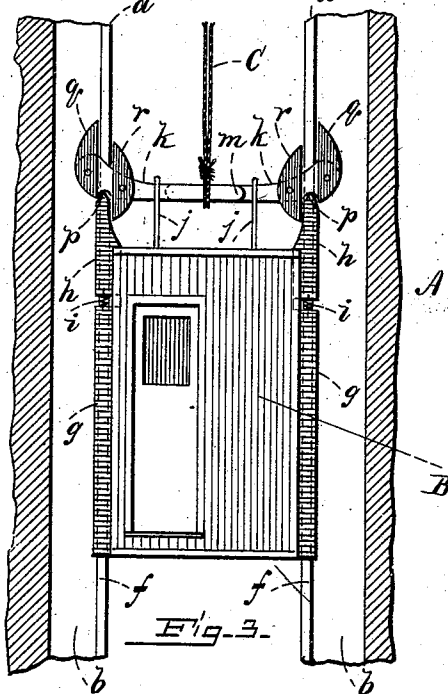
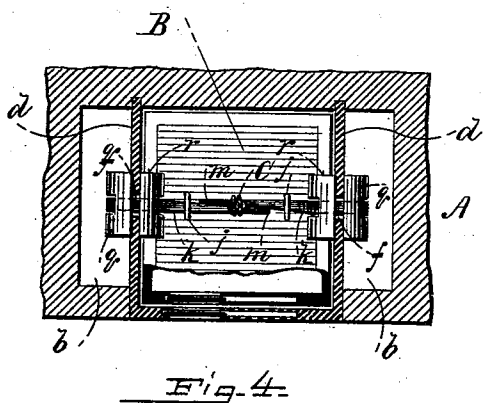
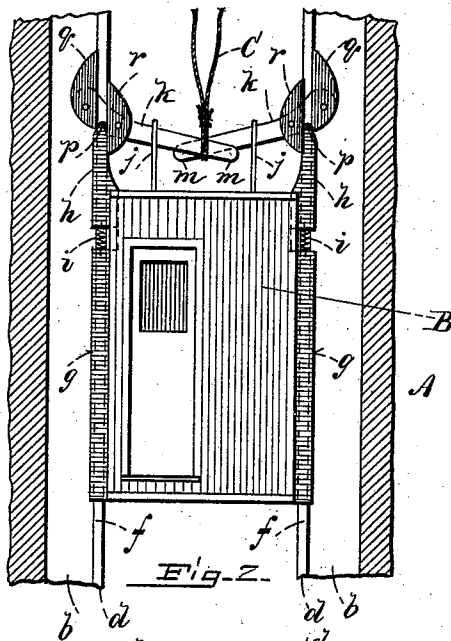
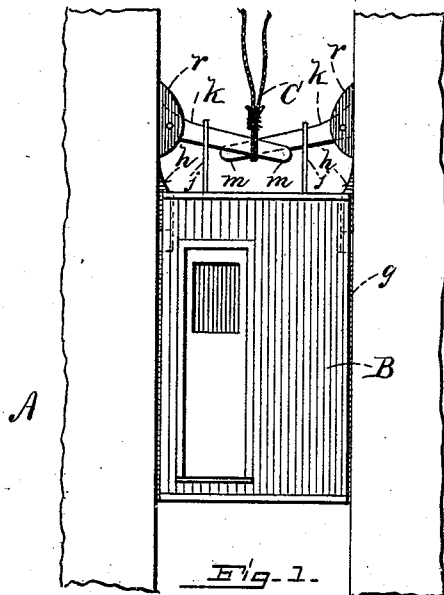


(No Model.)

A. McEACHRAN.
ELEVATOR.

No. 472,768.

Patented Apr. 12, 1892.



WITNESSES=
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UNITED STATES PATENT OFFICE.

ANDREW MCEACHRAN, OF FITCHBURG, MASSACHUSETTS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 472,768, dated April 12, 1892.

Application filed January 18, 1892. Serial No. 418,399. (No model.)

