

E. RUHLMANN  
GARDEN WHEEL-HOES.

No. 194,977.

Patented Sept. 11, 1877.

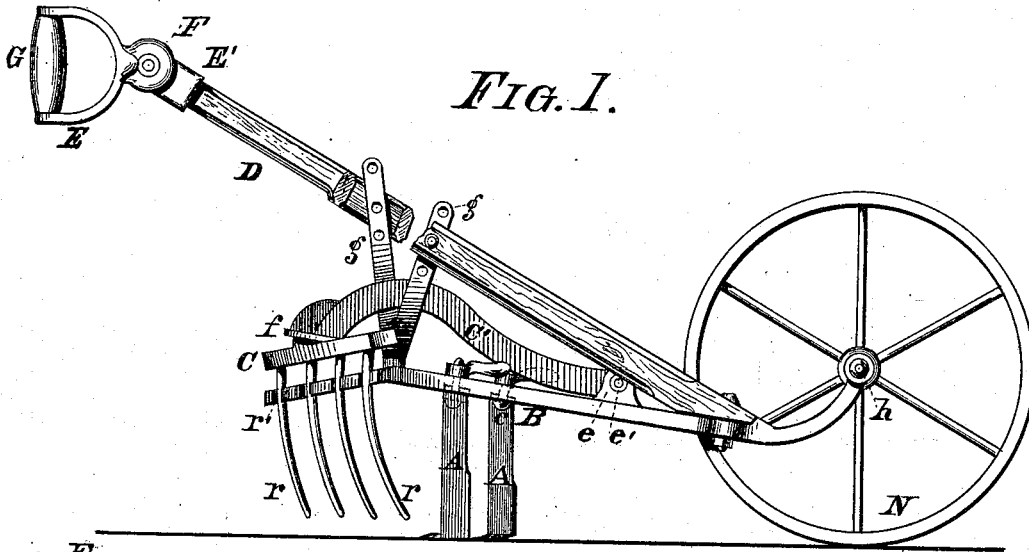


FIG. 1.

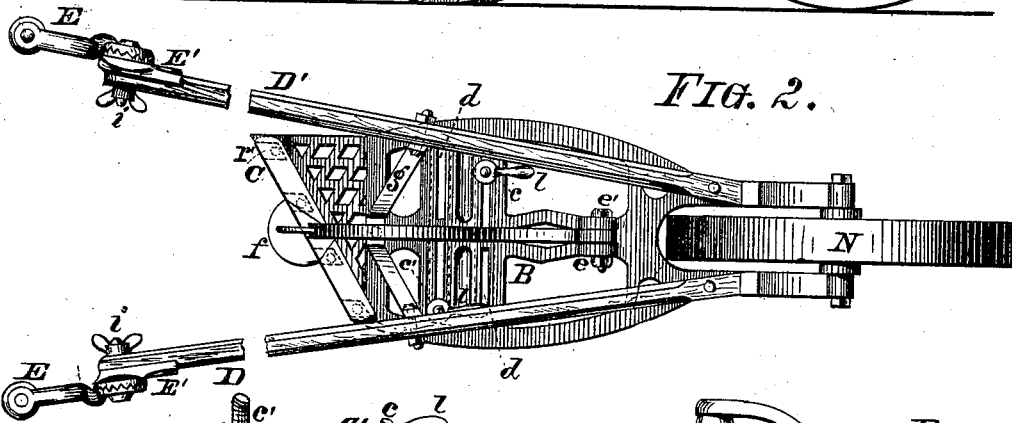


FIG. 2.

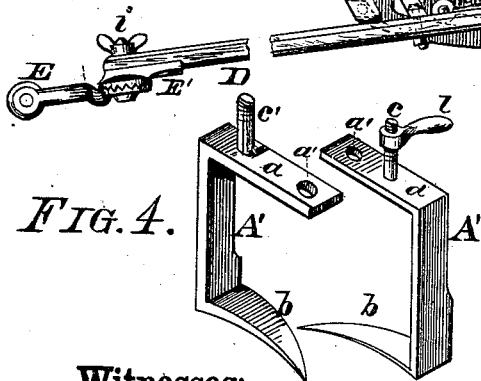


FIG. 4.

