

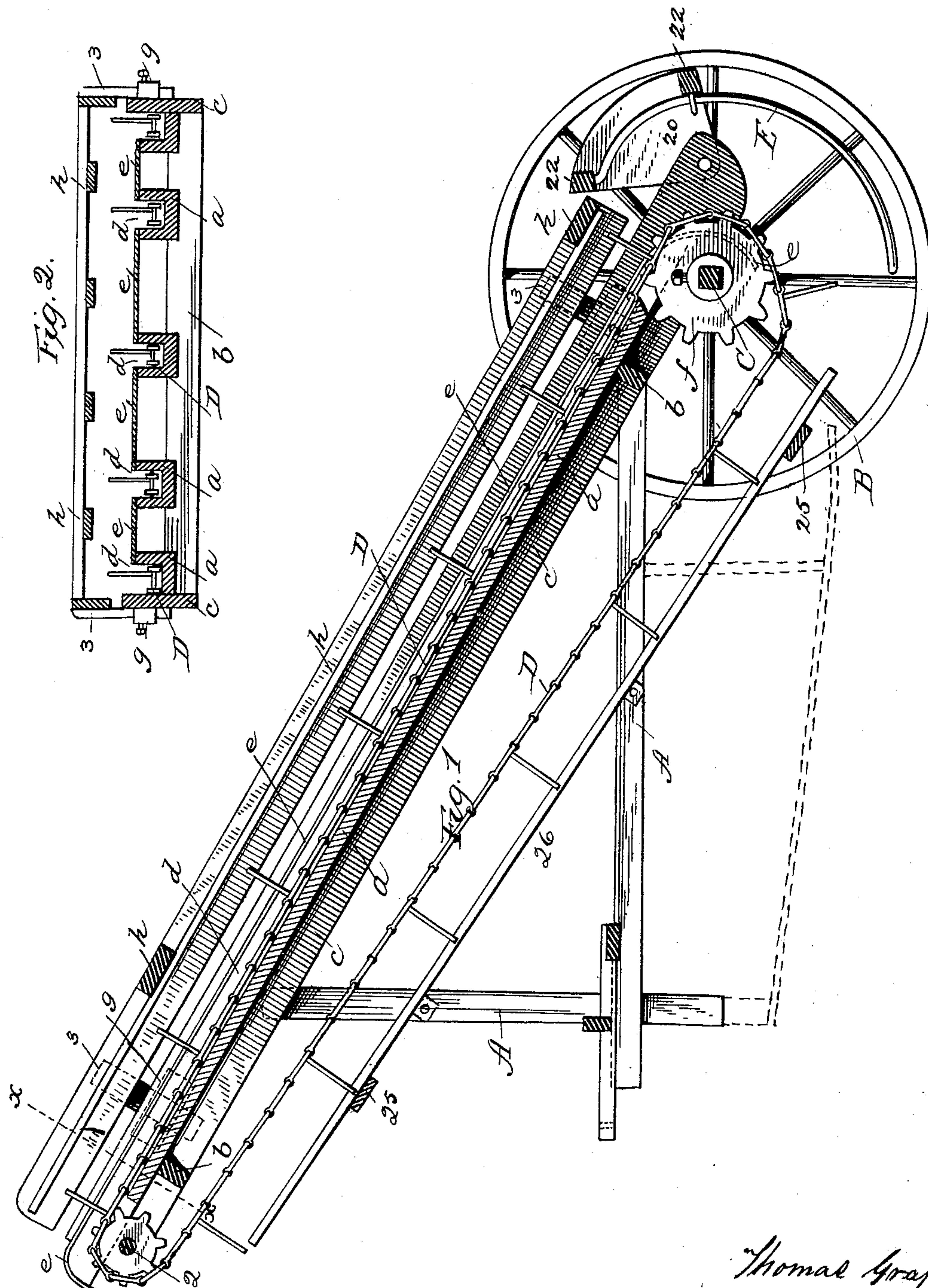
(No Model.)

2 Sheets—Sheet 1.

T. GRAPES.  
HAY LOADER.

No. 368,203.

Patented Aug. 16, 1887.



Attest:  
J. M. Yznaga,  
W. K. Rindenhall

Thomas Grapes  
Inventor

by Howard Bras  
Attys.

