(No Model.)

N. ISACHSON.

HAY CARRIER.

No. 483,845. Patented Oct. 4, 1892.

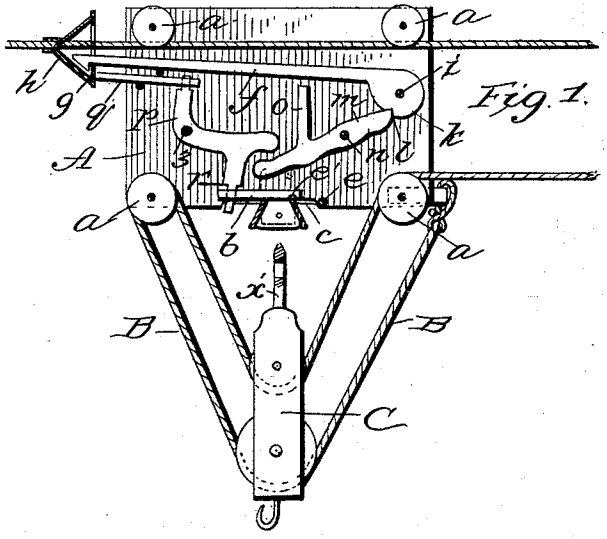


Fig. 1.

Fig. 2

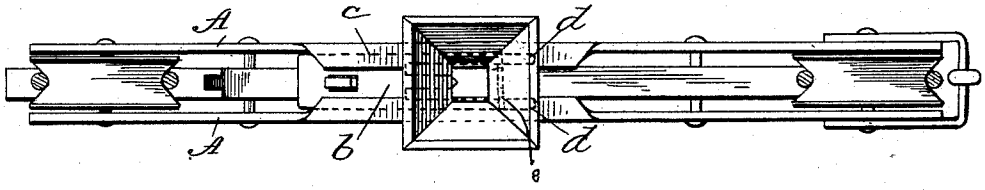
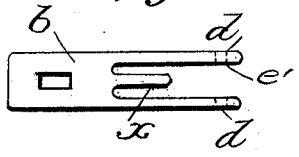


Fig. 3.



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HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 483,845, dated October 4, 1892.

Application filed January 22, 1892. Serial No. 418,928. (No model.)

To all whom it may concern:

Be it known that I, NORMAN ISACHSON, a citizen of the United States of America, residing at Marion, in the county of Cassia and State of Idaho, have invented certain new and useful Improvements in Hay-Carriers, of which the following is a specification.

My invention is a hay-carrier of that type which is provided with wheels to run upon suitable ways and with locking devices to automatically engage the load as it is lifted and to automatically disengage the load or the empty fork at the desired point.

The invention consists in the locking devices and in the means for operating them, these means including a ring or collar fixed to the way.

In the accompanying drawings, Figure 1 is an elevation of a carrier embodying my invention with one side removed. Fig. 2 is a bottom plan view. Fig. 3 is a detail view of the locking-slide.

In the figures the working parts are inclosed between side plates A, which terminate upon the bottom thereof in a bell-shaped mouth, as is usual in such carriers. Pulleys *a* are journaled in bearings in the said side walls at each end of the lower edge, and these receive the loops of the hoisting-ropes B, one end of the rope being secured to the carriage to an eye or loop on one end thereof. The pulley-block C is carried in the loops of the hoisting-ropes and is provided with two pulleys, the lower one larger than the upper, so as to increase the power in lifting and at the same time permit the load to be lifted steadily without twisting the hoisting-rope. The frame of the pulley-block holder is provided with a hook at its lower end for engagement with the hay-fork, while the upper end is pointed and is provided with a lateral opening or eye passing through the same in the direction of the length of the carrier. A locking and holding slide *b* is adapted to slide upon flanges *c*, turned in on the lower edge of the side plates of the carrier, the line of movement of the said locking-plate being back and forth across the entrance of the opening in the upper part of the bell-shaped mouth. The slide has a central tongue *x*, which is adapted to pass through the opening in the pointed extension *x'* of the pulley-block frame, and thus hold it and its load to the carrier, and has also side extensions in lines parallel to the the tongue, and these bear in upon the turned-in flanges of the frame and serve to support and sustain the slide and the load. The side extensions are shown at *d*.

