

No. 675,159.

Patented May 28, 1901.

R. T. JONES.
ELEVATOR SAFETY DEVICE.

(Application filed Mar. 9, 1901.)

(No Model.)

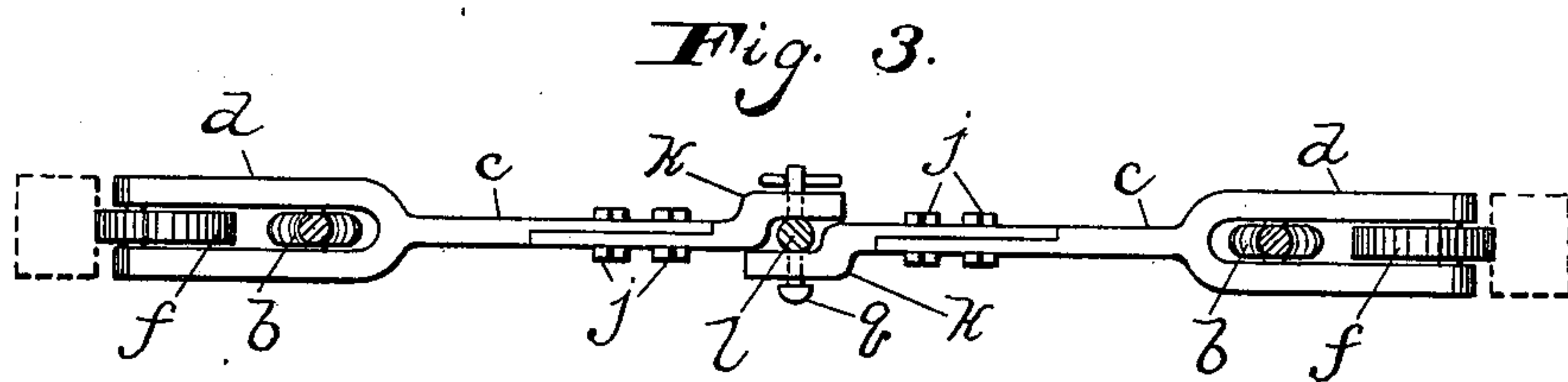
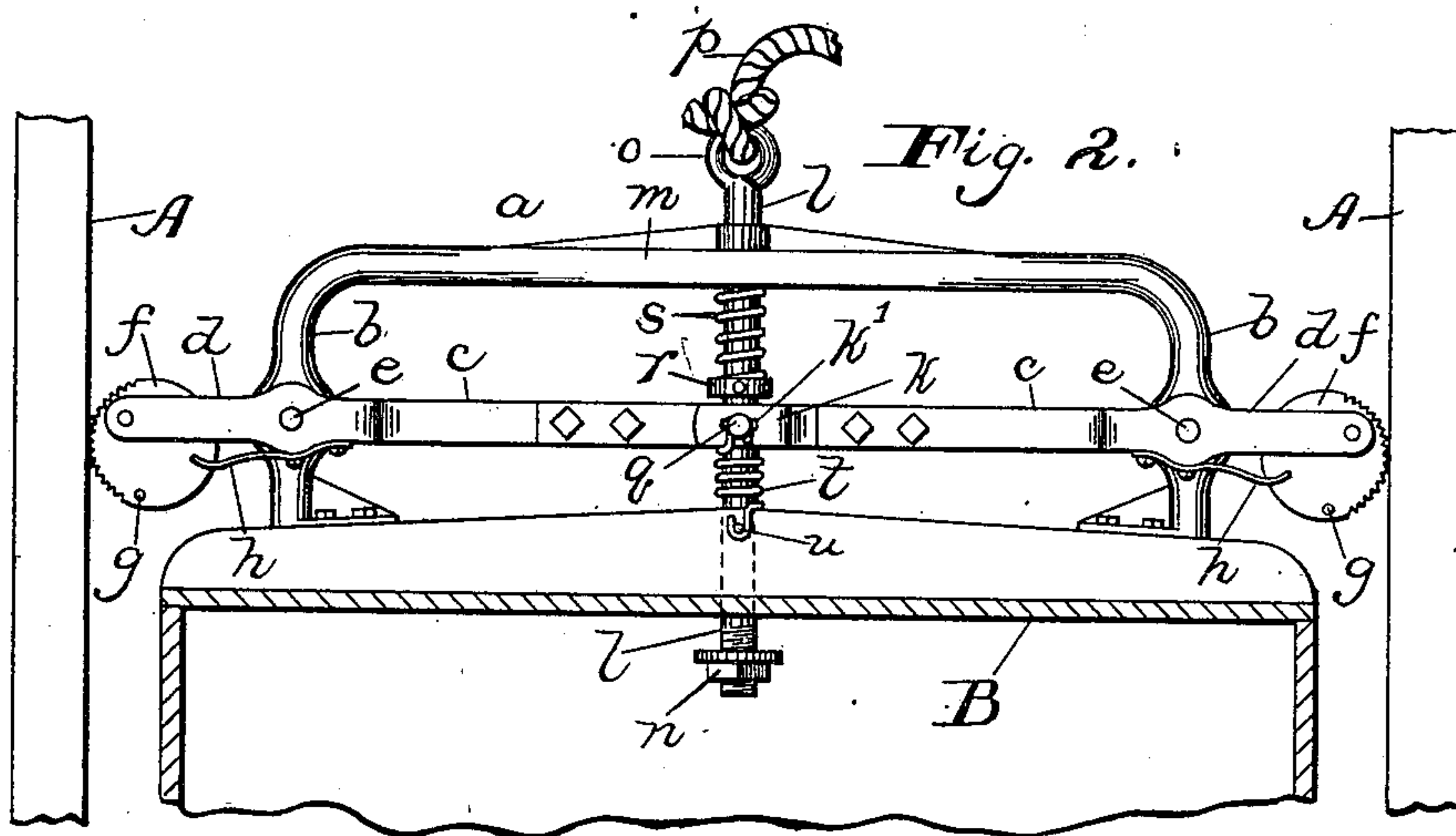
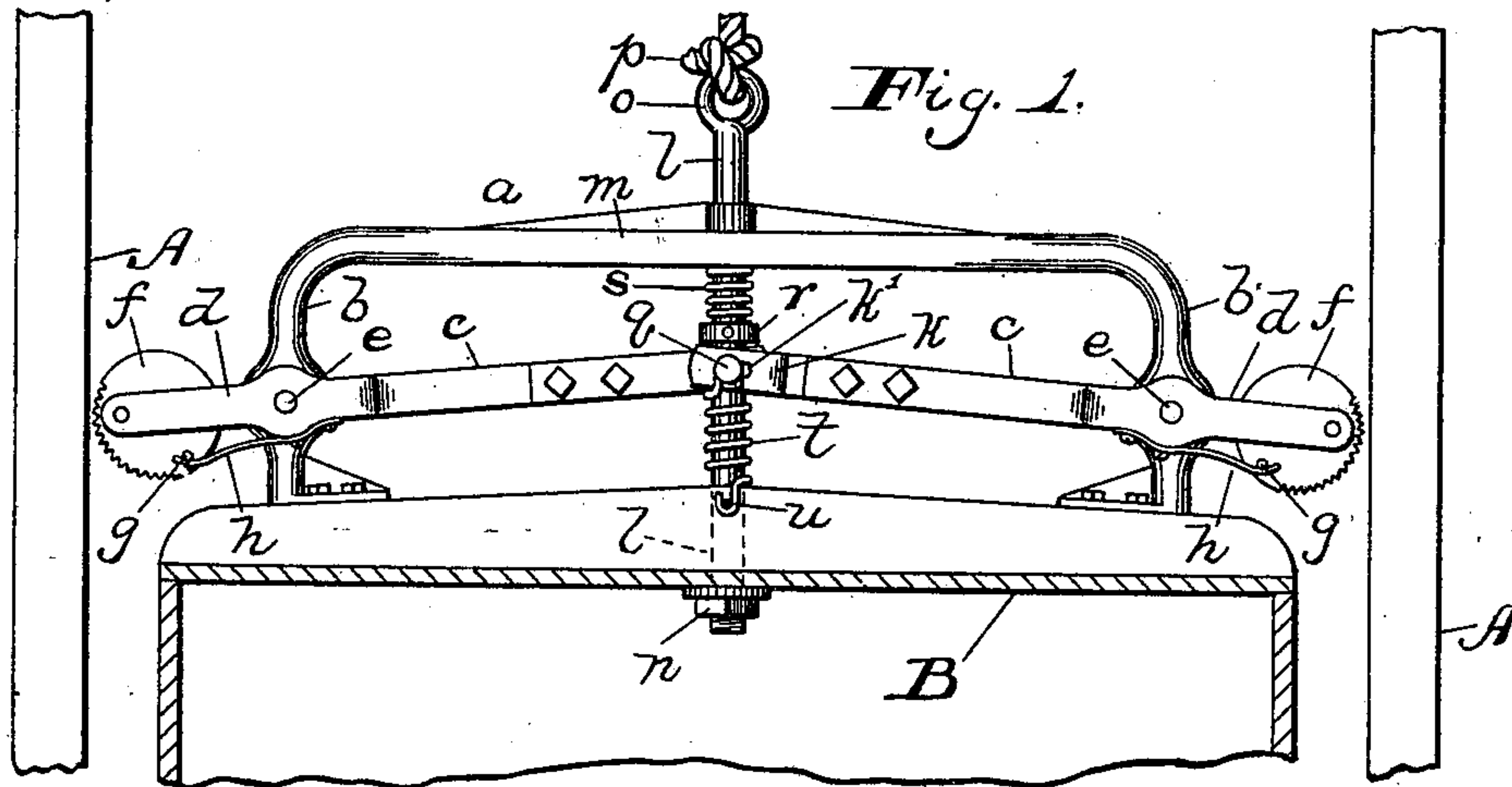
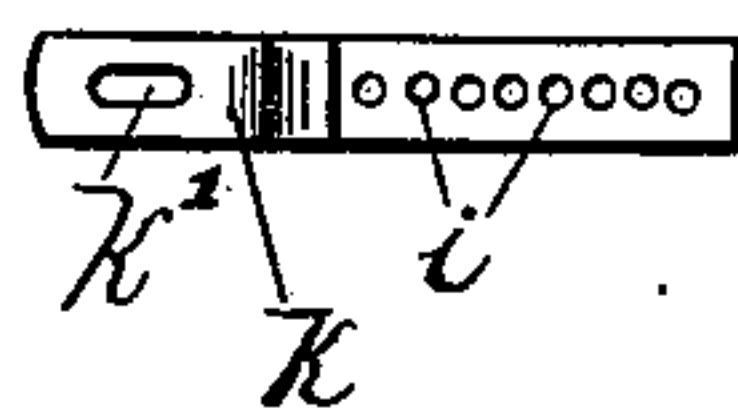


