

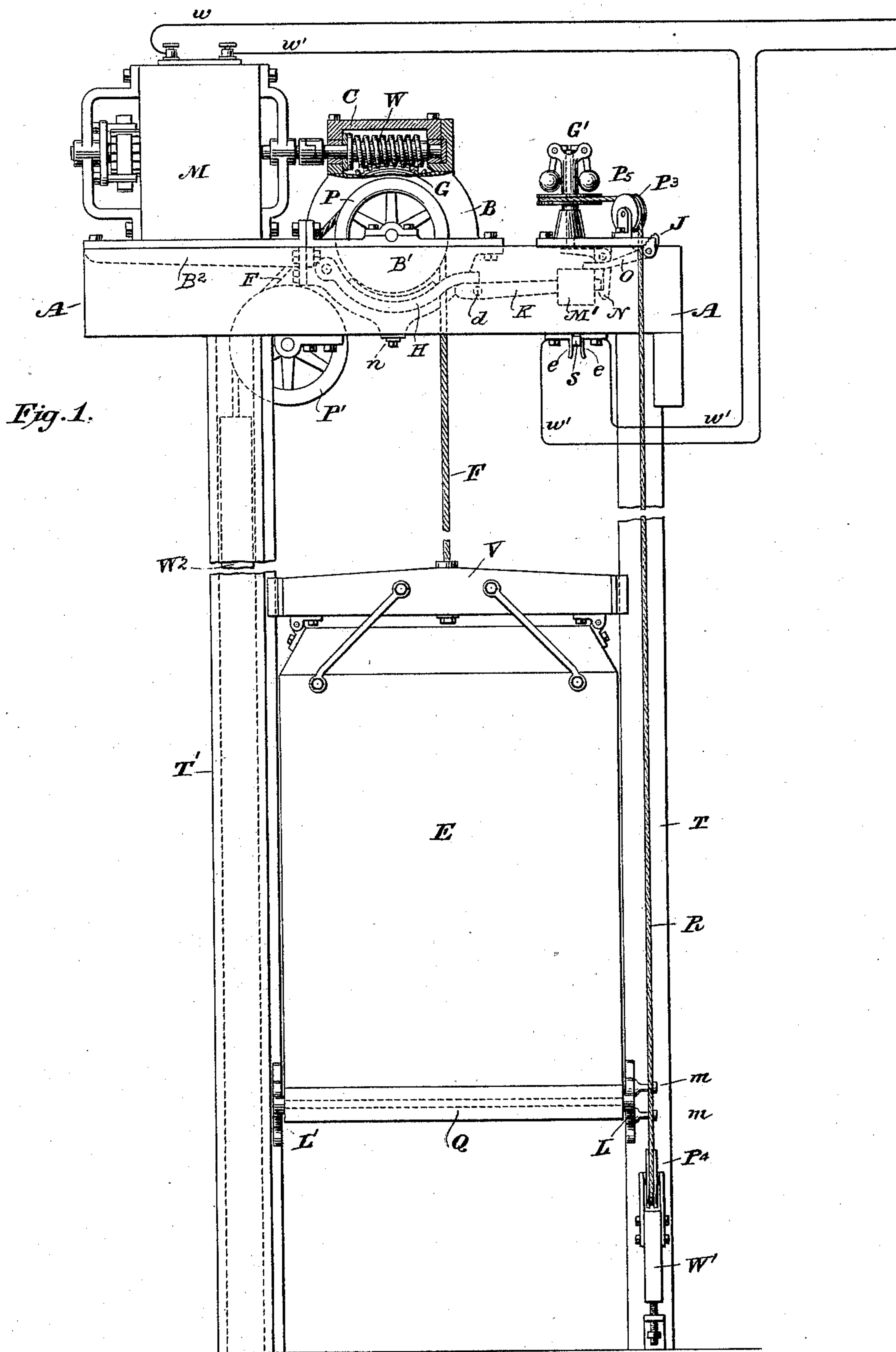
(No Model.)

2 Sheets—Sheet 1.

P. WRIGHT.
ELEVATOR.

No. 477,730.

Patented June 28, 1892.



Witnesses
Geo. W. Breck.
Henry W. Lloyd.

