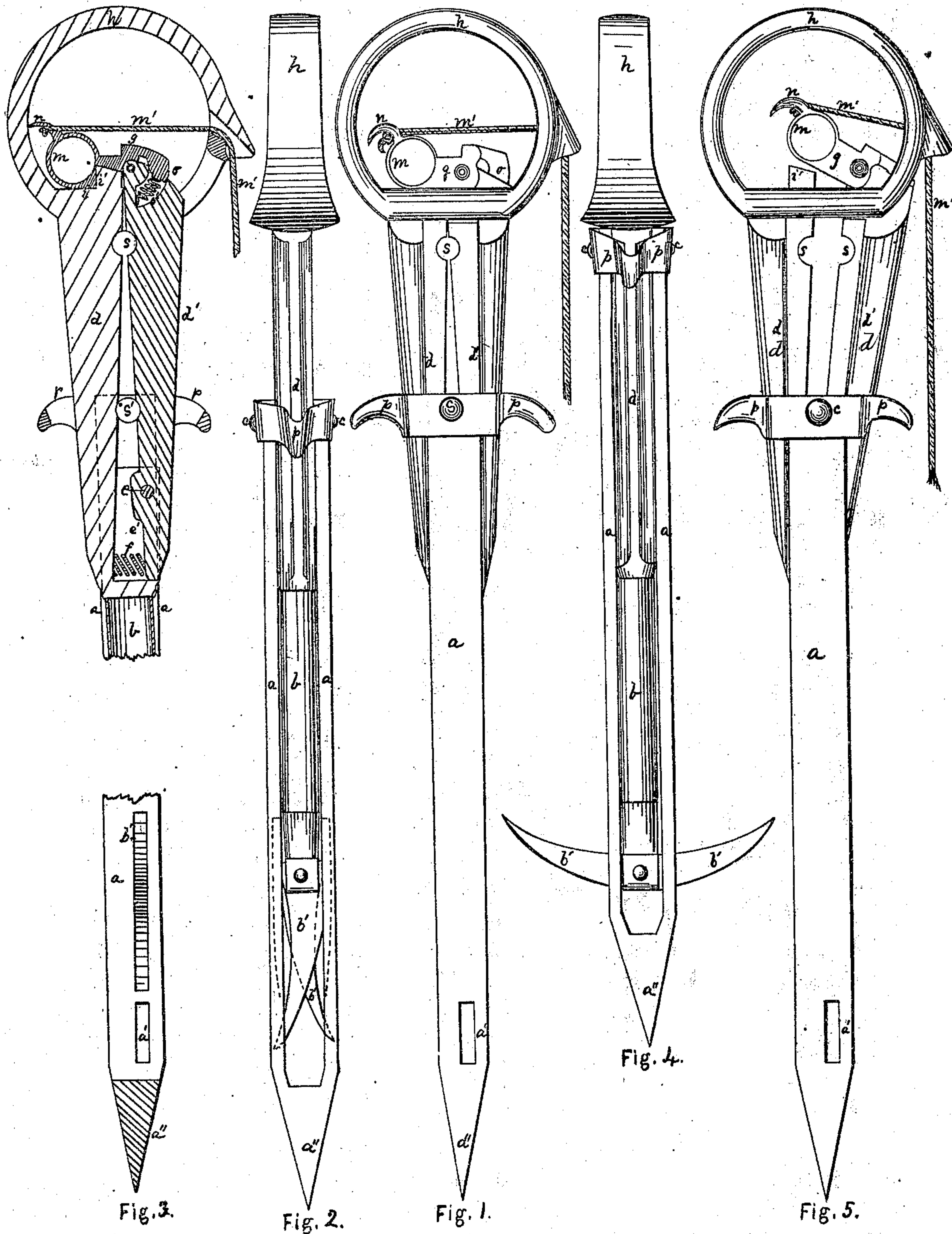


L. Rogers. Horse Hay Fork.

N^o 98711.

Patented Jan. 11. 1870.



Witnesses.

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Inventor.

Luman Rogers,
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United States Patent Office.

LUMAN ROGERS, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 98,711, dated January 11, 1870.

IMPROVED HAY-FORK

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, LUMAN ROGERS, of the city of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Hay-Forks or Elevators; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a side elevation of my improved hay-elevator, with the devices in the position they occupy when the fork or elevator is ready for use.

Figure 2 is an edge view, and

Figure 3 is a sectional view of the same.

Figure 4 is also an edge view of the same, with the devices in proper position for hoisting a load of hay into which the point and barbs have been thrust, and

Figure 5 is a side elevation of the same devices, in the position they occupy immediately after the discharge of a load, and before the hinged jaw is brought to its place and locked, preparatory to taking a new load.

Like letters of reference indicate like parts in each.

My invention relates to that class of hay-forks or elevators commonly known as harpoon-forks; and

The nature of it consists—

First, in combining, with the centre-rod, which carries and operates the barbs or prongs, a pair of jaws, one, at least, of which is hinged, or in a similar manner connected with the other jaw, or with the shaft or stem, such jaws being provided with recesses, which, at the different points of adjustment of the fork, embrace the centre or main pin of the sheath;

Second, the construction and arrangement, within the handle of the fork, of a locking-device, by which to lock and unlock the hinged jaw or jaws; and

Third, in the arrangement of a guard on the sheath to protect the movable jaw and locking-device.

