

Sheet 1.  
2 Sheets.

*M. D. Myers.*  
*Horse Hay Fork.*  
*Nº 46814*      *Patented Mar. 14, 1865.*

Fig. 3.

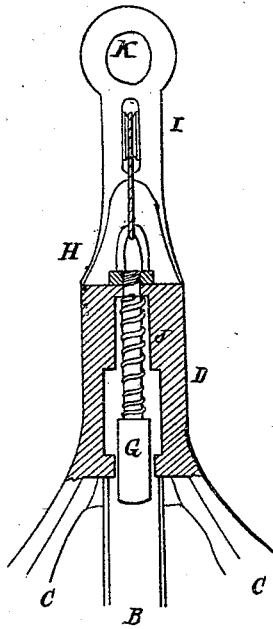
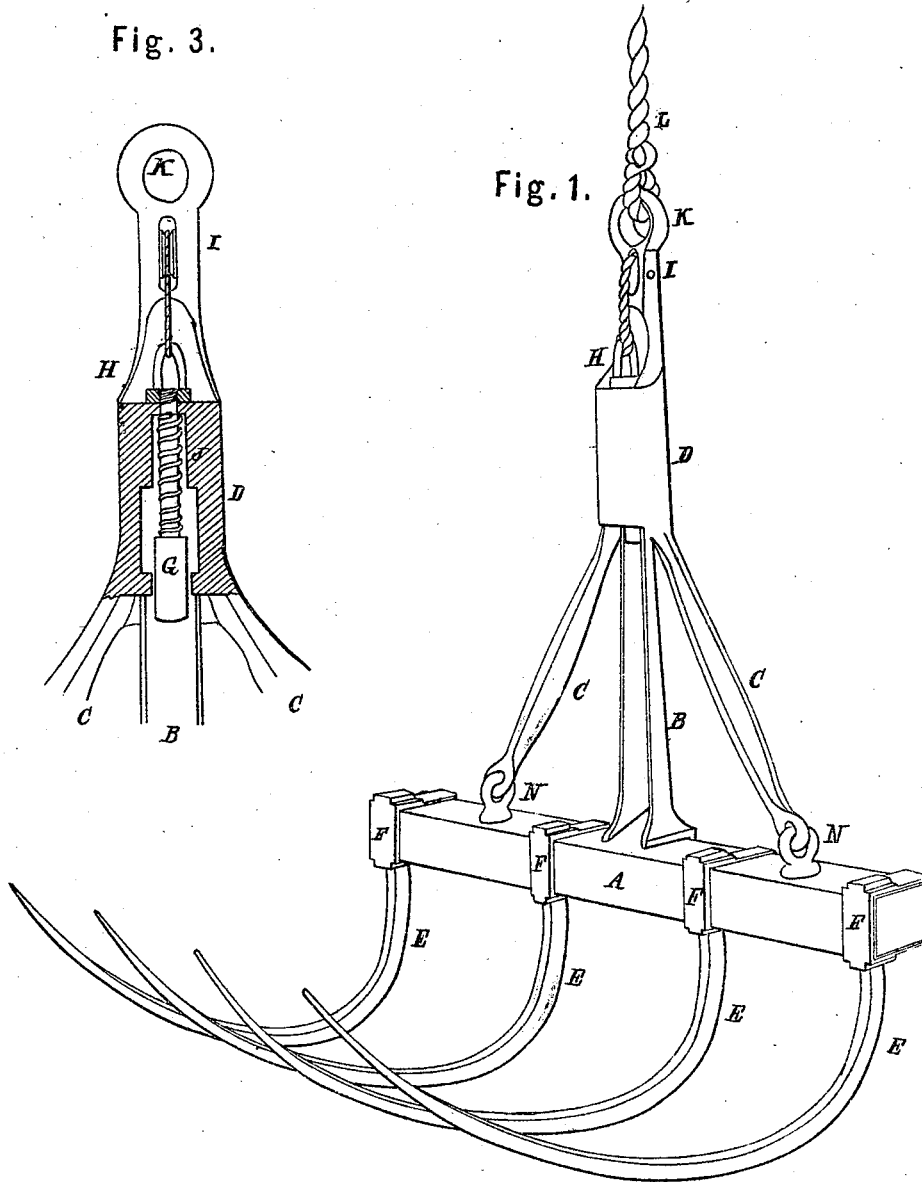


Fig. 1.



Witnesses.

*H. H. Hingham,*  
*A. J. Wagner*

Inventor.

*M. D. Myers*

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*Horse Hay Fork.*

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Fig. 4.

