

J. NEY.
HAY CARRIER.
APPLICATION FILED APR. 7, 1909.

Patented Oct. 26, 1909.
3 SHEETS—SHEET 1.

937,846.

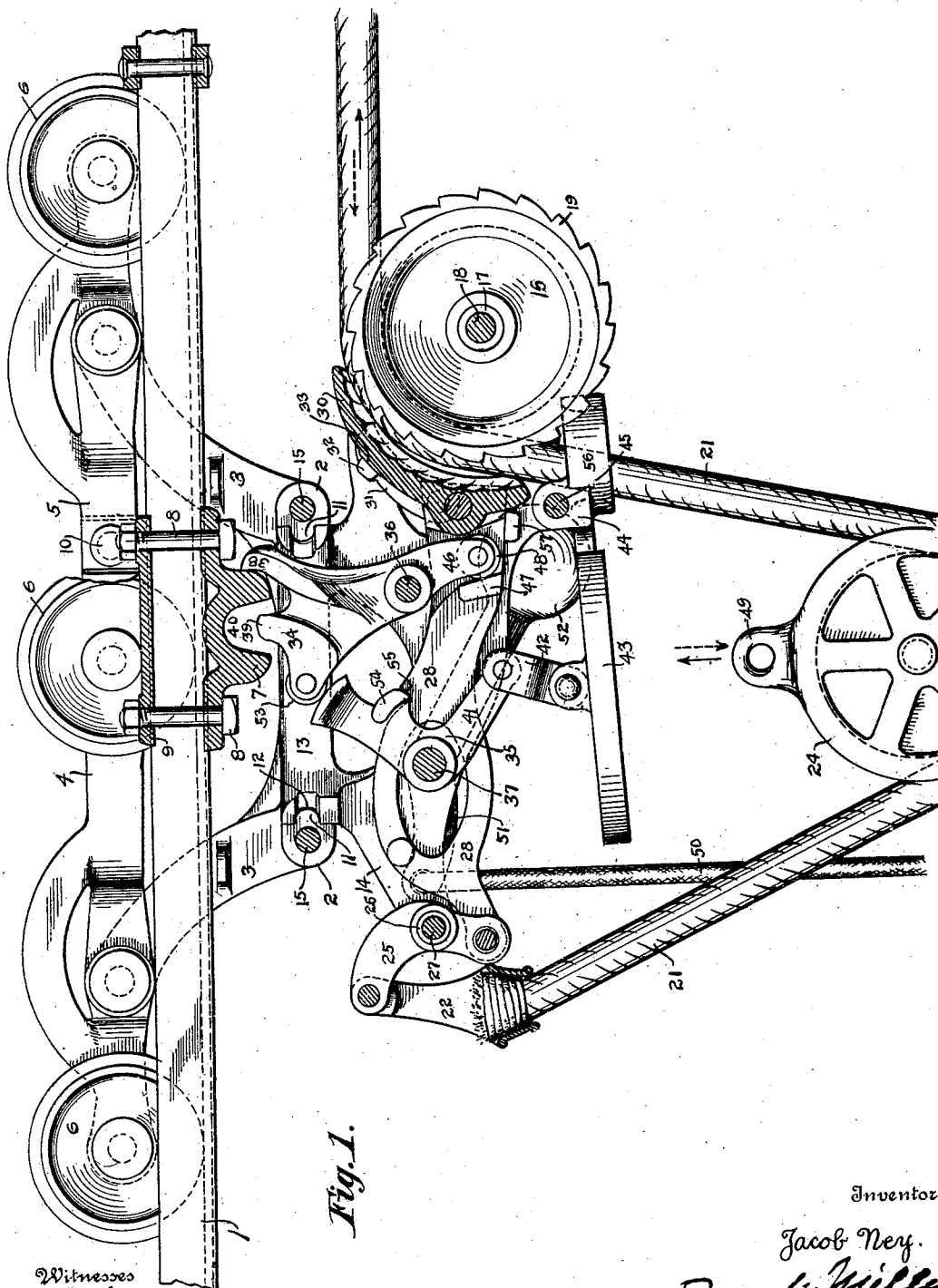


Fig. 1.

