

(No Model.)

2 Sheets—Sheet 1.

C. C. AIKMAN.
HAY LOADER.

No. 578,533.

Patented Mar. 9, 1897.

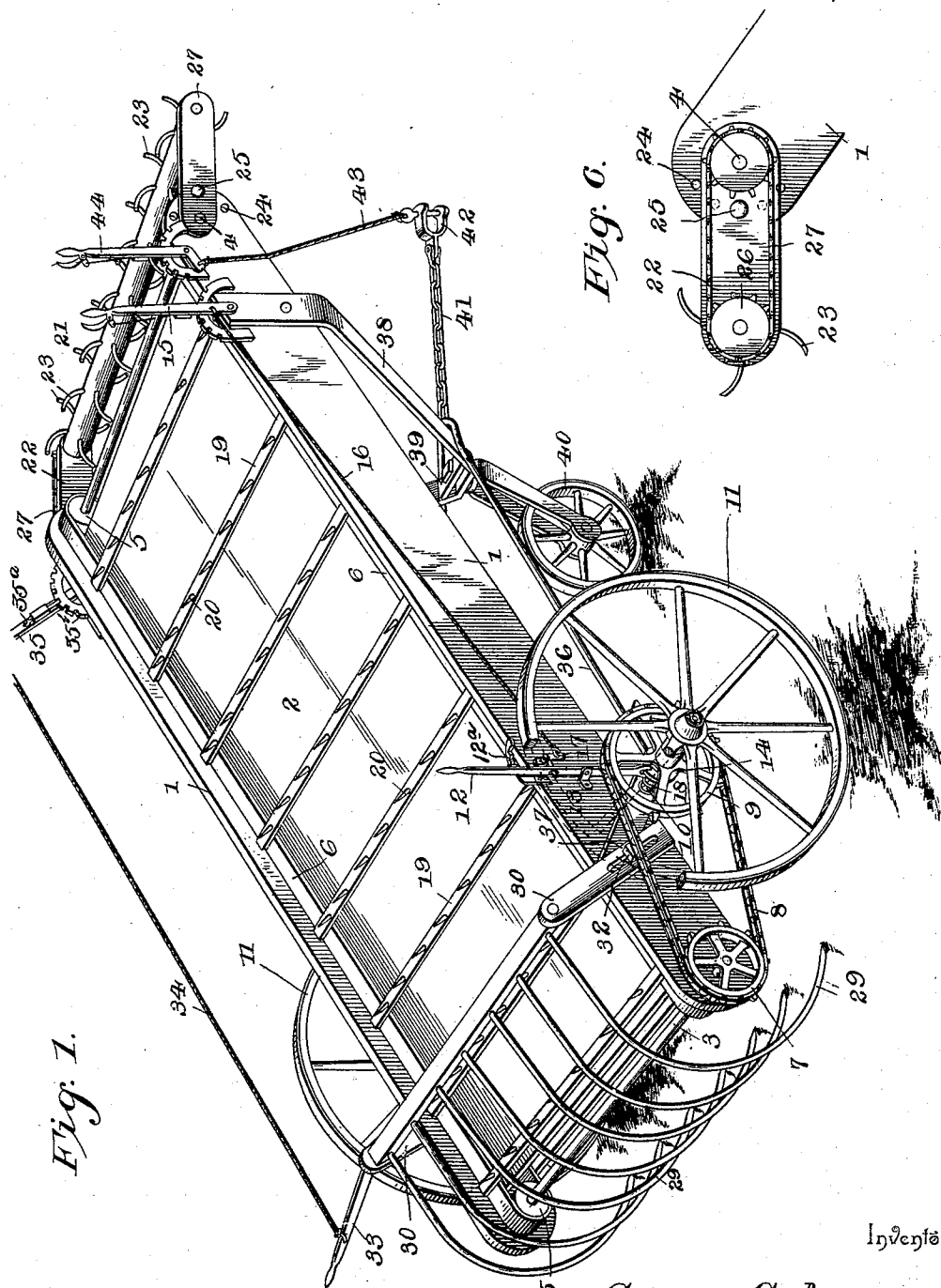


Fig. 1.

Fig. 6.

