

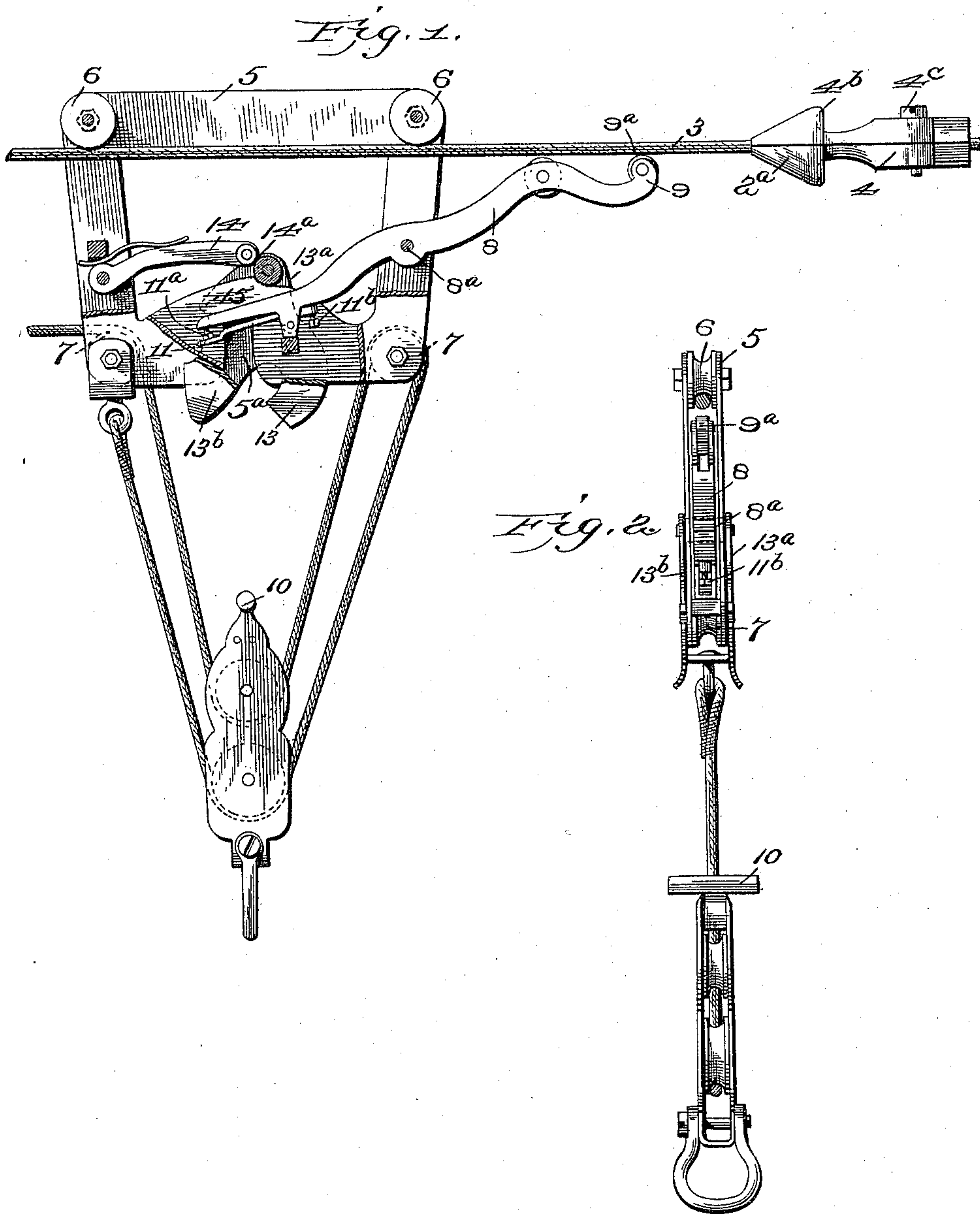
(No Model.)

2 Sheets—Sheet 1.

N. ISACHSON.
HAY CARRIER.

No. 600,949.

Patented Mar. 22, 1898.



Attest
James M. Spear
F. L. Middleton

Inventor
Norman Isachson
by *Wm. Spear*
Atty.