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384

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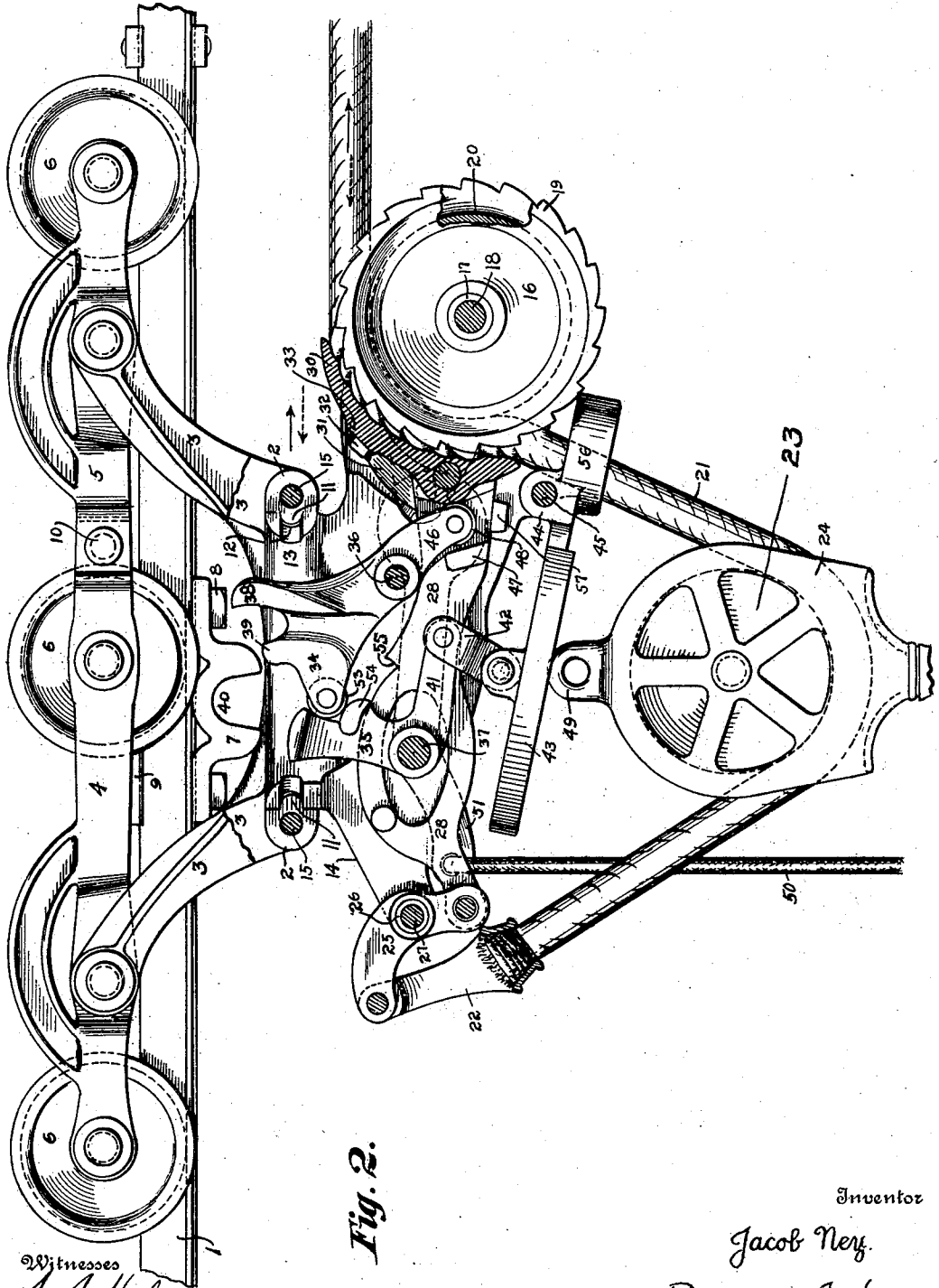


Fig. 2.

