

(Model.)

2 Sheets—Sheet 1.

J. M. WESTCOTT & A. C. CONNER.  
HORSE HAY RAKE.

No. 264,806.

Patented Sept. 19, 1882.

Fig. 1

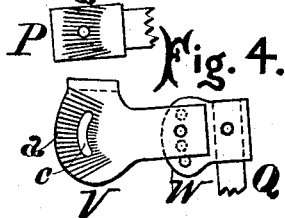
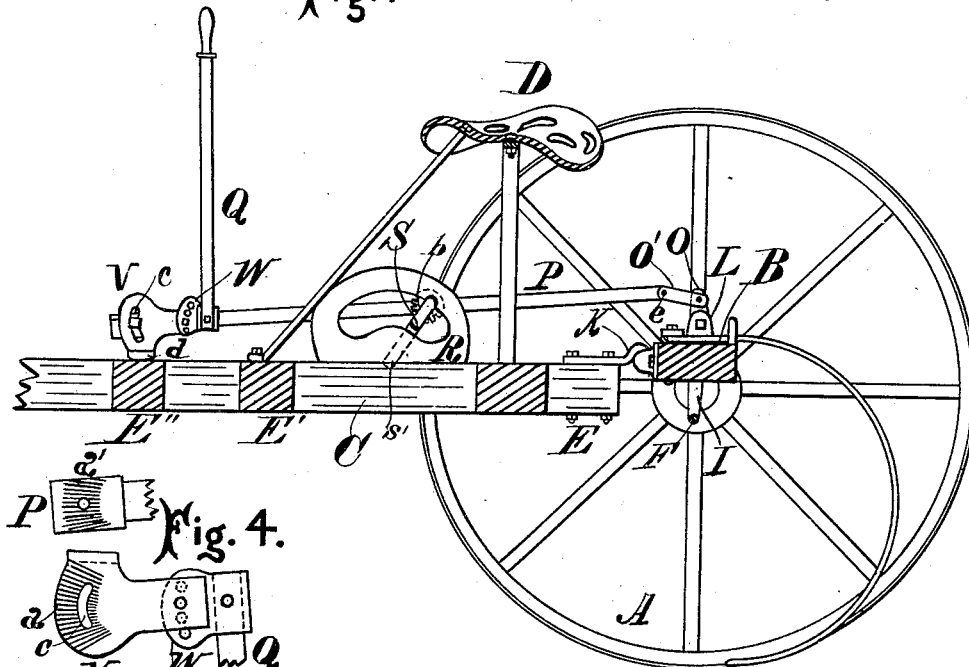


Fig. 2.

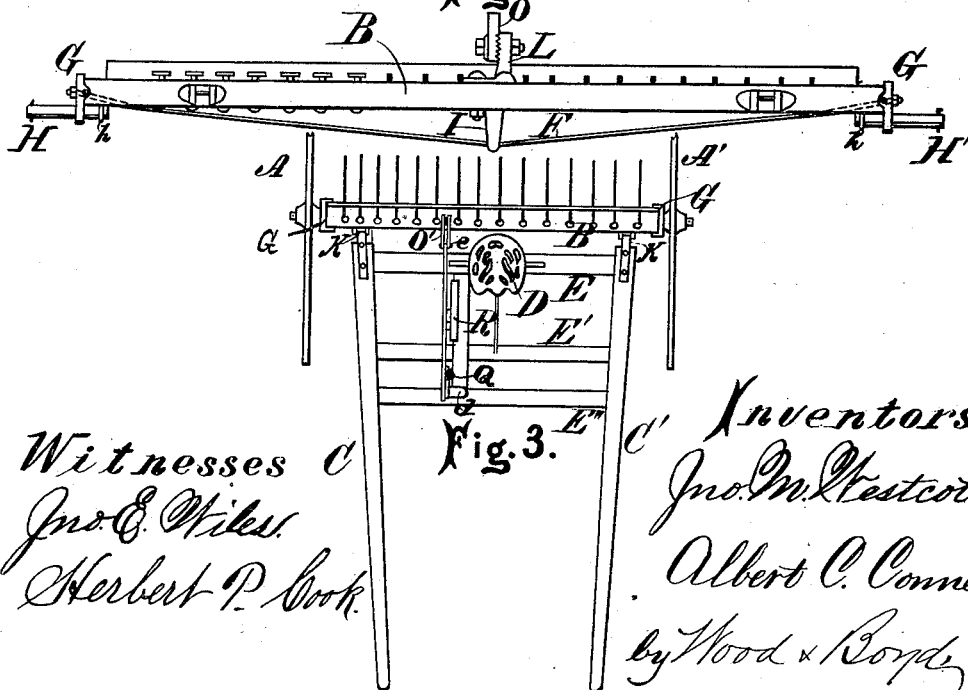


Fig. 3.

Witnesses C  
Jno. E. Wiles.  
Herbert P. Cook.

Inventors  
Jno. M. Westcott.  
Albert C. Conner.  
by Wood & Bondy  
Attorneys &c.

