

J. M. McDonald.

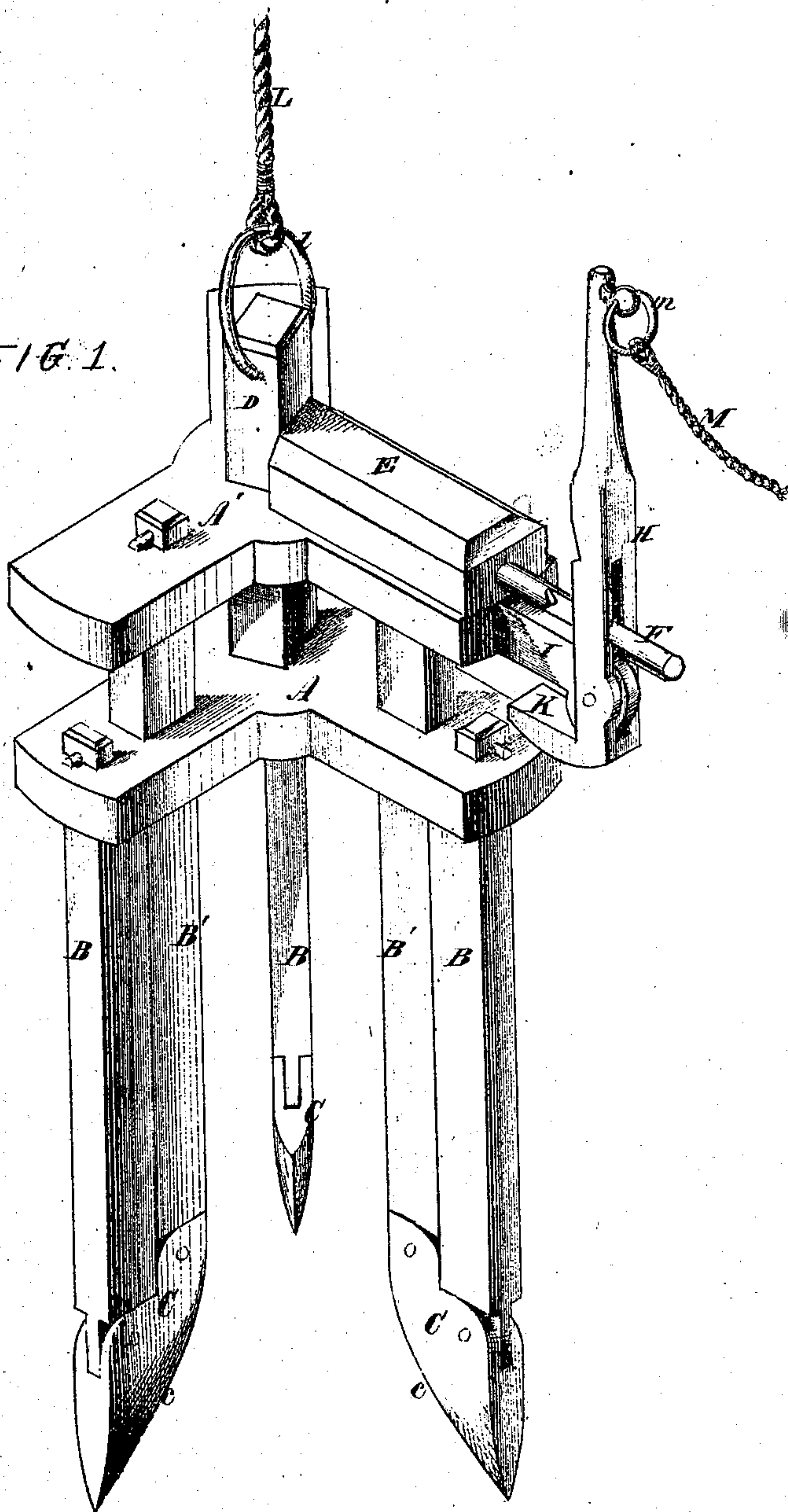
2. Sheets. Sheet 1.

Hay Fork.

No. 100,650.

Patented. Mar. 8. 1870

FIG. 1.