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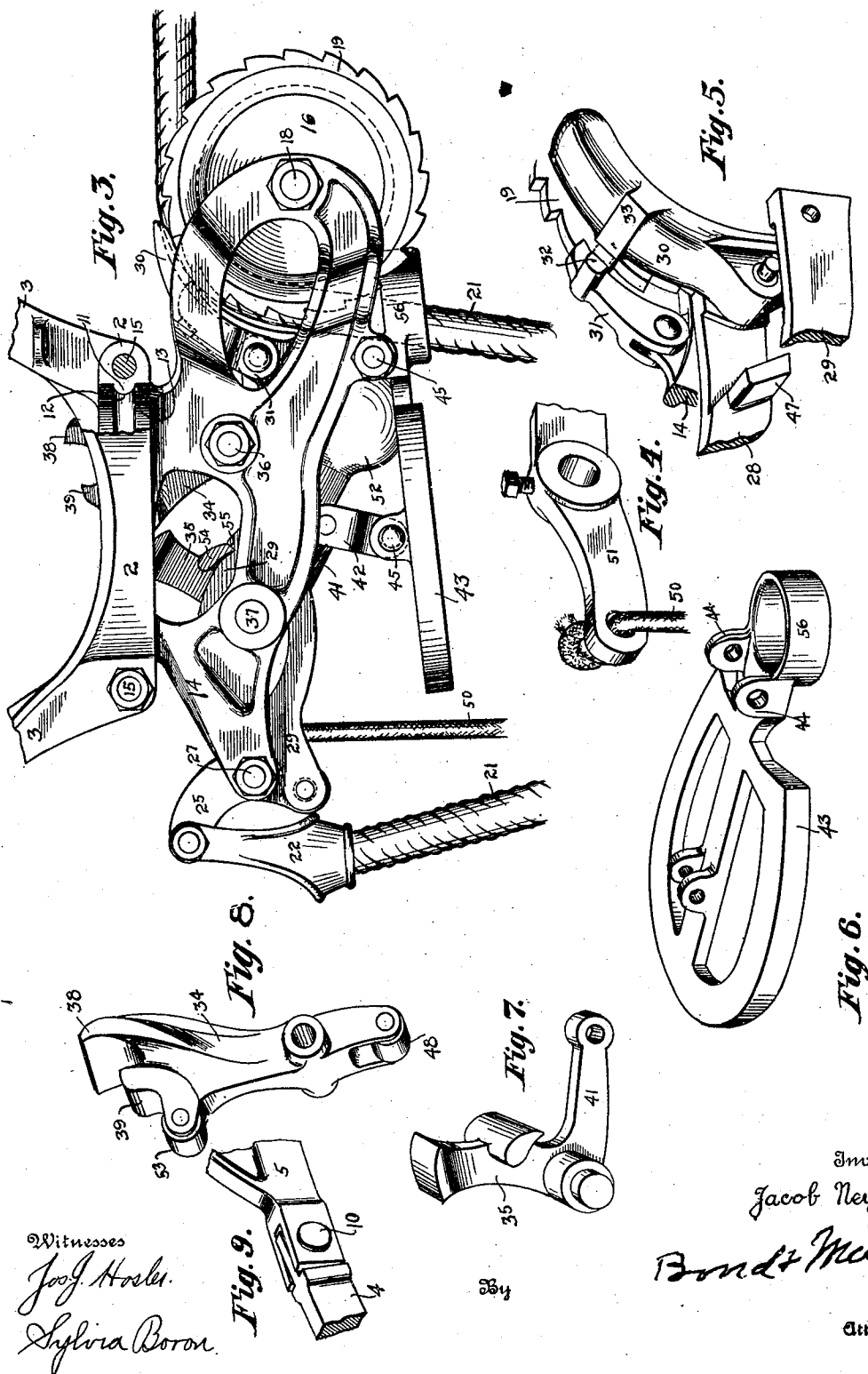
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3 SHEETS—SHEET 3.

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UNITED STATES PATENT OFFICE.

