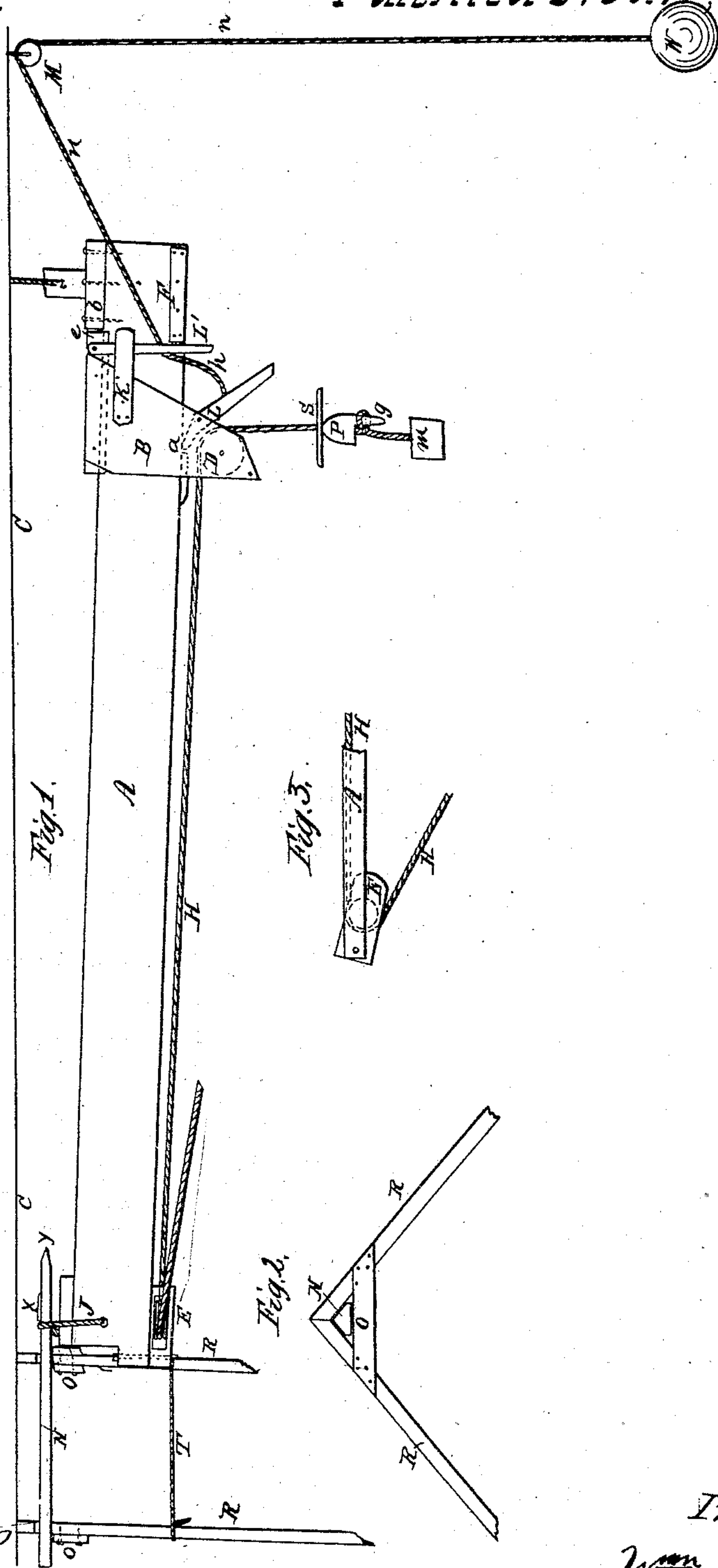


W. Louden,
Hay Elevator.

N^o 84,127.

Patented Nov. 17, 1868.



Witnesses,
D. G. Higley
S. M. Poling

Inventor
Wm. Louden

United States Patent Office.

WILLIAM LOUDEN, OF CEDAR TOWNSHIP, IOWA.

Letters Patent No. 84,127, dated November 17, 1868.

ELEVATOR.

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, WILLIAM LOUDEN, of the township of Cedar, county of Jefferson, State of Iowa, Fairfield being my post office, have invented a new and useful Improvement in Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, in which—

Figure 1 is an elevation.

Figures 2 and 3 refer to parts to be explained hereafter.

Similar letters of reference indicate corresponding parts.

This invention relates to certain improvements of the patents issued to me September 24, 1867, and March 17, 1868, numbered, respectively, 69,107 and 75,686.

To enable those skilled in the art to make and use my improvements, I will proceed to describe its construction and operation.

A is an elevated track or railway attached to the ridge-pole C, provided with a carrier, B, hoisting-rope H, &c., &c., substantially as set forth in the above-mentioned patents.

My first improvement consists in an improved method of attaching the track or railway to the ridge-pole, whereby the track can be suspended in its proper position without ascending into the peak of the barn. The bar N is placed in the angle where the rafters R join, so that its ends will project beyond the rafter or rafters to which it is attached. It is held in this position by pieces O fastened to the rafters below it, or by other suitable means. Fig. 2 shows a cross-section of the arrangement. The rope J, which sustains the track, is tied so as to form a loop or ring. This loop is passed over the projecting point Y of the bar N until it passes beyond the projection X. If necessary, a guy-rope, T, may be used. This arrangement can be used to sustain either one or both ends.

