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E. H. ALVORD.

HAY FORK.

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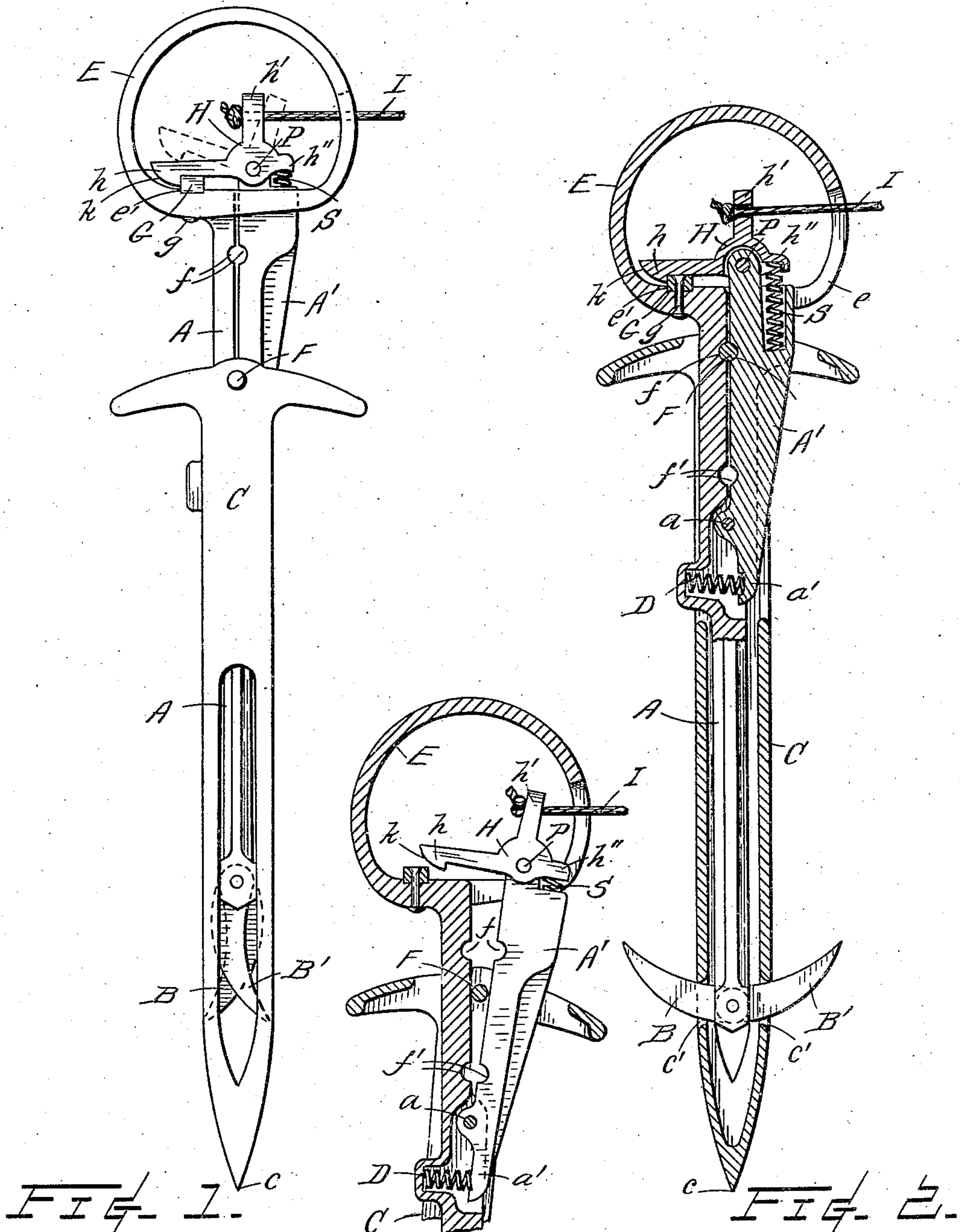


FIG. 1.

FIG. 2.

FIG. 3.

WITNESSES:

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## HAY-FORK.

No. 845,445.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed August 3, 1905. Renewed July 19, 1906. Serial No. 328,877.

*To all whom it may concern:*

Be it known that I, ELISHA H. ALVORD, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Hay-Forks, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is an elevation of a hay-fork embodying my invention; Fig. 2, a cross-sectional view of the same, and Fig. 3 a fragmentary like view and respectively illustrating the device in various positions.

This invention relates to hay-carriers, and more particularly to improvements in that type known as "harpoon" forks.

The object of the invention is the provision of reliable, durable, and inexpensively-constructed means for detachably locking the operative fork-prongs in both their distended and sheathed conditions.

