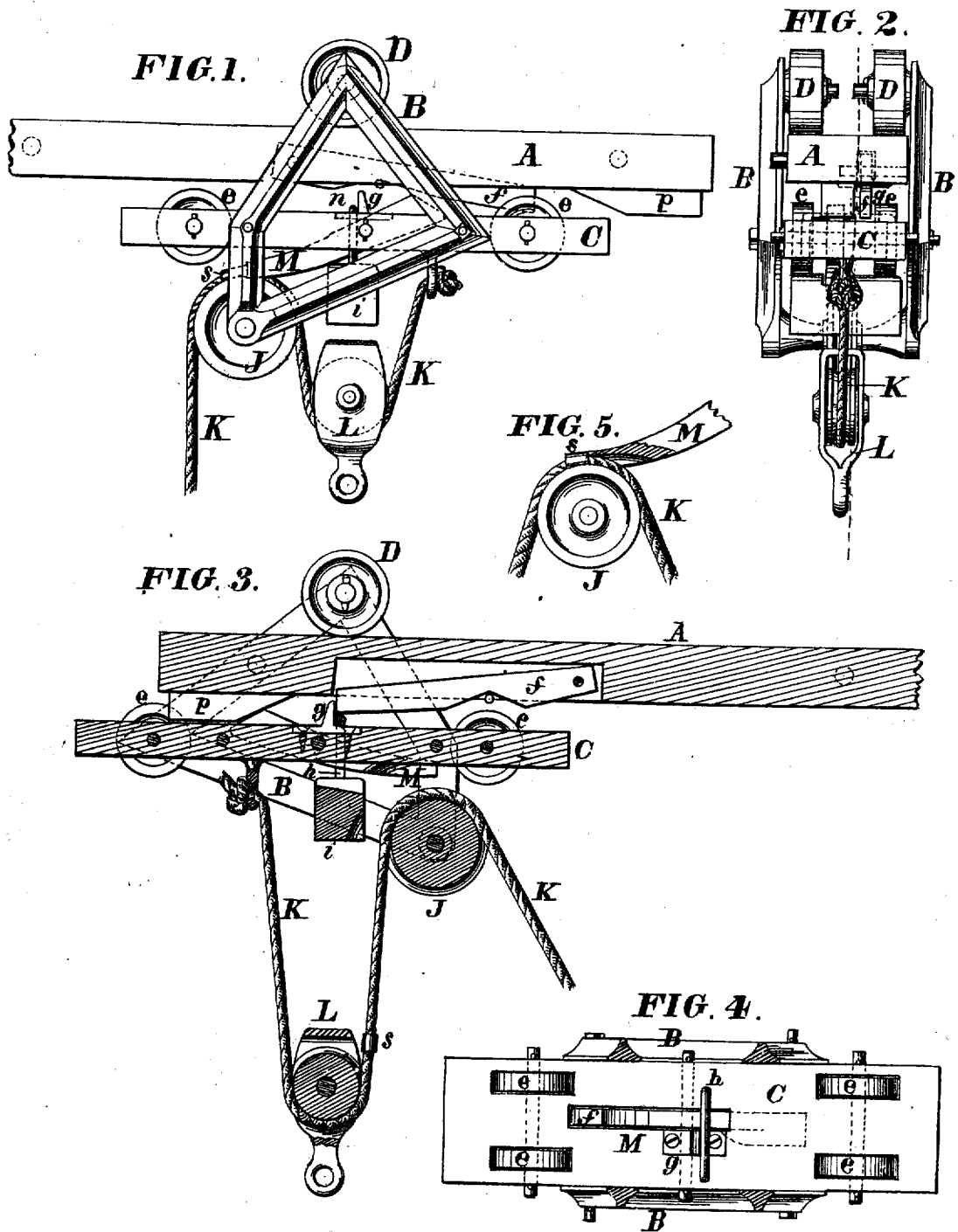


J. C. CRAMER.
HAY-ELEVATOR.

No. 175,038.

Patented March 21, 1876.



WITNESSES:

Geo. L. Cwin
Walter Allen

INVENTOR:

Jay Carson Cramer
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UNITED STATES PATENT OFFICE.

JAY CARSON CRAMER, OF STRATHROY, CANADA.

IMPROVEMENT IN HAY-ELEVATORS.

Specification forming part of Letters Patent No. **175,038**, dated March 21, 1876; application filed December 26, 1873.

