(No Model.)

E. S. MATTHEWS.

CONTROLLER FOR ELEVATORS.

No. 472,930. Patented Apr. 12, 1892.

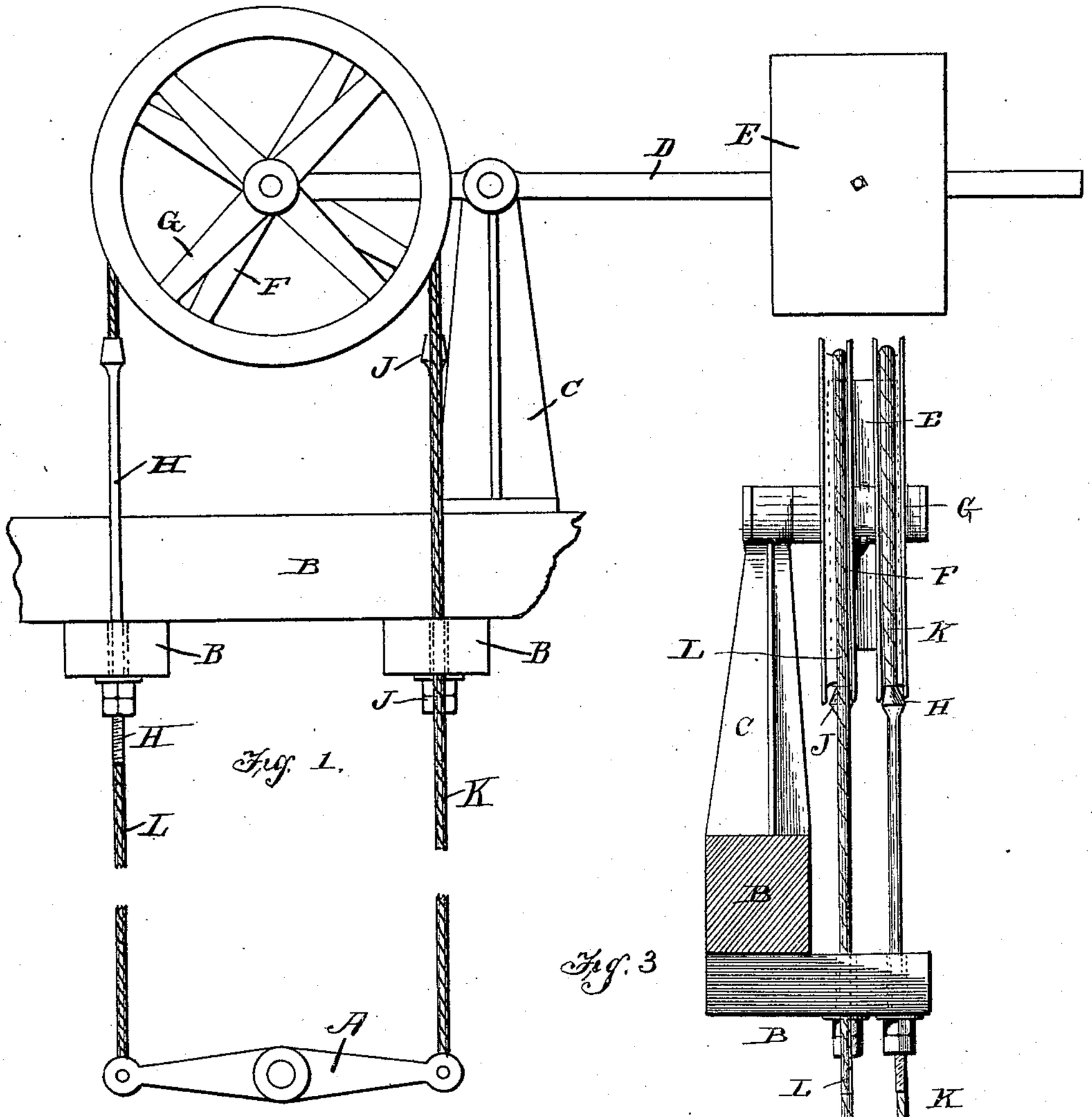

Fig. 1.

