

C. R. Foreman,

Elevator.

No. 107,028.

Patented Sep. 6, 1870

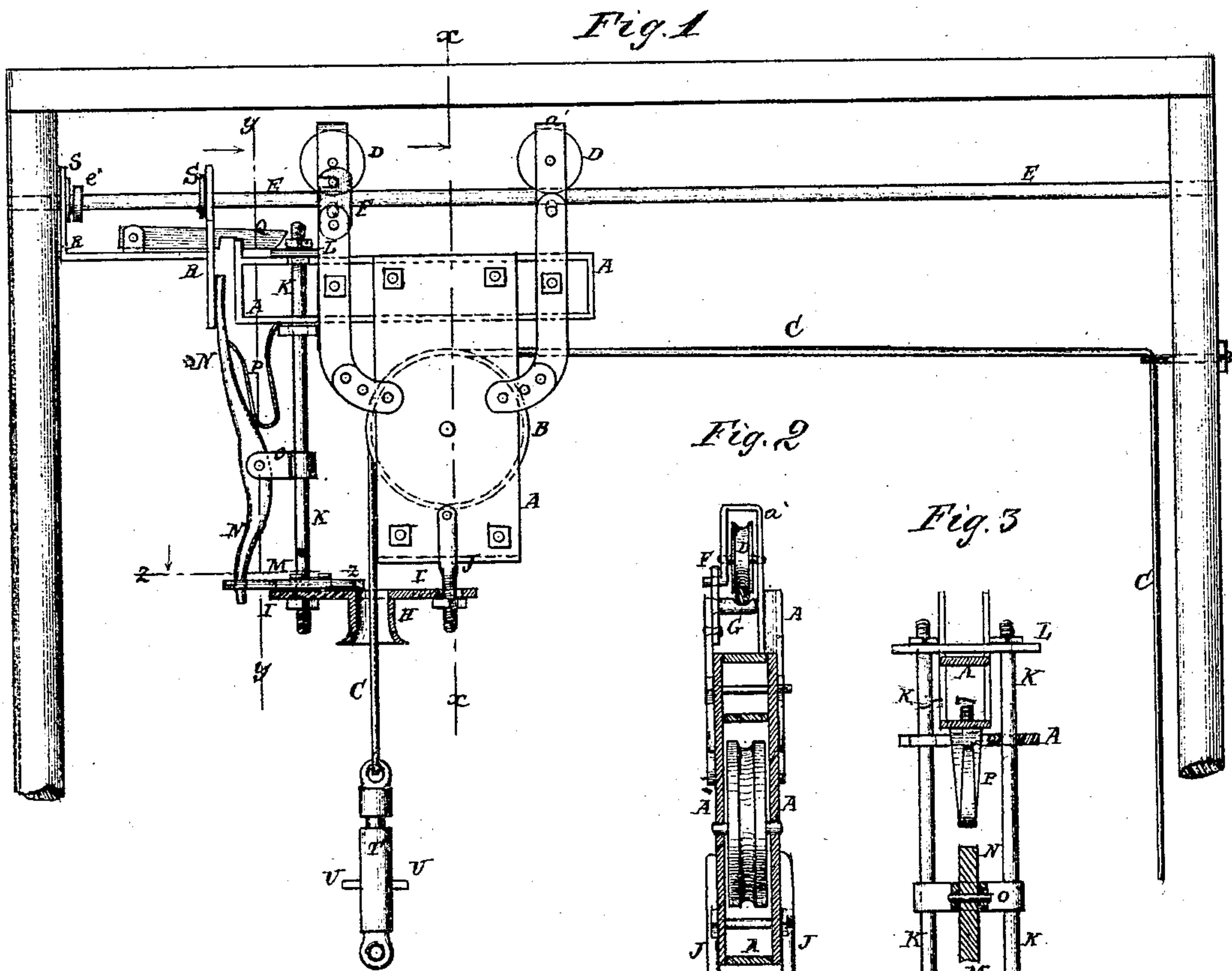


