

No. 812,060.

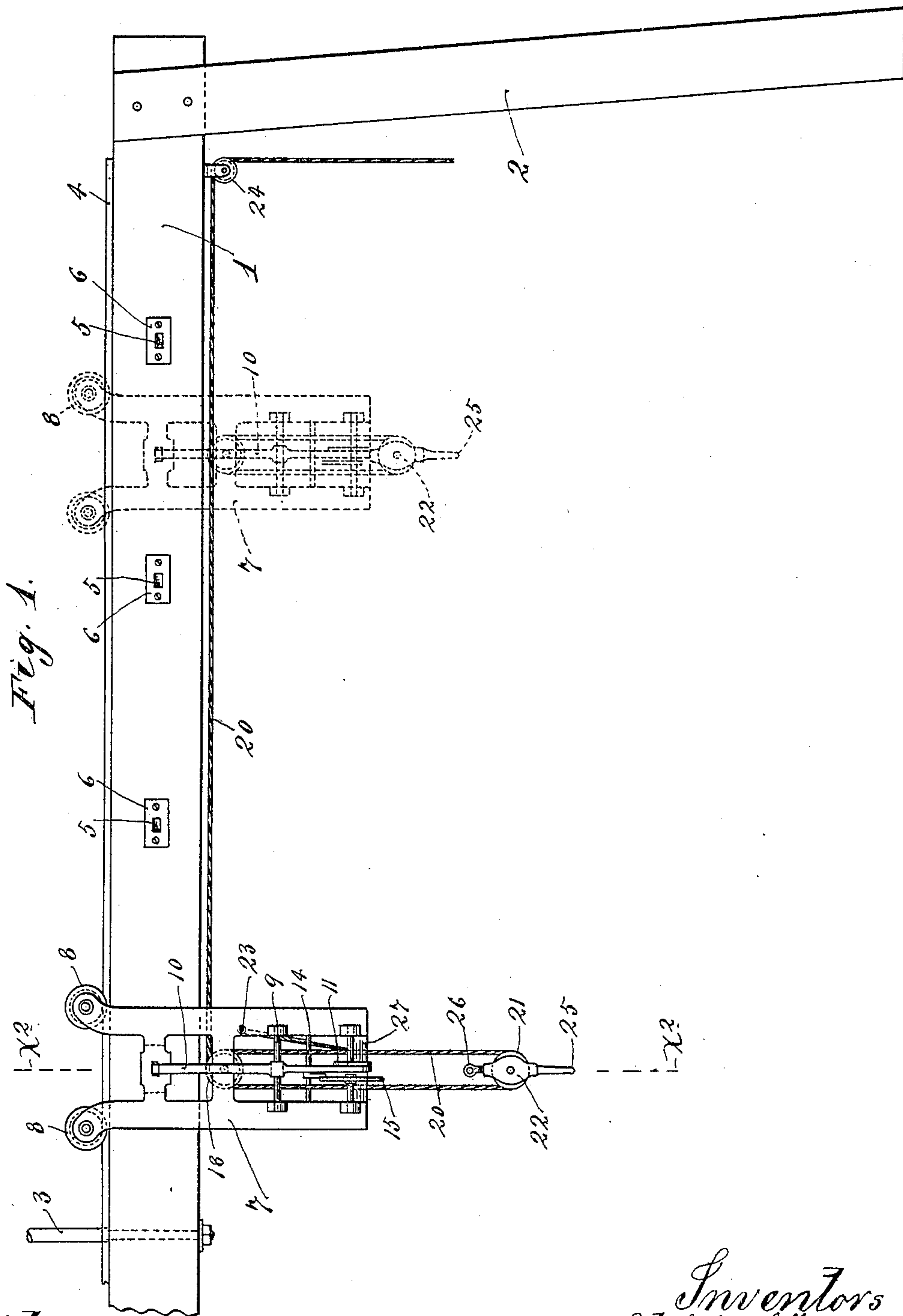
PATENTED FEB. 6, 1906.

A. MELLQUIST & O. A. WESTERSON.

HAY ELEVATOR AND CONVEYER.

