

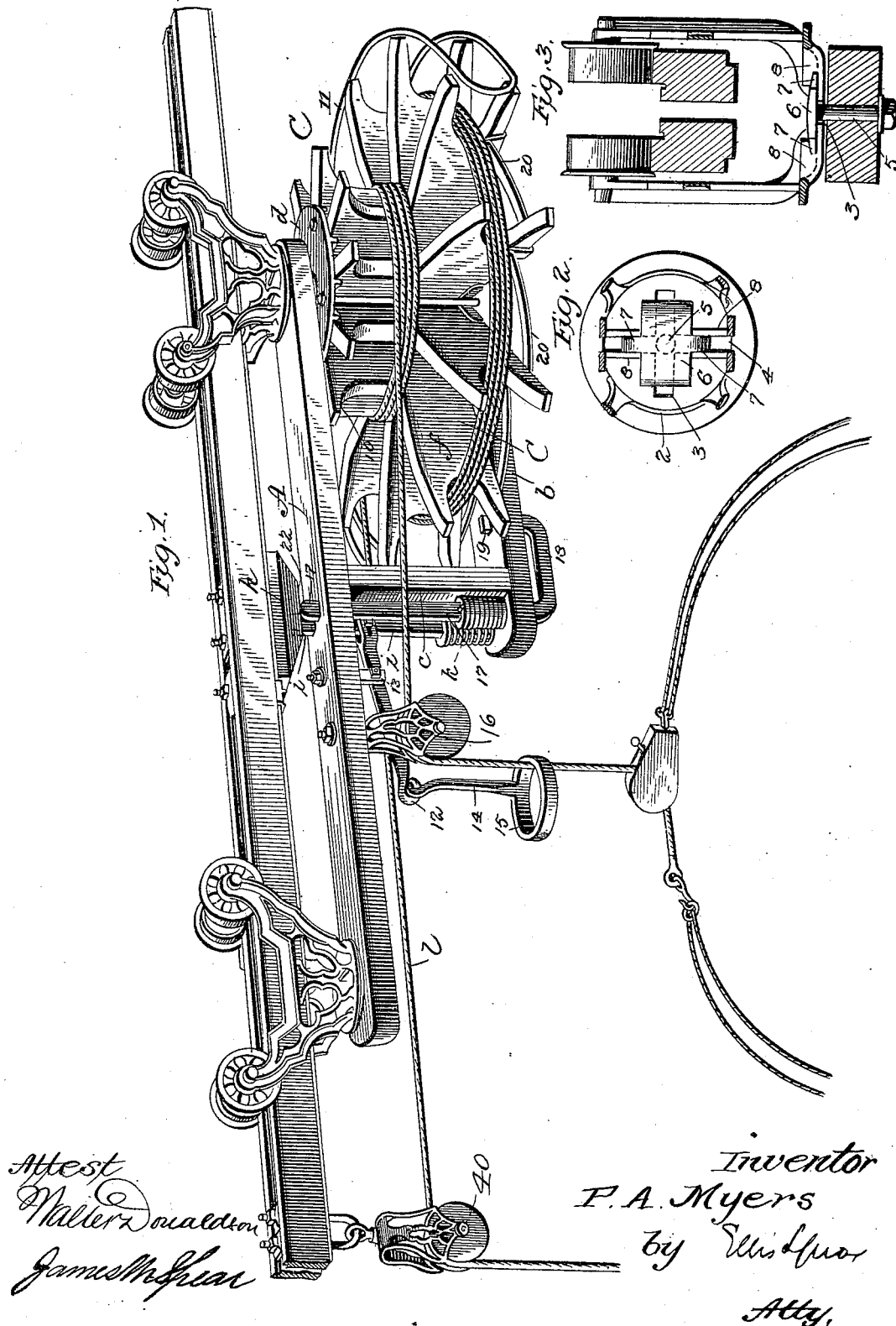
(No Model.)

2 Sheets—Sheet 1.

P. A. MYERS.  
HAY CARRIER.

No. 419,279.

