

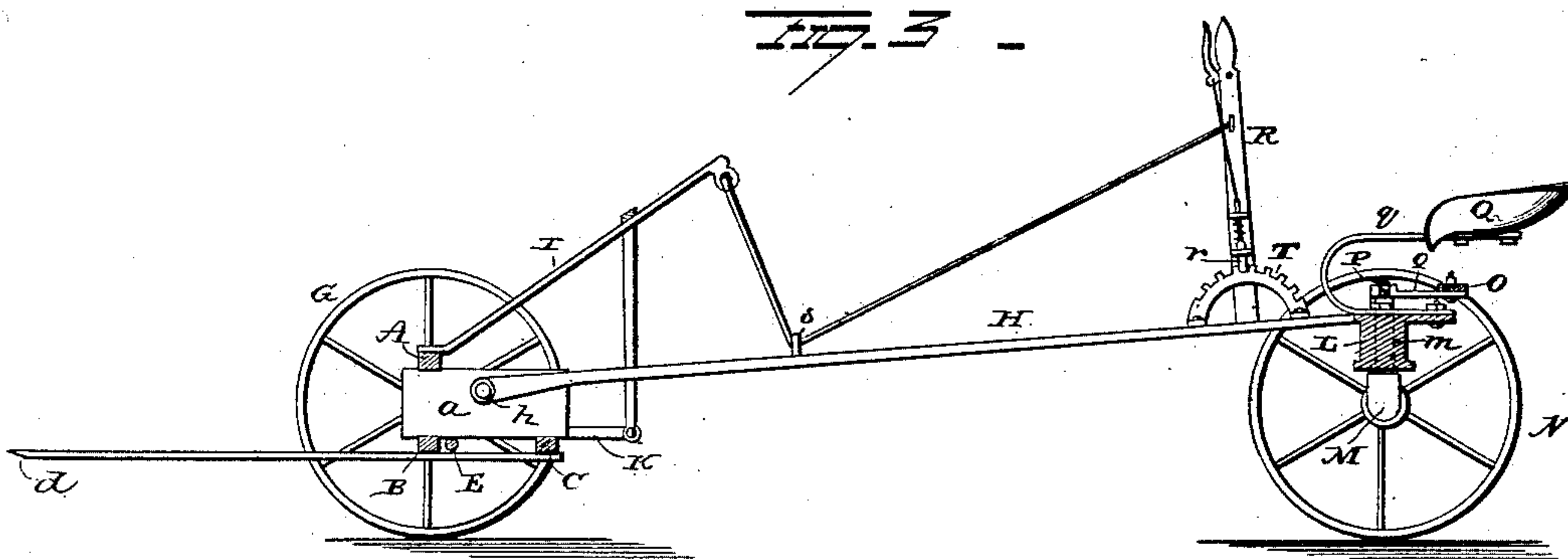
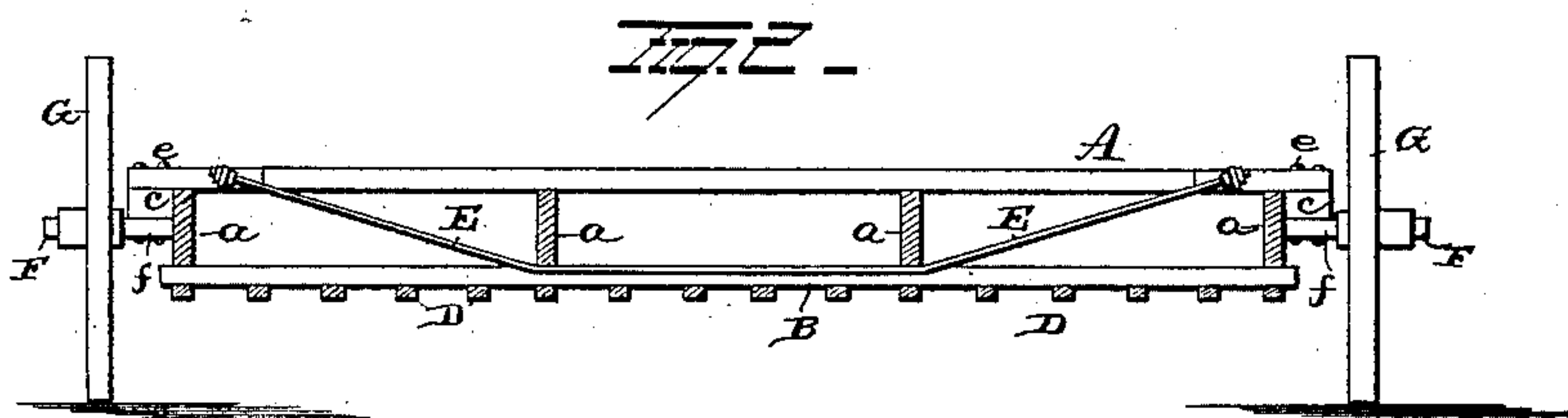
