

2 Sheets, Sheet 1.

W. Murray,

Elevator

No 71,043.

Patented Nov. 19, 1867.

Fig. 1.

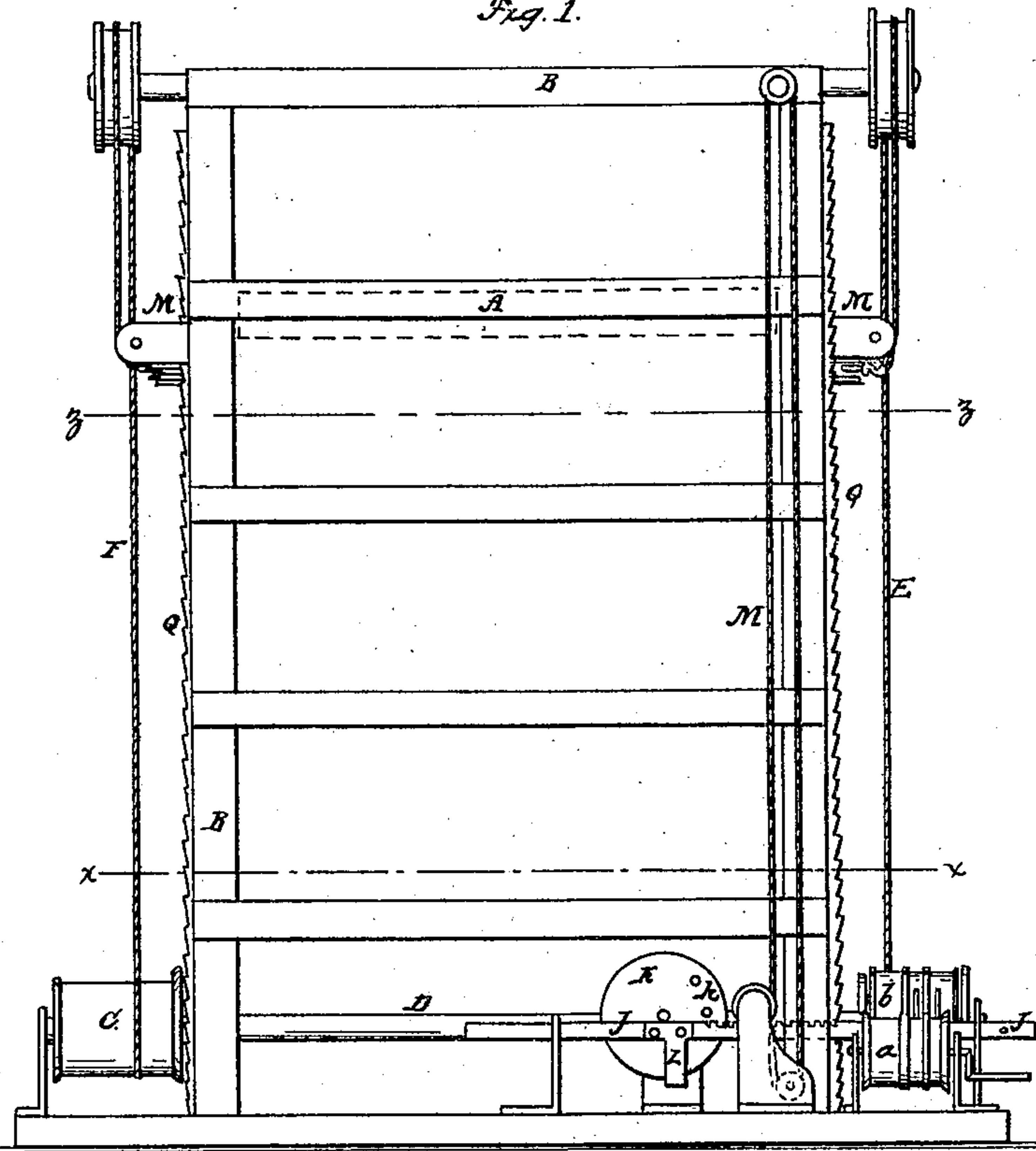
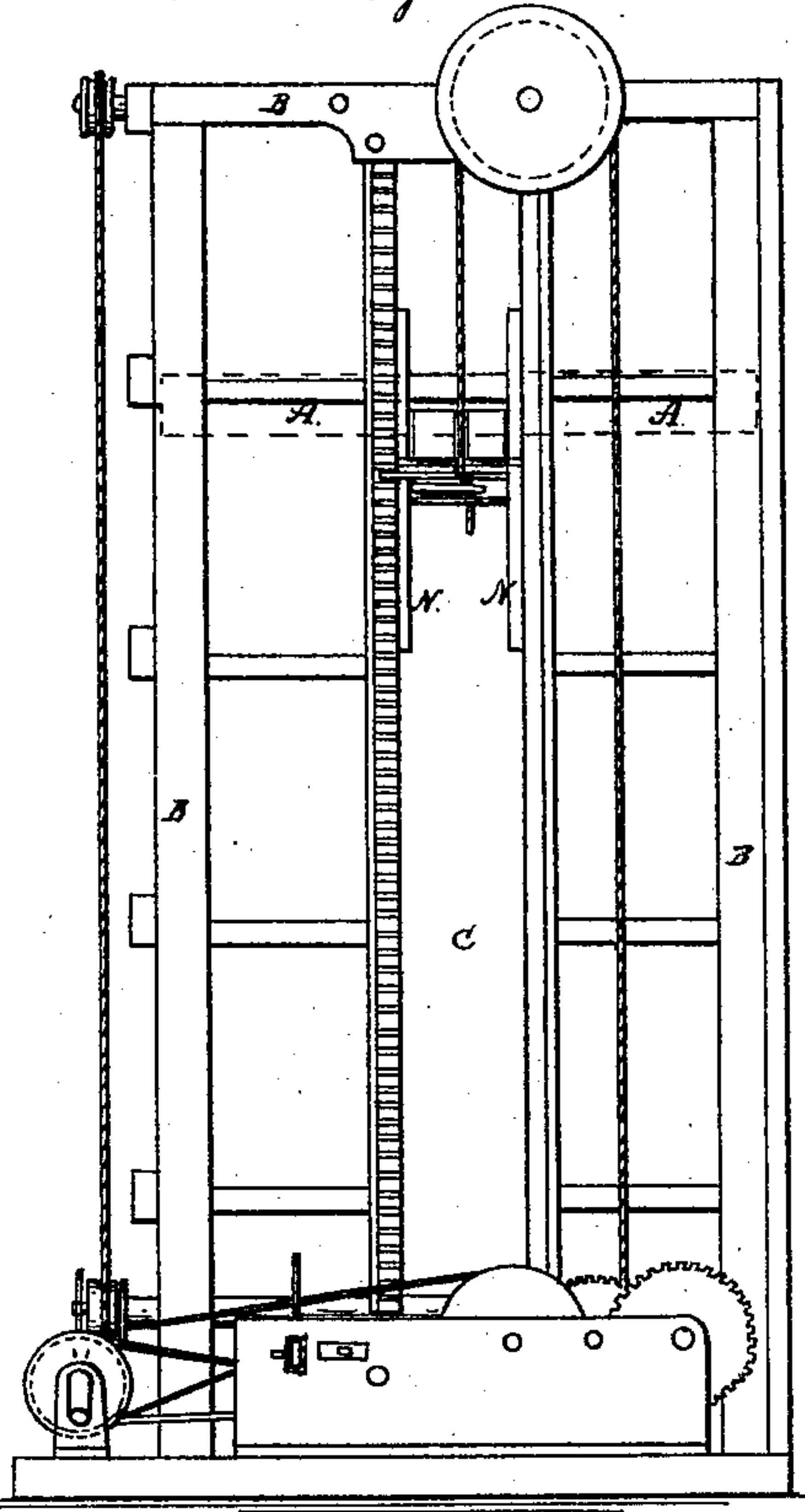


