W. ALDRICH.
HORSE-RAKE.

No. 169,329. Patented Nov. 2, 1875.

Fig. 1.

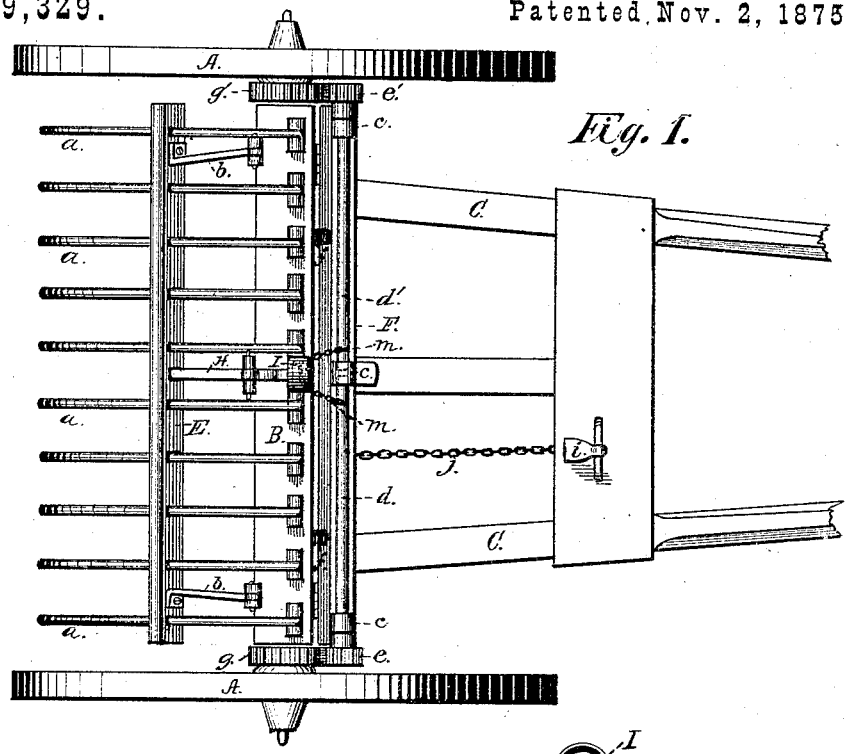


Fig. 3.

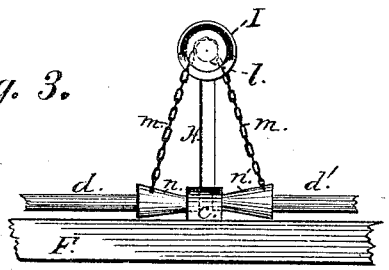
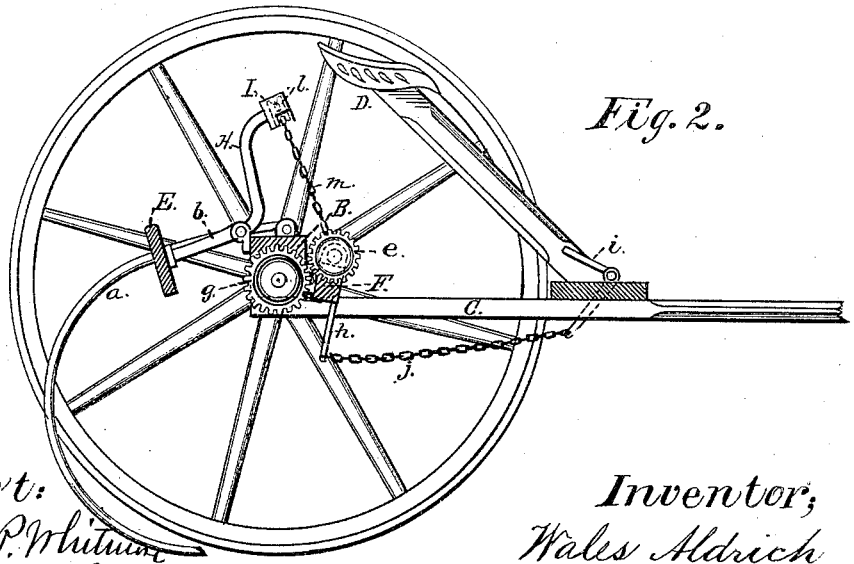


Fig. 2.



Attest:
James. P. Whitman
H. S. Mead.

Inventor;
Wales Aldrich
by his Attys.
Peck & Co.

UNITED STATES PATENT OFFICE.

WALES ALDRICH, OF DAYTON, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY C. HERCHELRODE, OF SAME PLACE.

IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. **169,329**, dated November 2, 1875; application filed July 12, 1875.

CASE 1.

To all whom it may concern:

Be it known that I, WALES ALDRICH, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Horse Hay-Rakes; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to that class of hay-rakes in which the progressive motion of the machine is employed to elevate the teeth at the will of the driver to discharge the collected loads; and the improvement consists in the application and arrangement of certain novel devices whereby the driver, by pressing his foot upon a treadle, causes the teeth to be elevated, whether the rake be going forward or backward, or is in the act of turning, the parts being so arranged that each wheel exerts an equal force in accomplishing the result, thereby preventing what is commonly called a side draft.

I would thus describe my invention, referring to the accompanying drawings, in which—

Figure 1 is a plan view of a horse hay-rake provided with my improvements. Fig. 2 is a side elevation of the same with a wheel removed. Fig. 3 is a partial front view of my improved equalizing device.

Like letters of reference indicate corresponding parts.

A A represent the wheels, supporting the axle B, which is the rake-head, and to which the thills C are attached in the ordinary manner, and connected by a platform, upholding the driver's seat D. The teeth *a*, properly curved, are hinged in any convenient manner to the head, and passed through the vertical slots in the lifting-bar E, which is connected to the head by means of arms *b*, pivoted in front to its rearward top edge, and rigidly attached by their rear ends to the bar E. F represents a beam, of equal length with the axle, and hinged to its bottom forward edge, so that when pressed back its rear face coincides with the front face of the axle, and their bottom faces lie in the same plane. This beam has upon its top the bearing-journals *c*, arranged one at each end and one in the middle, for supporting two shafts, *d d'*, placed end to end in the middle bearing, (see Fig. 3,) and having keyed upon their outer ends the pinions *e e'*. These shafts, which have the appearance of a single one, are so arranged that they can be revolved independently of each other. Two spiral or other springs, *f f*, are adjusted between the axle and the beam F, and so arranged as to throw the beam forward, as seen in Fig. 2. It occupies this position constantly, except when pressed back to throw the pinions *e e'* into gear with the cog-wheels *g g'*, keyed upon the supporting-wheels A A, with a common axis, and revolving with them. For throwing them into gear I provide a pendent arm, *h*, rigidly attached to the beam F, and connected to the treadle *i* by means of a chain, *j*. The treadle is pivoted in the platform, in convenient reach of the driver's foot. H represents a curved arm, pivoted upon the axle, and having its rear end confined in a slot in the lifting-bar E. From the pivotal point the arm extends upward, and is bent forward at the top, which is provided with a shield or housing, I, in which is pivoted a spool, *l*. (Seen in dotted lines.) A chain, *m*, is passed over this spool, and has its ends attached, the one to the shaft *d*, and the other to the shaft *d'*, at some little distance from the middle journal.

Such is the construction of my improved rake. Its operation is as follows: Supposing the horse to be going straight forward, the driver, upon coming to a windrow, presses his foot upon the treadle *i*, thereby throwing the pinions *e' e* into gear with the wheels *g' g*. This causes the shafts *d d'* to revolve and wind upon themselves the chain *m*, thus causing the lever H to elevate the lifting-bar E, and with it the rake-teeth, which discharge the collected hay.

The shafts *d d'* may have cones *n n'*, as seen in Fig. 3, on which the chain *m* is wound, the object of which is to cause the teeth to rise rapidly at first, and afterward more gradually.

Upon removing his foot the springs *f f* throw the pinions out of gear, and the teeth fall back to raking position, but not with such rapidity

and jar as is usually the case in most rakes. Should any hay be passed over, the driver can back the rake, causing the teeth to rise, as before, and, dropping them behind the escaped hay, collect it.

Again, by the employment of the separate shafts *d d'* and the equalizing devices, consisting of the chain *m* and the spool *l*, arranged as shown, the rake may be dumped while in the act of turning by either or both wheels, the chain being wound upon one shaft, or upon both, in opposite directions.

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

1. The shafts *d d'*, arranged as described, and provided with the pinions *e e'*, in combination with the adjustable beam F, as and for the purpose specified.

2. The lifting-lever H, attached to two separate shafts, *d d'*, by means of a chain, *m*, arranged as described.

3. The combination of the lifting-bar E, lever H, spool *l*, chain *m*, shafts *d d'*, beam F, arm *h*, chain *j*, and treadle *i*, when the respective parts are arranged in the manner and for the purpose specified.

Witness my hand this 8th day of July, A. D. 1875.

WALES ALDRICH.

Witnesses:
J. P. WHITMORE,
CHAS. M. PECK.