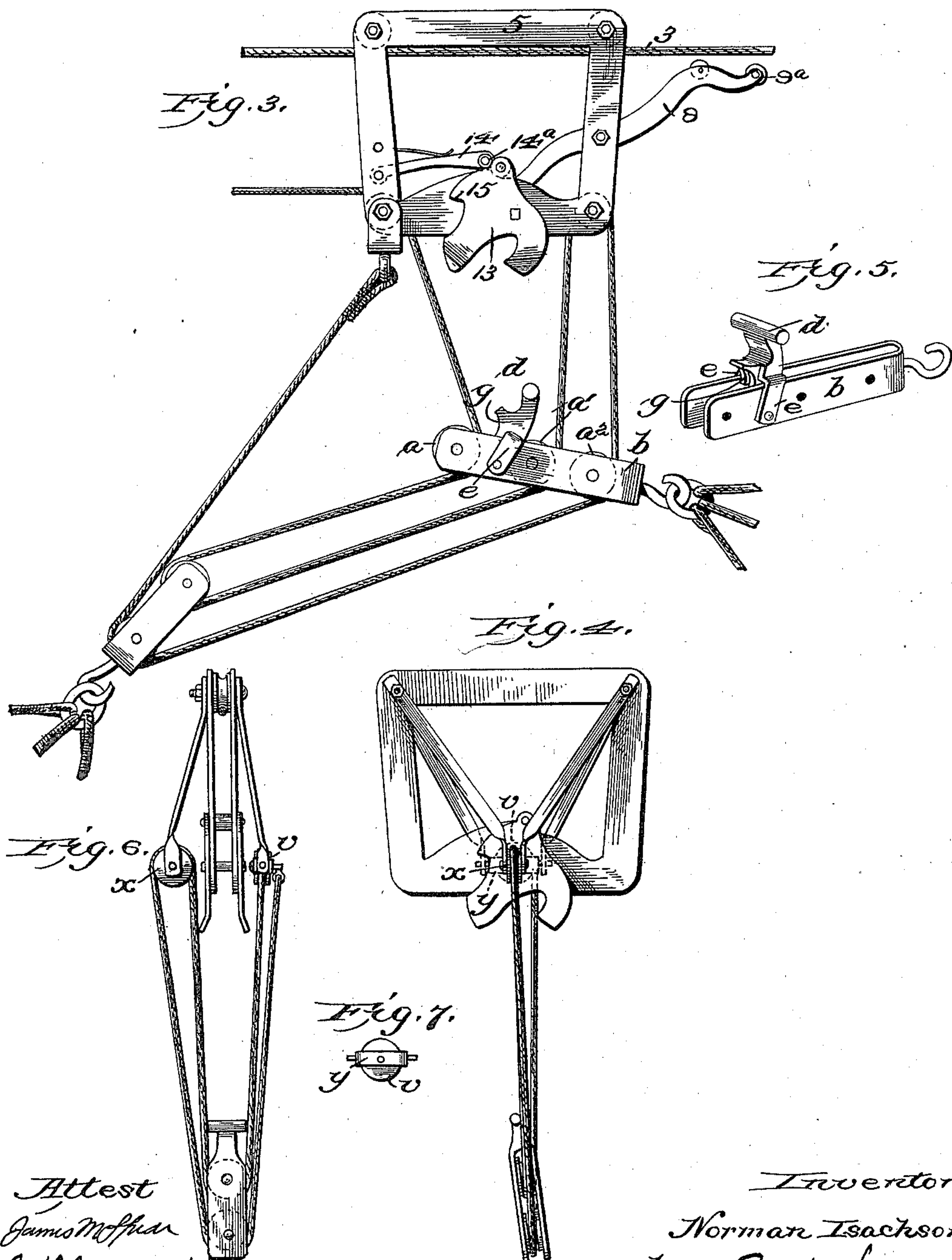
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2 Sheets—Sheet 2.

N. ISACHSON.
HAY CARRIER.

No. 600,949.

Patented Mar. 22, 1898.



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UNITED STATES PATENT OFFICE.

NORMAN ISACHSON, OF MARION, IDAHO.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 600,949, dated March 22, 1898.

Application filed June 24, 1897. Serial No. 642,028. (No model.)

To all whom it may concern:

Be it known that I, NORMAN ISACHSON, a citizen of the United States, 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, reference being had therein to the accompanying drawings.

