(No Model.) 2 Sheets—Sheet 1.

W. LOUDEN.

HAY CARRIER.

No. 498,748. Patented May 30, 1893.

Fig. 1.

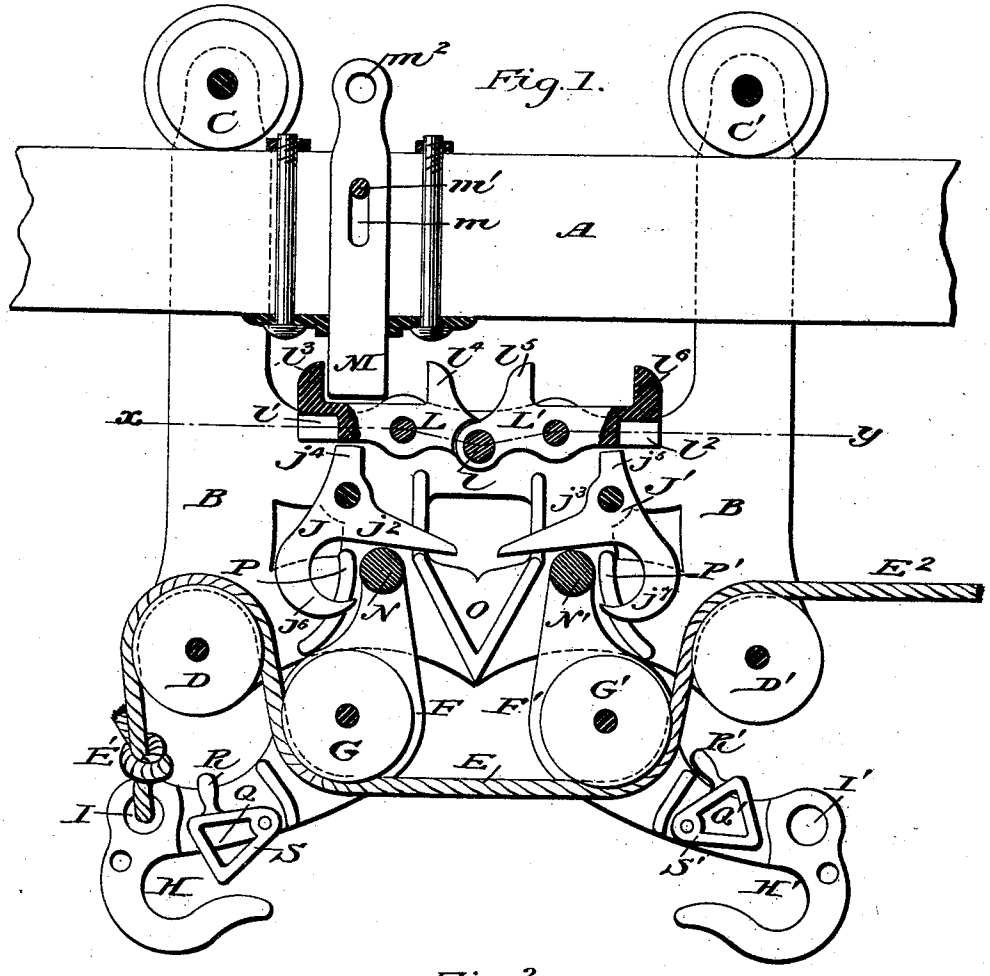
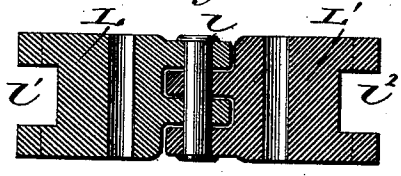


Fig. 3.



Witnesses.
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W. P. Pence

Inventor.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

W. LOUDEN.

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Fig. 2.

