Wm. Zimmerman,

Horse-Hay-Fork.

No. 76,029. Patented Mar. 24. 1868.

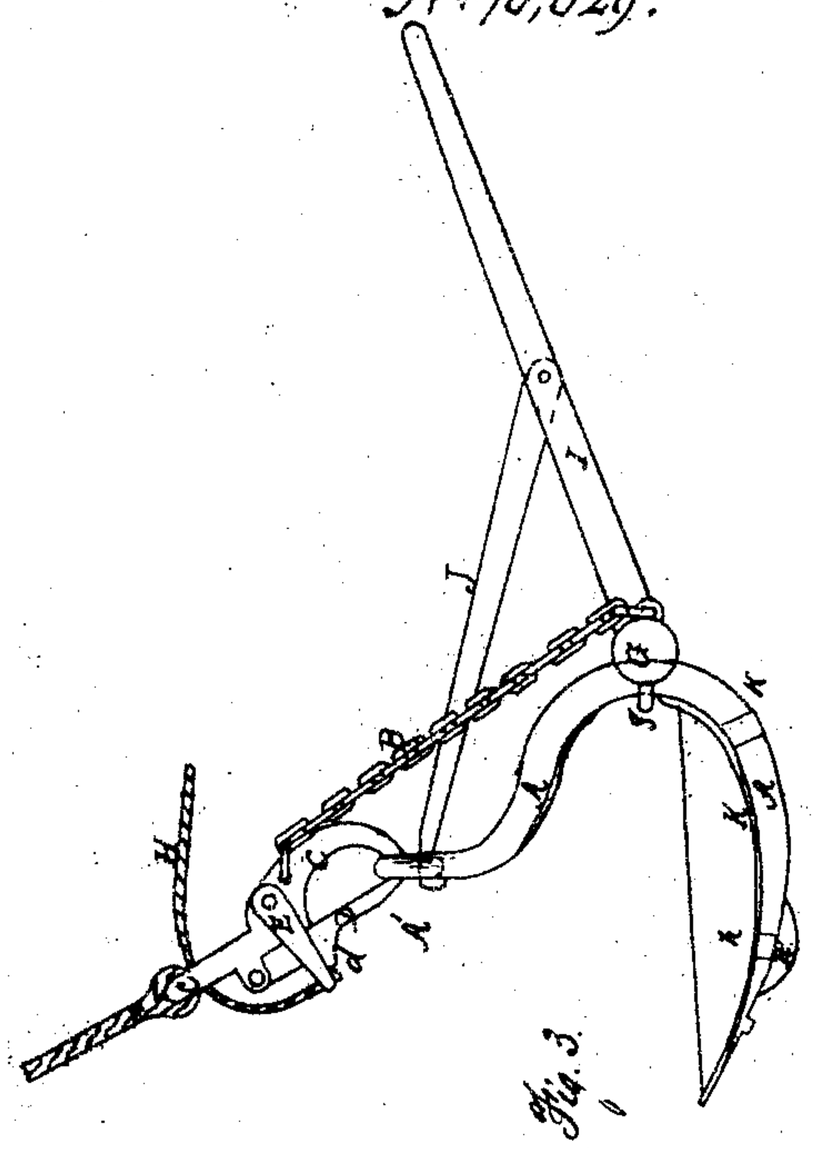

Fig. 3.

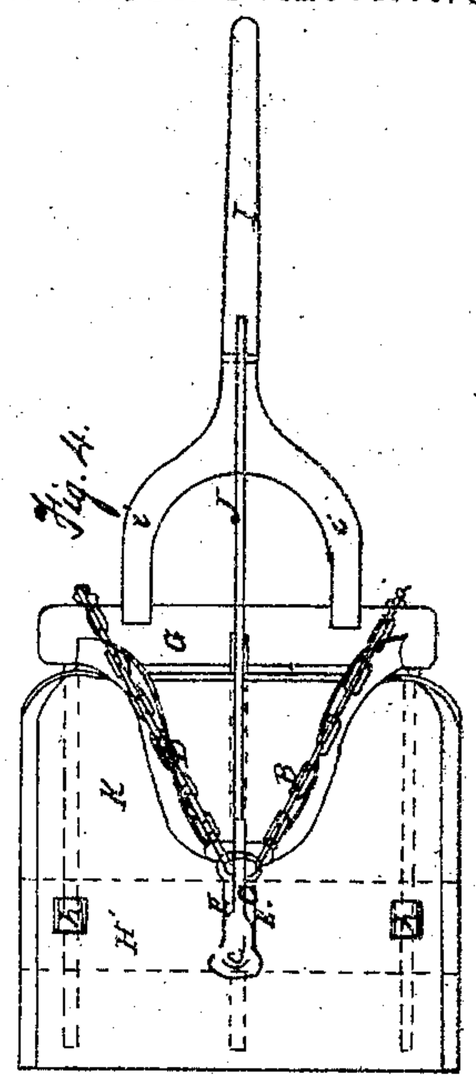

Fig. 4.

