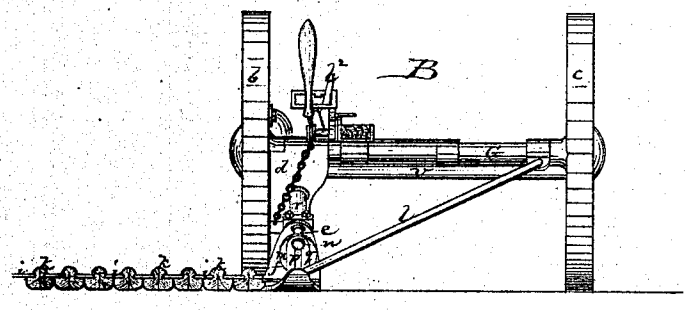
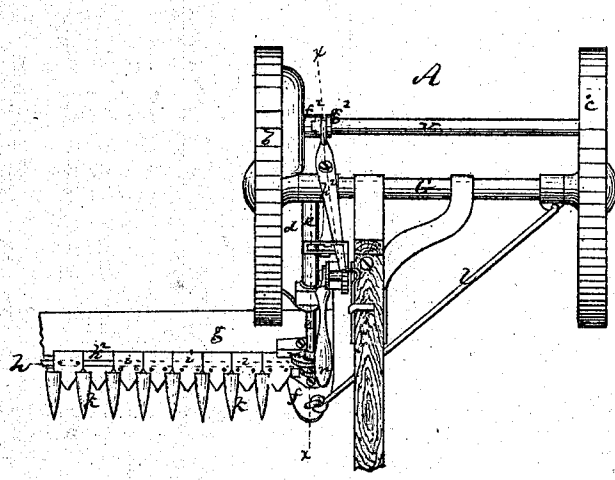
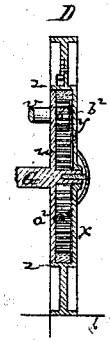
J. G. Perry.

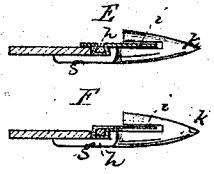
Mower.

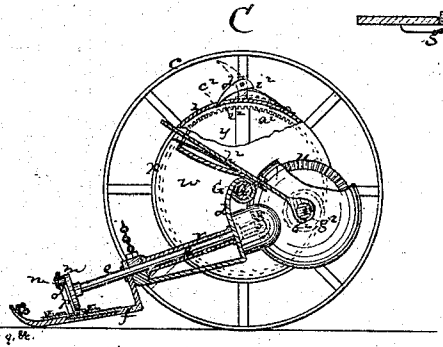
No. 104,489. Patented June 21 1870.



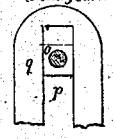








Detail showing slot-plate q. &c. (enlarged).



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Witnesses
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UNITED STATES PATENT OFFICE.

JOHN G. PERRY, OF KINGSTON, RHODE ISLAND.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **104,489**, dated June 21, 1870.

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 Improvements in Mowing-Machines and Harvesters; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to mowing and reaping machines, and has particular reference to the construction and arrangement of the driving-wheels, ratchets, and pawls, gearing, carriage-frame, and cutter-bar connections.

The drawings represent such parts of the machine and mechanism as are necessary for clearly understanding my improvements.

A shows such parts in plan. B is a front elevation of them. C is a vertical section on the irregular line *x x*. D is a detail, showing a sectional view of one of the driving-wheels and its gearing. E and F show cross-sections of two of the cutters and cutter-bar.

G in the drawings denotes the main axle, mounted upon two wheels, *b c*. Upon one end of the axle is suspended the bearing-plate or hanger *d*, in which is journaled the shaft *e*. This shaft *e* passes through a sleeve, *r*, and carries at its rear end a bevel-pinion, *s*, which meshes into and is driven by a bevel-gear, *u*, on a counter-shaft, *v*.

At the front end of sleeve *r* is hung the shoe *f*, which has fixed to it and supports one end of the finger-bar *g*, upon which reciprocates the cutter-bar *h*, carrying the cutters *i*, playing between and through the slots in the rear ends of the fingers *k*. The front end of the shoe *f* is hung from the opposite end of the axle G by means of a link, *l*. At the front end of the shaft *e* is a crank-wheel, *m*, from which extends a wrist-pin, *n*, which plays in and reciprocates a box, *o*, sliding in a vertical slot, *p*, in a slot-plate, *q*, projecting up from the end of the cutter-bar.

I am aware that friction-rollers have been used on wrist-pins; but the employment of this box, increasing the bearing-surface, renders the parts more enduring and insures accurate and full reciprocative movements of the cutter-bar.