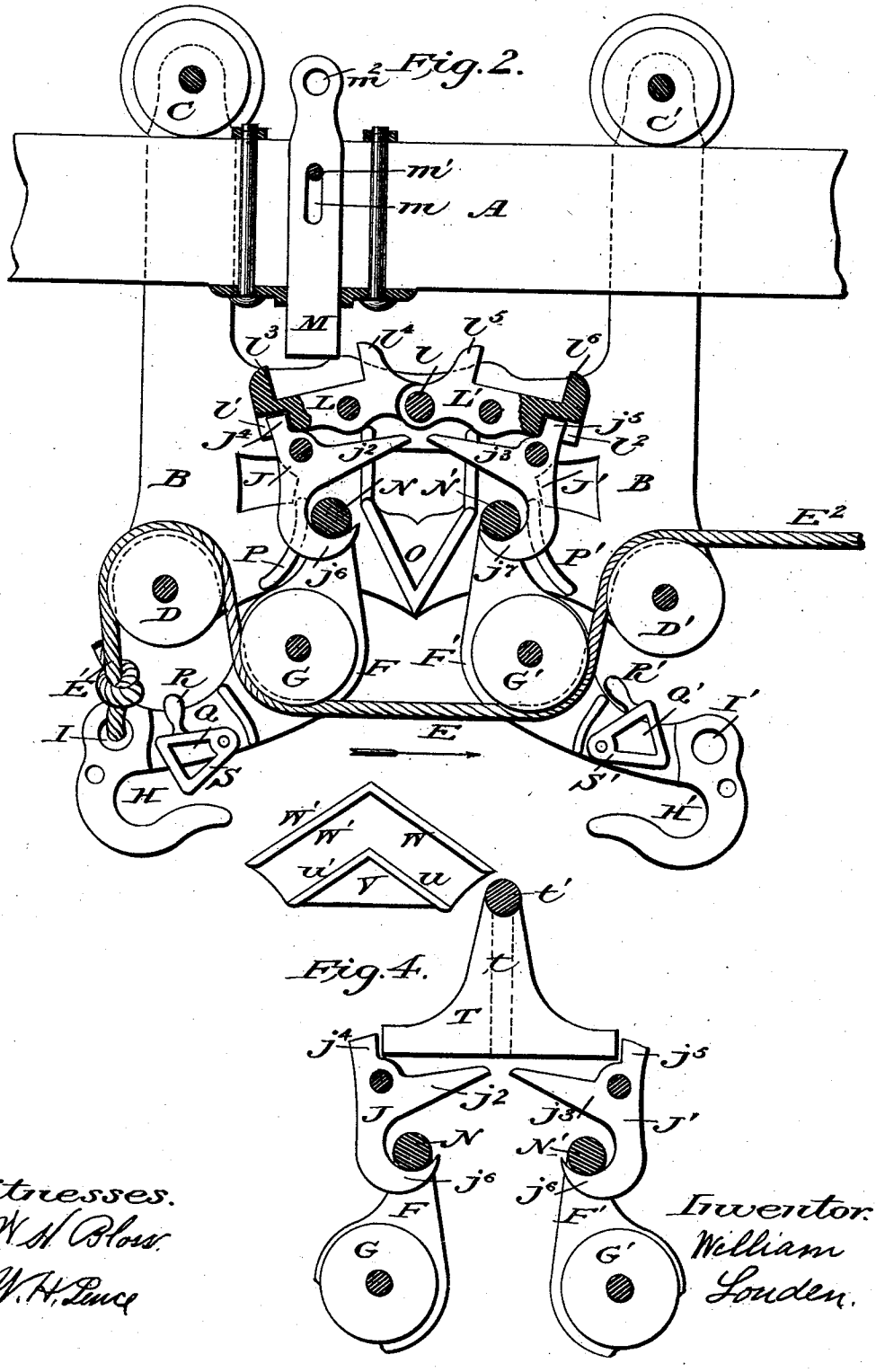

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 498,748, dated May 30, 1893.

Application filed February 27, 1893. Serial No. 463,986. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LOUDEN, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented certain new and useful Improvements in Hay-Carriers; and I do hereby declare the following to be a full, clear, and exact description of the same.

The invention relates to hay carriers wherein two pulley blocks are carried by the hoisting rope which passes through the carrier, and it consists in constructing and arranging the parts so that the pulley blocks will jointly operate the lock mechanism of the carrier, and each pulley block will be positively locked thereto while the carrier is traversing the track.

It further consists of improvements in details which will be herein described and set forth.

This invention has advantages which those familiar with the art will readily understand from the description herein, reference being had to the accompanying drawings in which—

Figure 1 is a side elevation, with the frames on the near sides of the carrier and pulley blocks removed to show the working parts. Fig. 2 is the same, showing the carrier released from the stop on the track and the pulley blocks locked to the carrier. Fig. 3 is a horizontal section of the locking dogs drawn on the line X—Y. Fig. 4 is a modification of the lock mechanism.

