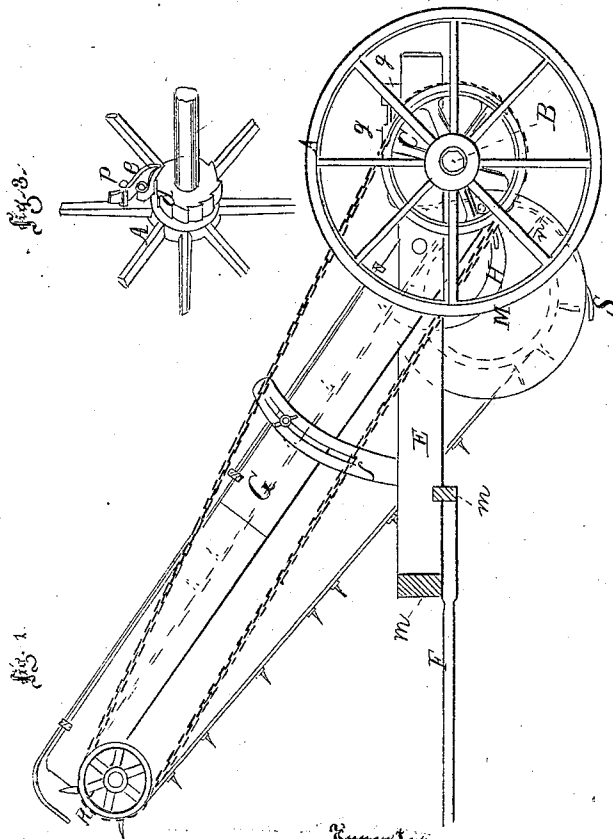
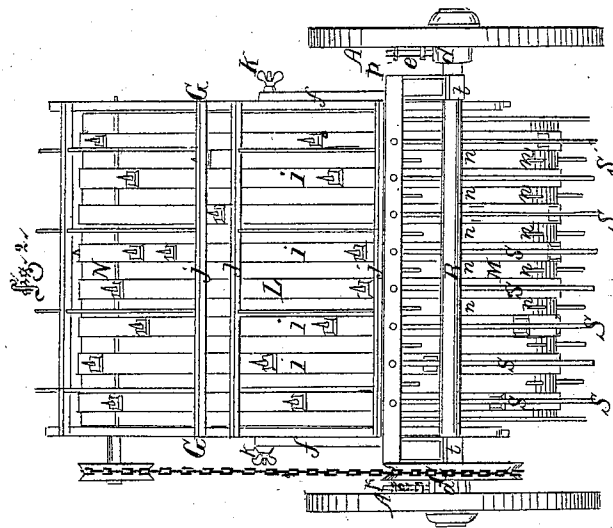


*S. K. Morse,
Hay Loader.*

No. 77,641.

Patented May 5, 1868



*Witnesses:
J. A. Ellis
J. M. Miller*

*Inventor:
S. K. Morse by J. H. Alexander, att*

United States Patent Office.

SAMUEL K. MORSE, OF COMMERCE, MICHIGAN.

Letters Patent No. 77,641, dated May 5, 1868.

IMPROVEMENT IN HAY-RAKERS AND LOADERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL K. MORSE, of Commerce, in the county of Oakland, and State of Michigan, have invented certain new and useful Improvements in Revolving Hay-Rake and Loader; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a side elevation,

Figure 2 a plan, and

Figure 3 a view of the inner side of one of the wheels of my invention.

The nature of my invention consists in the construction of a machine for raking up hay and conveying it into the body of the wagon.

To enable others skilled in the art to make and use my invention, I will now describe its construction and operation.

A A represent the wheels, and B a cylindrical iron axle. *dd* designate two ratchet-wheels, one of which is fastened to each end of the axle B, and inside of wheels A A. *ee* represent two pawls, designed to act on said ratchets. The pawls *ee* are pivoted to a spoke near the hubs of wheels A A, and at their outer ends rest on pins *p* in their respective spokes, some distance from the hubs of wheels A A. C represents a pulley, placed on the axle B, and near to one of the ratchet-wheels *d*. E represents a frame, resting, near its hinder end, on axle B, and secured to said axle by means of metal bearings *tt*. The frame E, at its rear, is furnished with cross-bars *gg*, through which the horizontal portion of the rake-teeth S are made to pass, the said teeth being made to curve downwards underneath the cylinder M, as seen in fig. 1. The front of frame E is supplied with two cross-ties *m*, to which a short tongue, F, is attached, for attaching the machine to a wagon. M represents a wooden cylinder placed in front of axle B, and furnished with several horizontal rows of teeth, *n*, the object of which will be seen hereafter. The cylinder M is pivoted at its ends in the semicircular metal plates H H, the said plates being adjusted to the side-pieces G of the belt-frame. The side-pieces G, it will be seen, are pivoted within frame E. *ff* represent two curved standards, with slots in them to receive bolts *k*, each bolt being furnished with a nut, by which the outer end of side-pieces G, and belts *i*, can be elevated or lowered to suit the height of the wagon to be used. N designates a cylinder, which is pivoted to the upper end of the side-pieces G, and to their under sides. *i* designates a series of belts, embracing the cylinders M and N. Each of said belts is furnished with a number of teeth, designed to prevent the hay from falling back when on the belts. Immediately below the belts *i* is the platform L, which is designed to support the belts when the pressure of the hay is upon them. In order to give motion to the belts *i*, the pulley R is attached to the end of cylinder N, and a band extends from said pulley to the pulley C, on axle B. That the hay when on the belts *i* may be compressed to a certain degree, and thus made more manageable, the lateral ties *j* are fastened to the upper edge of the side-pieces G, and wire extended from one cross-tie to another, at a suitable distance apart. It will be remarked that the side-pieces G are hinged near their centre, so that they can be folded back when required.

The operation of my machine is as follows: The belts *i*, being adjusted to the required angle by means of the bolts in standards *ff*, the machine will be put in motion. The motion of the wheels A A is imparted to the axle B by the action of the pawls, one end of which rests on the ratchets on the axle, the other ends resting on pins *p*. The motion of the axle B gives motion to pulley C, and pulley C operates on pulley R. As pulley R revolves, it will revolve the cylinder M, by means of the belts which embrace both of the pulleys C and R. As the machine advances, the hay will be taken up by the curved ends of teeth S, and, by the reverse motion of the teeth on cylinder M, will be brought around to the top of the cylinder, and of the belts *i*, and by the belts conveyed over cylinder N, and then falls into the wagon or hay-ladders ready to receive it.

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

The slotted semicircular plates H H, and curved standards *ff*, by means of which the belt-frame is adjusted to any desired elevation, as described.

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

SAMUEL K. MORSE.

Witnesses:

A. W. BURT,

HORACE M. KEITH.