(Model.)

L. Y. MYERS.

HAY FORK.

No. 263,562. Patented Aug. 29, 1882.

Fig. 1.

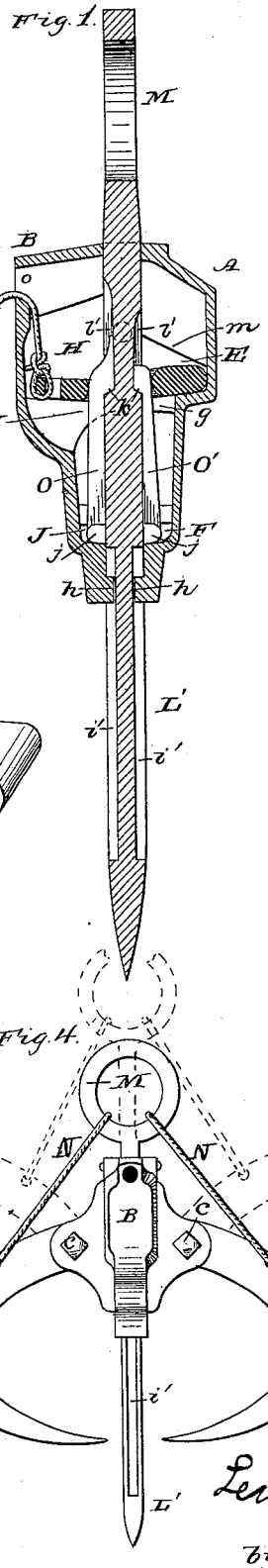


Fig. 2.

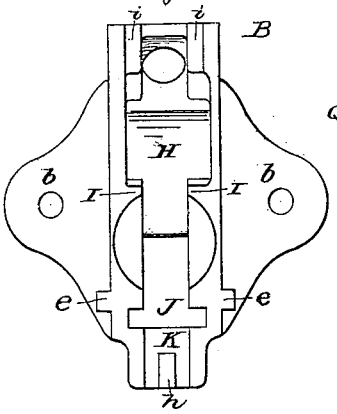
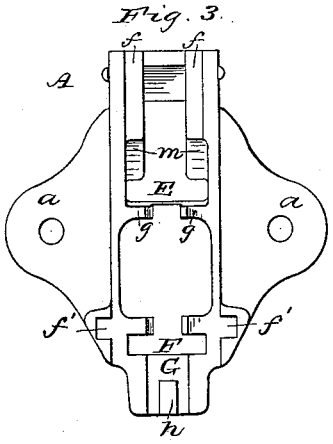


Fig. 3.



P Fig. 5.

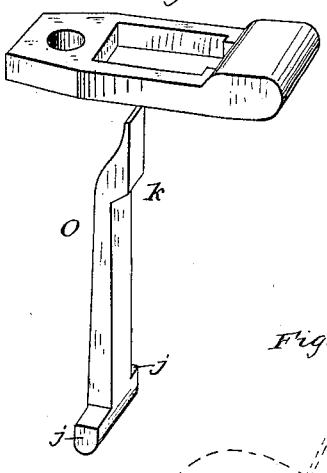


Fig. 6.

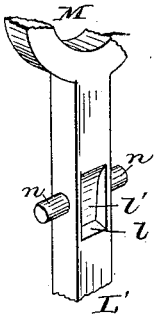


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

LEWIS Y. MYERS, OF CANTON, OHIO.

HAY-FORK.

SPECIFICATION forming part of Letters Patent No. 263,562, dated August 29, 1882.

Application filed December 3, 1881. (Model.)

To all whom it may concern:

Be it known that I, LEWIS Y. MYERS, a citizen of the United States of America, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Hay-Forks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved device for grasping and elevating hay. It relates also to improvements in devices for locking together the movable parts of the fork or elevator; and, further, to devices for stopping the movements of the parts at proper times relatively to each other.

