

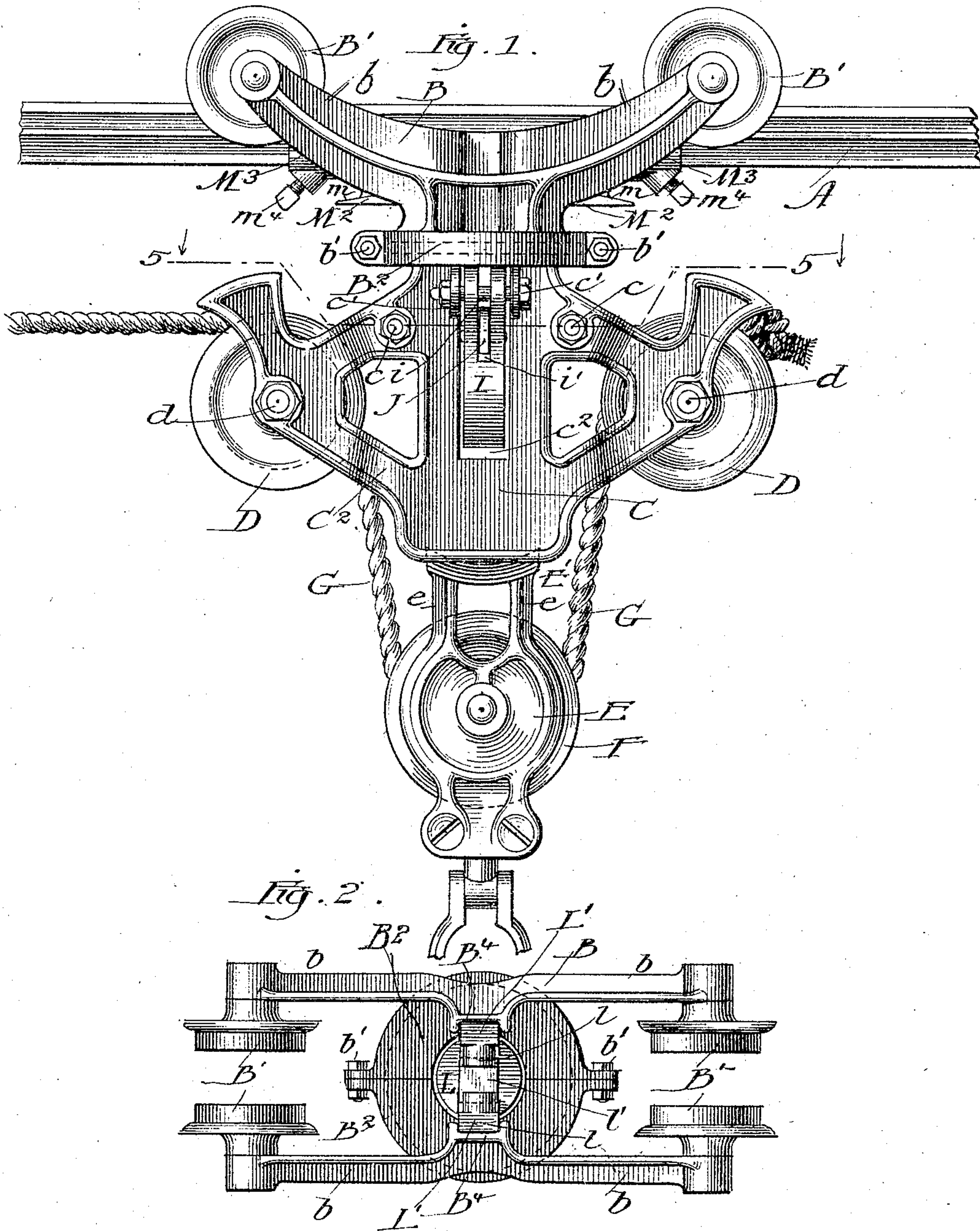
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W. F. JACOBS.
HAY CARRIER.

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2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

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HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 785,361, dated March 21, 1905.

Application filed August 12, 1904. Serial No. 220,530.