My second improvement consists in an improved method of attaching the horizontal pulley E to the track, whereby a common pulley-block can be used, instead of one made specially for the purpose, as set forth in my patent of September 24, 1867. It is attached directly beneath the track, by means of a single bolt passing up through a portion of the track, as shown in the drawing. By this means the pulley is free to follow the line of draught, as shown at fig. 3, and when not required in this position, can be used as an ordinary pulley-block. Fig. 3 shows a top view of the arrangement.

My third improvement consists in providing the adjustable stop P with a projecting pin, g, around which the hoisting-rope is fastened, as shown in the drawing. This projecting point may be made in the shape of a hook, so as to prevent the stop P from slipping in either direction.

My fourth improvement relates to the apparatus for

holding the carrier stationary while the load is being elevated, and it consists in so arranging the latch that it may also be used as a brake to prevent the hoisting-rope from passing over the pulley D while the carrier is traversing the track or railway. It also consists of an improved method of releasing the latch, and of preventing the stop b from being knocked loose by the return-motion of the carrier.

L is a lever, pivoted between the side pieces of the carrier B, (see patent No. 75,686, dated March 17, 1868,) so that the overbalancing weight of its outer end will cause its inner end to press against the lower edge of the track or railway A, and when its outer end is elevated, its inner end will press against the hoisting-rope H, which passes over the pulley D.

The lower edge of the track A is fitted with a notch or catch, a, into or behind which the inner end of the lever L fits, and prevents the carrier from moving along the track.

Another lever, L', is pivoted to the slide e of the carrier, or to any suitable part of the carrier.

The rope u, which bears the weight W, is attached to this lever, near its centre.

A stop or block, F, is attached to the side of the track.

K is a keeper or guide, attached to the side of the carrier, to prevent the lateral play of the lever L'.

The levers L L' are connected with each other by means of a rope, chain, or other connecting-devices, which will allow the lever L sufficient play for the purpose hereinafter stated.

The operation is as follows:

The carrier is back on the track far enough to allow the slide e and stop b to be in contact, the free end of the lever L' to rest against the stop F, and the inner end of the lever L to engage the notch or catch a. The load m being elevated by power applied to the hoisting-rope, the one edge of the tilting-plate S (see patent No. 75,686) comes in contact with the lower part of the carrier, and the other edge comes in contact with the outer end of the lever L. The pressure of the plate S against the outer end of the lever L elevates it, and releases its inner end from the notch or catch a, which unlatches the carrier and allows it to move along the track or railway.

As soon as the lever L' is moved away from the stop F, the power of the weight W, applied through the rope u, draws the free end of the lever L' back. The levers L L' being connected, and the free end of the lever L' being no longer sustained, the power of the weight W is exerted upon the lever L, which causes its outer end to be elevated until its inner end comes in contact with the hoisting-rope H, which passes over the pulley D. Its continued pressure forms a brake, thus binding the hoisting-rope against the pulley D, and prevents it from passing either backward or forward. As soon as the load is deposited, and the elevating-power withdrawn,

the weight *W* draws the carrier back, when the free end of the lever *L'* comes in contact with the stop *F*. A part of the power of the weight is then sustained by the block or stop *F*, and the remainder is exerted upon the carrier. This remaining power draws the carrier back until the end of the slide *e* comes in contact with the stop *b*. Thus the levers *L L'* are brought closer together, and the rope or chain *h*, which connects them, is slackened, so as to allow the lever *L* sufficient play for its inner end to drop into the notch or catch *a*, when it is ready to repeat the operation.

The advantages of this arrangement are many and important.

First, it will be observed that the hoisting-rope does not pass through any portion of the latching-apparatus. By this means the load can be taken from a point at either side, and as high as the track itself, without the hoisting-rope rubbing against the latch, and unlatching it before the plate or stop *S* comes in contact with the latch.

Second, the free end of the lever *L'* coming in contact with the stop *F* before the slide *e* comes against the stops *b*, divides the power of the descending weight between the stops *F* and *b*, thus preventing the stop *b* from being knocked loose by the force of the descending weight.

Third, the arrangement of the levers *L L'*, stop *F*, and weight *W*, enables me to use a single part for both latch and brake, so that it will perform the office of a latch while the load is being elevated, and the office of a brake while the carrier is traversing the track or railway.

Lastly, the entire device is simple, effective, durable, and inexpensive.

What I claim as new, and desire to secure by Letters Patent, is—

1. The within-described arrangement of the bar *N*, for suspending the track or railway *A*, substantially as set forth.

2. The manner of attaching the pulley *E* to the track or railway *A*, substantially as shown and described.

3. The adjustable stop *P*, when provided with a projecting pin or hook, around which the hoisting-rope is fastened, substantially as shown.

4. The lever *L*, so arranged and operated that it can be used both as a latch and as a brake, substantially as shown and set forth.

5. The combination of the levers *L L'*, having a flexible or sliding connection, substantially as and for the purpose set forth.

6. The levers *L L'*, having a flexible connection, in combination with a weight for producing, and a stop, *F*, for releasing the pressure on the hoisting-rope, substantially as and for the purpose set forth.

7. So arranging the latching-apparatus that the hoisting-rope will pass by, instead of through it or around it, and the latch be released by one edge of the plate *S* coming in contact with it, substantially as set forth.

8. The guide or keeper *K*, for the purpose specified.

WILLIAM LOUDEN.

Witnesses:

D. G. HIGBY,
S. M. BOLING.