(No Model.) 2 Sheets—Sheet 1.

W. LOUDEN.

HAY CARRIER.

No. 525,425. Patented Sept. 4, 1894.

Fig. 1.

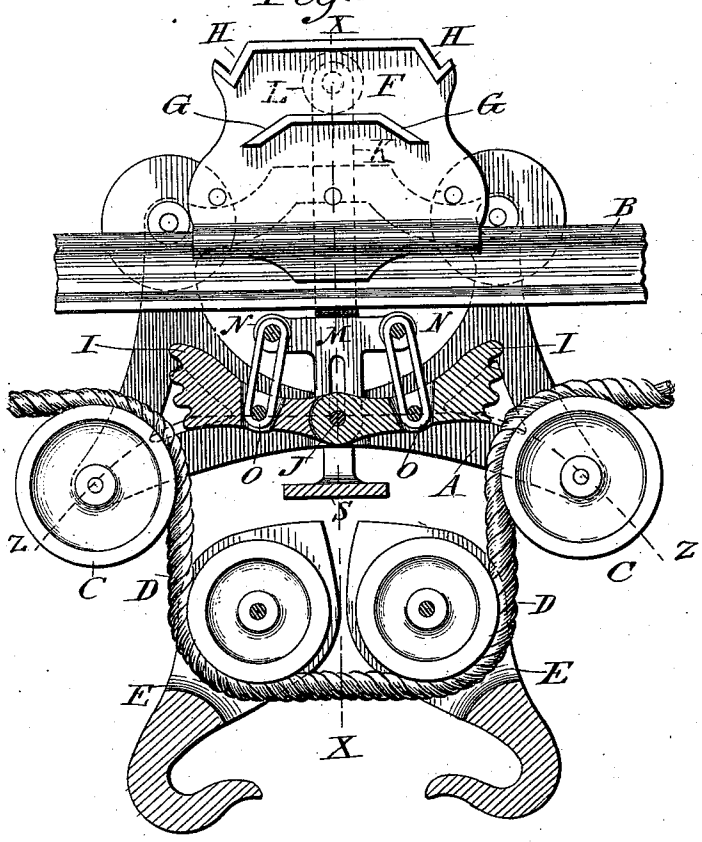


Fig. 2.

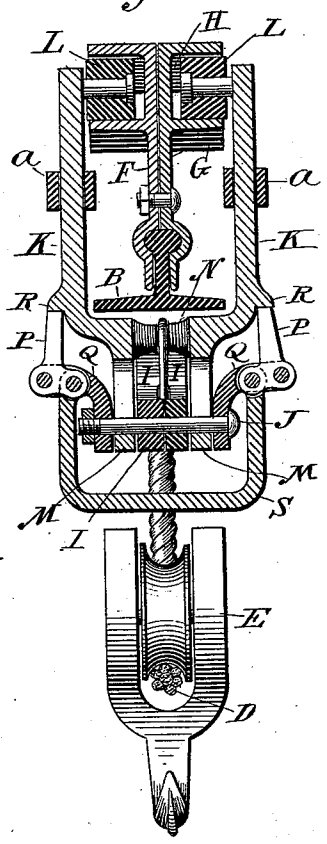
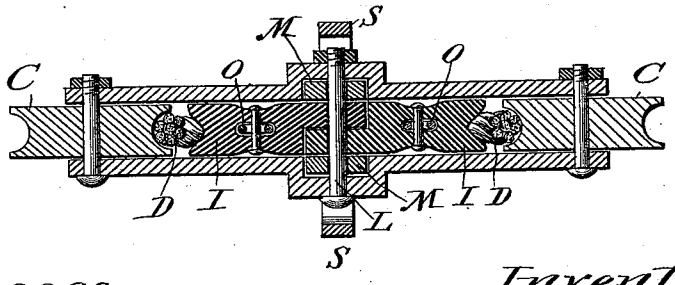


Fig. 3.



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Fig. 4.