To all whom it may concern :

Be it known that I, JAY CARSON CRAMER, of Strathroy, in the county of Middlesex and Province of Ontario, Dominion of Canada, have invented certain Improvements in Elevators for Hay, &c., of which the following is a specification:

This invention relates to certain improvements in devices for elevating hay, ice, and other articles, and conveying them short distances for packing or storing. The carriage travels on a suspended tramway, and is supported by a single central pair of wheels running on the top of the tramway and two or more steadying-wheels underneath. The carriage is held in place at the end of the tramway by means of a latch in the under side of the tramway and a projection on the top of the carriage-platform. The latch is lifted by a gravitating slide working through the carriage platform and provided with a weight underneath the same. The pulley-block on the elevating-rope coming in contact with the weight, forces the slide up against the latch, and thus releases the carriage. The primary object of the said arrangement of wheels on the carriage is to lessen the friction and to make the draft easier, the entire weight of the carriage and its attachments being sustained by a single pair of wheels and centralized in these. The wheels beneath the tramway keep the car steady, preventing the oscillation which would otherwise take place, and they also preclude jamming. The pair of supporting-wheels (as distinguished from a single wheel) are adapted to run on the upper edges of a suspended tramway without interfering with the suspending-links. They also equalize the strain on all parts of the carriage. The peculiar holding and releasing device is believed to be of superior simplicity and practical efficiency.

Figure 1 is a side view of the carriage resting on the tramway. Fig. 2 is an end view of the same. Fig. 3 is a longitudinal vertical section. Fig. 4 is a longitudinal horizontal section. Fig. 5 is a detached view, showing the engagement of the gravitating-lever with the elevating-rope.

A represents the tramway, which may be suspended from the top of a stacking-frame built in any suitable manner. B B represent

a pair of frames attached to the carriage C, one on each side. In the upper corner of each frame B are journaled wheels D, which two wheels travel on the top of the tramway. Near the ends of the carriage C are journaled four wheels, *e*, which run on the under side of the tramway and serve to steady the carriage. Near the end of the tramway is a latch, *f*, pivoted at one end in a recess made for the purpose on the under side of the tramway. About the center of the carriage C is a stud, *g*, which engages with the free end of the latch *f*, and holds the carriage in place while the load is being elevated. Near the stud *g* a slide, *h*, works through the carriage-platform, and is attached to a weight, *i*, underneath. Journaled between the frames B B, at the lower corners thereof, is a pulley, J. One end of the elevating-rope K is attached to an eye, ring, or hook on the underside of the carriage, and the other end is passed through a block, L, and over the pulley J. A gravitating-lever, M, is pivoted in a recess in the carriage-platform in such a manner that its lower end engages with the elevating-rope on the pulley J. An adjustable stop, *s*, on the rope K is placed at the point where it is desired that the lever M shall engage with it to hold the load at a certain desired elevation. The load is attached to the block L, and power is applied to the free end of the rope K. When the load reaches the desired elevation, the block L comes in contact with the weighted slide *h i*, which raises the free end of the latch *f*, and allows the carriage to pass off on the tramway with its load, and the gravitating-lever M to engage with the adjustable-stop *s* on the rope K, and hold the load at the desired elevation while traversing the tramway.

When the apparatus is used for unloading hay, a fork is attached to the block L, and the load is dropped by means of a cord attached to the trip of the fork, so as to release the load without lowering the fork. The carriage is then run back on the tramway until the upper end of the gravitating-lever M comes in contact with the projection *p* on the under side of the tramway and its lower end is released from engagement with the stop *s*, when the block is free to descend.

When a hay-fork is not used, or when the

apparatus is used for other purposes than unloading hay, the gravitating-lever M is operated by a cord so as to allow the load to be lowered at any desired point.

I am aware that elevators and conveyers have been proposed in which the carriage has a single supporting-roller running on a suspended tramway or rope. This device is, therefore, disclaimed. In my device a central pair of wheels on the top of the tramway is employed, in combination with steadying-wheels beneath the tramway at the ends of the carriage. This arrangement, as compared with the old device, possesses two peculiar advantages, namely: It permits the employment of any required number of suspending-links between the ends of the tramway, which the other does not, and any oscillation or binding of the carriage is prevented, as hereinbefore set forth.

I also disclaim the broad idea of holding the carriage at the loading-end of the tramway by

an automatic catch, and releasing it when the load is elevated, as I am aware that various devices have already been patented for accomplishing this general object.

I claim—

The car constructed as herein described, with a single pair of carrying-wheels, D D, running on independent stud-shafts projecting inward from opposite sides of the frame B, so as to admit of pressing the track-supports, and with steady-wheels *e e* below, mounted in a frame, C, to limit the oscillation of the car, in combination with the latch *f*, depending from the track so as to engage with the stop *g*, and thrown out by the contact of the elevating-pulley L, with the block *i*, as shown and described.

J. C. CRAMER.

Witnesses:

DAVID TRAILL,
JAMES OSBORNE.