

(No Model.)

J. H. McCARREN.

SAFETY DEVICE FOR ELEVATORS.

No. 246,969.

Patented Sept. 13, 1881.

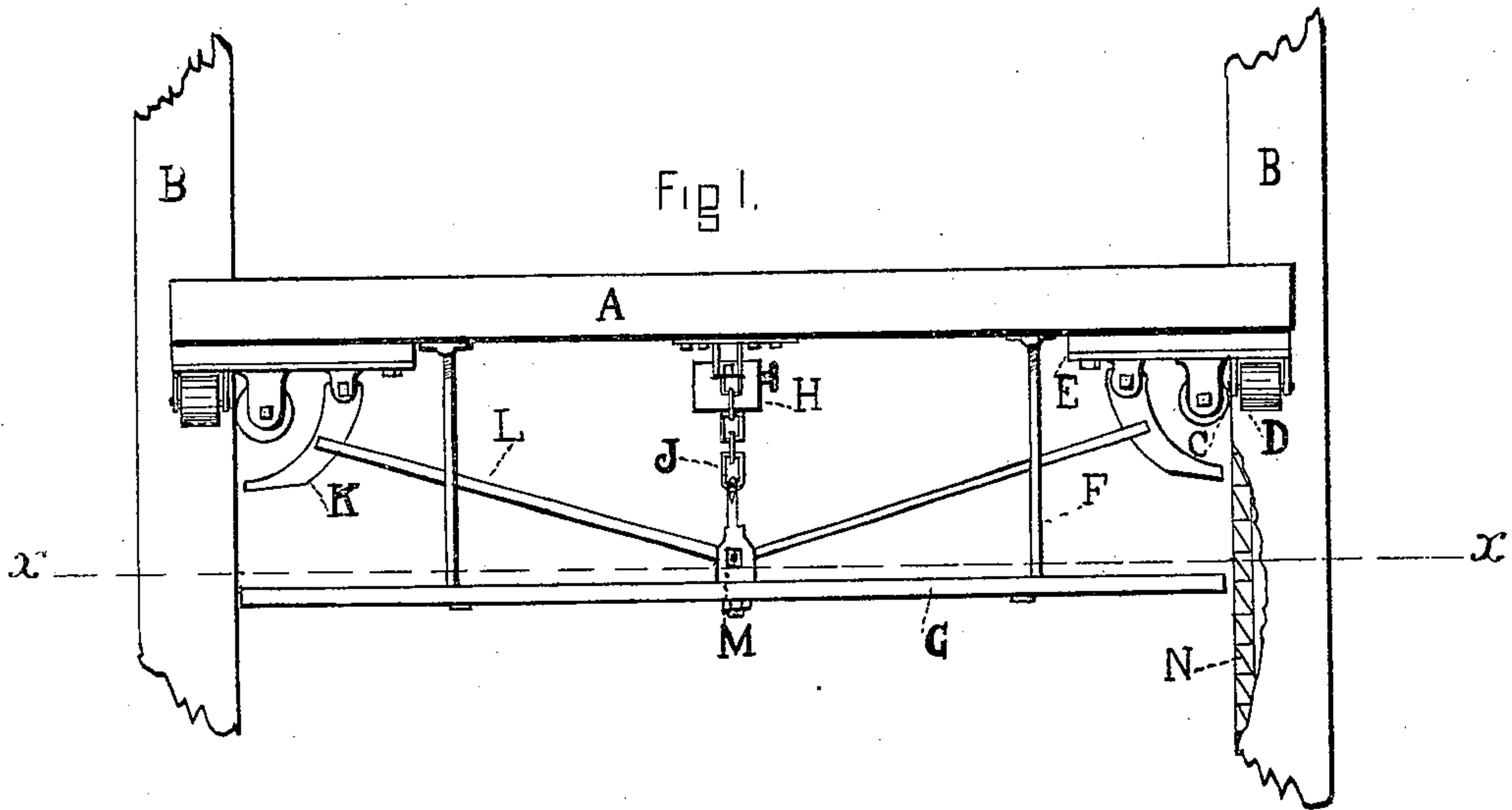
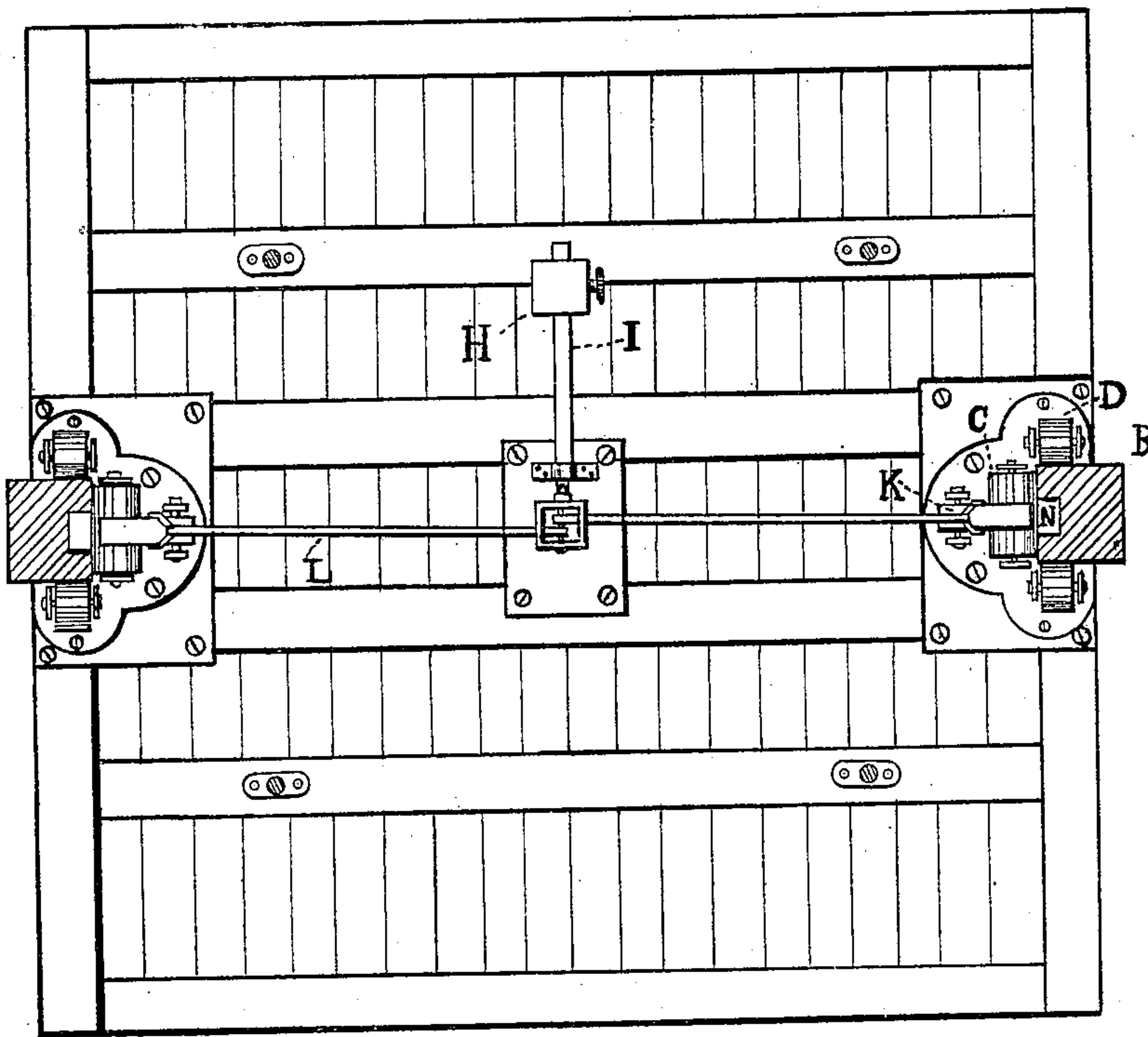


Fig 2.



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SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 246,969, dated September 13, 1881.