Patented Jan. 14, 1890.



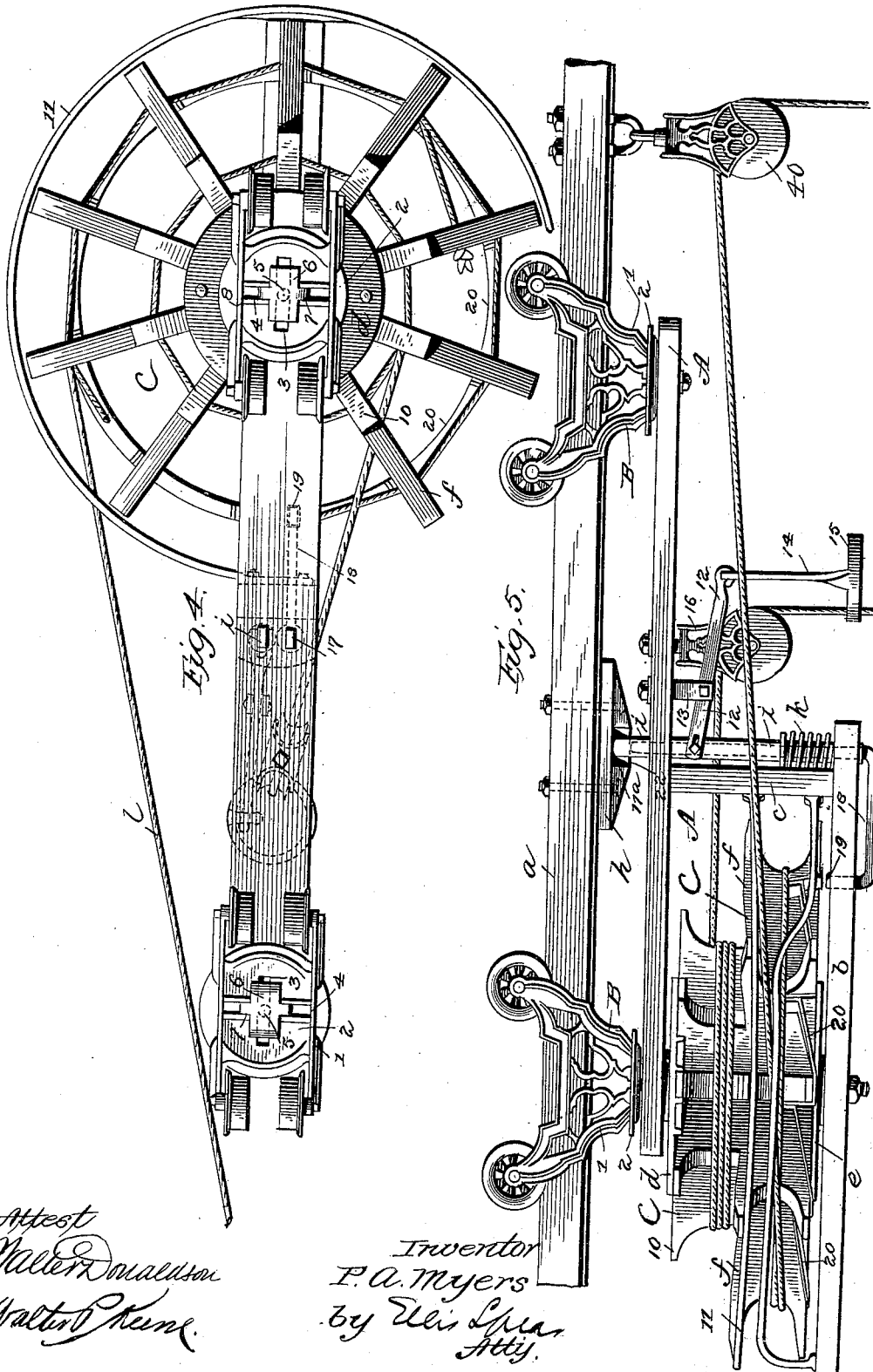
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# UNITED STATES PATENT OFFICE.