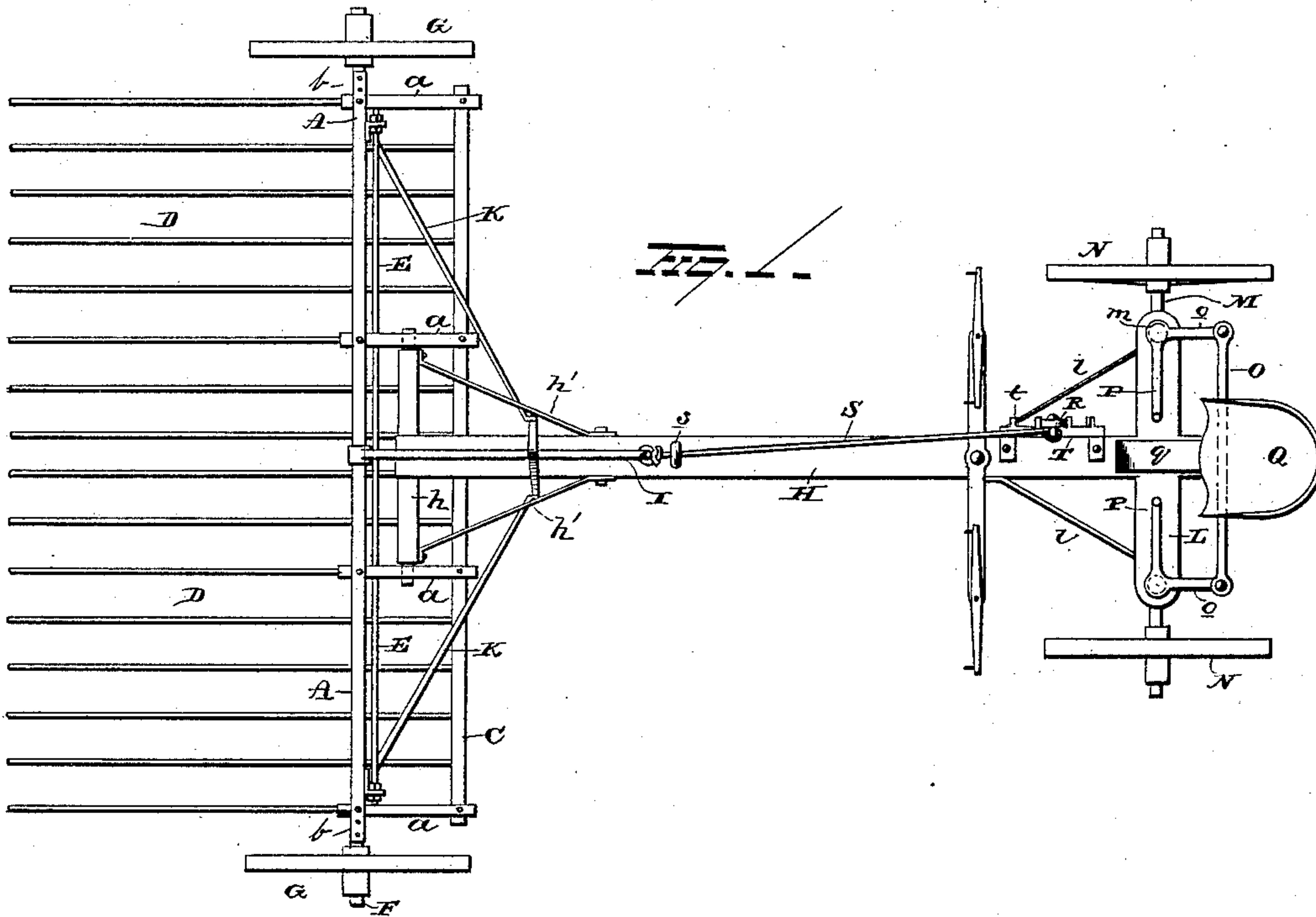
(No Model.)