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

In the sheath, barrel, or guiding-box *a*, the centre-rod *b* operates with a reciprocating motion, when thrust downward, throwing out the barbs *b'* through mortises *a'* in the sides *a* of the sheath, and *vice versa*.

The sheath *a* is pointed at its lower end, as shown at *a''*, so as the more easily to enter the hay. This point *a''* connects the opposite sides *a* of the sheath, at their lower ends, while, at their upper ends they are held together, and at the proper distance apart, by a strong main rivet, *c*.

Attached to the upper end of the stem *b* are the jaws *d d'*, at least one of which is movable.

The construction I prefer is as shown in the drawings, in which the fixed jaw *d* is a prolongation of the

centre-rod, though set a little to one side, so as to make room for the movable jaw *d'*, which latter is also hinged to the former at a little distance from its lower end, by a hinge-pin, *e*, which passes through the jaw *d'*, and through flanges *e'* of the jaw *d*, the flanges *e* and the lower face of the fixed jaw *d* making a seat or box for the lower end of the movable jaw *d'*. This hinging is so done that the movable jaw *d'* may have a slight play, as presently to be described.

Recesses or eyes, *s s'*, are made in the inner faces of the jaws *d d'*, each large enough to admit the main pin *c* of the sheath *a*.

A spiral spring, *f*, is inserted in the box-like cavity between the jaws at their lower end, and below the hinge *e*.

To the fixed jaw *d* is attached a handle, *h*, of ring-like or other suitable shape.

The upper end of the movable jaw *d'* plays through a slot in its base.

In another slot in the upper end of the inner face of the jaw *d'* is hinged a dog, *g*.

This dog *g* has, near its forward end, a mortised catch, *i*, which engages a shoulder, *i'*, on the jaw *d*, and, at its rear end, a hook-shaped lug, *o*, which enters a mortise in the upper end of the jaw *d'*, and bears against a spiral spring, *o'*, therein inserted.

For convenience of manipulation, it also has a ring, *m*, at its forward end, and a rope or cord, *m'*, is fastened to a trigger, *n*, on its upper side, and passes out through a hole in the opposite side of the handle.

A guard, *p*, projecting out in as many directions, and to such distance as may be desired, is attached to the upper end of the sheath *a*.

The operation is as follows:

The devices being in the position shown in fig. 1, the operator, taking the fork by the handle *h*, thrusts it downward into the wad of hay, the guard *p* pressing the surface of the hay down, to keep it from interfering with the free operation of the dog *g*.

He then raises the ring-end of the dog *g*, by which the catch *i* is disengaged from the shoulder *i'*, and presses it back till the movable jaw *d'*, turning on its hinge-pin *e*, releases its hold on the main rivet *c*.

He then presses down on the handle *h*, so as to drive the jaws *d d'* and centre-rod *b* downward, by which the barbs *b'* are forced out, as shown in fig. 4.

The dog *g* is then returned to its place, as in fig. 1, by which the jaws *d d'* are made to embrace the main rivet *c*, at their upper eye or recess *s*, whereby the barbs *b'* are locked in the position they occupy in fig. 4.

Hoisting-power is then applied to the handle *h*, the fork and its wad are raised to the place where the load is to be deposited, when a slight pull or jerk on the cord *m'* releases the dog *g*, and frees the jaws *d d'* from their hold at the upper eye *s*, on the main rivet *c*.

The sheath *a* being then unsupported, falls, the barbs *b' b'* slide through the mortises *a' a'*, the main rivet *c* comes down to the lower eye *s'*, the load is discharged, and, by the action of the springs *f o*, the jaws *d d'* are again brought together, and the dog *g* restored to its locking position, as in fig. 1, and the operation is continued.

The dog *g*, it will be observed, is so arranged in the handle *h* as to operate in the plane of the handle, and so guarded by it from injury.

I am aware that the sheath, centre-rod, point, and barbs have been separately in use, and that harpoon-forks of various constructions have been made.

I am also aware that various forms of levers have been used for shifting a movable bolt or catch in locking and unlocking the distended barbs or prongs, but I am not aware of the construction or use, prior to the date of my invention, of a pair of jaws in a hay-fork or elevator, which, by their conjoint action, embraced, engaged, or bore upon any fixed part of the stem, case, or sheath, in connection with which such jaws were operated, so as to lock the distended barbs or prongs. Hence I do not limit my invention to the use of a rivet, *c*, as a part of the locking device, since the form of the jaws may be so changed that they shall, by their

conjoint action, lock on some other part of the stem, case, or sheath; but

What I claim herein as my invention, and desire to secure by Letters Patent, is—

1. The construction, in a harpoon hay-fork or elevator, of a pair of jaws, one, at least, of which is hinged, such that, by their conjoint action, they shall lock the distended prongs or barbs, by embracing or engaging a rivet, *c*, or some other fixed part of the stem, case, or sheath, substantially as above set forth.

2. The arrangement, inside the handle of a harpoon hay-elevator, of a dog, *g*, as a locking-device, in combination with a pair of jaws, *d d'*, substantially as described.

3. The jaws *d d'*, one hinged at a point intermediate between its ends, and having a spring, *f*, in combination with a dog, *g*, and its spring *o'*, arranged substantially as described.

In testimony whereof, I, the said LUMAN ROGERS, have hereunto set my hand.

LUMAN ROGERS.

Witnesses:

A. J. MELLIS,

R. C. WRENSHALL.