PHILIP A. MYERS, OF ASHLAND, OHIO.

## HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 419,279, dated January 14, 1890.

Application filed February 15, 1889. Serial No. 299,965. (No model.)

### *To all whom it may concern:*

Be it known that I, PHILIP A. MYERS, of Ashland, in the county of Ashland and State of Ohio, have invented a new and useful Improvement in Hay-Carriers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is a combined hay sling and carrier, and relates to that class in which the carrier is moved upon a track to the position of the hay to be elevated, and after its elevation the carrier is again moved along its track to the place of deposit in the barn or other structure.

In carrying out my invention I have in view three principal objects: First, to provide a carrier adapted to carry heavy as well as light loads; second, to provide a construction by which the load of hay is elevated through an interposed winding-drum, so that less power is required than in ordinary forms of carriers in which the load is lifted by a direct hitch, and thirdly, in holding the load in its elevated position during its transit along the track without applying a grip or other pressure directly upon the hoisting-rope.

My object, further, is to generally improve the efficiency of the carrier, the elevating apparatus therefor, and the details of construction connected with the manipulation of the carrier.

In the accompanying drawings, Figure 1 represents a perspective view of my invention. Figs. 2 and 3 are details. Fig. 4 is a plan view. Fig. 5 is a side elevation of the carrier opposite to that side shown in Fig. 1.

In the drawings the track is shown at *a*, and may be of wood or metal, and while I prefer to use a track composed of two sections held together by clamps, it will be understood that any other kind of track may be used instead. The frame *A* consists of a long beam suspended beneath the track by trucks *B B*, one supporting each end of the frame, and each provided with four wheels, so as to give ample support to the frame and enable the carrier to be used with very heavy loads. The wheels shown on the trucks are adapted to the form of track shown; but the arrangement of the wheels may be changed in case another kind of track is used. The trucks are composed of sides 1, of open frame-work cast

with a lower ring 2, which, as shown in Fig. 2, is provided with a slot running lengthwise and a second slot cutting the first at right angles thereto, these slots being marked, respectively, 3 and 4. A bolt 5 passes up through the frame *A*, and has a flattened head 6, with laterally-extending lugs 7, which project into the slots 4, being prevented from longitudinal movement by projecting walls 8 on each side of the slot 4. The slot 3 serves the purpose of allowing the bolt, or rather the ring 2, to oscillate slightly longitudinally of the carrier as the wheels of the truck pass over any inequalities in the track, the slots 3 serving the same purpose as if an enlarged opening were formed around the bolt 5, and slight lateral movement is also allowed by the cross-slot 4 and the lug 7 projecting in the said slot, the under face of the ring 2 being made slightly convex to allow this pivotal movement.

The hoisting-drum is shown at *C*, and is supported upon an extension of the frame *A* directly beneath one of the trucks, and this truck, having four wheels, will carry the load equally, while the other truck sustains the greater part of the load which is being elevated and carried. A horizontal beam *b* is supported beneath the beam *A*, at one end thereof, by a bolt, which not only serves to support the beam *b*, but also has a pivot for the winding-drum which rotates around it. The opposite end of the beam *b* is supported by a vertical post *c*, which connects it with the beam *A*.

The reel or winding-drum is preferably composed of wooden arms, one set being of greater diameter than the other, the upper set being of less and the lower set of the greatest diameter, the arms of each set being made integral and each double arm radiating from the hub of the winding-drum, which consists of upper and lower flanged plates *d e*, between which the arms are clamped by suitable rods with nuts upon their ends. The arms of the reel are shown at *f*, and consist of a bifurcated lower part and an upper part of less diameter having an overlapping tongue 10, which thus provides a double winding-drum, upon the lower and larger part of which the rope which rotates the drum is secured, and to the upper or small part of which

the rope which hoists the load is secured, thus providing great leverage, on account of the difference in the size of the drum for hoisting the load. It will be understood, however, that instead of making the arms of wood they may be made of metal, and instead of being in one piece each reel may be made separate and the two secured together in any suitable way. I shield the rotating drum by means of a guard 11, which encircles the drum for about two-thirds of its circumference. The drum may also be arranged vertically, if desired.

