A. A. MUNSON.

Combined Elevator and Carrier.

No. 225,630. **Patented Mar. 16, 1880.**

Fig: 1.

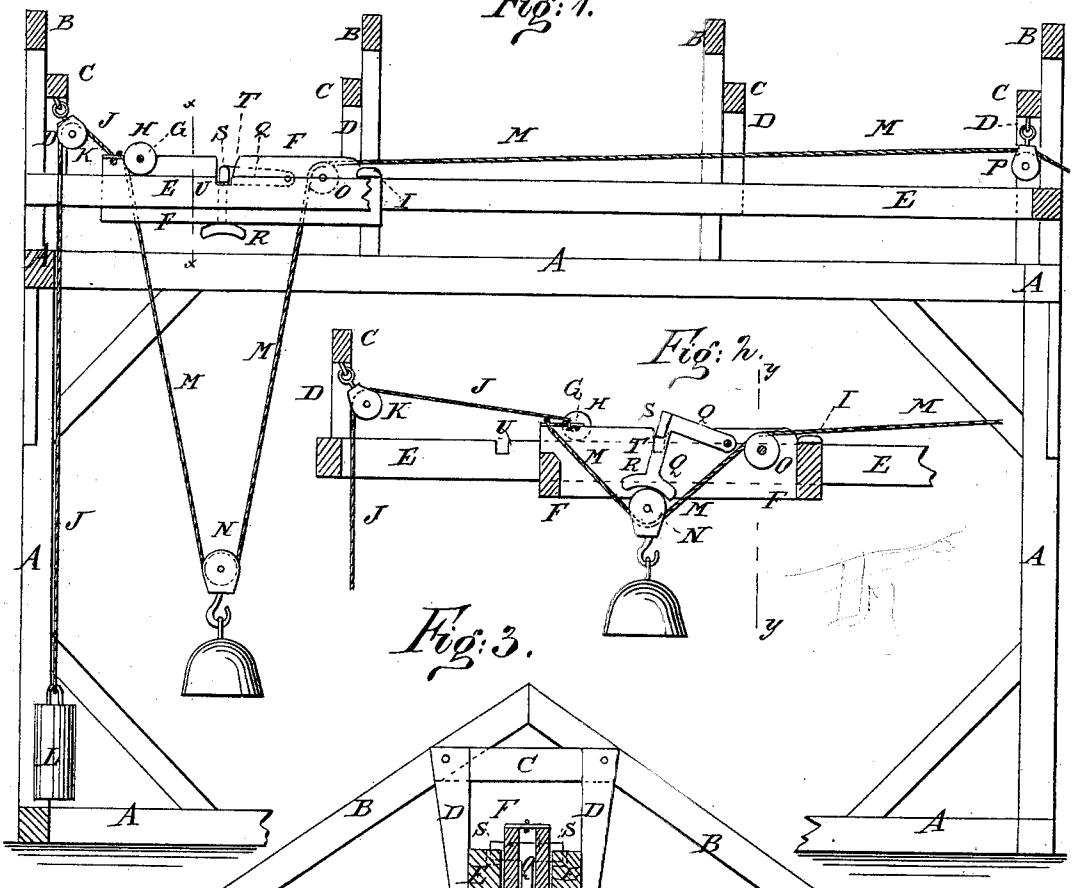
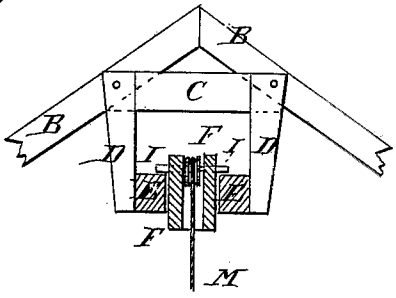


Fig: 2.

Fig: 3.

Fig: 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALLEN A. MUNSON, OF LA GRANGE, MICHIGAN.

COMBINED ELEVATOR AND CARRIER.

