

(No Model.)

3 Sheets—Sheet 1.

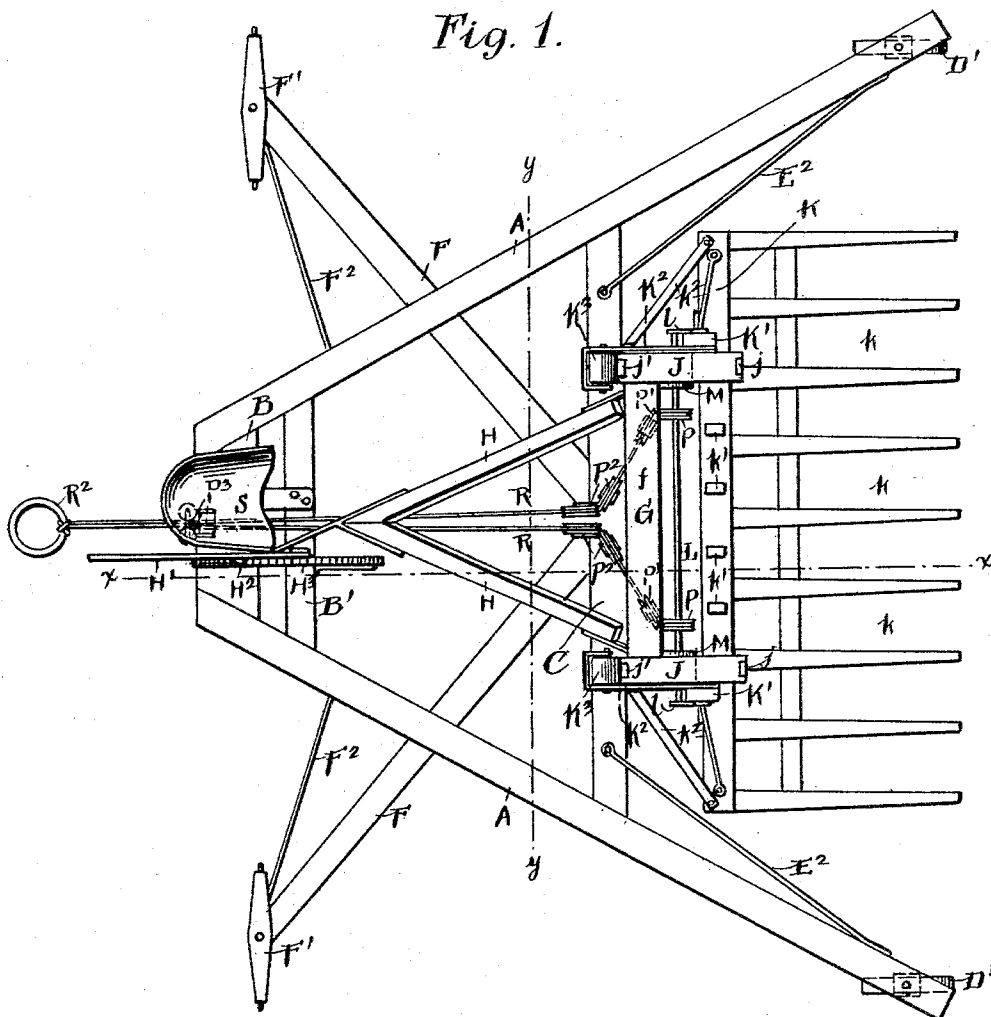
S. CONCANNON.

HAY RAKE AND LOADING AND STACKING MACHINE.

No. 584,210.

Patented June 8, 1897.

Fig. 1.



Witnesses.

