

A. KAMPFE.
SAFETY DEVICE FOR ELEVATORS.
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943,939.

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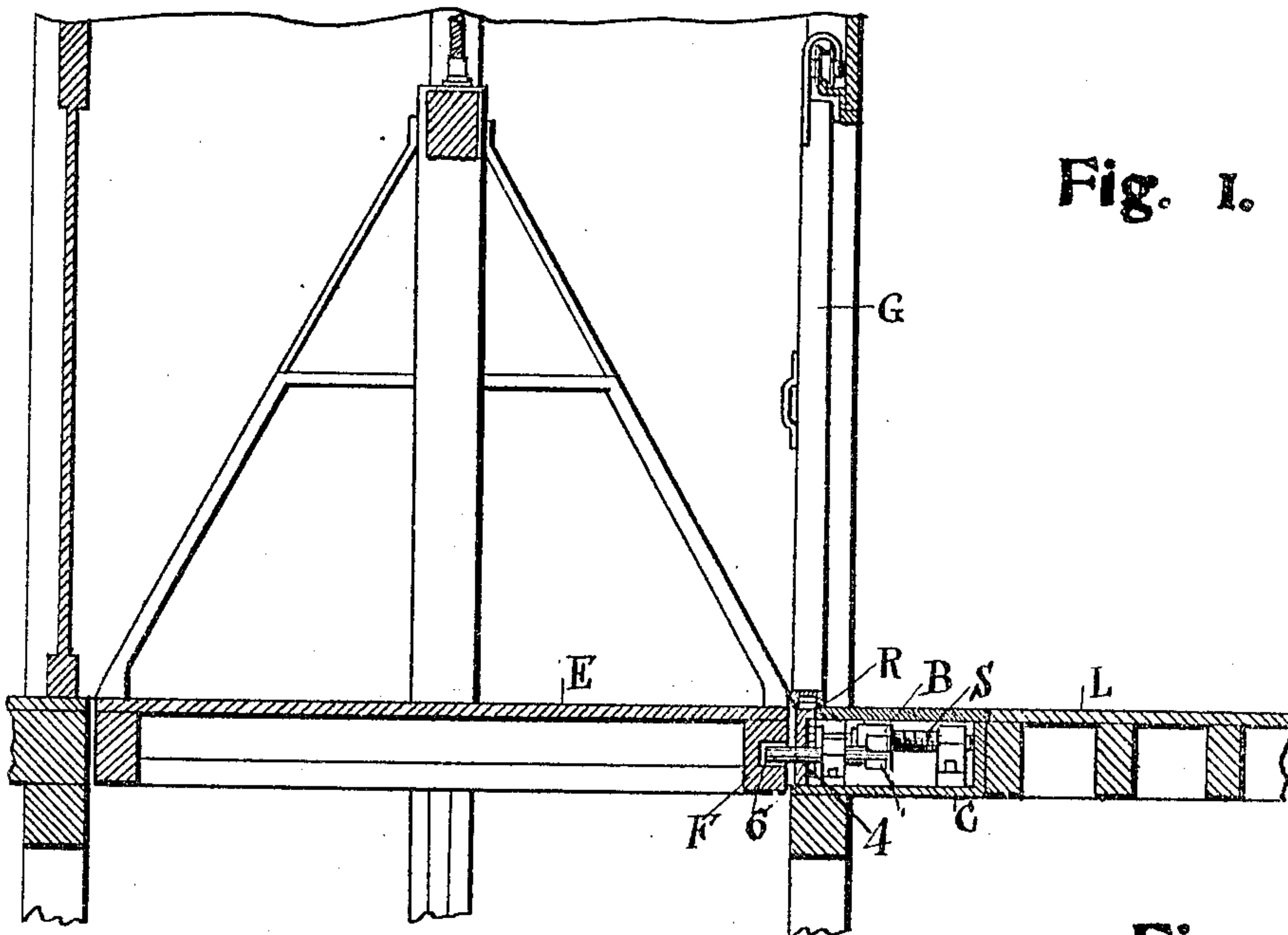


Fig. 1.