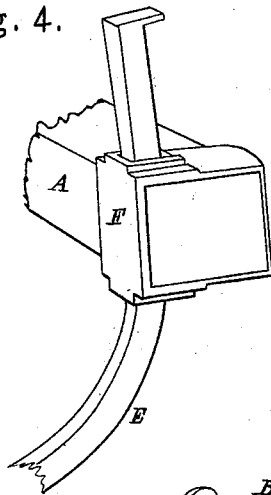
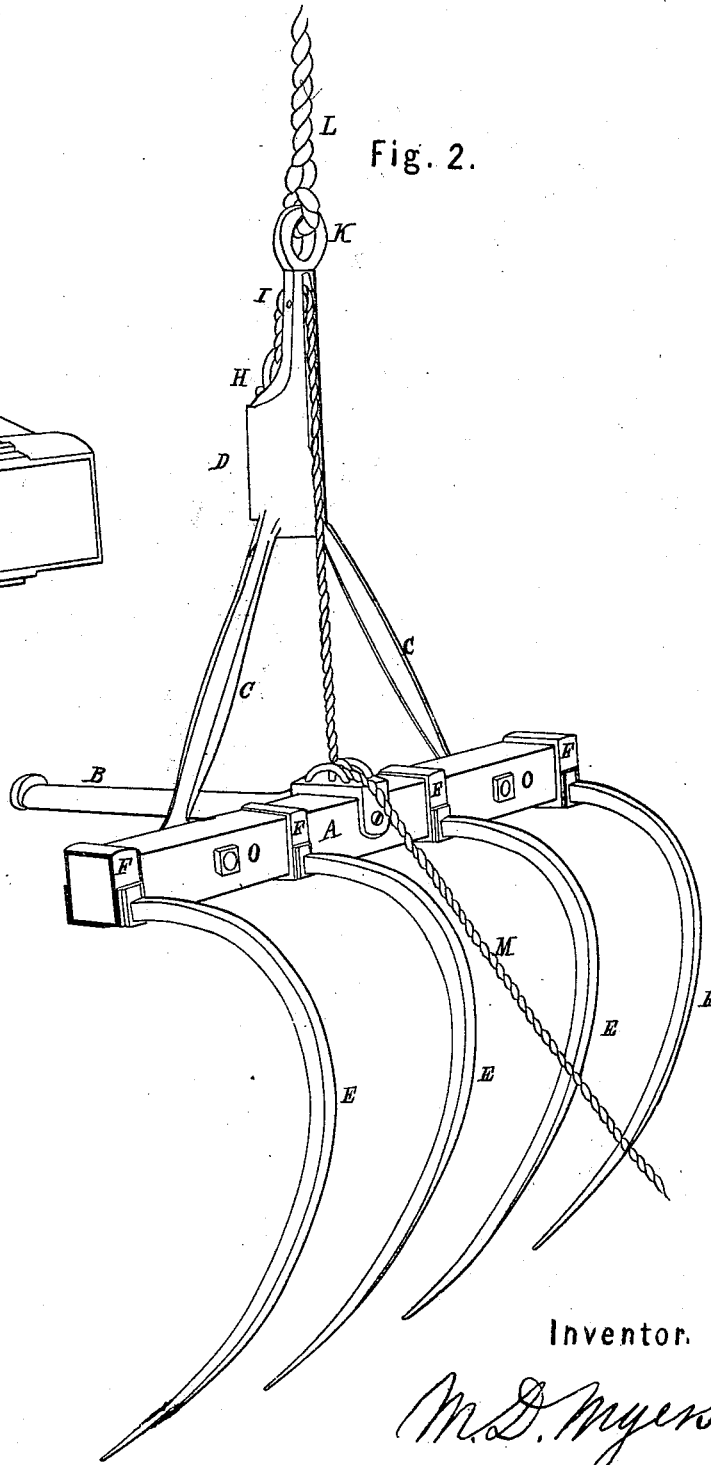


Fig. 2.



Witnesses.

*A. H. Angham*  
*A. J. Wagner*

Inventor.

*M. D. Myers*

# UNITED STATES PATENT OFFICE.

M. D. MYERS, OF ILION, NEW YORK.

## IMPROVEMENT IN HORSE HAY-FORKS.

Specification forming part of Letters Patent No. 46,814, dated March 14, 1865.

### *To all whom it may concern:*

Be it known that I, M. D. MYERS, of Ilion, in the county of Herkimer and State of New York, have invented new and useful Improvements in Hay-Elevators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Similar letters indicate the same devices in all the figures.

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

The nature of my invention consists in placing a spring-bolt within the crotch of the bail of a hay-elevator.

