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'x" 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 leg 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 7a of the truck-frame 7. The sliding link 12 works in bearings 12a 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, as all 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 latch-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 posi-
tion, 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 are 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 evi-
dent 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 draw-
ing 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 pur-
pose 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 under-
stood that the device described is capable of
modification within the scope of our inven-
tion, as herein set forth and claimed.

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

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 track, a lock mounted on said truck, and
engangeable 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 de-
vice, 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 hav-
ing aligned recesses in its opposite sides, of
the lock-levers 10, pivoted to the sides of the
truck-frame and engageable with the lock-re-
cesses 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" hoist-
ing device, having a movable block provided
with a perforated head, arranged to act upon
said toggle, to render said lock-levers inop-
erative 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 perfor-
ated 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 track-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 alin-
ing-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 signa-
tures in presence of two witnesses. ADOLPH MELLQUIST.
OSCAR A. WESTERSON.

Witnesses:

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