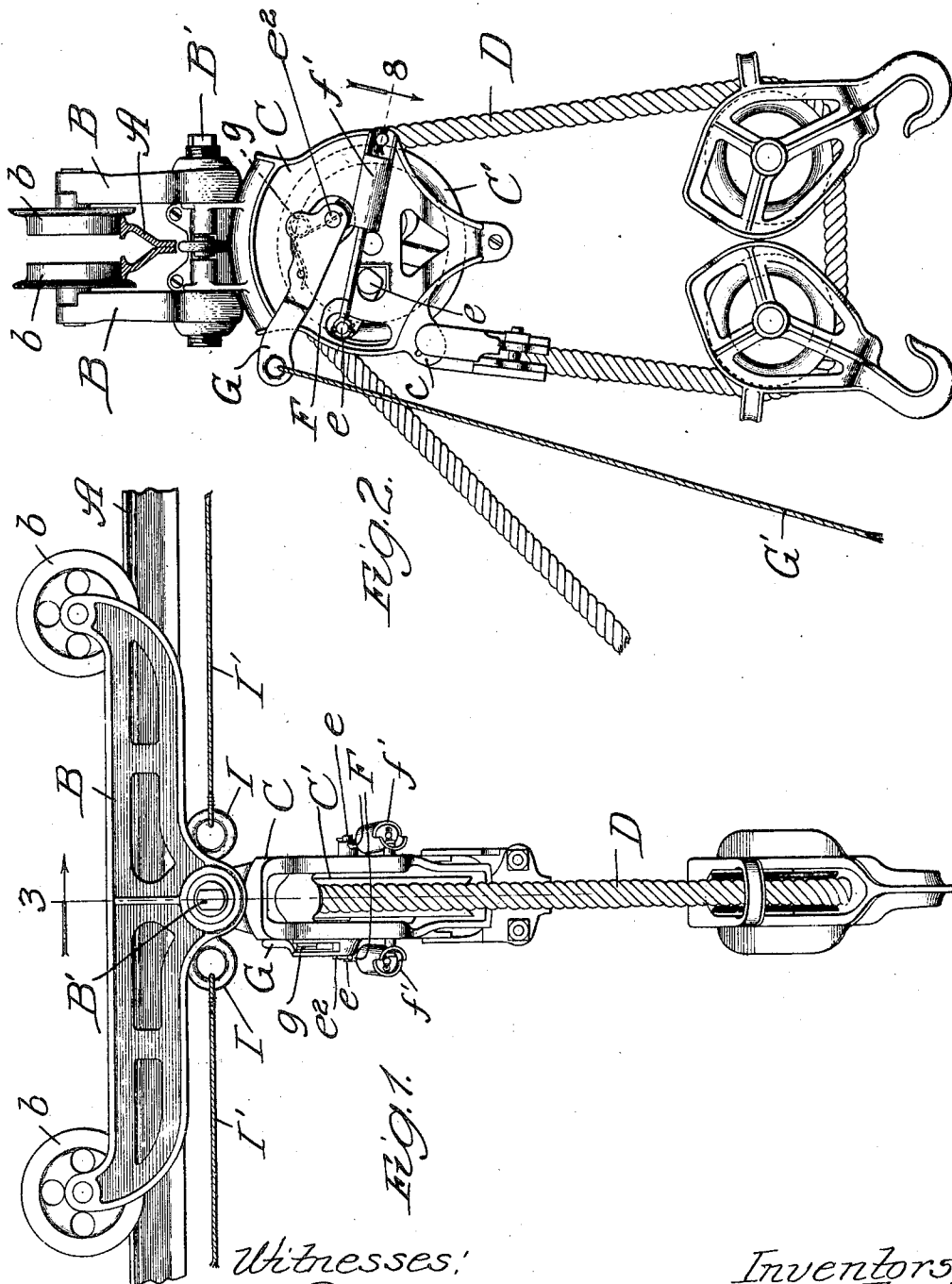


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HAY CARRIER.
APPLICATION FILED JULY 27, 1909.

971,741.

Patented Oct. 4, 1910.

3 SHEETS—SHEET 1.



Witnesses:
John Enders
Clyde C. Palmer.

