

(Model.)

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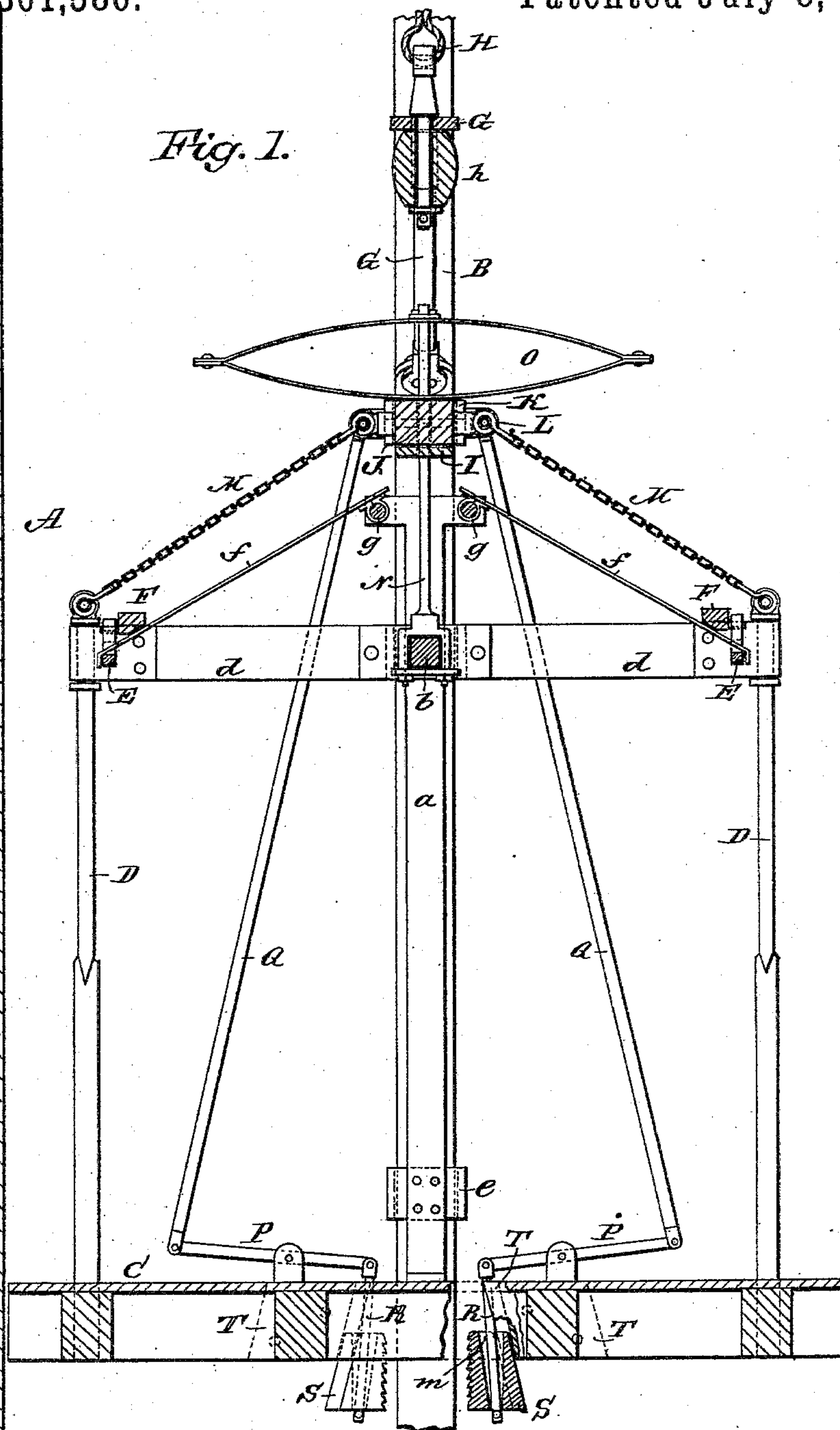
W. GILES.

SAFETY CATCH FOR ELEVATORS.

No. 301,586.

Patented July 8, 1884.

Fig. 1.



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INVENTOR:

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(Model.)