Witnesses

Chas. A. Ford

V. B. Hillyard

By his Attorneys,

Clinton C. Aikman,

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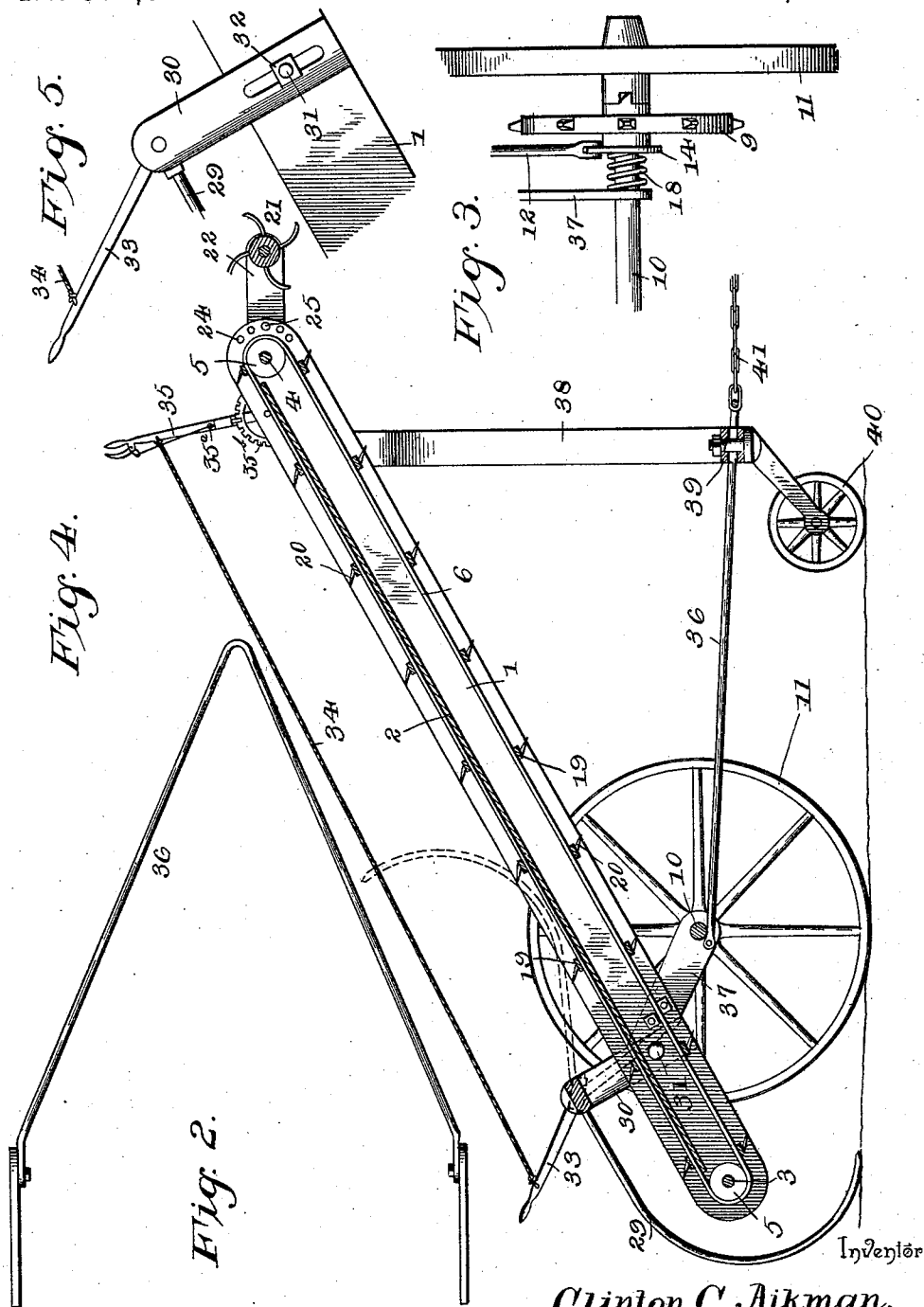
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UNITED STATES PATENT OFFICE.

CLINTON C. AIKMAN, OF DANA, INDIANA.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 578,533, dated March 9, 1897.

Application filed April 6, 1895. Serial No. 544,785. (No model.)

To all whom it may concern

Be it known that I, CLINTON C. AIKMAN, a citizen of the United States, residing at Dana, in the county of Vermillion and State of Indiana, have invented a new and useful Hay-Loader, of which the following is a specification.

The purpose of the present invention is to provide an attachment which can be readily applied to any farm-wagon to facilitate the raking and loading of hay therein.

The primary object of the invention is the provision of an attachment which can be controlled in its various operating parts from the load on the wagon without requiring dismounting and which at the same time will combine simplicity and compactness of construction and perform the required work in an efficient and satisfactory manner.

