(No Model.) 2 Sheets—Sheet 1.

G. A. WOODFORD.

HAY TEDDER.

No. 301,845. Patented July 8, 1884.

Fig. 1

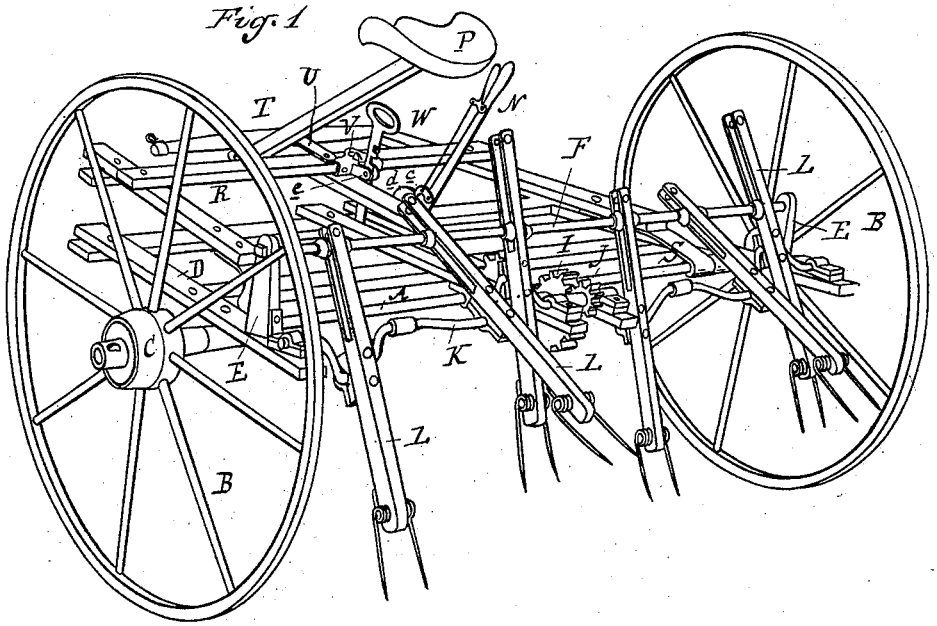


Fig. 2

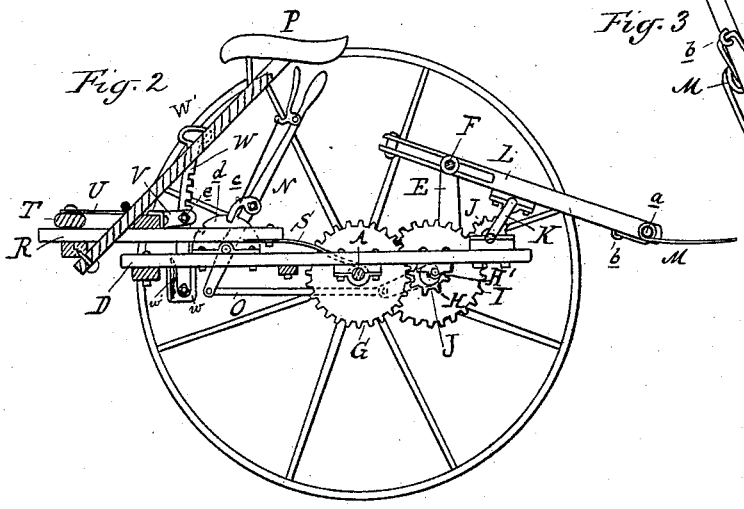
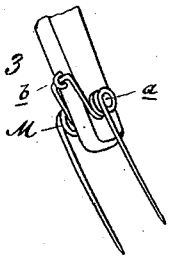


Fig. 3



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Inventor:

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Wm. L. Sprague

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4

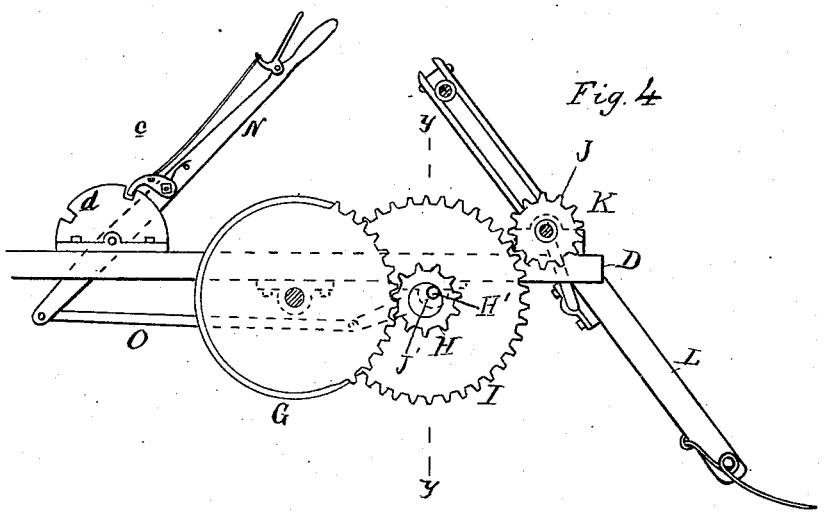
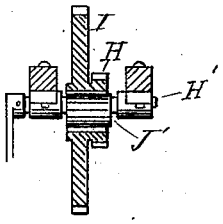


Fig. 5



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Inventor
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UNITED STATES PATENT OFFICE.

GEORGE A. WOODFORD, OF DETROIT, MICHIGAN, ASSIGNOR TO CORNELIA H. WOODFORD AND THOS. N. REYNOLDS, OF SAME PLACE.

HAY-TEDDER.