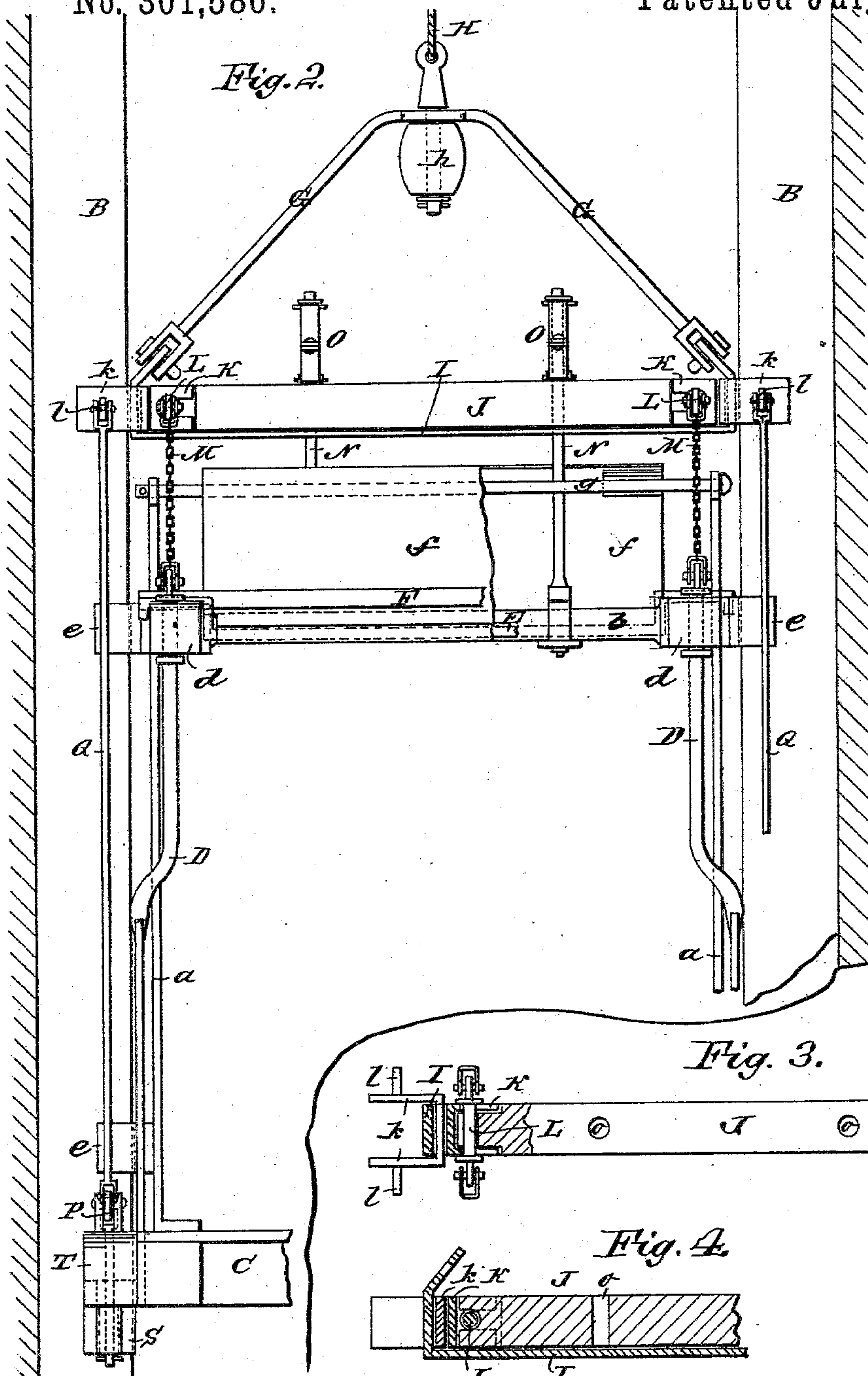
2 Sheets—Sheet 2.

W. GILES.

SAFETY CATCH FOR ELEVATORS.

No. 301,586.

Patented July 8, 1884.



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# UNITED STATES PATENT OFFICE.

WILLIAM GILES, OF MOUNT OLIVE, ILLINOIS.

## SAFETY-CATCH FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 301,586, dated July 8, 1884.

Application filed May 14, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GILES, of Mount Olive, in the county of Macoupin and State of Illinois, have invented a new and Improved Safety-Catch for Elevators, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved safety-catch for elevators, to prevent the cage or car from dropping in case the cable, cable-pulley, or like appliance breaks.

The invention consists in the combination, with an elevator car or cage, of a beam suspended from the hoisting-cable, and from which beam the car is suspended by means of springs and chains, and of levers pivoted on the floor of the car or cage, and carrying wedge-blocks, which levers are connected by rods with the above-mentioned beam, whereby the wedge-blocks are pressed against the guide-beams when the cable breaks, and thus lock the car in place, all as will be fully set forth hereinafter.

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 cross-sectional elevation of an elevator-car provided with my improved safety-catch. Fig. 2 is a side view of the same, parts being broken out. Fig. 3 is a plan view of the top beam of the same, parts being broken and others shown in section. Fig. 4 is a sectional view of the end of the beam.

The elevator or mine shaft A is provided with two opposite vertical guide-beams, B. Two standards, *a*, arranged at opposite sides of the cage-floor C, are united a short distance below the upper ends by a longitudinal beam, *b*. To each standard *a* a cross bar or beam, *d*, is secured. At the ends of the bars or beams *d* upright rods D are secured, which have their lower ends secured in the corners of the floor C. The standards *a* have forked clips *e* at the top and bottom, which clips embrace the guide-beams B. Stirrup-rods E are hung on the ends of the cross-beams *d*, and on them the free ends of sheet-iron tops *f* rest, which are hinged on rods *g*, connecting the upper

ends of the standards *a*, and arranged parallel with the longitudinal beam *b* and above the same. Brace-bars F unite the ends of the cross-beams *d*, and hold the said beams the desired distance apart.

