(No Model.)

2 Sheets—Sheet 1.

R. G. UTTER.

HAY TEDDER.

No. 370,169. Patented Sept. 20, 1887.

Fig. 1.

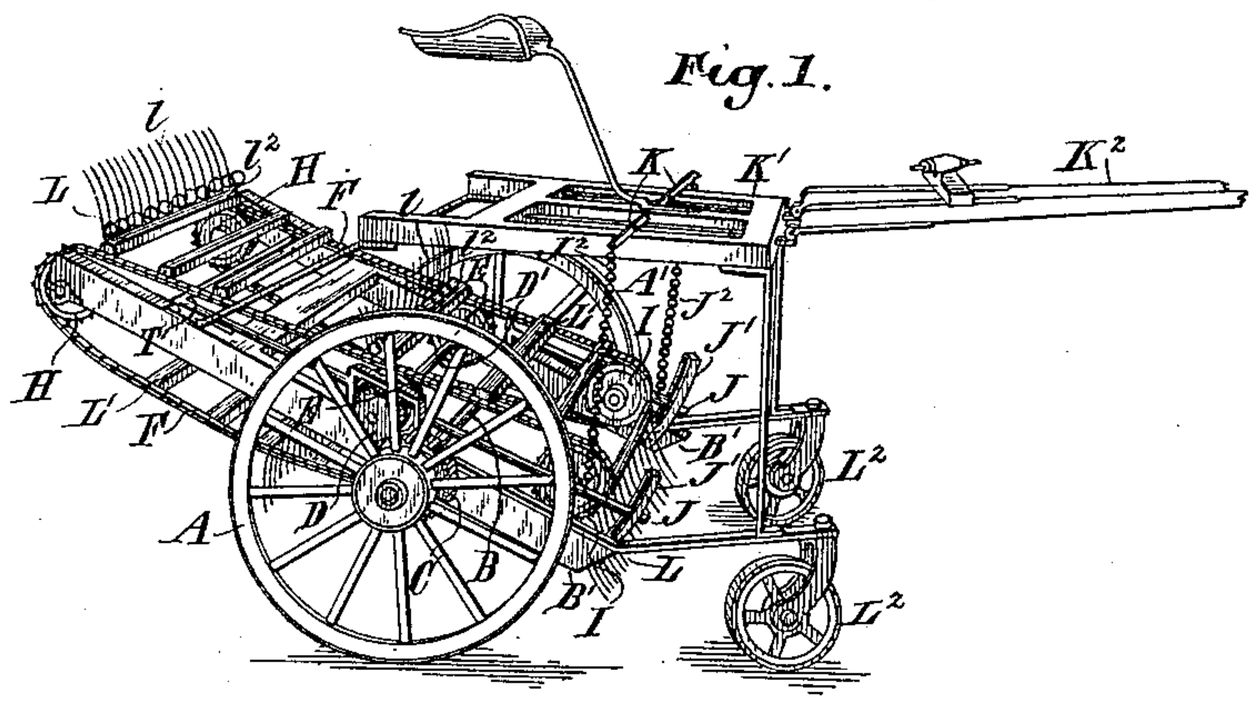


Fig. 2.

