

J. W. FENWICK.  
HORSE-RAKE.

No. 182,272.

Patented Sept. 19, 1876.

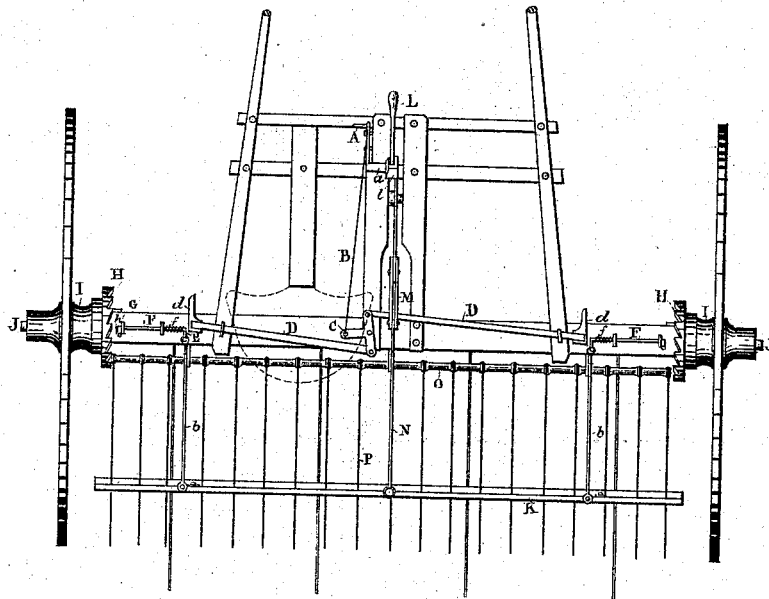


Fig. 1.

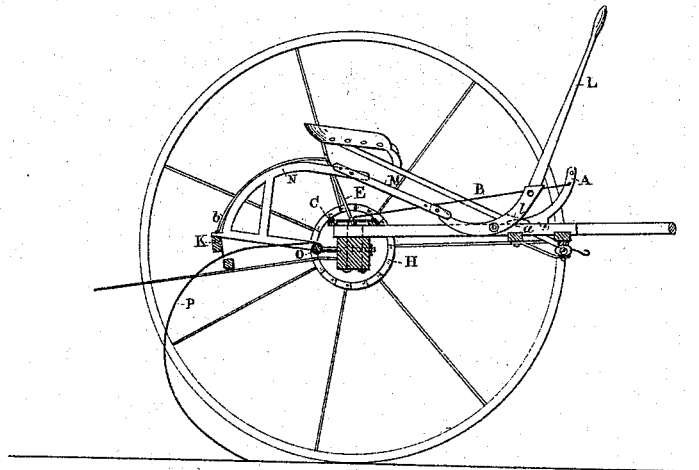


Fig. 2.

Witnesses.

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*Harry Mowens*

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*William Sandford*

Inventor.

.....  
*J. W. Fenwick*  
by *Ridout Bird Co*  
.....  
*Atty's*

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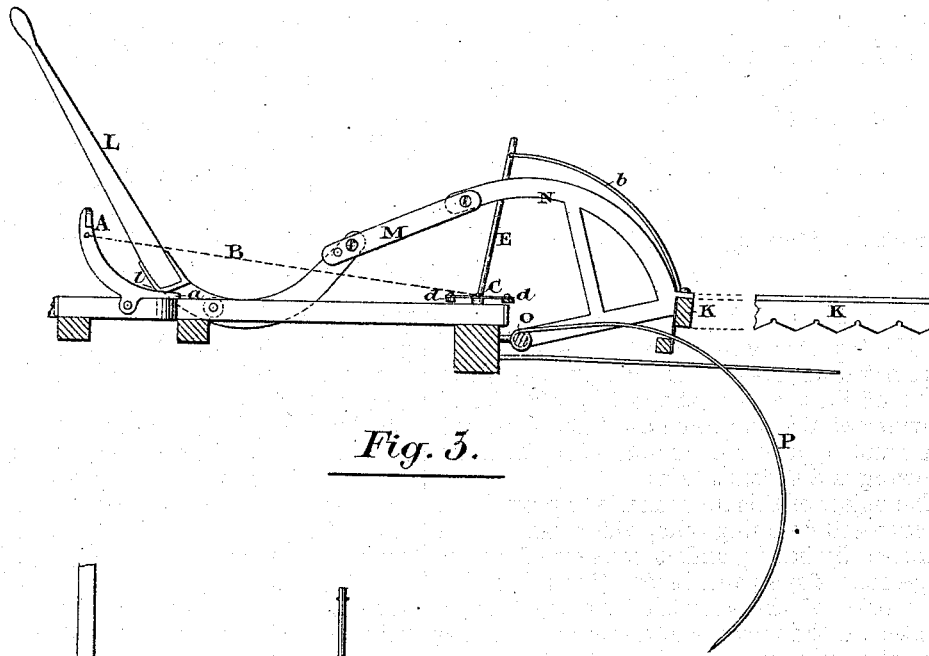


Fig. 3.

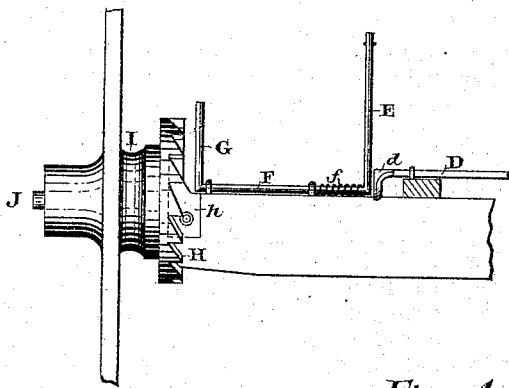


Fig. 4.