During the hoisting of the load it is necessary that the carrier be held from movement along the track while power is being applied to rotate the drum, and I have provided for this by securing to the track, at the point where the load is to be raised, a block *h*, having inclined sides and a central slot or opening 11, and on the carrier, directly in line with this opening when the carrier is in position beneath it, I provide a pin *i*, which passes through the beam *b* and also the beam *A*, having a washer held by a suitable pin to form a bearing for one end of a coiled spring *k*, while the other end of the spring bears against the projecting end of the beam *b*, thus placing the pin *i* under compression, which has the tendency to force the said pin constantly upward, and as soon as the carrier reaches the incline of the block the pin is depressed until it reaches the opening in the center of the block, when the spring again acts and the pin is forced into the opening, and thereby prevents the carrier from further movement on the track until it is released by depressing the pin and freeing it from its engagement with the slot. I perform this operation automatically by a pivoted lever 12, depending from a stud 13, secured to the beam *A*, one end of said lever being pivoted to the pin *i*, while to the other end of said lever is pivoted an arm 14, which carries a ring 15, through which the hoisting-rope passes to the load to be lifted.

A supporting-block of ordinary construction I have shown at 16, one side of this block being in line with the opening in the ring 15, so that the hoisting-cord is in line with said opening. When the load has been connected, whether by means of a sling or a support, to the hook of the hoisting-rope, the operating-rope *l* is connected to a source of power, and pull upon said rope rotates the winding-drum, and as this is rotated the load is lifted, the hoisting-rope being wound upon the smaller drum. During this time the carrier is stationary, by reason of the pin *i* being in engagement with the opening in the block *h*; but when the load reaches the ring 15 continued movement lifts the said ring, and this, through its arm 14, elevates the end of the lever 12, and this depresses the pin *i* against the tension of its spring, and any further pull upon the operating-rope *l* will draw the carrier along the track. As soon as the carrier

is moved along the track it is desirable that the winding-drum shall cease to rotate, and I have provided means by which, as soon as the carrier begins to move from its stationary position, the reel or drum will be automatically locked and prevented from rotating. These means consist of a pin 17, identical with pin *i*, arranged alongside of the pin *i*, but having an elongated staple-extension 18 on its lower end extending beneath the beam *b*, the short arm passing up through an opening in said beam directly in the path of the reel-arm. The pin 17 has its end passing through the beam *A*, and this end is normally in its highest position, with its projecting end 19 also in its highest position and in the path of the reel-arm, so that while in this position the operating-rope *l* may be drawn upon to any extent to move the carrier longitudinally without turning the reel or drum.

In order to allow for the raising of the hoisting-rope while the pin 17 is in a raised position, should the slings become entangled in the bundle that has been dropped on the full mow, I provide inclines 20 between each pair of reel-arms, so that as the reel is rotated to raise the hoisting-rope the inclines depress the end 19 against the pressure of its spring and allow the reel-arms to slip by. In order, however, to allow for the free revolution of the drum during the hoisting operation, the block *h* on the side opposite the opening 11<sup>a</sup> has a straight portion 22, but no central opening or slot, so that when the carrier has been moved into position ready for a new load the pin *i* engages with the opening 11<sup>a</sup>, while the pin 17 is depressed by contact with the level portion 22 of the block, and the reel is then free to rotate under the action of the operating-rope. The shield or guard 11 also serves to direct and guide the power-rope *l* and to keep it in engagement with the drum. It consists, as shown, of a section of bar-iron secured at one end to the post *c* approximately in line with the upper part of the winding-drum and extends around on this line to about two-thirds of the periphery of the drum. It is then bent in the form of a loop and runs for a short distance on a line with the lower part of the winding-drum to a point beyond the line of the central beam *A*, and at this point it is bent upwardly to contract the passage between it and the upper member of the guard, and from thence extends parallel to the upper member for about a third of the circumference of the reel, and is then bent downwardly again on a line with the lower part of the reel to the post *c*, where it is secured.

