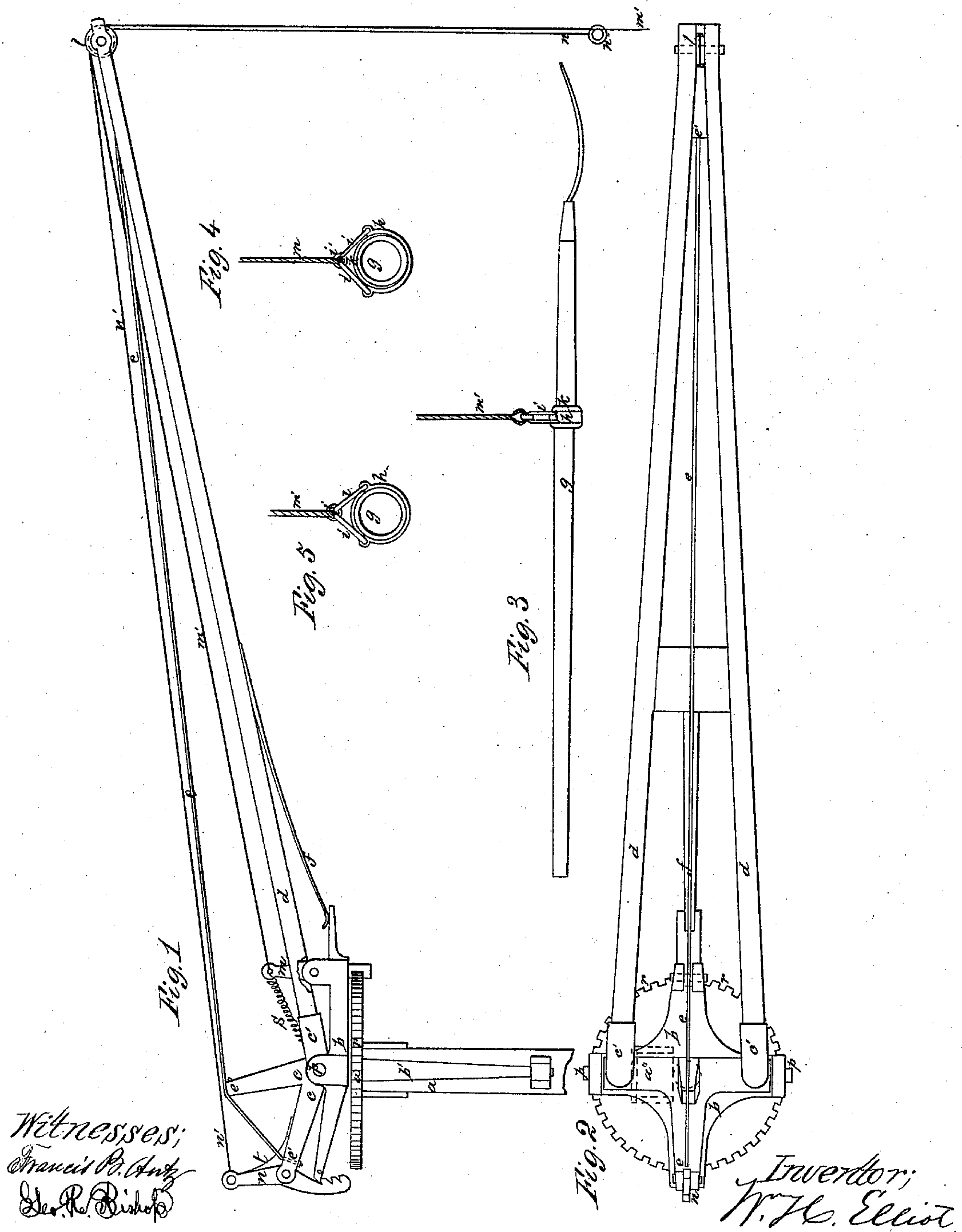


W. H. Elliot,

Derrick,

No 56,023,

Patented July 3, 1866.



# UNITED STATES PATENT OFFICE.

WM. H. ELLIOT, OF NEW YORK, N. Y.

## IMPROVEMENT IN HAY-LOADERS.

Specification forming part of Letters Patent No. 56,023, dated July 3, 1866.

*To all whom it may concern:*

Be it known that I, WM. H. ELLIOT, of the city and State of New York, have invented a new and Improved Hay-Loader; 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 of reference indicate the same devices in all the figures.

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

The nature of my invention consists in so constructing the revolving arm or crane of my hay-loader that its free end may be raised or lowered at pleasure by the man who pitches the hay, thereby enabling him to reach hay at a greater distance from the hay-rack than he could if the arm had no vertical motion; and it also consists in the employment of a ratchet and pawl for fastening the arm in any desired position in its vertical motion.

