

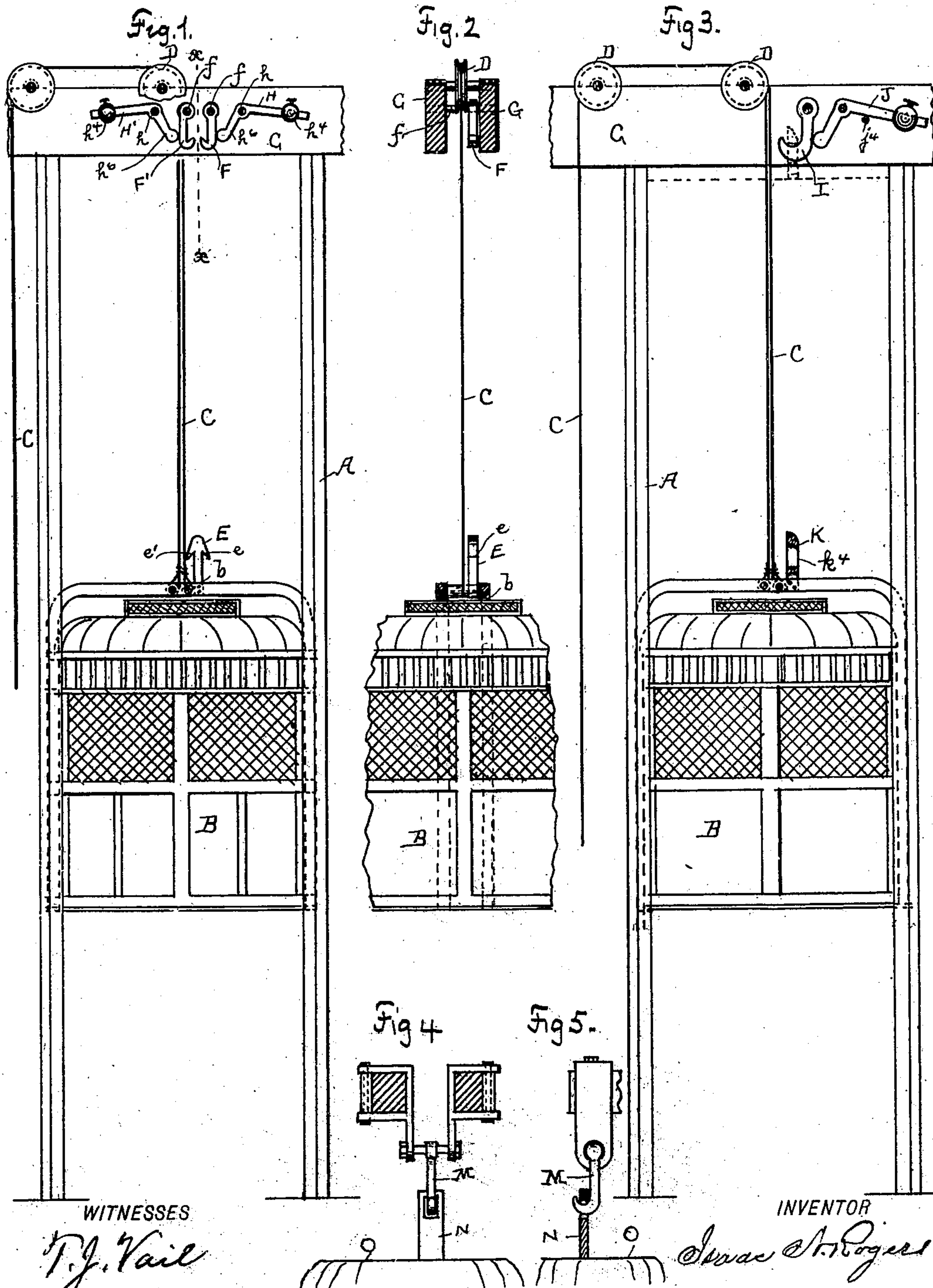
No. 644,098.

Patented Feb. 27, 1900.

I. N. ROGERS.
ELEVATOR SAFETY CATCH.

(Application filed Jan. 24, 1899.)

(No Model.)



WITNESSES

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ELEVATOR SAFETY-CATCH.

SPECIFICATION forming part of Letters Patent No. 644,098, dated February 27, 1900.

Application filed January 24, 1899. Serial No. 703,228. (No model.)

To all whom it may concern:

Be it known that I, ISAAC N. ROGERS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Elevator Safety-Catch, of which the following is a specification.