To all whom it may concern:

Be it known that I, ANDREW MCEACHRAN, of Fitchburg, in the county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Elevators, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of an elevator well and car provided with my improvement; Fig. 2, a vertical transverse section of the same, showing the safety-clutch in operation; Fig. 3, a like view showing the clutch mechanism in its normal position; and Fig. 4, a horizontal section of the well, taken above the car.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a safety-clutch lifting mechanism for elevator-cars; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the well, at opposite sides of which vertical ways *b* are formed by a partition *d*. A vertical slot *f* is formed centrally in each partition *d*, opening into the chambers *b*.

The car B may be of any desired form, and is provided at each side with a vertically-arranged flange *g*, which slide in the slots *f* of the partition *d*. Above each flange *g* and in alignment therewith there are spring-supported arms *h*, which slide in the slots *f*; the springs *i* being interposed between said arms and the flanges *g* and the car-walls being grooved to direct vertical play of said arms. On top of the car there are two vertical lifting-loops *j*, and through said loops two levers *k* project loosely, the inner ends *m* thereof overlapping the vertical center of the car. The lifting-cord C incloses said overlapping

lever ends. The levers project through the respective way-slots *f*, and are fulcrumed at *p* on the upper end of the spring-supported arms *h*, which are sharpened to form a bearing therefor. Within the chambers *b* a shoe *q* is pivoted eccentrically on the ends of said levers in position to engage the inner faces of the partitions *d*. Outside said chamber a similar shoe *r* is pivoted eccentrically to each lever in a horizontal plane below that of the pivot of the shoes *q*. The fulcrums *p* are thus disposed centrally between said pivots.

In the normal position of the parts, the lifting-cord C being taut, the weight of the car is supported by the loops *j* on the long arm of the levers, said levers being fulcrumed on the arms *h* on said car and the springs *i* compressed, as shown in Fig. 3. In this position the shoes *q r* are out of engagement with the partition *d* and do not interfere with the sliding of the car in either direction. Should the lifting-cord C break, the springs *i*, acting expansively, force the fulcrum-arms *h* upward, the loops *j* depressing the long arm of the levers, as shown in Fig. 2. This forces the shoes *q r* into engagement with opposite faces respectively of the partitions *d*, causing them to grip the same and arrest the downward movement of the car by frictional contact. As soon as tension is again exerted on the lifting-cord elevating the long arms of the levers the contact of the shoes with the walls *d* of the partition is broken and the car permitted to slide freely. A single lever *k* may be employed to effect the result described by mounting the loop *j* centrally of the car and disposing the lifting-cord eccentrically thereof.

It will be understood that a hook or other suitable device may be substituted for the loops *j* on the car, if desired.

I do not confine myself to mounting the spring-supported fulcrum in alignment with the flanges *g*, as they may be supported on the ends of flat springs secured to the car-top or in any other suitable manner if adapted to change the position vertically of the fulcrum in relation to the car-body when the strain is relieved on the rope.

Having thus explained my invention, what I claim is—

1. A safety-clutch for elevator-cars, com-

prising a lever mounted on a spring-pushed
fulcrum on the car and projecting through a
slot in the carways, two clamping-shoes piv-
oted to said lever respectively at opposite
5 sides of its fulcrum and in position to engage
opposite faces of said ways, the shoe-pivots
being in different horizontal planes, a lifting-
rope secured to the inner end of said lever,
and a connection between the lever and car-
10 body disposed between said rope and fulcrum,
substantially as described.

2. In an elevator, the combination, with the
car and well having the slotted ways, of the
spring-supported arms fitted to slide on the

car and in said slots, the levers *l*, fulcrumed, 15
respectively, on said arms and projecting
through said slots, the shoes *q* *r*, pivoted on
said levers in different planes and at opposite
sides of the ways, the lifting-rope *C*, secured
to the inner ends of the levers, and the loop 20
j, connecting the car with said levers between
their fulcrums and said rope, all being ar-
ranged substantially as described.

ANDREW McEACHRAN.

Witnesses:

ALICE M. LAMB,
CHAS. E. WARE.