Fig. 2

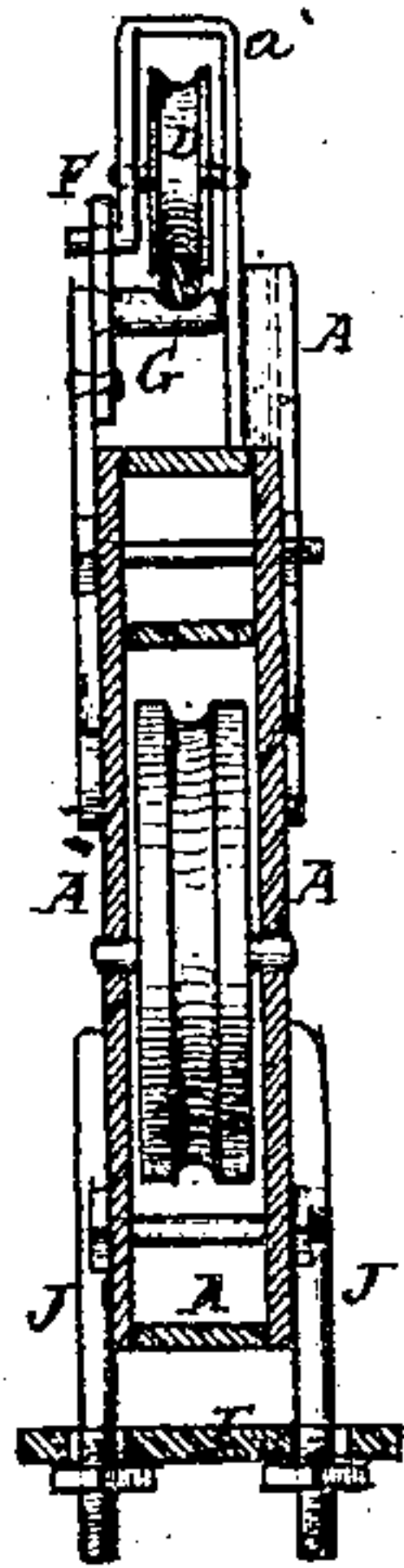


Fig. 3

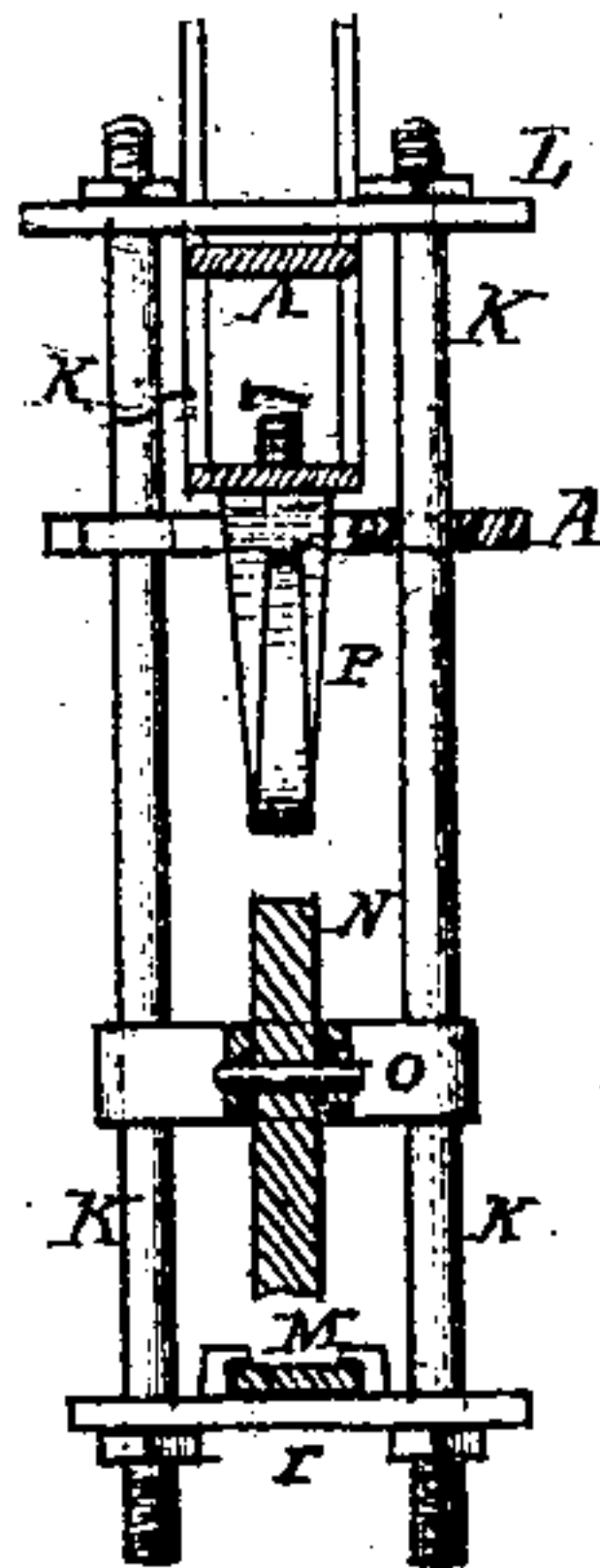


