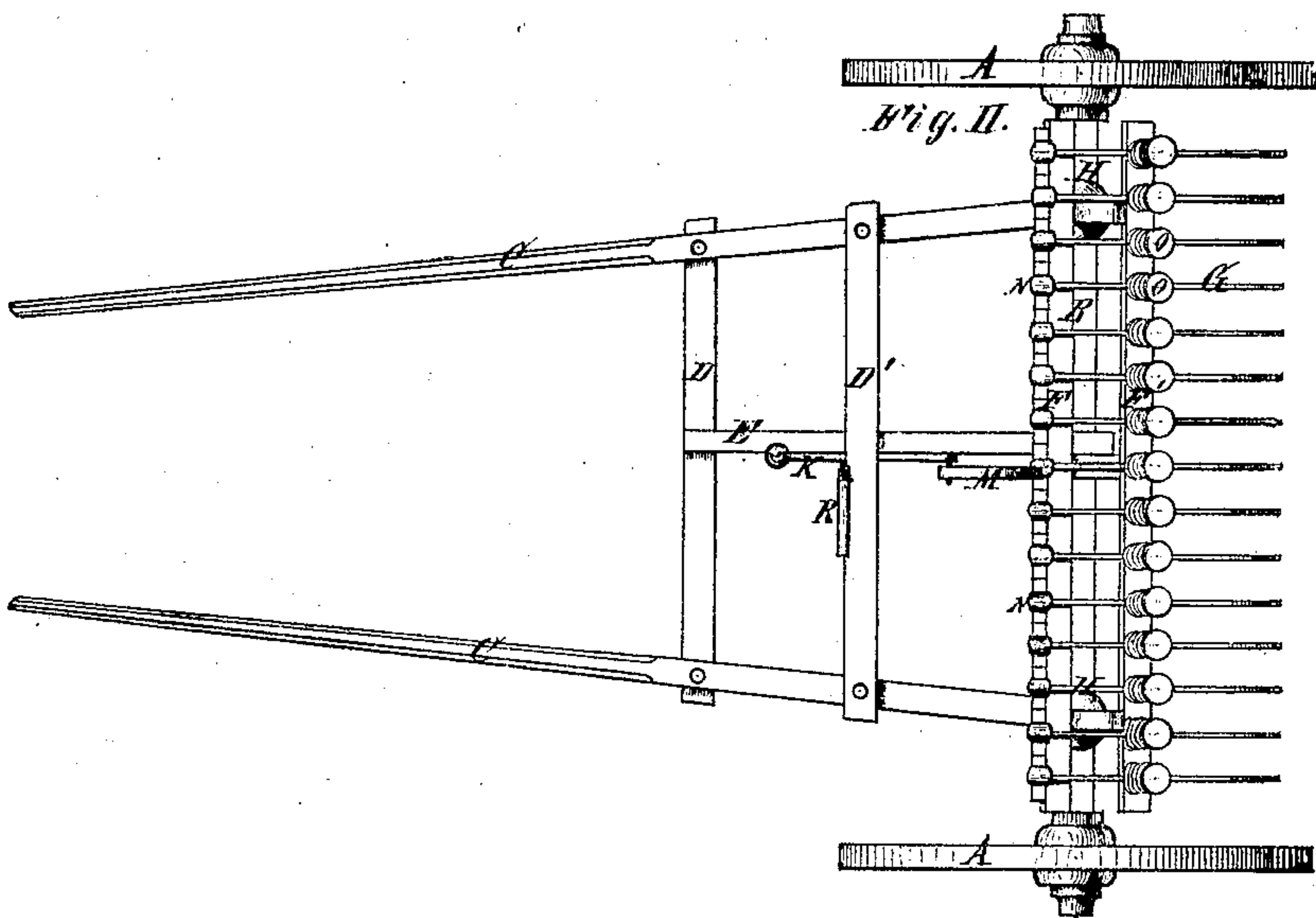