SPECIFICATION forming part of Letters Patent No. 301,845, dated July 8, 1884.

Application filed March 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. WOODFORD, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Hay-Tedders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in hay-tedders; and it consists in the peculiar construction of its parts and their combination, as more fully hereinafter described.

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of the rear of the machine. Fig. 2 is a vertical central section from front to rear. Fig. 3 is a perspective view of the front lower end of one of the fork-arms. Fig. 4 is a side view of the gearing for operating the forks, and Fig. 5 is a section on line *y y*, Fig. 4.

A represents an axle, upon each end of which is journaled a traction-wheel, B, provided with a ratcheted hub, C, of any of the known constructions, (not shown,) which will compel the axle to rotate in the forward movement of the wheels, and will allow it to remain stationary in a rearward movement of said wheels. By means of suitable boxes the frame D is secured to said axle in such a manner as to allow the axle to rotate in the boxes. To each of the side bars of this frame there is secured a standard, E, and in the upper ends of these standards is secured the guide-rod F, the function of which will be hereinafter described.

Between the two central fore-and-aft bars of the frame there is secured upon the axle a spur-wheel, G, which engages with a pinion, H, turning upon a rock-shaft, H′, adapted to be rocked in boxes secured to the lower sides of said central bars; and upon this same rock-shaft is carried a spur-wheel, I, which engages with the pinion J upon the crank-shaft K, which runs in boxes secured at the rear ends of the fore-and-aft bars of the frame. The wheel I is connected to the pinion H. Preferably they should be cast together, as shown in Fig. 5. It will be observed that the rock-shaft H′ is provided with an eccentric, J′, upon which the pinion H and gear-wheel I rotate eccentric to the axis of the shaft. As this shaft is rocked by the movement of the latch-lever N, it will be observed that the pinion H is caused to engage with the gear-wheel G, while a reverse movement of the lever will disengage them. During either operation the spur-wheel I will be in mesh with the pinion J. The shaft K is provided with cranks so arranged that in its rotation, communicated thereto from the traction-wheels through the axle and the intermediate train of gears already described, it will present but one or two of the tedder-forks hereinafter described to the hay at the same instant, and as these forks pick up their proportion of the hay another one is brought into action, and so on. In order to do this, and to give very much the same motion to the forks as is given by the hands of the workman using the ordinary hand-fork, these forks are each provided with a handle or arm, L, which is secured to a box, as shown in Figs. 1 and 2, each of said boxes running upon its own particular crank. The upper ends of these arms are bifurcated, as shown, and embrace the rod F, which acts as a guide and leverage rod, and compels the forks to describe the same motion as though they were being used by hand in picking up and throwing the hay into the air. Through the lower end of each of these arms is inserted a pin, *a*, upon which are coiled two spiral springs of the fork M, the portion which connects the two spirals embracing the front of the arm, and secured to it by a staple, *b*, or other suitable device, while the free ends of the springs form the fork. The great elasticity of the fork constructed in this way will prevent any liability of the machine being broken by any one of the forks coming in contact with a stone, log, or other impediment, which, if the forks were rigid, would cause the machine to break rather than lift the impediment.

N is a lever of the usual construction, and provided with a latch, *c*, which engages with the notched locking-segment *d*. The lower end of this lever is connected by means of a rod, O, to the rock-shaft, upon which the wheels H I rotate, in order to throw the pin-

ion H into or out of gear with the spur-wheel G, at the will of the operator upon the seat P, as hereinbefore described.

R is a draft-frame, the rear ends of which are, by means of suitable boxes and straps, S, sleeved upon the axle A, and to this latter frame the draft is applied through the whiffletree T and the usual hammer-link, U. To one of the cross-bars of this latter frame there is secured a slotted plate, V, through which passes the notched arm W, the lower end of said arm being pivoted in a box, *w*, attached to the first-described frame D, and terminating at its upper end in a hand-hold, W′, so that the tilting of the lower frame which carries the forks is obtained by pushing forward and down upon this arm and engaging one of its notches with a bolt, *e*, which passes through the rear end of the slotted plate, a spring, *w′*, attached to said box and bearing on the notched arm W, serving to keep it in engagement with the bolt *e*. By disengaging this arm and drawing up upon it, the position of the lower frame may be adjusted. The object of this tilting is to raise the forks by tilting the forward end of the frame down, so that the device can be driven from one point to another without damage.

What I claim as my invention is—

1. In a hay-tedder, a solid revolving axle, A, a spur-wheel, G, secured thereon, the rock-shaft H′, having the eccentric-bearing J′, a pinion, H, rotating on said bearing J′, and adapted to engage with said wheel G, the spur-wheel I, also carried by said eccentric-bearing J′, and the crank-shaft K, provided with the pinion J, engaging with said wheel I, substantially as and for the purpose specified.

2. In a hay-tedder, the combination of the crank-shaft K, provided with a pinion, the driving-axle A, having a gear-wheel, the eccentric J′, the intermediate gearing carried by said eccentric, the lever N, and connecting-rod O, substantially as and for the purpose described.

3. In a hay-tedder, the combination, with the draft-frame R, main frame D, fork-arms, and driving mechanism supported by said main frame, of the notched arm W, its lower end pivoted in a box, *w*, attached to the frame D, and its upper end terminating in a hand-hold, W′, slotted guide-plate V, secured to the frame R, bolt *e*, passing through the rear end of said slotted plate, and a spring, *w′*, secured within said box, and constructed to bear against said arm W, substantially as and for the purpose specified.

GEORGE A. WOODFORD.

Witnesses:
H. S. SPRAGUE,
E. SCULLY.