To all whom it may concern:

Be it known that I, WILLIAM F. JACOBS, a citizen of the United States, residing at Ottawa, in the county of Lasalle and State of Illinois, have invented certain new and useful Improvements in Hay-Carriers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to hay-carriers of that class embracing a supporting-track, a carriage which rests and travels on said track, a hoisting pulley-block, means for locking the carriage at one place on the track and locking the pulley-block to the carriage, together with means for simultaneously releasing the carriage from the track and locking the pulley to the carriage when the load has been elevated and for locking the carriage to the track and releasing the elevating-pulley from the carriage when the carriage is returned to its locking position after the load has been deposited.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a view in side elevation of a hay-carrier embodying my invention. Fig. 2 is a plan view of the carriage and parts thereon detached from the track. Fig. 3 is a vertical section taken upon line 3 3 of Fig. 4. Fig. 4 is a vertical cross-section taken upon line 4 4 of Fig. 3. Fig. 5 is a plan section taken upon line 5 5 of Fig. 1. Fig. 6 is a sectional view of the track and an end view of the stop-plate thereon.

As illustrated in the said drawings, which show in one practical form an apparatus embodying the several features of my invention, A indicates an overhead track which is intended to be supported in a barn or elsewhere and which usually extends over the place or floor upon which stands a wagon to be unloaded and over a mow or place in which the hay is to be deposited. Said track may be supported by any suitable means, not neces-

sary to be illustrated, as they form no part of the present invention.

B indicates the upper and C the lower part of the carriage-frame, said parts B and C being joined by a swivel connection permitting the lower part of said carriage-frame to be turned or rotated relatively to the upper part. The upper member B of the carriage is provided with four supporting-wheels B' B', which rest and roll upon the track A, and the lower part C of the carriage is provided with two sheaves or pulleys D D.

E indicates the frame of the pulley-block, which is provided with a pulley-wheel F and which is adapted to be raised and lowered relatively to the carriage-frame by means of a rope G, which also serves to move the carriage along the track A. Said pulley-block will usually have attached to it a hay-fork or other like device. Said rope G is engaged with the pulleys D D and passes around the pulley F of the hoisting-block in the usual manner.

M indicates a lock-plate which is secured to the track A over the place from which the load is to be hoisted.

I I are locking-dogs on the lower part C of the carriage for locking the pulley-block to the carriage, J an actuating-bar for operating said dogs, and K a central spindle which engages said bar J and is attached at its upper end to a locking-head L, adapted to engage the lock-plate M.

The four track-wheels B' B' rest upon or engage suitable lateral bearing-surfaces upon the track A, and the said upper member of the carriage is provided with four arms b b, on the ends of which said track-wheels are mounted, these parts being arranged in a common and familiar manner. At its lower part or base the said upper portion B of the carriage is provided with a horizontally-arranged rigidly-attached internally-grooved swivel-ring B², which engages a circular swivel-plate C', formed on or attached to the top of the lower part C of the carriage. Said lower part C of the carriage consists, mainly, of two side plates C² C², between which the pulleys D D are pivoted and which are separated at their lower parts to receive between them the pulley-block

E when the latter is in its elevated position or drawn upwardly into engagement with the carriage. Said side plates $C^2 C^2$ are shown as joined at their upper ends to the swivel-plate C' , which is made in two parts or halves, each of which is rigidly attached to or formed on one of the side plates. Said side plates C^2 of the lower frame are also connected with each other by means of stud-bolts $c c$ and by the pivots $d d$ of the pulleys D. The swivel-ring B^2 on the upper carriage-frame B is likewise formed of two semicircular parts or pieces, which are severally cast integral with two side plates $B^3 B^3$, constituting said upper part of the carriage, the parts or halves of said ring B^2 being joined by bolts b' , inserted through laterally-extending lugs on the exterior of the ring and which serve to rigidly connect the side plates of said upper frame at the lower end thereof.

