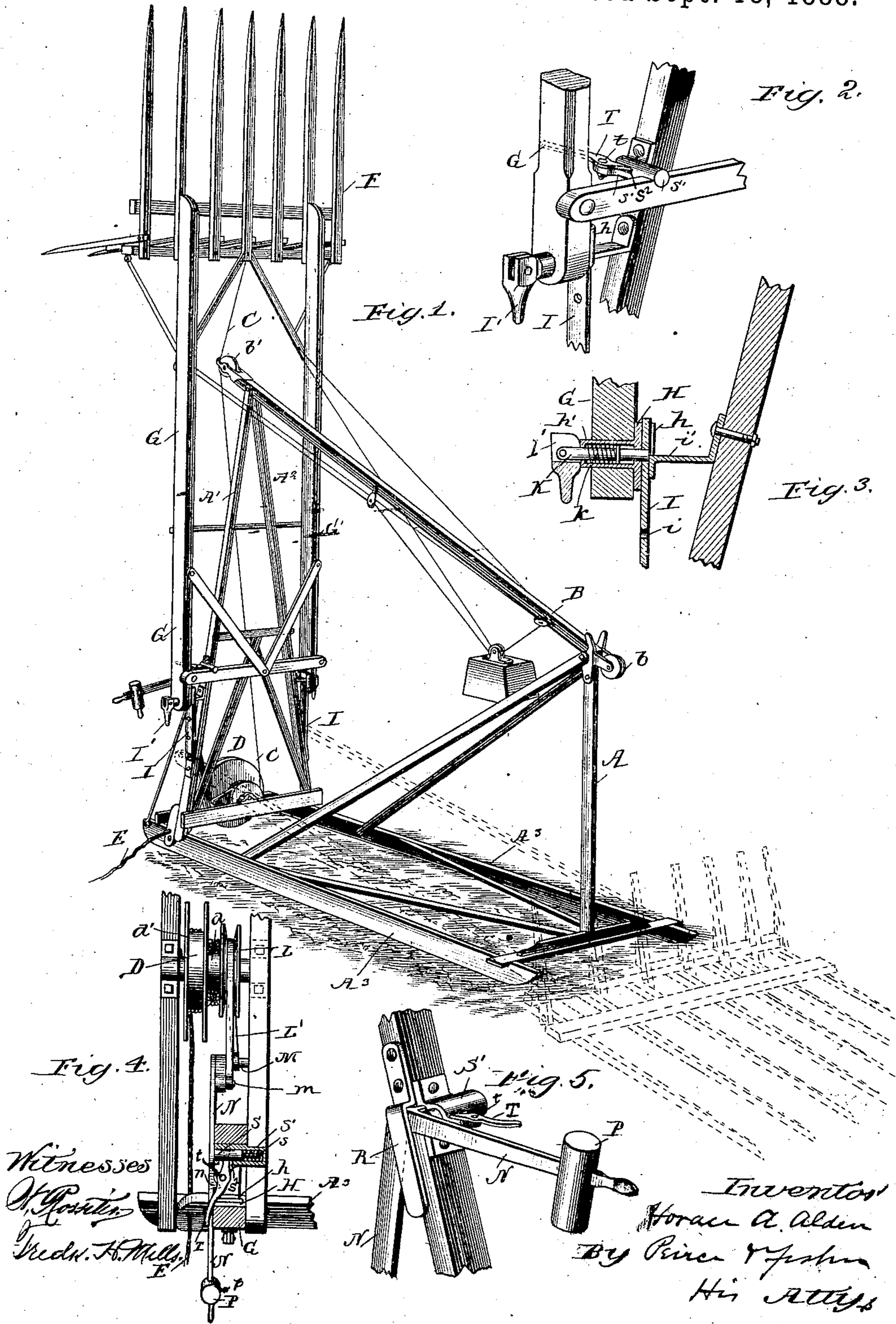


(No Model.)

H. A. ALDEN.  
HAY RICKING DEVICE.

No. 389,537.

Patented Sept. 18, 1888.



