(No Model.)

2 Sheets—Sheet 1.

G. A. SAXER.

ELEVATOR.

No. 292,684. Patented Jan. 29, 1884.

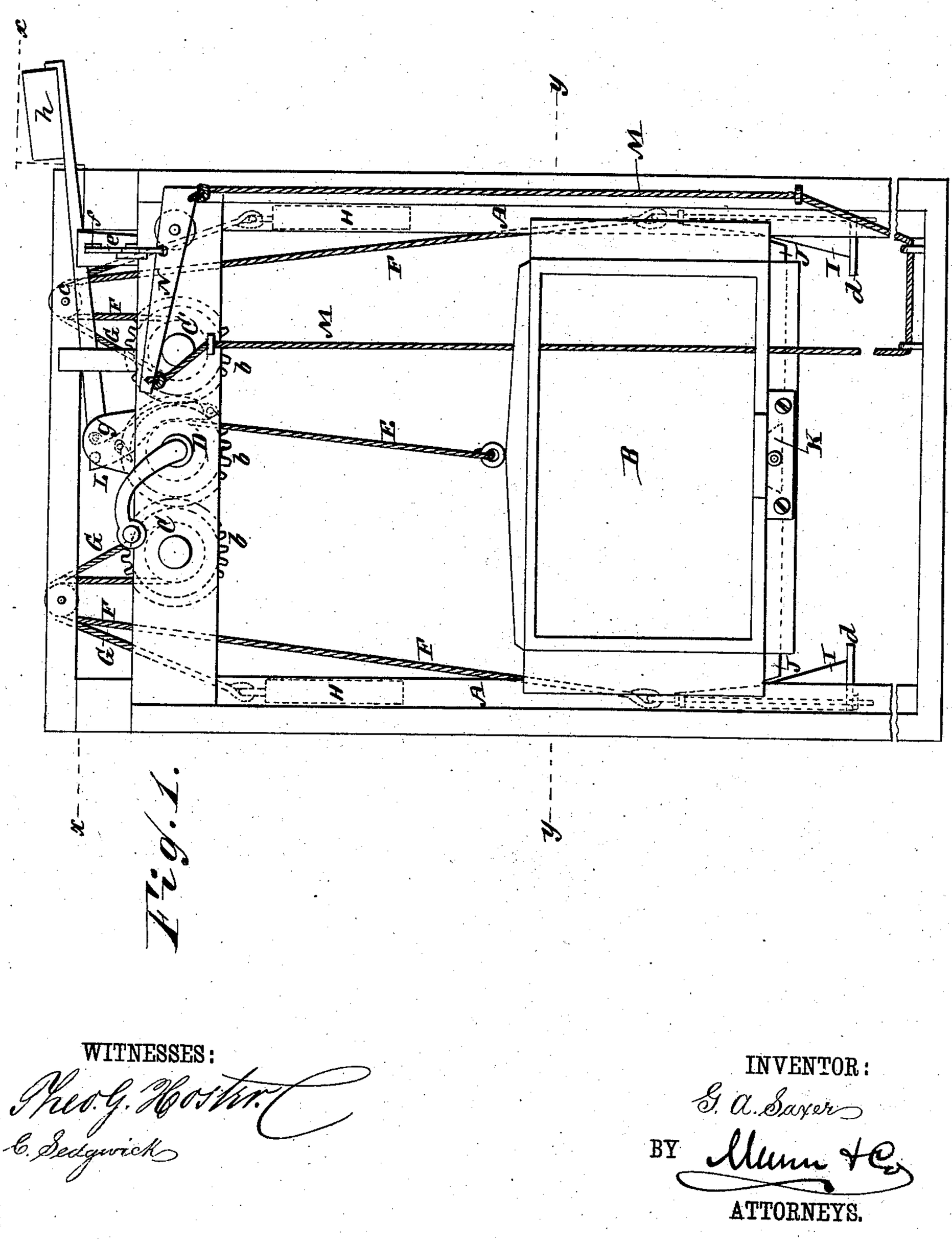

