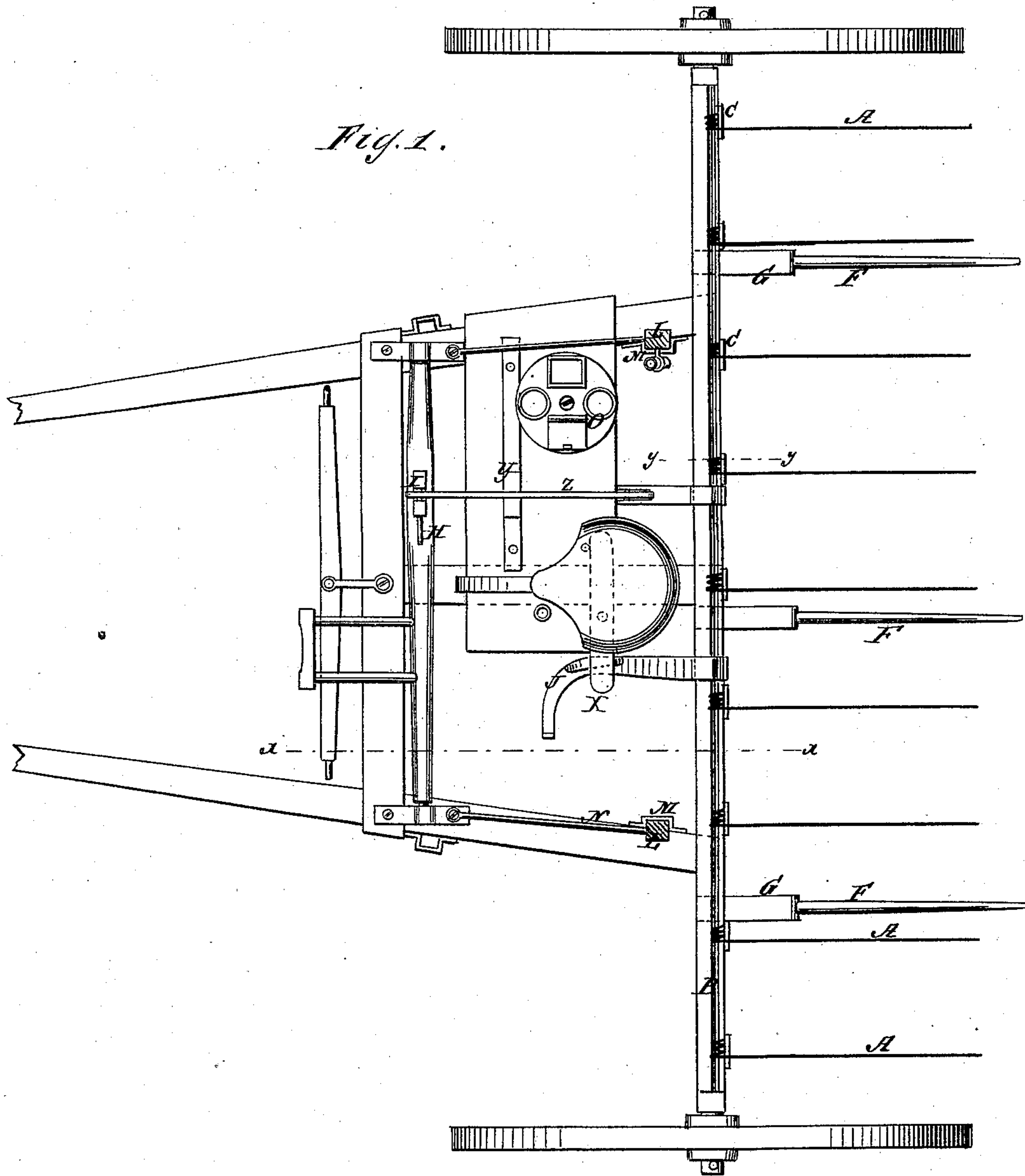


W. H. RYER.  
HORSE HAY-RAKE.

No. 169,733.

Patented Nov. 9, 1875.



