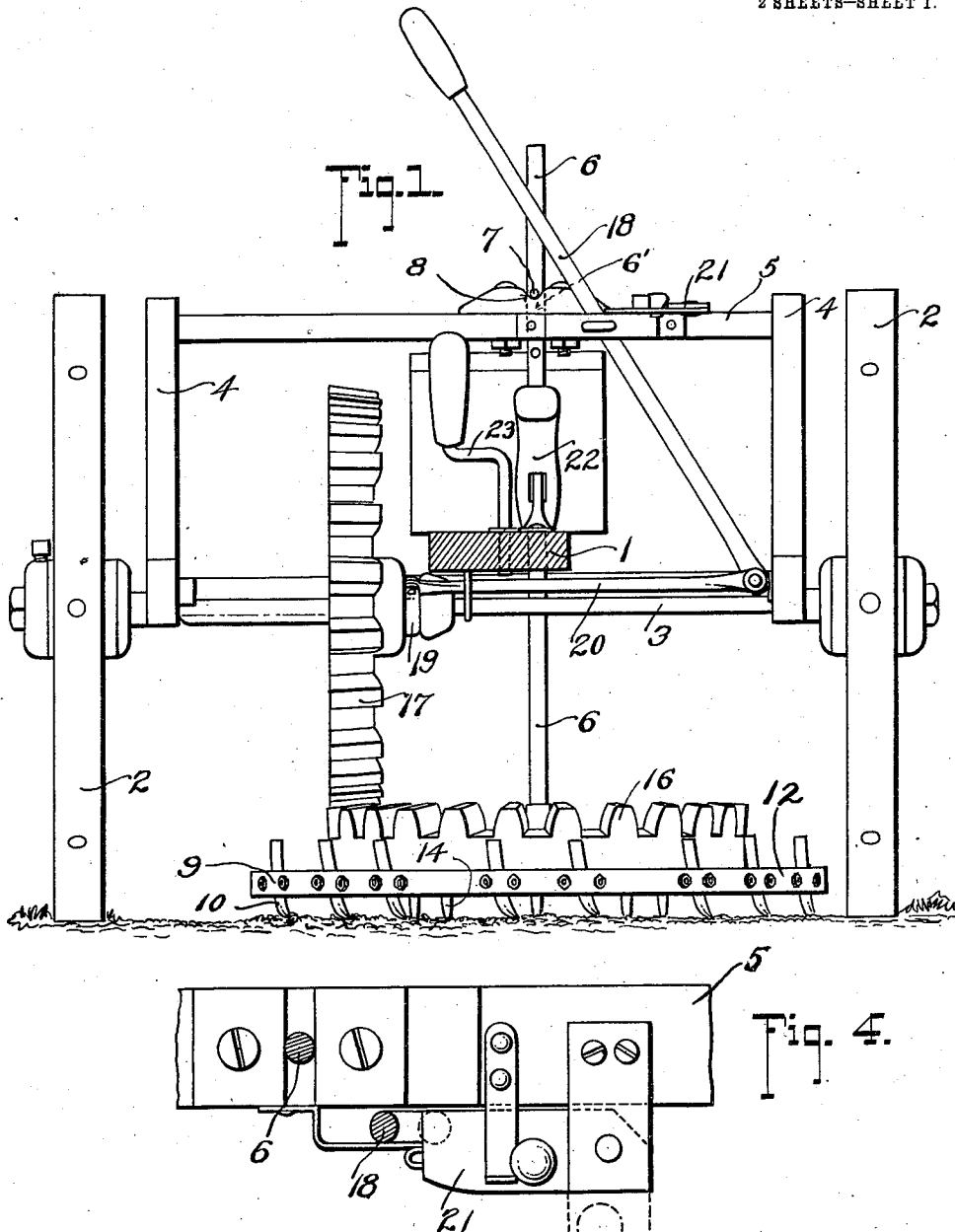


J. W. CARTER.
 ROTARY HARROW.
 APPLICATION FILED AUG. 23, 1911.

1,012,810.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

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2 SHEETS-SHEET 2.