Fig. 5

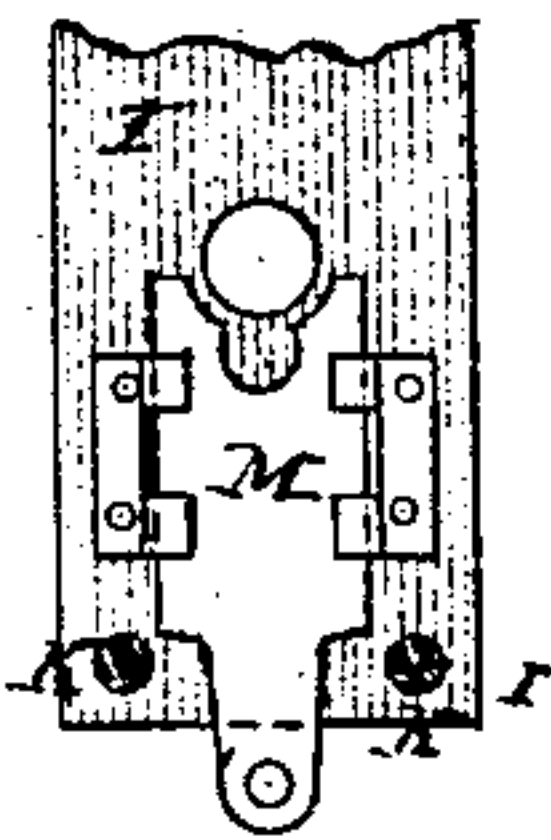
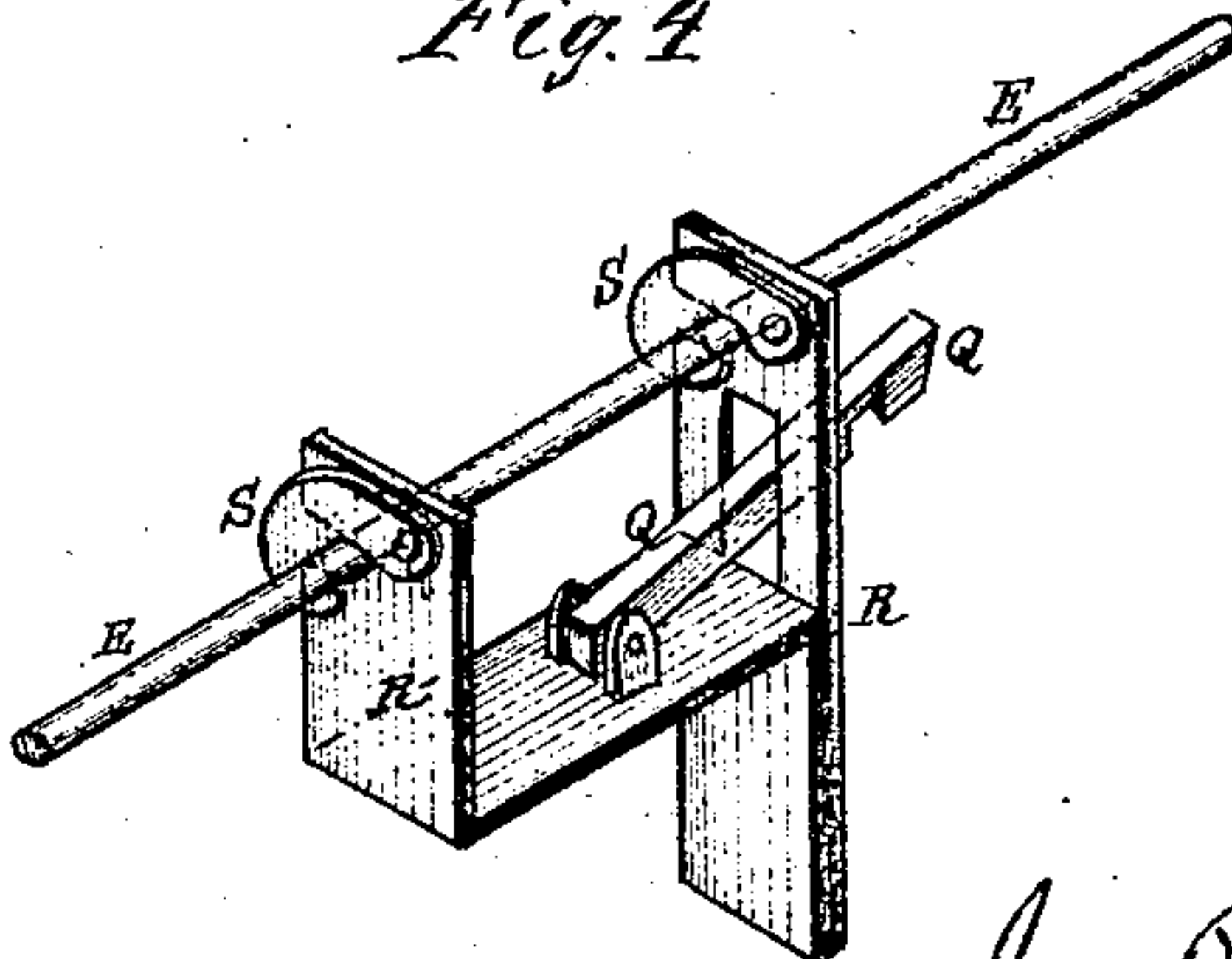


