

(No Model.)

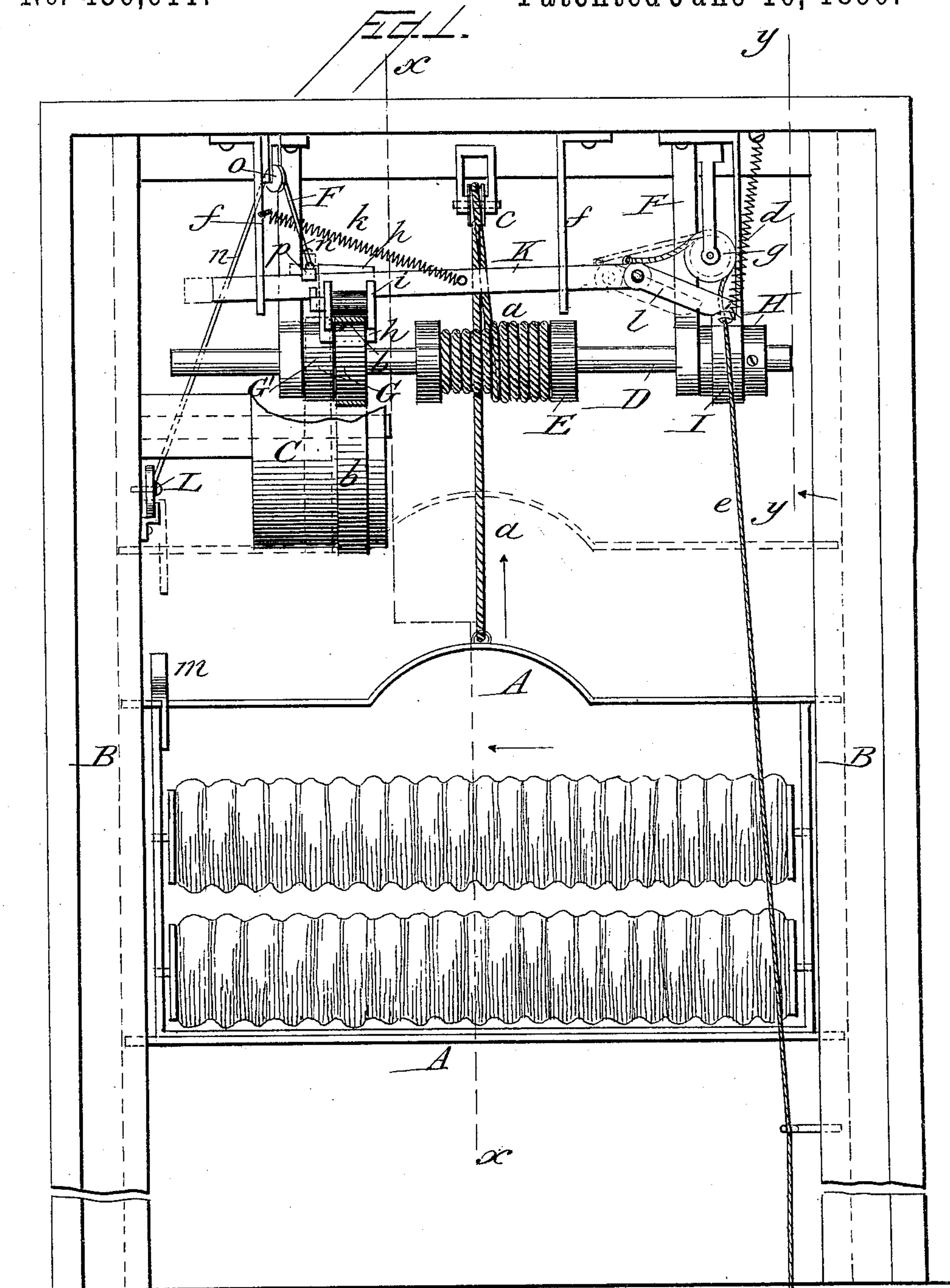
2 Sheets—Sheet 1.