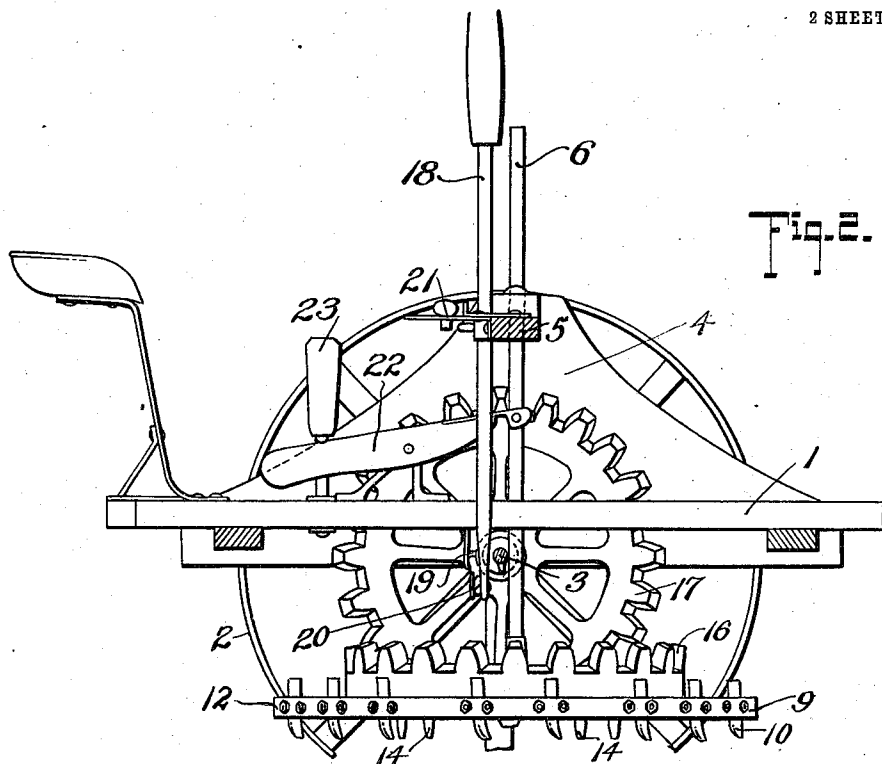
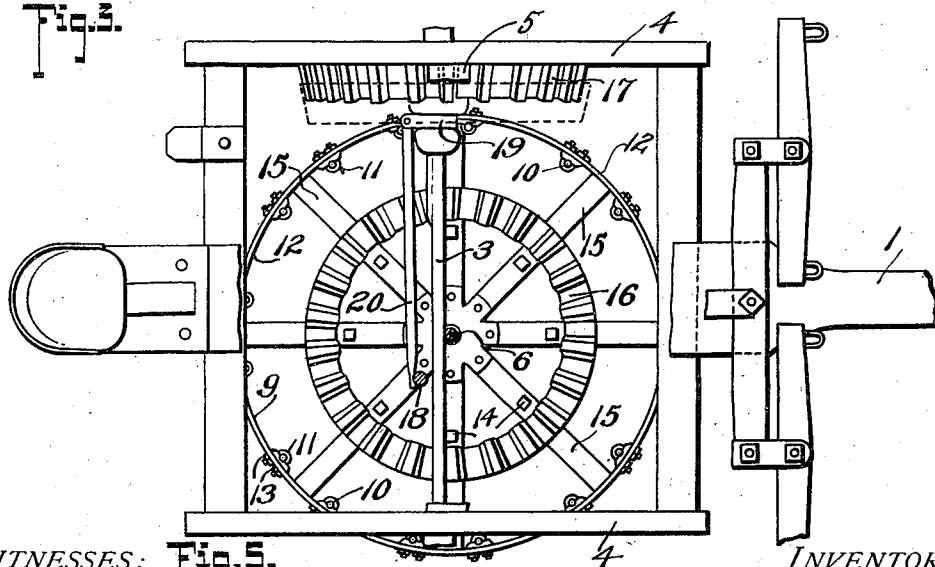


Fig. 2.

Fig. 3.

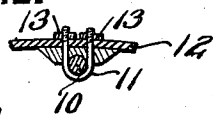


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Fig. 5.



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ROTARY HARROW.

1,012,810.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed August 23, 1911. Serial No. 645,475.

To all whom it may concern:

Be it known that I, JOHN W. CARTER, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Rotary Harrows, of which the following is a specification.

This invention relates to harrows, and particularly to that type wherein the harrow body is supported for rotary movement.

The invention primarily resides in the peculiar positioning of the power transmission means, whereby on elevating the harrow body, said means will tend to raise a portion of the harrow from the ground while the opposite portion will remain in an operative position.

A further object of this invention is to arrange the harrow body adjacent to one traction wheel so that, should any grass or weeds cling to the teeth of the harrow, the same will be brought under the traction wheel and torn from said teeth, thereby keeping the harrow cleared.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawings, in which—

Figure 1 is a rear elevation of a harrow embodying the present invention; Fig. 2 is a vertical longitudinal section thereof; Fig. 3 is a horizontal section of the harrow; Fig. 4 is a plan view of the locking mechanism employed to lock the gears together; Fig. 5 is a fragmentary sectional view illustrating the manner of mounting the harrow teeth.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

In constructing a harrow in accordance with the present invention, a supporting body 1 is provided which is mounted on the traction wheels 2, said wheels being rigidly mounted on the axle 3. On the frame or body 1 are mounted a pair of spaced standards 4 which are connected at their upper end portions by a cross member 5, said member being provided with a bore or opening 6' to receive the shaft 6. The shaft 6 is mounted for vertical movement, the downward movement thereof being limited by a pin 7 which is adapted to rest in a seat 8 on the cross member 5. A second opening is provided in the supporting frame and register

with the opening 6' for receiving the lower portion of the shaft 6.