The object of my invention is to provide freight and passenger elevators with an attachment which will automatically hook and also hold up an elevator-car from falling whenever through imperfect machinery or other causes the said car is accidentally carried up against the upper beams or timbers and the rope or ropes thereby torn from their sockets or disconnected from the car.

Referring to the drawings, Figure 1 is an elevation of an elevator shaft and car, showing my attachment connected thereto. Fig. 2 is a detached part cross-section on line $x x$, Fig. 1. Fig. 3 is an elevation of an elevator shaft and car, showing a modification of my attachment. Figs. 4 and 5 are respectively front and end views of another modification.

A represents the elevator-shaft, of usual construction. B is the elevator-car, also of usual construction.

C are the cables, and D the sheaves over which the ropes pass.

The car has secured to it at b , about the center of the top of the car alongside the lifting-ropes, as shown, the double-hook bar E. Directly, or nearly so, over this bar E are suspended the hooks $F F'$ on single axles f , passing through the upper timbers $G G'$ of the elevator-shaft. These hooks are acted upon by the weighted levers $H H'$, fulcrumed on pins h , secured in the timber G. The weights h^4 on these levers are adjustable for the purpose of regulating the pressure of member h^6 against the arms of the hooks.

The action of this device is apparent. When the car is accidentally carried up against the upper timbers by reason of the imperfect action of the machinery or otherwise, the bar E will pass in between the hooks $F F'$ and spread them apart, the weighted levers permitting of this. When the enlarged portion or head of the bar has passed the hooked portion of the hooks $F F'$, the said hooked portion will instantly swing under the shoulders $e e'$ of the bar E because of the weighted

levers acting on the said hooks $F F'$. Now in the contest between the motor-power and the upper timbers against which the car is pressing usually the cables are drawn from their sockets or otherwise disconnected, thereby permitting the car to fall; but my device prevents this by means of the hooks and bar, which catch the car and hold it from falling. To release the car, first replace the cables, if removed, then raise the car slightly, lift the weighted levers, and draw the hooks apart. The bar E is then free, permitting the car to descend. There are places where two hooks cannot be used. I show in Fig. 3 a construction where only one hook is used, (designated by letter I,) pivoted in the same way as hooks $F F'$ and acted upon by a weighted lever J of like construction to levers $H H'$.

Instead of the bar E, I use the bar K, with curved end and slot k^4 . In this case the hook I enters the slot and holds up the car. (See dotted lines.) To prevent the hook swinging too far in, I use a stop j^4 or any other equivalent device. Again, it may be necessary to dispense with the weighted levers and use a single hook M, (see Figs. 4 and 5,) attached to the upper timbers, said hook passing through a slotted bar N, fastened to the top of the car for the purpose of holding the same up. The shaft f can rest upon the upper edge of the timbers instead of passing through the same.

I do not confine myself to the shape of the head of the bar and hooks nor to the position of the bar as shown.

The above construction possesses simplicity and durability, which are essential in order to apply this principle of automatically hooking and catching and holding a freight and passenger elevator.

The hook-bar E is shown as secured in the center of the top of the car. The object of securing the bar at that point is because experience has proven that the bar E will more effectually engage with the hooks and carry the whole weight of the car, and the fact that the lifting-ropes are centrally attached to the top of the car acts as a positive guide for the engagement of the hook with the overhead catching device, whereas if the bar or bars E were placed at the corners on the top of the car they would sometimes fail to engage, particularly if the car were unevenly loaded, which

is frequently the case by the passengers standing all on one side of the car. This being the fact, the position of the bar in this case produces a new result, which cannot possibly be attained by placing the bar at the corners of the top of the car.

What I claim is—

1. The combination with the elevator-car and the lifting-ropes secured directly thereto and the integral double hook E secured to the car alongside the lifting-ropes, of the timbers G G at the head of the elevator-shaft, and means on said timbers to engage said hook, and sustain said car substantially as described.

2. In a device for automatically hooking and catching and holding a freight and passenger elevator-car, the suspended hooks fulcrumed and supported as shown on the upper

timbers, and the weighted levers independently fulcrumed as shown, and acting upon the said suspended hooks, substantially as set forth.

3. In a device for automatically hooking and catching and holding a freight and passenger elevator-car, the double-hook bar, secured to the top of the car, the suspended hooks, fulcrumed on axles supported on the upper timbers, and the weighted levers also fulcrumed on said timbers, and acting against the hooks F F', substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 21st day of January, A. D. 1899.

ISAAC N. ROGERS.

Witnesses:

THOS. J. VAIL,
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