The invention consists in the novel construction, combination, and adaptation of devices, as will be hereinafter described with reference to the said drawings, wherein the letter A designates a bar having at its upper end a loop E and pivotally connected to its lower end two curved prongs B B'. The bar and the prongs are inclosed within a casing C, terminating at its lower end in a sharp point c, and is provided adjacent of the point with apertures c', through which the prongs are protruded. The bar is formed with an openable part A', which is hinged to the other part by a pivot a, and the part A' extends through a slot e of said eye. The said bar parts are normally held in their closed positions, Figs. 1 and 2, by a spring D, interposed between the arm a' of the openable part and the main part of the bar. Formed in the opposing surfaces of the two bar parts are notches f and f', which respectively register with an abutment-bolt F, extending through the casing, when the bar is in the positions indicated in Figs. 1 and 2, corresponding to the withdrawn and operative positions of said prongs. Removably provided or secured, as by rivet g, to the inner side of the loop E is a block G, which when made detachable is desirably seated in a depression or mortise e' of the loop. To the top end of the bar part A' is tiltably connected by a pivot P a bell-crank H, of which one arm is formed with a hook h, and the other arm h', extending upwardly, provides a trigger,

to which is connected the controlling-line I. Provided on the bell-crank and projecting oppositely from the hook-arm is a lug h', against which presses a helical spring S, tending to resiliently force the hook downwardly. This spring is interposed between the said lug and the bar part A' and is desirably extended into recesses formed in each in order to protect the spring from injury and also to enable it being made longer than would otherwise be possible or convenient. When a pull is exerted through said line upon the trigger-arm, it will disengage the hook-arm from the block G against the action of the spring S, and a continued pull will open the bar part A', as shown in Fig. 3, so that the bar can be raised or lowered to move the said prongs in or out of the sheath, as required, and position the notches f or f', as the case may be, in line to register with the bolt F. The line being now released, the spring D asserts itself to close the bar parts and embrace the bolt F within the notches presented, and in thus closing the hook h passes over and engages the block through the action of the other spring S. To insure the hook properly engaging the block, the bill thereof is made with a sloping underneath and advance face k. It may be mentioned that of the two springs the one acting to close the bar parts is the more powerful in order to be capable of overcoming the opposing force of the other.

In practice a hoisting-line is connected to the bar-loop E, and the prongs are distended only during the lifting of the hay. Then through the weights of the latter and the sheath when the bar parts are unlocked by a pull upon the controlling-line the prongs retreat into the sheath to allow the hay being deposited. The fork is in this condition lowered into the hay to be moved, when upon again disconnecting the hook from its block the weight of the bar will force the latter downwardly within the sheath, and thereby protrude the prongs, which are thus locked by the release of the controlling-line to allow the closing of the bar parts about the sheath-bolt and the latching of the hook. The fork can now be raised by the hoisting-line to elevate its load of hay, and so on.

Among the advantages of the present invention are its reliability in maintaining the bar parts in their locked engagement and in a most positive manner, the simplicity and direct action of the parts whereby such lock-



ing action is accomplished and maintained, and the ease with which the block G when detachable can be taken out and replaced by another when it becomes worn, whereas in  
 5 other forks with which I am familiar the catches act against or in registering notches in the bar-loop or elsewhere in the main portions of the implement and renders the same when worn useless for further operation, as  
 10 the work required in repair is so expensive and unsatisfactory as to cause the entire implement to be thrown aside and be replaced by another.

I do not claim the entire fork as my invention, as I am aware there have been others  
 15 hitherto in use which embody various of the aforescribed parts; but

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

20 1. In combination with a sheath having a bolt, a bar carrying prongs and an openable part formed with notches therein, a loop on the bar, an element on said part projecting above said bar, a bell-crank having a hooked  
 25 arm, a central arm and a lug, said part having a vertical aperture therein underlying said lug, a spring vertically disposed in said aperture and engaging said lug, a block re-

ceived in a countersunk portion provided therefor in the upper face of the bottom portion of said loop, and means for fastening  
 30 said block.

2. In combination with a sheath having a bolt, a bar having prongs, an openable part carried by said bar, a loop carried by the bar,  
 35 said loop having a countersunk portion on the upper face of the bottom portion thereof, a block seated in said countersunk portion, fastening means countersunk at one end in the upper face of said block and on the opposite end engaging the under face of said bottom portion of the loop said openable part  
 40 having an upwardly-projecting element extending above said block and a vertical aperture adjacent thereto, a bell-crank pivotally connected to said element and comprising a hooked arm to engage said block, a lug, and a central arm, and a vertically-disposed coil-spring within said aperture to bear  
 45 against said lug.

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

ELISHA H. ALVORD.

Witnesses:

PIERRE BARNES,  
 ALFRED J. WARE.