W. F. GOODWIN.
Hay-Tedder.

No. 197,118. Patented Nov. 13, 1877.

Fig. 1.

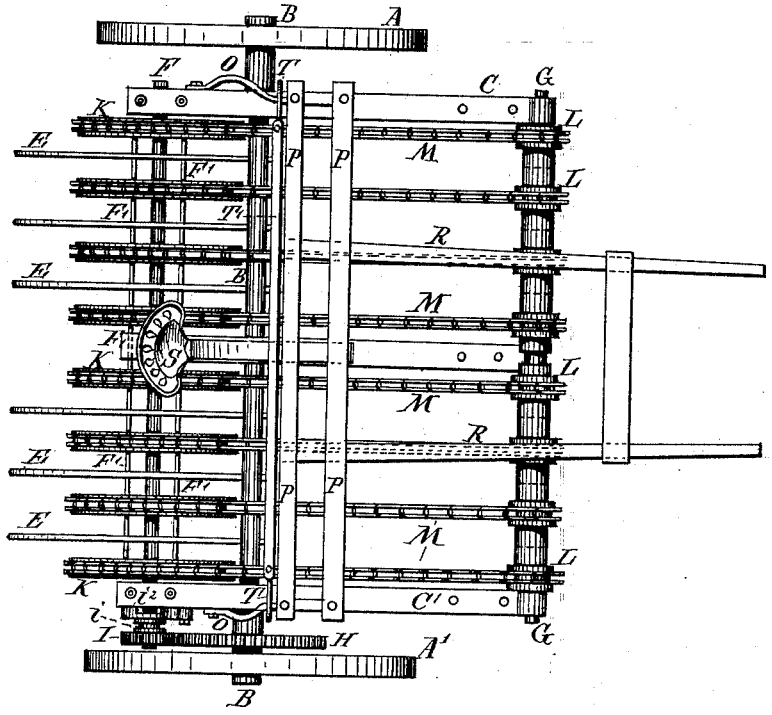


Fig. 3.

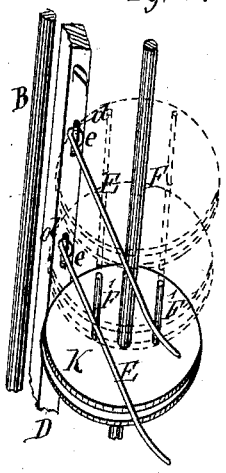
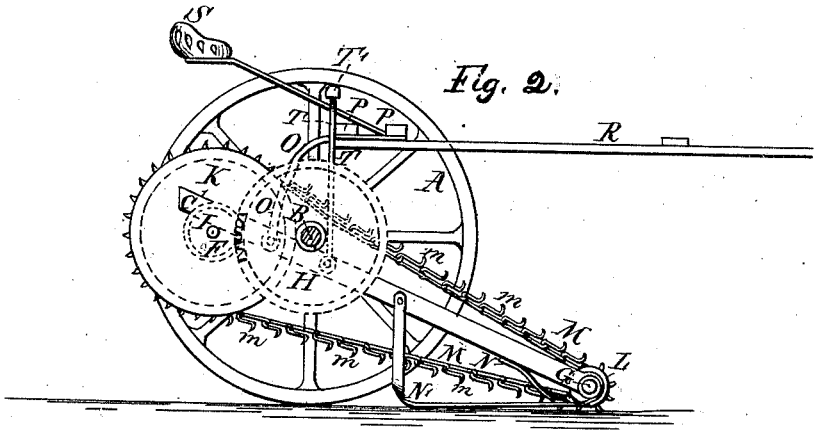


Fig. 2.



Witnesses.
Henry Orth
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UNITED STATES PATENT OFFICE.

WILLIAM F. GOODWIN, OF STELTON, NEW JERSEY.

IMPROVEMENT IN HAY-TEDDERS.

Specification forming part of Letters Patent No. **197,118**, dated November 13, 1877; application filed February 9, 1877.

To all whom it may concern:

Be it known that I, WILLIAM FARR GOODWIN, of Stelton, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Hay-Tedders; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in hay-tedders; and it consists in combining with an endless elevating apparatus a series of constantly-vibrating tedder-arms, for the purpose of spreading and stirring the hay, and, further, in so attaching the tedder-frame to the draft-frame that the position of said tedder-frame shall be determined by the direction of the draft.

Figure 1 is a top-plan view of my improved tedder. Fig. 2 is a side elevation, one of the driving-wheels being removed; and Fig. 3, a detached view, showing one method of attaching the tedding-arms to the cross-beam.