The locking-dogs I I for holding the hoisting-sheave E in its elevated position or interlocked with the lower part C of the carriage are mounted on horizontal pivot-pins $i i$, arranged parallel with and outside of the side frame-plates $C^2 C^2$ and mounted in outwardly-extending lugs or ears $c' c'$, formed on said side plates at either side of vertically-extending slots $c^2 c^2$ therein, as clearly seen in Fig. 5. Said dogs are arranged to hang or depend from said pivot-pins and to swing in transverse vertical planes inwardly and outwardly relatively to the side plates, the lower ends of the dogs being adapted to extend through said slots or openings $c^2 c^2$. Said lower ends of the dogs are hook-shaped or provided with inwardly-extending arms adapted to engage a locking-plate E' , which is located at the top of the pulley-block E and is connected with the side plates of said block by means of four upwardly-extending bars $e e$, two of which are connected with each of the said side plates and are separated from each other, so as to afford a wide space or opening beneath the side margins of the said locking-plate E' to permit the engagement of the ends of the dogs I I with the lower surfaces of the said side margins of said locking-plate. The lower surface of said locking-plate E' or the side margins thereof which are engaged by the ends of said dogs I I are convexly curved, so that the ends of said locking-plate to which the arms $e e$ are attached are above the level of the center part of said plate. As a result of this construction when the pulley-block E is sustained or supported by engagement with said dogs its lower end may be swung or moved in the plane of the carriage without affecting the engagement of the dogs therewith, thus permitting the pulley-block to take a forwardly or rearwardly inclined position in case the point at which the hay-fork or other lifting device attached to the pulley-block is not directly beneath the carriage when it engages the load and enabling said locking-dog to engage said

locking-plate equally well whether the pulley-block stands in a vertical or inclined position when drawn upwardly between the side plates of the carriage. This will be readily understood from Fig. 3, wherein the pulley-block is shown in its inclined position in dotted lines and the dogs I engaged with the locking-plate E' near one end of the same.

The actuating-bar J is arranged horizontally and extends transversely of the lower carriage-frame C, with its ends extending through the slots $c^2 c^2$ in the carriage-frame and through slots $i' i'$, formed in the dogs I between the lower ends of the same and the pivots i thereof. Guide-lugs $j^3 j^3$ project from the sides of the bar J in position to bear and slide upon the inner faces of the side plates $C^2 C^2$ at the sides of the slots $c^2 c^2$ therein. Said bar J is provided near its end with guide-pins j , which extend therethrough and engage inclined guide-slots i^2 in the dogs, which guide-slots are inclined downwardly and outwardly and preferably are nearly vertical at their upper ends. Said bar J is pivotally connected with the lower end of the spindle K, which has a head k on its lower end below the said bar. The locking-head L is mounted to slide vertically in the upper part B of the carrier, which latter is provided with lateral guides $B^4 B^4$, Fig. 2, which are engaged by the sides of the head L. Said locking-head L is provided with two upwardly-extending arms $L' L'$, having at their upper ends two inwardly-extending locking-lugs ll . A swivel-ring J' surrounds the upper end of the spindle K below and in contact with the locking-head L and is rigidly connected with the bar J by two inclined braces $j^2 j^2$.

The lock-plate M is rigidly secured to the track A beneath the same and will be located over the point from which the load is to be hoisted—that is to say, in unloading hay from a wagon the said lock-plate will be located over the wagon. Said lock-plate embraces a vertical web M' , which is arranged centrally beneath the track and provided at its lower margin with longitudinally-arranged laterally-projecting guide-flanges M^2 . At its end portion each of the flanges M^2 is provided with outwardly and downwardly oppositely inclined guide or cam surfaces $m m$ and at the center of its top surface between said opposite inclined surfaces $m m$ with a locking-notch or depressed portion having at its ends inwardly-facing shoulders m' . The lower surface of each flange M^2 is inclined downwardly at its ends to form inclined cam-surfaces $m^2 m^2$, corresponding generally with the downward inclination of the cam-surfaces $m m$, while at the central part of the lock-plate are formed two downwardly and inwardly inclined cam-surfaces $m^3 m^3$, which meet to form a downward central projection. The upper end of the locking-head L between the arms $L' L'$ is provided with an upwardly-fac-