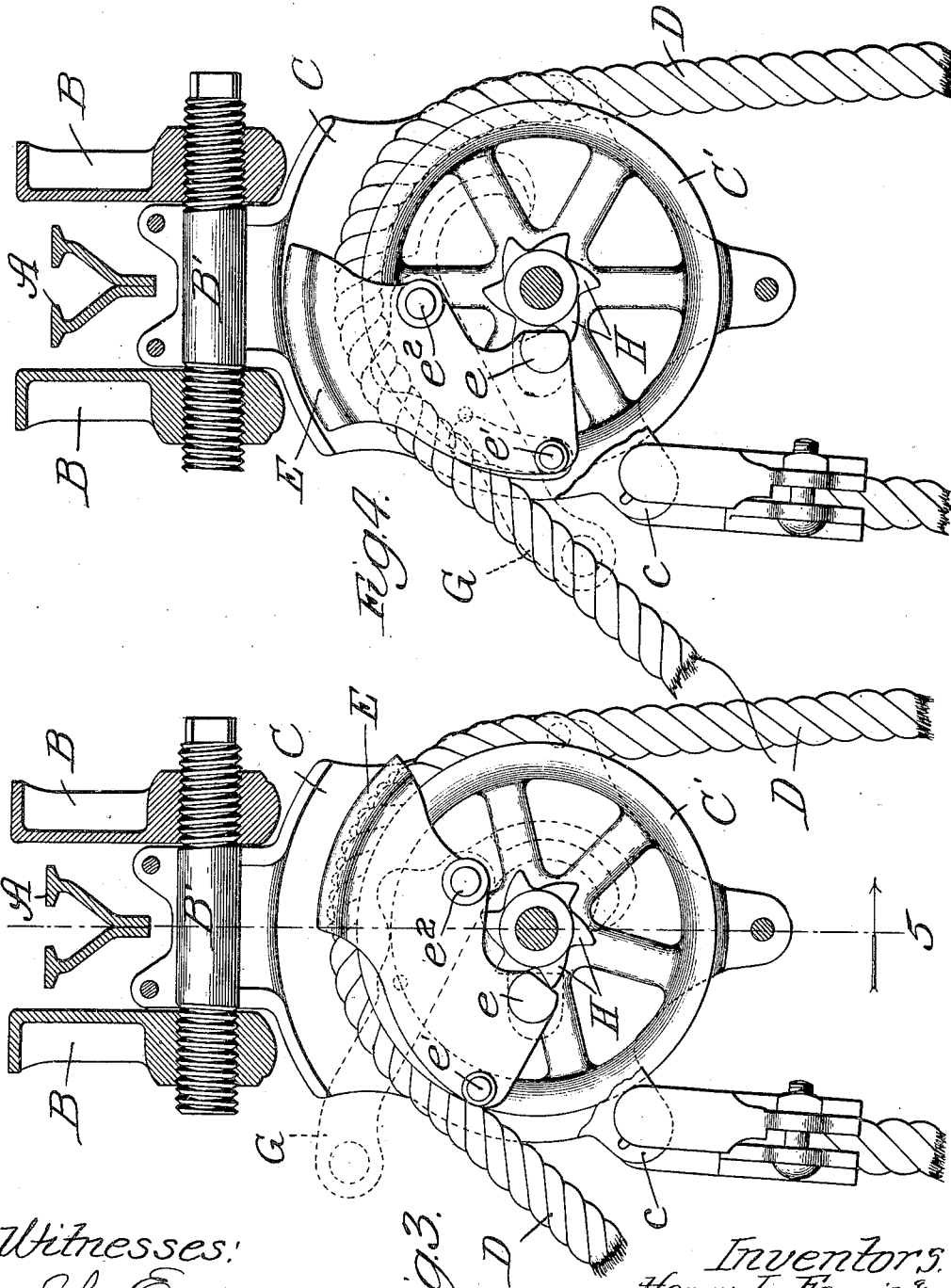
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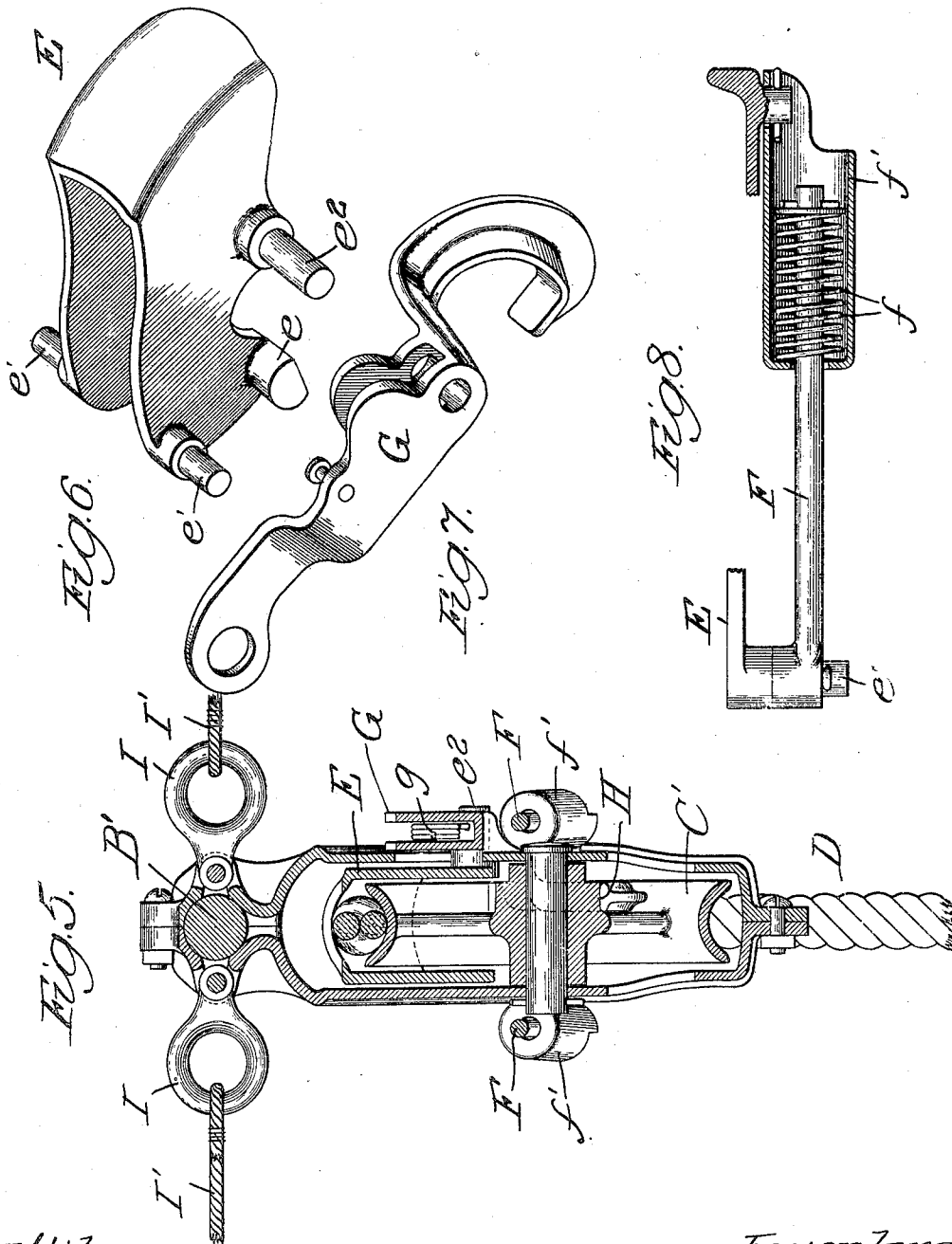
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3 SHEETS-SHEET 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY L. FERRIS AND HOWARD J. FERRIS, OF HARVARD, ILLINOIS, ASSIGNORS TO
HUNT HELM FERRIS & COMPANY, OF HARVARD, ILLINOIS, A CORPORATION OF
ILLINOIS.