FIG. 1.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

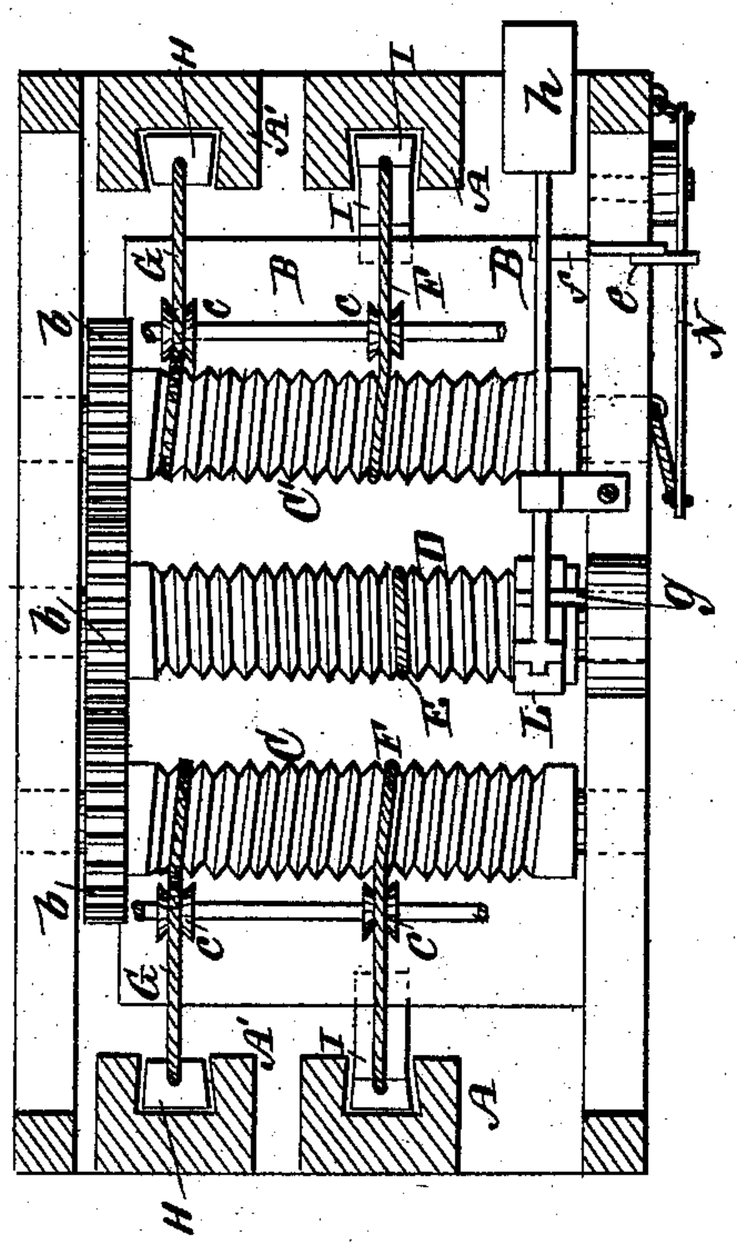


Fig. 4.