JACOB NEY, OF CANTON, OHIO, ASSIGNOR TO THE V. L. NEY COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO.

HAY-CARRIER.

937,846.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed April 7, 1909. Serial No. 488,432.

To all whom it may concern:

Be it known that I, JACOB NEY, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have
5 invented certain new and useful Improvements in Hay-Carriers, of which the following is a specification.

My invention relates to improvements in hay carriers designed for elevating and conveying hay and more particularly intended to be used in conveying hay or other material from a wagon to a haymow, and the objects of my invention are, first, to provide
10 a suitable overhead track or way upon which is to travel a carriage or frame; second, to provide means whereby the carriage can be locked against movement upon the track or way; third, to provide means for releasing
15 the carriage so that it is free to travel back and forth upon the track or way; and fourth, to provide means whereby the load can be held suspended at any point between the starting point of elevation and the extreme height or limit of elevation. I attain
20 these various objects and others by the construction and manipulation of the various parts illustrated in the accompanying drawings, in which—

Figure 1 is a view showing parts of the
30 carrier in section also showing the carrier locked against movement upon the track or way. Fig. 2 is a similar view showing the carrier in released position with reference to the track or way, also showing the lifting
35 or head block fully elevated and in contact with the trip plate. Fig. 3 is a side elevation showing the parts of the lower carrier frame properly assembled and illustrating a portion of the upper carrier frame showing
40 parts broken away. Fig. 4 is a view showing portions of the trip lever and trip rope. Fig. 5 is a view showing a portion of the ratchet wheel its detent and illustrating the rope clamp detached but in position to be
45 properly connected, also showing portions of the sliding bars. Fig. 6 is a detached perspective view of the trip plate. Fig. 7 is a detached perspective view of the load releasing and trip plate dog. Fig. 8 is a detached
50 perspective view of the carriage releasing dog. Fig. 9 is a detached perspective view showing fragment of the upper carriage frame and illustrating the hinge connection.

Similar numerals of reference indicate
55 corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the track or way, which may be of the usual twin rail form or of any other desired form, reference being had to the proper
60 mounting of the traveling carriage upon the track or way. It will be understood that this track or way is to be suspended, preferably from the rafters of a barn or like
65 structure, but inasmuch as the track and the manner of suspending the same form no specific part of the present invention, the devices commonly employed for suspending
70 tracks of this nature are not illustrated. The upper carriage frame consists of a lower circular portion, 2, from which circular portion extend upward the arms or
75 bars 3 and to the upper ends of said arms or bars 3 are pivotally attached the extreme top frame bars 4 and 5, which bars are
hinged or pivotally connected together intermediate their ends for the purpose hereinafter described.

To the bars 4 and 5 are properly connected in the usual manner the traveling
80 wheels 6 the peripheries of which are formed to properly fit the track or way upon which said wheels travel. To the track or way 1 is securely attached the stop-block 7 preferably by means of the clamping bolts 8 and
85 if desired a common and well known cap-plate, 9, may be employed through which cap-plate the clamping bolts 8 are passed. The construction and arrangement of the stop block 7 and the manner of connecting
90 the same form no specific part of the present invention, but a stop block must necessarily be provided to carry out the successful operation of the carrier which stop block should be so located that it will be
95 substantially above the load of hay or other material designed to be lifted either by a hay sling or fork.

It is of importance that the upper carriage frame be of considerable length so that
100 it may be provided with a number of traveling wheels, such as 6; spaced some distance apart so that the weight of loads designed to be lifted will be distributed at different points upon the track or way. In order
105 that the frame bars 4 and 5 may have a vertical yielding movement and such a movement that all of the traveling wheels will rest and ride upon the track the bars 4 and 5 are provided with a hinge or joint, 10.
110 It will be understood that suspended tracks are liable to vary from time to time as to

true horizontal alinement, and hence the purpose of providing the hinge 10. The ring 2 is provided with the bead or flange 11, which bead or flange is for the purpose of engaging the annular groove 12 formed in the ring 13, which ring constitutes the upper portion of the lower carrier frame. By connecting the rings 2 and 13 together by means of the rib 11 and the groove 12 a swivel connection is produced as between the upper frame or track member and the lower frame member. From the ring 13 extend downward the side members or plates 14 which are substantially of the form shown in Fig. 3 and also illustrated in Figs. 1 and 2; but it will be understood that the ring 13 is to be formed in sections or halves and also the ring 2 and the sections or halves properly connected together in the usual manner. The inner sections or ring 13 being held by the outer ring 2, when said outer ring or the upper flange members clamp together by means of the usual cross clamp bolts 15.