# UNITED STATES PATENT OFFICE.

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## HAY-RICKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 389,537, dated September 18, 1888.

Application filed April 23, 1888. Serial No. 271,609. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE A. ALDEN, a citizen of the United States, residing at Peoria, in the county of Peoria, State of Illinois, have invented certain new and useful Improvements in Hay-Ricking Devices, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention has relation more particularly to that class of hay ricking or stacking devices in which the hay is elevated from the ground by means of a broad fork or platform mounted upon the outer ends of arms adapted to swing upward and raise the hay to sufficient height to form a rick or stack.

In the building of stacks or ricks it is frequently desirable to carry the same to an unusual height; and one of the objects of my present invention is to provide improved means whereby the rear ends of the swinging arms that carry the elevating-platform may be vertically adjusted so as to enable the platform to be swung to greater height, and consequently to deliver its load to the top of a higher rick.

A further object of my invention is to provide the winding-drum of a lifting-rope with improved mechanism whereby the backward movement of this rope and the position of the platform can be controlled independently of the draft-horse, and in such manner as to avoid the necessity of backing the horse in order to permit the platform to be gradually lowered to the ground.

With these objects in view my invention consists in the various novel features of construction hereinafter described, illustrated in the accompanying drawings, and particularly defined in the claims at the end of this specification.

Figure 1 is a perspective view of a hay-ricker having my improvements applied thereto. Fig. 2 is an enlarged detail fractional view, in perspective, of the rear end of one of the swinging arms and the adjacent parts. Fig. 3 is an enlarged detail fractional view, in vertical section, through the rear end of one of the swinging arms and mechanism for adjusting the same. Fig. 4 is a view, partly in plan and

partly in cross-section, showing the winding-drum and brake mechanism. Fig. 5 is an enlarged detail perspective view of a portion of the brake-lever and the means for locking the same in position.

In the form of ricking device to which my invention is shown as applied, A designates the front post, and A' and A<sup>2</sup> designate the rear posts or standards of the ricker, these posts being mounted in any suitable or usual manner upon cross-bars that are sustained upon the runners A<sup>3</sup>, that rest upon the ground. The rear posts or standards, A' and A<sup>2</sup>, are shown as converging at their top and as connected with a longitudinal beam, B, that extends in forward and downward direction to the front post, A, and at the front and rear ends of this beam B are sustained the pulleys b and b', over which passes the lifting-rope C, that is wound upon the small portion d of the winding drum or pulley D, this pulley being mounted upon a shaft or axle suitably sustained in any well-known or convenient manner upon cross-beams at the rear end of the ricker. Over the larger portion, d', of the winding drum or pulley passes the draft-rope E, that is wound in a reverse direction from the lifting-rope, and to the free end of which will be hitched a draft-horse for lifting the loaded platform.

The elevating-platform F may be of any well-known or suitable construction, and is sustained upon the outer ends of the swinging arms G and G' in the usual manner, the inner ends of these arms being pivotally mounted, so as to permit the platform to swing up and over the top of the ricker-frame, in order to deliver its load upon the stack being formed at the rear side thereof. Instead, however, of connecting the rear ends of the swinging arms G G' to fixed pivots or journals, as has been heretofore the practice, I have provided means whereby the rear ends of these arms can be vertically adjusted, in order to permit the platform to be swung to a greater height when desired for building stacks of unusual height. The means which I prefer to employ for effecting the vertical adjustment of the rear ends of the swinging arms that carry the elevating-platform consist of journal-blocks H, that are adjustably mounted upon vertical brackets or

plates I, these blocks being preferably provided with the lips or flanges *h*, that serve to hold the blocks in a manner free to slide upon the brackets, and I prefer to form the blocks H with the journals or projections *h'*, whereon the rear ends of the swinging arms G and G' will be mounted. It will thus be seen that as the position of the journal-blocks H is shifted upon the brackets I the pivot-points of the swinging arms will be correspondingly changed.

