

J. G. Perry.

Mower.

Nº 90020.

Patented May 11. 1869.

Fig. 1.

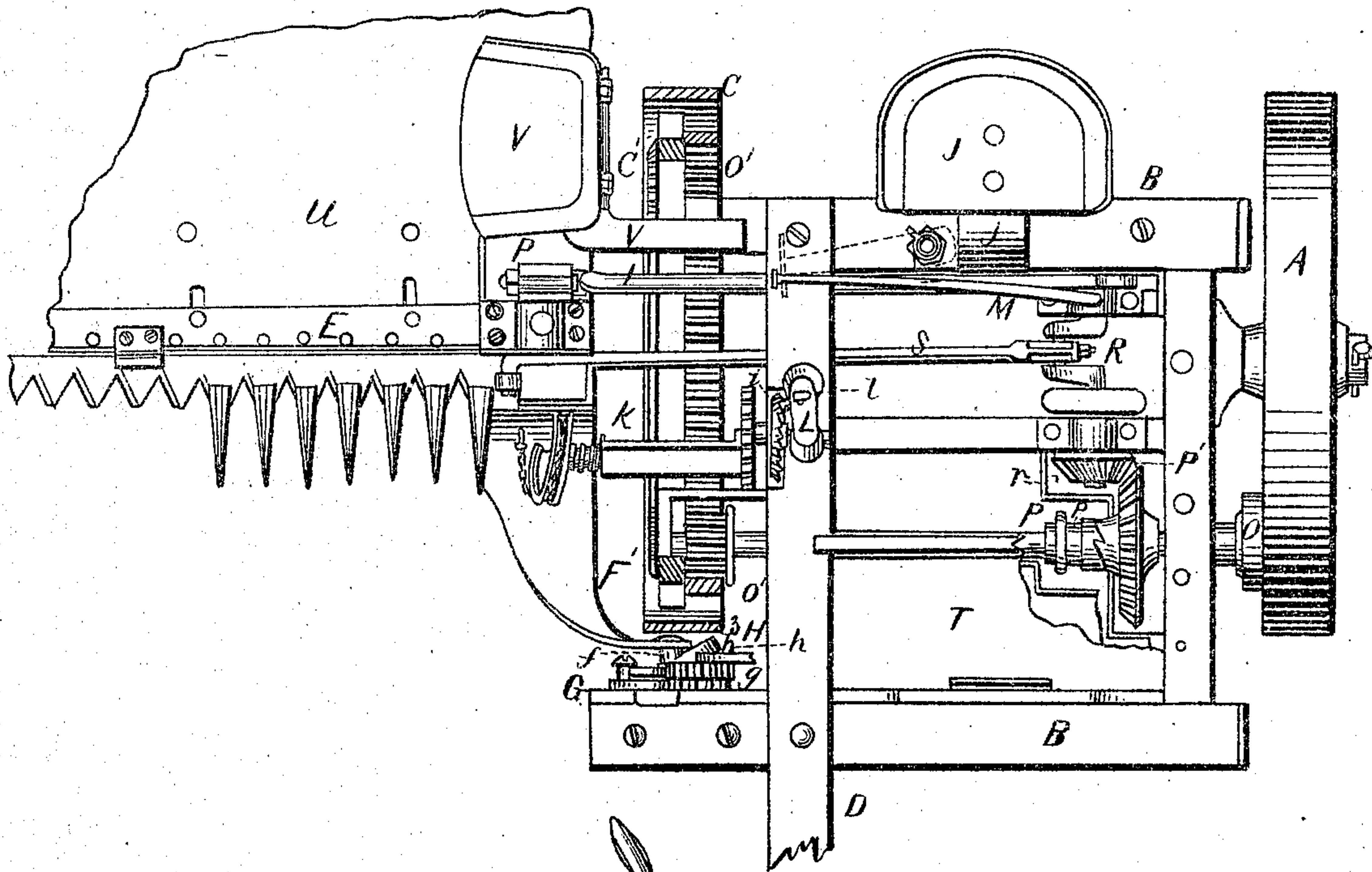
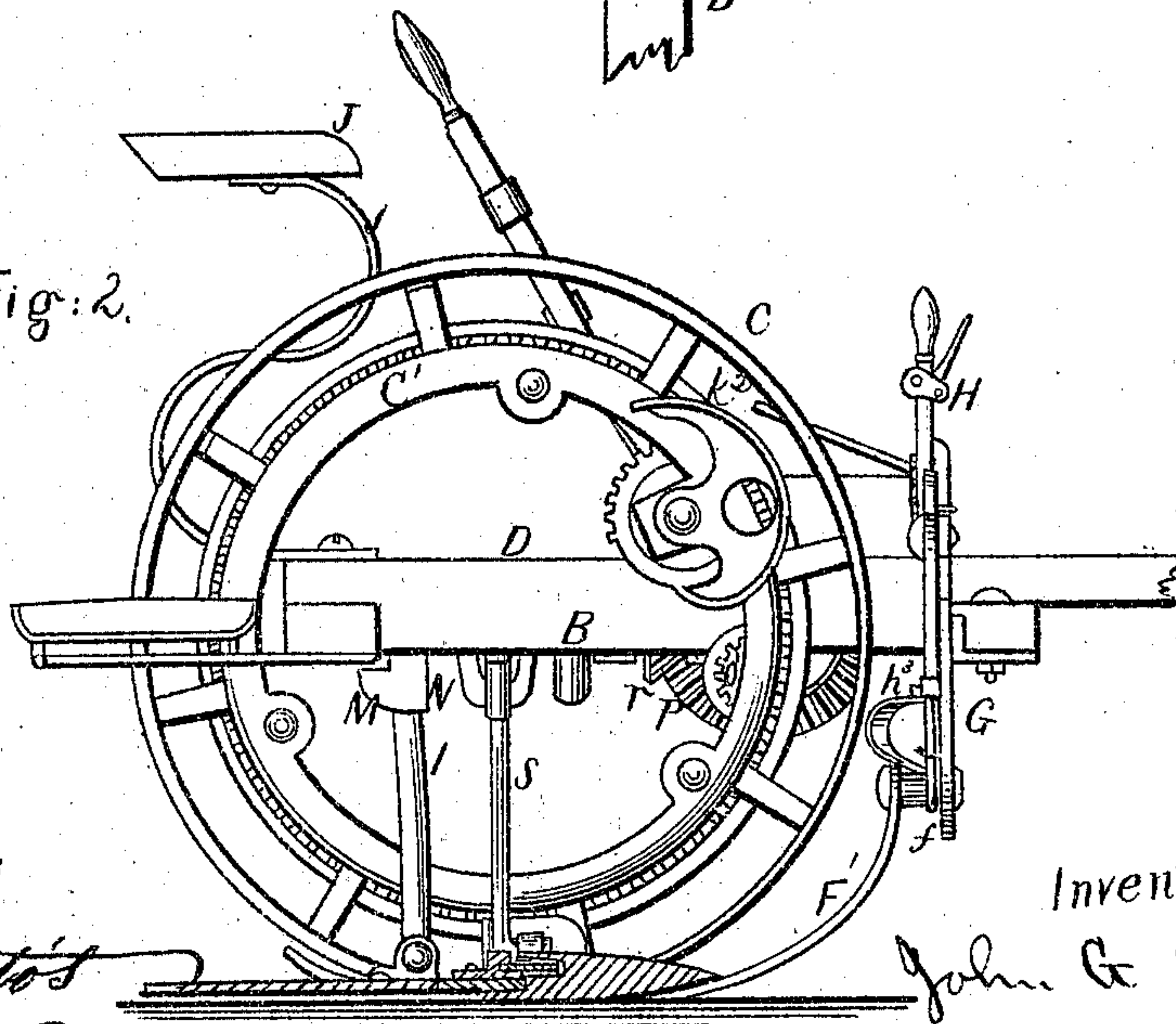