J. H. SIGAFOOS.

HORSE HAY RAKE.

No. 354,254.

Patented Dec. 14, 1886.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

JAMES H. SIGAFOOS, OF FREMONT, NEBRASKA.

## HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 354,254, dated December 14, 1886.

Application filed October 17, 1885. Serial No. 180,120. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. SIGAFOOS, of Fremont, in the county of Dodge and State of Nebraska, have invented certain new and useful  
5 Improvements in Horse 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.

10 My invention relates to an improvement in horse hay-rakes.

The object is to provide a light, stiff, easily-running rake, which may be guided and adjusted with slight expenditure of strength and  
15 with great accuracy.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

20 In the accompanying drawings, Figure 1 is a top plan view of the rake. Fig. 2 is a transverse vertical section through the rake-head, and Fig. 3 is a longitudinal vertical section through the tongue.

25 The rake to which my invention applies belongs to that class in which the horses travel in the rear of the rake, and the driver guides the same from a sulky drawn by the team.

The rake-head consists, preferably, of a pair  
30 of front parallel rails, A and B, the rail A being located a short distance above the rail B, and a rear rail, C, in the same horizontal plane with the rail B and running parallel with the rails A B. The three rails A B C are united  
35 by a series of cross plates or blocks, *a*, one being located at each end of the rake and two or more at suitable distances between these. The teeth D are secured at their heads to the rail C, and at a short distance from their heads to the rail B, their points extending forwardly to the desired distance, and being beveled on the under side, as shown at *d*, to cause them to  
40 slide more freely over the ground or any obstruction which they may encounter. A brace-rod, E, extends from the ends of the rail A diagonally downward beneath the two middle cross plates or blocks *a*, and beneath several  
45 of the middle teeth, if desired, thereby binding the parts of the skeleton head thus formed  
50 rigidly together and preventing any liability

of sagging in the middle when a heavy load is gathered on the rake.

The upper front rail, A, is conveniently made to project a short distance beyond the end cross-plates, as shown at *b*. The ends *b*  
55 are re-enforced by strong blocks *c*, located beneath them, and the spindles F, terminating in flat plates *f*, adapted to fit the lower faces of the blocks *c*, and, together with the blocks *c*, are secured firmly to the ends *b* by draw-bolts *e*.  
60

The ground-wheels G, mounted on the spindles F, are sufficiently large to roll freely over any of the ordinary ridges, stones, or other slight obstructions commonly found in a hay-field, and, being located well toward the front,  
65 the rake, when loaded, is more readily tilted to clear any dangerous obstacle.

H represents the tongue. It is provided with a cross rod or bar, *h*, by which it is pivotally secured in the two middle cross-plates,  
70 *a*, and leads rearwardly therefrom to the sulky. A pair of diagonal braces, *h'*, connect the tongue H and cross rod or bar *h*. A lever, I, for tilting the rake, is secured to the upper rail, A, in line with the tongue, and extends  
75 upwardly and rearwardly from said rail a distance sufficient to give the required leverage.

