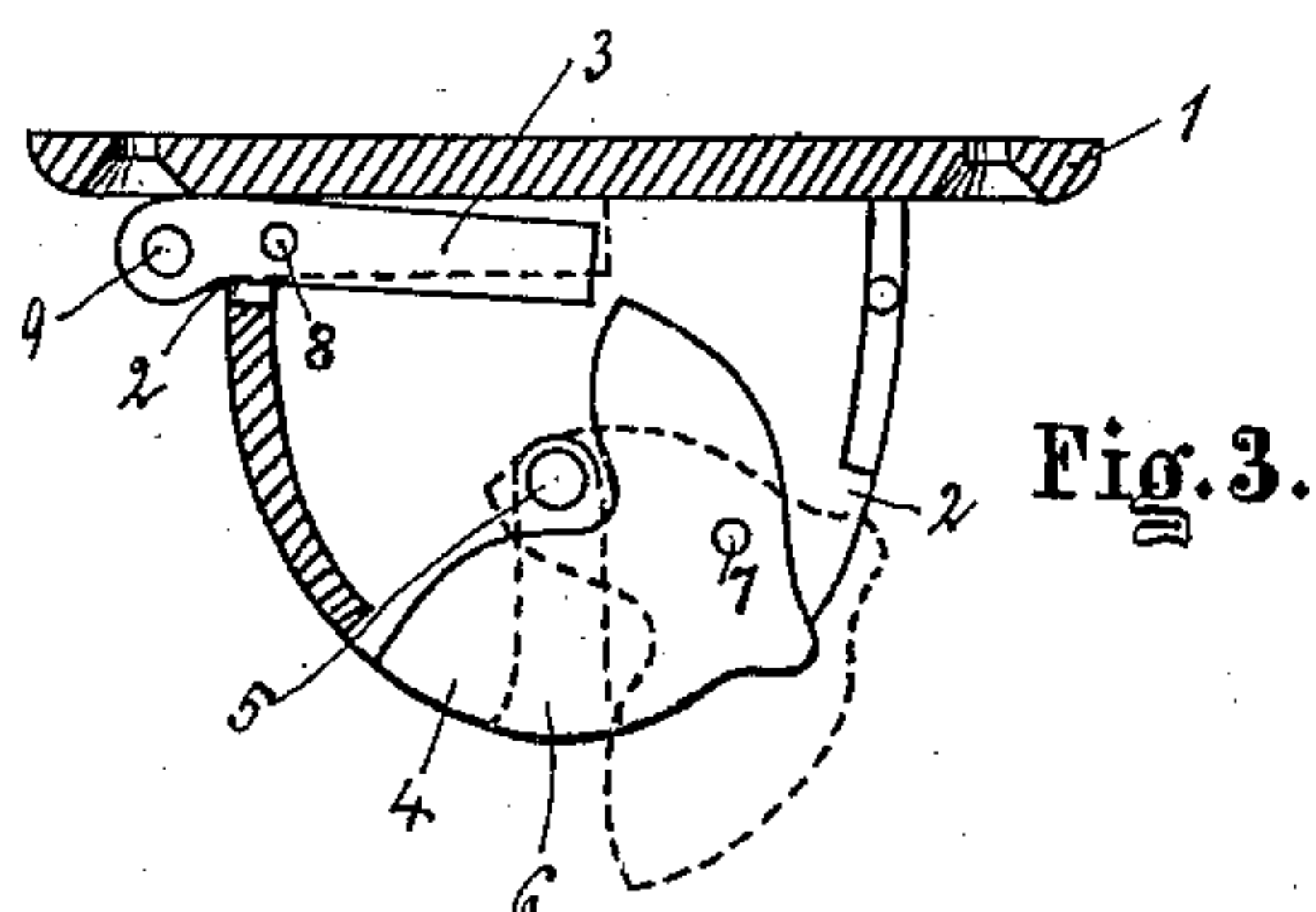
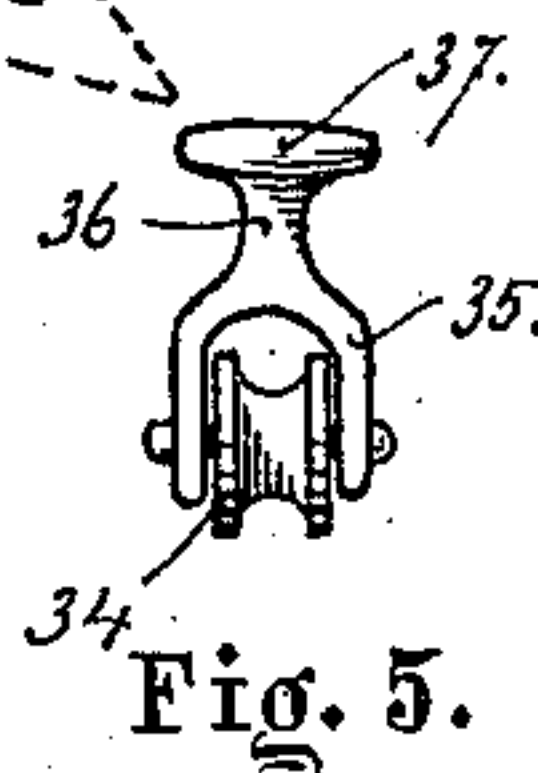
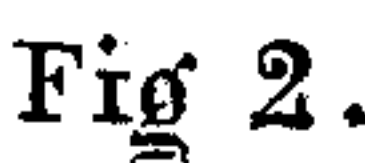
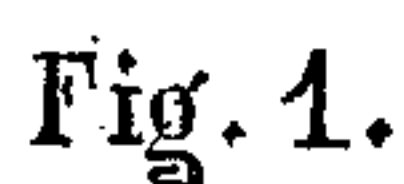