M. H. FOGARTY & C. A. BUCHANAN.

ELEVATOR.

No. 430,011.

Patented June 10, 1890.



Attest:

H. H. Schott
Chas. E. Parker

Inventor:

Michael H. Fogarty
Charles A. Buchanan
John C. Parker, Atty.

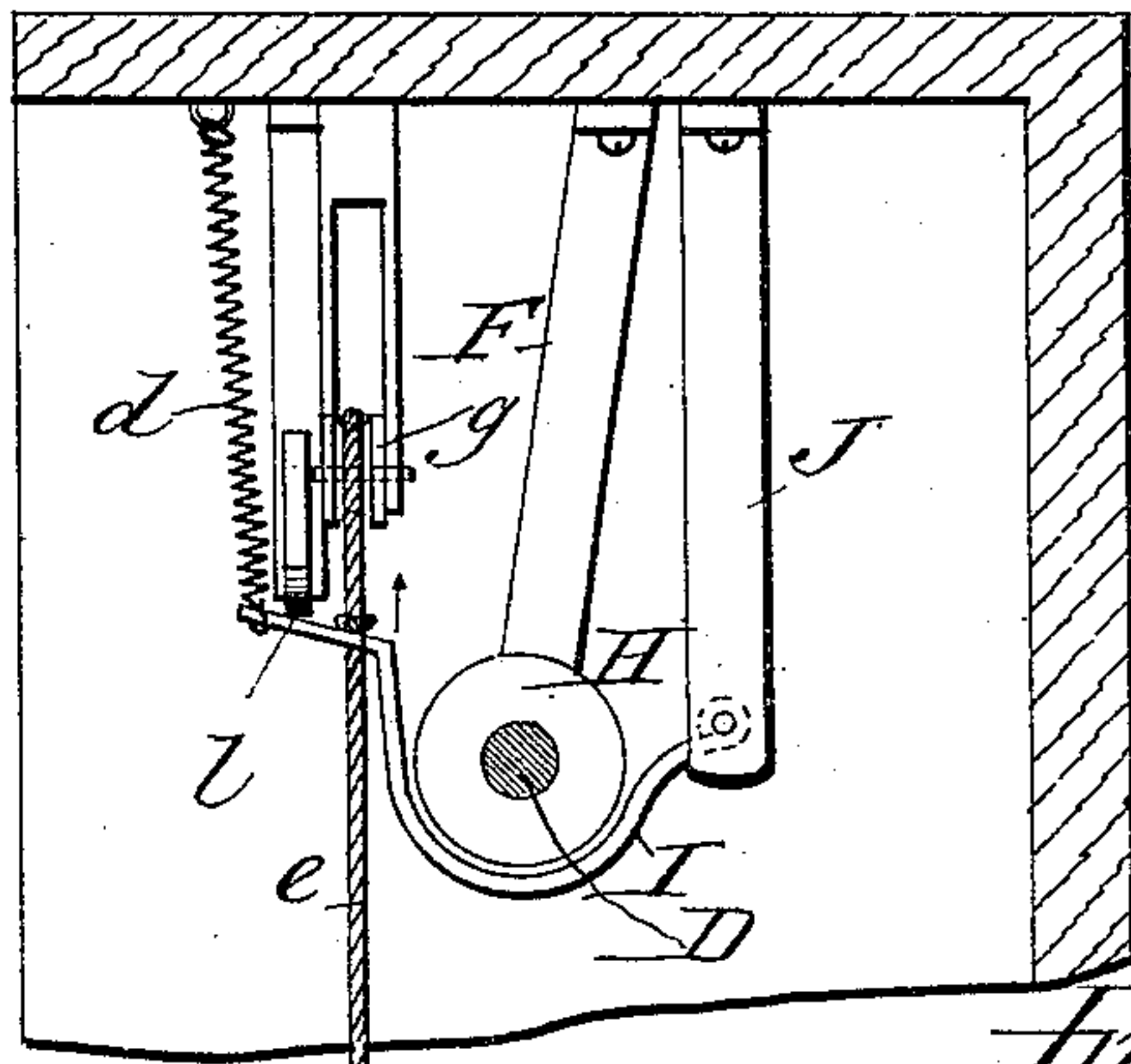
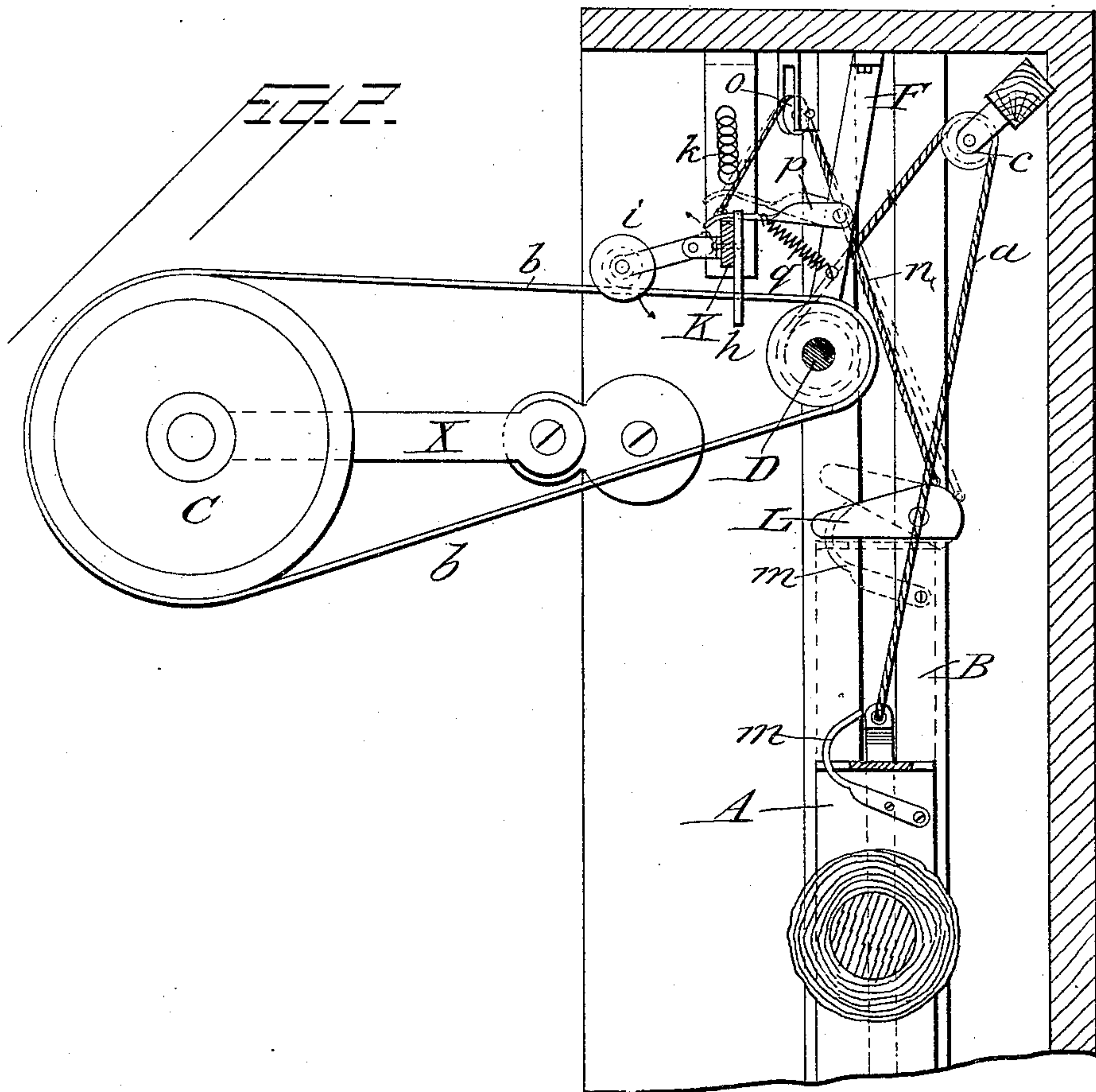
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per John E. Parker atty

UNITED STATES PATENT OFFICE.

