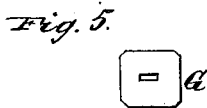
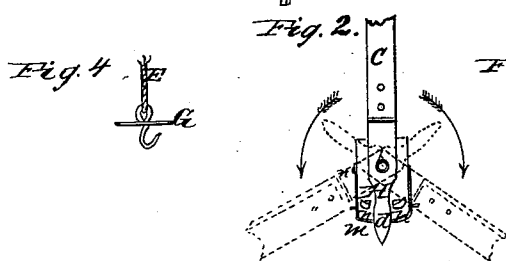
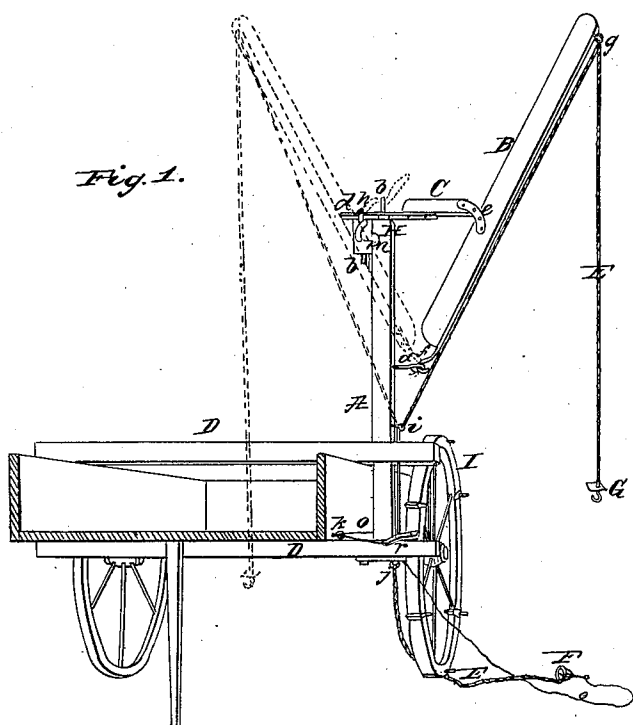
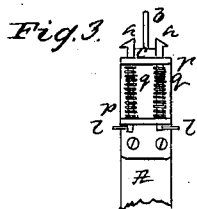


A. W. Lozier,
Hay Elevator,
No 84,560. Patented Dec. 1, 1868.



Witnesses
Edw. C. Osborn



Inventor
Abraham W. Lozier

United States Patent Office.

ABRAHAM W. LOZIER, OF NEW YORK, N. Y.

Letters Patent No. 84,560, dated December 1, 1868.

IMPROVEMENT IN HAY-LOADERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ABRAHAM W. LOZIER, of the city, county, and State of New York, have invented a new and useful Improvement in Hay-Loaders; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being made to the drawings accompanying this specification, and the figures and letters of reference thereon.

Of the said drawings—

Figure 1 is a perspective view, representing the apparatus attached to a section of a hay-wagon, with the rack removed.

Figure 2 is a diagram of the movements of the swinging crane.

Figure 3 is a sectional view of the top part of the standard A, with the cover *m* removed, showing the construction of the catches *h*.

Figures 4 and 5 are views showing the construction of the hook-plate G, that is used in loading grain, &c., when tied in bundles.

Like parts are indicated by similar letters of reference in all the drawings.

My invention consists, first, in a novel arrangement of mechanism for operating the crane, whereby the same is made automatic or self-swinging; second, in the combination, with the crane, of the mechanism for raising the load; third, in an arrangement of means for elevating the load.

To enable others skilled in the art to construct and use my invention, I will describe the manner of constructing and operating it.

The frame which supports the crane, and secures the same to the wagon, is formed of two pieces, D D, bolted to the wagon-body, at about the centre thereof. The upper one is made with a square slot, in which the standard A fits, and the lower one with a mortise, in which the end of the standard is received.

On the upper end of the standard is secured a metal cap, H, on the top of which there is a circular plate, *c*, and a centre pin or pivot, *b*.

The spring-catches *h h* are secured to the side of the standard by passing through slots in the projections *p p*, screwed to the side of the same.

These catches are held up by the spiral springs *q q*, and are provided with handles *l l*, to enable them to be drawn down below the plate *d*.

To the crane B is attached an arm, C, by the hinges *e e*, screwed to the sides of the crane.

And on the under side of the arm G is secured the plate *d*, which turns on the pivot *b*, and is held between the catches *h h*.

The lower end of the crane is attached to the standard by the staple *a*, in which the hook *f* on the crane turns, the two forming a hinge of an eccentric character, the former, *a*, being inclined upwards to assist the motion of the latter in turning.

The hoist-rope E passes through the pulleys *g i j*, and is secured to the ring F, which is placed on the

pins of the drum-wheel I when the load is to be elevated.

The end of the rope is shown in fig. 1 as secured to the hook-plate G, but forks the load can also be attached to the rope in place of this plate, when it is desired to load the hay from cocks.

The construction and operation of the drum-wheel that is used to elevate the load are clearly set forth in the patent for hay-loading apparatus, granted me on the 23d of June, 1868, No. 79,135.

The hoist-rope is controlled by the stop *r* on the frame D, which grips the rope by pressing it against the side of the standard A.

The stop is operated by the cord *o*, as represented in fig. 1.

The manner in which the hook-plate G is constructed is plainly shown in figs. 4 and 5.

The crane is operated as follows:

The standard being placed in position in the frame D D, the arm B is attached thereto by placing the hook *f* in the staple *a*, and turning the arm C down so that the plate *d* can be placed on the pin *b*, and rest upon the circular plate *c*, and between the catches *h h*.

The crane is thus held in position to allow the load on the end of the rope to be raised to the top of the arm B, and is prevented from turning by the catches.

The operator, in bringing the load that has been elevated by the rope E to the end of the arm B, into position over the wagon, to be discharged, draws down one of the catches *h*, and causes the arm B, with its load, to swing around over the wagon, by pushing on the end of the plate *d* with but force enough to throw the arm B off of the centre. The arm B swings around automatically, and brings the load over the centre of the wagon, either front or rear, as may be desired by the operator.

The movements of the arm C in turning on the pivot *b* are plainly illustrated by the diagram, fig. 2.

When the left-hand catch is drawn down by the operator, the arm will turn in the direction of the blue arrow, and its position will correspond to that shown by the blue lines in the diagram, and also in fig. 1, while the withdrawal of the other catch would cause the arm to turn in the direction of the red arrow, when its position would correspond with the red lines.

When the crane is brought into place to receive another load, the plate *d*, in turning, strikes against the bevel formed on the top of the catch *h*, and forces the same down until it arrives in its position between the two catches, when the catch previously forced down is thrown again into place by the action of the spiral spring.

The construction of the hook G prevents it from becoming embedded in the grain that is being raised by the rope E, and enables the rope to be readily detached from the load.

Having thus fully described my invention,

What I claim, is—

1. The combination, with the upright standard A, of the arm B, connecting-arm C, and the hook F, the whole constructed and operating substantially as described.

2. The combination, with the upright standard A and arm B, provided with the arm C, of the mechanism for holding the arm in place on, and releasing it from the upright while loading and discharging the load, substantially as described and specified.

3. The combination, with the upright, A, and the arms, constructed substantially as described, of the pin-clevis wheel, for elevating the load, substantially as described and specified.

ABRAHAM W. LOZIER.

Witnesses:

C. A. DURGIN,
EDWARD E. OSBORN.