Fig. 3

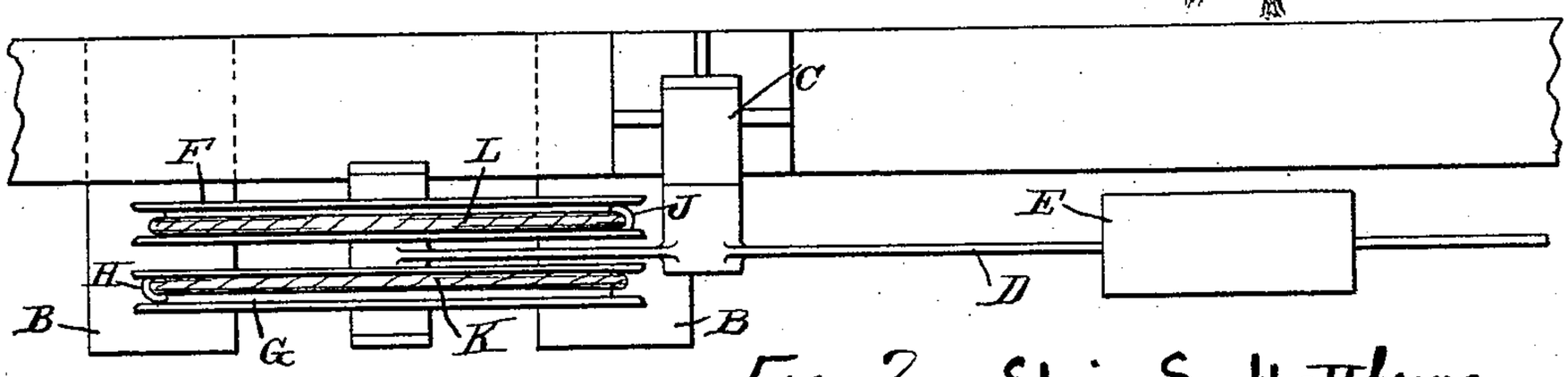

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

EDWIN S. MATTHEWS, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO JAMES L. HAVEN, OF SAME PLACE.

CONTROLLER FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 472,930, dated April 12, 1892.

Application filed January 25, 1892. Serial No. 419,147. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. MATTHEWS, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Control-Rope Tension Devices for Elevators, of which the following is a specification.

This invention pertains to improvements in devices for keeping in proper tension the control-ropes of elevators. In hydraulic elevators controlled by standing-ropes it becomes highly important in keeping the control-ropes under proper tension to provide against putting unequal tension on the two ropes, as such unequal tension is apt to disturb the normal relationship of the two ropes to the neutral position of the valve-controlling mechanism operated by the ropes.

My present invention relates to improvements in devices for applying equal tension to the two standing control-ropes.

My present invention will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of mechanism exemplifying my improved tension device, and Fig. 2 a plan of the same. Fig. 3 is an edge elevation of the operating parts.

In the drawings, A indicates a double-ended lever at the foot of the elevator-well, which lever may be taken as merely exemplifying a control-piece of an elevator, to be operated by means of standing control-ropes passing up the elevator-well and operated upon by the attendant within the moving car; B, timber-work at the top of the elevator-well; C, a fulcrum-bracket secured to this timber-work; D, a horizontal lever pivoted to the fulcrum-bracket; E, a weight adjustable along one end of the lever; F, a sheave mounted for free rotation at the end of the lever opposite the weight; G, a second sheave mounted alongside the first sheave; H, a bolt or threaded shank passing upward through the timber-work tangent to sheave G and provided at its lower end with adjusting-nuts whereby the shank may be adjusted vertically; J, a similar shank similarly arranged with reference to sheave G, but upon the side of the sheaves opposite that on which is disposed the first-mentioned shank; K, one of the control-ropes attached at its upper end to the upper end of shank H, and then bending over sheave G, and then passing down to the controlling mechanism at the foot of the well or in the basement of the building; and L, the other control-rope, having its upper end attached to the upper end of shank J, and then bending over sheave F, and then passing down the elevator-well.