MICHAEL H. FOGARTY AND CHARLES A. BUCHANAN, OF AMSTERDAM, NEW YORK, ASSIGNORS OF ONE-THIRD TO CHARLES D. AUSTIN, OF SAME PLACE.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 430,011, dated June 10, 1890.

Application filed August 22, 1889. Serial No. 321,562. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL H. FOGARTY and CHARLES A. BUCHANAN, citizens of the United States, residing at Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Elevators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an automatically-operating attachment, device, or mechanism for raising or lowering dumb-elevators, such as are ordinarily used in manufacturing establishments for the purpose of hoisting spools, bobbins, roping, yarn, cloth, or anything which it is desired to elevate or lower from one floor of the manufactory to another by hand-power; and the invention consists in the construction, arrangement, and combination of the various mechanical elements, substantially as will be hereinafter described and claimed.

In the accompanying drawings, illustrating our invention, Figure 1 is a front elevation of our improved mechanism for raising and lowering the elevator cage or car. Fig. 2 is a vertical section, in partial elevation, on the line $x x$ of Fig. 1. Fig. 3 is a partial sectional elevation on the line yy of Fig. 1, and showing particularly the brake device.

Similar letters of reference denote corresponding parts throughout all the different figures.

A denotes the general structure of any ordinary elevator cage or car to which our invention may be applicable, as it will be perceived that our invention may be used with all kinds of elevators varying widely in their structural peculiarities. The elevator A slides up and down between guides B B fixed in the frame-work of the structure with which the elevator is used.

D denotes a horizontal shaft journaled in the hangers F F, which are secured to some suitable part of the factory or other structure with which the elevator is used. On this shaft is the pulley, cylinder, or drum E, around which winds the rope a , one end of

which is attached to the elevator A. This rope passes around a pulley c , suitably carried by a box affixed to the factory at some point above the shaft D, as shown in the drawings. It will thus be perceived that the revolution of the shaft D will wind up or unwind the rope upon the drum E, and consequently elevate or lower the elevator cage or car A. On the shaft D are also secured the fast and loose pulleys G G' and the brake-pulley H. The shaft D is actuated by means of a belt b passing around a driving-pulley C and also around the fast and loose pulleys G G'. The driving-pulley C is carried in a frame X, which is adjustably mounted, so that its position may be varied as desired. (See Fig. 2.) The belt b is adapted to be shifted from the tight pulley G' to the loose pulley G and vice versa by means of automatically-operating devices, as will be hereinafter described as follows:

K denotes a horizontal bar adapted to reciprocate endwise. Said bar is carried loosely in slotted hangers $f f$, secured to some convenient part of the factory, as shown. On the bar K is a fork h and a flanged pulley i . The fork projects downward horizontally, so that the belt b may pass through it, while the flanged pulley, serving as a stop-motion, extends outward in the manner shown in Fig. 2, the frame supporting said pulley being pivoted so that the pulley may receive between its flanges the belt b and rest by gravity upon the top of said belt, so as to guide the same. Thus it will be seen that if the bar K reciprocates, the pulley i and the guide h will be carried along with it, and the belt b will be shifted from loose pulley G to fast pulley G'. A spring k , attached at one end to one of the hangers f and at the other end to the bar K, serves to keep said bar, and consequently the flanged pulley, in the position where the belt b will be passing over the loose pulley and serves to return said bar to the position just mentioned when under the action of other mechanism it has been moved out into the position where the belt b passes around the tight pulley. In Fig. 1 the belt b is shown upon the tight pulley, and hence the spring k is extended.

The right-hand end of the bar K, as shown in Fig. 1, is bent at a different angle from the main direction of the bar to form a sort of a latch *l*, although we are by no means confined to this structure, as it may vary.