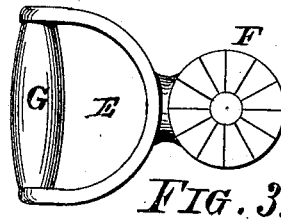


FIG. 3.

Witnesses:

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# UNITED STATES PATENT OFFICE.

EUGENE RUHLMANN, OF LOCKPORT, NEW YORK.

## IMPROVEMENT IN GARDEN WHEEL-HOES.

Specification forming part of Letters Patent No. 194,977, dated September 11, 1877; application filed April 28, 1877.

*To all whom it may concern:*

Be it known that I, EUGENE RUHLMANN, of the city of Lockport, in the county of Niagara and State of New York, have invented a new and useful Improvement in Garden Wheel-Hoes, which improvement is fully set forth in the following specification and accompanying drawings.

This invention has special reference to a combined garden weeder and rake; and it consists in the peculiar construction and arrangement of parts, as hereinafter first fully described, and then pointed out in the claims.

In the drawings heretofore mentioned, Figure 1 is a side elevation, and Fig. 2 a plan, of my improved weeder and rake combined. Fig. 3 is a side view of one of the handles. Fig. 4 is a perspective view of the weed-cutters.

Like letters of reference indicate similar parts in all the figures.

B is a cast-iron platform or bed-plate, to which all the parts entering into the construction of my machine are affixed. Its forward end is bifurcated, to admit the wheel N between the two forks, which are provided with eyes on their extremities for the passage of the bolt *h*, upon which the said wheel revolves. Its rear end is bent or deflected, and its extreme edge provided with a series of excisions, *r'*, for the passage of the rake-teeth *r*, as hereinafter more fully referred to. Near the forked end are provided two lugs, *e*, within which is pivoted the lever *C'* of the rake. Centrally, and traversing the bed-plate, are two slot-holes, *d*, through said bed-plate, entering channels formed in the under side of said plate.

The platform B is produced entire in the process of casting, and it is suitably perforated to relieve it from excessive weight. By its adoption I am enabled to produce a machine of extreme simplicity, and at a comparatively nominal cost, there being, besides drilling a few holes, no manual labor to be expended for finishing and fitting, as compared with others made of wood in parts, &c.

A A are two knives or cutters, consisting each of the standard *A'*, whose upper and lower parts are bent at right angles to form the shank *a* and the knife proper *b*. These shanks are perforated with bolt-holes *a'* for the passage of the bolts *c c'*, and they fit the

channels on the under side of the platform B, the bolts *c c'* being made to pass through the slot-holes *d*, and having nuts *l*, by means of which the knives can be adjustably secured to said platform.

In order to allow said knives to be placed a sufficient distance apart without widening the bed-plate B to such an extent as to render the machine too cumbersome to be readily handled, the channels *d* are placed behind each other, whereby the shanks of the knives A can be made as long as the bed-plate is wide, and whereby they may be laterally extended to nearly twice the width of said bed-plate by inserting the bolts *c c'* in the proper apertures *a'*.

The knives proper *b* are curved backward, and when attached to the platform stand horizontally, or nearly so. They are curved backward to produce what is termed a "draw-cut," whereby cutting of the roots and stems of the weeds is greatly facilitated, and they are nearly horizontal, so as not to lift the soil and thereby offer greater resistance to the progress of the machine.

In order to be able to exactly know the position of the cutters, they are arranged to project toward each other inside of their standards. By this means the said standards serve as gages or guides, and the knives, not projecting outside of them, are therefore prevented from injuring the roots of the plants in the adjacent rows, which is inevitably the case with weed-cutters wherein the knives project outside of their standards, and where, for this reason, their exact position cannot be known when submerged in the soil.