Witnesses.

*Harry Warren*  
*William Sandford*

Inventor.

*J. W. Fenwick*  
*by Richard Bird, Co.*  
*Atys.*

# UNITED STATES PATENT OFFICE.

JAMES W. FENWICK, OF PATTERSON, ONTARIO, CANADA, ASSIGNOR TO  
PETER PATTERSON, OF SAME PLACE.

## IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. 182,272, dated September 19, 1876; application filed  
February 25, 1876.

*To all whom it may concern:*

Be it known that I, JAMES WILLIAM FENWICK, of Patterson, in the county of York and Province of Ontario, Canada, have invented a new and Improved Horse-Rake, of which the following is a specification:

The object of this invention is to provide an effective self-dumping rake, which can also be operated by hand; and it consists of an arrangement of rods and levers through which the motion of the wheels of the machine is utilized for the purpose of dumping, and, further, of an improved toggle-jointed lever connecting the tooth-bar to a hand-lever, through which arrangement the former can be raised for the purpose of dumping with but little exertion on the part of the driver.

In the drawings, Figure 1 is a plan of my machine. Fig. 2 is a cross-section. Fig. 3 is a detail showing the action of lever, toggle, and quadrant. Fig. 4 is a detail showing the action of T cranks and clutches.

A is a foot-lever, shaped as shown, and pivoted to the frame of the machine. B is a rod connecting the foot-lever A with the T-lever C, to which the push-rods D D are fastened, as shown. These rods may be of wood, and are attached to the frame of the machine in a suitable manner. The cast-iron feet or wearing-blocks *d d* protect the ends of the push-rods, which act against the levers E E. These levers form part of, or are attached to, the spindles F F, to the other ends of which the short levers G G are likewise fastened. H H are clutches forming part of, or attached to, the hubs I I, as shown. These wheels I I revolve upon the axle J. *b b* are light rods or chains connecting the levers E E to the tooth-bar K. *f f* are spiral springs placed upon the spindles F F, as shown. L is a hand-lever, shaped as shown, and pivoted to the frame of the machine. This lever is connected by means of the toggle-joint M to the quadrant N, which is attached to the tooth-bar K, and pivoted to the rod O, as shown, upon which rod the teeth P and tooth-bar K are also pivoted.

It will be noticed that the bar K is notched on its lower side immediately above each tooth. By this notch the teeth are drawn to their

proper relative position to each other as they are forced up in contact with the lever K.

Having referred to the main features in the construction of my improved hay-rake, I will proceed to explain the operation thereof.

When the driver wishes to dump the rake through the motion of the wheels of the machine, he has merely to press his foot against the foot-lever A, causing the rod B to act upon the T-lever C, which conveys the motion to the push-rods D D, and through them to the spindles F F, upon the opposite ends of which the short levers G G, are fixed. Through the motion described the short levers G G are forced into the clutches H H, and as the machine is being driven the clutches H H are revolving with the wheels I I, and when the short levers G G are in gear with the clutches H H the said levers are carried around, and the levers E E, being on the same spindles, a corresponding motion is conveyed to them, and, further, as these levers E E are connected to the tooth-bar, as described, the rake is raised in proportion to the motion of the said levers. *h h* are stops, placed in such a position that when the levers G G are carried around sufficiently far to raise the rake, as required, the said levers G G come in contact with the stops *h h*, which latter force the levers in question out of gear, thus permitting the rake to fall back again into the position for resuming work. The spiral springs *f f* act upon the spindles F F, so as to keep the levers G G out of gear till forced therein through the action of the push-bars D D, as described.

Through the connection described between the hand-lever L and tooth-bar K, the latter is locked when the former is thrown forward, as shown. In order to unlock it, the toggle-joint M must be bent by throwing back the lever L. When the rake is to be raised by the motion of the wheels, the toggle-joint M is bent by the toe *a* upon the foot-lever A, coming in contact with the shoulder *l* upon the hand-lever L, which action throws the said lever L back, as required.

The shape of the lever L, and the manner in which it is connected to the tooth-bar K by the toggle-joint M and quadrant N, gives the

lever L ample power over the tooth-bar K, enabling the driver to raise it with but little exertion when he desires to dump the rake by hand.

It is scarcely necessary to add that I do not confine myself to the use of any particular material, or to the exact sizes and shapes of the various parts shown, which might be altered in many ways without affecting the principle of my invention.

I do not claim broadly the application and combination of hub, clutches, springs, conducting, &c., for the purpose of dumping horse-rakes, as I am aware that there are several horse-rakes embodying these devices in existence; but

What I do claim is—

1. The spindle F, having levers G and E

attached thereto, and operated by the spring *f* and foot *d*, in combination with the revolving clutch H, substantially as and for the purpose specified.

2. The push-bars D, carried upon a stationary axle, J, and provided with feet *d*, in combination with a T-shaped crank or lever, C, and rod B, operated by a foot-lever, A, as and for the purpose specified.

3. The toe *a* upon the foot-lever A, in combination with the shoulder *b* upon the hand-lever L, substantially as and for the purpose specified.

Toronto, January 3, 1876.

J. W. FENWICK.

Witnesses:

J. A. SUTHERLAND,  
W. G. MCWILLIAMS.