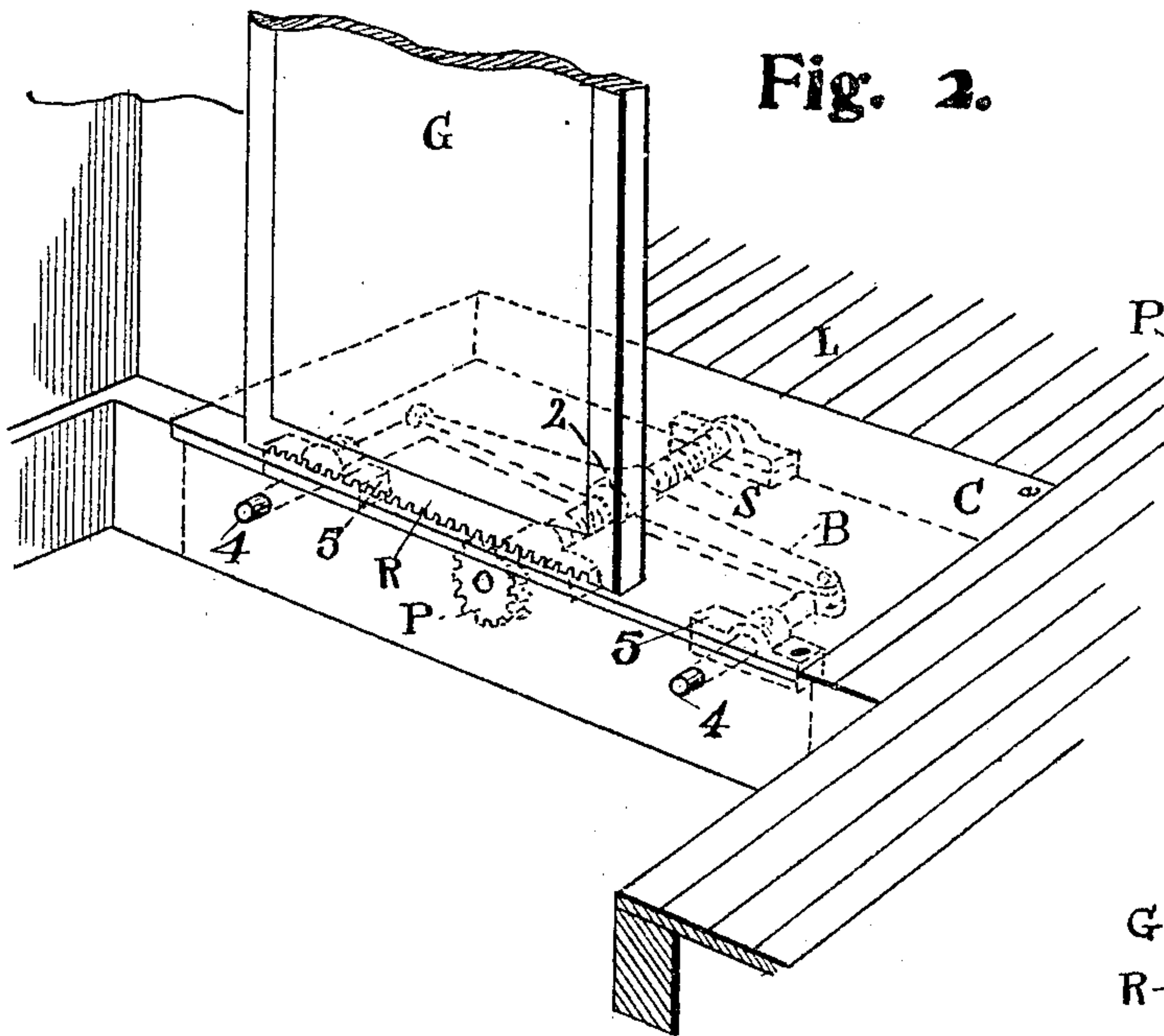


Fig. 2.