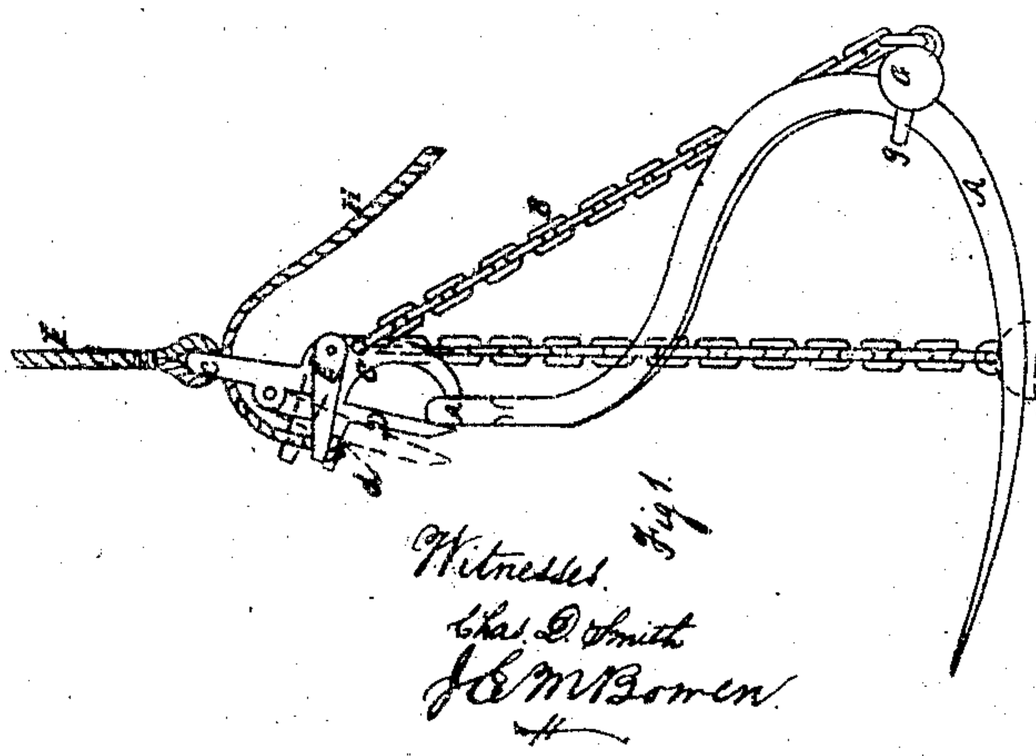

Fig. 1.

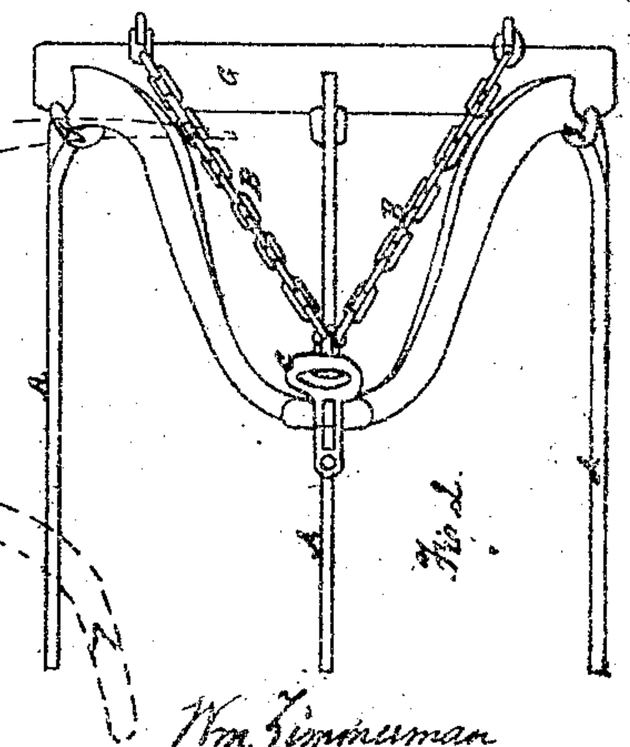

Fig. 2.

Witnesses.
Chas. D. Smith
J. E. M. Bowen

Wm. Zimmerman
By Knight Bros
Attorneys

United States Patent Office.

WILLIAM ZIMMERMAN, OF COLFAX, IOWA.