Patented Jan. 10, 1888.



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UNITED STATES PATENT OFFICE.

WILLIAM S. RISLEY AND E. EUGENE RISLEY, OF RICHFIELD SPRINGS,
NEW YORK.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 376,109, dated January 10, 1888.

Application filed July 1, 1886. Serial No. 206,889. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM S. RISLEY and EDWIN EUGENE RISLEY, of Richfield Springs, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Hay Carriers and Supports; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

Our invention relates to certain improvements in hay elevators and carriers, and also to the means employed for supporting or releasing the track upon which the car travels; and it consists in the mechanism and construction hereinafter pointed out, described, and claimed.

Like figures of reference refer to like parts in the several views presented.

In the accompanying drawings, Figure 1 represents a side elevation of the car, a portion of the track, and a view in perspective of one of the track-supports. Fig. 2 represents a side view of the car with one of its side walls removed to better show its internal construction and arrangement. Fig. 3 is a side view of the track-support with one of its side walls broken away to better exhibit its internal construction and arrangement. Fig. 4 is a side elevation of the detachable swiveled loop, and Fig. 5 is a front elevation of the detachable pulley, both of which will be hereinafter described.

Heretofore great difficulty has been experienced in operating cars upon a suspended single track, due to the fact that the car must at some point of its travel pass one or more of the track-supports, and this passage has, so far as we are aware, only been accomplished by removing the car and its appendages bodily from the track, carrying it past the track-support, and replacing it upon the track. As the track has usually been elevated, this operation necessitated the use of ladders or scaffolding and was attended with more or less inconvenience and danger.

Reference to Figs. 1 and 3 will show that the track-support consists, essentially, of a shell

or case, 1, provided with a suitable base to admit of its attachment to its supports. Certain portions of the perimeter of the shell are cut away, as shown at 2, to admit of access to its interior and permit the introduction and operation of latch or dog 3 and bifurcated cam 4. The opposing walls of the shell or case are provided with upwardly-extending slot 6, to permit of the reception of track 5. Cam 4 is introduced between the walls of the shell and pivoted upon pivot 7 (which passes through both walls of shell and the cam) in such manner as to admit of its free swinging thereupon. Latch or dog 3 is also partially introduced into the shell, and is pivoted therein on pivot 8 in such manner as to admit of its free vibration within certain limits. It will be noticed that the end of the latch projecting outside of the shell has an eye, 9, formed in it, the purpose of which is to provide a means for attaching a cord or wire thereto. The design and proportion of both the latch and cam are such that if left free to operate they will, by reason of their own gravity, assume the positions indicated in the case of the latch by full lines and in that of the cam by dotted lines.

Having described the construction of our track-support, its operation is as follows: Figs. 1 and 3 show the device in its operative position, the bifurcated cam being held in position by engagement with the latch, thus confining the track in the support. When we desire to release the track from its support, we apply downward pressure to the outwardly-projecting end of latch 3, which causes it to assume the position indicated in dotted lines. This frees it (the latch) from contact with the cam and allows the cam to swing into the position shown in dotted lines, carrying the track 5 with it, and disengaging it from the slots in the track-support. The car is then moved along the track under and past the support, after which the track is moved up into the slot, carrying the cam with it. As the cam swings up into place, the latch rides upon its perimeter until it drops down in front of the straight face of the cam, when the same is automatically locked thereby and retained in position.