Figure 1 is a longitudinal section of my improved hay-fork. Fig. 2 is an inner view of one of the parts of the supporting-head. Fig. 3 is a corresponding view of the opposite part of the supporting-head. Fig. 4 is a side elevation of the fork. Fig. 5 is a perspective of one of the locking-dogs and the yoke detached. Fig. 6 is a perspective of a portion of the spear.

The supporting part of my improved fork, which holds the other portions, is represented by A and B, these indicating two castings so arranged as when brought together to form an interior chamber for receiving, retaining, and guiding the pivoting, locking, and stop mechanism. Each of the parts A and B of the supporting-head is cast with two laterally-projecting ears, those on the part A being indicated by *a a*, those on the part B by *b b*, these ears being provided with corresponding bolt-holes for securing the parts together.

C C represent the hooks for inclosing the load of hay, each being pivoted by means of one of the clamping-bolts *c* to the supporting-head between one of the ears *a* and one of the ears *b*. In order to allow freedom of play for the hooks C C, an open space is provided between the ears of each opposing pair, which space may be produced by casting the ears to the central part of the head-pieces, so that their inner faces shall be below the surface or edge of said central part. By means of lugs *e e* on one part of the supporting-head—as the part B—adapted to fit into seats or recesses *f' f'* in the opposing part, the two parts of the head A B may be prevented from slipping longitudinally relatively to each other. The central part of the head A B is expanded on lines transverse to those of the ears *a b*, there being in the part A recesses *f f* at one end, a chamber E, shoulders *g g*, a recess or seat, F, a recess or way, G, and a stud or lug, *h*. The central portion of the other part of the head B is formed with recesses *i i*, corresponding in position to those at *f f* in the part B, a chamber, H, shoulders I, a recess, J, a recess or way, K, and a stud or lug, *h*. When the parts A and B are placed together the chamber H in one part adjoins the chamber E in the other, the shoulders I I lie in the same lines substantially as the shoulders *g g*, and the recesses J and F are opposite to each other, as are also the ways K and G and the studs or lugs *h h*. It will be seen that when the parts are thus put together there is a continuous way or passage through the central part of the head A B. In this passage or way is mounted the spear or sliding tine of the fork, said spear being constructed preferably with a shank or stem, L', and a ring, M. It is provided with two elongated slots, *i' i'*, on opposite sides, in which are situated the respective lugs or studs *h h* when the parts are put together. The said studs or lugs allow of but a limited movement of the spear L' M, only such movement being allowed as will permit the loading and unloading of the fork. When the fork is to be loaded the spear L' is drawn up into the position shown in dotted lines in Fig. 4, and this upward drawing of the spear also opens and draws upward the pivoted hooks C C, they being connected flexibly with the ring M or the upper end of the spear by means of cords or chains N. After the parts of the fork have been thus opened the spear is forced downward into the hay as far as the lugs or studs *h h* will permit it, and the hooks C C are then pushed down to their lowermost point. The pushing down of the spear L' causes it to be automatically locked in its lowest position by means of the following devices:

O O' are dogs mounted within the central chamber of the head A B, upon opposite sides