Fig. 4.



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UNITED STATES PATENT OFFICE.

RICHARD T. JONES, OF BALTIMORE, MARYLAND.

ELEVATOR SAFETY DEVICE.

SPECIFICATION forming part of Letters Patent No. 675,159, dated May 28, 1901.

Application filed March 9, 1901. Serial No. 50,414. (No model.)

To all whom it may concern:

Be it known that I, RICHARD T. JONES, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Elevator Safety Devices, of which the following is a specification.

This invention is an improvement in safety devices for elevators; and its object is to provide an elevator cage or car with an improved safety device having eccentric rollers which will wedge tightly against the sides of the elevator-shaft when the hoisting-cable becomes slack by breaking or any other cause, thus suspending the car in the shaft and preventing it from dropping down the same and causing damage.

The invention consists in certain constructions and arrangements of the parts herein after fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of an elevator shaft and car provided with my improved safety devices, the latter being held out of engagement with the sides of the shaft by the taut cable. Fig. 2 is a similar view illustrating a broken or slack cable and showing the safety devices wedged into frictional engagement with the sides of the elevator-shaft. Fig. 3 is a sectional top plan view illustrating the arrangement of rocking levers which carry the eccentric wedging-rollers. Fig. 4 is a detail side view of a portion of one of said levers.