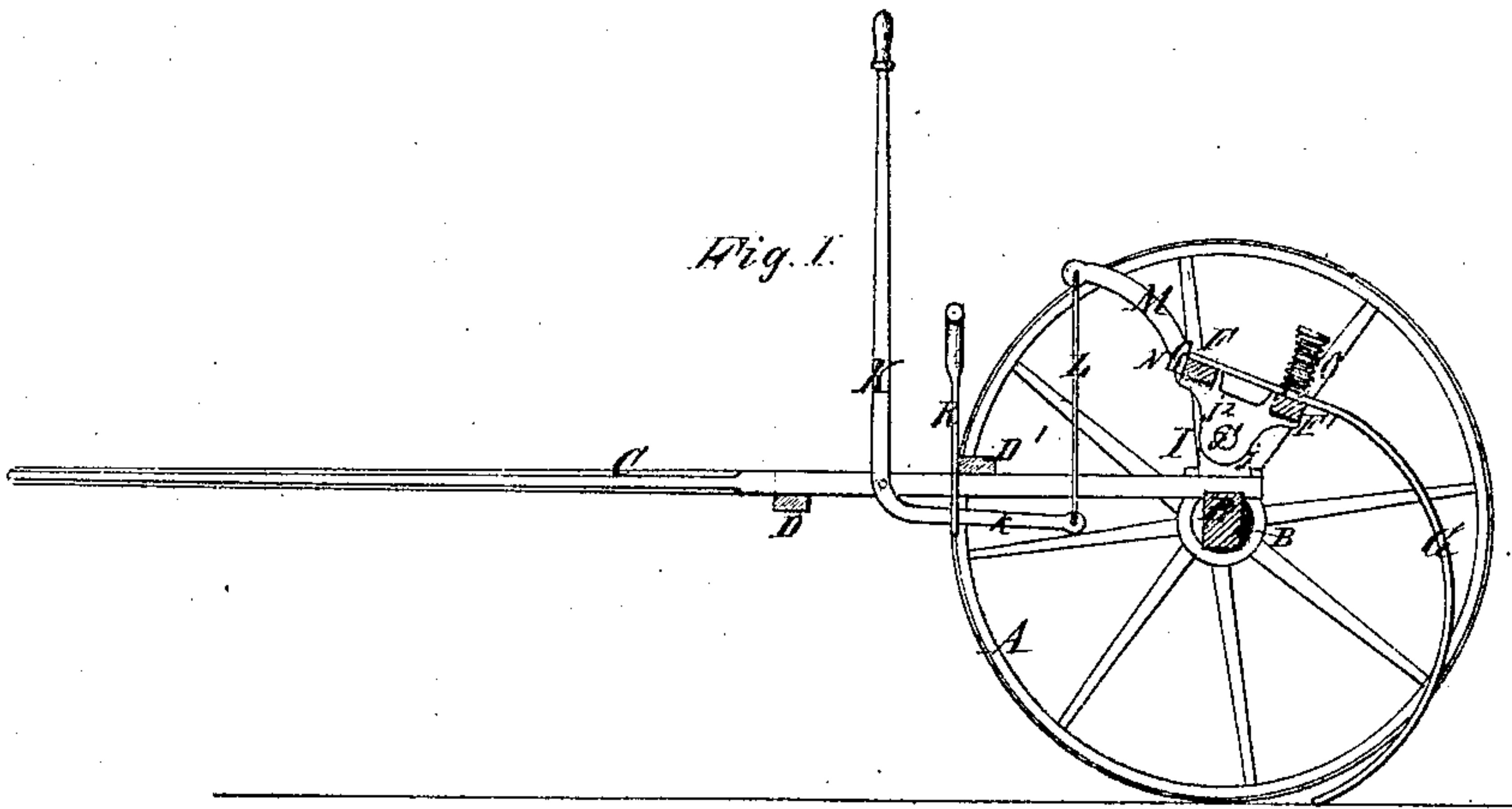