It also consists in providing a spring-clasp for attaching the cord to the fork-handle, which is so constructed as to clasp the fork-handle firmly when the fork is loaded, but spring open and leave the fork-handle free to turn when not loaded, thereby preventing the fork from turning over in the hands of the pitcher while loaded with hay.

Figure 1 is a side elevation of the top of the standard and the arm of my improved hay-loader. Fig. 2 is a plan of the same, shown without the cords which operate the pawls and ratchets. Fig. 3 is an elevation of the fork, showing the spring-clasp, by which the cord is attached to it. Fig. 4 is a section of the fork-handle and collar, showing also an elevation of the spring-clasp open, as it is when the fork is not loaded; Fig. 5, the same, showing the spring-clasp closed, as it is when the fork is loaded.

*a* is a standard of the crane; *a'*, ratchet or circular head of the standard; *a''*, flanges, by which the head is attached to the standard; *b*, revolving base of the arm; *b'*, pivot upon which the revolving base turns; *c d e*, arm of the crane; *c*, iron frame-work of the arm of the crane; *d*, wooden portions of the arm, inserted into sockets *c'* on the frame; *e*, iron brace to

give strength to the arm; *e'*, points of insertion of the brace; *e''*, point where the brace passes over and rests on the frame; *f*, spring which raises the arm; *g*, fork-handle; *h*, spring-clasp around the collar *k*; *i*, links joining the spring-clasp to the ring *i'*; *l*, pulleys in the end of the arm; *m*, pawls which work in ratchet *a'*; *m'*, cord to which the pawl is attached at one end and the fork at the other; *n*, ratchet which works on pawl *o*; *n'*, cord attached at one end to ratchet *n*, and at the other end to ring *n''*; *p*, pivot-bearing between the revolving base *b* and the arm *c d e*; *r*, teeth of ratchet *a'*; *s*, spring which draws pawl *m* out of notches *r* when the fork is not loaded; *t*, spring which forces ratchet *n* upon pawl *o*.

The standard *a* is fixed upon the hay-rack, and the revolving base *b*, with its pivot *b'*, rests in suitable bearings in the top of the standard and revolves in a horizontal plane upon pivot *b'*, as is shown in my patent of the 26th of April, 1864; but in my improved loader I provide a joint at *p*, between the base *b* and the arm *c d e*, so that its free end may have a vertical motion of several feet.

Fig. 1 represents the arm when it is raised and locked in a proper position for raising hay; but to reach hay with the fork that is at a greater distance from the hay-rack than can be reached with the arm in this position it is only necessary to draw upon cord *n'*, by means of ring *n''*, which liberates ratchet *n* from pawl *o*, when the free end of the arm may be pulled down three or four feet nearer the ground by means of cord *m'*, to which the fork is attached, which has the effect of adding several feet to the length of the cord, thereby enabling the pitcher to reach hay with the fork at a much greater distance from the hay-rack.

After fastening the fork into the hay the pitcher draws it toward the rack, and as he does so the arm is raised by spring *f* till it assumes the position represented in Fig. 1, and becomes fastened in that position by means of ratchet and pawl *n* and *o*.

The operation of placing a forkful of hay upon the load is the same as described in my patent of 1864. The cord *m'* passes over one of the pulleys in the end of the arm, and descends to within about two and a half feet of the ground, where it is attached to the fork-handle, as shown in Fig. 3. The tines of the



fork being firmly inserted in the hay, the end of the fork-handle is depressed, which raises the hay from the ground, being supported by the cord *m'*. The weight of the hay draws the pawl *m* into one of the notches *r*, and so locks the arm in its horizontal movement. As soon as the arm is locked the pitcher pushes the forkful of hay and causes it to swing up to the top of the load upon the cord *m'* swinging from the end of the arm. As soon as cord *m'* is released from the weight of the hay the pawl *m* is raised out of notches *r* by spring *s*, when the arm is again free to turn upon pivot *b'* in any direction.

Great difficulty has been experienced in using the fork attached to the cord in this way, in consequence of the fork turning in the hand when the load upon it happens not to be exactly central. To obviate this difficulty I place a collar, *k*, on the fork-handle, with a groove turned around it for the reception of a spring-clasp, *h*. This spring-clasp is connected to ring *i'* by links *i*.

When the fork is not loaded the spring-clasp opens a little, so that the collar turns freely in it; but when the hay is upon the fork the two links *i* draw the ends of the spring-clasp together, so as to pinch the collar *k*, and thus prevent the fork from turning over when it is loaded.

Having described my improved hay-loader, what I claim as my invention, and desire to have secured to me by Letters Patent of the United States, is—

1. Joining the arm *c d e* to revolving base *b* by means of pivot-bearings *p*, so that the arm may have a vertical movement, as described.

2. The spring-clasp *h*, in combination with the fork-handle *g* and cord *m'*, substantially as and for the purpose set forth.

WM. H. ELLIOT.

Witnesses:

FRANCIS B. ANTZ,  
GEO. R. BISHOP.