To the front end of the bed-plate B are convergently arranged two poles, *D D'*, by means of which and handles E the implement is operated. These poles are rendered adjustable as to their elevation from the plane of the machine by the brace *g*. Their extremities are provided with the said handles E, which themselves are again rendered adjustable as to their relative position to said poles by means of the device consisting of the radially-corrugated disk F, centrally perforated, as shown in Fig. 3, to which the rod G is secured by the bail, formed in one piece with said disk F, and the plate *E'*, having lugs,

and a correspondingly-constructed corrugated plate and central aperture, a bolt, *i*, passing through said plates and serving as means for securing them together, and as a pivot around which the handle E turns during adjustment.

It will be readily seen that the handles E, being thus rendered adjustable, enable the operator of the implement to adjust them so as to be most convenient to his wrists without changing the position of the poles. By the introduction of these adjustable handles a person is able to operate this implement for a longer space of time without fatigue than any other machine with which I am acquainted.

The self-cleaning rake attached to my implement consists essentially of the lever C', pivoted within the lugs *e*, and provided with an obliquely-arranged head, C, having a series of curved rake-teeth, *r*. These teeth are curved to an arc having its center in the pivot or bolt *e'*, and they pass through the excisions *r* in the platform B, to render the rake self-cleaning when being swung around its said pivot *e'* by means of the toe of the operator lifting the same by the lug *f* projecting from the head C.

The object of my hereinbefore-described machine is to weed a garden between the rows of plants, and it operates in the following manner:

The knives A being set to the space between two adjacent rows or hills, and the poles and handles adjusted to the proper position best suiting the operator, the implement is pushed ahead, and the knives A, thereby entering the ground, sever the roots from the stalks of the weeds, which are then gathered by the rake following said cutters. When a sufficient amount of weeds has gathered in front of the rake, (which is arranged obliquely, so as to discharge as much as possible of the weeds without lifting the rake,) this is lifted to drop the weeds, after which it will again return to its normal position by the superincumbence of its weight.

Having thus fully described my invention, I desire to secure by Letters Patent of the United States—

1. A combined wheel hoe and rake, consisting essentially of the bed-plate B, provided with channels and slots *d*, and with bearings for the wheel N and notches *r'* of the cutters A, adjustably secured within said channels,

and the rake pivoted near the front end of said bed-plate, and having its curved teeth arranged to pass through said notches *r'*, the whole constructed and arranged substantially as and for the purpose specified.

2. The combination, with the bed-plate B, having the series of notches *r'* *r'*, of the lever C', pivoted to said bed-plate at *e*, and provided with curved teeth arranged obliquely in relation to the lever C', as stated.

3. A platform for a combined cultivator and weeder, consisting essentially of a plate whose forward part is bifurcated, and each fork provided with an eye whose middle part has two transverse slot-holes, *d*, terminating in channels on the under side of said plate, and whose rear end is downwardly deflected, and has a series of excisions, *r'*, along its oblique edge, all substantially as described, the whole produced entire in the process of casting, as and for the purpose specified.

4. In a hand-cultivator, the combination, with the vertically-adjustable poles D D', of the radially-adjustable handles E, said handles being composed of the bails connected by the rods G, and provided with the circular disk F, having radial corrugations, as described, and adjustably secured to plates E' fixed to the extremities of said poles, and provided with radial corrugations corresponding to those of the disk F, the whole being constructed and arranged to adapt the position of the handles to the wrists of the operator without changing the position of the poles, substantially as and for the use and purpose stated.

5. A combined wheel hoe and rake, consisting essentially of the bifurcated bed-plate B, mounted upon the wheel N between the fork, the hoes A secured to the plate B, with capability of lateral adjustment, the rake pivoted to the forward end of the plate B, and having its curved teeth *r* passing through the excisions *r'*, the vertically-adjustable poles D D', and the radially-adjustable handles E, the whole constructed and arranged substantially as and for the purpose specified.

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Witnesses:

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