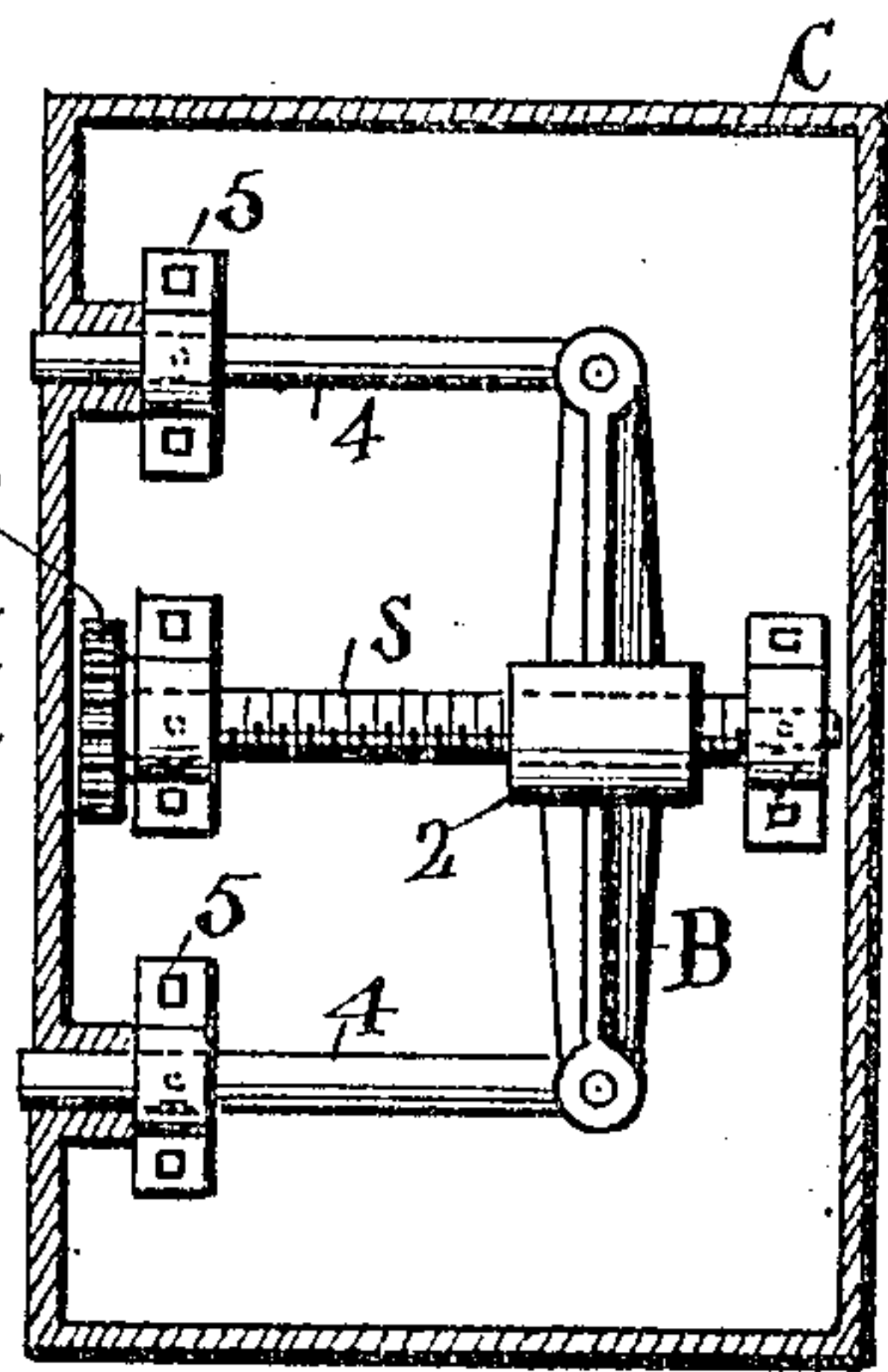


Fig. 3.

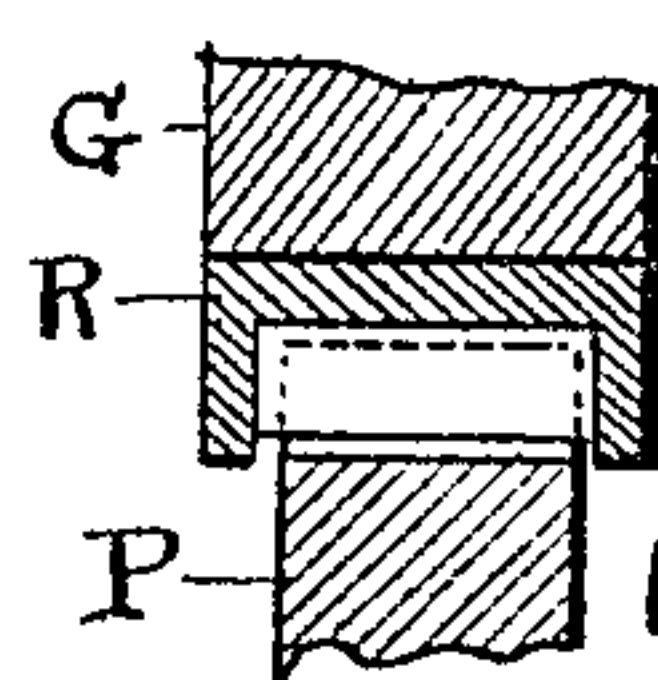


Fig. 4.

ATTEST
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SAFETY DEVICE FOR ELEVATORS.