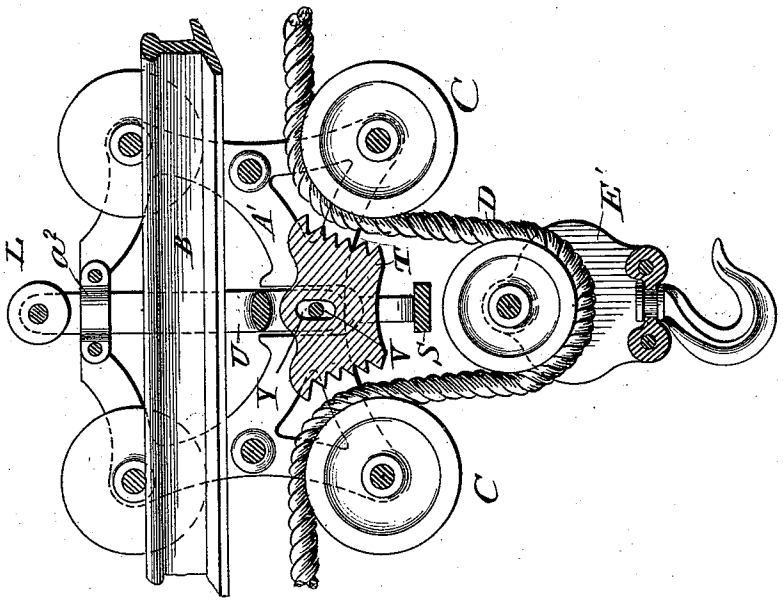
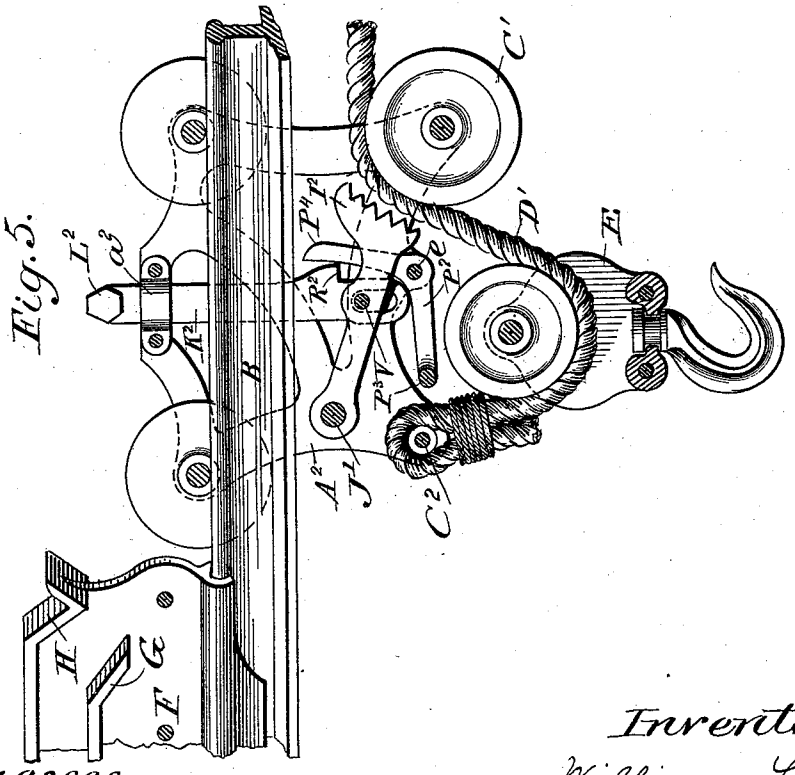


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 525,425, dated September 4, 1894.

Application filed May 19, 1894. Serial No. 511,811. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LOUDEN, a citizen of the United States, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented a new and useful Improvement in Hay-Carriers, of which the following is a specification.

This invention relates to carriers in which a brake or clutch is used to grip or catch and hold the hoisting rope where it passes over the sheaves in the carrier frame, and thus prevent the load from dropping down from the carrier as it traverses the track; and it consists of improved means for releasing this brake or clutch from the rope, and in holding it released while the tackle is being lowered from or elevated to the carrier.

It further consists of certain combinations and arrangements of parts set forth in the following specification and claims and shown in the accompanying drawings.

In the drawings Figure 1 is a side elevation of a carrier embodying my invention, the front side of the carrier frame being removed to give a better view of the working parts. Fig. 2 is a vertical section drawn on the line *x*, *x*, of Fig. 1. Fig. 3 is a horizontal section drawn on the line Z, Z, of Fig. 1. Figs. 4 and 5 are side elevations of modified forms of carriers embodying my invention, the front sides of the carrier frames being removed to give a better view of the working parts.

Fig. 1 shows a carrier A, mounted in the usual way upon a track B, which may be constructed in any suitable manner. The carrier is provided with sheaves or rope wheels C over which the hoisting rope D is passed, and in the loops of which pulley blocks E are hung, all in the usual manner.

A stop block F having inclined faces G and catch shoulders H, is secured to the upper edge of the track B.

Brakes or clutch pawls I are pivoted in the carrier frame by means of a bolt J, and are arranged to catch and hold the rope D upon the sheaves C.