ing surface l' , located at a distance below the lugs l substantially equal to the thickness of the flanges M^2 M^2 or the distance between the upper and lower cam-surfaces m and m^2 of said flanges. As a result of this construction the surface l' of the said locking-head will strike the inclined cam-surface m^3 at the center of the lock-plate as the locking-head approaches the center of the lock-plate and will be forced downwardly thereby, thus insuring the descent of the lugs l into locking engagement with the central notches of said lock-plate. Similarly when the locking-head is lifted to release it from said notch and the carriage moved away from its central position the said upper surface of the locking-head L will ride on the inclined lower cam-surfaces m^2 , and thus force the head downwardly should the weight of the parts be insufficient to keep the said lugs l in contact with the cam-surfaces m m in such movement of the carriage. Said lock-plate M is so arranged with relation to the vertically-movable locking-head L of the carriage that when the said carriage is traveling on the track and the head L is in its lowermost or depressed position the lugs l on the head will be in position to pass over or just above the outer ends of the upwardly-facing inclined cam-surfaces m m . Said cam-surfaces m m , moreover, are so arranged that the said lugs l move along the same toward the center of the lock-plate. Said cam-surfaces will operate to lift the head L until the lugs pass from the ends of said surfaces m and enter the notch formed between the shoulders m' m' . When the lugs l enter said notch, the head L will descend, being no longer supported by the cam-surfaces m m , and the carriage will thereby be locked in central position with respect to the locking-plate and cannot be moved from said central position until the head L is lifted to permit the passage of the said lugs l out of said central notch. The parts are so arranged, moreover, that when the lugs l rest in the said notch the head L will be held in its elevated position, and the operating-bar J , which is connected with the head, as above described, will be held near the upper limit of its movement. The inclined slots i' i' in the dogs I are so arranged with respect to the guide-pins j that when the said bar J is in its elevated position the dogs will be held with their lower ends in an outward or unlocked position; but when said bar J is depressed the lower ends of the dogs will be drawn inwardly in position to engage the pulley-block E . The cam-surfaces m m of the locking-plate M therefore constitute, in connection with the head L and its lugs l , means for lifting the bar J and throwing outwardly the locking-dogs I when the carriage in moving along the track is brought into a central position with respect to the locking-plate. In other words, supposing the carriage is at one end of the

track or at a distance from the locking-plate and is drawn toward the same, as soon as the lugs l reach the upwardly-facing cam-surfaces m m they and the head to which they are attached will be drawn upwardly, thus lifting the actuating-bar J and throwing outwardly the dogs I and releasing the pulley-block, which during such movement of the carriage along the track will have been supported on the carriage by engagement of the dogs with the plate E' . When the said bar J is at the extreme upward limit of its movement, as will be the case when the lugs are passing over the inner or upper ends of the cam-surfaces m , the guide-pins will be in the upper parts of the guide-slots i' i' , so that the slight downward movement of the lugs l and head L required for the engagement of the said lugs with the central notch of the locking-plate no considerable outward movement of the said dogs will occur, and said dogs will not by such slight downward movement of the bar J be caused to again engage the pulley-block. As the lugs pass inwardly over the shoulders m' m' the top of the locking-head L will strike the cam-surface m^3 and be drawn positively downward thereby, so that engagement of the lugs l with the central notch will be insured should the gravity of the head and attached parts be insufficient to produce a sufficiently quick downward movement of the head to effect such engagement. The space between the shoulders m' m' is preferably made considerably greater than the width of the lugs l , so as to give ample time for the lugs to descend into the notch before they strike the shoulders m' m' , toward which they may at the time be moving.

After the carriage has been locked in its central position over the load by engagement of the said lugs l with the central notch of the locking-plate M in the manner described the carriage will then be held from movement on the track while the pulley-block will be disengaged from the carriage, so that if the hoisting-ropes be slacked the said pulley-block, with its hay-fork, will descend to receive a load. When, however, the pulley-block, with its load, is again lifted by means of the rope and said pulley-block is brought into position between the side plates of the carriage, said pulley-block will be drawn upward far enough to bring the plate E' in contact with said actuating-bar J , with the result that not only will the dogs be thrown outwardly through the lifting of said bar, but the lugs l on the locking-head will be lifted above the upper ends of the inclined surfaces m m of the lock-plate, and the continued pulling on the rope will then shift the carriage away from its central position beneath the lock-plate. As soon, however, as the carriage begins to move away from its central position downwardly facing cam-surfaces m^2 at the end of said lock-plate will act on the top of the head L below the

lugs $l\ l$, thereby depressing or forcing downwardly the actuating-bar J and throwing inwardly the locking-dogs I until they are engaged with the locking-plate E' . Such downward movement of the head L and locking-plate usually takes place by gravity as the carriage is moved from its central position and the lugs $l\ l$ travel downwardly over the cam-surfaces $m\ m$; but in order to insure a certain locking of the pulley-block to the carriage before the latter passes from engagement with the locking-plate said cam-surfaces $m^2\ m^2$ are arranged to operate on the locking-head, so as to thrust the same positively downward in the manner described.