Inventor
Parvin Wright
By his Attorney
Charles J. Kintner

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

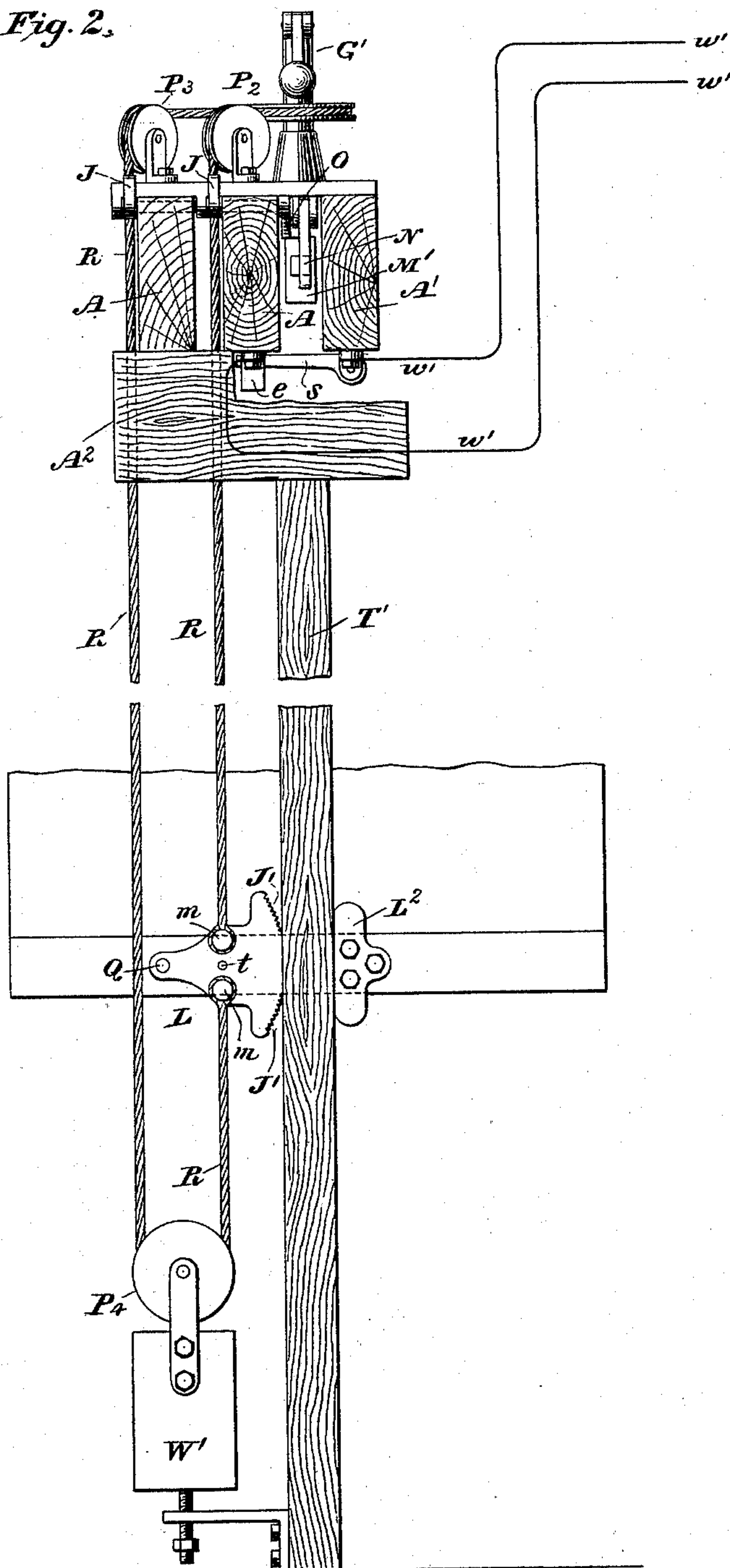
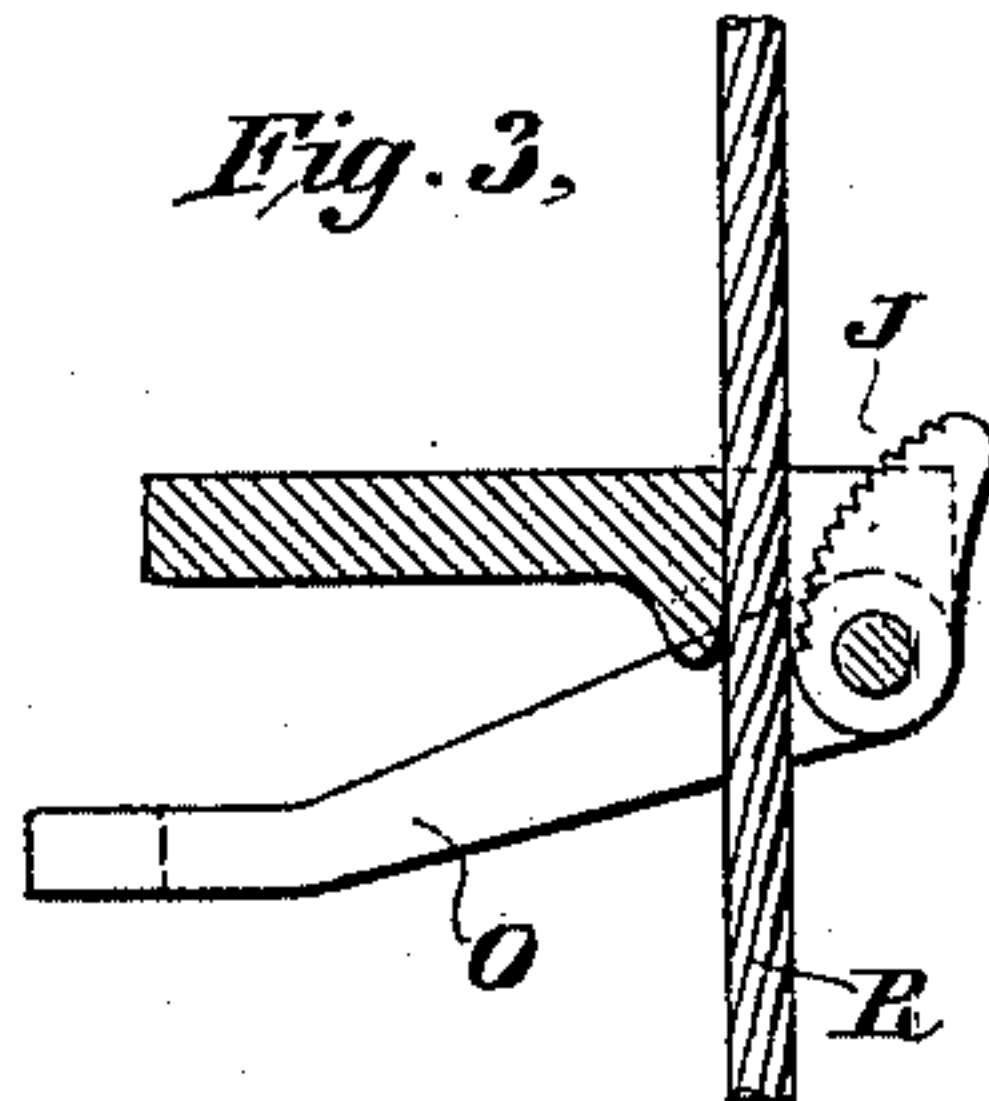