The tendency of weight E is to raise both sheaves equally and put tension on both control-ropes. The nuts upon the shanks permit the adjustment of the two ropes relative to each other so as to secure the proper normal neutral position of the control parts of the valve-gear. The weight will give equal tension to the two ropes, and if, in course of time, the stretching of the ropes has exhausted the proper movement of the lever D or if the ropes should have become unequally stretched, the nuts upon the shanks may be employed in adjusting the ropes into normal condition. If adjustments for this purpose are provided at the lower ends of the control-ropes, then of course they will not be needed at the upper ends of the ropes, and in such case it is only requisite that the ends of the ropes should be properly anchored to the timber-work.

In the exemplifying illustration it is assumed that the tension device can be located at the top of the elevator-well, and that the valve-mechanism-control part will be somewhere at the base of the elevator-well, and that the control-ropes, therefore, simply pass from the base of the well to its top. Such is the usual arrangement, and circumstances will most always permit of it; but cases may occur, as they sometimes do, in which the hydraulic machinery which operates the elevator is situated at some distance from the elevator-well—as, for instance, in some distant portion of the same building or in some other building. In such case the hydraulic machinery can hardly be said to be associated with the base of the elevator-well, and the control-ropes from the elevator-well must be carried over and to that hydraulic machinery, and these ropes may be thus carried over either at

the bottom of the well or at the top of the well, it only being necessary that there should be present the usual arrangement of two standing ropes in the elevator-well, which ropes shall go to the operating mechanism of the elevator wherever it may be situated, the tension device being applied at those ends of the control-ropes farthest from the valve part which they move. With such control-ropes carried away from the elevator-well at the top of the well the tension would of course be located at the base of the well. Again, in some rare cases there is not head-room at the top of the elevator-well for the usual working parts, and it becomes necessary to bend the various ropes over sheaves at the top of the elevator and carry them sidewise from the elevator-well to some place where there is room for the proper working parts, in which case the control-ropes would lead to the tension device in a horizontal direction instead of a vertical one. It will therefore be understood that such terms as "top of the elevator-well" and "vertical movement" of the sheaves F and G and "vertical" adjustment by means of the shanks, and "upwardly" action of the stretching-weight are merely relative terms, and properly responded to by the same tension devices when arranged in substantially the same manner to strain the control-ropes in a direction away from the valve part which they operate.

I claim as my invention—

1. In a tension device for elevators, the combination, substantially as set forth, of a pair of sheaves arranged side by side upon a common axis at the top of the elevator-well and arranged for vertical movement, a weight arranged to move said sheaves upwardly, a control-rope anchored at its upper end and passing upwardly and bending over one of said sheaves and passing thence downwardly through the elevator-well, and a second control-rope anchored at its top and passing upwardly to the other sheave upon the side opposite that engaged by the upwardly-passing part of the first-mentioned rope and passing thence over said other sheave and down through the elevator-well.

2. In a tension device for elevators, the combination, substantially as set forth, of a pair of sheaves mounted side by side at the top of the elevator-well and capable of vertical movement, a weight arranged to urge said sheaves upwardly, two threaded shanks anchored at the top of the elevator-well below said sheaves and arranged as opposite tangents to the two sheaves, respectively, and two control-ropes passing upwardly from said shanks and bending each over an appropriate sheave and passing thence downwardly through the elevator-well.

3. In a tension device for elevators, the combination, substantially as set forth, of two control-ropes passing up the elevator-well and bent and anchored at the top of the well, two sheaves arranged side by side upon a common axis and engaging under the bends of said ropes, and a pivoted weighted lever arranged to urge said sheaves upwardly.

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Witnesses:
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