APPLICATION FILED MAR. 23, 1905.

2 SHEETS—SHEET 1.



Witnesses.  
A. H. Opsahl.  
Edward W. Jeppesen.

Inventors  
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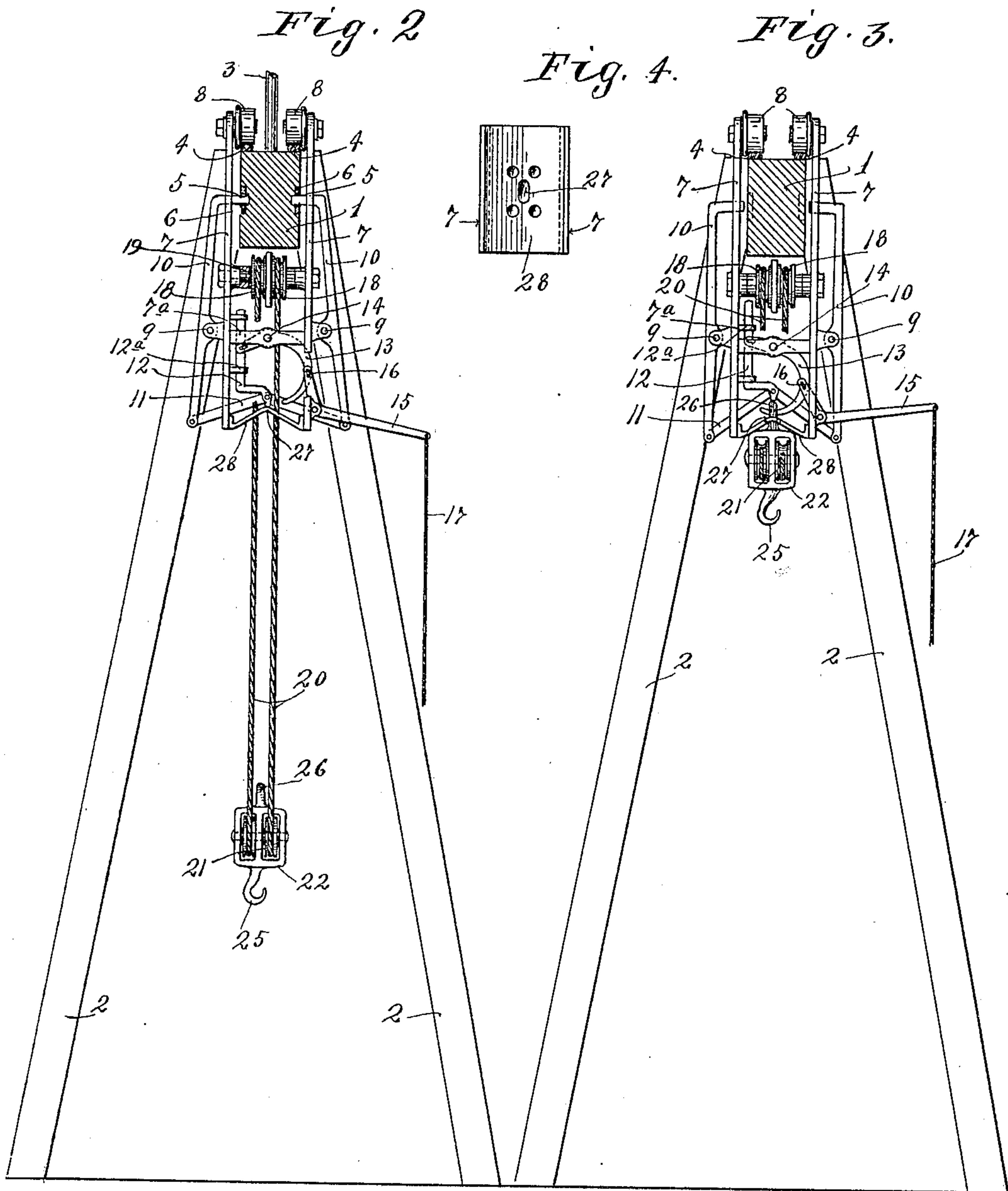
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By his Attorneys.  
William M. Mchaut



# UNITED STATES PATENT OFFICE.

ADOLPH MELLQUIST AND OSCAR A. WESTERSON, OF CANNON FALLS,  
MINNESOTA.