Fig. 3.



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UNITED STATES PATENT OFFICE.

PARVIN WRIGHT, OF DENVER, COLORADO.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 477,730, dated June 28, 1892.

Application filed May 18, 1891. Serial No. 393,152. (No model.)

To all whom it may concern:

Be it known that I, PARVIN WRIGHT, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have made a new and useful invention in Elevators, of which the following is a specification.

My invention is directed particularly to the adaptation of electric motors for use in connection with elevators, and also to certain features looking to the operation of safety devices for preventing accidents due to abnormal speeds of the elevator-car, and it will be fully understood by referring to the accompanying drawings, taken in connection with the specification, but particularly pointed out in the claims which follow said specification.

Figure 1 of the drawings represents a side elevation of an elevator embodying my improvements. Fig. 2 represents a longitudinal sectional view of the same, and Fig. 3 is an enlarged detail view of a part of the safety apparatus.

Prior to my invention it was old in the art to manipulate elevator-cars by electric motors located either at the base of the elevator-shaft or carried by the elevator-car. It was also old to devise means for automatically checking the descent or ascent of the car when it attained a speed beyond that of safety.

My invention is directed to features of novelty hereinafter described, but particularly pointed out in the claims at the end of this specification.

Referring now to the drawings in detail, T represent the side timbers of the elevator-shaft, and E the elevator-car, supported in the usual way by a cross-bar V, having guideways at its opposite ends adapted to sustain it in vertical alignment.