Stationary disks *w* are mounted and fixed upon the main axle G, and form a part of the carriage, and have journal-bearings for the shaft *v*, each of these disks also forming an inner head to a hub or shell, *x*, of the adjacent wheel, the wheel having an outer plate or disk, *y*, which forms the other head, and a peripheral flange, *z*, the disk *y* and flange *z* forming the hub, the spokes connecting the flange and the rim of the wheel, as seen at C and D, and the two disks and flange forming a box or shell for containing the gearing that drives the shaft *v*, and, through such shaft, the cutting mechanism. Within the shell is a ring, a^2, whose periphery fits and is capable of rotation within the inner surface of the flange, and whose inner surface is an internal gear. Each end of the shaft *v* carries a pinion, b^2, that meshes into the teeth of the gear-ring in the adjacent wheel.

On the outer or peripheral surface of each ring is a series of ratchet-notches, c^2, with any one of which the tooth of a spring-pawl, d^2, may engage, this pawl extending through a slot, e^2, in the hub-flange *z*, as seen at C, so that, as the wheels run forward, the pawls turn the gear-rings with the wheels, while, if the wheels run back, the pawls can slip over the ring without imparting rotative movement thereto. As the gear-rings are rotated by the wheels their teeth drive the pinions b^2 and impart rotation to the shaft *v*. The bevel-gear *u* is not fixed upon this shaft, but turns loosely thereupon when not clutched thereto.

On the inner side of the bevel-wheel are clutch-teeth f^2, and on the shaft *v* is a sliding clutch, g^2, operated by a clutch-lever, h^2, the clutch sliding along the shaft, but turning with it. When the clutch is slid up against the clutch-teeth of the bevel-gear *u*, the rotation of the shaft *v*, effected by the gear-rings, drives the bevel-gear, whose rotation drives the bevel-pinion and the crank-shaft. When the sliding clutch is thrown away from the clutch-teeth of the bevel-wheel, the wheels drive the shaft *v* without imparting rotation to the bevel-wheel and crank-shaft, and, by throwing the pawls d^2 up from the periphery

of the gear-ring, the wheels will rotate without imparting movement, except the forward movement of the carriage, to any of the mechanism.

To hold each pawl out of connection with its ring, it is formed with a point, i^2, in rear of its fulcrum, and by pressing up the pawl the spring bears upon this point, throwing it forward and the point of the pawl upward, as seen by dotted lines at C. Either or both wheels may thus be thrown into or out of connection with the gearing mechanism.

By making a hub shell or box, as shown, for containing the gearing, such gearing is shielded from all foreign matter, and saved from much wear and from breakage.

The bevel-gear u might be placed farther out on the shaft v; but, by placing it close to one of the main wheels and incasing it on the disk, it is out of the way, and the machine is rendered very compact.

The cutting apparatus is shown as swinging upon the crank-shaft; but the finger-bar may be hinged to the shoe f, and a pitman-rod or link-connection be made between the crank-shaft and the cutter-bar. Usually each cutter is riveted to the cutter-bar; but, instead of so applying the cutters, I bend the rear part of each, so as to make a socket or recess therein for the reception of the cutter-bar, as seen at E and at k^2, the cutter-bar being made dovetailing in section, and the cutter-plate being bent, so that its recess corresponds to or fits upon the cutter-bar, the cutters being slid upon the end of the bar, or the bar being sprung into those made with a recess, and the last one being secured by a head on the bar to keep them all in place.

By making the cutters with a recess, as above, any one can be removed and replaced independently of the others, and they are self-fastening, and held without rivets. The bevel-wheels are shielded by casing attached to the stationary disks.

The gear-rings may be cast to the flanges or to the spokes of the main wheels, made in the ordinary way, and left partly open; but I prefer the above-described mode.

By adding a platform, rake, and other attachments, it can be changed from a mower to a reaper.

By the use of the hand-lever and chain attached to the bearing-plate or hanger d turning on the axle, the cutting apparatus can be raised to any desired height, and, when not in use, can be laid over horizontally, and rest upon the pole.

Having thus described my improved mower or harvester, I claim—

1. In a two-wheel mower or harvester, the combination of the main axle G, the stationary disks w, shaft v, pinions b^2, and gear-rings a^2, substantially as described, and for the purposes set forth.

2. The hubs x, constructed as described, in combination with the gear-rings, as and for the purposes set forth.

3. In combination with the main wheels and gear-rings, the ratchets and pawls, arranged substantially as and for the purposes set forth.

JOHN G. PERRY.

Witnesses:
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