W. ADRIANCE.

Horse Hay-Rakes.

No. 209,004. Patented Oct. 15. 1878.

Fig. 1.

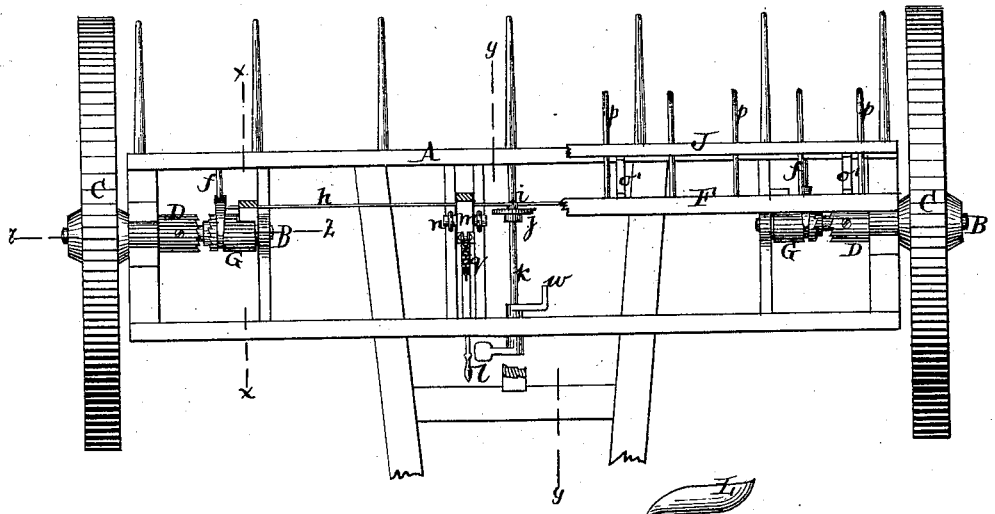

Fig. 2.

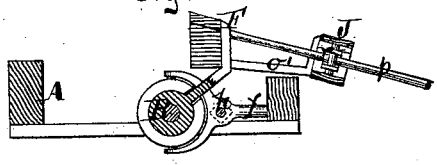

Fig. 3.

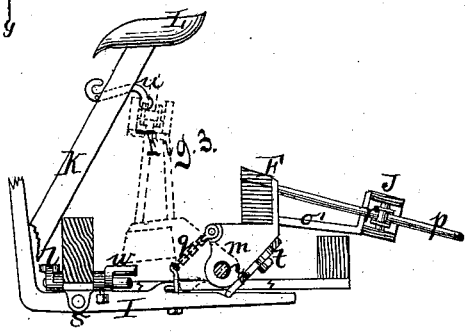

Fig. 4.

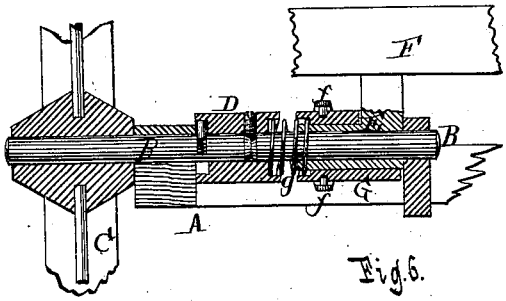

Fig. 5.

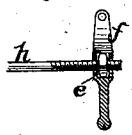

Fig. 6.

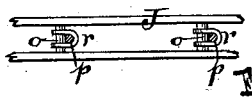

Fig. 7.

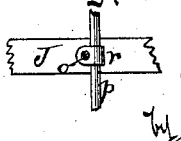

Fig. 8.

Witnesses.

Otto Stupland.

W. C. Hauff

Inventor

Walter Adriance

by

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his attys.

UNITED STATES PATENT OFFICE.

WALTER ADRIANCE, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **209,004**, dated October 15, 1878; application filed September 11, 1878.

To all whom it may concern:

Be it known that I, WALTER ADRIANCE, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Horse Hay-Rakes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a plan or top view of my rake, partly in section. Fig. 2 is a cross-section in the plane *x x*, Fig. 1, but on a larger scale than in said figure. Fig. 3 is cross-section in the plane *y y*, Fig. 1. Fig. 4 is a longitudinal section in the plane *z z*, Fig. 1. Fig. 5 is a longitudinal section of one of the clutch-levers. Fig. 6 is a rear view of a portion of the guide-frame for the rake-teeth. Fig. 7 is a horizontal section thereof. Fig. 8 is a similar section, showing a modification of the slides carrying the rake-teeth.

Similar letters indicate corresponding parts.

My invention relates to that class of rakes for which Letters Patent of the United States were granted to me October 2, 1877, No. 195,783.

My invention consists in certain means for holding the rake-head in a partially-raised position; further, in certain means for supporting the shanks of the rake-teeth, whereby the teeth are permitted to vibrate, but are held against a lateral motion.

