JEROME WHEELOCK.

Hoisting Apparatus.

117,948.

Fig 1

Patented August 8, 1871.

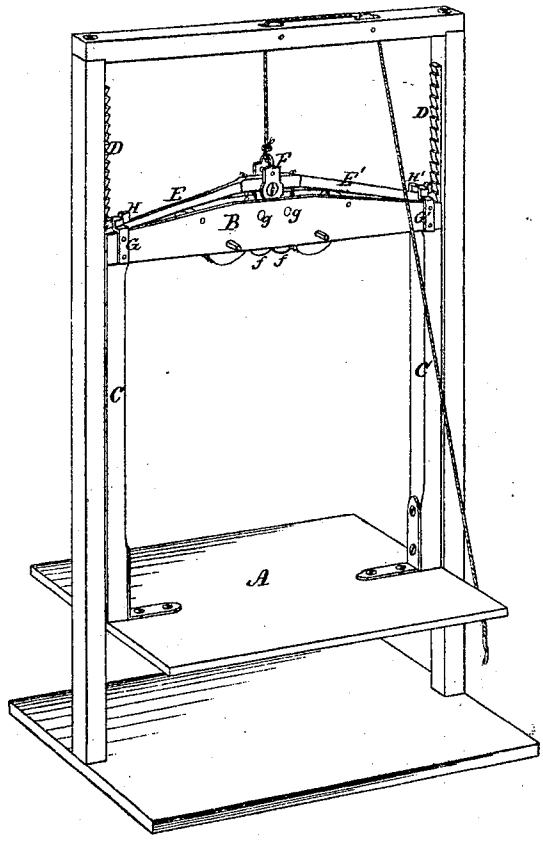
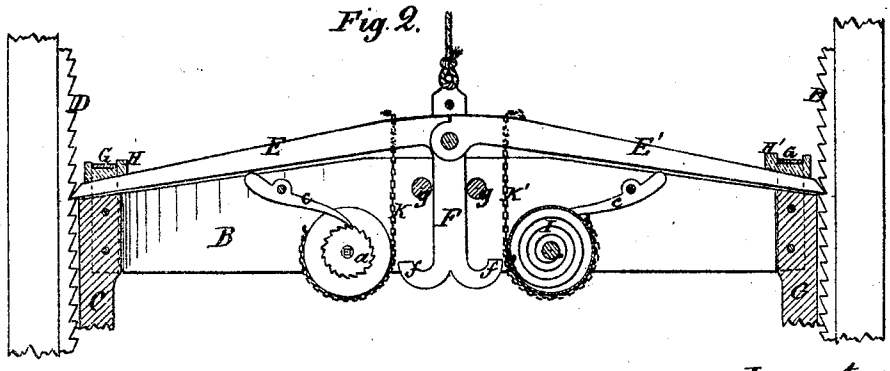


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JEROME WHEELOCK, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN HOISTING APPARATUS.

Specification forming part of Letters Patent No. 117,948, dated August 8, 1871.

To all whom it may concern:

Be it known that I, JEROME WHEELOCK, of the city and county of Worcester, in the State of Massachusetts, have invented a certain new and useful Hoisting Apparatus; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a clear, true, and exact description thereof.

Referring to the drawing, Figure 1 represents a perspective view of a hoisting apparatus constructed in accordance with my invention; and Fig. 2 a detached view of the same, showing the operating mechanism.

My invention relates to that class of elevators which is operated by cable and drum, and which is provided with devices for arresting the fall of the platform in case the rope should break; and it consists, in part, in a novel manner of mounting the catch-bolts; in a novel combination of adjustable springs and catch-bolts; and in combining elastic cushions and catch-bolts, by means of which the shock usually attendant upon the sudden parting of the cable and the sudden stopping of the platform is practically obviated.

In the drawing, A represents the platform, and B the head-beam, the two being connected by the side timbers C, which are grooved for the reception of ratchet-toothed racks D, which project from the vertical frame-work in which the platform operates in a manner well known. E and E′ represent a pair of catch-bolts jointed together at their inner ends, and connected with the hoisting-hook F, to which the cable is attached. The outer ends of the catch-bolts are pawl-shaped, and fitted to enter and fill the tooth-space of the rack-bars D. G and G′ are heavy staples provided for the reception of the outer ends of the catch-bolts. They are secured to the upper side of the head-beam, near its outer ends. H and H′ are elastic cushions placed under the bows of the staples G and over the upper edge of the catch-bolts. I and I′ are coiled springs located within drums, which are mounted on arbors, to which are keyed ratchet-wheels *a*, with which the spring-pawls *c* engage in such a manner as will hold the drums at any position desired. The arbors on which the drums are mounted are fitted at their ends to engage with a wrench or key. K and K′ are chains which, in each instance, are attached at one end to the periphery of one of the spring-drums, and at the opposite end to the under side of the inner ends of one of the catch-bolts. The hoisting-hook F is provided with lateral projecting arms *f* at its lower end, which engage with studs *g* in the head-beam.

The operation of my apparatus is as follows: Assuming the parts to have been combined substantially as described, the springs I are adjusted so as to bear with proper force upon the inner ends of the catch-bolts. Care should be taken to secure sufficient force upon the springs to cause prompt action of the bolts. In hoisting, the first strain comes upon the springs until the catch-bolts are withdrawn, and therefore the force of the springs should nearly counterbalance the weight of the platform. When, by the strain on the cable, the latch-bolts are withdrawn, the lateral arms *f* on the lower end of the hoisting-hook engage with the studs *g*, and thus sustain the weight of the platform. Upon the breaking of the cable the springs deflect the inner ends of the catch-bolts, thereby projecting promptly the outer ends and causing an effectual connection with the teeth of the rack-bar, and securely holding the platform at the very point at which it had arrived when the cable parted. The elastic cushions relieve the shock which would otherwise result from the sudden checking of the falling platform.

I am aware that a great variety of devices has been proposed and employed for accomplishing similar results, and that catch-bolts, rack-bars, and springs have been employed in various combinations. My apparatus differs from any heretofore known to me, in the novel jointing of the catch-bolts direct to the hoisting-hook, by which a prompt and quick liberating action is effected; in the elastic cushions for relieving the shock in case the cable should break; in the adjustable springs, by means of which a uniform strain can always be maintained regardless of the age of the springs or the extent of the use to which they may have been subjected; in the double and separate springs adding to the safety of the apparatus, for should one by accident fail to operate the duplicate spring would operate the bolts; and in the positive manner in which the bolts are forced to the bottom of the teeth in the rack-bar.

The value of adjustable springs consists in the

practicability of frequent testing, and the facility with which any loss of force from long use or weakening may be compensated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In combination with the cross-beam of a cable-hoisting apparatus, the catch-bolts E and E′ connected together at their inner ends, the hoisting-hook F, and the operating-springs, as and for the purposes specified.

2. The catch-bolts E and E′ and the elastic cushions H, in combination with the cross-beam of a cable-hoisting apparatus, substantially as and for the purposes specified.

3. The adjustable deflecting-springs, in combination with the catch-bolts of a hoisting apparatus, as and for the purposes specified.

JEROME WHEELOCK.

Witnesses:
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