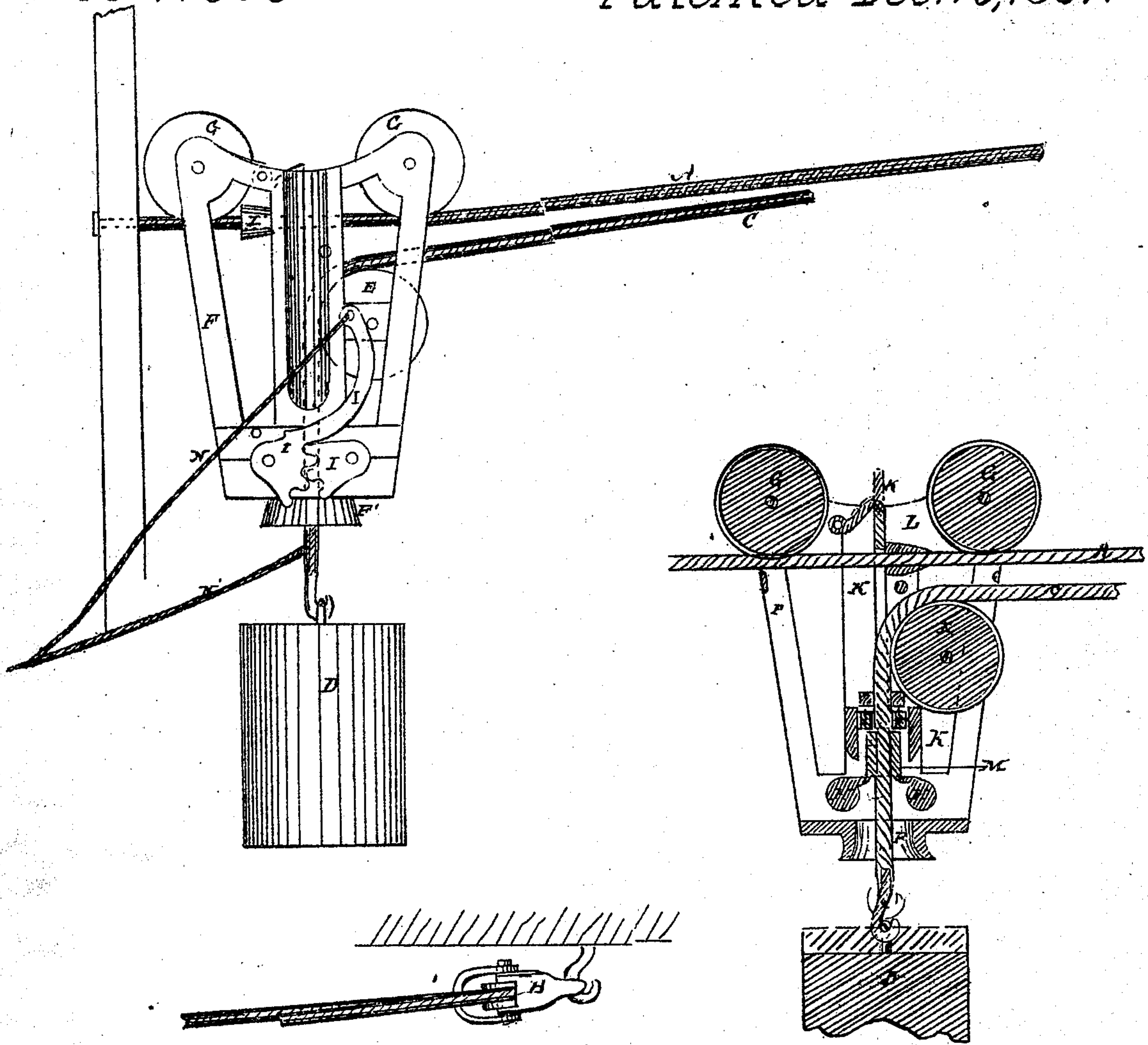


E. H. Carpenter.

Hay-Elevator.