## HAY ELEVATOR AND CONVEYER.

No. 812,060.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed March 23, 1905. Serial No. 251,702.

*To all whom it may concern:*

Be it known that we, ADOLPH MELLQUIST and OSCAR A. WESTERSON, citizens of the United States, residing at Cannon Falls, in the county of Goodhue and State of Minnesota, have invented certain new and useful Improvements in Hay Elevators and Conveyers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has for its object to provide an improvement in hoisting and conveying devices; and to this end it consists of the novel devices and combination of devices hereinafter described, and defined in the claims.

In the accompanying drawings, which illustrate our invention, like characters indicate like parts throughout the several views.

Figure 1 is a view in side elevation, with some parts broken away, showing an elevated track and a traveling hoisting device applied to run thereon. Fig. 2 is a transverse vertical section taken on the line  $x^2 x^2$  of Fig. 1. Fig. 3 is a similar view to Fig. 2, but showing the parts in different positions; and Fig. 4 is a detail in bottom plan view, showing an alining-plate, which is secured to the lower portion of the truck-frame of the traveling hoisting device.

The numeral 1 indicates an elevated track-beam, which may be supported by various devices, but, as shown, is supported at one end by legs 2 and at its intermediate portion by depending bar 3, the upper end of which bar may be suspended from legs or other overhead support. (Not shown.) On the upper end of the beam 1 are secured laterally-spaced rails 4. At suitable intervals the beam 1 is provided in its opposite sides with lock depressions 5, preferably formed in plates 6, set into and rigidly secured to said beam.

The hoisting device comprises a truck or carriage made up of a rectangular framework 7, that depends below the beam 1 and the upper portion of which embraces or straddles the sides of said beam 1, and is provided with truck-wheels 8, that run over the rails 4. As shown, there are two wheels 8 on each side of the truck, and those that are upon the opposite sides of the truck are spaced apart

from each other, so that the truck is adapted to pass the intermediate supporting-bar 3.

Pivoted at 9 to the opposite sides of the truck-frame 7 is a pair of lock-levers 10, having inturned upper ends that work through perforations in the sides of the said frame 7 and are adapted to engage with the lock-recesses 5 in the beam 1. At their lower ends the lock-levers 10 are connected by a toggle-lever 11, the intermediate joint of which is connected by a sliding link 12 to one end of a latch-hook 13, which latter is pivoted at 14 to a transverse portion 7<sup>a</sup> of the truck-frame 7. The sliding link 12 works in bearings 12<sup>a</sup> on the frame 7.

The numeral 15 indicates a bell-crank lever, which is pivoted to one side of the truck-frame 7, and is attached to the intermediate portion of the latch-hook 13 by a slot-and-pin connection 16. The outwardly-projecting arm of the bell-crank 15 is attached to the depending operating rope or cord 17.

The hoisting device in its preferred form involves a pair of upper sheaves or pulleys 18, that are loosely mounted on a rod 19, that is rigidly attached at its ends to the sides of the truck-frame and serves to brace the same. A hoisting-cable 20 is passed over the sheaves 18 and over sheaves 21 of the lower tackle-block 22. One end of the hoisting-cable 20, as shown, is attached at 23 to the truck-frame 7, and the other end thereof is run along under the beam and over the guide-sheave 24, supported near one end thereof. The tackle-block has a hook 25 at its lower portion and at its upper portion is provided with a perforated head 26. When the tackle-block 22 is raised, as shown in Fig. 3, its perforated head 26 is forced through the perforation 27 in an alining-plate 28. When forced to said position, the said perforated head 26 strikes the intermediate joint of the toggle 11 and buckles the same, as shown in Fig. 3, thereby moving the upper ends of the locking-levers 10 out of engagement with the lock-recesses 5 of the beam 1 and acting through the link 12 causes the latch-hook 13 to pass through the said perforated head 26, all as shown in Fig. 3.