The hoisting-cable F passes over transmission pulleys or sheaves P P', and has attached to its opposite end a counter-weight W², adapted to move in guideways in the side timber T'. The pulley or sheave P is carried by the same shaft which supports a gear-wheel G, meshing with a worm W, said worm being connected in the manner shown to the armature-shaft of an electric motor M. The gear-wheel G and worm W are inclosed in a housing B, having a removable cover C, said housing being separable from a similar hous-

ing B' on the lower side of the shaft, and both of said housings being attached to a base or support B², carried by the cross-timbers A A', the parts being bolted together, as clearly shown in Fig. 1, and all rendered substantially dust-tight when the mechanism is all in position.

n is a removable screw-plug in the lower portion of the housing B', adapted to be removed so as to withdraw the refuse oil from the journals and worm-gear as it seeps down into the lower housing.

H is a brake-lever pivotally secured to the cross-timbers A at one end and lying beneath and in the plane of the grooved pulley or sheave P, but normally out of contact therewith, its free end being supported by the short arm of a weighted lever K and having its free end sustained by the hooked portion of a bell-crank lever N, pivoted to the cross-timbers A, the free end of said bell-crank lever being located in alignment with a sliding shaft operatively connected with a pair of ball-governors G', carrying a pulley P⁵.

On the outer or free end of the lever K is an adjustable weight M', on the top of which rests the free end of a gripping-lever O, provided with a serrated jaw J, adapted to grip and firmly hold a rope R, which passes around the governing-pulley P⁵, the guide-pulleys P³ and P², and a weighted pulley P⁴, adjustably secured near the bottom of the elevator-shaft, the opposite ends of the rope R being fixedly secured to the bottom of the elevator-car E by pins m near the middle of a gripping-lever L, which is connected by a pivoted rod Q to a similar gripping-lever L' at the opposite side of the car, these two gripping-levers being provided with serrated jaws J' J', adapted, when actuated, to firmly grip the face of the timber T'.

L² represents a fixed block bolted or otherwise secured to the base of the elevator-car, there being one of these blocks on each side of the car opposite the gripping-levers L L'.

t represents a wooden pin, which temporarily unites the pivoted lever L with the base of the car, there being a similar wooden pin in the lever L' on the opposite side of the car.

w w' represent the conductor running from an extraneous source of electrical energy (not shown) to the binding-posts of the motor M, the

conductor w' passing first through the switch S, pivoted at one end to the timber A' and resting at its free end between the contact-springs ee , said lever being in the path of the free end of the weighted lever K, so that when said lever is released by its governor it will actuate the switch and break the circuit.

Having thus described the operative parts of my invention, I now proceed to describe its mode of operation. Suppose the elevator to be ascending and through some accident the car E to have obtained an abnormal speed under this condition of affairs, the rope R will cause the governing-pulleys G' to force the vertical shaft downward, thereby releasing the lever K from the hooked end of the lever N. This permits the weight M to turn the lever K about its fulcrum d and force the brake H into the groove of the pulley P, thus bringing the car instantly to a stop. The same action causes the circuit to be broken at switch S, and hence the motor to be stopped. Should the car be descending and an abnormal speed be obtained, either by the breaking of the cable F or otherwise, the brake H will be in like manner put into operation, and should it fail to instantly stop the car in its descent the application of the brake-lever O to the rope R will instantly check said rope in its descent with the car, thus causing it to break the wooden pins t in the pivoted levers L L', thereby allowing the lower serrated faces J' of these levers to firmly grip and hold the car against the counteracting effect of the blocks L² upon the timbers T T'. Continued abnor-

mal speed in the upward direction of the car, should the brake H fail to check it, would in like manner cause the brake-levers L L' to bring into action the upper serrated jaws J J'.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. An elevator having an electric motor located at the top of the shaft, a speed-governor geared to the car, and a switch connected in circuit with the motor and lying in the path of a weighted lever operatively connected with a brake, and a speed-governor whereby the car may be automatically checked when running at abnormal speed, substantially as described.

2. A safety device for an elevator, consisting of a governor operatively connected with the car, a brake held normally out of action by a detent operatively controlled by the governor, and a second brake carried by the car and connected to a rope or cord which drives the governor, substantially as described.

3. A safety device for an elevator, consisting of a gripping device carried by the car and held normally out of action by a fragile pin, in combination with a governor connected by a rope to the gripping-lever, and a second gripping-lever for gripping the rope, substantially as described.

PARVIN WRIGHT.

Witnesses:

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