(No Model.)

J. W. PROVAN.

HAY CARRIER.

No. 322,968. Patented July 28, 1885.

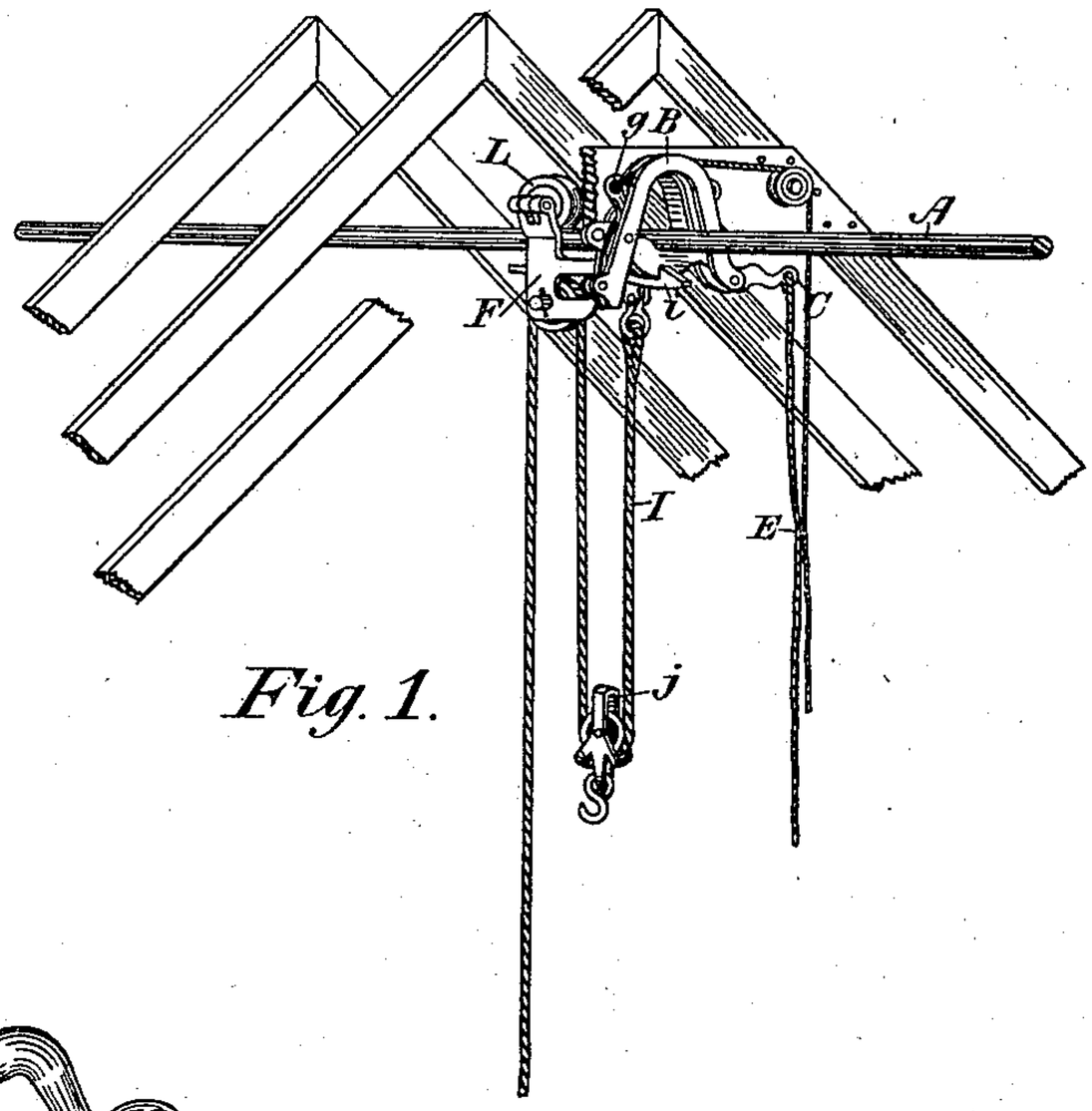

Fig. 1.

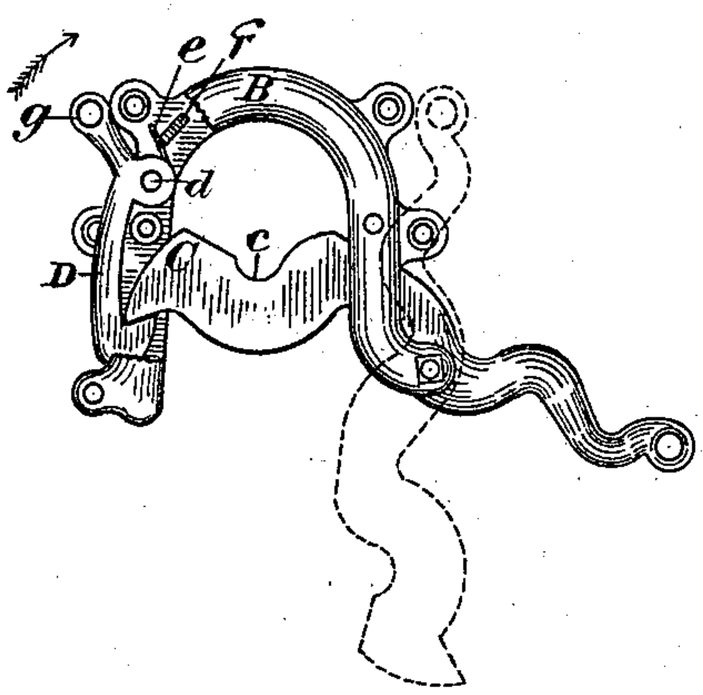

Fig. 2.