A V-shaped inverted hanger, G, rests upon a rubber cushion-spring, *h*, secured on the lower end of the hoisting-cable H, and to the ends of the hanger G the ends of a stirrup-bar, I, on which a beam, J, rests, are pivoted. Between the ends of the beam J and the upwardly-projecting parts of the stirrup outwardly-projecting U-shaped clips *k* are held, which embrace the upright guide-beams B, which clips *k* each have an outwardly-projecting lug, *l*, on the outer surface of each prong. U-shaped clips K are held on the ends of the beam J, and through the ends of the beam J and the clips K bolts L are passed, which have an eye at each end. Chains M have their ends secured to the eyes on the ends of the bolts L and to eyes in the upper ends of the corner standards or rods D.

Upwardly-projecting rods N, secured on the longitudinal beam *b*, pass through vertical apertures *o* in the beam J, and through elliptic springs O, resting on the beam J. Nuts are screwed on the upper ends of the bars, or pins are passed through the upper ends of the said rods.

On each end of the floor C a lever, P, is pivoted at each side of each standard *a*, to the outer ends of which levers P the lower ends of rods Q are pivoted, which rods have their upper ends pivoted to the lugs *l* on the clips *k*.

To the inner ends of the levers P downwardly-projecting rods R are pivoted, which pass through apertures *m* in wedge-shaped blocks S, the said apertures gradually decreasing in width from the top to the bottom. Pins are passed through the lower ends of the rods R, to prevent the blocks from dropping. The blocks S have transverse downwardly-projecting teeth formed in the faces toward the sides of the guide-beams B. Beveled blocks T are secured on the ends of the floor C in such a manner that their bevel-edges face the bevel-edges of the blocks S.

The operation is as follows: The cage is suspended from the beam J by means of rods N,



whereby the springs O are compressed. The beam J is suspended by means of the hanger G from the cable H. The beam J keeps the outer ends of the levers P raised, and thus the blocks S are held at a short distance from the sides of the guide-beams B when the elevator car or cage ascends or descends. As long as the cable is intact, the springs O remain compressed. When the cable breaks, the springs O expand and exert a downward pressure, thereby forcing the beam J downward, and also pressing the outer ends of the levers P downward and the inner ends upward. Thereby the blocks S are pulled upward, and as they slide on the beveled edges of the blocks T they are pressed against the sides of the beams B with great force, and thus lock the car or cage in place. The plates *f* form a roof to protect the occupants of the car or cage from stones, &c., dropping down the shaft.

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

1. In an elevator-car, the combination, with the beam J, suspended from the hoisting-cable, of springs on the said beam, rods secured on the said springs and passing through the beam, and which rods are secured to the top of the cage or car, chains for suspending the car or cage from the beam J, the levers P, pivoted on the car-floor, the rods Q, connecting the outer ends of the levers P with the beam J, wedge-blocks S, suspended from the inner ends of the levers P, and the beveled blocks T on the ends of the car or cage, substantially as herein shown and described.

2. In an elevator-car, the combination, with the floor C, of the standards *a*, the beams *b* and *d*, the upright rods D, the beam J, the rods N, passing from the beam *b* up through the beam J, the springs O on the beam J, to which

springs the upper ends of the rods N are secured, the hanger G, suspended from the cable H, the chains M, connecting the beam J with the upper ends of the rods D, the levers P on the floor C, the rods Q, connecting the levers P with the beam J, the wedge-blocks S, suspended from the ends of levers P, and the bevel-blocks T on the ends of the car-floor, substantially as herein shown and described.

3. The combination, with the floor C, of the standards *a*, the beams *b* and *d*, the stirrup-rods E, the rods *g*, and the top plates, *f*, pivoted on rods *g*, uniting the standards *a* and resting on the stirrups E, substantially as herein shown and described.

4. The combination, with hanger G, secured on the cable H, of the stirrup I, the beam J on the same, the U-shaped clips K, held between the ends of the beams J and the stirrup I, and of an elevator-car suspended from the beam J by means of intermediate springs and of levers carrying wedge-blocks, which levers are connected by connecting-rods with the beam J, substantially as herein shown and described.

5. The combination, with the hanger G, of the stirrup I, pivoted to the same, the beam J, resting on the stirrup, the U-shaped clip *k* on the ends of the beam J, the bolts L, passed through the ends of the beam J, the U-shaped clips K, held between the ends of the beam J and stirrup I, and an elevator-car suspended from the beam J by means of springs and chains M, secured to the ends of the bolts L, levers pivoted on the car-floor, and carrying wedge-blocks and rods, connecting the said levers with the beam J, substantially as herein shown and described.

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Witnesses:

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