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To all whom it may concern:

Be it known that I, AUGUST KAMPFE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

My invention relates to a safety device for elevator cars, and the object of the invention is to provide a device by means of which the elevator car will be automatically locked at the floor against movement either up or down when the elevator door is open, and the device is designed to be used in both passenger and freight elevators, as will hereinafter clearly appear.

Referring to the accompanying drawings, Figure 1 is a vertical sectional elevation of an elevator car taken at one of the floors and on a line which discloses the gate open and the automatic locking mechanism in locking position. Fig. 2 is a perspective view of a floor or landing and the gate partially open therein and looking from the inside outward. Fig. 3 is a plan view of the automatic locking mechanism, and Fig. 4 is a cross section enlarged of a portion of the bottom of the gate and rack thereon and of the pinion engaging the rack.

In the safety mechanism as thus disclosed E represents the elevator car or platform, which may be either a passenger elevator or a freight elevator, and my automatic locking mechanism is the same for both.

G represents a sliding gate, which may be of any preferred pattern or style, and L represents a landing or floor as usual also.

The invention lies in the mechanism adapted to be automatically operated by or from the gate and which mechanism is constructed and arranged to engage the platform or elevator car and hold the same against movement either up or down when thus engaged or locked and thereby prevent possible accident by premature starting in either direction. To these ends the said gate is provided with a channel or approximately U shaped rack bar R at its bottom opening downward and adapted to engage a pinion P on a short screw threaded shaft S supported upon suitable brackets in a special casing C located in the floor directly at the landing. A double armed bar B has an internally threaded hub 2 of nut form adapted to run back and forth upon the screw S as

said screw is rotated in one direction or the other. Such rotation is through pinion P by its contact with rack R, and a bolt 4 is connected with each arm of the bar B and projected through suitable bracket supports 5 at its opposite ends fixed on the floor of casing C and through sleeved openings in the front of said casing and adapted to enter holes or sockets 6 oppositely in the corresponding edge or side F of the elevator car. The said bolts 4 and supporting bar B are so located in respect to the elevator car and said socket holes 6, and the pitch of the thread on screw or shaft 6 is such that when the gate or door G is opened the said bolts 4 will be thrust outward into said sockets 6 the requisite depth and the elevator car will be thereby firmly locked against movement up or down. Then as the elevator door is closed again in the usual way, the screw S is automatically turned in the opposite direction and the bar B run back thereon a sufficient distance to withdraw the bolts 4 from engagement and leave the elevator car free to move in either direction.

It will thus be seen that the locking of the elevator car is an entirely automatic arrangement and does not entail any additional labor or responsibility upon the elevator car man or person who controls the door. In other words, the locking and unlocking of the elevator is wholly incidental with the movement of the gate, but it does occur that the entrance is absolutely safeguarded as against accident, because the elevator car cannot possibly move until the gate is closed, nor can it be moved after the gate is open till complete closing occurs again. A person cannot, therefore, be caught by the elevator car at the door or landing as heretofore, and the device becomes a perfect safety device which makes accident at the landing impossible. The only essential requisite is that the elevator car be stopped flush with the landing or floor, where it properly belongs anyway, when passengers are received or delivered. This being done, the gate can be opened or closed with the same liberty and ease as without my improved safety mechanism. To start the elevator car the door must first be closed, and this being done, the elevator car is started promptly in the usual way.

Bolts 4 and their supports are necessarily constructed heavy and strong enough to sustain the elevator car and its load if the

hoisting cable of the elevator car should break.

A further feature of this invention rests in the safety afforded to passengers by reason of the inability of the operator of the car from opening the gate in the event of an improper stop at the landing as it is essential that the elevator car be stopped absolutely flush with the landing before bolts 4 can enter openings 6. This advantage is obtained whether the elevator car is rising or descending.

What I claim is:

1. In safety attachments for elevator cars, an elevator car having openings in its side and a gate having a rack at its bottom, and locking mechanism comprising bolts to engage said openings and a bar carrying the same, a screw on which said bar is operatively mounted and a pinion on said screw engaged by said rack.

2. An elevator gate having a rack on its

bottom, a pinion engaged by said rack and a screw carrying said pinion, a cross bar threaded on said screw and bolts mounted on the ends of said bar, in combination with an elevator car having holes in its side adapted to be engaged by said bolts.

3. In elevators, a safety device comprising a hollow casing adapted to be set into an elevator landing and covered across its top, a threaded shaft supported in said casing and a pinion on one end thereof, and a cross bar having a threaded hub mounted on said shaft and a bolt on each end of said bar projecting through the front of said casing, said pinion being exposed through the top of said casing.

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

AUGUST KAMPFE.

Witnesses:

E. M. FISHER,
F. C. MUSSUN.