The construction of the car is described as

follows: The car consists, essentially, of the two opposing walls or cheeks 10, Figs. 1 and 2, which are held at a proper distance apart by the projecting or superimposed ledge or flange 11, Fig. 2. It is proper here to observe that the frame or body of the car can be made in one casting, or it may be composed of several pieces or parts, in which latter case proper bolts would be required to hold the several parts in their proper relations. Portions of the side walls of the car are carried up, so as to form opposing projecting lugs or ears 12, Fig. 1. Between and in ears 12 are journaled the wheels 13, Figs. 1 and 2. The wheels are free to rotate upon their journals, and are provided upon their peripheries with a proper groove to engage with the track and retain them thereon. The lower central portions of the side walls of the car are provided with upwardly-extending slots 14, Figs. 1 and 2. Pivoted between the walls of the car, in such manner as to admit of their free vibration within certain limits, we provide the gravity-latches 15, Figs. 1 and 2. Reference to Fig. 2 will show that we provide one of the latches with a semicircular depression or recess, 16, in its inner end, which engages with a corresponding semicircular projection, 17, upon the inner end of the other latch. This construction necessitates the simultaneous movement of the latches, and any other conformation of the contacting ends of the latches that would accomplish this result would be embraced in the spirit of our invention. It is proper here to remark that the latches 15 are so designed that there shall be an excess of weight upon their inner ends, which, if they are left free to vibrate, will cause them to assume and retain the positions indicated by full lines in Fig. 2. We also provide spring 19, Fig. 2, to assist in holding the latches in their normal position. We also provide the inner end of one of the latches with a downwardly-projecting lug or shoulder, 20, Fig. 2. The outer ends of the latches are formed with inclined faces 27, Figs. 1 and 2, which terminate at their inner extremities in the shoulders 28. Pivoted between the walls of the shell, in such manner as to admit of its free movement and at an appropriate point in relation to the gravity-latches, we provide the eccentric cam 18, Fig. 2. This cam has a sectoral projection, 21, Fig. 2, upon its periphery, the ends of which have radial faces. The cam also has an approximately-tangential face, as shown at 22, Fig. 2.

Before proceeding to the description of the operation of the car it will be necessary to describe the construction of what, for the purposes of this description, we term the "hoisting-pulley." This consists of a pulley, 23, Fig. 1, having its face appropriately grooved for the retention of the hoisting-cable 24, Figs. 1 and 2. This pulley is journaled and held in a cage or shell, 25, Fig. 1, having attached thereto at its bottom the swiveled clevis 26, Fig. 1, which furnishes a means for attaching

the load thereto, and having projecting upwardly therefrom the bail or prong 29, having a loop or opening in its upper extremity.

Projecting inwardly from the inner faces of the walls of the car, and at each end thereof, we provide lugs or ears 33, the purpose of which is to receive and retain the detachable swiveled loop and detachable pulley heretofore referred to. The swiveled loop consists of a ring, 30, swiveled to a projecting shank or neck, 31, and cross-bar 32, as shown in Fig. 4. The cross-bar is of such length as to easily pass between the walls of the car and be held therein by the lugs 33. The detachable pulley consists of the grooved pulley 34, journaled in the fork 35, the fork being provided with shank 36 and cross-bar 37, as shown in Fig. 5. It is attached and held to the car in the same manner as the swiveled loop, heretofore described.