To the lower members 14 and at one end thereof is located the pulley 16, which pulley is mounted upon the sleeve or bushing 17, said bushing being carried by a cross clamping bolt 18. The bushing 17 is formed of such a length that the side members 14 will be properly spaced from each other when coupled together by means of the clamping bolt 18 and also allow the pulley 16 to rotate upon the bushing without any binding or friction as between the side members 14; that is to say the extreme width of the pulley 16 should be somewhat less than the bushing or thimble 17. For the purpose hereinafter described the pulley 16 is provided with the ratchet flanges 19, said ratchet flanges being located upon the opposite sides of the rope groove 20, which groove is for the purpose of receiving the elevating rope 21, which elevating rope is connected at one end to the socket link 22. Said rope when properly connected extends downward under the pulley 23 in the elevating head or block 24, over the pulley 16 and thence to the place where power is to be applied. The usual method of connection is that of an ordinary whiffletree to which a horse is attached.

The socket link 22 is pivotally attached at its top or upper end to the lever or what might be termed rock bar 25, which lever or rock bar is pivotally mounted intermediate its ends upon the bushing 26, which bushing serves the purpose of spacing the said members 14 the proper distance apart at their opposite ends from that to which the pulley 16 is attached, the members 14 being clamped together by means of the clamping bolt 27.

Between the side members 14 are located two spaced bars 28 and 29 which spaced bars are pivotally connected to the bottom or

lower end of the rock bar or lever 25. To the bars 28 and 29 is pivotally attached the rope-clamp shoe 30, which rope clamp shoe, 30, is so located that it will come in proper contact with the elevating rope when the longitudinal movement is imparted in the direction toward the pulley 16. For the purpose of locking the pulley 16 against backward rotation when the load is held in suspension and at rest the ratchet flanges 19 are provided, which ratchet flanges are preferably formed integral with the pulley 16; but may be made separate and attached in any convenient and well known manner. To the side members 14 are pivotally attached suitable dogs or detents 31, one of said dogs or detents being illustrated in Fig. 5. These dogs or detents are provided with the lateral flanges 32, which flanges ride upon the flange 33 formed upon the brake shoe 30.

It will be understood that when the brake shoe 30 is moved toward the pulley 16, the dogs or detents 31 are free to move by gravity toward the ratchet disks 19 and engage the ratchets or notches, thereby preventing any backward movement of the pulley 16. It will be understood that by this arrangement or by the locking of the pulley 16 the elevating rope is greatly relieved from wear and tear, as the entire surface of the elevating pulley 16 upon which the rope comes in direct contact, acts as a brake or clamp and that the locking against backward movement of the pulley 16 does not depend upon the pressure of the brake shoe.

In Fig. 1 the carriage proper is shown locked against movement upon the track or way 1, the devices for so locking the carriage consisting in the stop block 7, the upper or stop block engaging dog 34 and the trip dog 35, which parts are pivotally mounted upon the cross shaft 37. The dog 34 is provided with the two stop block engaging flanges 38 and 39, the flange 39 being formed of such a length that it will come between the spaced flanges of the stop block 7 and the flange 38 being formed of greater length so that it cannot pass under the flanges of the stop block 7 and when the dog 34 is held in elevation and locked by means of the dog 35 the lower flange 39 cannot move by reason of it being extended into the space or recess 40 formed in the stop block 7. The trip dog 35 is provided with the arm 41 to which arm is pivotally attached the link 42; said link being pivotally connected to the trip plate 43, said trip plate being pivotally attached to the side members or plates 14 by means of the apertured ears 44 and the cross bolt 45. The dog 34 is provided with the downward extending arm 46 which arm is located between the lateral flange 47, preferably formed upon the bar