WITNESSES:

*E. Wolff.*  
*A. J. Terry*

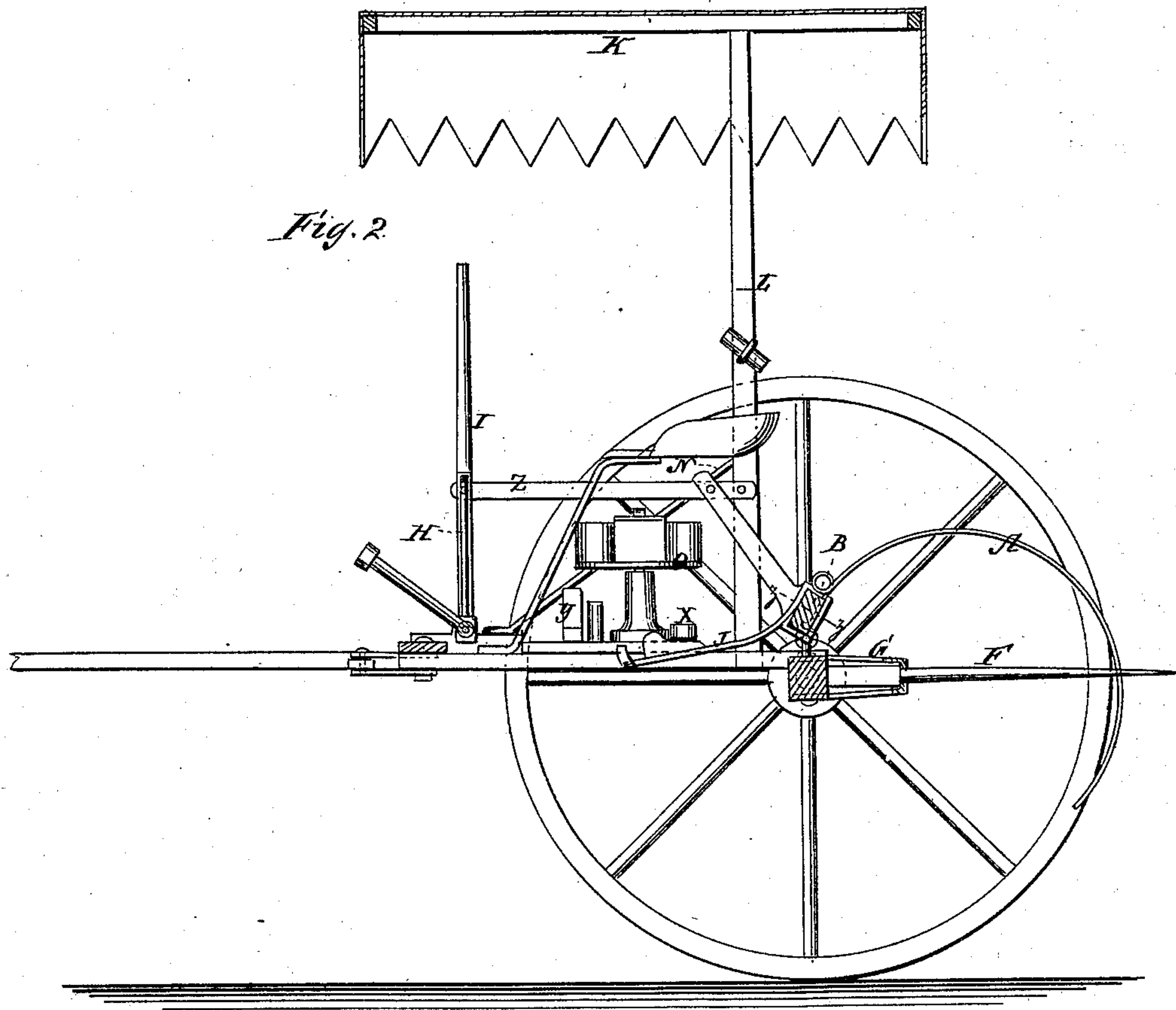
INVENTOR:

*W. H. Ryer*  
BY *mm*  
ATTORNEYS.