HAY-CARRIER.

971,741.

Specification of Letters Patent.

Patented Oct. 4, 1910.

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To all whom it may concern:

Be it known that we, HENRY L. FERRIS and HOWARD J. FERRIS, citizens of the United States, residing at Harvard, in the county of McHenry and State of Illinois, have invented a new and useful Improvement in Hay-Carriers, of which the following is a specification.

Our invention relates to certain new and useful improvements in hay carriers, and is fully described and explained in the specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of our improved device; Fig. 2 is an end view of the same; Fig. 3 is a transverse section in the line 3 of Fig. 1; Fig. 4 is a similar view showing the parts in a different position; Fig. 5 is a section in the line 5 of Fig. 3; Fig. 6 is a perspective view of the clamping-member; Fig. 7 is a perspective view of the dog, and Fig. 8 is a section in the line 8 of Fig. 2.

Referring to the drawings—A is a track such as is in common use for hay-carriers, B, B, are the two halves of a carrier which are connected together by a right and left threaded bolt B¹ whereby their distance apart may be adjusted for tracks of various widths. The halves B of the carriage support at their ends pulleys b which run upon the track A in the usual manner. The bolt B¹ furnishes pivotal support for a frame C, which, it will be observed lies in a plane transverse to that of the track. Within this frame is rotatably mounted a sheave C¹ over which runs the hoisting-rope D, the bight of which carries sling-pulleys of the usual form, and the end of which is attached in usual manner to a lug e on the frame C. Within the frame C, and straddling the sheave C¹ is a clamping-member E, the shape of which will be best understood by reference to Fig. 6. The clamping-member has laterally projecting flat studs e, which extend through holes in the frame C, the holes being somewhat larger than the studs and each having a flat side as illustrated in the drawings, to cooperate with the flat portions of the studs e to hold the clamping-member in a fixed position under certain circumstances as will hereafter be set forth. The clamping-member also has two projecting pins e¹ at its lower end, which said pins are attached to links F, surrounded by

springs f which tend to draw the clamping-member bodily toward the center. The springs f, it will be noted, are for convenience and compactness of construction, mounted in oscillatory barrels f¹.

The result of the foregoing construction is that the clamping-member can occupy alternatively either the position shown in Fig. 4, or the position shown in Fig. 3. When in the position shown in Fig. 4, the arched upper portion of the clamping-member is out of contact with the rope, and the pressure exerted by the springs f upon the clamping-member through the medium of the links F, which in this position lie below a straight line connecting the pivot of the barrels f¹ with the studs e, will hold it so, but when the clamping-member is moved slightly it will be swung forward, in which position the arched upper part of the clamping-member will contact with the rope. It is to be noted that when in the position shown in Fig. 4, or in the unlocked position, the clamping-member is held stationary by two different forces:—first, the action of the springs acting in a line below the dead-center and second, the engagement of the flat parts of the studs with the flat parts of the holes in the frame. For the purpose of oscillating the clamping-member to secure the desired clamping-action, a dog G is provided, the said dog being pivotally mounted on a stud e² projecting from the clamping-member along its forward edge and above the studs e which form the pivot thereof on the frame. This dog it will be noted while cast in one piece has two portions which are off-set with respect to each other, so that the rear end of the dog lies outside the case or frame as shown in Fig. 2, while the forward end thereof lies inside the case or frame, as shown in Fig. 5, the case or frame being slotted to provide for the entrance and movement of the dog. The dog is provided with a spring g by which it is normally given a tendency to cross-wise rotation as viewed in Fig. 2. The inner, or forward, end of the dog is so positioned as to engage with a ratchet H mounted upon and rigid with (preferably integral with) the sheave C¹. A hand-rope G¹ extends from the rear or outer end of the dog, by which the same can be rotated against the pressure of the spring when desired.

The frame C is provided with eyes I to

which are attached ropes I¹, through the medium of which the entire structure may be moved along the track as desired.

The operation of my device as a whole will now be set forth.

The device in its normal or unlocked position is shown in Fig. 4, which is the position which it occupies when a load is about to be lifted. It will be understood that in this position, the sling-pulleys are engaged with the hay-sling in the usual manner, and the main hoisting-rope is operated to raise the load. The moment the tension upon the load is released, the sheave will begin to rotate in the reverse direction whereupon the ratchet thereon will engage with the inner or forward end of the dog drawing the same with it in its rotary movement and pulling the locking-member down into the position shown in Fig. 3, whereupon the same will engage the rope and clamp it firmly between itself and the sheave. The carrier can then be drawn to any desired position and the slings released and the carrier returned. When it is desired to draw down the sling-pulleys again for a second operation, the hand-rope G¹ is pulled downward forcibly, with the result that the dog is released from the ratchet and rotates the locking-member back to the unlocked position indicated in Fig. 4, in which position the locking-member remains fixed. During the downward pulling of the main-rope, the hand-rope G¹ will, of course, be held taut to prevent the locking-device from again swinging into locking position.

It will be seen that this device is exceedingly simple in construction, comprising few parts and that it can be made very light in weight. Furthermore, the total height of the device is small so that the load can be pulled very close to the track. The device is also readily adjustable to different sizes of track in the manner indicated. Great advantages arise from the fact that the locking-member is held permanently away from the rope during the raising of the load and that it is automatically swung positively against the same upon the commencement of the descent of the load.