In order to permit the journal-blocks H to be set at any desired position upon the brackets I, I prefer to form the journals *h'* of these blocks hollow, so as to receive a pin or catch, K, and a suitable spring, *k*, one end of which bears upon the outer portion of the journals *h*, while its opposite end engages with a suitable lug or stud on the pin or catch K, and tends to force this pin normally inward, so as to cause it to engage with pin-holes *i*, formed at suitable intervals upon the bracket-plate I; and in order to permit the pin or catch K to be withdrawn from engagement with the bracket-plate when the journal-block is to be shifted I prefer to provide the outer end of this pin with a handle, *I'*, having its curved end eccentrically pivoted to said pin, so that when the handle is lifted it will bear against the outer end of the journal *h'* and cause the pin or catch K to be withdrawn from engagement with the bracket-plate I.

From the construction as thus far defined it will be seen that when ricks or stacks of the usual height are to be built the position of the journal-blocks H will be at or near the lower ends of the bracket-plates I. If, however, it is desired to build a stack of unusual height, the journal-blocks H will be moved upward to the desired extent upon the bracket-plates I, and there held by the engagement of the pins or catches K with the holes of the bracket-plate, and when the journal-blocks H have been thus adjusted it is obvious that the swinging arms G and G' will carry the platform and its load to a correspondingly greater height.

It is obvious that the precise mechanism above described for effecting an adjustment of the rear ends of the swinging arms can be varied within wide limits without departing from the spirit of my invention; and it will also be understood that the invention can be employed in connection with any suitable construction of ricking device. I prefer to form the bracket-plates I with the standards *i'*, which not only serve as a convenient means for bolting the bracket-plates to the sides of the rear standards of the ricker, but also bring these plates into true vertical position to permit free sliding movement of the journal-blocks thereon.

In order to enable the backward movement of the winding-drum and the consequent lowering of the elevating-platform to be controlled independent of the movements of the draft-horse, I have provided such drum with suitable brake mechanism, the preferred construction of which will be next described.

Upon the shaft or journal of the winding-

drum, and suitably connected to move in unison therewith, is mounted the friction wheel or drum L, over which passes a suitable friction-strap, *L'*, preferably of sheet metal, one end of this strap being connected to a shaft, M, whereon is sustained the brake-lever N, and the opposite end of this friction-strap being attached to the lever by means of a suitable pin, *m*, projecting therefrom at a distance above its fulcrum.

The brake-lever N is preferably of elbow shape, and carries at its upper end a weight, P, through which the short arm of the lever passes, and which is adjustably held upon the lever by a set-screw, *p*. A guard plate or keeper, R, suitably bolted to the standard A', is preferably employed to prevent the lateral movement of the lever N. Upon one side of the lever N is formed a tooth or lug, *n*, with which engages a pawl, S, this pawl being preferably mounted in a manner free to slide within a casing, S', that is bolted to the standard A', and is forced normally in outward direction to engage with the tooth or lug *n* by the coiled spring *s*, held within the casing and bearing upon the rear end of the pawl.

In order to permit the pawl S to be withdrawn from engagement with the tooth or lug *n* of the brake-lever, I prefer to provide the trip-arm T, that is pivotally mounted, as at *t*, upon a flange, *s'*, of the casing, the inner end of this trip-arm passing through the slot *s<sup>2</sup>* of the casing and engaging with a notch formed in the pawl S, while the outer end of this arm projects from the standard into the path of the swinging arm G and in such position that it will be struck by the swinging arm G when it has about reached the limit of its upward movement.

From the construction of parts as above defined the operation of this part of my invention will be seen to be as follows: When the loaded platform is raised by the forward movement of the draft-horse and consequent winding of the lifting-rope, the swinging arm G will about the end of its upward movement strike the outer end of the trip-arm T and will cause this arm to force backward the pawl S, so as to withdraw this pawl from engagement with the tooth *n* of the brake-lever and to permit this lever to fall to the position shown in Figs. 1 and 2. When the brake-lever is in this position, it is obvious that the weight P upon this lever will tend to tightly bind the friction-strap upon the periphery of the friction wheel or drum, and will thus arrest the backward movement of the drum and the downward movement of the elevating-platform, and this, too, independently of the movement of the draft-horse, thus allowing the horse to return without backing as speedily as desired to the proper position to lift the next succeeding load. The backward movement of the winding-drum and the downward movement of the elevating-platform can be controlled by the operator from his position on the horse or on the ground by simply raising or lowering the

weighted end of the brake-lever, and the platform can thus be quickly lowered without danger of breakage.