Diagonal braces K extend from the ends of the rail B across the rail C, to which they are secured, to points a short distance below and  
80 nearly in vertical planes with the side edges of the tongue. The ends of the braces K are connected by a V-shaped brace, which extends upwardly over the tilting-lever I, to which it is secured. The rear end of the tongue H is  
85 provided with a firm cross-head, L, rigidly secured thereto and braced by the rods or bars *l*.

Suitable bearings are provided in the ends of the cross-head L, in which are journaled the vertical arms *m* of the crank-axles M. The  
90 sulky-wheels N are mounted on the axles M, and serve to guide the rake, as follows: To the upper ends of the arms *m* are firmly secured the rearwardly-extending arms *o*, the free ends of which are connected by a rigid rod, O, the  
95 joints between the rod O and the arms *o* being of such a nature as to admit of the arms being swung to the right or left.

Foot-levers P are firmly secured at one end to the upper ends of the arms *m*, and extend  
100



toward each other to positions within convenient reach of the feet of the driver as he sits upon the seat Q, secured by a spring-standard, g, to the rear end of the tongue.

5 Since the foot-levers P extend in opposite directions from their respective axles, it follows that a forward pressure on one of the levers P will, through the arms o and connecting-rod O, cause the other lever P to recede, 10 and the two wheels N will be thereby simultaneously canted to the right or left, as the case may be, and the rake will be guided left or right.

15 An operating-lever, R, is pivotally secured at its lower end to the tongue H, its handle extending upwardly within easy reach of the driver. A cord or chain, S, is secured at one end to the lever R, and leads from thence forwardly through an eye, s, secured to the tongue, 20 and thence to the end of the tilting-lever I, to which it is secured.

The operating-lever R is locked in the desired rocking adjustment by means of a spring-actuated dog, r, in engagement with the notches 25 of a sector-bar, T, secured to the tongue; or the sector-bar T may be provided with curved or hooked teeth t, and the lever be placed between them and held in position by the weight of the rake and its load.

30 By drawing back on the lever R the teeth of the rake will be lifted from the ground, and may be held suspended at any desired height or lowered at pleasure.

35 The rake is preferably constructed of wood, with the exception of a few of the braces and the wheels, which are of iron. The double-tree, to which the horses are attached, is conveniently located just in front of the sector-bar T.

40 The above construction admits of the greatest accuracy in guiding the rake, and also admits of the rake-teeth being raised or lowered with the load thereon with but little exertion on the part of the operator.

45 It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to 50 the construction herein set forth; but,

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

1. The combination, with a rake-head consisting of the upper and lower rails, blocks located between said rails, and teeth secured to the lower rails, a truss-rod secured at its ends and passing below the blocks, and carrying-wheels for said rake-head, of the tongue loosely secured to the rake-head, a cross-head 55 secured to the tongue, horizontally-swinging crank-axes journaled in the ends of the cross-head, connected crank-arms secured to the upper ends of the axles, foot-levers extending from the ends of the axles toward each other, 60 and devices for tilting the rake-head, substantially as set forth.

2. The combination, with the rake, the rearwardly-extending tongue, the cross-head secured to the end of the tongue, and the horizontally-swinging crank-axes journaled in the 65 ends of the cross-head, of connected crank-arms located above the cross-head and secured to the upper ends of the axles and foot-levers extending from the end of the axles toward 70 each other, substantially as set forth.

3. The combination, with the tilting rake supported upon wheels, the rearwardly-extending tongue hinged to the rake head, the laterally-swinging axles journaled in a cross-head secured to the rear end of the tongue, 75 connected crank-arms secured to the upper ends of the axles, and foot-levers extending from the ends of the axles toward each other, of the sulky-supporting wheels, the driver's 80 seat located over the rear end of the tongue, the operating-lever connecting with a tilting-lever on the rake head, and means for locking the operating-lever in any desired rocking adjustment, substantially as set forth. 85 90

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES H. SIGAFOOS.

Witnesses:

GEO. H. FORNEY,  
O. H. P. SHIVELY.