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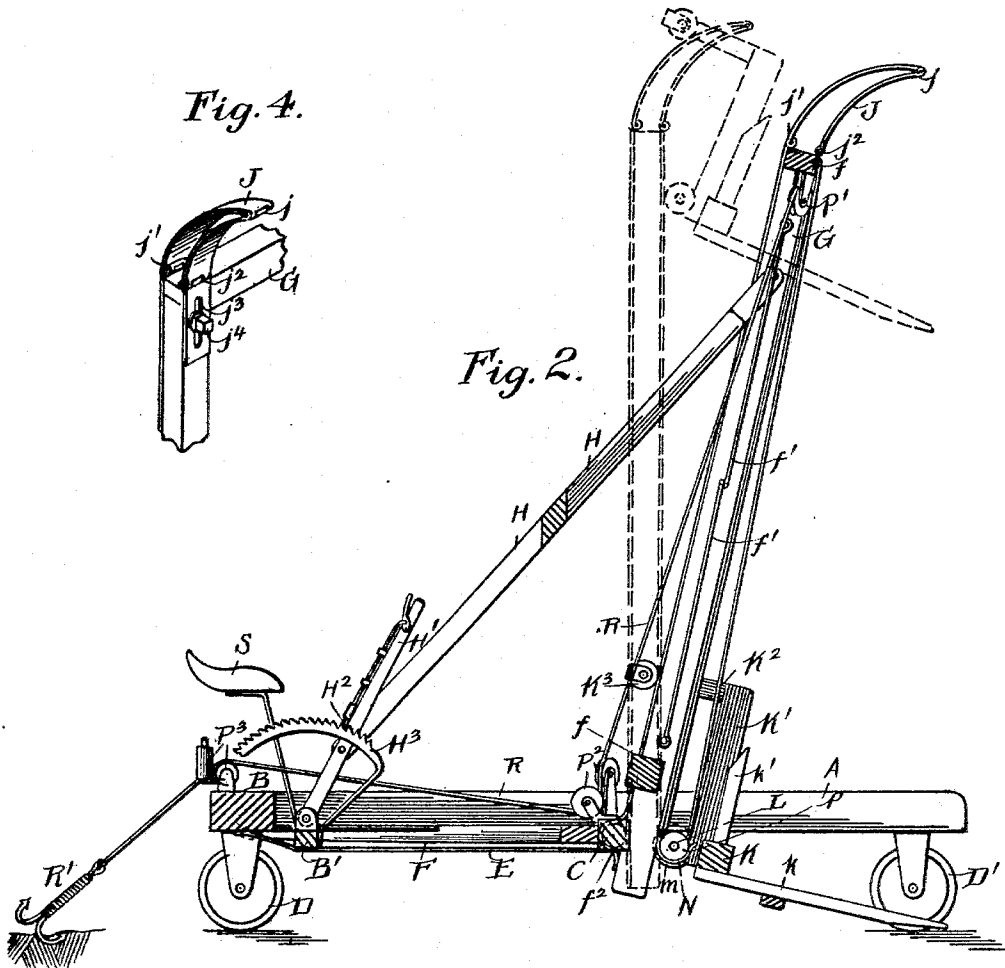
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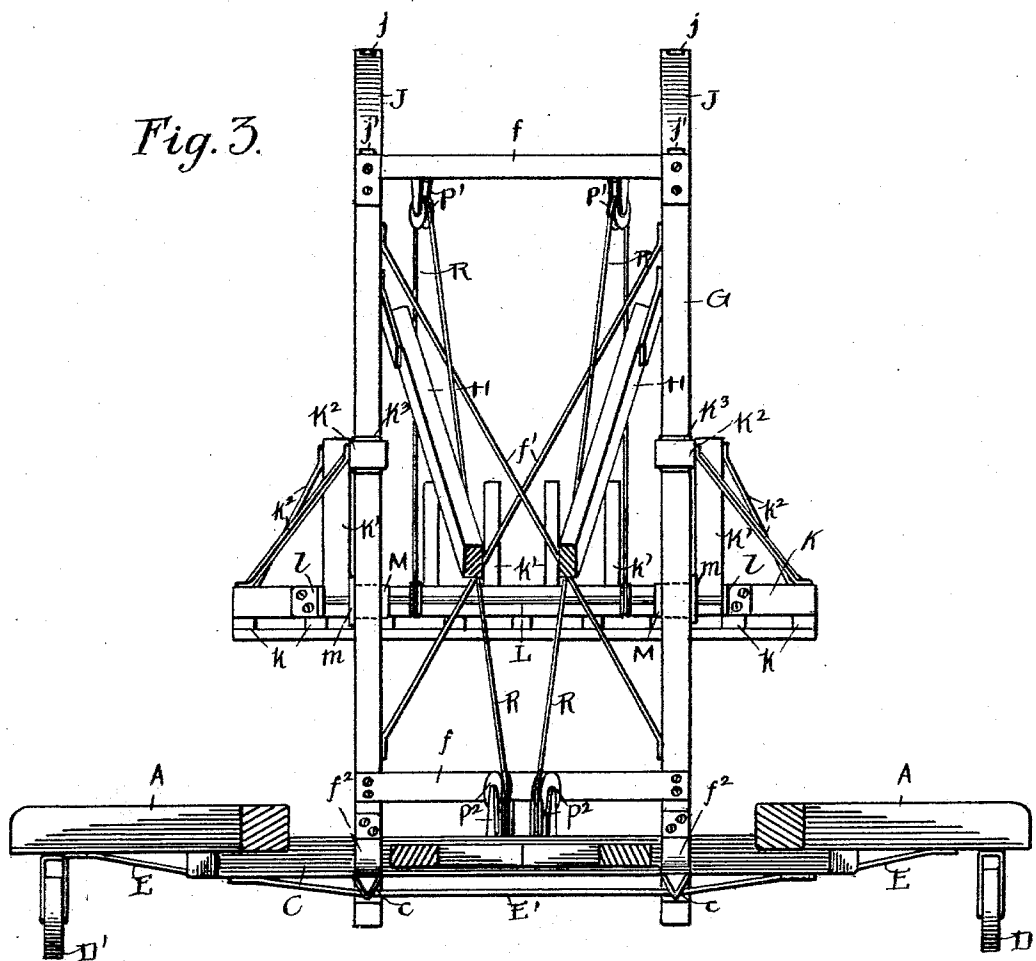
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UNITED STATES PATENT OFFICE.