Witnesses
W. B. Deming
John Grinnell

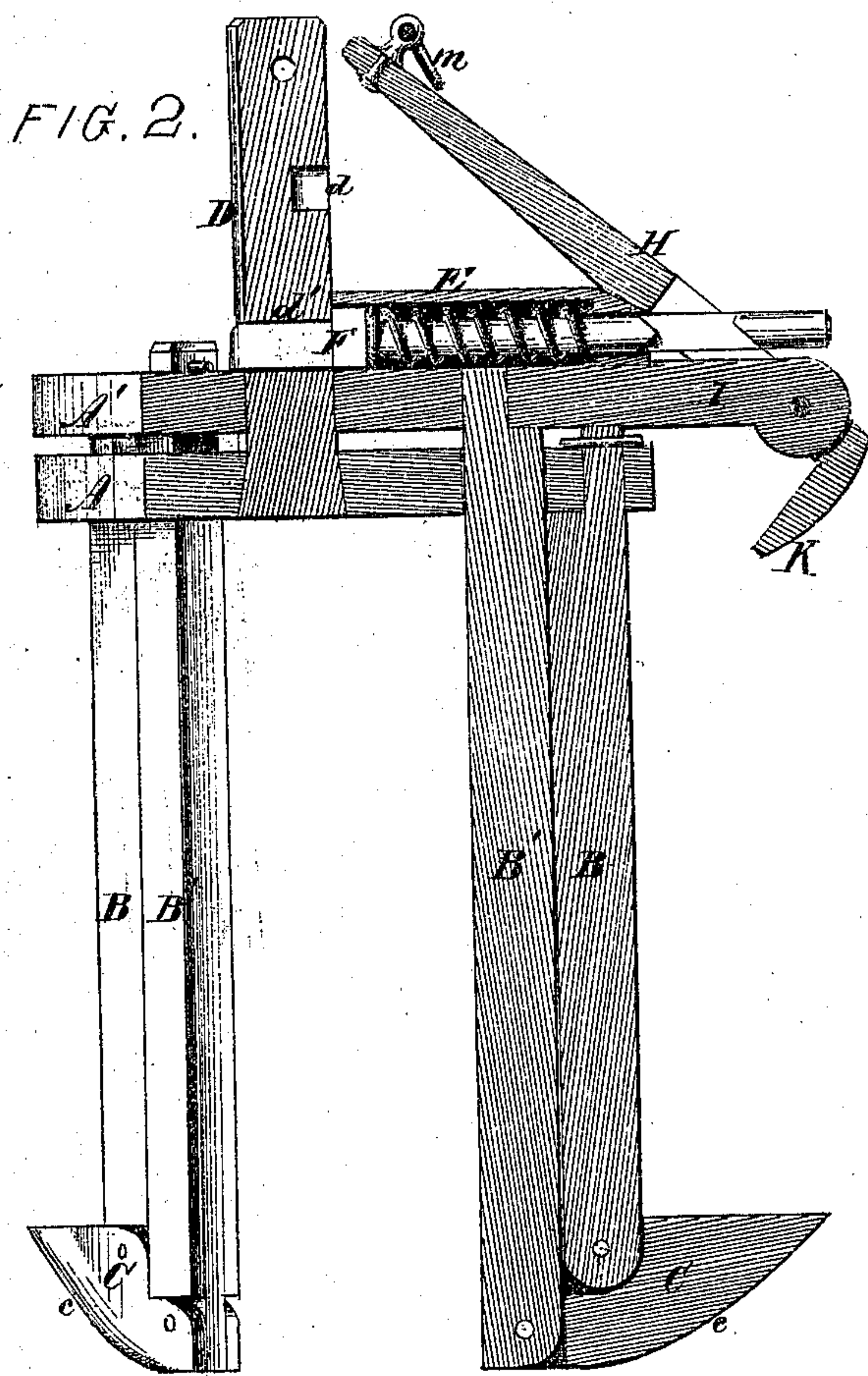
J. M. McDonald
by *Kinghorn*
attys.

J. M. Mc Donald,
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Witnesses
W. B. Deming
John Grinnell

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United States Patent Office.

J. M. McDONALD, OF McCOYSVILLE, PENNSYLVANIA.

Letters Patent No. 100,650, dated March 8, 1870.

IMPROVED HORSE 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, J. M. McDONALD, of McCoysville, in the county of Juniata, and State of Pennsylvania, have invented a new and useful Improvement in Horse Hay-Forks; and that the following is a sufficiently full and exact description thereof to enable one skilled in the art to which my invention appertains to carry it into effect, reference being had to the accompanying drawings which form part of this specification.

