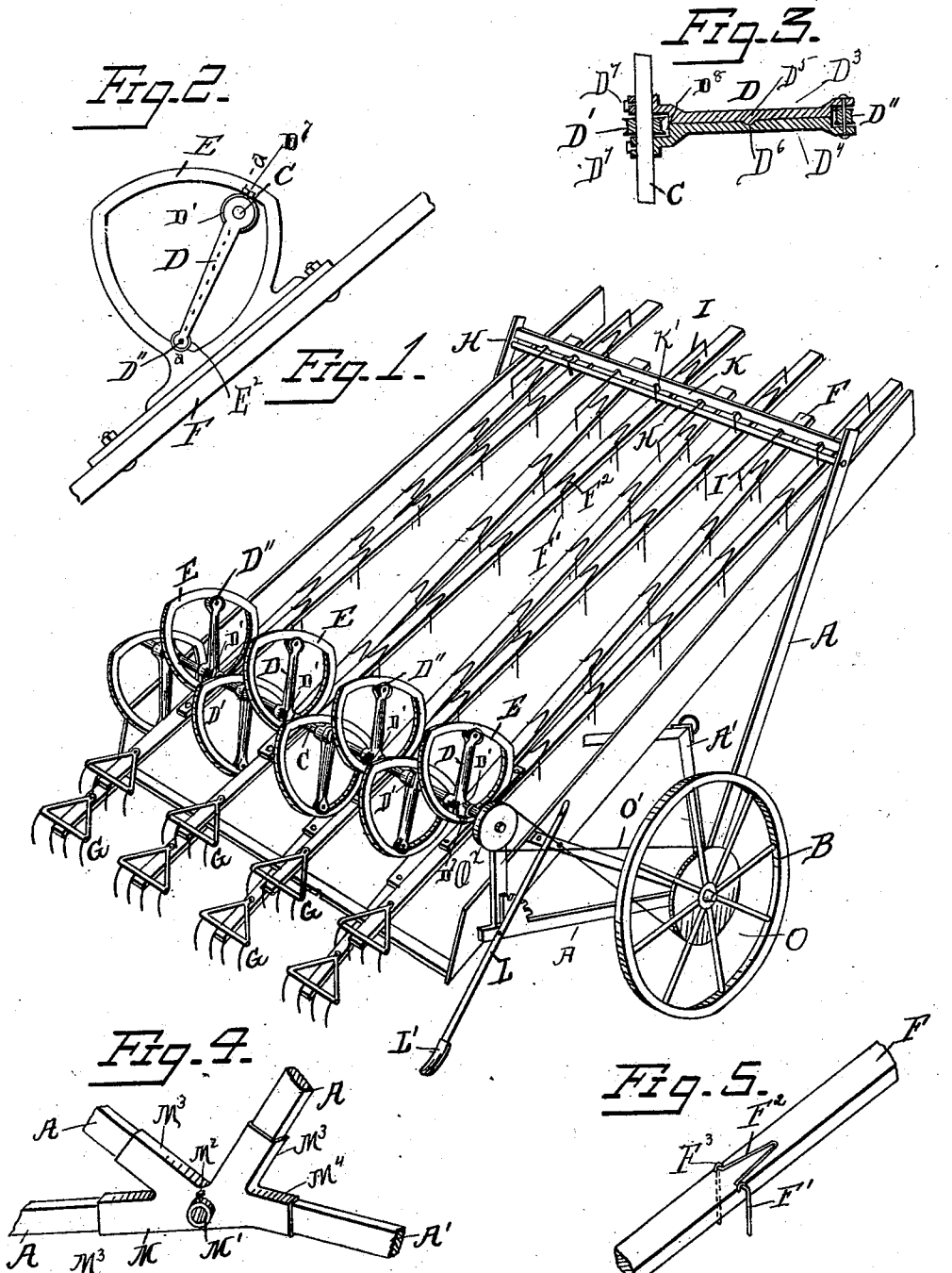


(No Model.)

W. H. KADEL.
HAY RAKE AND LOADER.

No. 548,257.

Patented Oct. 22, 1895.



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM H. KADEL, OF ROCK FALLS, ILLINOIS.

HAY RAKE AND LOADER.

SPECIFICATION forming part of Letters Patent No. 548,257, dated October 22, 1895.

Application filed September 11, 1894. Serial No. 522,703. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. KADEL, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented a new and useful Hay Rake and Loader, of which the following is a specification.

My invention relates to improvements in hay rakes and loaders; and the object of my improvement is to provide simple means for removing hay from the ground by a steady raking process, by rakes attached to the elevator-bars; doing away with all supplementary raking devices, as well as the spasmodic action of said elevator-rakes common in similar machines now in use.