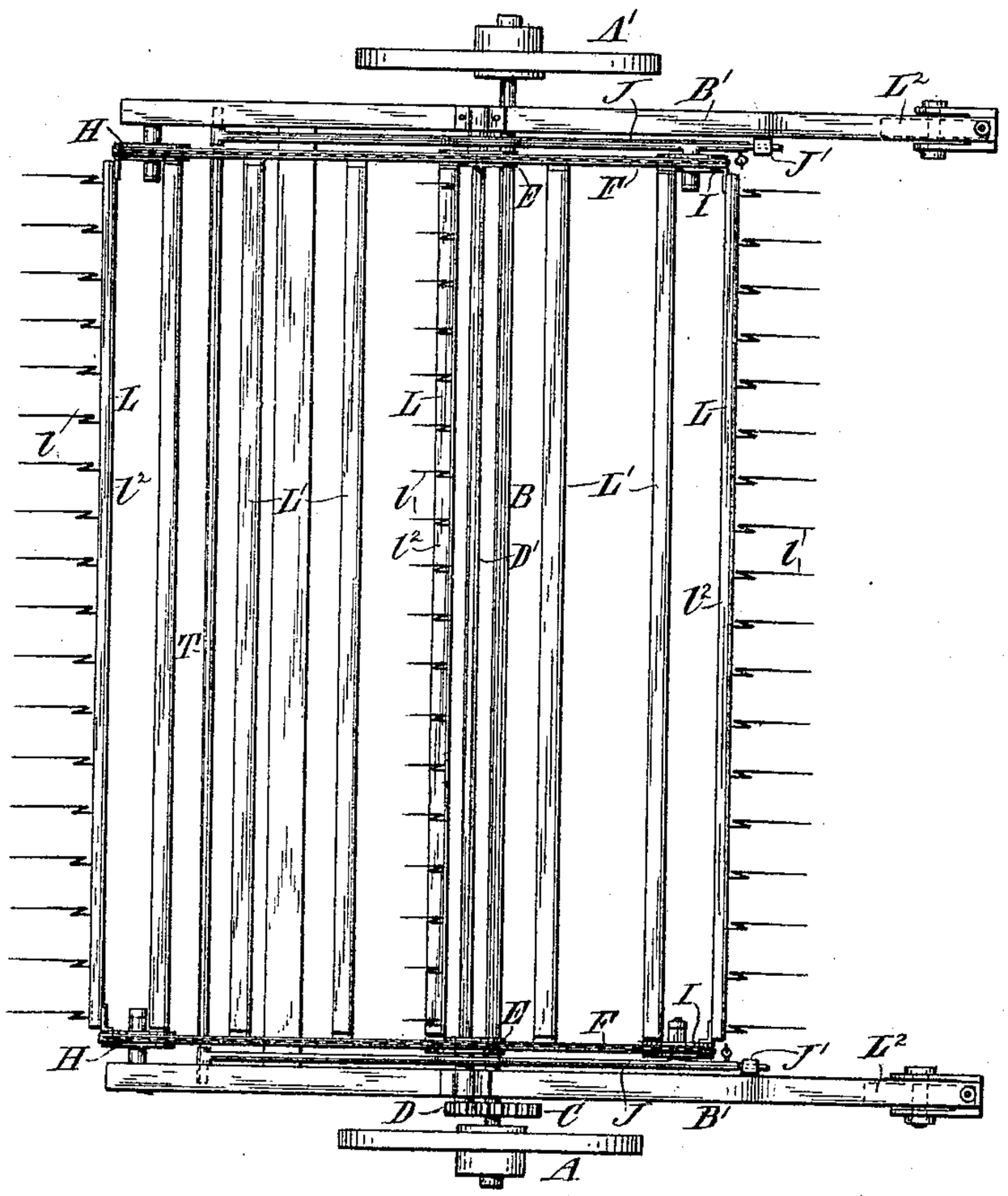
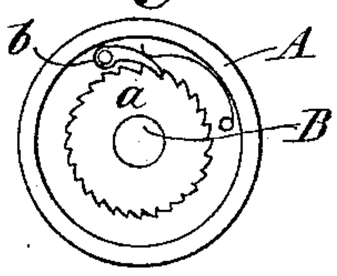


Fig. 3.



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(No Model.)

2 Sheets—Sheet 2.

R. G. UTTER.

HAY TEDDER.