In the drawings A represents the track which may be of any approved construction.

B is the carrier frame which is fitted with the track wheels C and C′, and the rope wheels D and D′.

E is the hoisting rope upon which the pulley blocks F and F′ are mounted. The hoisting rope is passed over the rope wheel D′ then under the sheaves G′ and G of the pulley blocks, then over the rope wheel D, and its end E′ is secured to an eye I in the upper part of the hook H of the pulley block F. The hooks H and H′ are used for the attachment of the hay sling or other receptacle for elevating the hay and thus to connect the load to the pulley blocks.

J and J′ are grappling hooks pivoted in the frame of the carrier and adapted to operate in connection with the locking dogs L and L′.

M is a stop fitted to the track A and adapted to operate the locking dogs L and L′ which are pivoted together at l.

The pulley blocks F and F′ are each provided with registering heads N and N′ which are adapted to engage, and be engaged by the grappling hooks J and J′.

The operation is as follows. The carrier being in the position shown in Fig. 1 is held stationary upon the track by the stop M. The hay sling being connected to the pulley blocks F and F^2 and power being applied to the free end, E^3, of the hoisting rope, the load will be elevated until the registering heads (N and N′) are brought in contact with the arms j^2 and j^3 of the grappling hooks J and J′. The grappling hooks will now be turned on their respective pivots until the hooks j^6 and j^7 will be brought under the heads N and N′ of the pulley blocks F and F′ and the locking dogs L and L′ will drop in behind the ends j^4 and j^5 of the grappling hooks, as shown in Fig. 2; thus freeing the carrier from the stop M and locking both pulley blocks F and F′ securely to the carrier while it traverses the track. The load being discharged and the carrier returned, the stop M will come in contact with the fork l^4 of the dog L which will bring the dogs back to the position in Fig. 1, thus locking the carrier to the track again and releasing the pulley blocks so that they and the elevating tackle to which they are connected may be drawn down for another load.

It will be observed that the pulley blocks F and F′, the grappling hooks J and J′ and the locking dogs L and L′ all have to work together. Should one of the pulley blocks be drawn up in advance of the other, and turn the grappling hook with which it engages, this will not operate the locking dogs until the other pulley block is drawn against and turns its grappling hook also. Thus the carrier cannot be released from the stop on the track before both pulley blocks are securely locked thereto.

To guide the pulley blocks accurately to their respective grappling hooks, I divide the throat of the carrier into two separate parts by means of the V shaped lip or partition O, the upper ends of which have recesses or openings in which the arms j^2 and j^3 have free vertical movement. In addition to this, extra

lips or partitions P and P′ may be used to keep the heads N and N′ from striking the points of the hooks j^6 and j^7. The heads N and N′ may be formed in any suitable shape to operate the grappling hooks J and J′ and to be in turn held suspended by them as already stated.

To reverse the carrier and let it run upon the track in the opposite direction the stop M is made so that it can be drawn up to pass over the forks l^4, and l^5, of the locking dogs, and come in contact with the dog L′ instead of L as it is shown in the drawings. The stop M is arranged to slide in a mortise in the track and its movement is limited by a pin M′ passing through a slot M formed in the stop. A cord or wire may be connected to the eye M^2 to lift the stop and let the carrier pass. The end E^2 of the hoisting rope will also have to be connected to the eye I′ of the pulley block F′, and the end E′ disconnected from the eye I and left free for the application of the elevating power.

The movement of the hoisting rope has a tendency to draw up the pulley block next to the end where the power is applied in advance of the other, but this tendency is largely overcome by attaching the rear end of the rope to the farthest pulley as already described; and it also serves to increase the leverage in raising the load. By placing the eye I on the back of the hook and close to its lower end the draft of the rope upon it will not interfere with the natural position of the pulley which would be the case were it connected to the upper part of the pulley block.

The hooks H and H′ of the pulley blocks F and F′ may be fitted with stops S and S′ to close the throats of the hooks and prevent the sling from being prematurely detached. These stops are preferably pivoted in recess Q and Q′ formed in the shanks of the hooks, and to facilitate the opening of the hooks I have formed fingers R and R′ on the stops so that they will project out of the recesses Q and Q′ so that the stops S and S′ may be more readily lifted as shown in pulley block F′. The throat of the hook is closed by the stop swinging against the inner face of the point of the hook, and opened by pushing the stop back into or beyond the shank of the hook.