Nº 71850

Patented Dec. 10, 1867.



Ephraim H. Carpenter
Inventor

by
D. S. Hollaway & Co
his Attys.

Witnesses

J. Blasen
Lawrence Murphy

United States Patent Office.

EPHRAIM H. CARPENTER, OF DEXTER, MICHIGAN.

Letters Patent No. 71,850, dated December 10, 1867.

IMPROVEMENT IN HAY-ELEVATORS.

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, EPHRAIM H. CARPENTER, of Dexter, in the county of Washtenaw, and State of Michigan, have invented a new and useful Improvement in Hay-Elevators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation, and

Figure 2 is a central vertical section.

The same letters are employed in both figures in the indication of identical parts.

My improvements consist in alterations made in the mode of actuating the detaching-mechanism, as set forth in my patent of February 20, 1866, the character of which changes is plainly indicated by a comparison of that patent with the following description of my present improved apparatus.

I have called this machinery a hay-elevator; but it is equally adaptable to all kinds of work of a similar character, as, for instance, the loading of cargoes into vessels or warehouses, and my claims will extend to the mechanism irrespective of the particular use to which it may be applied. The following description will enable any person skilled in the art to construct and operate the same.

A is a cable, stretched tautly over the point where the load is to be elevated, and extending over the point where it is to be deposited. One end of the cable is represented as made fast to the block B, over the sheave of which a rope, C, is carried. One end, passing over the sheave E, supports the weight to be raised, D, while the other is carried over such snatch-blocks as may be necessary to give it the proper direction to receive most conveniently the draught by which it is to be operated. The remainder of the hoisting-mechanism, including also the sheave E, already mentioned, is placed in a frame, F, made of convenient form to receive the different parts. The frame is carried under the cable A, suspended from the journals of the grooved wheels G running upon the cable. The lower part of the frame has, in the middle, a funnel-formed mouth, opening and widening downwards, through which the rope C passes after leaving the sheave E. Immediately above the opening, at F', are two falling doors or valves H, turning upon pivots, and shutting together around the rope C. These valves are actuated by the cogged cams I and lever I', by which they may be raised, closing by gravity. Immediately above the valves H is a vertical slotted catch, K, which is formed, in the case shown, as a rectangular frame, sliding in suitable grooves in the frame F up and down. The rope C passes through a pipe in the lower side of the catch, into the open part of the same, and thence over the pulley E. The catch extends over and it encloses the cable A, upon which it rests, when not raised, in the manner to be explained. A conical stop, L, is placed on the cable A, immediately over the place whence the load is to be raised. The point of the stop is toward the place to which the load is to be conveyed. When receiving the load, the catch rests against the base of the stop, and prevents the rope C from drawing the frame forward.

On the rope is placed a collar, M, which may be adjustable. This collar is small enough to pass through the opening F', and between the valves H, which will rise as it is carried past them, immediately closing by gravity after the collar has passed, thus preventing the fall of the load until the valves are raised by the rope, it acting on the lever I' and cams I. When the collar has passed through the valves, it immediately strikes against the bottom of the catch K, throwing it up, and disengaging it from the stop L. The force of the draught has heretofore been expended in raising the load; but, the frame F being released when the catch K is raised above the stop, the force of traction now will draw the frame and load along the cable A. When the load is over the place where it is to be deposited by raising the valves H, it may be lowered by releasing the rope C. Two ropes, N and N', may be used, or they may be so tied that they will answer both the purpose of operating the valves H and drawing back the frame to take up another load.

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

1. In combination with the cable A, frame F, wheels G, sheave E, and rope C, the disengaging device, consisting of a collar, M, stop, L, and vertical catch K, enclosing the cable A and rope C, and operated substantially as described.

2. The combination of the frame F, rope C, collar M, stop L, catch K, and valves H, cams I, and lever I', said parts being constructed and the whole arranged substantially as set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

E. H. CARPENTER.

Witnesses:

D. P. FOLLOWAY,

JOHN S. HOLLINGSHEAD.