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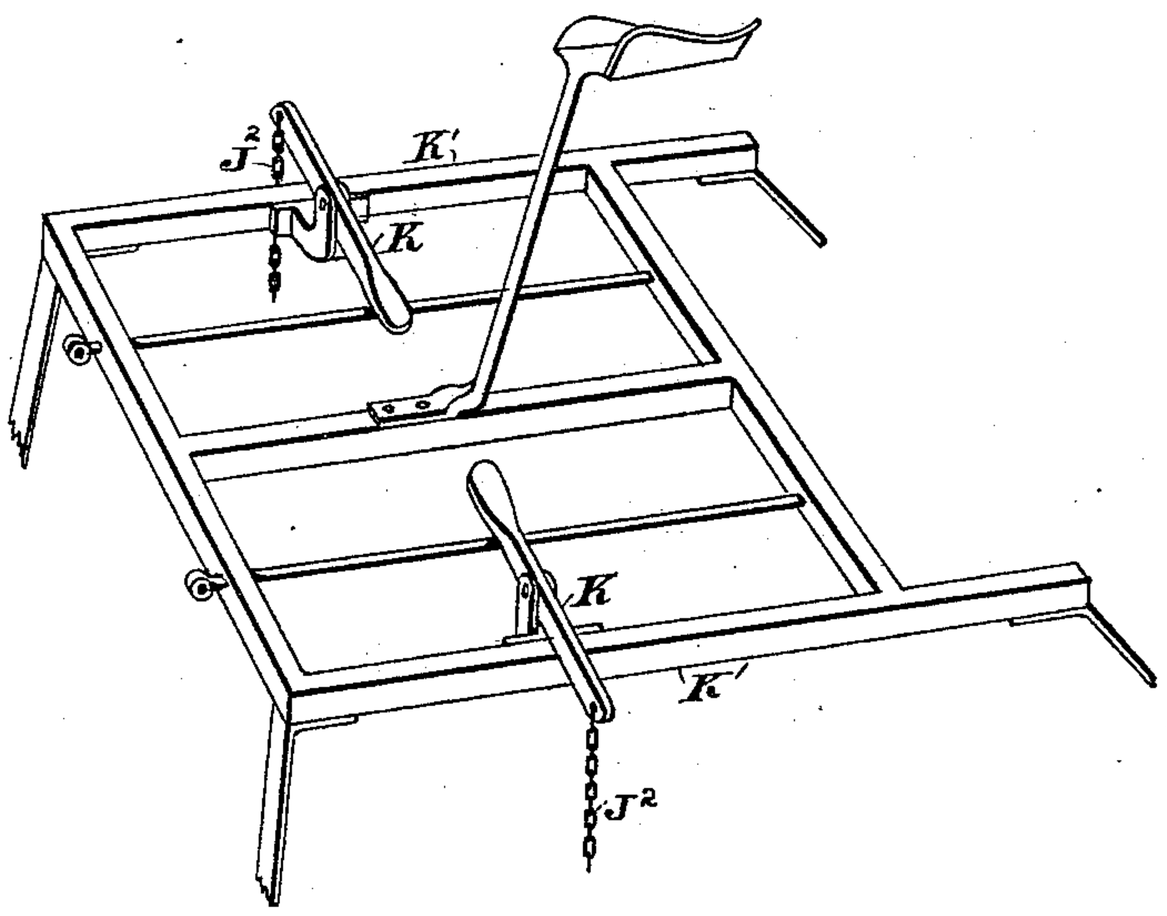
Fig. 4.



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UNITED STATES PATENT OFFICE.

RALPH G. UTTER, OF FRIENDSHIP, NEW YORK.

HAY-TEDDER.

SPECIFICATION forming part of Letters Patent No. 370,169, dated September 20, 1887.

Application filed July 24, 1886. Serial No. 208,925. (No model.)

To all whom it may concern:

Be it known that I, RALPH G. UTTER, of Friendship, county of Allegany, and State of New York, have invented a certain new and useful Improvement in Hay-Tedders, of which the following is a specification.

My invention relates to machines for tedding hay which are operated by horse-power.

I will describe in detail my improved hay-tedder, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a perspective side elevation of a hay-tedder embodying my improvement. Fig. 2 is a plan or top view of the same, a portion of the frame being removed to more clearly disclose certain parts. Fig. 3 is a detail view. Fig. 4 is a perspective view of a portion of the frame of the machine, and showing the arrangement of certain levers employed in the machine.

Similar letters of reference designate corresponding parts in all the figures.

A A′ designate the main wheels of the machine, mounted loosely upon an axle, B, journaled in suitable bearings in side pieces, B′, of the main frame of the machine. These wheels act as drive-wheels for the machine. The hubs of these wheels are recessed upon their outer sides to afford space for ratchet-wheels *a*, rigidly affixed to the ends of the axle B. Spring-actuated pawls *b*, pivoted upon the hubs at the rear of said recesses, are adapted to engage the ratchets *a*. When the machine is moving forward, the pawls operate to lock the axle B and the wheels A A′ together, and they rotate together, thereby imparting motion to the tedding mechanism, as hereinafter to be more fully described. When the machine is moving backward, the pawls play freely over the teeth of the ratchet-wheels and no motion is imparted to the axle B.

Upon the axle B, adjacent to one of the wheels, (here shown as the wheel A,) is mounted a gear-wheel, C. This gear-wheel meshes with a pinion, D, keyed to one end of a shaft, D′, journaled in suitable bearings in the side pieces, B′, of the main frame. The pinion D is, as shown, outside the adjacent side piece, B′. Inward of the side pieces, B′, sprocket-wheels E are keyed upon the shaft D′. Motion transmitted to the pinion D causes the sprocket-wheels E to rotate in a reverse direction to the direction of rotation of the wheels A A′.