K is a yoke having a limited vertical sliding movement in the frame of the carrier, its arms extending up by the track B. Rollers or wheels L are mounted upon the upper ends of the arms of the yoke K and are adapted to run up on the inclined faces G and lift the yoke. The upper part of the yoke is passed through a portion *a*, of the carrier frame which is extended up to support it, while the lower end is provided with a pair of downwardly projecting slotted forks M.

The bolt J upon which the clutch levers I are pivoted, is passed through the slots in these forks, so that the yoke K will be securely supported laterally, but will have free vertical movement in the frame of the carrier to the extent of the slot in its lower end.

Horizontal branches N are extended a short distance on each side of the yoke so as to be parallel with the clutches I. Links O are connected to these branches and also to the clutches. It will be seen that by this means when the rollers L run up the incline faces G and lift the yoke K the clutches I will also be lifted off the rope D, which will then be free to run over the sheaves C, and the tackle may be lowered for a load.

In order to hold the carrier stationary at the stop F and the clutches released from the rope while the load is being elevated, dogs P are pivoted at Q in a portion of the frame of the carrier which is extended out to receive them. These dogs are adapted to engage shoulders R on the yoke K, and hold it in its elevated position, so that the rollers L mounted in the upper ends of the yoke cannot pass under the shoulders H or out of the stop F in which case the carrier will be held from moving along the track, and the clutches I will be held released from the rope.

A bail S is connected to the dogs P and when the load is elevated this bail will be lifted by the tackle so as to throw the dogs P out of engagement with the yoke K, and permit it to drop down and pass out of the stop F so the carrier can move along the track. The clutches I will now drop on the rope and grip it upon the sheaves C, so as to prevent the tackle from running down from the carrier.

The carrier being returned to the stop F the rollers L will run up one of the inclines G and lift the yoke K and the clutches I connected to it, so that the tackle will be allowed to descend, and at the same time the dogs P will engage the shoulders R on the yoke K, and hold the rollers L from passing out of the stop. The operation may be repeated at will.

It is evident that the carrier may be operated either way from the stop F, and the clutch pawls I being set in opposite directions will grip and hold the rope on both sides of the elevating tackle. It is not essential however, that the details shown in Figs. 1 and 2 above described shall be strictly adhered to. I consider this the preferable form but am aware that several modifications may be made without departing from the scope and spirit of my invention. Two of these modifications are shown in Figs. 4 and 5.

Fig. 4 represents a carrier A′ designed to operate in either direction upon the track and is substantially the same as that shown in Fig. 1, except that the clutch T is made in one piece. It has a vertical movement in the frame of the carrier, and is designed to drop on the rope between the sheaves C and hold it in both directions. The yoke U has a lower forked end which straddles the clutch T, and is connected to it by means of the bolt V passing through the slotted hole Y.

It is desirable to have a little slack in the connection between the lifting device and the clutch, because different sized ropes may be used in the carrier, and if the connection was rigid a large sized rope might not permit the yoke to descend low enough to pass the rollers out of the stop F nor permit them to enter it. This is amply provided for in the link connection shown in Fig. 1.

In Fig. 5 a one way carrier A^2, is shown having only one hinged clutch pawl I^2, and a single lifting link K^2 connected to the clutch and passed up on one side of the track to the stop F. This will answer the same purpose as the yoke K.

The yoke passing up around both sides of the track is the preferable plan but the form of lifting device shown in Fig. 5 is within the limits of my invention. The stop may also be secured to the lower edge of the track, (as is commonly done) and the lifting device extended up only sufficiently to engage the stop located in that position, without exceeding the scope and spirit of the invention. It is preferable however, to place the stop on the upper edge of the track and extend the lifting device up around the track to engage the stop, as shown in the drawings, because by so doing the hoisting tackle can be drawn up closer to the track and space will thereby be economized in the operation of the carrier.

The tripping bail S shown in Figs. 1 and 4 is dispensed with in Fig. 5, and a combined dog and trip lever P^2, is used instead. It is hinged to the carrier frame at *e*, and is constructed to straddle the clutch pawl I^2, the front side being cut away in the drawings.

The elevating tackle is adapted to lift the lower end P^3 and throw the upper end P^4 out of engagement with the shoulder R^2 of the lifting link K^2. When the lifting link is raised by the stop F, the weight of the lower end P^3 will draw the end P^4, under the shoulder R^2.

The roller L shown in Figs. 1 and 4, is also dispensed with, and an ordinary horizontally projecting finger L^2, is used to slide up the incline G and catch against the shoulder H of the stop F.

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

1. In hay carriers the combination of a clutch to catch and hold the hoisting rope, a stop having an inclined face, and a lifting device connected to the rope clutch; said lifting device being adapted to be elevated by the inclined face of the stop and thereby release the clutch from the rope.

