

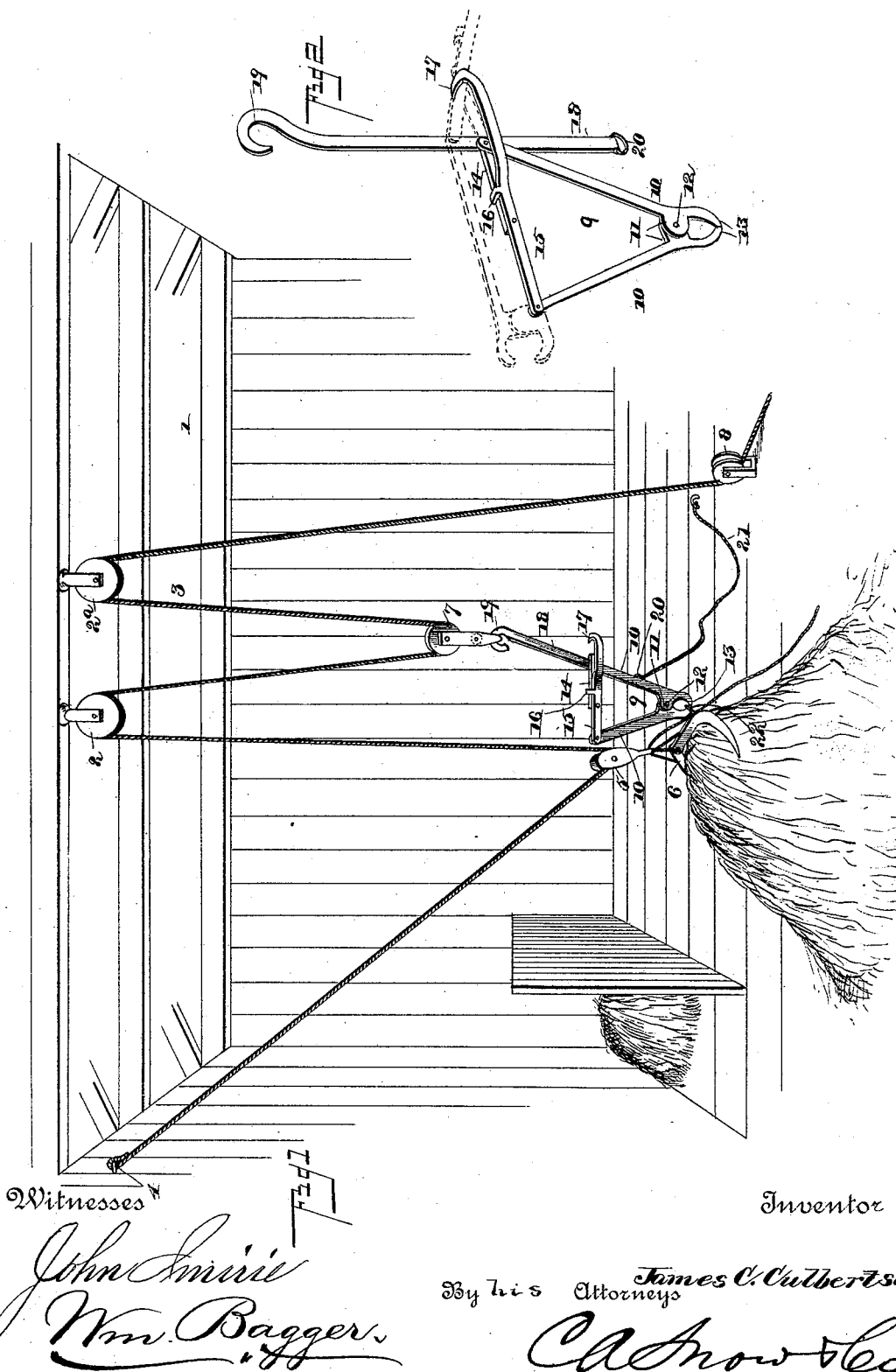
(No Model.)

2 Sheets—Sheet 1.

J. C. CULBERTSON.
HAY ELEVATOR AND CARRIER.

No. 420,533.

Patented Feb. 4, 1890.