SPECIFICATION forming part of Letters Patent No. 225,630, dated March 16, 1880.

Application filed January 10, 1880.

To all whom it may concern:

Be it known that I, ALLEN A. MUNSON, of La Grange, in the county of Cass and State of Michigan, have invented a new and useful Improvement in Combined Elevators and Carriers, of which the following is a specification.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a sectional side elevation of the car and track. Fig. 3 is a sectional end elevation taken through the line *x x*, Fig. 2. Fig. 4 is a sectional end elevation taken through the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish combined elevators and carriers for unloading hay and depositing it in the mow, for loading and unloading vessels and cars, and for other uses.

A represents a frame, which may be the frame of a barn or other building, or a frame erected expressly for the machine. To the rafters B of the frame A, or to other suitable parts of the said frame A, are attached short cross-bars C, to the ends of which are halved the upper ends of the hangers D. To the inner sides of the lower ends of the hangers D are attached the rails E, that form the track for the carriage.

By this construction the shoulders of the cross-bars C and hangers D will strengthen the hangers D against the outward strain upon the rails E, and will thus hold the said rails E from spreading. The rails E are placed at such a distance apart as to receive the carriage F between them, so that the said carriage cannot run off the track.

To the rear end of the carriage F is attached an axle, G, the wheels H of which roll along the upper sides of the rails E.

To the forward end of the carriage F is attached a cross-bar, I, the end parts of which rest and slide upon the upper sides of the rails E, so that the friction thus produced may prevent the carriage F, when unlocked, from starting off quickly and moving faster than the hoisting-rope, which inequality of movement would allow the load to drop down by the sagging of the part of the said hoisting-rope that supports the said load.

To the rear end of the carriage F is attached the end of a rope, J, which passes over a pulley, K, suspended from the end cross-bar, C, or other suitable support.

To the other end of the rope J is attached a weight, L, sufficiently heavy to overbalance the carriage F and draw it back when its load has been discharged.

To the rear end of the carriage F is attached the hoisting-rope M, which passes down through the rear end of a longitudinal slot in the carriage F, around the pulley N, to which the load is to be attached, up through the forward end of the slot in the carriage F, over a pulley, O, pivoted in the forward part of the said slot, over a guide-pulley, P, pivoted to a support at the other end of the frame A, and is led thence to the place where the power is to be applied.

Q is a right-angled bar, which is pivoted at the end of its horizontal arm in the forward part of the slot in the carriage F. The other arm of the bar Q passes down through the middle part of the slot in the carriage F, and has a curved cross-head, R, formed upon or attached to its end, and placed longitudinally with the said bar Q. Upon the bar Q, at its angle, is formed, or to it is attached, a cross-head, S, the ends of which project through notches T in the carriage F, which notches T are made sufficiently deep to allow the ends of the said cross-head S to drop into notches U in the upper sides of the rails E, to hold the carriage stationary when over the place whence the load is to be raised.

With this construction, when the hoisting-rope M is drawn upon, the pulley N and its attached load are raised vertically until the said pulley comes in contact with the cross-head R and raises the bar Q, raising the cross-head S out of the notches U, and releasing the carriage F. The carriage F then moves forward until it is over the place where the load is to be deposited, when the load may be discharged by disengaging its connection with the pulley N; or the load may be lowered into place by slackening the rope M. As soon as the weight of the load is removed from the carriage F the said carriage is drawn back to its former position by the weight L, where it

is held in place by the ends of the cross-head S dropping into the notches U.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a combined elevator and carrier, the combination, with the carriage F, of the lock and trip right-angled bar Q, having a curved cross-head, R, at its lower end for the pulley N, that carries the load, to strike against, and a cross-head, S, at its angle, to engage with notches U in the rails E, and hold the carriage in place, substantially as herein shown and described.

ALLEN AUGUSTUS MUNSON.

Witnesses:
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REUBEN M. MUNSON.