When the carrier is used in one direction, the power-rope is passed from its reel between the members of the guard, and as the upper and lower members are on a line with the upper and lower portions of the reel or drum it will be seen that the rope is kept within the line of the channel in the reel-arms and prevented from any entanglement. In case the

carrier is to be run in the opposite direction it is only necessary to place the pulley-block 40 at the opposite end of the track and the power-rope can be passed through the contracted opening between the guard members to the opposite side of the winding-drum, and the parts of the guard at this point will serve the same purpose of directing the rope. In all other respects, also, the carrier is capable of movement in one direction or the other.

I claim as my invention—

1. In a hay-carrier, a frame below the track, a truck at each end thereof, and a hoisting and winding drum rotating in horizontal plane arranged beneath the frame, substantially as described.

2. In a hay-carrier, a frame below the track, a truck at each end of the frame, and the combined hoisting and winding drum supported by the carrier-frame and rotating in horizontal plane, substantially as described.

3. In a hay-carrier, an elongated frame, a truck at each end of frame, a drum rotating in horizontal plane arranged directly beneath one of the trucks, the drum being composed of a series of radiating arms formed with two winding portions of different diameters, substantially as described.

4. In a hay-carrier, an elongated frame, hoisting devices carried thereby, and a truck at each end of said frame pivotally connected thereto, so as to have slight lateral and longitudinal movement, substantially as described.

5. In combination with a hay-carrier, hoisting means carried thereby, a stop on the track, a spring locking-catch on the carrier adapted thereto, and a pivoted lever directly connected to the locking-catch, said lever being adapted to be operated by the load being lifted to release the catch, substantially as described.

6. In combination with a hay-carrier, hoisting means carried thereby, a track provided with a block having inclined sides and a slot in the center, a spring-pin adapted to engage said slot, a pivoted lever in connection with said spring-pin, and a ring connected to the other end of said lever, said ring being adapted to be lifted by the load to release the spring-pin, substantially as described.

7. In combination, a frame, trucks at each end thereof, a drum rotating in horizontal plane, a spring-pin *i*, having a lower upturned end 19 normally in the path of the drum and having its other end engaging a block on the track, substantially as described.

8. In combination, a frame, trucks at each end thereof, a drum supported beneath the frame upon a beam *b*, a spring-pin *i*, having a lower hooked end passing through an opening in the beam *b* and its other end passing through an opening in the main frame and engaging a block on the track, substantially as described.

9. In combination with the drum rotating in horizontal plane, a spring-pin *i*, having a hooked portion with an upturned end 19 in the path of the drum, and a series of inclines 20, arranged in line with the end 19, substantially as and for the purpose set forth.

10. In combination with a hay-carrier, a winding-drum, a block on one side of the track having a slot in the center, a block on the opposite side having a straight portion 22 in its center, spring-pins *i* and 17, the pin *i* engaging the slotted block and the pin 17 being depressed by the block 21, whereby the reel is free to rotate during the hoisting of the load, substantially as described.

11. In combination, a suitable track, a frame *A*, having trucks at each end thereof, a reel supported beneath the frame *A* at one end thereof, said drum having reels of different diameters, spring-pins supported parallel to each other, one of said pins being in connection with a ring in the path of the load to be lifted and the other having an extension in the path of the drum, and blocks on the track in line with said pins, substantially as described.

12. In combination with a winding-drum, a guard partially encircling the same, having upper and lower members on opposite sides of the drum for confining the movement of the rope within the grooved periphery of the drum, whether the carrier be moved one way or the other, substantially as described.

13. In combination, a frame, trucks provided therefor, a winding-drum rotating in horizontal plane carried by said frame, a track, and a movable pulley, as 40, for the draft-rope connected directly to the track, substantially as described.

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

PHILIP A. MYERS.

Witnesses:

B. S. GROSSCUP,  
W. W. FELGER.