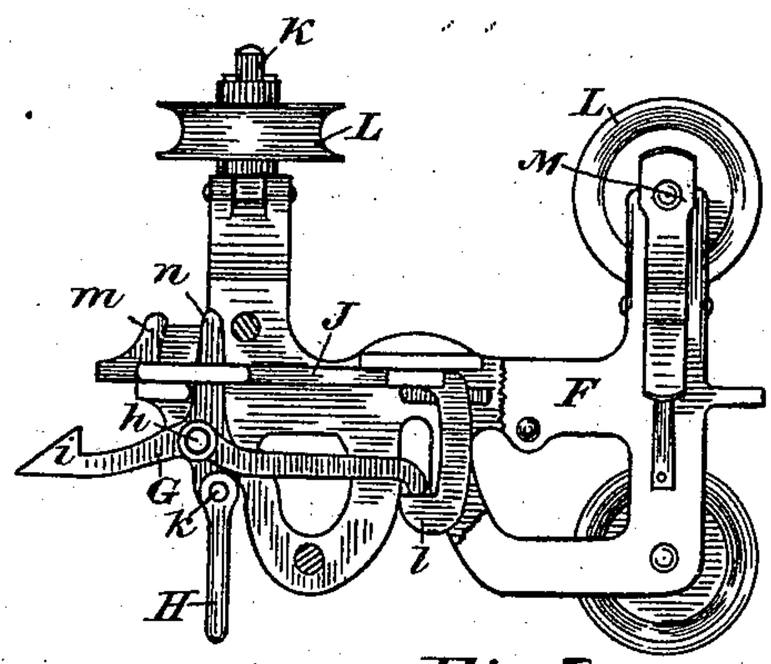

Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES W. PROVAN, OF OSHAWA, ONTARIO, CANADA.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 322,968, dated July 28, 1885.

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To all whom it may concern:

Be it known that I, JAMES WHITE PROVAN, of the town of Oshawa, in the county of Ontario, in the province of Ontario, Canada, machinist, have invented certain new and useful Improvements in Hay-Carriers, of which the following is a specification.

The invention relates to that class of hay-carriers in which the carriage is supported on an iron rod; and the principal objects of the invention, are, first, to provide a device arranged to take up the sag in the bar, and at the same time provide a stop-block constructed so that it may be adjusted to permit the carriage to pass it; secondly, to arrange the locking-latch and its connections so that springs may be dispensed with; and, thirdly, to connect the rollers or wheels of the carriage so that they can be readily opened from their frame, so as to permit the carriage to be easily removed from the rod; and it consists, first, in pivoting to a bracket, located immediately over the carrying-rod, a lever arranged to extend below the said rod and support, as hereinafter specified; secondly, in connecting the end of the lifting-rope to the locking-latch at a point inside of the pivot, so that the downdraft of the lifting-rope shall hold the latch in contact with the stop-block, the locking-latch being otherwise specially constructed, as hereinafter described; and, thirdly, in hinging the axles of the wheels or rollers to the body of the carriage, and arranging an adjustable lock by which they can be opened or closed, as hereinafter more particularly explained.

Figure 1 is a perspective view of my improved carriage, resting on the iron rod supported by my lifting-lever. Fig. 2 is an enlarged detail of my lifting-lever and its bracket. Fig. 3 is an enlarged detail of my carriage, made partially in section, so as to exhibit its peculiar construction.

In the drawings, like letters of reference indicate corresponding parts in each figure.

A is an iron rod which should extend from end to end of the barn, and be rigidly fastened thereto.

B is an iron bracket arranged to be bolted to any convenient timber near the top of the barn, so as to bring the bracket immediately over the rod A.

C is a lever pivoted to the bracket B, and extending across its mouth so as to pass below the rod A.

c is a notch or recess made in the lever C, so as to form a receptacle for the rod A. This notch is not in every case necessary, but it will be found advantageous, and it will be preferable to form it in the lever, as indicated.

D is a latch pivoted to the bracket B at *d*, and arranged to engage with and support the end of the lever C, as indicated in Fig. 2. A piece of spring-wire, *e*, is wound round the pivot *d*, and its end fits behind the lug *f*, so that the tendency of the spring-wire *e*, which is attached to the latch D, is to keep the said latch in contact with the end of the lever C.