My invention relates to improvements in hay-carriers of that class known as "sheave-frame catch," in which the sheave-frame on reaching the limit of its upward movement disengages the carrier from a stop on the way and also operates a retaining device to prevent the sheave-frame from descending.

The objects of the invention are to provide a stop which is always in the right position, even if the cable or way twists, and which can be readily removed and replaced; to provide an extremely simple form of catch-lever for engaging the stop which is adapted to reduce the wear of the parts to a minimum and to insure their more perfect working and also to provide for the taking up of any wear upon the parts, and, lastly, to provide an extremely simple catch for the sheave-frame which while holding it securely will permit it to swing without danger of twisting the head of the sheave-frame.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the carrier in place upon the way, parts being broken away; and Fig. 2 is an end view, the upper portion of one of the lower rollers 7 being broken off. Figs. 3, 4, 5, 6, and 7 are views of modifications.

In the drawings, the numeral 3 designates the wire or cable way upon which the carrier is designed to run. The way carries a stop 4, having a cone-shaped head 2^a, with the narrow neck in rear providing an annular shoulder 4^b, which is adapted to be engaged by the catch-lever of the carrier to retain the carrier against movement while the load is being elevated. The stop is made in two parts, as shown, each part being provided with a longitudinal groove to receive a portion of the cable or way, so that when the parts are placed together the cable is securely clamped between them. Suitable means are provided for fastening the two parts together—such, for instance, as the set-screw 4^c.

The carrier consists of a double frame 5, substantially rectangular in shape, carrying rollers 6 at its upper side, adapted to run upon the cable, and rollers 7 at its lower corners, over which the hoisting-rope passes.

The catch-lever 8 is pivoted between the two parts of the carrier at 8^a and has a hooked end 9. A roller 9^a is provided on this hooked end, which is adapted to rest behind the annular shoulder on the stop, the shoulder being slightly undercut for this purpose. It will thus be seen that when the catch-lever is operated to release the carrier the roller rides easily off from the shoulder without wear on the parts. A second roller is pivoted in a recess in this arm to the rear of the hooked end, which is adapted to ride upon the incline face of the stop and thus relieve the lever from contact with said stop. The forward end of the lever passes across the slotted portion 5^a of the carrier-frame, into which the T-shaped head 10 of the sheave-frame rises at the limit of the upward movement of the load, so that this T-shaped head lifts the end of the catch-lever to release the carrier from the stop. The continual contact of the sheave-frame with the end of the lever is apt to wear the parts, so that in time the lever would not be lifted far enough to disengage it from the stop. To provide against this, I place a wear-plate 11 at the opening where the T-shaped head strikes, this wear-plate being pivotally connected to the lever and provided with set-screws 11^a and 11^b, whereby it may be adjusted to take up any wear of the parts.

In order to hold the T-shaped head within the slotted portion of the carrier-frame, a pivoted retaining device is provided, as shown at 13, consisting of two plates 13^a 13^b, each having a hooked lower end adapted to engage one of the arms of the T-shaped head of the sheave. These plates are connected so that they turn together and are provided with portions overhanging the hooked portions, against which the head strikes as it approaches, so that the plate is rocked to draw the hooks up under the head 10. The spring-pressed arm 14 bears against the upper side of the retaining-plates and drops over a shoulder 15 when the head is in place within the recesses, so that it is held securely against downward movement. This arm is prefer-

ably narrower than the space between the plates of the retaining device and is provided with a transverse pivot carrying antifriction-rollers 14^a, which engage the shoulders of the retaining device. The sheave-frame is also of less thickness than the retaining device, so that when the head is held thereby the upper portion of the sheave-frame can swing freely back and forth to accommodate itself to the swinging of the load or when the load drags upon the top of a stack which has been piled up nearly to the table, so that there is no danger of bending or breaking the head.

I prefer to connect the two plates of the retaining device so that they will move simultaneously by forming the pivot-pin with squared portions engaging correspondingly square openings in the plates.

As shown in Fig. 3, I may employ a modified form of sheave and sheave-frame which is provided with a clutch for positively locking the draft-rope when the frame is engaged and supported by the carrier. The frame *b* herein shown carries three sheaves *a*, *a'*, and *a''* and is provided with a hook, to which one end of the hay-sling is attached. The other end of the sling is attached to a second frame carrying two sheaves, over which the draft-rope passes, as shown.