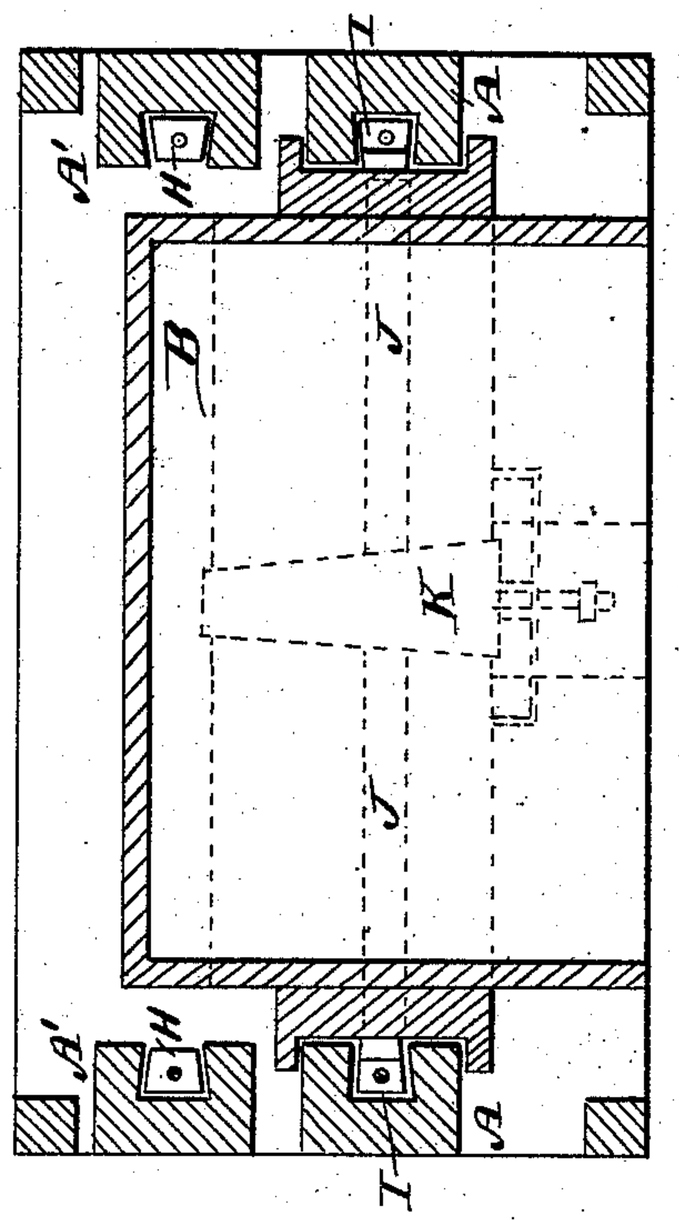
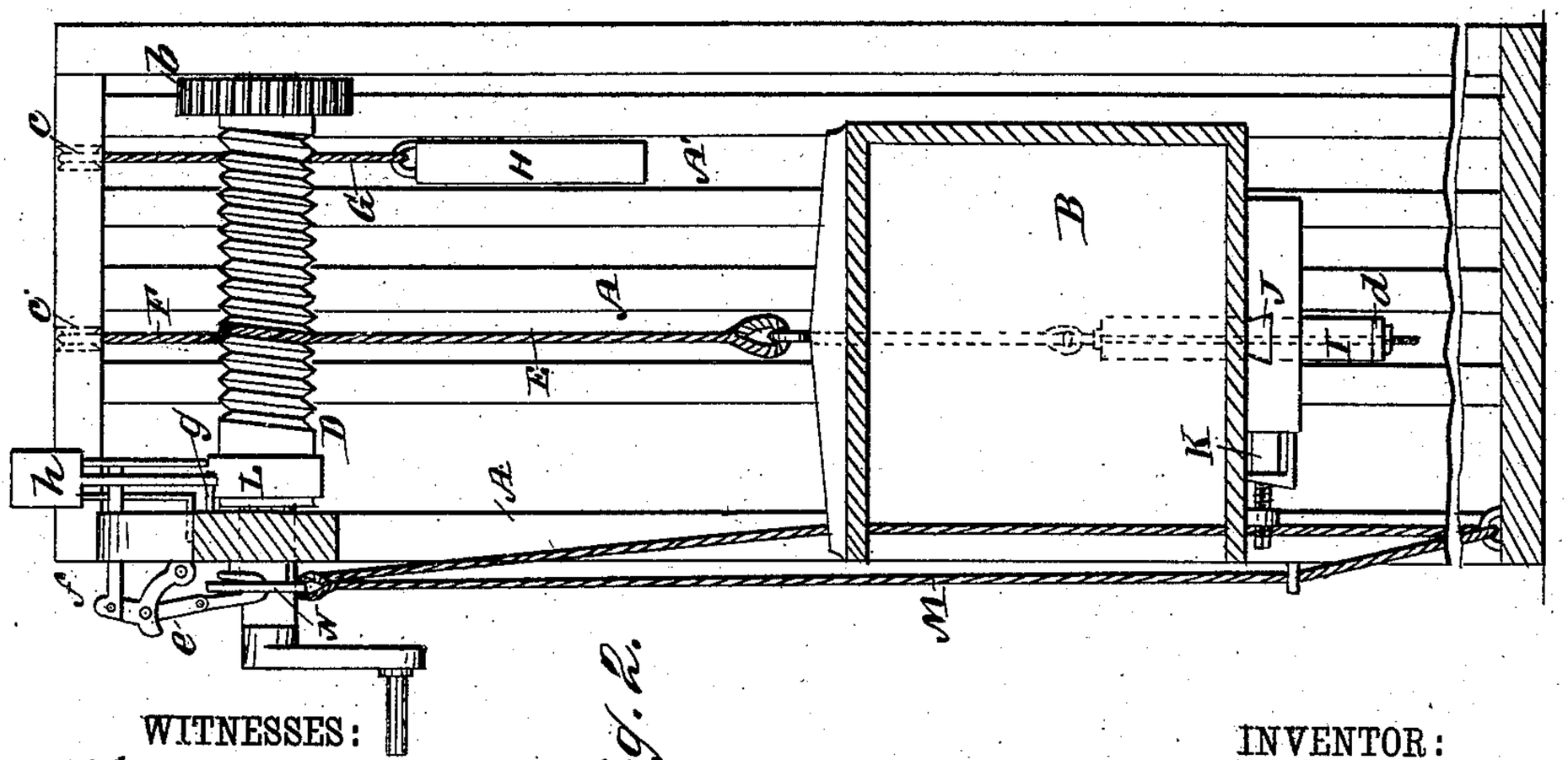


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE ALEXANDER SAXER, OF NEW BRIGHTON, NEW YORK.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 292,684, dated January 29, 1884.

Application filed November 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ALEXANDER SAXER, of New Brighton, in the county of Richmond and State of New York, have invented a new and useful Improvement in Elevators, of which the following is a full, clear, and exact description.

