

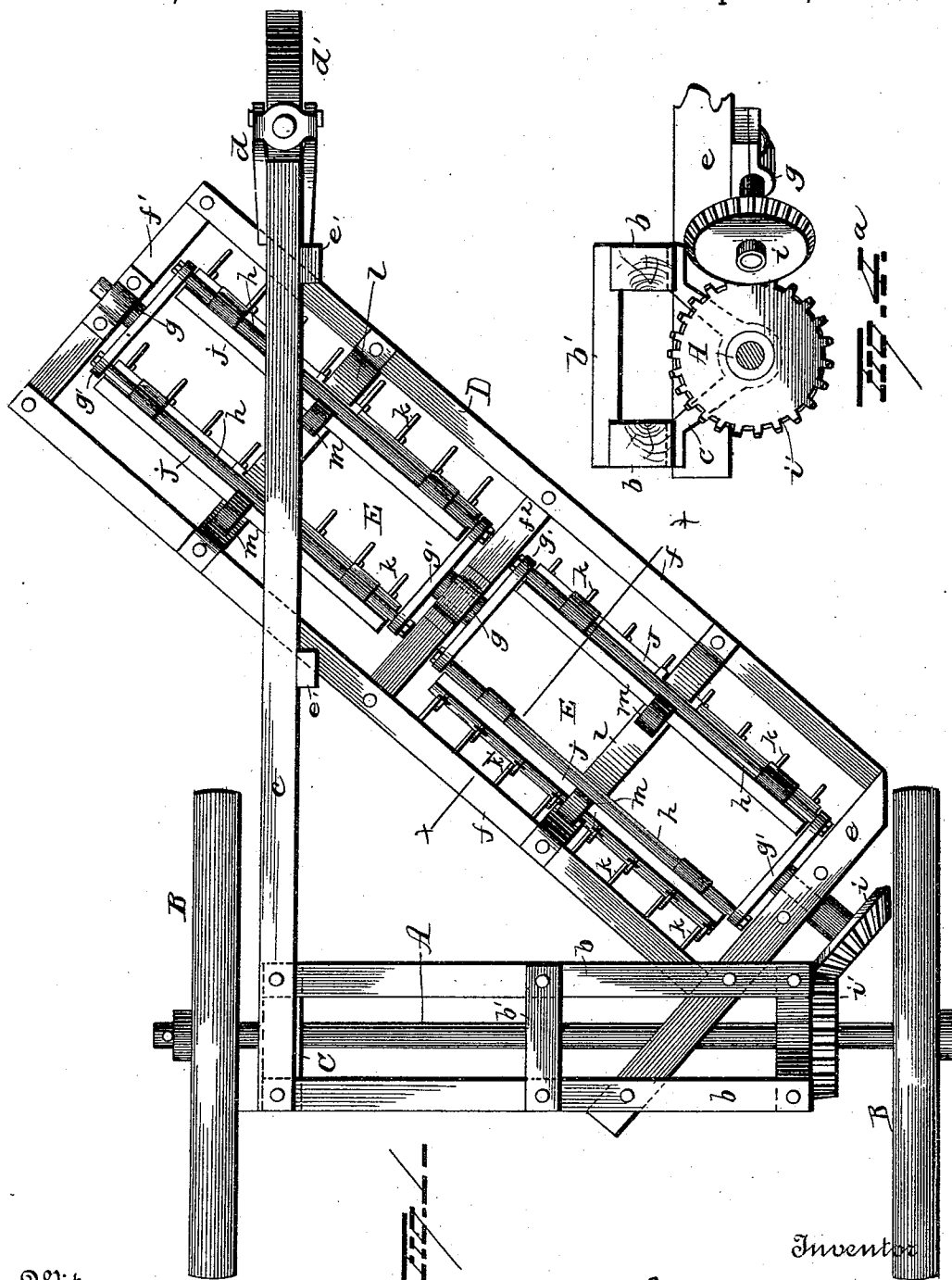
(No Model.)

2 Sheets—Sheet 1.

J. B. ENGSTROM.
HAY RAKE.

No. 473,416.

Patented Apr. 19, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

JACOB B. ENGSTROM, OF MANCHESTER, IOWA.

HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 473,416, dated April 19, 1892.