In order to release the latch from the lever C, the arm *g* of the said latch is drawn in the direction indicated by arrow, carrying the latch away from the lever C, which will then fall and assume the position indicated by dotted lines.

E is a rope attached to the other end of the lever C, for the purpose of pulling the said lever back into the position it is shown in in the drawings in full lines.

F is the body or frame of the carriage.

G is a latching-lever, pivoted at *h* to the body or frame F. Its hooked end *i* is formed in the usual way to engage with the stop-block. Its other end extends back to the point where the bail *j* enters, as hereinafter described.

H is an eye, pivoted at *k* to a projection formed on the latch-lever G. The end of the lifting-rope I is fastened to the eye H, and as the pivot of this eye is on the inside of the pivot *h*, any downward-pulling strain on the rope I will have a tendency to hold the hook *i* up against the stop-block when it is engaged therewith.

J is a sliding bar, held in suitable guides within the body or frame F, and shaped substantially as shown, one end projecting down so as to form a hook, *l*, while its other end has an upward projection, *m*, so as to come opposite to the arm *n*, attached to or forming part of the latching-lever G.

K are the axles of the rollers or wheels L, which axles are pivoted or hinged to the frame or body F, as indicated on the left-hand side of Fig. 3, where one wheel is shown thrown back. The spindle of the other wheels as

shown on the right-hand side, is secured in position by a bearing formed on the end of the spring-lever M, which is pivoted to the frame or body F.

Having now described the general construction and arrangement of the parts involved in my invention, I shall proceed to explain their operation, and to state, briefly, the advantages secured by my specific construction. It is customary to place a stationary stop-block at the point where the hay is to be elevated, so that the carriage will be locked in position during the period that the lifting is taking place. This stop-block being a fixture, it is necessary to remove the carriage from the rod when one end of the barn is filled and carry the said carriage to the other side of the stop-block in order to fill the opposite end of the barn. The stop-block being stationary, as before described, the carriage cannot run past it on the bar. By providing a lever, C, pivoted to the bracket B, located as described, I am enabled to utilize the said lever C for the purposes of a stop-block, and by unlatching the lever, as before described, and permitting it to drop clear of the rod A, I can push the carriage past the said block without removing it from the rod A, and by drawing on the rope E, I pull back the lever into its initial position and re-form the stop-block, and while pulling back this lever, I raise the rod A, and take up any sag in the rod A which would naturally occur from the temporary removal of its support. When I have moved the carriage past the stop-block in a position to operate at the opposite end of the barn, it is of course necessary to turn the carriage, unless it is made double-ended.

In the drawings, I have shown merely a single-ended carriage, in which case, as I have said before, it is necessary to turn it. With the view of facilitating this operation I have hinged the spindles of the wheels L as hereinbefore described. It is therefore merely necessary to press the spring-levers M, so as to draw their upper ends away from their respective spindles, when the carriage can be dropped down, turned, and replaced without the operator descending from the ladder.

In Fig. 1 the hook *i* is shown engaged with the lever C, in which position the said lever acts as the ordinary stop-block. When the lifting-rope I is drawn upon, so as to raise the bail *j*, the strain of the rope has a tendency to keep the hook *i* engaged with the lever C, in the position in which it is indicated in Fig. 1. When the bail *j* comes in contact with the beveled head of the hook *l*, it pushes the sliding bar J so as to move the hook *l* out of the way of the bail, which thus strikes against the end of the latching-lever G, tilting it on its pivot so as to clear its hooked end *i* away from the stop-block. At the same time the arm *m* comes in contact with the upward projection, *n*, and pushes the sliding bar J back so as to bring the hooked end back into its initial position.

What I claim as my invention is—

1. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, pivoted to the said bracket and arranged to support the rod A, substantially as and for the purpose specified.

2. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, pivoted to the said bracket and held by the latch D for the purpose of supporting the rod A, substantially as specified.

3. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, with the notch *c*, and latch D, arranged for the purpose of supporting the rod A, substantially as specified.

4. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, with the notch *c*, and latch D, spring *e*, attached to the latch D, and the lug *f*, attached to the bracket, the whole arranged and operating substantially as and for the purpose specified.

5. The latching-lever G, pivoted to the body or frame F at *h*, in combination with the eye H, connected to the latching-lever G at a point inside of the pivot *h*, so that the said pivot shall be between the eye H and hook *i*, substantially as and for the purpose specified.

6. A wheel or roller, L, journaled on the axle K, which is hinged at one end to the body or frame F, in combination with a locking device arranged to lock the free end of the axle, substantially as and for the purpose specified.

7. The latching-lever G, pivoted to the body or frame F, and having one of its ends extending back to the point where the bail *j* enters the carriage, and an upward projection, *n*, formed upon or attached to the said lever G, in combination with a sliding bar, J, held in suitable guides within the frame F, and having one of its ends projecting down so as to form a hook, *l*, and its other end formed with an upward projection, *m*.

Toronto, April 22, 1885.

JAS. W. PROVAN.

In presence of—

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