28 and the brake shoe 30 and for the purpose of reducing friction it is provided with the anti-friction roller 48. It will be understood that when the carriage proper is locked upon the track or way the pull of the elevating rope will move the load in substantially a true vertical direction and toward the trip plate 43, and when the head 49 formed upon the block or head 24 or its equivalent strikes the trip plate 43 said head will cause said trip plate to turn upon its pivotal point and lift the link 42, which throws the dog 35 from under the trip dog 34 at which time the dog 34 is free to assume the position illustrated in Fig. 2 after which a continued pull of the elevating rope causes the carriage to travel upon the track or way in the direction of the pull.

It will be understood that when the trip dog 34 is held against a downward movement or in the position illustrated in Fig. 1 no end or reciprocating movement can be imparted to the parallel bars 28 and 29 by reason of the flange 47 coming in contact with the downwardly extending arm 46 but when said trip dog is freed, the downwardly extending arm will be permitted to move or turn upon its pivotal point and the downward pull of the elevating rope upon the socket link 22 will rock the lever 25 and move the bars 28 and 29 toward the pulley 16 and the elevating rope 21, thereby forcing the shoe upon the elevating rope. This is brought about by a short movement of the bars 28 and 29. As the bars 28 and 29 move endwise and toward the pulley 16 the detents or dogs 31 are free to drop into engagement with the proper notch in the ratchet flanges 19, thereby holding the pulley 16 against any backward movement and remove the wear and strain to a large extent from the elevating rope 21. It will be understood that when a haymow is entirely empty or that very little hay or other material has been deposited it is unnecessary to lift the loads of hay or other material to the comb of the roof before dropping the load.

In order to overcome the necessity of bringing the head-block into engagement with the trip plate 43 I provide means for releasing the carriage so that it is free to travel upon the track or way by means of a suitable trip rope 50 which is extended downward to a place within easy reach. This trip rope 50 is attached to a trip lever or bar, 51, which trip lever or bar is preferably mounted upon the same shaft upon which the dog 35 is mounted. The trip lever 51 is provided with a counter weight, 52, which counter weight has a tendency to hold up the end of the trip lever 51 to which the trip rope 50 is attached which is its normal position, but when a down pull is given to the trip rope 50 the top or upper end of the

dog 35 will be carried from under the roller 53 which roller is carried by the trip dog 34.

It will be understood that when the trip rope 50 is pulled down the trip plate 43 will also be moved upon its pivotal point in substantially the same manner as it is turned when struck by the head-block, except that when the trip rope is pulled the trip plate will be pulled upward by means of the connecting link and when the head block strikes the under side of the trip block it will be lifted, but the same result is produced in both instances, that is to say the releasing of the carriage from the track. It will be understood that some provision must be made for limiting the downward movement of the trip plate 43 and the parts connected thereto when the carriage is locked upon the track or way and in order to provide for this the dog 35 is provided with the tooth or flange 54, which tooth or flange engages the notches 55 formed in the bars 28 and 29 and stops the rocking movement of the dog 35.

When the carriage is returned for a new load the flange 38 strikes one of the members of the stop block 7, rocks the dog 34 upon its pivotal point and permits the dog to drop under the dog 34 and hold it in its elevated position, thereby, automatically locking the carriage upon the track and at the same time releasing the empty head block when it is free to descend to be again connected to a load.

It will be understood that by swiveling the lower frame of the carriage to that part of the frame directly above the one provided with the traveling wheels, said lower frame can be turned in such a manner that the carriage as an entirety can be operated in either direction upon the track or in other words to the right and to the left of the stop block 7. It will be understood that the elevating rope 21 must be adjusted with the proper pulley connections with reference to the direction of travel desired. In the accompanying drawing the elevating rope is illustrated in proper adjustment to move the carriage to the right of the stop block as it travels upon the track or way after being properly released from the stop block 7.