of the spear L′. They are prevented from moving longitudinally relatively to said head by means of cross-bars or lugs *j j*, which are seated in the recesses J F, and which, although they, as above said, prevent longitudinal play of the dogs, allow them to oscillate a little upon the bars or lugs as centers. These dogs engage with the spear by means of shoulders *k* on the dogs and shoulders *l* on the spear, produced by forming therein recesses *l′*. When the spear is at its lowest point it has been brought down sufficiently far to have the shoulders *k* engage with the shoulders *l* on the spear, and if then an upward strain be exerted upon the spear, and if the dogs be kept in engagement with the shoulders *l*, they will prevent any upward longitudinal movement of the spear in the head A B. In order to hold the dogs in such engagement as last mentioned, I employ a yoke, P, which, although mounted loosely and detachably in the interior chamber of the head, is nevertheless arranged so as to have a swinging movement at one end, as if it were hinged at the other—that is to say, one end is substantially stationary, while the other oscillates vertically. The stationary end is mounted in the chamber E of the part A, said chamber having shoulders *m*, inclined relatively to the shoulders *g g*, the distance between them at their outer ends being about the same as the thickness of the yoke P. The other end of the yoke P is situated in the opposite chamber, H, which chamber is large enough at the outer end to permit an oscillating play of the end of the yoke mounted therein. The yoke has a central aperture, (preferably rectangular,) and it surrounds the spear and the two dogs O O′. Just as the spear is reaching its lowest point, and the dogs O O′, by their shoulders *k k*, are engaging with the shoulders *l l* on the spear, pins *n n*, projecting laterally from the spear, strike the yoke and swing it downward, so that it shall pass over the dog O and assume a position substantially transverse to the line of the spear, it (the yoke) at this time resting or bearing upon the shoulders I *g*. While the yoke is in this position the dogs are held tightly in engagement with the spear in the recesses *l′ l′*, and therefore prevent any upward longitudinal movement of the spear. The load, being thus locked in the fork, is now elevated to the desired point, and when there is released by swinging upward the oscillating end of the yoke P, which upward swinging throws it beyond the end of the dog O, and the spear therefore can escape from an engagement with the dog, such escape being made possible by the beveling or inclining of the engaging shoulders *k* and *l*. The end of the yoke is thus moved upward by means of a chain or cord, Q, running up a short distance, thence out through an aperture, *o*, in the part B of the head, and thence downward to the operator's hand.

It will be seen that all of the parts of my improved fork are exceedingly simple, each of them being of such shape and character that it can be easily cast, and therefore manufactured at but comparatively little cost. None of the ordinary rivets or pivots or hinges are necessary, and therefore the fork is in many respects stronger than those in which pivoting and hinging devices are required. However, if desired, pivots might be employed as means of attaching the yoke P or the dogs O O′, though I prefer the construction shown and described.

What I claim is—

1. The combination of the following elements: the part A of the supporting-head, cast with the inclined pivoting-recess E, the pivoting-recesses F and J, the stud *h*, and the passage running longitudinally through said part A, the part B of the head, having the chamber H and the pivoting-recess J, the longitudinally-moving spear, the locking devices pivoted in the recesses F and J, and a yoke or clamping device pivoted and swinging in the chambers E H, substantially as set forth.

2. The combination of the following elements: the supporting-head provided with a way longitudinally through it, and with lugs or stops *h*, the spear L′, mounted in said supporting-head and provided with the slots *i*, the dogs O O′, the yoke P, and the pins *n n*, substantially as set forth.

3. The combination, with the sliding spear, the devices which prevent an upward movement of the spear relatively to the casing, and the yoke P for locking said devices, of the casing having the chamber E on one side of the spear, formed with the converging shoulders *m g*, to provide a pivoting-recess for the yoke, and having the chamber H on the opposite side of the spear to permit the oscillation of that end of the yoke situated therein, substantially as set forth.

4. The combination of the head A B, formed with an inclosed chamber, the spear L′, which passes entirely through said head, the locking-dogs O O′, retained within said head, but mounted loosely therein, and the yoke P, mounted loosely within the head, substantially as set forth.

5. The combination, with the head A B and the spear passing entirely through the head, of the locking-dogs O O′, arranged on opposite sides of the spear, and the yoke P, which surrounds the spear, and also the locking-dogs, said yoke and locking-dogs being retained loosely in the head, substantially as set forth.

6. The combination of the head A B, the spear passing through the head, the dogs O O′, and the yoke P, all mounted within the head, the hook C C, pivoted to the head independently of the spear, and the cords N, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS Y. MYERS.

Witnesses:
HENRY FISHER,
JACOB P. FAWCETT.