Fig. 2.



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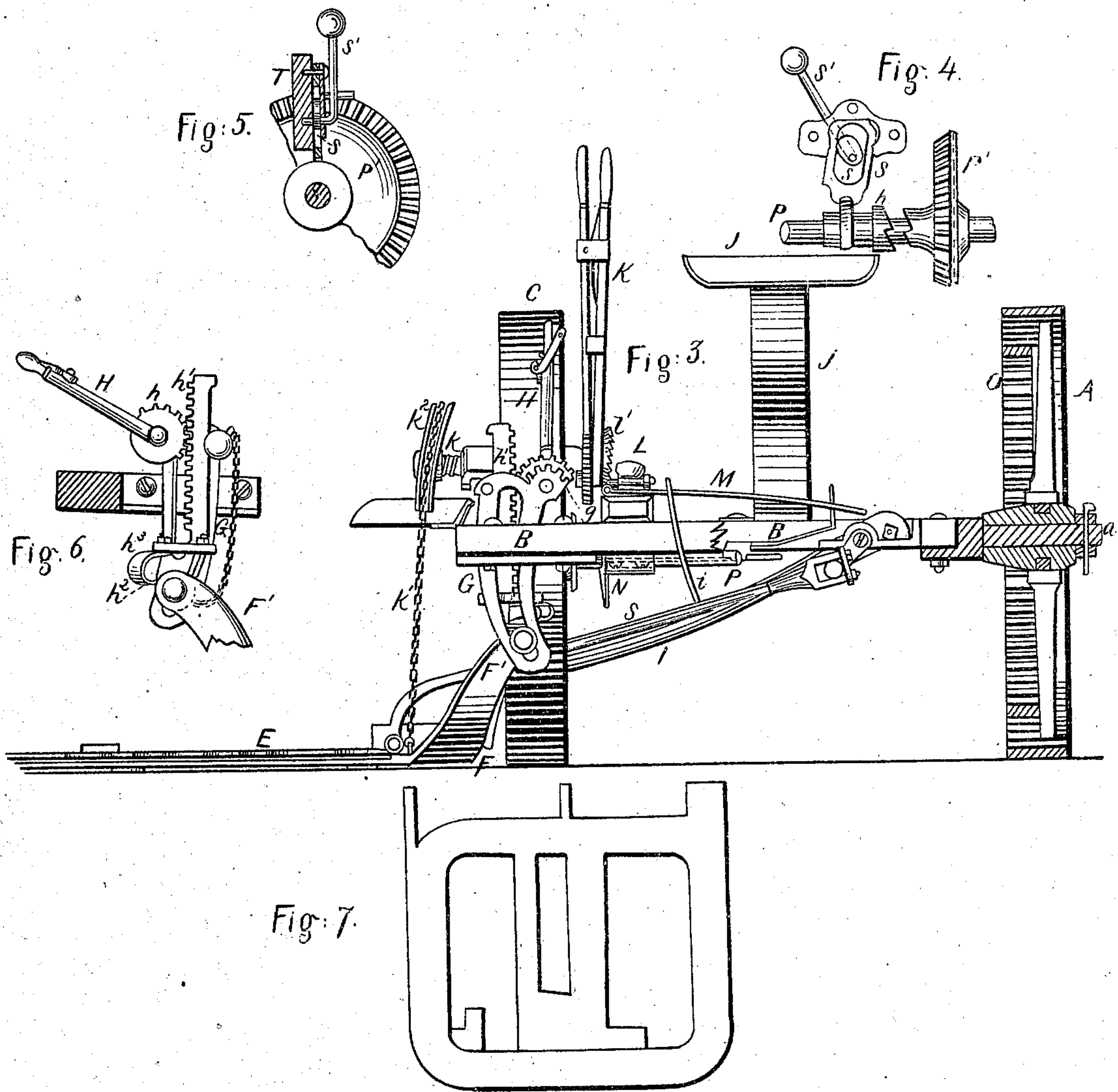
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 90,020, dated May 11, 1869.

To all whom it may concern:

Be it known that I, JOHN G. PERRY, of Kingston, in the county of Washington and State of Rhode Island, have invented certain new and useful Improvements in Harvesters, of which the following is a full, clear, and exact description.

The first part of my invention relates to that class of harvesters in which both ends of the cutting apparatus are raised by the same movement, and one object of the invention is to prevent the slipping of the lifting-chain from its sector; and the improvement consists in a novel method of constructing the sector, to which the lifting-chain is attached, in a spiral form, and setting it so as gradually to incline downward away from the driving-wheel, so that as the shoe swings outward on its pivot as the finger-beam rises the lifting-chain will also be carried away from the driving-wheel, and thus prevented from being twisted off its sector.

The improvement further consists in a novel method of combining a cutting apparatus and an open or annular driving-wheel, or an open axle, with a spiral lifting-sector outside the wheel, a rock-shaft passing through the open wheel or axle, and a lifting-lever and detent inside the wheel.