2. In hay carriers the combination of a clutch to catch and hold the hoisting rope, a stop having an inclined face, a lifting device connected to the rope clutch, said lifting device being adapted to be elevated by the inclined face of the stop and thereby release the clutch from the rope, and a dog to hold the lifting device in elevated position.

3. In hay carriers, the combination of a clutch to catch and hold the hoisting rope, a stop having an inclined face and also a retaining shoulder, a lifting device adapted to be elevated by the inclined face of the stop and thereby release the clutch from the rope, and a dog to hold the lifting device in elevated position, and in engagement with the retaining shoulder of the stop.

4. In hay carriers, the combination of a clutch to catch and hold the hoisting rope, a stop having an inclined face and also a retaining shoulder, a lifting device adapted to be elevated by the inclined face of the stop and thereby release the clutch from the rope, a dog to hold the lifting device in elevated position, and in engagement with the retaining shoulder of the stop, and a tripping device to release the dog from engagement with the lifting device substantially as and for the purpose set forth.

5. In hay carriers, the combination of a rope clutch, a lifting device loosely connected to said rope clutch, and having a limited vertically sliding movement in the carrier frame, and a stop having an inclined face adapted to elevate the lifting device, and thereby release the clutch.

6. In hay carriers, the combination of a rope clutch, a lifting device loosely connected to said rope clutch and having a limited vertically sliding movement in the carrier frame, a stop having an inclined face adapted to elevate the lifting device, and thereby release the clutch, and a dog to hold the lifting device in elevated position.

7. In hay carriers the combination of a rope clutching device set to catch and hold the rope in opposite directions, a lifting device connected thereto, and a stop having an inclined face adapted to elevate the lifting device and thereby lift and release the clutch from the rope.

8. In hay carriers the combination of a rope

clutching device set to catch and hold the rope in opposite directions, a lifting device connected thereto, a stop having an inclined face adapted to elevate the lifting device and thereby lift and release the clutch from the rope, and a dog to hold the lifting device in elevated position.

9. In hay carriers the combination of a rope clutching device consisting of a pair of pivoted clutching pawls set to catch and hold the hoisting rope in both directions, a lifting device connected to said pawls and a stop having an inclined face adapted to elevate the lifting device and thereby lift and release the pawls from the rope substantially as shown and described.

10. In hay carriers the combination of a rope clutching device consisting of a pair of pivoted clutching pawls set to catch and hold the hoisting rope in both directions, a lifting device connected thereto, a stop having an inclined face adapted to elevate the lifting device and thereby lift and release the pawls from the rope, and a dog to hold the lifting device in elevated position, substantially as and for the purpose set forth.

11. In hay carriers the combination of a clutching device to catch and hold the hoisting rope, a stop stationed on the upper edge of the track, and having an inclined face, and a yoke having vertical movement in the frame of the carrier, and adapted to straddle the track, said yoke being connected to the clutching device, and adapted to be lifted by the inclined face of the stop and release the clutch from the rope substantially as set forth.

12. In hay carriers the combination of a clutching device to catch and hold the hoisting rope, a stop stationed on the upper edge of the track and having an inclined face, a yoke having vertical movement in the frame of the carrier and adapted to straddle the track, said yoke being connected to the clutching device, and adapted to be lifted by the inclined face on the stop and release the clutch from the rope, and a dog to hold the yoke in elevated position substantially as and for the purpose set forth.

13. In a hay carrier the combination of a clutching device to catch and hold the hoisting rope, a stop stationed on the upper edge of the track and having inclined faces and retaining shoulders, a yoke having vertical movement in the frame of the carrier, being adapted to straddle the track and carrying rollers at its upper ends, said yoke being connected to the clutching device, the rollers on its upper ends being adapted to run up the inclined faces on the stop and thereby release the clutching device from the rope, dogs to hold the yoke in its elevated position, and a tripping device to release them therefrom substantially as shown and described.

14. In hay carriers, the combination of a clutching device to catch and hold the hoisting rope, a stop stationed on the upper edge of the track and having inclined faces and retaining shoulders, a yoke having vertical movement in the frame of the carrier, being adapted to straddle the track and carrying rollers at its upper ends, said yokes having horizontal branches connected by links to the clutching device, the rollers on its upper ends being adapted to run up the inclined faces on the stop and thereby release the clutching device from the rope, dogs to hold the yoke in its elevated position, and a tripping device to release them substantially as shown and described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WILLIAM LOUDEN.

Witnesses:
J. E. SHIRLLAM,
B. A. SNOOK.