SHERMAN CONCANNON, OF LENEXA, KANSAS.

HAY-RAKE AND LOADING AND STACKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 584,210, dated June 8, 1897.

Application filed November 5, 1896. Serial No. 611,137. (No model.)

To all whom it may concern:

Be it known that I, SHERMAN CONCANNON, a citizen of the United States, and a resident of Lenexa, in the county of Johnson and State of Kansas, have invented certain new and useful Improvements in a Combined Hay-Rake and Loading and Stacking Machine; and I do 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 of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a plan view of the invention with frame G vertical. Fig. 2 is a section on line $x x$, Fig. 1, with frame G thrown forward, dumping position of rake being shown in dotted lines. Fig. 3 is a section on line $y y$, Fig. 1. Fig. 4 is a perspective view of one of the dump or trip arms.

This invention is designed to provide a machine of improved character combining in one machine the functions of a hay-rake, a hay-stacker, and a hay-loader, and, further, to provide a machine of this character which is not materially, if any, heavier than an ordinary hay-loading machine, which is of simple but strong and durable construction, and which is a practical and effective machine.

With these objects in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

The supporting-frame of the machine, as illustrated in the accompanying drawings, consists of a pair of oblique forwardly-diverging side bars A A, rigidly connected at their converging rear ends by a piece B, brace B', and a cross-bar C, which connects intermediate portions of the said bars.

D is a caster-wheel which is journaled in the piece B, and D' D' are the two forward wheels, one of which is journaled in a suitable bracket or bearing underneath the forward portion of each of said side bars. Said frame is strengthened by the truss rods or braces E, one of which extends underneath each of said side bars over the ends of the braces B' and C, and also by a similar rod E',

which extends underneath the brace C and has intermediate bearings thereon at c.

E² are brace-rods, which extend from the forward ends of the respective side bars A A to the brace C. This construction is designed to provide a frame of neat appearance and also one which is strong and durable and of comparatively little weight.

The side bars A diverge to a considerable distance from each other to the rear of the bar or brace C, in order to receive between them the rake presently to be described.

G designates an upright frame composed of two side posts connected at top and bottom by cross-braces f and also by the oblique intercrossing rods f' . Said frame has at its lower end a hinged or pivotal connection with the cross-bar C, as indicated at f^2 . H designates a brace for said frame, which consists of two downwardly and rearwardly extending bars, which are pivoted or hinged at their upper end portions to the inside of the respective side bars of the frame and whose lower ends converge and are secured together and pivotally connected to a lever H', which is fulcrumed on the brace B'. H² is a pawl carried by said lever, and H³ is a rack which is engaged by said pawl to lock the lever.

Secured to the upper end of each side post of the frame G is a forwardly-curved dump or trip arm J, having therein hinged joints at the three points $j j' j^2$. One portion of said arm has therein a slot j^3 , which is engaged by a set-screw j^4 . By the adjustment of this arm on the screw it will be seen that the pitch or inclination of the arm will be correspondingly adjusted, this movement being permitted by reason of the hinge-joints at $j j' j^2$. Secured to the central portion of the bar C and extending laterally and rearwardly therefrom in opposite directions are two draft-bars F, which pass underneath the bars A, to which they are secured, and extend some distance laterally thereof. Pivoted to the outer end portion of each of these bars is a single-tree F', to which a horse is attached in operation, there being, as will be seen, a horse at each side of the machine. E² are brace-rods for said draft-bars.