The locking dogs L and L′ are made with recesses l' and l^2, in their outer ends to fit down over the ends j^4 and j^5 of the grappling hook J and J′ when the latter are turned by the registering heads N and N′. By this means the locking dogs can be made of sufficient length to work properly in connection with the stop M and at the same time the grappling hooks can be set closer together and the carrier be more compactly made. However, the precise form in which the grappling hooks are made or set is not essential to the successful working of my invention. Neither is the precise form of the stop nor the exact construction of the locking dogs.

Fig. 4 shows a modification of the stop and lock mechanism in which a single locking dog T, adapted to slide in a vertical groove in the carrier frame is used. It is provided with a lug or pin t' on its upper end which engages cam faces U or U′ on the stop V. This lifts the dog T up from between the ends j^4 and j^5 of the grappling hooks J and J′ and permits them to turn and release the pulley blocks as already described. The dog L will then rest upon the upper ends of the grappling hooks and cannot escape from the stop V by reason of the upper cam faces W and W′, until the grappling hooks are turned and the locking dog T drops between them as shown in Fig. 4. Other modifications may also be made without departing from the spirit and scope of my invention.

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

1. The combination with a hay carrier, of two pulley blocks and means to positively lock both pulley blocks in the carrier substantially as set forth.

2. The combination with a hay carrier of two pulley blocks and means to lock both pulley blocks simultaneously in the carrier substantially as and for the purpose set forth.

3. The combination with a hay carrier, of an elevated track, a stop to limit the movement of the carrier on the track, a hoisting rope, two pulley blocks mounted upon the rope and means whereby the pulley blocks will jointly release the carrier from the stop and be positively locked in the carrier.

4. The combination with a hay carrier, of two pulley blocks, a registering head fitted on each pulley block and two grappling hooks adapted to engage the registering heads and lock the pulley blocks in the carrier substantially as set forth.

5. The combination with a hay carrier of two grappling hooks, two pulley blocks adapted to engage the grappling hooks, and a locking dog to lock the hooks in engagement with the pulley blocks.

6. The combination with a hay carrier of two grappling hooks, two pulley blocks, adapted to catch on the hooks, and means whereby the hooks are locked in position and the pulley blocks retained thereby.

7. The combination with a hay carrier of a stop to arrest the movement of the carrrier on its track, two pulley blocks adapted to hold the load, two grappling hooks to catch and retain the pulley blocks, and a locking dog to alternately engage the stop and to hold the grappling hooks in engagement with the pulley blocks, substantially as and for the purpose set forth.

8. The combination with a hay carrier of a stop to arrest the movement of the carrier on its track, two pulley blocks adapted to hold the load, two grappling hooks to engage the pulley blocks and a pair of locking dogs

pivoted together and adapted to alternately engage the stop and the grappling hooks substantially as set forth.

9. The combination with a hay carrier of two pulley blocks, two grappling hooks to engage them, two forked locking dogs pivoted together and a movable stop to engage them, all arranged to operate substantially as set forth.

10. The combination with a hay carrier of two pulley blocks and two grappling hooks to engage them, the throat of the carrier being made in two divisions substantially as and for the purpose set forth.

11. The combination with a hay carrier having two grappling hooks and a V shaped partition in its throat, of two pulley blocks adapted to enter the separate divisions and lock therein substantially as shown and described.

12. In hay carriers, the combination of a stop to arrest the movement of the carrier, two pulley blocks, two grappling hooks and two locking dogs pivoted together and having recesses in their outer ends substantially as and for the purpose set forth.

13. In hay carriers, a pulley block having a hook thereon, a stop pivoted in the shank of the hook so as to swing against the inner face of the point of the hook, and a finger on the stop extending beyond the shank of the hook substantially as and for the purpose set forth.

14. The combination of the stop M, locking dogs L and L′, grappling hooks J and J′, pulley blocks F and F′ and the hoisting rope E, substantially as shown and described.

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

WILLIAM LOUDEN.

Witnesses:
J. G. ALEXANDER,
R. M. COINESS.