I denotes a brake-shoe consisting of a curved strap covered inside with leather and adapted to press against the brake-pulley H, said strap being pivoted at one end to the downwardly-projecting hanger J, while to the other end of the strap I is attached a spring *d*, fastened to some fixed part. The spring *d* serves to keep the brake-strap I close against the pulley H, and thus prevent the shaft D from revolving. A rope *e* is attached to the other end of the strap I, near the point where the spring *d* is fastened thereto, said rope or chain extending downward alongside the way B, so as to be in convenient position to be manipulated by the person operating the elevator. By pulling down upon this rope or chain the tension of the spring *d* will be overcome and the brake-strap I removed from the pulley H. Furthermore, the end portion *l* of the bar K is so related thereto that when the bar K reciprocates endwise the end portion *l* will pass above the strap I and press it downward far enough to remove it from contact with the pulley H. A rope passing around a pulley *g* serves to connect the bar K with the strap I; hence when the operator pulls downward upon the rope *e* he will not only move the strap away from the pulley H, but will move the rod K endwise.

Hinged or pivoted to one of the ways B, so as to be struck by the elevator-car in its upward motion, is a short lever or latch L. On the car or cage is a curved extension or projection *m*, which is adapted to come in contact with this pivoted latch-lever L, when the elevator car or cage moves upward. To the latch-lever L is secured a rope *n*, which passes around a pulley *o*, and is attached at its other end to a latch *p*, pivoted to one of the hangers F, and held downward in a horizontal position by means of a spring *q*. When the latch-lever L is lifted, it will cause the latch *p* to be likewise lifted, the tension of the spring *q* being thus overcome. The latch *p* normally rests upon the top of the bar K, and when said bar is in the position shown in dotted lines in Fig. 1 the latch is inactive. When, however, the bar K has been moved endwise, so that its portion *l* is above the brake I, the latch *p* will drop over a projecting part on the bar and keep the said bar in the position just mentioned until the car or cage in its ascent strikes against the latch-lever L, which will result in causing the latch *p* to be disengaged from the projecting part on the bar, and thus the bar

permitted to return to its former position (shown in dotted lines in Fig. 1) under the action of the spring *k*.

When it is desired to lower the car or cage, all that the operator need to do is to give a light pull easily upon the rope or chain *e*, sufficiently to remove the brake-strap I from contact with the pulley H. The car or cage will then descend. If it be desired to stop the car or cage and cause it to ascend, the operator will pull harder upon the rope or chain *e*, enough to reciprocate the shipper-bar K, so that the fork on said bar may transfer the belt from the loose to the tight pulley, and so that the latch *p* may come into play to hold the shipper-bar K in the position where the belt *b* will be on the tight pulley and where the end portion *l* of the shipper-bar will be in contact with the strap I, keeping the latter away from contact with the brake-pulley. When the elevator has ascended as high as it should, however, the projection *m* thereon will strike the latch-lever L, and a change in the relative position of the parts will take place in such a manner that the belt *b* will be shifted back again onto the loose pulley, while the brake-strap I will be brought to bear hard against the brake and keep the shaft from further revolution.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the car A, shaft D, having drum E and the brake-pulley, the brake-strap I, and the spring *d*, shipper-bar K, the fast and loose pulleys, the latch, and the latch-lever, as specified.

2. The combination of the elevator-car A, the ways B B therefor, the shaft D, carrying pulley E, brake-pulley H, and tight and loose pulleys G G', the rope *a*, the brake-strap I, the shipper-bar K, the latch *p*, the latch-lever L, and suitable connecting parts for all these several elements, substantially as described.

3. The combination, with the reciprocating shipper-bar K, the brake-strap, and the main shaft carrying tight and loose pulleys G G', the drum E, and brake-pulley H, of the latch-lever L, the pivoted latch *p*, the rope *n*, connecting the latch-lever with the pivoted latch, and the spring *q* for the latter, all substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

MICHAEL H. FOGARTY.
CHARLES A. BUCHANAN.

Witnesses:

MARTIN S. STORER,
IRVING LARRABEE.