Fig. 2.



Attest:

Inventor:

J. H. Herthel.  
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Fig. 3. Patented Nov. 19, 1867.

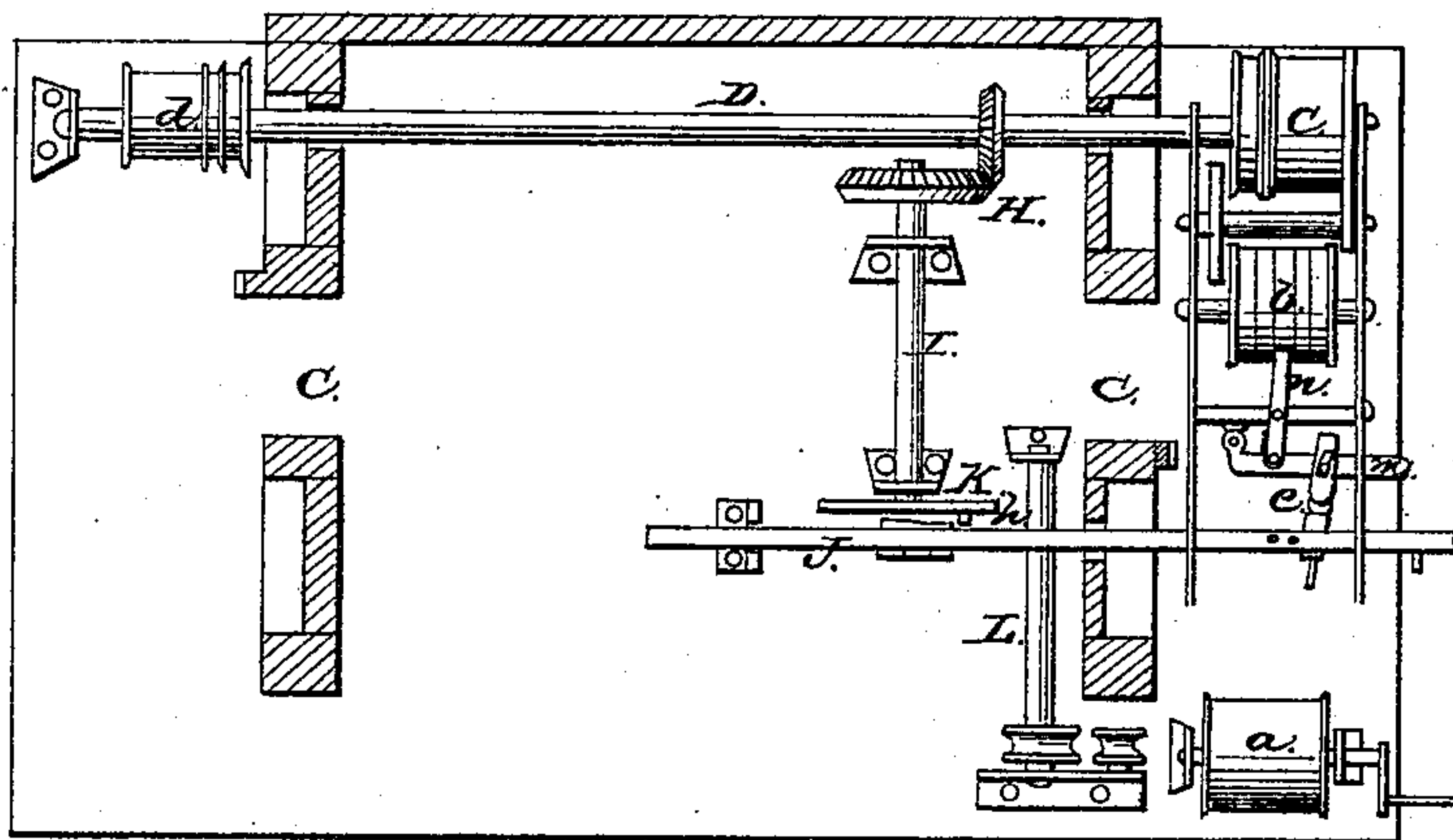
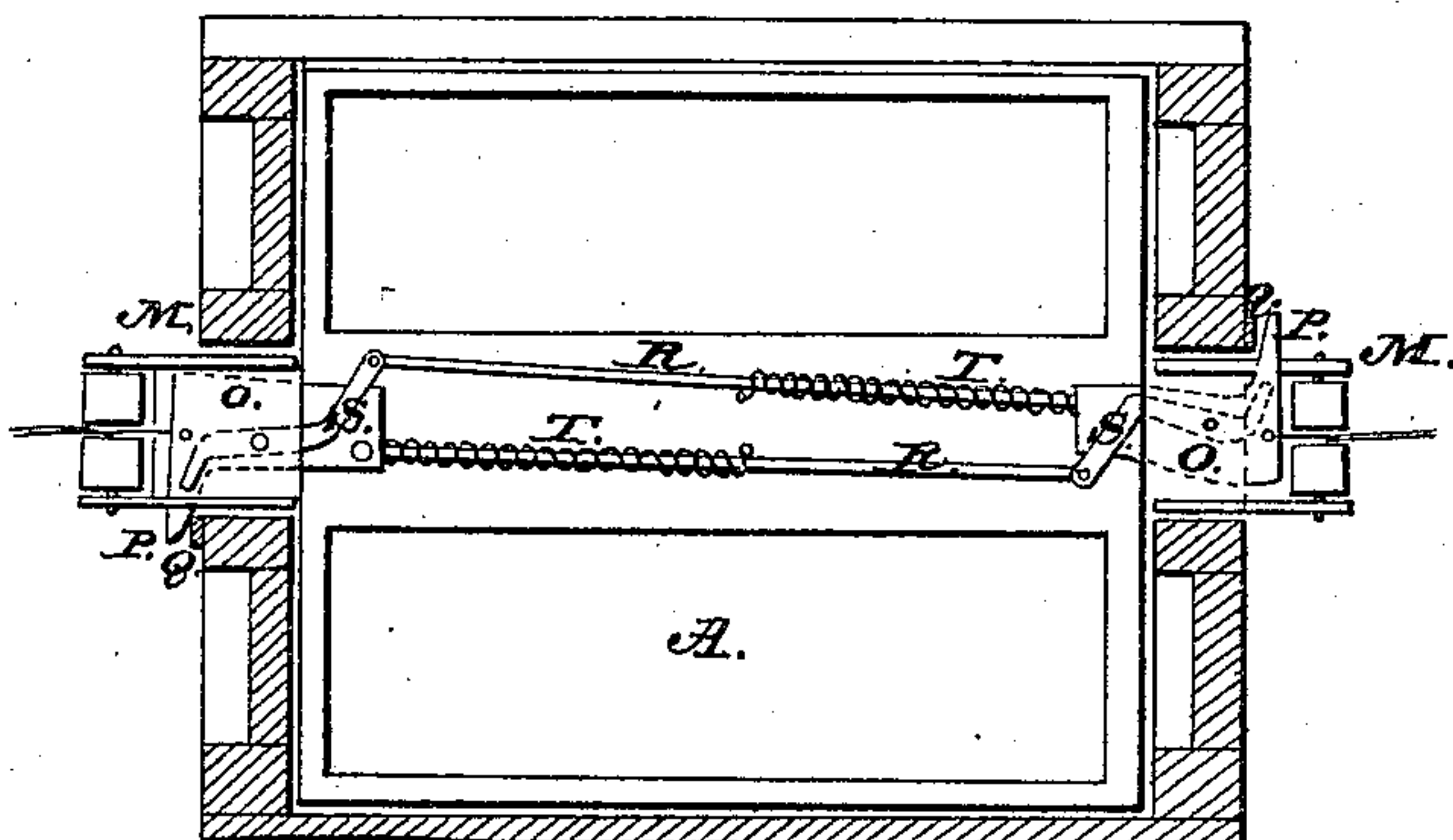