*G. Weiland,  
Horse Rake.*

2 Sheets, Sheet 1.

*No. 101.196.*

*Patented. Mar. 22. 1870.*



Victor H. Becker }  
Jno. J. Connor } Witnesses.

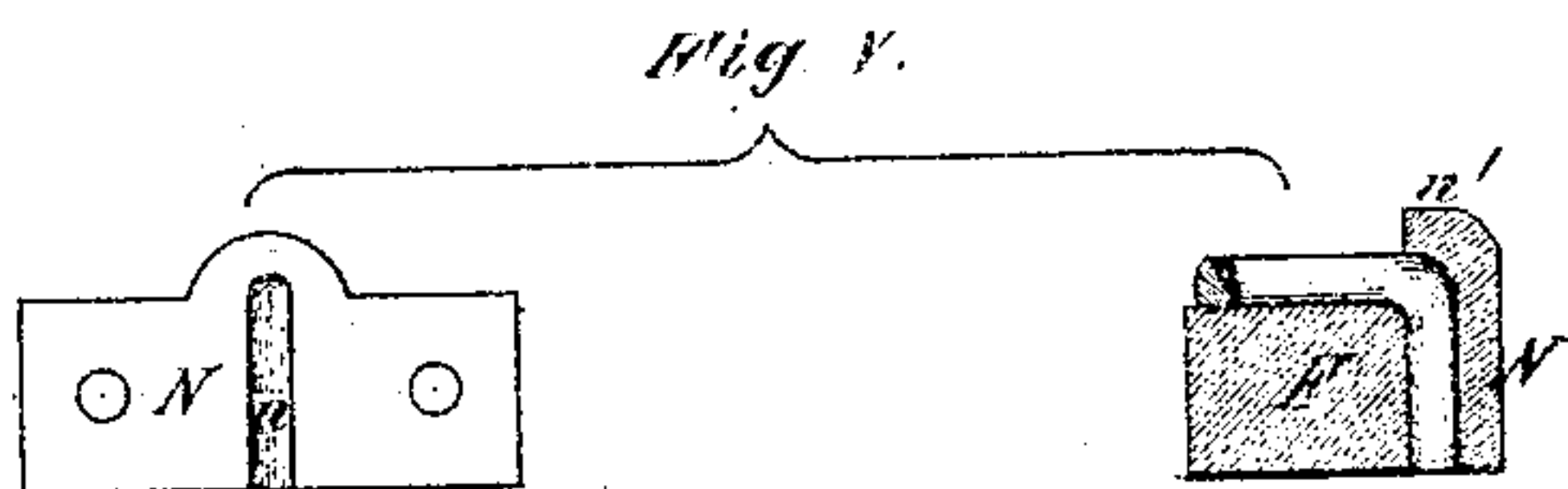
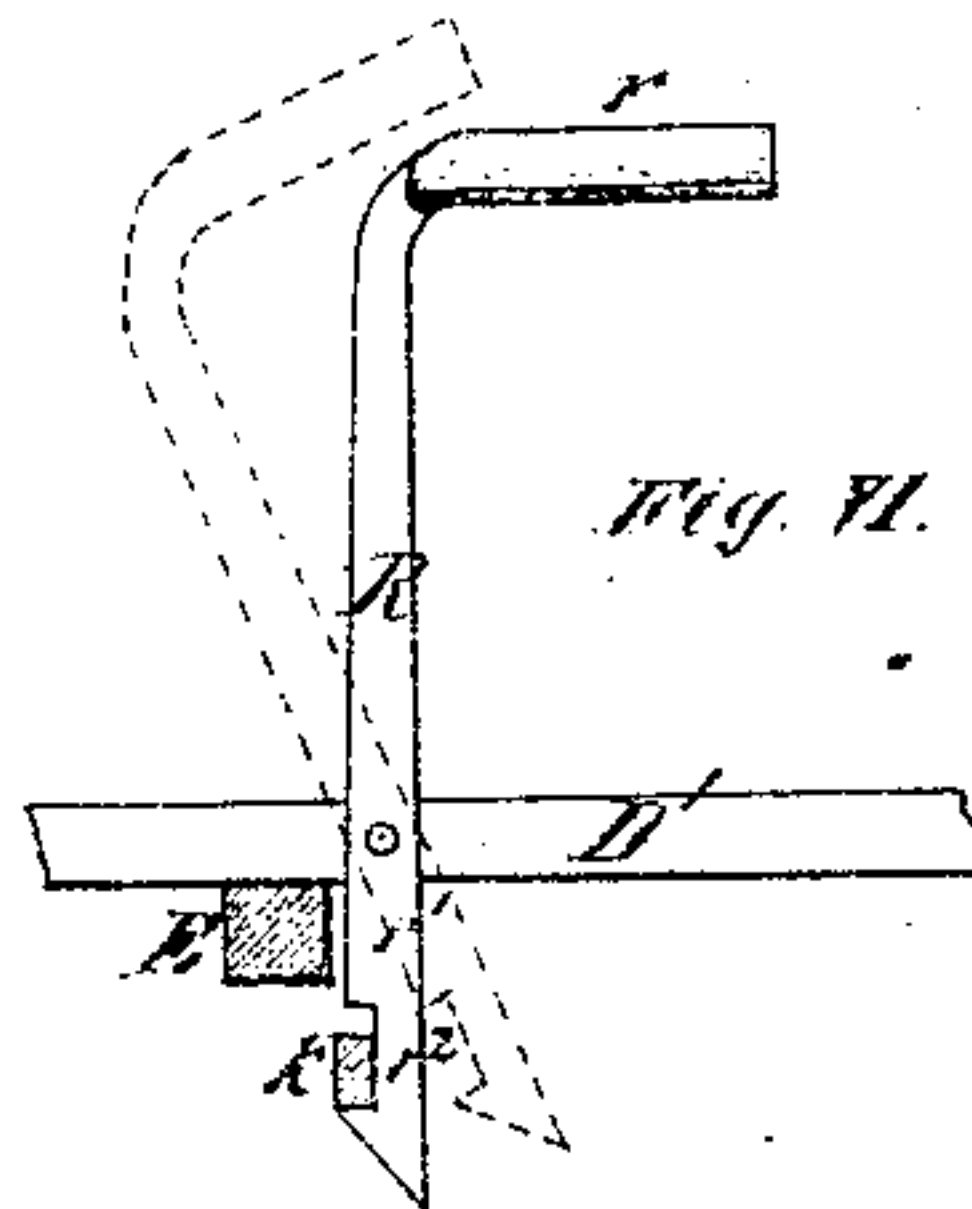