In the drawing, the letter A designates the frame of my rake, forming the bearings for two independent shafts or axles, B B, to the outer ends of which are secured the wheels C C. On each of these shafts is mounted a clutch-head, D, substantially as described in my former patent, and a tubular shaft, E, which carries the rake-head F, and on which is feathered the clutch-slide G.

The letter *f* designates a forked lever, which engages the clutch-slide G, and which, when moved in the proper direction, serves to throw this slide in gear with the clutch-head; and *g* is a spring, by which the clutch-slide is thrown out of gear when released. The letters *h h* designate rods, by which the inner ends of the forked levers *f* are connected to eccentric wrist-pins *i i*, secured to a disk, *j*, which in turn is secured to a rock-shaft, *k*. The rock-shaft *k* carries a radial arm, *w*, which is arranged on such a part of this shaft that, when the clutch-slides G are thrown in gear with the clutch-heads and the rake-head F is raised, said arm is brought into the path or circle of motion of the rake-head, and the latter strikes against the arm when it reaches its highest point, whereby the rock-shaft is partially rotated, the clutch-slides are thrown out of gear, and the rake-head is released. The arm *w* thus forms a very simple and effective means for automatically releasing the rake-head. On the rock-shaft *k* is also mounted a foot-lever, *l*, which, when depressed, serves to rotate the rock-shaft in an opposite direction to the arm *w*, and by this means to bring the clutches into action.

Each of the connecting-rods *h* is provided with a screw-thread at its outer end, as seen in Fig. 5, and at such end is passed through the clutch-lever *f* and through a nut, *e*, located in a recess formed in said lever for this purpose, so that a firm connection between the rod and the lever is obtained, while the rod, moreover, is rendered adjustable, and hence, if, by reason of wear of the teeth or for any other reason, it is desirable to lessen the distance between the clutch-slide G and the clutch-head, this can be accomplished without difficulty.

The rake-head F is secured to a bracket, *m*, (see Fig. 3,) which in turn is secured to a supplemental shaft, *n*, arranged intermediately of the shafts B B, but in a corresponding horizontal plane thereto, in the frame A. The bracket *m* carries a stop, *t*, consisting of a plate, which is slotted and secured to the bracket by means of a set-screw, so that it is adjustable.

I is a hand-lever, which has its fulcrum on a pivot, *s*, and extends at right angles to and beneath the shaft *n*.

If, for any reason, it is desirable to hold the rake-teeth up so as to clear the ground, the rake-head F is simply elevated, and the lever I is depressed at its forward end, whereby the rear arm of said lever is brought to bear on the stop *t*, and the rake-head is firmly held in position. By properly adjusting the stop *t* the rake-teeth can be held at a greater or less distance from the ground.

The bracket *m* is connected to the lever I by means of a chain, *q*, so that the rake-head can be raised by hand.

The letter J designates a frame, which is secured to the rake-head F by straps *o'*, or other suitable means, and provided with vertical bars *o*, equal in number to the teeth *p* of the rake. On the bars *o* are fitted slides *r*, which carry the shanks of the rake-teeth *p*, and in the example shown consist of metal straps embracing the teeth, and having holes near their ends, through which the bars *o* pass.

The object of connecting the rake-teeth to the slides *r* is to prevent a lateral motion thereof, but at the same time allow the same to vibrate in the rake-head. When the rake-teeth vibrate the slides *r* partake of their motion and move up and down on the bars *o*. In some cases the straps composing the slides *r* are slotted, as shown in Fig. 8, so that if the same become broken they can be removed without disturbing their guide-bars.

From the frame A rises a bar or frame, K, to support the seat L. In this seat-supporting frame K is pivoted a hook, *u*, which, when the rake-head F is raised, can be made to catch over the same, as indicated in Fig. 3, whereby the rake-head is retained in its raised position, and the clutches or other devices used for temporarily lifting the rake-head can be released.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a vibrating rake-head, F, attached to a bracket, *m*, on a shaft, *n*, and having a downwardly-projecting adjustable stop, *t*, of a hand-lever, I, pivoted at right angles to and beneath the shaft *n*, and connected with the bracket *m* at a point between its pivot and rear free end, said end of the lever being constructed to receive and support the end of the stop *t*, substantially as described, whereby the rake-head may be partially elevated by the hand-lever and supported firmly in such position, as set forth.

2. In a horse hay-rake, the combination, with a vibrating rake-head and its teeth, of a frame which is attached to the rake-head, and provided with guide-bars for each tooth, and of slides which are fitted on said bars and carry the shanks of the rake-teeth, substantially as and for the purpose described.

In testimony that I claim the foregoing I hereunto set my hand and seal this 7th day of September, 1878.

WALTER ADRIANCE. [L. S.]

Witnesses:
J. VAN SANTVOORD,
E. F. KASTENHUBER.