Fig. 4



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United States Patent Office.

CHARLES R. FOREMAN, OF WEST BRANCH, NEW YORK.

Letters Patent No. 107,028, dated September 6, 1870.

IMPROVEMENT IN 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, CHARLES R. FOREMAN, of West Branch, in the county of Oneida and State of New York, have invented a new and useful Improvement in Steadfast and Traveling Automatic Hay-Fork Pulley; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side view of my improved machine, part being broken away to show the construction.

Figure 2 is a detail vertical section of the same, taken through the line *x x* of fig. 1.

Figure 3 is a detail vertical section of the same, taken through the line *y y*, fig. 1.

Figure 4 is a perspective view of the catch and its pivoted frame.

Figure 5 is a detail sectional view, taken through the line *z z*, fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved device for carrying a loaded hay-fork or other weight from the place where it is hoisted to the place where it is to be deposited, which shall be so constructed and arranged as to be held steadily in place until the fork or other weight has been raised, and which will then detach itself automatically and carry the said weight back to the place where it is to be deposited, and which shall be at the same time simple in construction and easily operated; and

It consists in the construction and combination of the various parts of the device, as hereinafter more fully described.

A is the main frame of the carriage, in the middle part of which is pivoted the grooved pulley B, around which the hoisting-rope C passes.

Upon the upper part of the frame A are formed two loops, *a'*, in which are pivoted two grooved pulleys or wheels, D, which roll along the wire or rod E as the carriage is drawn back and forth.

The loops *a'* are made open upon their alternate sides, as shown in figs. 1 and 2, so that the carriage may be conveniently placed upon and removed from the wire E when desired. This enables the carriage to be readily shifted from one to another of several rods or wires stretched in different parts of the barn, or moved from one barn to another, without its being necessary to slacken or take down the rod or wire E.

The carriage is kept in place upon the wire or rod E by hooks F, which are pivoted to the lower part of the open sides of the loops *a'*, and hook upon pins attached to the upper parts of the said loops *a'*.

The hooks F have pins G attached to them, which,

when the said hooks are hooked upon their catches, move up beneath the rod or wire E, so as to keep the wheels D in place upon the rod or wire E, however much the said carriage may be moved out of plumb laterally.

H is a short tube, through which the hoisting-rope C passes, and the lower end of which is made flaring, as shown in fig. 1.

The upper end of the tube H is securely attached to the plate I, one end of which is perforated to receive the arms J, to which it is adjustably secured by nuts, as shown in figs. 1 and 2.

