOPKINS.

Witnesses:

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L. I. WHITE.

(74)