We realize that considerable variation is possible in the details of construction of our improved device, without departing from the spirit of our invention, and do not intend, therefore, to limit ourselves to the specific form herein shown and described.

What we claim as new and desire to secure by Letters Patent is—

1. In a device of the class described, a carriage adapted to run upon a track, a hoisting-sheave over which the hoisting-rope may be led, and a locking-device provided with means for holding it in two alternative positions, in one of which it is pressed toward the sheave to clamp the rope

against the same, and in the other of which it is held positively away from the sheave.

2. In a device of the class described, the combination with a carriage adapted to run upon a track, of a hoisting-sheave, an eccentrically pivoted locking-device adapted to clamp the hoisting-rope between itself and the sheave, and means for holding the locking-device in two alternative positions, one pressed toward the sheave, and the other held away from the sheave.

3. In a device of the class described, the combination with a carriage adapted to run upon a track, of a hoisting-sheave, an eccentrically pivoted locking-device adapted to clamp the hoisting-rope between itself and the sheave, means for holding the locking-device in two alternative positions, in one of which the locking-device is pressed against the sheave, and in the other of which it is held away from the sheave, and means whereby rotation of the sheave in one direction will throw the locking-device against the sheave.

4. In a device of the class described, a carriage adapted to run upon a track, a hoisting-sheave, an eccentrically pivoted locking-device adapted to be swung toward the sheave, and means on the sheave adapted to engage the locking device to swing the same positively toward the sheave.

5. The combination with a hoisting-sheave, and an eccentrically pivoted locking-device adapted to swing against the same, of engaging means on the sheave arranged to force the locking-device toward the sheave when the sheave is rotated in one direction.

6. The combination with a hoisting-sheave provided with engaging means and an eccentrically pivoted locking-device adapted to be swung against the sheave, of a dog carried by the locking-device and arranged to be engaged by engaging means on the sheave whereby to rotate the locking-device positively against the sheave upon rotation of the sheave in one direction.

7. The combination of a sheave, an eccentrically pivoted locking-device, springs engaging the locking-device adapted to swing past the dead-center as the locking-device is rotated away from the sheave, means on the locking-device for engaging the sheave to throw the locking-device toward the sheave upon movement of the sheave in one direction, and means for retracting the locking-device from the sheave.

8. The combination with a frame, a sheave journaled therein and a ratchet on the sheave, an eccentrically pivoted locking-device adapted to engage the ratchet, a spring engaging the locking-device and adapted to swing over the dead-center to hold the same either against the sheave or away from the sheave, and a hand-rope attached to the dog to release the locking-device.

9. The combination with a frame, a sheave journaled therein and a ratchet on the sheave, of an eccentrically pivoted locking-device adapted to swing against the sheave, 5 a dog pivoted to the locking-device and adapted to engage the ratchet, a spring engaging the locking-device and adapted to swing over the dead-center to hold the same against the sheave or away from the sheave, 10 and a hand-rope attached to the dog to release the locking device, the pivot of the locking-device on the frame having a flattened portion to engage a corresponding flattened portion on the frame when the 15 locking-device is in its retracted position.

10. In a hay-carrier, a carriage composed of two separate halves, each carrying rollers at its ends and a single strut connecting said halves medially whereby the halves may in- 20 dependently pivot.

11. In a hay-carrier, a carriage comprising two separate halves, pulleys at the ends of said halves and a medial strut connecting said halves, said strut being in the form of a 25 right and left bolt upon which the halves can mutually pivot and through the medium of which they can be relatively adjusted.

12. In a hay-carrier, a carriage compris-

ing two separate halves, pulleys at the ends of said halves and a medial strut connecting 30 said halves, said strut being in the form of a right and left bolt upon which the halves can mutually pivot and through the medium of which they can be relatively adjusted, 35 said bolt serving as the pivotal support of the hay carrier.

13. In a hay-carrier, a carriage comprising two separate halves, pulleys at the ends of said halves, and a medial strut connecting 40 said halves, said strut being in the form of a bolt upon which the halves can mutually pivot and through the medium of which they can be relatively adjusted.

14. In a hay-carrier, a carriage comprising two separate halves, pulleys at the ends 45 of said halves, and a medial strut connecting said halves, said strut being in the form of a bolt through the medium of which said halves can be relatively adjusted by the turning of said bolt.

HENRY L. FERRIS.
HOWARD J. FERRIS.

In presence of—
R. N. JACOBS,
S. E. MAY.