The improvement further consists in a novel method of combining a lifting hand-lever and its detent with a rocking foot-lever, carrying a swinging pawl, taking into a rack on the side of the hand-lever, to enable the driver to use both hand and foot in lifting the cutting apparatus.

The improvement further consists in a novel method of combining, with the rear coupling-arm, a vertically-moving foot-lever to depress the arm and a horizontally-moving foot-lever and stop to hold the bar down.

The improvement further consists in a novel method of combining a drag-bar, moving vertically in a slotted bracket on the main frame, and carried by a vibrating loop, with a spring, which holds the drag-bar tightly in the loop, prevents its rattling, and also holds down the points of the guards.

The improvement further consists in a novel method of combining a removable foot-board and a tool-chest, so as to cover and protect the gearing.

The improvement further consists in a novel method of mounting the shipping-lever, which disconnects the gearing on the tool-chest, so that it may be removed therewith.

The object of the next branch of my invention is to adapt the machine to reaping; and the improvement consists in a novel method of combining, in a two-wheel harvester, the grain-platform and a finger-beam with an open or annular driving-wheel, so that the grain may be swept from the platform by a hand or an automatic rake and delivered in gavels in rear of the machine.

The improvement further consists in a novel method of combining an open or annular driving-wheel, a finger-beam, and a platform with a raker's seat or stand attached to the open axle or mounted on a support passing through the driving-wheel.

The accompanying drawings represent these improvements applied to the well-known "Perry harvester," patented by me March 21, 1865, and March 6 and May 22, 1866. It is obvious, however, that some of the devices may be used without the others. They may likewise be applied to machines differing in construction from that herein shown.

Figure 1 represents a plan or top view of my improved harvester, with the foot-board and tool-chest removed, and with portions of the inner driving-wheel, tongue, cutting apparatus, and platform broken away. Fig. 2 represents a view, in elevation, of the machine, as seen from the divider side. Fig. 3 represents a similar view of the same, as seen from the front, with the outer driving-wheel in section. Fig. 4 represents a view of a portion of the counter-shaft, driving-gear, and shipping mechanism, as seen from the front. Fig. 5 represents a side view of the same; Fig. 6, a view of the apparatus for lifting the front end of the drag-bar, as seen from the rear; and Fig. 7 represents an iron frame.

A driving-wheel, A, of the usual construction, is shown as turning loosely on a stud-axle, a, fixed on the stubble side of the main frame B. This axle may be made either hollow or solid, and a cap may be placed on, in, or to its end when cast hollow, to close and finish it up. This cap is held in place by the linch-pin. (See Figs. 1 and 3.)

The inner driving-wheel, C, is of an open annular form, and revolves on an open-flanged ring or axle, C', firmly secured to the main frame, so that the wheel may rotate on the flange, as shown in my patent of May 22, 1866.

The ring C' may either carry the usual friction-rollers, or the wheel may run on bearings of Babbitt metal, or any suitable material secured at intervals upon the bearing-surfaces of the wheel or the ring, or the ring or wheel, or both, may be made with projections of the same metal of them, cast or made thereon.

A rigid tongue, D, is shown, in this instance, as extending back entirely across the frame; but both the tongue and inner frame-timber may, if preferred, be cut away opposite the driving-wheel, as in my patent of May 22, 1866, in which case the rim C' acts as a brace for the frame, as well as a support for the driving-ring C.

The finger-beam E is secured to a shoe, F, the rear of which is turned up to aid in backing, while its front end is prolonged into a drag-bar, F'.

A stud, *f*, on the front end of this drag-bar rocks and moves freely up and down in a slot in a bracket, G, on the inner front corner of the main frame.

A hand-lever, H, is pivoted to move vertically on its fulcrum transversely to the tongue. A sector-pinion, *h*, on this lever gears into a rack, *h*¹, moving vertically in guides on the bracket G and carrying a loop, *h*², which embraces the stud *f*.

A spring, *h*³, interposed between the stud and the upper part of the loop, prevents the stud from rattling, while allowing it to rise freely. This spring also serves to keep the guards level, as the rising of the stud rocks the finger-beam on its axis, as is well understood.

A spring-detent on the hand-lever H takes into a rack, *g*, on the bracket, and holds the rack *h*¹ at any desired elevation.