Referring to the drawings, the letter A designates the two opposite vertical guides of an elevator-shaft in which a car B is intended to move up and down. Rigidly secured to the top of said car is an inverted-U-shaped frame α , to whose vertical side members b are pivoted two horizontally-placed rocking levers c . The pivoted ends of said levers are forked, as shown at d , and straddle the said vertical frame members and are pivoted to the latter by pivot-bolts e , and the forked end of each lever projects toward the adjacent vertical guide A of the elevator-shaft and carry wedging-rollers f , which are journaled eccentrically in the forked ends of the levers.

Each wedging-roller f has its edge serrated and is provided on one side with a lug or stud

g , and to each lever c , adjacent the roller, is secured a leaf-spring h , whose free end normally takes under said stud, whereby to hold said rollers away from the vertical guides A and prevent them from turning into contact with said guides of the elevator-shaft. The other ends of the two rocking levers c extend toward each other, and each lever is made in two overlapping sections, one of which is provided with a plurality of bolt-holes i , as shown in Fig. 4, through which bolts j in the other section pass, so that the levers may be adjusted longer or shorter when desired. The inner end of each lever is laterally offset, as at k , and is provided with an elongated slot k' . One of these offsets k laps on one side of the suspending-rod and the other laps on the opposite side.

The letter l designates the suspending-rod mounted to move vertically through the horizontal member m of the frame α and also through the top of the car. The lower end of said rod is provided with a stop-nut n , adapted to abut against the under side of the top of the car to limit the upward movement of the rod, and the upper end of said rod is provided with an eye o , to which one end of the hoisting-cable p is attached. As already described, the rod l extends between the laterally-offset slotted ends of the two levers c , and a pin q , rigidly secured to the rod, projects transversely from opposite sides of the latter and takes in the elongated slots k' of the adjacent lever ends.

A collar r is rigidly secured to the rod l above the ends of the two levers c . An expansion-spring s is coiled around said rod above the collar and between it and the frame α and tends to push said rod downwardly, and a compression-spring t has its upper end attached to one end of the transverse pin q and its other end attached to a stud u on the top beam of the car, whereby to pull downwardly on said rod and said two lever ends.

When the elevator is in the normal running position, (shown in Fig. 1,) the car B is suspended from the taut cable p , which causes the suspension-rod l to remain at the upward limit of its movement against the tension of its springs, so that the levers c are held at a slight angle with respect to each other, and the eccentric wedging-rollers f are

held out of contact with or away from the vertical guides A.

If the cable *p* should break or become slack from any cause, the two springs *s* and *t* will quickly move the rod *l* downwardly, which will rock the levers and force the eccentric rollers into contact with the guides of the shaft, whereupon the downward movement of the car B will cause said rollers to turn and free themselves from their supporting-springs *h* and wedge tightly against the guides of the shaft, whereby to hold the car suspended and prevent it from falling and causing damage.

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

1. The combination with an elevator car and shaft having vertical guides, of a safety device comprising two rocking levers mounted on the top of the car and provided with inwardly-extending overlapping ends each of which has an elongated slot; a roller journaled eccentrically in the outer end of each lever adjacent a guide; a vertically-movable suspension-rod spring-pressed in a downward

direction and connected to the hoisting-cable whereby to suspend the car; and a pin, *q*, rigidly secured to said rod and taking in the said elongated slots of the levers, said pin having a diameter less than the length of said slots, as and for the purpose set forth.

2. The combination with an elevator-car and vertical guide, of a safety device comprising two rocking levers mounted on the top of the car; a roller journaled eccentrically in the outer end of each lever adjacent a guide and each roller provided with a stud; a spring secured to each lever and with its free end normally engaging said roller-stud whereby to hold said rollers away from the guides; and a vertically-movable downwardly-pressed rod on the car and connected to the hoisting-cable and also connected to said levers, as and for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

RICHARD T. JONES.

Witnesses:

CHARLES L. VIETSCH,
H. T. MEYER, Jr.