In the drawings, A A′ are the driving-wheels, mounted upon the axle B. C C′ are the cross-girts of the tedding-frame, mounted loosely upon the axle B, and at right angles thereto. D is a beam or joist connecting the girts C C′.

To the rear side of the joist D the tedding-arms may be attached, as shown in Fig. 3, by means of staples *d* and links *e*. At their upper or inner ends the girts C C′ provide bearings for a shaft, F, which carries the rear reels for actuating the pick-up chains. At their front ends the girts C C furnish bearings for a shaft, G, upon which revolve the front spools or reels.

Between the driving-wheel A′ and the tedder-frame the cogged wheel H is mounted rigidly upon the axle B. This cog-wheel H meshes with a pinion, I, upon the shaft F, by which gearing said shaft is caused to revolve. I have shown in Fig. 1 one of the methods which may be employed to throw the tedder-reels out of gear. The pinion I is so attached to the shaft F that it can be moved inward sufficiently far to avoid meshing with the wheel H. Pinion I is provided also with a spool or sleeve, *i*, on its inner face, which, in combination with a dog or pawl, i^2, pivoted to the girt C′, enables me to hold the pinion either in or out of gear, at pleasure.

Mounted upon and rigidly attached to the shaft F are the larger rear chain reels or pulleys K K, provided with grooves to guide the chains. Between each consecutive pair of these pulleys one of the tedding-arms E extends backward above the shaft F.

In order to give the required vibrating motion to these arms, the pulleys K K may be connected by tumbling-rods F′ F′, which alternately raise and drop the tedder-arms as the pulleys revolve.

The tedder-arms may be curved downward near their centers, so that they shall be long enough for their office, and yet not interfere with the delivery of the hay, nor be thrown over the pulleys.

It will be seen that these arms are not essential to the raising and spreading of the hay, but may be employed, if desired, to assist in the same.

L L are the front or lower pulleys, mounted upon the shaft G. These pulleys L guide the pick-up chains along the ground. In the construction shown in full lines in Fig. 1 these pulleys L are rigidly attached to two sleeves mounted loosely upon shaft G; but, if preferred, each pulley may be so constructed as to rotate upon the shaft independently of the others, as shown in dotted lines in Fig. 1.

M M are the endless pick-up chains, of which any desired number may be mounted upon the above-described frame.

In Fig. 2 I have shown one of the methods which may be employed for constructing the links in the endless chains. Each link, after being looped with the next, has its ends bent back and upward, so as to form outwardly-projecting prongs or hooks *m*, which pick up the hay and carry it over the pulleys L backward to the pulleys K.

As these chains M have no rigid connection with each other, it is apparent that, should the motion of either chain be interfered with by any slight obstruction, such chain could be stopped in its revolution without seriously affecting the work of the other chains.

N is a shoe, attached to the under surface of the lower end of each of the girts C. This shoe permits the front end of the tedding-frame to slide freely along the ground, and prevents the pulleys L and the chain M from being caught and clogged in the soil.

A supplementary shoe, N′, may be employed to give a longer sliding support to the frame.

The draft-frame for the machine may be constructed and attached as follows: O O are arms, attached to the girts C C′ behind the axle B. They are forwardly curved, and furnish support for the draft-frame. This frame consists of the cross-pieces P P and the thill-pieces R R. The operator's seat S, of the usual construction, is attached to the cross-pieces P. T T are perpendicular arms, pivoted to the girts C in front of the axle B. They support a bar, T′, which gives a rest for the operator's foot.

It will be seen that, as the draft-frame is pivoted behind the axle, the front pulleys L will be held to the ground when the draft is forward; but when it is backward, or when the machine is turning, said pulleys are raised.

The operation of my improved tedder will be readily understood from the drawings and description.

Unlike the ordinary constructions, which in tossing the hay also throw up dust and stones, it moves easily and smoothly over the field, picks up the hay clearly, carries it over the pulleys, and drops it thoroughly shaken.

I do not confine myself to the particular features of construction that have been described in detail; but

What I claim is—

1. In a hay-tedder, in combination with an endless elevating apparatus, a series of vibrating tedder-arms, substantially as set forth.

2. In a hay-tedder, the combination, with an endless elevating apparatus, of a draft mechanism, arranged as described, so that the position of the tedder-frame is determined by the direction of the draft, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WM. FARR GOODWIN.

Witnesses:
M. P. CALLAN,
H. H. BLISS.