Fig. 4.



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J. H. Hertel.  
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# United States Patent Office.

WILLIAM MURRAY, OF CHICAGO, ILLINOIS.

Letters Patent No. 71,043, dated November 19, 1867.

## IMPROVEMENT IN HOISTING MACHINE.

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 MURRAY, of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful Improved Hoisting Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form a part of this specification, and in which—

Figure 1 represents a side elevation of my machine,

Figure 2 an end elevation,

Figure 3 a horizontal sectional view at *x*, and

Figure 4 a horizontal sectional view at *y*, showing the bottom of the platform A.

The nature of my invention consists in a novel device for throwing the machinery out of gear automatically as the hoisting-platform reaches the top or bottom of the frame. It also consists in a novel device by which the hoisting-platform is kept from falling if either or both of the hoisting-ropes break; and it further consists in a novel frame for a hoisting machine.

To enable those skilled in the art to manufacture and use my invention, I will proceed to describe the same with particularity.

The same letters of reference represent the corresponding parts in the different figures.

There is a strong frame, B, made of suitable-sized timber, which extends up through the building. Inside of said frame the movable platform A is placed, which moves up and down to carry articles from one story to another of a building, as hereinafter described. The peculiarity of the frame B consists in its being made with the openings C extending the entire length of each end of the frame, for the purpose of guiding and controlling the platform, as hereafter described. The machinery for hoisting is placed at the bottom of the frame, and is substantially the same as now in use. *a* is the driving-drum, which carries two belts, one crossed and the other not, so as to reverse the motion communicated as the belts are changed; and said belts run on to the drum *b*, which is composed of two loose and one tight pulley. The machine is thrown out of gear by throwing the bands on to the loose pulleys, and whether the platform is raised or lowered depends upon which band is thrown on to the tight pulley. The drum *b* is geared so as to drive the shaft D, on which are rigidly secured the drums *c* and *d*. The chains or ropes E and F have one end attached to the drums *c* and *d*, from which they extend over the pulleys *e* and *f*, and have their other ends attached to the device under the platform, so as to raise and lower the platform as desired. There is bevel-gear H which drives the shaft I from the shaft D, and to the shaft I the wheel or disk K is attached, which has pins *h* so attached to it as to strike the projection *i* and slide the bar J to which projection *i* is attached. These pins are so arranged in the disk K that they slide the bar J and throw the machine out of gear just as the platform, in being raised, reaches the top of the frame, and again as the platform, in being lowered, reaches the floor. There is also a shaft, L, with a cog-wheel on it, which meshes into cogs on the bar J, and, by turning said shaft by pulling on the chain or rope M which passes around a pulley on the shaft L, and around the pulleys *j* and *k* at the top and bottom of the frame, so that it can be reached from any part thereof, the bar J is slid, and the machine is thrown into or out of gear when the hoisting-platform is at any part of the frame, and the platform can be made to go up or down, when it is stopped at any intermediate point in the frame, depending upon which band you throw on to the tight pulley on the drum *b*. The bar J has also attached to it a jointed arm, *l*, which operates the lever *m* and applies the brake *n* to the drum *b* when the bands are thrown on to the loose pulleys. This brake serves to stop the machinery and hold the platform, when loaded, at any part of the frame. There is a block, M, rigidly attached to each end of the platform A, which extends through the openings C in the frame, as shown in figs. 1 and 4. The pieces N are firmly attached to the blocks M, and extend above and below the same, being suitably braced, if necessary, so as to prevent the platform from tipping when a heavier weight is placed on one side than on the other. The hoisting-ropes E and F pass over pulleys in the ends of the blocks M, and are attached to the plates O, said plates being so arranged beneath the blocks M that they will slide out sufficiently far to cause the projection P of said plate to pass the rack Q. There is a rod, R, attached to the inner end of the plate O, which extends across beneath the platform, and is attached to the end of the bent lever S. There is also a spiral spring, T, or other suitable spring, attached to the rod R or plate O in such a way as to draw continually upon



the plate. By this arrangement the platform is kept from falling if either or both of the hoisting-ropes break, for, as soon as one of the ropes breaks, the plate O is drawn back by the spring T, and the arm P catches in the notches of the rack Q, and the same rod R operates the bent lever S and throws one end of it on to the rack Q on the other side of the frame. The same device is attached to or connected with each of the hoisting-ropes, so that if either of the ropes breaks the platform is sustained at both ends, as above described.

The operation of my machine is substantially the same as machines now in use in hoisting goods and heavy articles in stores and warehouses, excepting I obviate all danger of any accident happening on account of the operator not attending to the machine, as the platform reaches the upper floor when it goes up or the lower floor when it comes down. Also the danger of the platform falling is done away with, and by a simple construction of the frame the platform is readily reached by the hoisting-ropes and kept horizontal.

Having thus fully described the construction and operation of my hoisting machine, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the shaft I, the disk K, and bar J in a hoisting machine, when arranged and operating substantially as and for the purpose set forth.
2. The combination of the platform A, provided with the blocks M and the frame B, when constructed and operated substantially as described.
3. In combination with the above, the pieces N, for the purpose of keeping the platform horizontal, substantially as specified.
4. I claim, in combination with the platform A and racks Q, the plates O, rods R, and levers S, when arranged and operating substantially as and for the purposes herein set forth and described.

WILLIAM MURRAY.

Witnesses:

L. L. COBURN,  
W. E. MARRS.