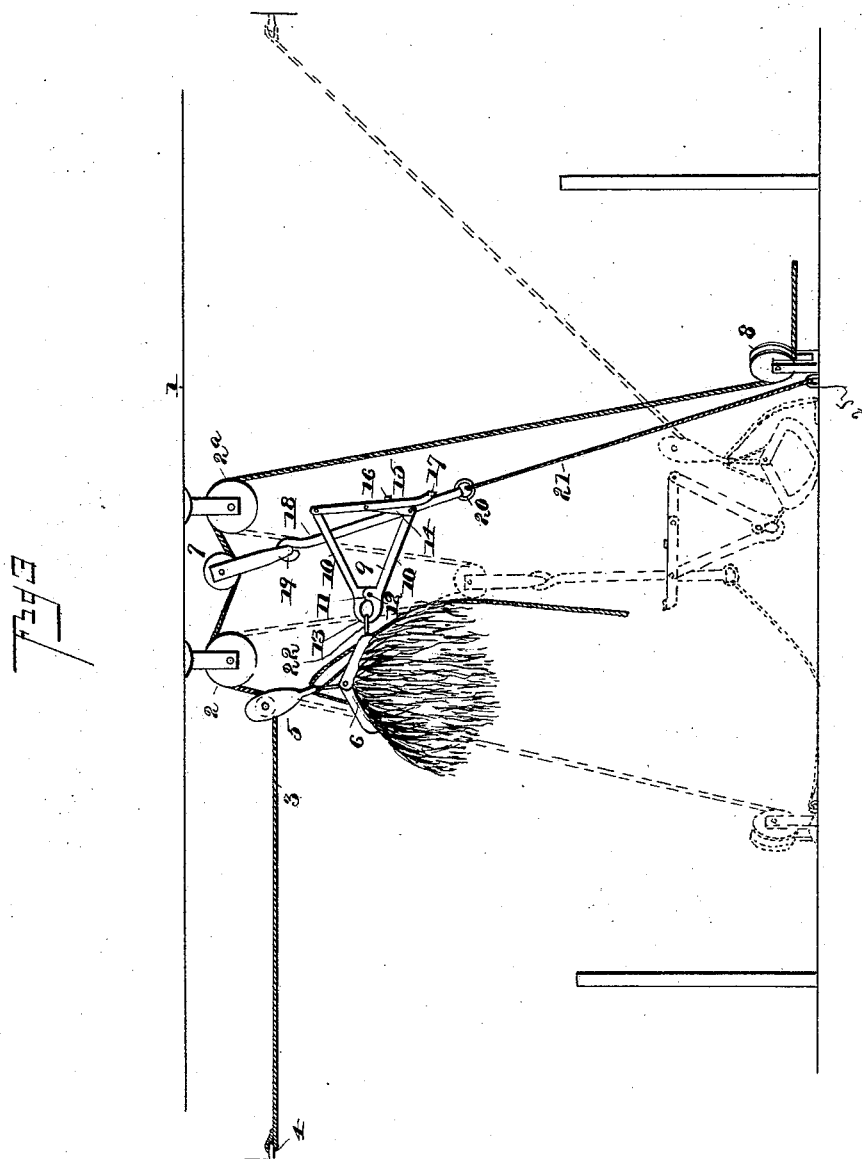
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Witnesses

John Smiré
Wm. Baggett

Inventor

James C. Culbertson
By his Attorneys

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UNITED STATES PATENT OFFICE.

JAMES C. CULBERTSON, OF GOHEENVILLE, PENNSYLVANIA.

HAY ELEVATOR AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 420,533, dated February 4, 1890.

Application filed November 16, 1889. Serial No. 330,589. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. CULBERTSON, a citizen of the United States, residing at Goheenville, in the county of Armstrong and State of Pennsylvania, have invented a new and useful Hay Elevator and Carrier, of which the following is a specification.

This invention relates to hay elevators and carriers; and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view illustrating the construction and operation of a hay elevator and carrier embodying my improvements. Fig. 2 is a perspective view, on an enlarged scale, of the grab-hook, which forms a part of my invention. Fig. 3 is a side elevation showing the device complete and in position for discharging the load.

Like numerals of reference indicate like parts in all the figures.

1 designates the barn or other structure in which my improved hay carrier and elevator is arranged for operation.

2 2^a designate a pair of pulleys mounted centrally under the roof or under some supporting-beam, and which are adapted to support the rope 3, which forms the combined track and hoisting rope, one end of which is attached at the point 4, between which and the pulleys 2 2^a the hay or other material is to be deposited. Upon the rope 3, between the pulley 2 and the point 4, is supported a pulley or sheave 5, to which a hay-fork 6 of ordinary construction may be attached. Likewise supported upon the rope 3, between the pulleys 2 and 2^a, is a sheave 7. The end of the rope 3, passing downwardly from the pulley 2^a, passes under the guide-pulley 8, attached securely near the ground, and to the end of the rope extending from the said pulley 8 the draft is attached.