Rotatably mounted on the lower terminal of the shaft 6 is a revolving harrow 9 which comprises a plurality of radiating arms carrying on their terminals a connecting ring 12, on which are supported a set of harrow teeth 10. These teeth are adjustably mounted by means of the U-shaped member 11 which is detachably secured to the ring 12 by the nuts 13. A second set of teeth 14 are carried by the radial arms 15.

Supported by the arms 15 is a bevel gear 16 which, when the harrow is in its operative position, is adapted to mesh with a second bevel gear 17 slidably mounted on the shaft 3 and splined thereon. A sliding movement is imparted to the gear 17 by the lever 18, pivotally mounted on the cross member 5 and connected to a yoke 19 carried by said gear by a link member 20. To prevent accidental disengagement of the gear 17 from the gear 16, a pivoted locking member 21 is mounted on the cross member 5 and is adapted to be swung into the path of the lever 18.

Thus it will be seen from the foregoing that, when the supporting frame is moved along the ground, the traction wheels 2 will cause the rotation of the harrow 9 through the transmission gear 17 and 16. Furthermore, it will be noted that the harrow shaft presents a certain amount of resiliency, and should the bevel gear 17 be forced toward the shaft after engaging the gear 16, it will tend to depress the engaging portion of the harrow and elevate the remote portion thereof.

For elevating the harrow, a lever 22 is pivotally mounted on the frame 1 and has pivotal connection with the harrow shaft 6 whereby, on depressing the free terminal of said lever, the harrow will be elevated from the ground, and when it is desired to retain said harrow in an elevated position, the locking member 23, which is pivotally mounted on the frame adjacent to the free terminal of the lever may be swung into engagement with said terminal.

It will be obvious from the drawings, that the gear 17 will have to be shifted out of the vertical path of the harrow in order to elevate the latter. A second mechanism may be employed for elevating a portion of the harrow from the ground, this being accomplished by having the gear 17 in en-

gagement or meshing with the gear 16 and exerting a downward pressure upon the free terminal of the lever 22, whereby a tendency is created to raise the harrow. Owing to the resiliency of the harrow shaft, a portion of the harrow remote from the gear 17 will be elevated. The elevation of the harrow in such a manner will be very slight, although harrows of larger diameter may be raised several inches. By having the harrow mounted adjacent to the traction wheel and having the portion of the harrow nearest to said wheel adapted to be raised from the ground, it will, of course, be obvious that the clearing of the teeth of any weeds or grass which may have been carried thereby will be greatly facilitated as the traction wheel passes over said weeds. When the harrow is elevated, the gear 17 may be thrown into engagement with the ring 12 and tends to retain the harrow in said elevated position temporarily until the locking member 23 is thrown into engagement with the lever 22. It will be noted that the second set of teeth 14 also tend to prevent the dislodgment of the gear 16 should the latter become loosened in any manner.

Having thus described the invention, what is claimed as new is:

1. In combination, a supporting frame, a harrow mounted thereon for horizontal and vertical movement, and power transmission means for imparting a horizontal movement to the harrow, said means being disposed in the path of the harrow when moved vertically.

2. In combination, a supporting frame, traction wheels therefor, a harrow mounted

thereon adjacent to one of said wheels for horizontal movement, means for actuating said harrow, and means for raising the portion of the harrow nearest the traction wheel.

3. In combination, a supporting frame, a harrow mounted thereon for horizontal and vertical movement, power transmission means for imparting a rotary movement to the harrow, and means for raising said harrow to an inoperative position, said power transmission means being adapted to engage the harrow when elevated for retaining the latter in said position.

4. In combination, a supporting frame, a harrow mounted thereon for horizontal and vertical movement, a driving shaft, a gear slidably carried thereon for driving said harrow, means for raising the harrow, and means for sliding said gear into an inoperative position to permit the elevation of the harrow.

5. In combination, a supporting frame, a harrow mounted thereon for horizontal and vertical movement, a driving shaft, a gear slidably carried thereon for driving said harrow, means for raising the harrow, and means for sliding said gear into an inoperative position to permit the elevation of the harrow, and then into engagement with said harrow to retain the latter in said elevated position.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. CARTER.

Witnesses:

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