The sprocket-wheels E impart motion to an endless carrier by means of chains F, comprised in the carrier. As here shown, these chains pass over sprocket-wheels H, mounted upon studs affixed to the side-pieces, B′, near the extreme rear of the main frame. Near the front of the main frame are other idler sprocket-wheels, I, around which the chains F also pass. These wheels I are mounted upon studs journaled in bearings near one of the ends of bars J, these bars, loosely connected at their rear ends to a shaft, T, extending between the side pieces, B′, and may swing up and down thereon. This arrangement admits of the forward end of the carrier being lifted up and down upon one side alone or upon both sides together, as desirable. The carrier may also accommodate itself in this way to unevenness of ground over which the machine passes. The forward end of the carrier is guided in its up-and-down movements by guides J′, extending upwardly from the side pieces, B′, of the frame, and which are slotted to receive the ends of the bars J.

J^2 designates chains, secured at one of their ends to the bars J and at the other of their ends to levers K, fulcrumed upon a frame, K′, comprised in the machine, and affording support for a driver's seat. The levers, as shown, may be operated by the feet of the driver of the tedder, who, by placing his feet upon the inner ends of the levers, may depress them, and thus cause the elevation of the chains J^2, and consequently of the bars J. Of course it will be understood that either of the bars J may be thus elevated independently of the other. By operating the levers K the bars J, and consequently either or both sides of the endless carrier, may be raised and lowered by the driver. The frame K′ has attached to it shafts K^2 for a horse; but these shafts may as well be secured in any other suitable manner or position.

The endless carrier comprises a series of rakes, L, and cross-slats L′. The rakes L consist of a series of fingers, *l*, affixed to bars l^2, extending between and secured to the chains F. The cross-slats L′ also extend between the chains, and will catch hay which may fall down from the rakes as the carrier

travels backwardly. Any desired number of the rakes and slats may be employed. The fingers *l* are longitudinally curved in such manner that when brought foward upon the under side of the machine and close to the ground they will gather up the hay.

By my improvement the hay is taken up in front, leaving the ground clean, and is then carried upward and backward and dropped from the rear of the machine in such manner that it is turned completely over, and will be left in a light loose condition conducive to drying and curing. It will also be seen that the machine may be easily turned either way and run backward without reversing the direction of movement of the carrier and causing hay already on the carrier to be again thrown down in front of the machine.

I have shown caster-wheels L^2, mounted in suitable brackets secured to the frame K′ and arranged at the front of the machine.

I have filed an application for United States Letters Patent for improvement in hay-tedders, Serial No. 232,478, March 26, 1887. In said application I show and describe a hay-tedder comprising the combination of driving-wheels, a shaft on which said wheels are mounted, a gear-wheel on said shaft, a second shaft, a gear-wheel on said second shaft deriving motion from the gear-wheel first named, a sprocket-wheel on said second shaft a third shaft also having a sprocket-wheel mounted thereon, a sprocket-chain extending about these two sprocket-wheels, other sprocket-wheels mounted on said third-named shaft, an endless carrier, other sprocket-chains comprised in the endless carrier passing around said last-mentioned sprocket-wheels, swinging bars hung upon said third-named shaft near one of their ends, and sprocket-wheels around which said last-named sprocket-chains pass, mounted on said swinging bars near their other ends. In said application I also show means for elevating said swinging bars, consisting of a single lever and a single rocking bar to which said lever is rigidly secured, cranks on the rocking bar near its ends, and rods connecting the cranks with the swinging bars. I do not herein lay claim to either of the foregoing arrangements and combinations of parts specifically.

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

1. The combination, with driving-wheels, of an axle upon which said driving-wheels are mounted, an endless carrier, sprocket-wheels for transmitting motion to said endless carrier, gearing for transmitting motion from said axle to the sprocket-wheels, sprocket-chains comprised in said carrier, sprocket-wheels mounted upon stud-axles at the rear of the driving sprocket-wheels, over which said chains pass, independently-swinging bars, sprocket-wheels mounted in said swinging bars at or near the forward ends thereof, over which said chains also pass, and mechanism, substantially such as described, for imparting vertical movement to the said swinging bars, substantially as specified.

2. The combination, with an endless carrier comprising chains, of wheels over which said chains pass, certain of said wheels being mounted in swinging bars which are independent of each other, and levers whereby either of said bars may be swung up or down independently of the other, substantially as specified.

RALPH G. UTTER.

Witnesses:
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