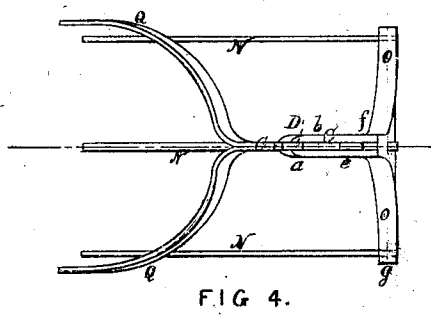
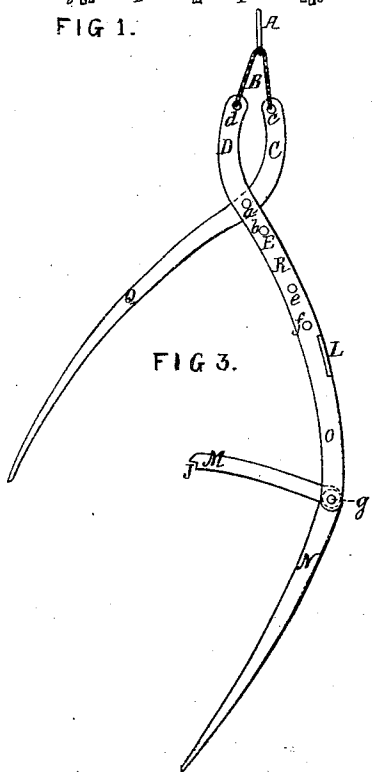
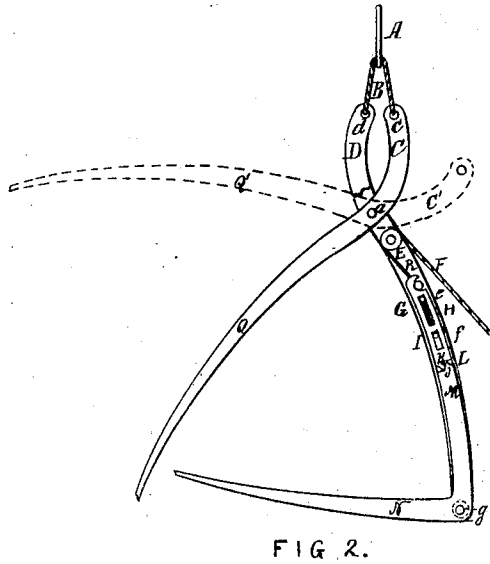
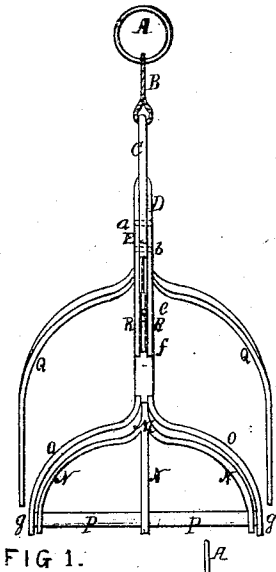


R. A. Smith.  
Hay Fork.

No. 89603.

Patented May 4, 1869.



R. A. Smith, INVENTOR.  
BY Job Abbott, ATTORNEY.

Smith & Abbott }  
Edw. H. Abbott } WITNESSES.

# United States Patent Office.

R. A. SMITH, OF WASHINGTON MILLS, NEW YORK.

Letters Patent No. 89,603, dated May 4, 1869.

## 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, R. A. SMITH, of Washington Mills, in the county of Oneida, and State of New York, have invented new and useful Improvements in Horse Hay-Forks; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings forming a part of this specification, and to the letters of reference marked thereon, of which drawings—

Figure 1 is an end elevation of my improved fork.

Figure 2 is a side elevation of the same.

Figure 3 is a side elevation of the same, as it appears after dropping the load.

Figure 4 is a plan of the fork, when arranged as shown in fig. 2.

The nature of my invention consists in the novel mode of constructing and arranging the catch which holds the lifting-tines, while the load is being elevated, whereby the perfect working of said catch is insured, and the same is fully protected from any injury which might otherwise arise from the striking of the fork against any obstacle, either while being raised or when lying on the ground and not in use.

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

The fork-staff D R R O O is constructed of two pieces of flat-bar iron, which are welded together into a common head D, provided with a hole, *d*, and a rounded top, as shown.

From the head, the parts R R of the staff, branch out and run down parallel to each other to the plate L, which is welded or otherwise secured between them as shown, and serves to hold them in their proper relative positions, as well as to cover the lower end of the catch S, and to prevent the lifting-tines from swinging back too far.