Application filed June 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. McCARREN, of the city of Cincinnati, county of Hamilton, State of Ohio, have invented a new and useful
5 Improvement in Automatic Safety Devices for Elevators, of which the following is a specification.

The object of my invention is to provide a safety attachment for elevators that will automatically arrest the descent of the platform
10 should the rope break, the rope-winding mechanism give way, or any person or object be caught by the elevator in descending.

In the accompanying drawings, in which
15 similar letters of reference indicate identical parts in the different views, Figure 1 is a side elevation of an elevator-platform and its guides provided with my improved safety device. Fig. 2 is a horizontal section of the same, taken
20 through line *xx* of Fig. 1, looking toward the platform.

The platform A is guided between the up-
rights B by friction-rollers C and D, which
are journaled in a metal piece, E, secured be-
25 low the platform, the rollers C bearing against the inner faces of uprights B, and rollers D bearing upon the sides of the uprights. The platform and means of operating and guiding the same are well known and need no further
30 description.

Suspended beneath the platform upon rods F is a square bottom, G, made of boards, metal, or other suitable material. The bottom is of the same size as the floor of the platform, and
35 has vertical play, guided by the rods F. In its lower position it rests upon the lower bent ends of the rods. The weight of the bottom G is counterbalanced by a weight, H, on one end of a lever, I, the opposite end of which is
40 connected to the bottom by a chain, J, and the lever has its fulcrum in a yoke depending from the bottom of the platform A. The weight is adjustable along its lever by means of a set-screw, so that the bottom may be
45 made more or less sensitive to atmospheric pressure, and can be regulated to suit the speed at which the elevator is intended to be run.

Journaled in lugs depending from plates E and back of the rollers C, are swinging pawls
50 K. These pawls are linked to the center of bottom G by rods L, the attachment being

made by pins passing through the upper bifurcated ends of the links L, and through the pawls, and journal-pins passing through the yoke-piece M, which is secured centrally to the
55 bottom and the perforated ends of rods L, so that when the bottom is in the position shown in Fig. 1, resting upon the bent ends of the rods F, the pawls K will be held out of contact with racks N, which are recessed into the
60 uprights B, and when from any cause the bottom is brought nearer the platform the pawls will be swung into engagement with the teeth of racks N, and the descent of the elevator thereby arrested. As the platform descends
65 the displacing of the air beneath tends to press the bottom G nearer to the platform A, and of course the pressure is greater as the speed of the platform is accelerated.

By means of the adjustable weight I am enabled to regulate my automatic stopping mechanism to suit any speed, and so evenly that
70 any appreciable acceleration of speed, whether caused by the breaking of the rope or the giving way of any part of the rope-winding mechanism, will move the bottom up upon the guide-
75 rods F and throw the pawls K into engagement with the racks N and stop the platform.

By the use of my invention the danger of injury to persons who may be accidentally caught
80 between the platform and floors or casings of the hatchways as the elevator descends will be avoided almost entirely, as any resistance exerted against the under side of the bottom G will immediately stop the platform.
85

It is evident that the bottom G may be made so light as to require no counterbalance, or that a flexible diaphragm secured upon a fixed frame below the platform may be made to operate the
90 pawls to stop the platform in case the rope should break; but the form shown is believed to be the best. It is also evident that the racks and pawls may be dispensed with, and instead thereof eccentrics or cams journaled beneath the platform substituted, the rods F being so
95 connected to the cams as to turn them against the inner faces of the uprights B when the bottom G is brought nearer to the platform.

What I claim is—

1. In an elevator, the combination, substantially as before set forth, of the platform, the
100 locking devices secured thereto, the movable

bottom suspended beneath the platform, and rods for connecting the locking devices with the movable bottom.

2. The combination, substantially as specified, of platform A, the racks secured to the uprights B, with the movable bottom G, pawls K, and connection-rods L, arranged to operate as set forth.

3. The combination, substantially as specified, of the platform A, locking devices se-

cured to said platform, the bottom G, and rods L, connecting said bottom and the locking devices with the weighted lever I, fulcrumed beneath the platform, and chain J, connecting the lever and movable bottom.

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Witnesses:

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