Having described the construction of the car and its appendages, its operation is as follows: In the operation of this class of mechanism it is desirable to elevate the load from some fixed point, then convey the same to some other fixed point, and there automatically dump or release the load. To hold the car in a fixed position to receive its load, we fasten a track-support at a proper point and engage the track therein. We then run the car toward the track-support, when the inclined face 27, Figs. 1 and 2, of the approaching latch contacts with the projecting edge 38, Fig. 1, of the bifurcated cam, and is thereby moved down until the shoulder 28, Figs. 1 and 2, passes by the projecting edge of the bifurcated cam, when the outer end of the latch moves upward and automatically connects the movable car with the fixed track-support. During this operation the hoisting-pulley is supposed to be down upon the ground or floor. The load is then attached to the hoisting-pulley and traction applied to the hoisting-cable, which raises the hoisting-pulley and its attached load. As the hoisting-pulley approaches the car, its upwardly-projecting bail enters the slots in the side walls of the car, and is thereby guided into contact with tangential face 22 of cam 18. The upward movement of the hoisting-pulley continuing, the eccentric cam 18 is partially rotated, and as the inner end of one of the latches 15 is in contact with the eccentric-cam at point 39, Fig. 2, and rides thereon, it follows that such partial rotation, in combination with the eccentricity of the cam, must result in raising the inner end of the contacting latch; and as the latches are combined to be simultaneously moved, they both assume the position shown in dotted lines in Fig. 2. The outer ends of the latches are depressed, and the one in engagement with the fixed track-support released therefrom, when the car is free to be moved along the track. Another function of the eccentric-cam is that of automatically locking and holding the hoisting-pulley and its load in combination with the car. As the projecting bail of the hoisting-pulley partially rotates the cam, the sectoral

projection 21, Fig. 2, thereon enters and engages the loop in the bail, while at the same time the tangential face 22, Fig. 2, of the cam is moved into such position that the shoulder 5 20, Fig. 2, on the latch drops over it and locks the cam and hoisting-pulley to the car. The position assumed by the eccentric-cam is shown in dotted lines in Fig. 2. The car with its attached load is then free to move along 10 the track. At the point where it is desired to dump the load another track-support is fixed. As the car approaches it the inclined face 27 of latch 15, Figs. 1 and 2, contacts with the projecting edge 38, Fig. 1, of the bifurcated cam, thereby moving the outer end 15 of the latch downward and raising the inner end. This releases the tangential face 22 of eccentric-cam 18 from engagement with the shoulder 20 on latch 15, Fig. 2, and permits 20 eccentric-cam 18, by reason of the weight of the parts suspended thereon, to partially rotate. The effect of this rotation is to withdraw the sectoral projection 21 upon cam 18, Fig. 2, from its engagement with the loop in the bail of the hoisting-pulley and permit it 25 (the hoisting-pulley) to descend.

Raising the hoisting-pulley again locks the same to the car and releases the car from engagement with the fixed track-support and 30 leaves the car free to move along the track. This cycle of operations may be repeated and continued indefinitely. The swiveled loop, Fig. 4, and the pulley, Fig. 5, being detachable and interchangeable, it follows that reversal of their positions in relation to the car 35 will permit the car to be operated in either direction at the pleasure of the operator.

While we describe our invention as a hay elevator and carrier, we do not intend to limit 40 ourselves to such specific use, as it is evident that it might be applicable to the elevating and carrying of other substances.

It is obvious that slight changes could be made in the construction of our device without departure from the central feature or spirit 45 of our invention. Hence we do not limit ourselves to the precise specific construction and

conformation of parts herein pointed out and described.

What we claim as new, and desire to secure 50 by Letters Patent, is—

1. In a hoisting and carrying apparatus, the combination, with a carrier depending from wheels or rollers, mounted upon a track, and having guiding-slots in the lower central portion 55 of the walls, of latches pivoted in the carrier, projecting longitudinally from each end thereof, having hooks or shoulders upon their outer ends, their inner ends adapted to engage each other and to be simultaneously movable, 60 and the shouldered cam-shaped catch pivoted in the carrier, adapted to engage a bail within the guiding-slot, and having a shoulder thereon adapted to be engaged by a projection on one 65 of the pivoted latches.

2. A carrier depending from wheels, mounted upon a track, and having guiding-slots in the lower central portion thereof, latches pivoted in the carrier, having shouldered projections on the outer ends of each, the inner ends 70 adapted to engage each other to be simultaneously moved, and the shouldered cam-shaped catch pivoted in the carrier, adapted to engage a bail within the guiding-slots, and having a shoulder thereon adapted to be engaged by a 75 projection on one of the latches, in combination with a track-support having guiding-slots in the lower central portion of the walls, a cam-shaped catch pivoted therein, and a pivoted lever for engaging and disengaging the 80 cam-shaped catch, for the purposes set forth.

3. A track-support having opposing walls provided with guiding-slots, the cam-shaped catch pivoted therein, and the pivoted lever for engaging and disengaging the cam-shaped 85 catch, for the purposes stated.

In witness whereof we have affixed our signatures in presence of two witnesses.

WM. S. RISLEY.
E. EUGENE RISLEY.

Witnesses:

EDWIN H. RISLEY,
MILTON E. ROBINSON.