From the plate L, the parts O O of the staff, branch out in the form seen in fig. 1, and between their lower ends is secured the lifting-tine head, as will be presently shown.

The retaining-tines Q Q, are of the general form shown, and are welded into a common head, C, which is provided with a hole, *c*, and a rounded top, as shown.

These tines are pivoted in the fork-staff by means of the pin or bolt *a*, which is inserted through the parts R R, and head O, as shown, said head O being arranged between the parts R R of the fork-staff, as seen in figs. 1 and 4.

A rope, B, has its ends looped through the holes *c* and *d*, in the heads O and D of the lifting-tines and fork-staff, and a ring, A, is arranged on this rope B, to which the lifting-power is attached, or if preferred, the lifting-rope may be looped around the rope B in an obvious manner.

Between the parts R R of the fork-staff, and a little below the pin *a*, is pivoted the pulley-wheel E, by

means of the pin or bolt *d*, as seen in fig. 2; the front portion R O of the fork-staff being broken out in this figure to show the pulley-wheel, catch, and head of the lifting-tines.

The catch S is constructed with two slots, G and I, and notched lower end K, as shown, and is arranged between the parts R R of the fork-staff, by means of the pins or bolts *e* and *f*, which are secured in the parts R R, and pass through the slots G and I, as seen in fig. 2.

A spiral spring, H, or if preferred, a block of rubber, is placed in the slot G, its lower end bearing on the bottom of said slot, and its upper end bearing on the pin *e*, thus serving to keep the catch S pressed down.

A rope, F, is secured to the upper end of the catch S, and passes over the pulley-wheel E, and down to the operator, so that by drawing on said rope he can raise the catch S, as is readily seen.

The lifting-tines N N N are made of plate-bar iron, the front parts being drawn out into the pointed form, shown in figs. 2 and 3, and the rear parts being bent up to an elbow, as shown, and also being bent up together and welded into a common head, M, as seen in fig. 1.

Between the points of the elbows in these tines, are inserted the tubes P P, and a rod, *g*, is passed through holes in the ends of the parts O O of the fork-staff, and holes in the angles of said elbows, and also through the tubes P P, and is secured by nuts or riveting on the outside of the parts O O in said position, thus serving to bind the tines together, and also to pivot them between the lower branches O O of the fork-staff.

The head M of the lifting-tines is provided with a notch, J, and is of such size as that when said head is drawn back against the plate L, the notch K of the slide S shall slide into the notch J of the head M, and thus hold it in the position shown in fig. 2.

The front and top of the head M are bevelled off, as are also the rear and bottom of the catch S, so that as the head M is drawn back towards the plate L, the catch S will be raised up, so as to allow the head M to pass under it, in a manner readily seen.

The mode of operating my fork is readily seen after the foregoing description of its construction.

The retaining-tines Q Q C are turned up into the position shown by dotted lines Q' C' in fig. 2, and the lifting-tines N N N are forced under the hay or load to be lifted, the head M being held up in the fork-staff D R R O O, and against the plate L by the catch S, as before shown.

The lifting-power being then applied to the ring A, the rope B is drawn up, and consequently the tines Q Q are turned down into the position shown in drawings, where they serve to prevent the load from slipping off the lifting-tines N N N.

This downward turning of the tines is limited by the striking of the heads C and D, at such a point that said

tines Q Q sit a little out beyond the end of the tines N N N, so that in the raising of the fork the tines Q Q prevent the ends of the tines N N N from catching under any obstacle.

The heads C and D, being of the rounded form shown, and there being no projection on the fork-staff D R R O O, and the lower branches O O of said fork-staff, covering the angles at the elbows of the tines N N N, it is readily seen that there is little chance of the fork catching against any obstacle while being elevated.

When the load has been carried to the desired point, the operator pulls the rope F, which draws up the catch S, and allows the lifting-tines to revolve into the position shown in fig. 3, thus discharging the load from the fork.

Having thus fully described my improved fork, What I claim as new, and desire to secure by Letters Patent, is—

The sliding catch S, when constructed with the slots G and I, and notch K, and used in combination with the pins *e* and *f*, spring H, rope F, and lifting-tine head M, with notch J therein, the several parts being arranged as and for the purpose herein specified.

As evidence that I claim the foregoing, I have hereunto set my hand in the presence of two witnesses, this 3d day of November, A. D. 1868.

R. A. SMITH.

Witnesses:

W. W. CHAPMAN,  
J. T. NELSON.