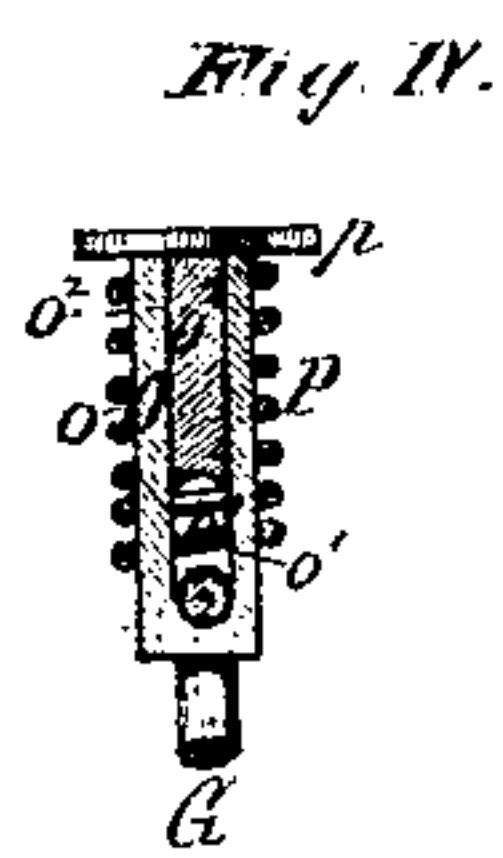
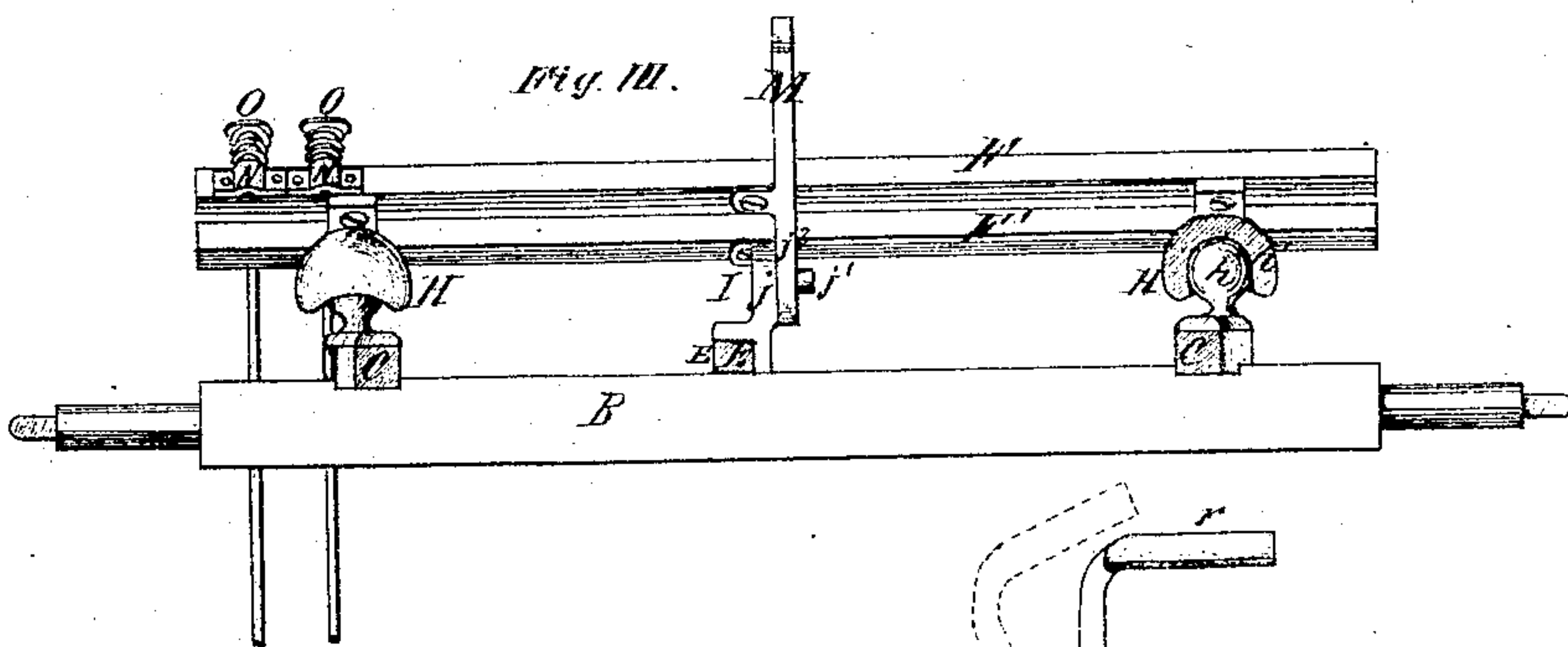
G. Miland *Inventor.*  
by Forbush & Mayall