Other objects and advantages will appear from the subjoined description and the drawings hereto annexed, in which—

Figure 1 is a perspective view of a hay-loader embodying the vital principles of the invention. Fig. 2 is a top plan view of the draft-frame and the axle attached thereto. Fig. 3 is a detail view of the mechanism for throwing the machine in and out of gear. Fig. 4 is a longitudinal section of the attachment, showing the gathering-rake thrown out of operative relation by the dotted lines. Fig. 5 is a detail view of the provisions for adjusting the rake vertically with reference to the frame of the attachment. Fig. 6 is a detail view of the adjustable connections between the frame of the attachment and the revolving hay-distributor at the delivery end of the machine, also showing the means for driving the hay-distributor from the elevator.

The elevator-frame comprises side pieces 1 and a table 2, the latter being secured at its longitudinal edges to the said side pieces along a line about midway between their top and bottom edges. This frame normally inclines in an upward and forward direction from the lower or receiving end of the elevator, so as to extend over the wagon to which the machine is attached in order to deliver and load the hay therein. Shafts 3 and 4 are journaled near their ends in the side pieces 1 and have supporting-pulleys 5 to receive the belts

or chains 6 of the endless elevator or carrier. These supporting-pulleys 5 may be plain or have sprocket-teeth, according as belts or chains 6 are provided to pass thereover. A sprocket-wheel 7 is secured to the projecting end of the shaft 3 and receives a chain or belt 8, which passes over a corresponding sprocket-wheel 9 on the axle 10, by means of which motion is transmitted from the supporting-wheel 11 to the elevator or endless carrier. The supporting-wheel 11 is mounted to revolve loosely upon the axle 10, as is also the sprocket-wheel 9, and each is provided on its opposing side with a half-clutch, whereby on moving the sprocket-wheel 9 on the axle 10 the half-clutches will be brought into engagement and the sprocket-wheel 9 and supporting-wheel 11 will revolve as one part, thereby throwing the machine in gear and causing a movement of the elevator or carrier, whereby the hay is loaded into the wagon. This sprocket-wheel 9 is adapted to be moved into and out of engagement with the supporting-wheel 11 from a point either upon the ground or from the top of the load in the wagon, and suitable means will be provided to effect this result, and, as shown, will consist of a lever 12, pivoted to a bracket or support 13, attached to a convenient part of the frame and having its end bifurcated and embracing an annular flange 14, forming a part of the hub portion of the sprocket-wheel 9. The end of this lever 12 extends within convenient reach from the ground. A locking device in the shape of a notched segment 12^a engages with the lever 12 and holds it in the required position.

A corresponding lever 15 is located at the upper end of the elevator-frame, and is connected by a chain or cord 16 with a bell-crank lever 17, pivoted on the frame and having engagement with the lever 12, whereby the latter may be released from the notched segment 12^a and operated from the load on the wagon to throw the machine in and out of gear, as hereinbefore stated. This operation is easily effected from the upper end of the elevator, as the bell-crank lever 17 is disposed so that one member extends about parallel with the adjacent side of the elevator-frame and the other member projects about at right

angles therefrom, the inner end of the said lever 17 being loosely connected with the lever 12. Upon operating the lever 15 the bell-crank lever 17 will be turned upon its pivotal support, and its inner arm moving outward will carry the lever 12 with it and disengage the said lever 12 from the notched segment 12^a, as will be readily understood. As shown, the lever 15 is provided with the usual hand-latch and notched segment to hold it locked when the wheel 9 is thrown out of gear, and when the lever 15 is released the spring 18, regaining itself, will throw the wheel 9 again into gear. When the lever 12 is operated by the lever 15 through the intermediate connections, it will not engage with the notched segment 12^a. Hence upon releasing the lever 15 the lever 12 will be returned to a normal position by the expansive force of the spring 18. When the lever 12 is operated alone, it is engaged with the notched segment 12^a by moving it toward the latter after the wheel 9 has been thrown out of gear, so as to hold it in this position, but such action does not take place when it is actuated from the lever 15. Hence it is obvious that the wheel 9 can be thrown out of gear and again into mesh solely by the action of the lever 15.

A spring 18 will be mounted upon the axle 10 and so disposed with reference to the sprocket-wheel 9 as to hold the latter in gear. Each end of the axle 10 will be provided with a supporting-wheel 11, which may be connected so as to operate the elevator or carrier when circling either to the right or the left, as will be readily understood. For all practical purposes it is sufficient if one supporting-wheel be geared to operate the elevator or carrier in the manner just described. The elevator or carrier comprises endless belts or chains 6 and cross-slats 19, the latter being attached at their ends to the respective belts or chains 6 and having teeth 20, which are adapted to engage with the hay and elevate the same in the operation of the machine. These teeth 20 are metal pins and incline rearwardly, so as to disengage themselves from the hay at the delivery end of the loader and prevent dragging the hay under the table 2.