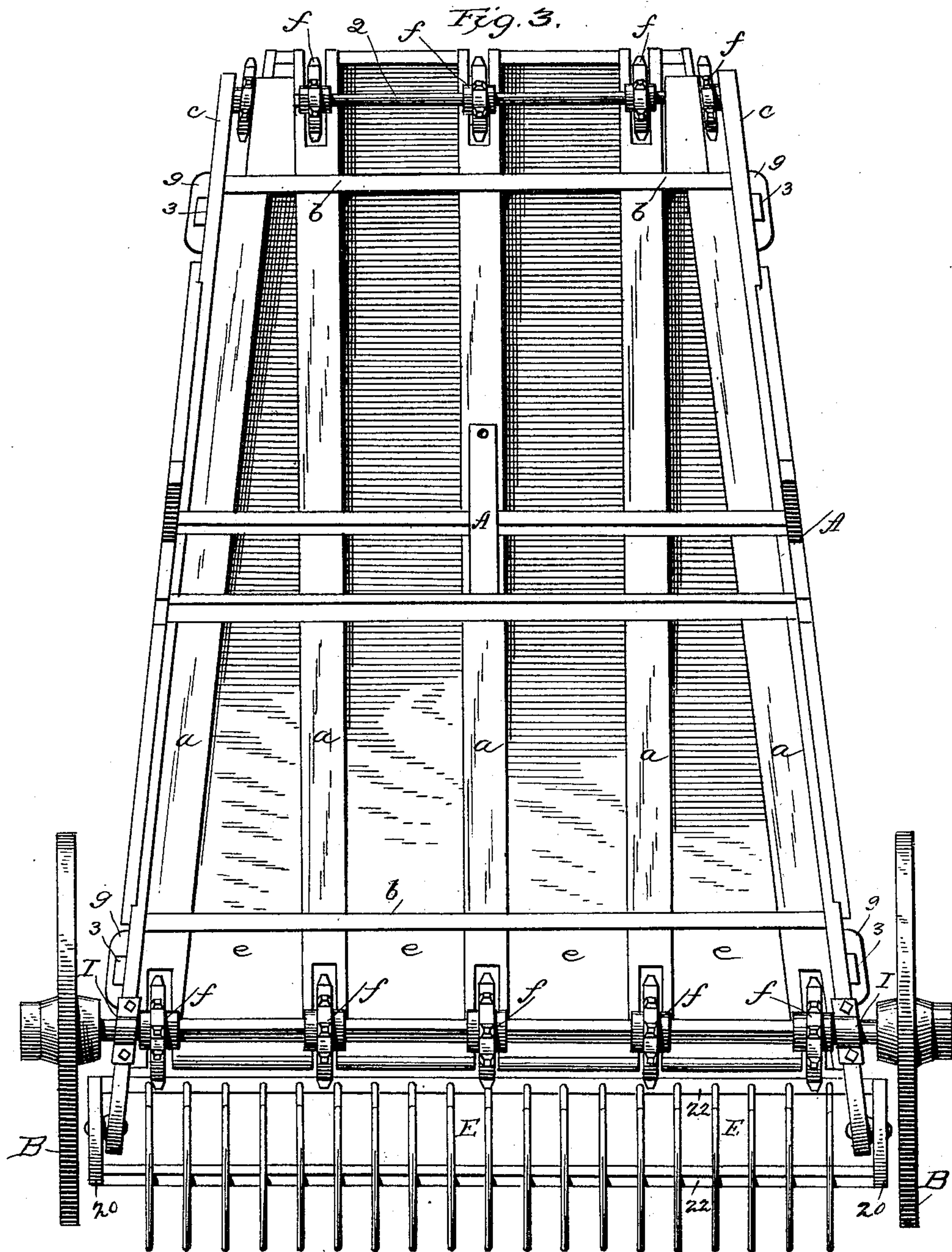
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# UNITED STATES PATENT OFFICE.

THOMAS GRAPES, OF WORTHINGTON, IOWA.

## HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 368,203, dated August 16, 1887.

Application filed January 19, 1887. Serial No. 224,802. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS GRAPES, a resident of Worthington, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Hay-Loaders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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.

My invention relates to hay-loaders of that class in which a series of endless chains provided with projecting blades or teeth are used to transfer the hay from the ground to the wagon.

The object of the invention is to simplify the construction and make the apparatus more effective in operation.

The invention consists in the devices and combination of devices hereinafter fully described and particularly claimed.

In the drawings, Figure 1 represents a longitudinal central section of the loader. Fig. 2 is a section on line *xx* of Fig. 1. Fig. 3 is a plan view of the bottom.

In the drawings, A represents the ordinary supporting frame-work adapted for connection with the wagon upon which the hay is to be loaded.

B B are ordinary supporting-wheels mounted on a square axle, C. The loader proper is supported by these wheels and by the frame A, and consists of the longitudinal beams *a*, suitably braced by lateral supports *b b*, with side pieces, *c c*, and the metallic sections *e* between the longitudinal beams. These beams *a* run the length of the loader, and are grooved, as shown at *d*, the whole extent to receive the links of the chains D D. At both ends this groove is made entirely through, so as to form slots which are adapted to receive sprocket-wheels over which the chains pass. Between the beams *a a* sheet-metal sheathing is placed, as at *e*, thus completely covering the space at the bottom. The beams are increased or diminished according to the number of conveyer-chains it is desired to use.