Figure 1 is a view showing the position of my elevator while passing to the mow with its load. Fig. 2 is a view showing its position while discharging its load. Fig. 3 is a view showing my improvements for unlocking or discharging. Fig. 4 shows my improvements in the tooth and band.

A is the head; B, the tongue; C, the bail; D, the crotch of the bail; E, the teeth; F, the bands; G, the spring-bolt; H, the swivel-nut to which the tripping-cord M is attached; I, the pulley over which the tripping-cord passes; J, the spring for operating the spring-bolt; K, the point of attachment for the elevating-rope; L, the elevating-rope; M, the tripping rope or cord; N, eyebolt by which the bail is attached to the head; O, nut by which the eyebolt is secured after passing through the head.

I construct my hay-elevator in the following manner: A suitable piece of timber is worked to the proper size, so that the bands will fit well on all sides except the side where the slots are made and the teeth are inserted, upon which side it is not absolutely necessary that the bands should fit tightly to the head. The head is then slotted for the reception of the teeth and the two center-bands driven on their proper places. Holes are then made in the head for the reception of the eyebolt N, which is secured firmly with a nut on the side of the head opposite to the eye. The bail C is then hooked into the eyes and the eyes closed. The bail, crotch of the bail, and all that portion above the crotch is cast in one piece of malleable iron. The chamber for the reception of the spring-bolt being cast upon a core of suitable

shape, little remains to prepare it for receiving the bolt and its spring. This I accomplish by inserting a reamer in the large opening of the bolt-chamber and another of suitable size in the small or upper opening. The spring-bolt is forged or cast of malleable iron and turned to a suitable size in a lathe and a thread cut on the small end. A spiral spring of suitable size and length is then placed upon the small part of the bolt, and the bolt is then inserted in its chamber at the large end, and the swivel-nut H screwed upon it. A small pulley, I, is then placed in a slot just below the point of attachment K and secured with a pin. The tripping-rope M is then attached to the swivel-nut, then passed through the slot over the pulley I. The tongue B, which is also cast in the proper shape, is firmly secured to the head by means of screws or bolts, and the tripping-rope M is finally passed through a small hole made through the band portion of the tongue where it is attached to the head. A small slot is also cut under the band portion of the tongue in the head, to allow the rope M to pass freely. The end bands, F, (which, together with the center bands, are cast of malleable iron,) are next driven firmly onto the head A and the teeth E driven firmly into the bands F, passing through the slots in the head.

I operate my hay-elevator as follows: At the point of attachment K, I secure a large rope, which I pass through a tackle attached to the rafters over the mow or place where the hay or grain is to be deposited and another tackle attached to the floor in the doorway of the barn. The rope L is then passed over the pulleys of the tackles attached to the rafter and under the pulley of the tackle attached to the floor, and the horse, or whatever may be the power, is attached to the end of the rope at the door. The elevator is then thrust into the surface of the load of hay or grain and elevated to the mow, and the tripping-rope M slightly jerked and its load is discharged. This operation is repeated until the hay or grain is unloaded.

One great difficulty attending the operation of hay-elevators having external tripping devices or having their tripping device exposed is that they are very liable to be injured while passing from the load to the mow by coming in contact with beams and scaffolding, or dragged over the mow, and thus injured or broken.

Another great difficulty is that where a portion of the tripping-cord is concealed in such a manner that it cannot be got at to repair where it may have become broken without taking a portion of the elevator apart, a great hinderance and annoyance is experienced, perhaps at a time when a perfect operation of the elevator is most required to secure a valuable quantity of hay or grain from a coming storm. With my elevator no such difficulty is experienced, as the tripping device is entirely secure from injury, and if the rope should become worn out or broken it can readily be repaired in a short space of time. Still another difficulty is that when an elevator has stood or hung over a mow of hay for a few hours the head becomes swollen from the moisture arising from the sweating of the hay, which fills the bands to their utmost capacity. Now, when the head becomes dry again, it shrinks away from the bands, and thus they are left

loose on the head, which soon causes the teeth to work loose and thus derange the efficiency of the elevator. With my improved tooth and band this difficulty is also overcome, for when a head becomes shrunk the teeth can be withdrawn and a small piece of leather or other suitable packing put in the bottom of the slot in the head and the tooth again driven firmly to its place, which will bring the band firmly on the head.

I do not claim as my invention the use of a spring-bolt as a tripping device; but

What I do claim, and wish to secure by Letters Patent of the United States, is—

Placing the spring-bolt G or its equivalent within the crotch D, as and for the purpose specified.

M. D. MYERS.

Witnesses:

A. F. WAGNER,  
H. H. INGHAM.