Application filed March 4, 1891. Serial No. 383,734. (No model.)

To all whom it may concern:

Be it known that I, JACOB B. ENGSTROM, of Manchester, in the county of Delaware and State of Iowa, have invented certain new and useful Improvements in Hay-Rakes; 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.

My invention relates to an improvement in hay-rakes; and it consists in a main frame and an obliquely-set rake-frame in connection with revolubly-supported frames, finger-bars hinged thereto, curved plates extending transversely beneath the revoluble frames, cam-plates secured to the finger-plates and above the latter and adapted to travel thereon, whereby the finger-bars are confined in a certain position during a part of the revolution of the revoluble frame.

In the accompanying drawings, Figure 1 is a plan view of the device. Fig. 2 is a view on the line *xx* of Fig. 1. Fig. 3 is a separate view of one of the frames carrying the rakes. Fig. 4 is a detached view of the gearing. Fig. 4^a is a detail.

A represents the axle of the machine supported in wheels BB at its ends, said axle also carrying fixed ratchet-wheels *a*, adapted to be engaged by spring-actuated dogs *a'*, carried by the wheels B when said wheels are rotated in one direction.

Loosely mounted on the axle A are brackets C, on which timbers *b b* are secured and connected by a cross-bar *b'*. At one end of the timbers *b b* a rearwardly-extending beam *c* is secured, said beam being of considerable length and carrying at its rear extremity a bracket *d* for the reception of the bracket of a caster-wheel *d'*, adapted to support the rear end of the frame thus formed. Secured to the timbers *b* at the opposite end from the beam *c* is a diagonally-disposed bar *e*, to which one end of a diagonally-disposed frame D is secured, said frame being also supported by hangers *e'*, secured to and depending from the beam *c*. The frame D is composed of longitudinal timbers *f* and cross-bars *f' f'*, the bar *e* constituting the cross-bar at the forward end of the frame.

Secured to the cross-bars *e f' f'* are jour-

nal-boxes *g*, in which two revoluble frames E are journaled and adapted to rotate together. Each frame E may consist of side bars *h* and end bars *g'*, the journal-bearings of said frames E being projected from the end bars *g'*. The forward journal of the forward frame E is projected beyond its bearing and provided with a gear-wheel *i*, adapted to mesh with a gear-wheel *i'*, secured to the axle A. By this means rotary motion is imparted to said rotary frames.

The frames E are preferably disposed at an angle to each other, but adapted to rotate together. Pivottally connected to the side bars *h* of the frames E are finger-bars *j*, to each of which a series of fingers or rake-teeth *k* are secured, said fingers or teeth being bent to form a spring *k'* at their upper ends and being made of a length nearly equal to the width of the frames E. This can readily be done, as there is no central shaft running through said frames, and said fingers can therefore be made quite long. Extending from one longitudinal bar to the other of the diagonally-disposed frame are two curved plates *l*, one to correspond with each revoluble frame. The pivoted bars *h* are each provided at the center with cam plates or projections *m*, which are adapted to come into contact with the curved plates *l* as the frames E rotate, and thus hold the pivoted finger-bars locked, so as to cause the fingers or rake-teeth to be rigid and rake the hay. As soon as the cam-plates *m* leave curved plates *l l* the rakes will be again set free and be permitted to fall back to a proper position to be again locked when the frame shall have sufficiently rotated.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a horse hay-rake, the combination, with the main frame and obliquely-set rake-frame, of frames revolubly supported in the rake-frame, finger-bars hinged on said revoluble frame, curved plates extending transversely beneath the revoluble frames, these curved plates secured at their ends to the sides of the rake-frame, and cam-plates secured to the finger-bars opposite the curved plates and above the latter and adapted to travel thereon, whereby the finger-bars are confined in a

certain position during a part of the revolution of the revoluble frames, substantially as set forth.

5 2. The combination, with a main frame, a beam extending rearwardly from said main frame, and a caster-wheel supporting the rear end of the beam, of an oblique frame secured to the main frame and the beam, revoluble frames supported in the oblique frame, finger-
10 bars, curved plates secured to the sides of the

oblique frame, and cams secured to the finger-bars in position to travel along the upper faces of the curved plates, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscri- 15
ing witnesses.

JACOB B. ENGSTROM.

Witnesses:

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