In finishing or topping out a rick it is frequently desirable to remove the hay with forks from the platform, and it is obvious that by the employment of my improved brake mechanism I provide a simple and effective means for holding the elevating-platform with its load at its highest position, while the hay is being thus removed, and as well also for enabling the platform to be speedily lowered into position to receive a new load, while at the same time the draft-horse is saved the severe strain of either holding the platform or of backing to permit its return to the ground.

It will be readily understood that the precise details of construction above set out may be varied within wide limits without departing from the spirit of my invention, and that my improvements can be applied to any suitable form of hay-ricking apparatus.

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

1. In a hay-ricker, the combination, with a main frame and the elevating-platform, of swinging arms, the rear ends of which are pivotally connected with and vertically adjustable upon said main frame at each side thereof, whereby the pivot-points of the rear ends of the said swinging arms can be shifted upward or downward, substantially as described.

2. In a hay-ricker, the combination, with a main frame, an elevating-platform, and the swinging arms, of vertically-adjustable journal-blocks, whereon the rear ends of said swinging arms are mounted, and a suitable catch for locking said journal-blocks in position, substantially as described.

3. In a hay-ricker, the combination, with a main frame and the elevating-platform and swinging arms, of vertically-adjustable journal-blocks, whereon the rear ends of said swinging arms are mounted, a catch for determining the position of said journal-blocks, and a handle eccentrically connected to said catch for releasing the same, substantially as described.

4. In a hay-ricker, the combination, with the main frame having rear inclined standards and the elevating-platform and its swinging arms, of brackets attached to said rear standards, said swinging arms being vertically adjustable upon said brackets, substantially as described.

5. In a hay-ricker, the combination, with the main frame having rear inclined standards,

and having its elevating-platform mounted upon swinging arms, of brackets bolted to said rear standards and vertically-adjustable journal-blocks mounted upon said brackets and adapted to sustain the rear ends of the swinging arms, substantially as described.

6. In a hay-ricker, the combination, with an elevating-platform and its lifting-rope and winding-drum, of a brake mechanism for checking the movement of said winding-drum, a brake-lever for controlling said mechanism, and a catch for holding said brake-lever out of action, substantially as described.

7. In a hay-ricker, the combination, with an elevating-platform and its lifting-rope and winding-drum mounted at the base of the main frame, of a friction-drum connected with said winding-drum, a friction-strap passing over said friction-drum, and a brake-lever arranged to force said friction-strap into normal engagement with the friction-drum, said brake-lever being weighted to overcome the weight of the platform, whereby the descent of the platform may be automatically checked, substantially as described.

8. In a hay-ricker, the combination, with an elevating-platform and its lifting-rope and winding-drum, of a friction-brake mechanism for controlling the backward movement of the winding-drum, a suitable catch for holding said friction-brake mechanism out of action, and a suitable trip-arm for throwing said friction-brake mechanism into action, substantially as described.

9. In a hay-ricker, the combination, with an elevating-platform, its swinging arms, the lifting-rope, and its winding-drum, of a brake mechanism, a brake-lever for controlling said mechanism, a catch for holding the brake-lever out of action, and a trip-arm for withdrawing said catch, said trip-arm extending into the path of one of the swinging arms, substantially as described.

10. In a hay-ricker, the combination, with the elevating-platform and its lifting-rope and winding-drum, of a friction-drum connected with said winding-drum, a friction-strap passing over said friction-drum, a brake-lever for operating said friction-strap, a catch for engagement with said lever, and a trip-arm for throwing said catch out of engagement, substantially as described.

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Witnesses:

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