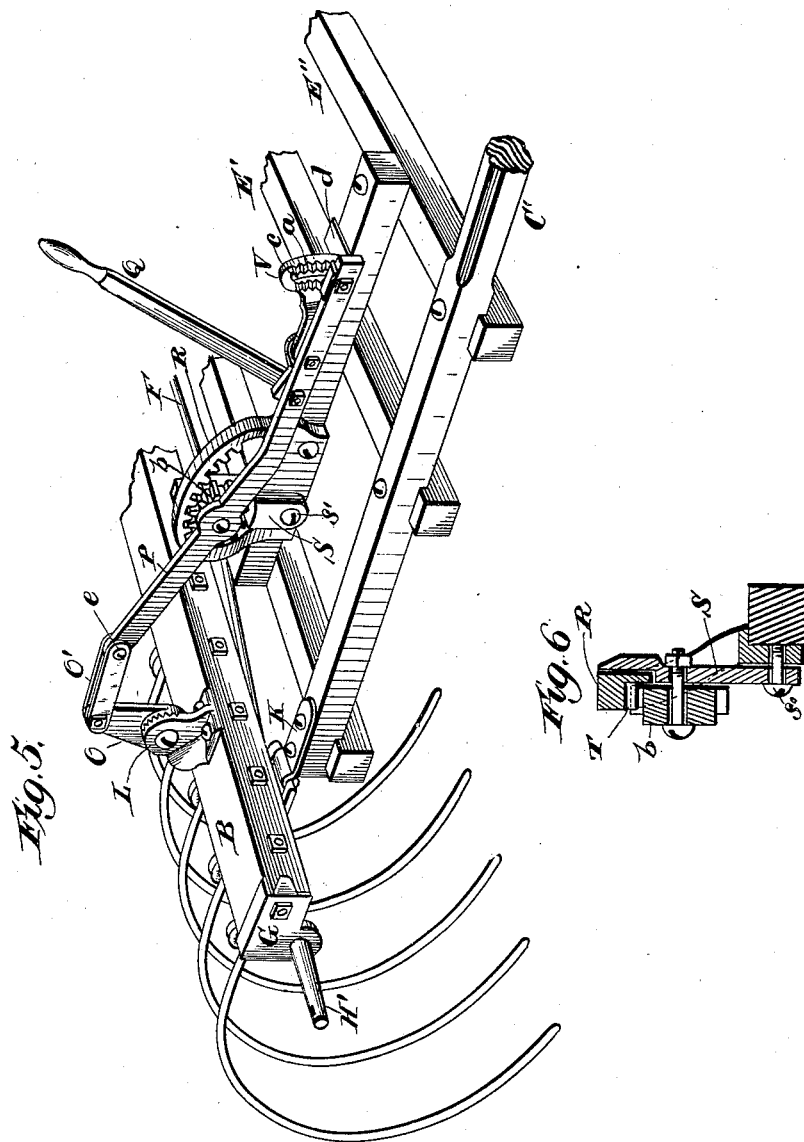
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HORSE HAY RAKE.

No. 264,806.

Patented Sept. 19, 1882



Witnesses.

Robert Everett.  
[Signature]

Inventors.

Jno. M. Westcott & Albert C. Conner.

By Wood & Boyd,  
Attys.

# UNITED STATES PATENT OFFICE.

JOHN M. WESTCOTT AND ALBERT C. CONNER, OF RICHMOND, INDIANA,  
ASSIGNORS TO THE HOOSIER DRILL COMPANY, OF SAME PLACE.

## HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 264,806, dated September 19, 1882.

Application filed January 16, 1882. (Model.)

*To all whom it may concern:*

Be it known that we, JOHN M. WESTCOTT and ALBERT C. CONNER, citizens of the United States, residing at the city of Richmond, in the county of Wayne and State of Indiana, have  
5 invented certain new and useful Improvements in Horse-Rakes, of which the following is a specification.

Our invention relates to improvements in  
10 horse-rakes.

The invention relates to a lifting-lever adapted to be operated by the hand or by the hand and foot.

The object of our invention is to make a powerful lever, and one which will dump the load  
15 by a short movement of the hand-lever.

In horse-rakes employing hand-levers as they are usually constructed it has been difficult to obtain a lever powerful enough to do the dumping without too long a motion of the handle for  
20 the operator to sit on the machine and easily dump the rake and at the same time guide the team.

By our improvement we have not only been  
25 enabled to shorten the lever movement, but at the same time increased its power by employing a tilting axle which operates with the pivoted lever, the fulcrum of which moves in the arc of a circle in both its forward and backward motion.

Other features of our invention will be fully explained in the description of the accompanying drawings, making a part of this specification.

Figure 1 is a vertical central section, showing our improvements attached to the rake.  
35 Fig. 2 is front elevation of the axle and truss-rod attached thereto. Fig. 3 is a reduced top plan view of Fig. 1. Fig. 4 is a plan view of the adjusting-faces of the lever. Fig. 5 is a  
40 perspective view, broken away to more clearly illustrate the dumping devices; and Fig. 6 is a sectional view of Fig. 5.