This invention consists in certain combinations of mechanism applied to elevators in which the safety stops or appliances are moved independently of the car, though in concert with it, and whereby perfect safety is obtained and every facility afforded for manipulation of the car, substantially as hereinafter described,

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-broken front view of an elevator and its hoistway with my invention applied. Fig. 2 is a vertical section of the same in a plane at right angles to Fig. 1. Fig. 3 is a horizontal section, mainly on the line *x x* in Fig. 1; and Fig. 4, a further horizontal section on the line *y y* in said Fig. 1.

A A and A′ A′ are the uprights and side guides of the hoistway, and B the car.

C, C′, and D are three horizontal parallel drums at the top of the hoistway, geared together by wheels *b b b* to work in unison. The center one, D, of these drums, which may be rotated by hand-crank or by any other motive power and means to raise and lower the car, as required, has the hoisting-rope E of the car attached to it. The other drums, C C′, have the ropes F F connected with them, by which the safety appliances are operated; also, the ropes G G, which carry weights H H for counterbalancing the car. These several drums are or may be grooved for the run of their respective ropes upon them, said ropes passing over or around sliding pulleys *c c* to and from the drums.

I I are upright safety-wedges, which follow directly under and at the sides of the car with the same motion as the car, but independently of it.

By the arrangement shown and described, when the car and safety-wedges are ascending the counterbalance-weights are descending on or from the same drums C C′ that the wedges are being raised by, the ropes F F and G G being attached to opposite sides of the axes of said drums. Each safety-wedge I has a rod running up through it with set-nuts at its top and bottom for adjusting or raising and lowering them as stretch of the ropes varies. To the upper ends of these rods the ropes F F are attached. The wedges I I bear at their straight backs against or within the guides A A of the hoistway—that is, when pressure is put upon them. Their sloping faces under a like condition of pressure—that is, when thrown into action to arrest the car by the breakage or injury of the hoisting-rope E—bear against the outer ends of pawls or horizontal bolts J J on the bottom of the car. These bolts have their outward set controlled by a V or wedge shaped slide, K, in the bottom of the car and accessible from a pocket in the floor thereof, said slide having a rod run through it provided with set-nuts for holding the slide in position, and whereby the operator in charge of the car can, by the application of a wrench, set up or slack off the bolts J J relatively to the wedges I I.

Projecting inward from the bottoms of the wedges I I are plates *d d*, which serve to hold or support the car when released from the wedges, and when the car can be lowered to the landing by a powerful automatic brake, L.

M is a hand line or rope, arranged to run up through the car, for working the brake L by hand. Said rope, which is doubled to pass through the car and up the hoistway throughout the height thereof, passes through suitable staples or guides in its course, and is attached at its upper ends to the opposite ends of a lever, N, which, when suitably manipulated by the rope, serves to liberate, by connections *e*, a bolt or support, *f*, applied to the under side of the arm or lever of the brake L, and so cause said brake to put friction on the hoisting-drum D, the lever of the brake working at or near its one end, which has a shoe to fit the drum upon a fulcrum, *g*, and having a weight, *h*, at its opposite end to throw the brake into action. By these several combinations of devices, perfect or positive safety is secured in case of the breakage of the hoisting-rope, the independent safety-wedges I I then coming into play to hold the car until the pawls or slides J J are slacked off by the operator in the car, when by pulling on the hand-rope M, the brake

released and made to throw itself into action to safely lower the car to the landing; or said brake may be used conjointly with the safety-wedges to stop and hold the car when the hoisting-rope breaks.

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

1. The combination, with the car and its hoistway, of the geared drums C, C′, and D, the hoisting-rope E, and the ropes F F, having attached safety appliances which move with the car, though independently of it, substantially as specified.

2. The combination, with the car and its hoistway, of the geared drums C, C′, and D, the hoisting-rope E, the safety device, operating-ropes F F, and the counterbalance-weight ropes G G, arranged to work on and off the same drums as the ropes F F, but in reverse direction thereto, essentially as described.

3. The safety-wedges I I, in combination with the hoistway-uprights A A, the car B, the ropes E F F, and the geared drums C C′ D, substantially as and for the purposes specified.

4. The sliding pawls or bolts J J and their adjusting wedge or slide K, in combination with the car B and its hoistway, the safety-wedges I I, the ropes E F F, and the geared drums C C′ D, essentially as described.

5. The automatic brake L, in combination with its releasing mechanism N *e f*, the hand-rope M, the car B, the geared drums C C′ D, the hoisting-rope E, the ropes F F, and the safety-wedges I I, having attached car supports or plates *d d*, substantially as specified.

GEORGE ALEXANDER SAXER.

Witnesses:
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CARL AUGUSTIN.