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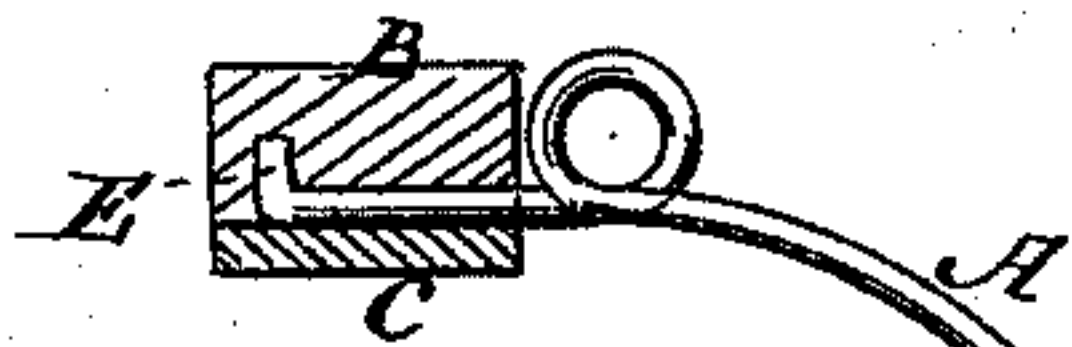
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*Fig. 3.*



*Fig. 4.*



WITNESSES:

*E. Woff*  
*A. J. Terry*

INVENTOR:

*W. H. Ryer*

BY

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

WILLIAM H. RYER, OF MARGARETTVILLE, NEW YORK.

## IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **169,733**, dated November 9, 1875; application filed May 15, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM H. RYER, of Margaretville, in the county of Delaware and State of New York, have invented a new and Improved Horse-Rake, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in the claims.

Figure 1 is a plan view of my improved machine. Fig. 2 is a longitudinal sectional elevation taken on line *xx*. Fig. 3 is a transverse section of the rake-head, taken on the line *yy* of Fig. 1; and Fig. 4 is a detail of the rake-head in longitudinal section on line *zz*.

Similar letters of reference indicate corresponding parts.

I propose to attach the rake-teeth A to the head B by a separate clamping-plate, C, and screw D for each tooth, the teeth being laid in a groove in the under side of the head, and having the end E bent up to enter a hole in the head, to secure them against pulling out by the dragging strain, so that the attaching-plate is relieved of the effect of such strain to which it is subject in the common way of clamping the teeth to the back of the head, the teeth being bent up at right angles to fit the back. F represents the dischargers or clearers for forcing the hay out of the rake-teeth when the latter are raised, which I propose to re-enforce in their connection with the axle by the metal supports G, to prevent the breaking of them at the junction with the axle, to which they are very subject when merely driven into holes in the axle, unless they and the axle are made larger and heavier than otherwise needed.

The tooth F is, at its enlarged end, provided with a shoulder, that supports the brace G, the tooth being passed through the middle of brace up to the shoulder, while the brace is then bent so as to be fastened, above and below, to the axle.

H is the foot-lever, and I the hand-lever, combined in one device for raising the rake to discharge the hay, to economize the cost of construction and simplify the parts. J is a

foot-lever attached to the rake-head, in addition to the lever HI, to be used, if preferred, instead of the latter; also, to serve for holding the rake up by the button X.

The rake-head is pivoted to the axle at the top and in the vertical plane of the axis of the wheels, and the teeth are arranged so that the points run directly under the connection with the axle, and are thereby gaged by the wheel to the uneven ground much better than when they run some distance behind the axis, as they must do when the connection of the rake-head with the axle is behind it, and they discharge better than when they are extended forward to the plane of the axle, and are hinged behind it.

K is the shade attachment for protecting the driver from the sun. It consists of a cover of cloth of any kind stretched on a frame of light material, supported by the posts *l*, which are supported on the truck-frame by the clips M and braces N; but the posts and the frame may be connected and supported in any approved way. O is a rotating table fixed on a suitable stand, P, by the side of the driver's seat, and having cases, pockets, or cells, in which to carry refreshments for the use of the driver. Y is a buffer-spring, which is arranged under the lever I to check the fall easy and prevent rattling noise.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The clearer-tooth A, provided with brace G, through the middle of which passes the tooth, and whose ends are then bent over and made fast to axle, one above and the other below, as and for the purpose specified.

2. A bar secured to rake-platform and carrying an elastic block, operating in combination with the lever I, connection Z, and vibratory rake-head B, as and for the purpose set forth.

WILLIAM H. RYER.

Witnesses:

T. B. MOSHER,  
ALEX. F. ROBERTS.