The revolving hay-distributor 21 consists of a cylinder or roller journaled at its ends in arms 22, which have adjustable connection at their inner or rear ends with the elevator-frame and parallel rows of teeth 23, the latter curving in an opposite direction to the movement of the said roller or cylinder to obviate dragging of the hay from the load. In the operation of the revolving hay-distributor the rows of teeth 23 receive the hay from the elevator or carrier and deliver it into the wagon in the best manner possible to form a compact and self-sustaining load. The arms 22 are pivoted at their inner ends to the sides 1 of the elevator-frame and have a series of openings 24 arranged concentric with the pivotal support of the said arms and which

are adapted to receive a pin 25, by means of which the said arms are held in the required adjusted position.

It will be understood that any desired means for effecting the adjustment of the arms 22 may be provided so long as the vertical adjustment of the revolving hay-distributor is attained, the means herein set forth being shown to illustrate one way of attaining the desired result. A sprocket or band wheel 26 is mounted upon a projecting journal of the revolving hay-distributor and receives a chain or belt 27, passing around a corresponding sprocket or band wheel 28, mounted upon the projecting end of the shaft 4, whereby movement is transmitted from the said shaft 4 to the revolving hay-distributor 21 in the efficient service of the attachment.

The gathering-rake 29 is journaled at its ends in standards 30, having adjustable connection with the elevator-frame, preferably by having their lower ends slotted for the passage of threaded rods or bolts 31, upon which are mounted binding-nuts 32. A crank arm or lever 33 at one end of the rake-head is connected by a rope or cord 34 with an operating-lever 35 near the delivery end of the attachment, whereby the said rake may be thrown out of operative position from the top of the load, when required, this feature being shown by the dotted lines in Fig. 4.

The lever 35 has a hand-latch 35^a, which engages with the teeth of a notched segment 35^b, by means of which the position of the rake 29 can be adjusted relative to the ground. Hence it will be seen that the rake can be adjusted by moving either the standards 30 or the lever 35 and that it can be tilted by operating either of the levers 33 or 35, the flexible connection 34 admitting of the lever 33 being tilted without disturbing the lever 35.

The draft-frame 36 is approximately V-shaped, the angular portion extending to the front and the separated ends having attachment with arms 37, which are secured to the sides of the elevator-frame and are constructed so as to form supports for the axle 10.

An approximately V-shaped brace 38 extends from the front end of the draft-frame 36 to the upper end of the elevator-frame, thereby strengthening these parts. The angular end portions of the said draft-frame and brace are firmly secured at the points of crossing, and the lower end of the brace is flattened and strengthened by a cross-bar 39. A pilot or caster wheel 40 is journaled in the flattened end of the brace 38 and the cross-bar 39, and is adapted to conform to the direction of movement of the attachment when deviating from a straight line in its travel over the field. A draft-chain 41 is attached to the front end of the draft-frame 36, and has a clevis 42 at its front end, by means of which attachment is had with the wagon to which the attachment is hitched. A rope or chain 43 is fastened at one end to the clevis-pin, and its opposite end is secured to a lever 44

at the upper end of the elevator-frame, so that when it is required to disconnect the attachment or machine from the wagon the same may be effected without necessitating the dismantling of the operator.

When using the loader, it is hitched to the farm-wagon in the ordinary manner by means of the clevis 42 in such a manner that the delivery end of the elevator projects over the bed of the wagon, so as to deposit the hay therein. As the wagon is drawn over the mown field the rake 29 gathers up the hay and deposits the same upon the carrier, and the latter in its travel moves the hay upon the table 2 upward and forward to the upper end of the table, where the said hay is caught by the revolving distributor 21 and thrown into the wagon. When a sufficient load has been gathered, the rake can be thrown out of operative relation, the elevator ungeared, and the machine detached from the loaded wagon without requiring the dismantling of the attendant, as hereinbefore stated.

For different localities different styles of attachments are required. Hence in constructing the machine to meet the various demands it is manifest that changes in the form, proportion, and the minor details of construction may be resorted to without departing from

the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

In a hay-holder, the combination of a rake, an elevator coöperating with the rake, actuating mechanism for operating the elevator, a clutch for throwing the elevator in and out of gear, a lever accessible from the ground and having connection with the said clutch, a locking device to hold the lever in an adjusted position, a bell-crank lever having one arm in engagement with the said lever, a second lever accessible from the load, and a flexible connection between the second lever and the aforesaid bell-crank lever whereby upon operating the said second lever the first-mentioned lever will be released from its locking device and will be simultaneously actuated to throw the elevator out of gear, substantially in the manner set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CLINTON C. AIKMAN.

Witnesses:

ANGUS E. VAN HOUTIN,
JOHN M. TAYLOR.