*G. Weiland.*  
*Horse Rake.*

*2 Sheets, Sheet. 2*

*No. 101,196.*

*Patented Mar. 22. 1870.*



*Victor H. Becker.*  
*Jos. J. Donner.*  
Witnesses

*G. Weiland.* Inventor  
*by F. W. V. Heydt.* Atty.



# United States Patent Office.

GODFRIED WEILAND, OF DAYTON, OHIO.

Letters Patent No. 101,196, dated March 22, 1870; antedated December 14, 1869.

## IMPROVEMENT IN HORSE HAY-RAKES.

The Schedule referred to in these Letters Patent and making part of the same.

I, GODFRIED WEILAND, of Dayton, in the county of Montgomery and State of Ohio, have invented a certain Improvement in Horse-Rakes, of which the following is a specification.

My invention relates to that class of wheeled horse-rakes which is furnished with elastic wire teeth attached to a rake-head, which is hinged to the main frame of the machine, and operated by a hand-lever.

My invention consists of two ball-and-socket joints, with an intermediate hinge, so constructed and arranged as to hinge the rake-head to the main frame of the machine without the use of screw-bolts, or bolts and keys, &c., as hereinafter set forth.

In the drawings—

Figure I is a sectional elevation of a horse-rake provided with my improvements.

Figure II is a plan view.

Figure III, a front elevation thereof.

Figure IV is a detached view of one of the guide-standards.

Figure V is a detached view of one of the cast boxes for fastening the rake-teeth.

Figure VI is a detached view of the locking-lever.

Like letters designate like parts in each of the figures.

A A are the wheels.

B, the axle.

C, the thills, rigidly attached to the axle, and connected by cross-beams D D'.

A<sup>o</sup> central brace, E, runs from the forward cross-beam D, underneath the beam D', to the axle B.

These parts form the main frame of the machine.

The rake-head, located above the axle, consists of two parallel beams, F F', connected together, and arranged one behind the other. It is hinged to the axle B by two ball-and-socket joints, H H, the ball portions *h* of which are fastened to the axle, while the socketed portions *h'* are attached to the under side of the rake-head.

Between these two joints is arranged a hinge, I, forming an additional connection and means for securing the rake-head to the axle B.

The lower portion *j* of this hinge is fastened to the axle B, and is cast with a stud or pin, *j*<sup>1</sup>, which fits into an eye provided in the upper portion *j*<sup>2</sup> of the hinge attached to the rake-head.

The parts being connected together, as shown, the hinge I prevents the vertical displacement of the ball-and-socket joints, while the construction of the latter is such as to prevent lateral derangement.

In order to fasten the rake-teeth G to the rake-head, I bend the upper end or head of said teeth at right angles to the straight part thereof. A cast box

or socket, N, having a groove, *n*, receiving the bent head of the tooth, and a top piece, *n'*, overlapping said part of the tooth, is provided for each tooth, and fastened to the face of the front beam F of the rake-head. The head of the tooth is held firmly between this box and the beam F, the groove *n* in the box retaining the same against lateral movement, while the projection *n'* prevents any vertical displacement of the same.

A guide-standard, O, attached to the beam F' of the rake-head, is provided for each tooth, the latter passing through a vertical slot, *o*<sup>1</sup>, in the standard, which retains the tooth against lateral movement, but allows of a vertical play of the same.

The length of the slot *o*<sup>1</sup> is adjusted by a stop, *o*<sup>2</sup>, filling the former to a certain extent, and thereby limiting the vertical movement.

A coiled spring, P, inclosing the body of the standard, expands between the head *p* of the same and the tooth G, and renders the latter self-adjusting to the irregularities of the ground when raking.

The improved mode of hinging the rake-head dispenses with the use of screw-bolts, belts, and keys, &c., which parts are frequently lost, and thereby occasion greater or lesser inconvenience, while the hinging is such as to allow the rake-head all necessary freedom of movement.

K is a bent hand-lever pivoted to the frame, the short arm of which is connected, by a rod, L, to an arm, M, cast with and projecting from the upper portion of the hinge L.

The locking-lever R is pivoted to the cross-piece D' of the main frame in such a manner that the bent upper portion *r* of the same will preponderate, and press the lower portion *r*<sup>1</sup> of same against the lower arm *k* of hand-lever K, which is firmly held in a notch, *r*<sup>2</sup>, with which the lower portion *r*<sup>1</sup> of lever R is provided.

A pull applied to the upper portion *r* of locking-lever R will release the lever K, and permit it to be swung backward, to oscillate the rake-head and raise the teeth from the ground.

By letting go the hand-lever K, the gravity of the parts will cause them to assume their former position.

What I claim as my invention is—

The ball-and-socket joints H H and intermediate hinge I, when arranged with the axle B and the rake-head, substantially as and for the purpose set forth.

GODFRIED WEILAND.

Witnesses:

JESSE DARLINGTON,

THOS. D. MITCHELL.