On the axle C are secured sprocket-wheels *f*

*f*, one being provided for each conveyer-chain, and these may be made adjustable along the axle by means of a set-screw, so as to be moved to suit the position of the chain. The axle is held in bearings I I, as shown, beneath the frame, and thus the traction power of the wheels is communicated to the sprocket-wheels and the conveyer-chains passing over them.

At the extreme upper end of the loader a shaft, 2, is provided, held in bearings in the side pieces, and provided with an equal number of sprocket-wheels to the main axle, the central ones being the same distance apart, but the outer ones, by reason of the contraction of the loader at this point, being nearer to the center ones, and consequently inclined. These sprockets *f* are loose upon their supporting-shaft 2, so that the outer inclined ones can revolve without difficulty. As before stated, the peripheries of the wheels extend up through slots in the beams, and while the lower set drive the chains the upper set simply serve as idle-wheels over which the chains pass.

The conveyer-chains are of ordinary construction. As they pass within the grooves, the links of the chains are hid, and nothing but the prongs projecting from the said chains come in contact with the hay. Upon the extreme lower ends of the side pieces I pivot a rake, E, which is also of ordinary construction. By pivoting it upon the loader the prongs are prevented from being bent or broken in its backward movement, as it will thus give readily.

From an inspection of Fig. 1 it will be noticed that the pivotal points of the rake are at the lower ends of the frame sides. Supporting-pieces 20 are pivoted at these points, and are provided with cross-bars 22 22. The rake-teeth are supported by these bars, and it can thus be seen that the said teeth extend upwardly, and above the pivotal point a considerable distance curving toward the front, so that the material will be directed positively upon the supporting-frame and into the channel formed between said frame and the adjustable covering-frame, now to be described. I provide this adjustable frame to extend across the top of the loader, suitable loops, *g*, being formed on the side pieces in each side at top



and bottom of the frame, consisting of the longitudinal and lateral strips *h*, having holding-pieces 3 3, secured to the side strips and adapted to register with and fit the loops.

5 This frame may be held by frictional contact, if desired, or adjusting-screws may be used at the loops for this purpose, as shown in Fig. 2. It will be observed from Fig. 1 that this frame and the rake bear such a relation to each other  
10 that a complete channel is formed for the hay from the ground to the top of the loader. This frame keeps the hay pressed down and prevents it from becoming scattered.

15 The sheet-metal sections extend over the beams at both ends, so as not to leave any corners for the entanglement of the hay.

The apparatus is well known, and need not be particularly referred to.

20 When the machine has reached the end of the field and it is necessary to reverse it, under ordinary circumstances the contents of the loader would fall upon the ground, as the chains would travel backward and thus deposit their load. I have provided a construction, however, that prevents this. I arrange  
25 a frame-work beneath the loader proper, but preferably parallel with its inclined portion, so that in the backward movement of the loader the fingers of the chains will carry the hay  
30 upon them and that remaining in the rakes to the under frame, and if the backward movement is sufficient the hay will be carried entirely up beneath the loader and deposited on the wagon or mow. This frame may be com-  
35 posed of strips, as 26, Fig. 1, and cross-pieces 25, the whole supplemental frame being supported in any suitable manner from the main frame, such as shown in the drawings. As

the loader moves backward, the rake being pivoted, the teeth thereof swing up and in  
40 line with the under frame, so that the hay from the rake is easily carried onto the said frame.

If desired, instead of having the under frame extend to the top of the loader, it may be ar-  
45 ranged approximately horizontally, as shown in dotted lines, and the accumulated hay removed by a pitchfork or other means.

Having described my invention, what I claim, and desire to secure by Letters Patent  
50 of the United States, is—

1. A hay-loader consisting of the inclined frame mounted on wheels, the endless carrier-chains extending upwardly and traveling up-  
55 ward over the flooring of said frame, the pivoted rake at the rear of the frame, and the supplemental frame beneath the flooring of the loader to catch the hay when the machine is backed, all substantially as described.

2. A hay-loader consisting of the support-  
60 ing-frame and wheels, grooved beams with the intermediate metallic sections, suitable conveyer-chains and supporting and driving devices therefor, and a frame arranged across  
65 the top of the loader, adjustably supported thereon by holding-pieces 3 3, secured at its upper and lower ends, and corresponding loops secured to the loader-frame, substantially as described.

In testimony that I do claim the foregoing as  
70 my own I hereby affix my signature in presence of two witnesses.

THOMAS GRAPES.

Witnesses:

ANDREW A. BECK,  
L. C. GEARHART.