The track A and the locking-plate M embrace other improved features of construction as follows: Said track A , Fig. 6, consists of a central vertical web a and two horizontal laterally-extending flanges $a'\ a'$, on which the wheels $B'\ B'$ of the carriage rest and roll. The web a is extended below the flanges $a'\ a'$ and is provided with an enlarged or widened part or T-head a^2 , by which the stop-plate M is secured thereto. Said web a of the track also preferably extends above the horizontal flanges $a'\ a'$ and is likewise provided with an enlarged upper margin or T-head to facilitate the attachment of the track to supporting devices by which it is suspended and also to give greater stiffness and rigidity to the track as a whole. The said locking-plate M is provided at the end of its web portion M' with enlarged parts or blocks $M^3\ M^3$, which are provided in their upper ends with longitudinally-extending T-shaped grooves, Fig. 6, adapted to receive the T-head on the lower margin or edge of the depending web a of the track A . Set-screws $m^4\ m^4$ are inserted obliquely through the blocks $M^3\ M^3$, so as to bear against the lower surface of the web a and to thereby firmly clamp the lock-plate to said track. Said set-screws $m^4\ m^4$ are arranged obliquely in the heads $M^3\ M^3$ and are arranged to bear obliquely on the lower surface of the track, so that they will be adapted to effectively resist end thrust on the stop-plate due to the impact of the locking parts of the carriage against the same when the carriage is arrested upon reaching a central position beneath the lock-plate by engagement of the locking-lugs $l\ l$ with the shoulders m' at one end of the central notch in the flanges of said lock-plate.

The swiveled connection of the lower part of the carriage-frame with the upper part thereof afforded by the swivel-ring B^2 and swivel-plate C' , together with the pivotal or swiveled connection of the lower end of the locking-head L with the actuating-bar J , enables the said lower part of the carriage to be turned or rotated on the upper part, so as to reverse its position or bring the pulley D , over which the running end of the rope passes, toward either end of the track. In unloading

with a carrier it is often necessary to change the direction in which the carriage runs, so that it shall move from the lock-plate toward one end or the other of the track, as in delivering hay to opposite ends of a mow, and this may be done in the construction described by merely rotating the lower part of the carriage a half-turn and carrying the running end of the hoisting-rope toward the end of the track to which it is desired that the carriage should travel.

I claim as my invention—

1. A hay-carrier comprising a carriage, a pulley-block, locking-dogs on the carriage adapted for engagement with the said pulley-block, a carriage lock-plate provided with oppositely-arranged, downwardly and outwardly inclined, upwardly-facing cam-surfaces and a central locking-notch, and a vertically-moving locking-head on the carriage connected with and actuating the locking-dogs, said head having a locking-lug adapted for engagement with said lock-plate.

2. A hay-carrier comprising a carriage, a pulley-block, locking-dogs on the carriage adapted for engagement with the said pulley-block, a carriage lock-plate provided with oppositely-arranged, downwardly and outwardly inclined, upwardly-facing cam-surfaces, with downwardly and outwardly inclined, downwardly-facing cam-surfaces and with a central locking-notch and a vertically-moving locking-head on the carriage connected with and actuating the locking-dogs, said locking-head having a locking-lug adapted for engagement with said upwardly-facing cam-surfaces and the said central notch, said locking-head also having an upwardly-facing surface below said locking-lug for engagement with the said downwardly-facing cam-surfaces of the locking-plate.

3. A hay-carrier comprising a carriage, a pulley-block, locking-dogs on the carriage adapted for engagement with the said pulley-block, a carriage lock-plate provided with oppositely-arranged downwardly and outwardly inclined, upwardly-facing cam-surfaces, and with a central locking-notch, and having, beneath said upwardly-facing cam-surfaces, downwardly and outwardly inclined, downwardly-facing cam-surfaces and at the central part of the plate, downwardly and inwardly inclined, downwardly-facing cam-surfaces, and a vertically-movable locking-head connected with and actuating the locking-dogs, said locking-head having a locking-lug adapted for engagement with the upwardly-facing cam-surfaces and notch of the lock-plate and having below said lug an upwardly-facing surface adapted for engagement with the downwardly-facing cam-surfaces of said lock-plate.