For the purpose of guiding the elevating rope, the trip-plate 43 is provided with the ring 56, which ring surrounds the rope and forms a guide and prevents the rope from coming in contact with the ratchet flanges 19. It will be understood that the weight of the trip plate 43 will hold the dog 35 down and the tooth 54 in proper engagement with the notch 55.

For the purpose of holding the reciprocating bars 28 and 29 in proper elevation with reference to the frame the side members 14 are provided with the lugs 57 upon which lugs the bars 28 and 29 rest and ride. In

use the bars 28 and 29 should be connected together so that they will move in unison and this is done by the means employed for connecting the brake shoe 30 and the rock bar 25 to the bars 28 and 29; but if desired additional means such as rivets may be employed, but inasmuch as the connecting together of the two bars 29 does not form any specific part of the present invention the parts are not illustrated, except to show the device for properly connecting the brake shoe 30 and the rock bar 25.

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

1. In a hay-carrier of the class described, a track or way provided with a stop-block, a carriage adapted to travel thereon, said carriage provided with non-swiveled and swiveled portions, the swiveled portion thereof provided with locking-dogs spaced from each other and carried by the swiveled portion of the frame, one of said dogs provided with spaced flanges at its top or upper end, said flanges adapted to engage the stop-block and its lower end provided with an extended arm, reciprocating bars carried by the swiveled frame, a flange carried by said bars adapted for engagement with the lower extended arm of the dog provided with the spaced flanges, a brake shoe carried by the reciprocating bars and the pulley provided with ratchet flanges and detents adapted for engagement with the ratchet flanges, a rock bar pivoted to the swiveled frame and to the sliding bars, an elevating rope and means for connecting said elevating rope to the rock bar or lever, substantially as and for the purpose specified.

2. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, said carriage consisting of non-swiveled and swiveled portions, the non-swiveled portion provided with traveling wheels, spaced from each other, said non-swiveled portion provided with a joint intermediate its ends and between the outermost traveling wheels and the swiveled portion of the frame provided with dogs, one of said dogs adapted to engage the stop block upon the track, a trip plate pivoted to the swivel portion of the frame and a dog adapted to be actuated by the trip plate and said dog adapted to lock the aforesaid dog in elevated position and to the stop block, substantially as and for the purpose specified.

3. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, said carriage provided with a rope elevating pulley, said pulley provided with ratchet flanges, a reciprocating element provided with a brake shoe at one end and a rock bar at the opposite end, detents carried by the

carriage frame, said detents provided with flanges adapted for contact with the brake shoe and the detents adapted for engagement with the ratchet frames, and means carried by the frame adapted to lock the carriage and to release the carriage to and upon the track or way, substantially as and for the purpose specified.

4. In a hay-carrier of the class described, a track or way provided with a stop-block, a carriage adapted to travel thereon, said carriage consisting of swiveled and non-swiveled portions, locking dogs spaced from each other, one of said dogs adapted to be actuated by the stop block, a trip plate adapted to actuate the other dog, a trip lever carried by the swiveled portion of the frame, said trip lever adapted to actuate the last mentioned dog, reciprocating member carried by the swiveled portion of the frame and means for imparting reciprocating movement to the reciprocating member and a brake shoe carried by said reciprocating member, substantially as and for the purpose specified.

5. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, said carriage provided with locking dogs spaced from each other one of said locking dogs adapted to be actuated by the stop block and the other dog adapted to be actuated by trip mechanism independent of the stop block, a reciprocating element, a rock bar pivotally attached intermediate its ends and to the reciprocating element, an elevating rope adapted to actuate the rock bar when released, a pulley and a brake shoe located adjacent thereto, said brake shoe carried by the reciprocating element and means for moving the reciprocating element in the opposite direction from that moved by the rock bar, substantially as and for the purpose specified.

6. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, hinged intermediate its ends, said carriage provided with locking dogs spaced from each other one of said locking dogs adapted to be actuated by the stop block and the other dog adapted to be actuated by trip mechanism independent of the stop block, a reciprocating element, a rock bar pivotally attached intermediate its ends and to the reciprocating element, an elevating rope adapted to actuate the rock bar when released, a pulley and a brake shoe located adjacent thereto, said brake shoe carried by the reciprocating element and means for moving the reciprocating element in the opposite direction from that moved by the rock bar, substantially as and for the purpose specified.

7. In a hay carrier of the class described, a track or way provided with a stop block,

a carriage adapted to travel thereon, locking dogs spaced from each other, said locking dogs adapted to lock the carriage against movement upon the track, a reciprocating element provided with a brake-shoe, said reciprocating element adapted to be actuated by one of the dogs in one direction, a trip-plate operatively connected to one of the locking dogs, the dog connected to the trip plate provided with a tooth or flange and the reciprocating element provided with a recess adapted to be engaged by the tooth or flange, substantially as and for the purpose specified.

8. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, said carriage consisting of non-swiveled and swiveled portions, the swiveled portion of the carriage provided with locking dogs spaced from each other, a trip plate pivoted to the swiveled portion of the carriage and operatively connected to one of the locking dogs, said trip plate adapted to actuate one of the locking dogs, a reciprocating element provided with a brake shoe, an elevating rope pulley located adjacent the brake shoe, a rock bar adapted to be actuated by the down pull of the elevating rope when the reciprocating element is released, substantially as and for the purpose specified.

9. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, said carriage consisting of non-swiveled and swiveled portions, the swiveled portion of the carriage provided with locking dogs spaced from each other, a trip plate pivoted to the swiveled portion of the carriage and operatively connected to one of the locking dogs, said trip plate adapted to actuate one of the locking dogs, a reciprocating element provided with a brake shoe, an elevating rope pulley located adjacent the brake shoe, a rock bar adapted to be actuated by the down pull of the elevating rope when the reciprocating element is released and a trip lever adapted to actuate the trip plate dog independent thereof, substantially as and for the purpose specified.

10. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel thereon, said carriage consisting of non-swiveled and swiveled portions, the swiveled portion of the carriage provided with locking dogs spaced from each other, a trip plate pivoted to the swiveled portion of the carriage and operatively connected to one of the locking dogs, said trip plate adapted to actuate one of the locking dogs, a reciprocating element provided with a brake shoe, an elevating

rope pulley located adjacent the brake shoe, a rock bar adapted to be actuated by the down pull of the elevating rope when the reciprocating element is released, and a trip-lever adapted to actuate the trip-plate dog independent thereof, the trip-lever provided with a counter-weight, substantially as and for the purpose specified.

11. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel upon the track or way, said carriage provided with bars, a series of traveling wheels carried by the bars and the bars hinged intermediate their ends and between the outermost traveling wheels, substantially as and for the purpose specified.

12. In a hay carrier of the class described, a track or way provided with a stop block, a carriage adapted to travel upon said track or way, said carriage provided with bars, a series of traveling wheels carried by the bars and the bars hinged intermediate their ends and between the outermost traveling wheels, and means carried by the carriage adapted to lock the carriage to the stop block and to release the carriage from the stop block, substantially as and for the purpose specified.

13. In a hay carrier of the class described, a track or way, a carriage adapted to travel thereon, said carriage provided with a grooved pulley, an elevating rope located in the groove of the grooved pulley and secured to the carriage, a trip plate hinged to the carriage and provided with an elevating rope guide aperture and locking dogs spaced from each other, said locking dogs adapted to lock the carriage to the stop block upon the track, substantially as and for the purpose specified.

14. In a hay carrier of the class described, a track or way, a carriage adapted to travel thereon, said carriage provided with a grooved pulley, an elevating rope located in the groove of the grooved pulley and secured to the carriage, a trip plate hinged to the carriage and provided with an elevating rope guide aperture and locking dogs spaced from each other, said locking dogs adapted to lock the carriage to the stop block upon the track, a reciprocating element, a brake shoe carried by said reciprocating element and means for actuating the reciprocating element, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JACOB NEY.

Witnesses:

SYLVIA BORON,
F. W. BOND.