In the accompanying drawings, Figure 1 is a perspective of a machine provided with my improvement. Fig. 2 is a detailed plan view of the operating mechanism. Fig. 3 is a sectional view in the line *a a*, Fig. 2, of the arm D. Fig. 4 is a detailed view in perspective of the bearing on left side of machine. (Not shown in Fig. 1.) Fig. 5 is a detailed view in perspective of one of the teeth or prongs *F'*, Fig. 1.

Similar letters relate to similar parts throughout the several views.

A is the frame of the machine, supported by the wheels B and provided with the usual elevator-floor. (Not shown.)

A' is the usual tongue by which the loader is attached to the wagon.

Supported on the rear of the frame A is the rotary shaft C, upon which are rigidly stationed the arms D, provided with the flanged antifriction-rollers D' and D², Fig. 3.

Attached to the elevator-bar F is the eccentric-strap E, within which revolves the shaft C and arm D, the inner edge of the strap or hoop E forming a track on which run the rollers D' and D², the flanges of which prevent said rollers and the strap E from becoming disengaged.

The upper end of the elevator-bar F is supported and guided by means of the angle-iron I fastened thereto, said angle-iron being supported by and reciprocating upon the stationary shaft H, the uniform distance of the angle-irons I from one another being assured by means of the recesses K' in the strip K

through which they pass. The elevator-bar F is provided at its lower end with the usual rake G and at intervals between said rake G and its upper end with the swinging teeth or prongs F', which are hinged to the bar F by means of the staples F³, Fig. 5, and provided with the loop F², the function of which is to keep the teeth at right angles to the elevator-bar in its upward movement.

I prefer to construct the arm D of two pieces D³ and D⁴, as shown in Fig. 3, each of said pieces being rigidly fixed on the shaft C by means of the set-screws D⁷. By means of the lug D⁵ and recess D⁶ the stability of the arms D and coincidence of the two parts thereof is more fully assured.

The roller D' is seated loosely upon the shaft C in the recess D⁸ of the arm D.

In Fig. 4 M is the bearing on the left side of my machine through which passes the main shaft or axle, and in which are centered the supports of the frame A and the tongue A'. The axle is rigidly secured in the box M' by means of the set-screw M², the pieces A of the frame being secured in the sockets M³ and the tongue A' in the socket M⁴, which is inclined inward to receive the same.

The power is communicated to the shaft C from the wheel B by means of the wheel O, rigidly attached to said wheel B, the chain or band O', and pulley O², rigidly seated on the shaft C.

L is a hand-lever provided with the metal shoe L' and usual ratchet and pawl. By the contact of the shoe L' with the earth the distance of the rakes G from the ground at the lowest point of their stroke is regulated.

In the operation of my machine the shaft C revolving backward carries with it the arm D giving to the eccentric-hoop E, elevator-bars F, and rake G first a downward and backward movement, followed by a forward and upward movement. When the roller D² arrives at the point E', Fig. 2, the rake G will arrive at its nearest proximity to the ground, and while said roller D is passing from such point E' to the point E² (or about one-third of the revolution of the shaft C) there is no movement of the eccentric-hoop E, elevator-bar F, or rake G, except that caused by the forward movement of the machine, the form

of the strap E being such that there is no action of the arm D upon said strap E between said points E' and E². Meanwhile the rake G, passing along the ground in close proximity thereto, gathers up a bundle of the hay, and in its next upward movement carries it upon the elevator-floor. By the alternate arrangement of the arms D on the shaft C one set of the elevator-bars F and rakes G alternates with the other set of such bars and rakes in operating upon the hay. After being carried by one rake G to the elevator-floor, the hay is seized by the prong F' of the adjacent elevator-bar in its upward movement, and by successive operations carried up and delivered upon the load. In the downward movement of the elevator-bar, the prongs F', swinging upward, are automatically released from the hay.

20 What I claim as my invention, and desire

to secure by Letters Patent of the United States, is—

In a hay-rake and loader, the shaft C, with means as shown for operating the same; the straight arms D, projecting alternately from opposite sides of the shaft C, said arms D, provided at each end with the anti-friction rollers D' and D²; the triangular eccentric-strap E, and reciprocating elevator bar F; whereby the hay is removed from the ground by a steady raking process and elevated upon the load, substantially as shown and for the purpose described.

In testimony whereof I have hereunto set my hand this 31st day of August, 1894.

WILLIAM H. KADEL.

Witnesses:

G. B. DILLON,

W. A. OVERHOLSER.