The other end of the plate I is perforated, to receive the lower ends of the rods K, to which it is secured by nuts, as shown in figs. 1 and 3.

The rods K pass up through guide-holes in the frame A, and their upper ends are connected above the frame A by a cross-bar, L.

M is a plate, sliding in guides upon the upper side of the plate I, and the forward end of which is notched, as shown in fig. 5.

The rear end of the plate M is perforated, to receive the lower end of the lever N, which is pivoted to a support, O, attached to the rods K.

P is a spring connected with the rods K, and which presses against the upper end of the lever N.

Q is a catch pivoted to the frame R, and the forward or notched end of which projects in front of the said frame R.

The forward or projecting end of the catch Q is beveled off, as shown in fig. 1, so that, when the carriage is drawn back against the said catch-frame, the catch Q may catch upon the upwardly-projecting end of the end bar of the frame A.

The end bars or plates of the catch-frame R project upward, and are notched upon their side edges to receive the rod or wire E, to which they are secured by hooks S, covering the notches in the said bars.

The frame R is kept from being drawn forward upon the wire or rod E by a collar, *e'*, formed upon or attached to the said wire or rod E. This construction enables the catch-frame R to swing laterally as the frame A swings.

The lower end of the front end bar of the frame R projects downward, as shown in fig. 1, for the upper end of the lever N to strike against, to operate the said lever.

T is a cylindrical block, of such a size as to pass freely through the tube H, and upon the upper end of which is formed an eye for the attachment of the hoisting-rope C.

Upon the lower end of the block T is also formed an eye for the attachment of the hay-fork or other weight to be hoisted.

Around the block T, a little below its upper end, is

formed a neck to receive the notched forward end of the sliding plate M.

U is a pin, passing through the block T at such a distance below the neck formed upon the said block, that, when the said neck is in position to receive the sliding plate M, the projecting ends of the pin U may be resting against the lower end of the tube H.

The rope C, after passing over the pulley B, passes around guide-pulleys attached to the frame of the building, and is conducted down into proper position for the attachment of the draft. By this construction, as the loaded fork is raised by drawing upon the hoisting-rope B, the block T enters the tube H as the pin U strikes the lower end of the tube H, and raises the frame I K L, the cross-bar L raising the catch Q away from the frame A, releasing the carriage from the catch frame R, when the contraction of the rope C causes the frame A to spring away from the said frame R and traverse the wire or rod E, and usually without any further assistance from the draft.

At the instant the frame A springs away from the catch-frame R, the lever N is released, and the elasticity of the spring P operates the said lever to push the sliding plate M forward, so that its notched forward end may embrace the neck of the block T and support the fork or other weight until it has been carried to the place where it is to be deposited. Then, by operating the trip-rope, the hay is discharged.

The trip-rope I prefer to make long, one end being attached to the tripping device, and the other end to the carriage A, so that the same rope may be used for discharging the load and for drawing the carriage back to its place.

As the carriage is drawn back the catch Q catches upon the frame A. At the same time the upper end

of the lever N strikes against the front end bar of the catch-frame R, which operates the said lever and withdraws the notched sliding plate M from the neck of the block T, allowing the said block and its attached fork to descend for another load.

Having thus described my invention,

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

1. The combination of block T U, guide-tube H, plate I, arms J, bars or rods K, and cross-bar L, with the frame A of the carriage, and with the catch Q and catch-frame R, for the purpose of disengaging the said carriage from the said catch, substantially as herein shown and described.

2. The combination of the spring P, lever N, and sliding notched plate M with the block T U, plate I, rods K, and catch-frame R, for the purpose of supporting and releasing the fork or other work automatically, substantially as herein shown and described.

3. Detachably connecting and pivoting the carriage frame A to the wire or rod E by means of the open loops *a'*, grooved wheels D, hooks F, and pins G, substantially as herein shown and described and for the purpose set forth.

4. Detachably connecting and pivoting the catch-frame R to the wire or rod E by means of the notched end bars of said frame, the hooks S and collar *e'*, substantially as herein shown and described and for the purpose set forth.

The above specification of my invention signed by me this 27th day of January, 1870.

CHAS. R. FOREMAN.

Witnesses:

GEO. W. MABEE,
JAMES T. GRAHAM.