My improved fork is of that class in which the means for engagement with the load consists of a plurality of straight-perpendicular prongs, having points adapted to readily enter the hay, and to be turned up, when introduced to the desired extent, to hold the load, which is discharged by their being released.

My invention consists in an improved construction and arrangement of the prongs, and in a novel combination of parts for supporting and operating them.

In the drawings—

Figure 1 represents a perspective view of my improved fork in the position in which it is forced into the hay, and which it assumes in discharging a load.

Figure 2 is a sectional elevation of the same in the position in which it is locked to retain a load.

Similar letters of reference indicate like parts in the two figures.

A A' represent a pair of heads of suitable form and material (preferably similar in both respects) to support the desired number and nature of prongs.

B B B' B' B' represent stems, depending from the heads A and A', respectively, the latter passing through the head A preferably inside of the others.

C C C represent points, which are substantially of the form represented, being constructed with inclined cutting-edges, *c*, on the inner sides, and attached to the stems B B' by hinge joints of suitable form to adapt them to be held in the two positions shown.

The points C and stems B B' constitute the "prongs" of the fork, which are preferably three in number, as shown, being arranged relatively to each other, as represented, with the cutting-edges *c* of the points toward the center, so that the hay shall be compressed between them in the act of entering the fork, and a much larger quantity thus be adapted to be held, the flat outward-projecting supports provided by the points constructed of the form shown, and thus arranged, when turned up, to retain the load, as represented in fig. 2, serving further to secure this; said arrangement serving further to center the fork, and retain it in an upright position while it is being entered.

D represents a standard, projecting centrally from the head A, for the attachment of the hoisting-rope,

the head A' being provided with a suitable orifice for its reception, and sliding loosely on it to permit or impart the movements of the points.

E represents a case, formed on or attached to the head A' in a radial position, and adapted for the reception of a spring latch, by which to lock the points through their connections in their two positions.

F represents the latch, which may be of any suitable form;

d d', sockets in the standard D, for its engagement;

G, fig. 2, a spring, suitably applied thereto to automatically project it; and

H, a lever, suitably applied to withdraw it from said sockets *d d'*.

I represents a projection, provided on the head A', for the attachment of the lever H.

K represents a projection, provided on the lever H, to form a stop to limit its movement.

L represents the hoisting-rope;

M, the trip-cord; and

l m, rings (for which any equivalent provision may be substituted) applied to the standard D and lever H for their attachment.

The precise form and proportions of the several parts will vary according to the material of which they are composed, the taste of the manufacturer, &c.

I preferably construct the head A with the standard D, and the head A' with its latch-case E and projection I, of cast-iron, the points C of steel, the stems B B', lever H, bolt or latch F, the rings *l m*, and the pintles of the several hinge-joints, of wrought iron or steel, and the spring G of steel wire.

The operation of the fork is as follows:

The parts being in the position represented in fig. 1, with the latch F in the socket *d*, the prongs B B' C B B' C are simultaneously forced into the hay by pressing on the head A, the edges *c* of the points cutting a passage for them. On their insertion to a proper depth, the latch F is retracted by means of the lever H, and the head A is forced down, actuating through its stems B' the points, and forcing them into the position represented in fig. 2, when the latch F is forced by the spring G into the socket *d'* of the standard D, and the points, through said head A' and stems B', held in this position. The hoisting-rope L is then actuated, and the fork with its load elevated and conveyed to the desired location, when the trip-cord M is drawn on and through the lever H, the latch F retracted, thus disconnecting the head A' from the standard D, allowing the load, by its weight on the points C, to return them to the position represented in fig. 2, and slip off.

The fork may have any preferred number of prongs more than two.

The combination of devices for supporting and op-

erating the prongs is very strong and simple, rendering the operation of the fork easy and certain, and adapting it to be comparatively cheaply manufactured.

The improved construction and relative arrangement of the points facilitates centering the fork in its load, and adapts it to carry a larger load than it could otherwise.

Having thus described my invention,

I claim, and desire to secure by Letters Patent—

The combination and arrangement of the heads A A', prongs B B', pivoted points C, standard D, and

spring catch F *d'*, all constructed and adapted to operate substantially as and for the purposes herein set forth.

To the above specification of my improvement in horse hay-forks I have signed my hand this 22d day of June, 1869.

J. M. McDONALD.

Witnesses:

JOHN N. KENNEDY,
D. B. CRAWFORD.