In order to relieve the tongue *x* from the full weight of the load, I extend a cross-bar *e* between the side plates of the frame, and upon this cross-bar the free end of the tongue rests when in its extreme position to the right, and thus there is no danger of the tongue being ruptured by having one end unsupported.

In order to prevent the accidental withdrawal of the locking-slide, I form a groove *e'* on the under face of each extension *d*, near the ends thereof, and this engages with a slight rise in the guide-flanges of the frame, and thus some little pressure is required to withdraw the slide.

I have shown the carrier as running upon a cable; but it will be understood that it may be as readily applied to the tracks used in many instances in place of the cable. Secured to the cable or track at the end of the way by means of a set-screw I place a collar, which consists of a cylindrical plate having an annular opening with a beveled edge, and this is adapted to receive the latch *f*, which engages the beveled edge *g* of the collar *h*. By making the collar cylindrical it will be seen that the latch of the carrier will always engage with it, even though the carrier has a swinging movement as it reaches the end of the way, and there is a decided advantage in having a stop and catch which entirely encircles the way rather than a simple projection directly beneath the track, which only engages with the latch of the carrier when directly in line therewith. The carrier-latch extends to the opposite end of the frame, where it is pivoted at *i*, and has a cam-shaped portion *k*, which has a locking-notch *l*. A combined lever and dog *m*, pivoted at *n*, with its front end extending over the opening of the bell-shaped mouth has its rear end engaging the notch, and while thus engaged the latch cannot be lifted, but will be kept in engagement with the collar at the end of the way. The lever *m* has an upward extension *o*, and when the pulley-block is elevated the upper end thereof passes through the bell-shaped mouth and

lifts the lower end of the lever *m*, which releases the opposite end from the notch *l*, while the extension *o* elevates the latch and frees it from engagement from the holding-collar. The lifting of the lower end of the lever *m* has another effect—namely, to operate the locking-slide so as to advance it to engage with the pulley-block holder and hold the fork and its load in its elevated position. A bell-crank lever *p* is pivoted at 3 and has one arm directly above the lower end of the lever *m*, while the other end of the bell-crank engages a slide *q*. The bell-crank has a downward extension *r*, the reduced end of which passes through a slot in the end of the locking-slide, and thus when the end of the lever *m* is lifted by the end of the pulley-block frame it in turn comes in contact with the horizontal extension of the bell-crank lever with the effect to turn the lever on the pivot and through the downward extension *r* move the locking-slide forward or to the right to engage the opening in the end of the pulley-block holder. When the carrier reaches the end of the way, the slide *q*, which projects slightly beyond the frame of the carrier, comes in contact with the plane face of the collar, and this has the effect of moving the slide backward, turning the bell-crank upon its pivot, and through the downward extension *r* moves the locking-slide to the left and allows the pulley-block holder to be released from the carrier.

I claim as my invention—

1. In a hay-carrier, a pivoted lever *m*, a locking-slide, and a bell-crank lever connected with the slide and operated by the lever *m*, substantially as described.

2. In a hay-carrier, a lever *m*, a locking-slide, a bell-crank connected therewith and operated by the lever *m*, and a slide for operating the bell-crank, said slide being acted upon by the stop on the way, substantially as described.

3. In combination with the lever *m*, the bell-crank lever operated thereby, a locking-slide operated by the bell-crank lever, and an unlocking-slide connected with the bell-crank and projecting beyond the frame, a collar encircling the way and concentric therewith, and a latch on the carrier engaging said collar, said collar presenting a plane surface adapted to form a stop to actuate the unlocking-slide, substantially as described.

4. In a hay-carrier, the combination of a locking-slide having a tongue *x*, and also having side extensions *d d* grooved on the under faces near the outer ends, a cross-bar extending between the side plates of the carrier-frame for supporting the free end of the tongue, and means for operating the locking-slide, substantially as described.

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

NORMAN ISACHSON.

Witnesses:
C. A. TOLMAN,
NANNIE PICKETT.