A coupling-arm, I, pivoted to the shoe F, passes through the open space in the driving-wheel, and is hinged to the outer rear corner of the frame.

A seat, J, for the driver is mounted on curved arms or springs *j* on the rear of the main frame. The driver can lift the divider end of the finger-beam by inserting the end of a straight lever into a hole in the bar.

To lift the bar at its heel end also, I mount a rocker-shaft, *k*, on the frame, so that it shall extend through the open space of the open or annular driving-wheel or open axle.

A chain, *k*¹, fastened to the shoe F, is attached to a spiral sector, *k*², on the rocker-shaft. This sector, it will be observed, inclines from the driving-wheel, so that its lower end is farther from the wheel than the other. The result is that as the finger-beam rises and swings away from the frame the chain is also carried farther from the frame, and is thus prevented from being twisted out of the sector.

The shaft *k* is rocked by a hand-lever, K. A detent takes into a rack on the frame to hold the lever in any desired position.

In order that the driver may use his foot as well as hand in lifting the finger-beam, I prolong the shaft *k* inward, and pivot a foot-lever, L, thereon, so that it may play vertically parallel with the driving-wheel.

A pawl, *l*, pivoted on the heel of this lever takes into a rack, *l*¹, fixed on the hand-lever. When the driver bears with his heel on the pawl it takes into the rack, and thus aids in lifting the finger-beam.

In order to hold down the heel end of the finger-beam while lifting the divider-end I pivot a foot-lever, M, to the inner side of the frame, in such manner that it may extend across the machine and rest on an arm, *i*, extending upward from the coupling-arm I.

To hold the coupling-arm down without the necessity of the driver keeping his foot on the lever M, I pivot a horizontally-vibrating stop, N, under the frame, and operate it by a foot-lever, *n*. Internally-gear'd spur-wheels O O' on the driving-wheel A and ring C drive spur-pinions *o o'*, turning loosely on a counter-shaft, P, with which they are locked when moving forward by suitable backing-ratchets.

A bevel-wheel, P', runs loosely on this shaft, and drives a corresponding pinion, *v*, on a crank-shaft, R, driving the cutters by a pitman, S, which passes through the driving-ring.

A sliding sleeve, *p*, moving freely endwise on but turning with the shaft P, carries a feather, which drives the bevel-wheel when in gear. This collar is moved by a pendulum-yoke, S, pivoted on the tool-box, and an eccentric, *s*, controlled by a lever, *s'*, moved either by the hand or foot of the driver.

The tool-box T fits over the front part of the frame, and forms a protection for the gearing and a fulcrum for the shipping devices. It can readily be removed to afford access to the mechanism. The rear portion of the gearing is covered by the removable foot-board.

In order to adapt the machine to reaping, I attach a platform, U, to the finger-beam in the usual way, and use a reel and rake of any proper form.

For hand-raking, I attach a raker's seat, V, to the open axle, or mount it on an arm, *v*, extending through the open or annular driving ring or wheel.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The spiral lifting-sector, operating substantially as described.
2. The combination, substantially as set forth, with a cutting apparatus and an open or annular driving-wheel, of a lifting-sector outside the wheel, a rock-shaft passing through the open or annular driving-wheel, and a lifting-lever and detent inside the wheel.
3. The combination, with the rock-shaft and hand-lever, of the rocking foot-lever and its swinging pawl, for the purposes specified.
4. The combination, with the coupling-arm,

of the vertically-moving depressing-lever and the horizontally-moving stop-lever, operating, as set forth, to hold down the heel end of the finger-beam.

5. The combination of the drag-bar, slotted bracket, and loop with the interposed spring, to hold down the bar, substantially as set forth.

6. The combination of the removable foot-board and the tool-chest, arranged as set forth.

7. The combination of the shipping-lever, eccentric, and pendulum-yoke, arranged on the tool-chest, with the counter-shaft and sliding clutch, as set forth.

8. In a two-wheel harvester, the combina-

tion of the grain-platform, the finger-beam, and the open or annular driving-wheel, arranged substantially as described, and for the purposes set forth.

9. The combination, substantially as set forth, of an open or annular driving-wheel, a finger-beam, and a grain-platform with a raker's seat, supported by the open axle, or on an arm passing through the open or annular driving-wheel.

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