9 designates the grab-hook, which forms a part of my invention. Said grab-hook is composed of the arms 10 10, having inwardly-extending lugs 11 11, connected pivotally by a

pin or bolt 12. The arms 10 are also provided with jaws 13, extending beyond the lugs 11. The end of one of the arms 10 has a link or toggle 14 connected pivotally therewith and with a lever 15, which latter is pivotally connected with the end of the opposite or upper arm 10. The lever 15 is provided with a stop 16, adapted to bear against the outer side of the link 14, and the said lever 15 is also provided at its extreme lower end with a rearwardly-extending lug or projection 17.

18 designates a trip-lever, which is mounted pivotally upon the bolt which connects the lower arm 10 with the link or toggle 14. The upper end of the lever 18 has a hook 19, and the lower end of said lever is provided with an eye or loop 20, by means of which it may be connected with a trip-rope 21.

In practice the grab-hook 9 is connected by the hook 19 at the upper end of the trip-lever 18 with the sheave 7 between the pulleys 2 and 2^a. The fork 6, attached to the pulley 5, has a ring 22, to which the grab-hook 9 is connected by the jaws 13. The lever 15 is then manipulated so as to close the jaws 13 upon the ring 22, thereby connecting the grab-hook with the fork. By this operation the point at which the lever 15 is connected pivotally with the link 14 is brought beyond the dead-center until the stop 16 comes in contact with the link 14. The grab-hook is thus locked and connected securely with the sheave or pulley to which the fork is attached. One end of the trip-rope 21 is connected at 25 to a fixed point, and the length of the trip-rope is regulated to regulate the height to which the load is to be elevated. Draft is now applied to the end of the rope 3, which extends under the guide-pulley 8, and the pulleys 5 and 7 are thus simultaneously raised, so as to elevate the grab-hook and the load. When the desired height has been reached, the trip-rope 21 becomes stretched and pulls upon the lower end of the trip-lever 18, causing the latter to bear against the lug 17 of the lever 15. The point at which the latter is connected with the link or toggle 14 is thus thrown outward off the dead-center, thus permitting the jaws 13 to open, thereby releasing the sheave carrying the fork and permitting it to travel down-

wardly upon the rope 3 toward the point 4, at which the end of said rope is attached, and which point of attachment is necessarily somewhat lower than the point to which the load is elevated. When the point at which it is desired to dump the load has been reached, the trip-rope of the fork is manipulated and the load is permitted to drop, after which the pulleys 5 and 7 are permitted to descend for a repetition of the operation.

When it is desired to convey the load in a different direction from that indicated in the drawings hereto annexed, the end of the rope to which the draft is attached may be disengaged from the guide-pulley 8 and attached at some fixed point, the pulley 5 having previously been adjusted thereon. The opposite end of the rope is disengaged from the point 4 and passes through the guide-pulley 8, and the operation may then be proceeded with, as before. This arrangement of the respective parts has been illustrated by dotted lines in the drawings.

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

1. In a hay carrier and elevator, the combination of two supporting-pulleys, a combination track and hoisting rope passing over the same and having one end attached to a fixed point at a lower level than the supporting-pulleys, a pulley mounted upon the rope between the supporting-pulleys and the point of attachment and carrying a hay-fork, a sheave mounted upon the rope between the supporting-pulleys and carrying a grab-hook for the hay-fork, and a guide-pulley for the free end of the rope, all arranged and operating substantially as set forth.

2. In a hay carrier and elevator, the combination of the supporting-pulleys, the track-rope having one end attached at a fixed point,

a supporting-pulley mounted upon the track-rope between its point of attachment and the supporting-pulleys and having a hay-fork attached thereto, a sheave mounted upon a track-rope between the supporting-pulleys, the grab-hook attached to said sheave and comprising a pair of pivotally-connected jaws, a link pivoted to the rear end of said jaws, a lever connected pivotally to the rear end of the other jaw and to the pitman of the said link and having a stop adapted to bear against said link, and a rearwardly-extending lug at its lower end, and a trip-lever connected pivotally to the rear end of the lower jaw and having a hook at its upper end and provided at its lower end with a loop or eye connected by a trip-rope with a fixed point of attachment, and a guide-pulley for the free end of the track-rope, all arranged and operating substantially as and for the purpose set forth.

3. The herein-described grab-hook, comprising the pivoted arms 10 10, having jaws 13, the link 14, the lever 15, having the stop 16 and lug 17, and the lever 18, having hook 19 and loop or eye 20, substantially as and for the purpose set forth.

4. The herein-described grab-hook, comprising the pivoted arms 10 10, having jaws 13, the link 14, the lever 15, pivoted to one of the arms 10 and to the link 14, and the lever 18, to which both the link 14 and the other arm 10 are pivotally connected, as set forth.

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

JAMES C. CULBERTSON.

Witnesses:

GEORGE W. RODGERS,
J. D. O'DONNELL.