A A' represent the ground-wheels; B, the axle and rake-head; C C', the shafts; E E' E'',  
45 cross bars for uniting the shafts or thills and forming the frame on which the driver's seat and lifting-levers are mounted. F represents a truss-rod; G, end plates, which are preferably made of cast-iron, and are provided with  
50 flanges projecting over the sides of the axis, forming sockets into which the end of axle B

fits. The truss-rod F passes through the axle, as shown in Fig. 2, and through the end or socket plates, G, and the ends of this rod F are secured by a nut, screwing thereon and drawing  
55 against the faces of end plates, G.

I represents a tension-block, over which rod F draws to form the arch or brace of the axle. The end pieces, G, strengthen the axle against the strain of the rod F, and distribute the  
60 strain equally from end to end of the axle instead of through only a part thereof. The truss-rod F acts as a tie and affords an effective means for holding the socket-plates G firmly  
65 in position on the axle.

H H' represent studs, and form the axle for the wheels A A' to revolve upon. They are secured to the head of the rake B by passing through holes pierced in socket-plates G, and by staple-bolts h, which pass over them, and  
70 are driven into the head B.

The lifting devices are preferably constructed as follows:

L represents a stud-arm rigidly attached to the rake-head, one face of which is serrated;  
75 O, an arm, with its inner face serrated in a like manner, the two parts L and O being united by a bolt to form a short crank-shaft, by which power is applied to rotate the head B and dump the load. The serrations are for the purpose  
80 of adjusting the angle of the stand to regulate the distance of rotation of the head B and the relative position of the rake-teeth to the ground.

O' indicates a link, pivoted at one end to the upper end of the arm O and at its other end  
85 to the lever P.

P and Q indicate a bell-crank lever, the rear end of which is pivoted to the link O'.

R indicates a segmental rack, the teeth T of which engage with a gear or pinion, b, pivoted  
90 to a short arm, S, one end of which is made to project through the segmental slot in the plate R and act as a guide for the gear or pinion b. The other end of the short arm S is pivoted at S' to the frame of the machine, and such pivot  
95 provides for the travel of the gear or pinion b in the arc of a circle. The lever P is pivoted to the gear or pinion b and the short arm S by a bolt, and these parts constitute what I term a "traveling fulcrum" for the bell-crank lever,  
100 which serves to rotate the head B and dump the load. A substitute for the pivoted gear or

pinion *b* and rack *T* would be a friction-segment or pulley; but in either event a traveling fulcrum is provided for the bell-crank lever. When it is desired to have the lever *P* form a lock to hold the teeth down the pivot-bolt *e* must be above a line drawn through the center of the pivots of pinion *b* and the pivot at the upper end of the stud or arm *O*. The weight of the driver being on the shafts *C C'*, to which the rake-head *B* is hinged by hook-hinges *K*, either a lock-lever or some other means must be employed to hold the teeth down to their work. We have provided a plate, *d*, attached to the forward end of lever *P*, on which the foot of the attendant rests, and by this means the teeth may be held down to their work. This foot-piece *d* also enables the driver to bring the rake easily and quickly back into position as soon as a load is dumped. The combination of the bell-crank lever and link *P Q O'* with the pivoted gear *b*, rack *T*, and shaft *S* forms a very powerful leverage with a comparatively short travel of the handle *Q*.

*W* represents an adjusting-plate, provided with a series of bolt-holes at its front end and a single bolt-hole in the rear end. A bolt is inserted through the handle *Q* and through the hole in the rear end of plate *W*, and thence through the lever *P*, rigidly uniting the parts *Q W P*.

*V* represents a second plate, with a single bolt-hole in its rear end, by which it is attached to the plate *W* by a bolt passing through one of the series of holes in said plate *W*. The plate *V* has serrations *a* on its inner face, which fit into similar notches, *a'*, on the face of lever *P*. *c* represents a segmental slot for adjustably bolting it to lever *P*. By shifting the plate *V* up or down on the face of lever *P* the foot-piece *d*, attached thereto, is adjusted to or from the

cross-bar *E''*, on which the operator's feet rest. By changing the bolt from one hole to another in plate *W* the pitch of the handle *Q* is adjusted to or from the seat *D*, to suit the convenience of the operator.

We claim—

1. A lifting device for dumping a horse-rake, composed essentially of the bell-crank lever hinged to the tilting rake-head and pivoted to a traveling lever-fulcrum meshing with the teeth of the segmental rack, said members being combined to operate substantially as described.

2. A lifting device for a horse-rake, composed essentially of the bell-crank lever hinged to the tilting rake-head and pivoted to a traveling lever-fulcrum working in the arc of a circle, substantially as described.

3. A dumping device for a horse-rake, composed of a combined hand and foot lever connected by means of a link to the rake-head and pivoted to a traveling lever-fulcrum meshing with the teeth of the segmental rack, said members being combined for operating substantially as described.

4. In a horse-rake, the combination, with the frame *E* and the bell-crank lever connected with the rake-head, and having at its forward end the serrations *a'*, of the serrated plate *V*, attached to the serrated part of the lever, and provided with the foot-piece *d* and slot *c*, and the connecting-bolt, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN M. WESTCOTT.  
ALBERT C. CONNER.

Witnesses:

JAMES A. CARR,  
OMAR HOLLINGSWORTH.