K designates the rake-head, which has thereon two sets of teeth k and k' at right an-

gles to each other. The horizontal teeth k are longer than the vertical teeth k' , which are more properly guards.

k^2 indicates the several braces for the rake.

5 K' designates two vertical posts which are secured to the rake-head, one a short distance from each end thereof. Secured to the upper end portion of each post is a rearwardly-projecting horizontal arm K^2 , whose rear end
10 portion is bent around behind the adjacent side post of the upright frame G, and in said bent portion is journaled an antifriction-roller K^3 , which as the rake is raised and lowered is designed to run upon the rear face of
15 the said post.

L is a shaft which is supported in brackets
17 at the rear of the rake-head, and upon which are two loose rollers M, which are designed to travel on the front sides of the side posts of
20 said frame G, and which have flanges m thereon, which engage the outer edges of said posts. N designates brackets secured to said side posts and in which the rollers m rest when the rake is in normal position.

25 P P designate two flanged pulleys loosely mounted on the shaft L.

P' P' are two pulleys hung from the upper cross-bar of the frame G, and P^2 P^2 are two pulleys on the cross-bar C.

30 P^3 indicates antifriction-rollers on the rear frame-piece B.

R is a double cable, the two ends of which are brought together and are attached to an anchor R' . From this anchor the cable passes
35 forward between and over the pulleys P^3 , thence over the pulleys P^2 , thence its two portions separate and pass upward and respectively over the two pulleys P' , thence downward and around the two pulleys P . In lieu
40 of the anchor R' the ends of the cable may be provided with a ring or loop R^2 (see Fig. 1) or with any other suitable device by means of which it may be made fast.

S designates the driver's seat.

45 The operation is as follows: In raking, the lever H' is thrown forward, which causes, through the movement of the brace H, a forward tilting of the upright frame G and a consequent dropping of the teeth k of the rake.

50 When the rake is loaded, the lever is thrown back to raise the teeth and the machine is driven to the load or to the stack, as the case may be. At the proper distance from the load or stack one or more stakes are driven
55 into the ground or some other suitable obstruction is provided with which the anchor, loop, or other device on the end of the cable R may be engaged and made fast. By reason of such engagement as the machine moves

60 forward the rake is automatically moved up on the frame G, being guided by the rollers K^3 and M. The stake or other obstruction is located at such a distance from the stack that the rake will have been elevated to the de-

sired height by the time the stack is reached, 65 at which time the said rollers K^3 run onto the dumping or trip arms J, and the teeth k of the rake are depressed and the load thereby thrown off onto the stack or load. The rake is then lowered for the next operation. Ow- 70 ing to the character of the frame and the arrangement of the draft the stack or load can be approached from any direction.

The machine can be operated on any ground where an ordinary horse-rake can be used. 75

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

1. The combination with the supporting-frame, of the upright frame G hinged or piv- 80 oted at its lower end portion to said supporting-frame, the rearwardly and downwardly converging brace-bars whose upper end portions are pivoted to the respective side posts of said upright frame, and whose lower end 85 portions are connected, a lever to which said lower end portions are pivotally connected, and means for securing said lever, substantially as specified.

2. In a machine of the class recited, the 90 combination with a supporting-frame, of the upright frame mounted thereon hinged or pivoted at its lower end portion to the supporting-frame, the rearwardly and down- 95 wardly converging brace-bars whose upper end portions are pivoted to the respective side portions of said upright frame, an operating-lever to which the lower end portions of said bars are connected, a rake normally sup- 100 ported upon the lower portion of said upright frame, and adapted to move up and down thereon, and a cable attached to said rake and having means whereby one of its ends may be made fast, together with bearings for said cable, and trip devices at the upper portion 105 of said upright frame, substantially as specified.

3. In a machine of the class recited, the combination with a supporting-frame, of the 110 upright frame, having a hinged or pivotal connection with the supporting-frame, the rearwardly and downwardly converging braces whose upper end portions are pivoted to said upright frame, the lever to which said bars 115 are connected at their lower ends, trip-arms at the upper end of said frame, a rake adapted to be moved up and down on said frame, and having guide-rollers which run upon the same, a cable attached to said rake and having an anchoring device, and bearings for said cable, 120 substantially as specified.

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

SHERMAN CONCANNON.

Witnesses:

Mrs. R. J. CARTER,
ROSSELL ALLEN.