4. A hay-carrier comprising a carriage, a pulley-block, locking-dogs on the carriage adapted for engagement with the said pulley-block, a carriage lock-plate embracing a cen-

tral web having at its lower edge oppositely-extending flanges, said flanges being provided with oppositely-arranged, downwardly and outwardly inclined, upwardly-facing cam-surfaces, and with central, upwardly-facing locking-notches, and said flanges having, beneath said upwardly-facing cam-surfaces, downwardly and outwardly inclined, downwardly-facing cam-surfaces, and, at the central part of the plate, downwardly and inwardly inclined, downwardly-facing cam-surfaces, and a vertically-movable locking-head connected with and actuating the locking-dogs, said locking-head having inwardly-extending locking-lugs adapted for engagement with the upwardly-facing cam-surfaces and notches of the lock-plate, and having below said lugs an upwardly-facing bearing-surface adapted for engagement with the downwardly-facing cam-surfaces of said lock-plate.

5. A hay-carrier comprising a carriage, a pulley-block, locking-dogs on the carriage adapted for engagement with the pulley-block, an actuating-bar having vertically-sliding connection with the carriage and having actuating connection with the locking-dogs, a locking-head having vertically-sliding connection with the carriage above said actuating-bar, said locking-head being connected and moving with said actuating-bar, a carriage lock-plate provided with oppositely-arranged, downwardly and outwardly inclined, upwardly-facing cam-surfaces and with an upwardly-facing central locking-notch, said locking-head being adapted for engagement with said lock-plate.

6. A hay-carrier comprising a carriage, a pulley-block, locking-dogs on the carriage adapted for engagement with the pulley-block, said locking-dogs being pivoted at their upper ends to the carriage and adapted for engagement with said pulley-block by lateral movement of their lower ends, a vertically-movable actuating-bar mounted to slide vertically on the carriage-frame, said actuating-bar having a slot-and-pin connection with said dogs, whereby the lower ends of said dogs are swung inwardly and outwardly through the vertical movement of said actuating-bar, a locking-head on the carriage which is connected and moves with said actuating-bar, and a carriage lock-plate having oppositely-arranged, downwardly and outwardly inclined cam-surfaces and a central locking-notch, said locking-head being adapted for engagement with said lock-plate.

7. A hay-carrier comprising a carriage, a pulley-block, locking-dogs pivoted at their upper ends to the carriage and adapted to swing laterally at their lower ends, an actuating-bar mounted to slide vertically on the carriage, actuating connections between the ends of said bar and the said dog comprising pins on the said bar engaging inclined slots in

the dogs, and a locking-head on the carriage which is connected and moves vertically with said actuating-bar.

8. A hay-carrier comprising a carriage having two side plates, a pulley-block, locking-dogs pivoted at their upper ends to the side plates of the carriage and adapted to swing laterally at their lower ends, an actuating-bar the ends of which extend through and slide in the vertical slots in the said side plates of the carriage, actuating connections between the ends of said bar and the said dogs comprising pins on the bar engaging inclined slots in the dogs, and a locking-head on the carriage which is connected and moves vertically with said actuating-bar.

9. A hay-carrier comprising upper and lower carriage members having swiveled connection with each other, a pulley-block, locking-dogs on the lower member of the carriage adapted for engagement with said pulley-block, an actuating-bar on the lower carriage member having actuating connection with said locking-dogs, and a locking-head on said upper member having swiveled connection with said actuating-bar.

10. A hay-carrier comprising upper and lower carriage members having swiveled connection with each other, a pulley-block, locking-dogs on the lower member of the carriage adapted for engagement with said pulley-block, an actuating-bar mounted to slide vertically on the lower carriage member and having actuating connection with said locking-dogs, and a locking-head mounted to slide vertically in the upper carriage member and provided with a depending spindle affording pivotal connection between said locking-head and said actuating-bar.