Letters Patent No. 76,029, *dated March* 24, 1868.

IMPROVEMENT IN HORSE HAY-FORKS.

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, WILLIAM ZIMMERMAN, of Colfax, in the county of Jasper, and State of Iowa, have invented a new and useful Horse Hay-Fork and Manure and Earth-Elevator; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which are made part of this specification.

The subject of my invention is a horse hay-fork, provided with a novel tripping or discharging-device, and also adapted for use in connection with certain novel accessories, hereinafter described, whereby the instrument may be transformed into a manure-loading scoop, or shovel for elevating earth.

Figure 1 is a side elevation of a hay-fork with my improved tripping or discharging-device applied.

Figure 2 is a plan of the same.

Figures 3 and 4 are similar views of the fork as transformed into a scoop or shovel for loading manure.

Similar letters of reference indicate corresponding parts in the several figures.

A A A may represent the tines of a hay-fork welded into a solid head, and provided with a ring, A′, at their joined converging extremities. G is a cross-bar, preferably round, connected to the tines A by means of staples *g g g*, which, passing through bar G from the front, so as to embrace the several tines, are riveted or otherwise firmly secured at the back of G. B represents a chain, attached at its opposite extremities to the bar G, and attached at its mid-length to a hook, C, by means of a bolt or otherwise. D is a latch, pivoted to the hook C, and E is a yoke or strap, also pivoted to C, and so applied as to embrace D. The hook C is formed with a ring, *c*, for the attachment of the rope F, by which the fork is raised and lowered.

In operation, the fork is held in position to sustain its load by the engagement of the hook C with the ring A′, the latter being held upon the hook by the latch D, which is held in contact with the extremity of hook C by means of the pivoted yoke E, which, in its depressed or detaining position, bears upon the bridge or shoulder *d* of latch D. H is a tripping-rope, attached to the free end of the yoke E, and running through a notch inside of the ring *c*. This rope being pulled by hand raises the yoke E off the shoulder *d*, and the latch D being thereby released, permits the ring A′ to slide off of the hook C. When released from the hook C, as above explained, the fork A performs a partial revolution about the bar or axis G, so as to completely discharge its load. The chain B is not concerned in sustaining the load while the hook C is engaged with the ring A′, but the moment the hook lets go, the very slight extension of which the chain B is susceptible causes the weight of the fork and its contents to devolve upon the said chain without subjecting the latter to any sudden jerking or jarring action. It is also manifest that no injurious action of this kind can occur when the fork reaches the position of rest indicated by the red lines in fig. 1, mainly by reason of the fact that the fork is divested of its load before it completes its revolving and downward movement.

In order to adapt the fork for the purposes of a manure-loader, I apply a bar, H′, (see figs. 3 and 4,) which serves to give rigidity to the tines, and to some extent prevents the manure from falling through the intervening spaces. This bar is furnished with staples *h h h*, which, by being slipped upon the tines, securely attach the bar in a position at right angles thereto, as represented.

When used as a manure-loader, the fork is drawn over the manure-pile horizontally by the elevating-rope F, as suggested by fig. 3 of the drawing, and a handle, I, with a hooked rod, J, enables the position of the fork to be controlled by the attendant, so as to make the fork scoop up its load without penetrating too deeply. The extremities of the arms of the handle I are formed with semicircular concavities, such as to partially embrace the bar G, against which the handle I is pressed, while the hook on the end of the rod J is hitched to the ring A′.

In the manure-loading operation, the discharging-device C D E is, of course, employed. The hook on rod J may be so constructed as to embrace the tines A at either side of the ring A′. K is a broad metallic scoop or blade, applied to the tines A by means of staples or loops *k*, in like manner to the bar H. This scoop gives to the fork more of the character of a shovel, adapting it to elevate manure and earth which may be too fine or loose to rest upon the tines H, even with the aid of the cross-bar H′. The red lines in figs. 3 and 4 indicate side-boards or pieces, which may be applied to the scoop K, if desirable.

Having thus described my invention, the following is what I claim as new, and desire to secure by Letters Patent:

1. I claim, in a hay or manure-elevator, the combination of the hook C, latch D, yoke E, chain B, and connecting-bar G, arranged substantially as and for the purpose set forth.

2. I claim the combination, with a horse hay-fork, of the transverse bar H′, applied and operating in the manner and for the purpose set forth.

3. I claim the combination, with a horse hay-fork, of the scoop or blade K, applied and operating substantially as described.

4. I claim the detachable handle I, and rod or brace J, in combination with a horse hay-fork, substantially as and for the purpose set forth.

WM. ZIMMERMAN.

Witnesses:

CHARLES C. BONNEY,

CHAS. W. GRIGGS.