When the parts are in the position as shown in Fig. 3, the truck is free to move over the elevated track and the lock-hook 13 holds the tackle-block 22 with its load in an elevated position. When it is desired to re-



lease the tackle-block 22 and its load, this may be done by pulling on the trip-rope 17, thereby through the bell-crank 15, forcing the latch-hook 13 into an inoperative position, as shown in Fig. 2, and releasing the said tackle-block and its load and causing or permitting the lock-levers 10 to engage with the first lock-recess 5, with which their upper ends come into engagement.

From the foregoing it will be seen that the tackle-block 22 and its load will be locked in elevated positions at all times when the lock-levers 10 are in released positions, from which it follows that the load will be held properly suspended while the truck is being moved from place to place. It is also evident that the truck will be locked against traveling movement while the load is being raised or lowered. When the truck is locked in a stationary position, as shown in Fig. 2, the load may be raised or lowered by drawing on or letting out the depending end of the cable, which is beyond the guide-sheave 24. When, however, the truck is released, as shown in Fig. 3, the said truck with its load may be caused to travel toward the guide-sheave 24 by drawing on the end of the said cable 20.

This hoisting and conveying device is adapted for a great many different uses; but it is especially adapted for use in hoisting and conveying hay, manure, &c., and for this purpose we would employ a "grapple-fork" of the novel form disclosed and claimed in a companion application filed by us of even date herewith.

From what has been said it will be understood that the device described is capable of modification within the scope of our invention, as herein set forth and claimed.

What we claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a hoisting and conveying device, the combination with a track having a series of lock depressions and a truck movable over said track, of a hoisting device applied to said truck, a lock mounted on said truck, and engageable with said lock depressions on the track, to lock said truck thereto, a latch for securing said hoisting device, with its load elevated, and connections thereby, said lock and said latch are thrown into and out of action in alternative order, substantially as described.

2. The combination with an elevated track having a series of lock depressions and

a truck movable thereon, of a "block-and-tackle" hoisting device, applied to said truck, a pair of lock-levers, pivoted to said truck-frame and engageable on the opposite sides of said track, with said lock depressions to lock said truck thereto, a latch-hook, engageable with the movable block of said hoisting device, to lock the same in an elevated position, and connections whereby said movable block, on reaching its elevated position, releases said lock-levers from said lock depressions and throws said latch-hook into action upon itself, substantially as described.

3. The combination with an elevated track and a truck movable thereon, said track having aligned recesses in its opposite sides, of the lock-levers 10, pivoted to the sides of the truck-frame and engageable with the lock-recesses of said track, a toggle, connecting the lower ends of said lock-levers, a latch-hook pivoted to the truck-frame and connected to said toggle, and a "block-and-tackle" hoisting device, having a movable block provided with a perforated head, arranged to act upon said toggle, to render said latch-levers inoperative and adapted to be engaged by latch-hook, substantially as described.

4. The combination with an elevated track, having in its sides lock-recesses 5, of a truck made up of a frame 7, and wheels 8, said frame embracing said track and said wheels running thereon, the latch-levers 10 pivoted to the sides of said frame and engageable with said lock-recesses 5, a toggle 11, connecting the lower ends of said levers, the latch-hook 13, pivoted to said frame and connected to said toggle, by a sliding link 12, the perforated alining-plate 28, at the lower portion of said frame, the lever 15, pivoted to said frame and attached to said latch-hook, the sheaves 18, mounted on the said truck-frame, above said alining-plate, the tackle-block 22, having the perforated head 26 and sheaves 21, and the cable 20, working over said sheaves 18 and 21, the perforated head 26, of which tackle-block is adapted to project through one of the perforations of said alining-plate into engagement with said toggle 11 and adapted to be engaged by said latch-hook 13, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

ADOLPH MELLQUIST.  
OSCAR A. WESTERSON.

Witnesses:

R. C. MABEY,  
F. D. MERCHANT.