11. A hay-carrier comprising upper and lower carriage members having swiveled connection with each other, a pulley-block, locking-dogs on the lower member of the carriage adapted for engagement with said pulley-block, an actuating-bar mounted to slide vertically in the lower carriage member and having actuating connection with said locking-dogs, a locking-head mounted to slide vertically in the said upper carriage member and provided with a central depending spindle having pivotal connection at its lower end with the center of said actuating-bar, and a swivel-ring engaging the upper part of the spindle and rigidly attached to the said actuating-bar.

12. A hay-carrier comprising upper and lower carriage members having swiveled connection with each other, said lower carriage member embracing two parallel side frame-plates provided with central, vertically-arranged guide-slots, locking-dogs pivoted to said side plates of the lower member of the carriage and adapted for engagement with said pulley-block, an actuating-bar, the ends of which are adapted to slide vertically in said

guide-slots, and which have actuating connection at their outer ends with said locking-dogs, and a locking-head mounted in the upper carriage member and having swiveled connection with the center of said actuating-bar, said upper carriage member being provided with vertical guides for the said locking-head.

13. A hay-carrier comprising upper and lower carriage members having swiveled connection with each other, a pulley-block, locking-dogs on the carriage adapted for engagement with said pulley-block, a vertically-movable actuating-bar on the lower carriage member having actuating connection with said locking-dogs, and a locking-head on the upper carriage member having swiveled connection with the said actuating-bar, said upper carriage member being provided with vertical guides for said locking-head.

14. A hay-carrier comprising upper and lower carriage members having swiveled connection with each other, said lower carriage member embracing two parallel side frame-plates provided with central, vertically-arranged guide-slots, locking-dogs pivoted to said side plates of the lower member of the carriage and adapted for engagement with said pulley-block, an actuating-bar, the ends of which are adapted to slide vertically in and are guided by the said vertical slots, and which have actuating connection at their outer ends with said locking-dogs, a locking-head mounted in the upper carriage member, said upper carriage member being provided with vertical guides for said locking-head, and said locking-head having swiveled connection with the center of said actuating-bar, said actuating-bar having laterally-extending guide-lugs which bear against the inner faces of the said side frame-plates at either side of the guide-slots therein.

15. A hay-carrier comprising upper and lower carriage members one of which is provided with a swivel-plate and the other with an internally - grooved swivel - ring, said swivel-plate and swivel-ring being engaged with each other to afford a swiveled connection between the said upper and lower carriage members, locking-dogs on the lower member of the carriage adapted for engagement with said pulley-block, a vertically-movable actuating-bar on the lower carriage member, having actuating connection with said

locking-dogs, said lower carriage member embracing two side plates which are provided with vertical slots through which the ends of said actuating-bar extend and by which the same is guided in its vertical movement, a locking-head mounted on the upper carriage member and adapted to move vertically thereon, said upper carriage member having vertical guides for the said locking-head, and a spindle connecting the said locking-head with the said actuating-bar and affording swiveled connection between the same.

16. A hay-carrier comprising a carriage embracing two parallel side plates provided with opposite, vertical guide-slots, a pulley-block adapted to enter between the lower ends of said plates when in its elevated position, locking-dogs on said carriage adapted for engagement with the said pulley-block, a vertically-movable actuating-bar which slides in said guide-slots in the side plates and which has actuating connections at its ends with said locking-dogs, a carriage lock-plate, and a locking-head on the carriage which is connected and moves with said actuating-bar and which is movable vertically with respect to said locking-plate to effect its engagement with and disengagement from the same; said pulley-block being provided at its upper end with a locking-plate, the top surface of which is adapted for engagement with the actuating-bar when the pulley-block is drawn upwardly between the side plates of the carriage, and the lower surface of which constitutes bearing-surfaces for engagement with the locking-dogs.

17. The combination with a track provided with a central web having on its lower edge a T-head, of a carriage lock-plate provided at its ends with blocks or heads provided with T-grooves adapted to receive the T-head on the lower edge of the said web and provided with set-screws with which to clamp the same to said track, said set-screws being arranged obliquely with respect to the surface of the track against which they bear.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 28th day of July, A. D. 1904.

WILLIAM F. JACOBS.

Witnesses:

B. S. JORDAN,
M. B. SHAW.