The T-shaped head *d* has a shank having its lower end bifurcated to form arms *e*, which are pivotally connected to the outside frame at a point between the sheaves *a* *a'*. A jaw *g*, having a curved face, projects up from between the arms *e* at the junction of the same with the shank of the head, and when the head is held by the carrier the weight of the load will press said jaw into engagement with the draft-rope, passing over the sheave *a* and positively clamp the same. By using the three sheaves and threading the rope, as shown in Fig. 3, both of the pulleys will be elevated evenly and thus prevent the load from turning up edgewise, so that when it is tripped it will spread out evenly over the stack. The weight of the load will also regulate the compression of the same. Thus by using a short sling and a long slack rope the bundle will be compressed as long as the weight thereof will effect it.

In order to move the load laterally or longitudinally in relation to the carrier without twisting the ropes, I have modified the construction of the carrier, as shown in Figs. 4 and 6, in which the pulley *x* is arranged at right angles to the carrier, being journaled in brackets depending from and supported by the bolts upon which the upper rollers are journaled. Upon the opposite side of the carrier and pivotally supported in similar brackets is a sheave-frame *y*, in which the sheave *v* is mounted. The trunnions of this frame are placed slightly above the central line thereof, as shown in the detail view, to effect an easier operation of the same. The sheave-frame has in this form the T-head arranged parallel with the sides thereof, and

thus the sheaves are arranged transversely in relation to the carrier.

Having thus described my invention, what I claim is—

1. In combination the way, the stop having an undercut flange, the carrier and the catch-lever having a roller adapted to rest against said undercut flange, substantially as described.

2. In combination, the way, the stop thereon, the carrier, the catch-lever carried thereby, the sheave-frame adapted to contact with the catch-lever to release the carrier and the wear-plate adjustably connected to the catch-lever.

3. In combination, the way, the carrier thereon, the stop, the catch-lever engaging said stop, the sheave-frame having a T-shaped head and the pivoted retaining device comprising the two hook-shaped plates adapted to engage the arms of the T, substantially as described.

4. In combination, the way, the two-part stop, the carrier on the way having a recess in its under side, the sheave-frame having a T-shaped head adapted to enter said recess, the catch-lever having its end extending into the path of the T-shaped head, the two retaining-plates pivotally connected with the carrier and having hooked ends adapted to engage the arms of the head to hold it in the recesses and the spring-pressed arm adapted to engage shoulders on the upper edges of the plates to hold them against backward movement, substantially as described.

5. In combination, the way, the carrier, the sheave-frame, the retaining device and the T-head pivotally secured to said frame, substantially as described.

6. In combination, the way, the carrier, the retaining device, the sheave-frame, and the T-head pivoted to said frame and extending laterally therefrom, substantially as described.

7. In combination, the way, the carrier, the retaining device, the sheave-frame, the draft-rope, the pivoted head, and the jaw carried thereby adapted to engage said rope and be pressed thereagainst by the weight of the load, substantially as described.

8. In combination, the way, the carrier, the retaining device, the sheave-frame, the sheave journaled therein, the draft-rope guided around said sheave, the T-head pivoted to said frame adjacent to said sheave, and the jaw carried by said head projecting toward said sheave and adapted to automatically engage said rope, substantially as described.

9. In combination, the way, the carrier, the retaining device, the sheave-frame, the T-head having a shank with a bifurcated end forming arms, said arms being pivoted on each side of said frame, and the jaw located at the junction of the arms with the shank having a curved face, substantially as described.

10. In combination, the carrier, the retaining device, the sheave-frame having a T-head,

the pulley arranged at an angle to said carrier on one side thereof, and the pulley swiveled to said carrier on the opposite side of the same.

5 11. In combination, the way, the carrier, the retaining device, the sheave-frame having a T-head, the roller in the carrier for supporting the same in said way, the brackets held on the journal of said rolls projecting
10 from one side of said carrier, the pulley journaled in said bracket at an angle to the car-

rier, corresponding brackets on the opposite side of the carrier, the sheave-frame swiveled therein, and the sheave, substantially as described.

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

NORMAN ISACHSON.

Witnesses:

A. G. SMITH,
MAGGIE SMITH,

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