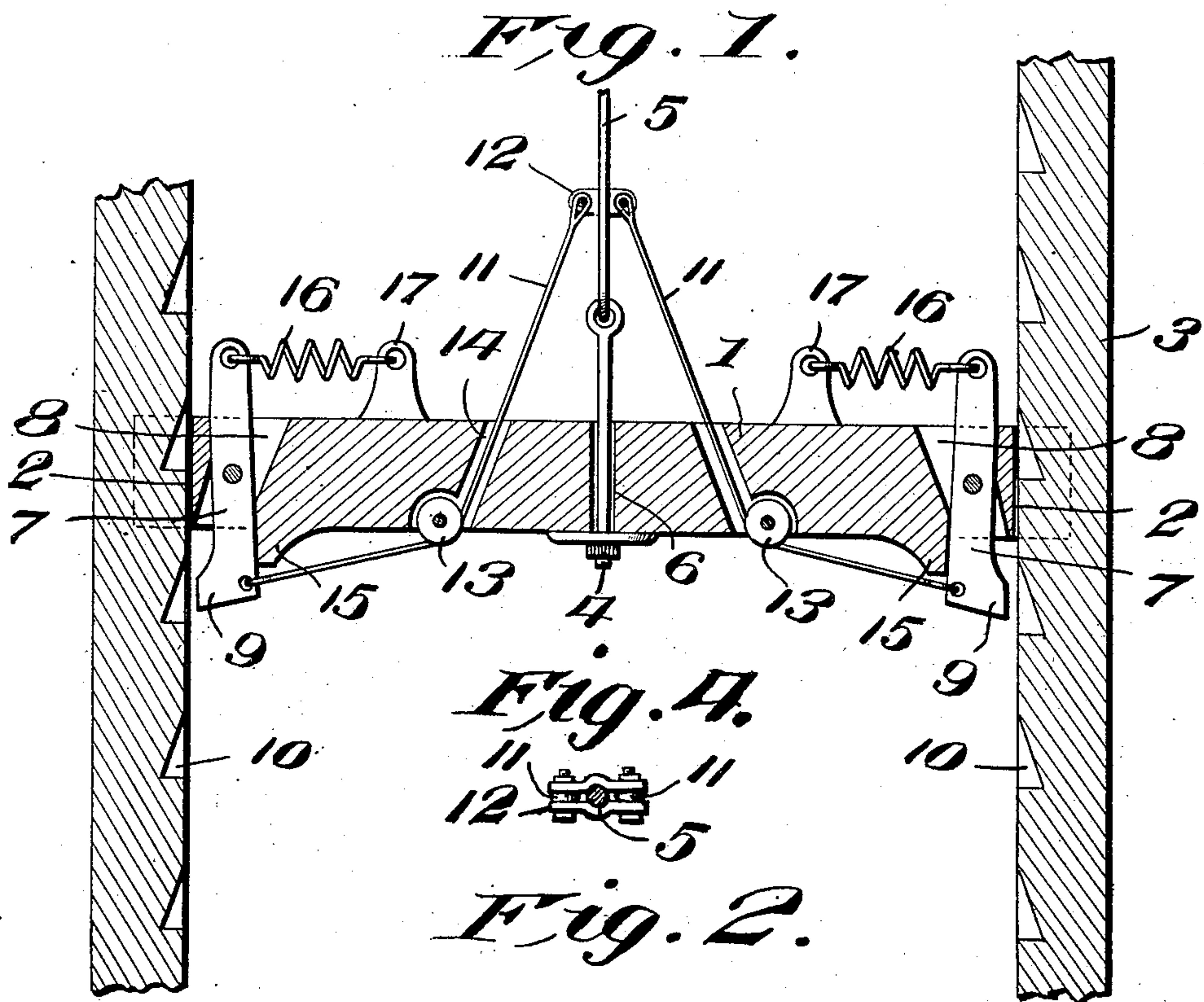


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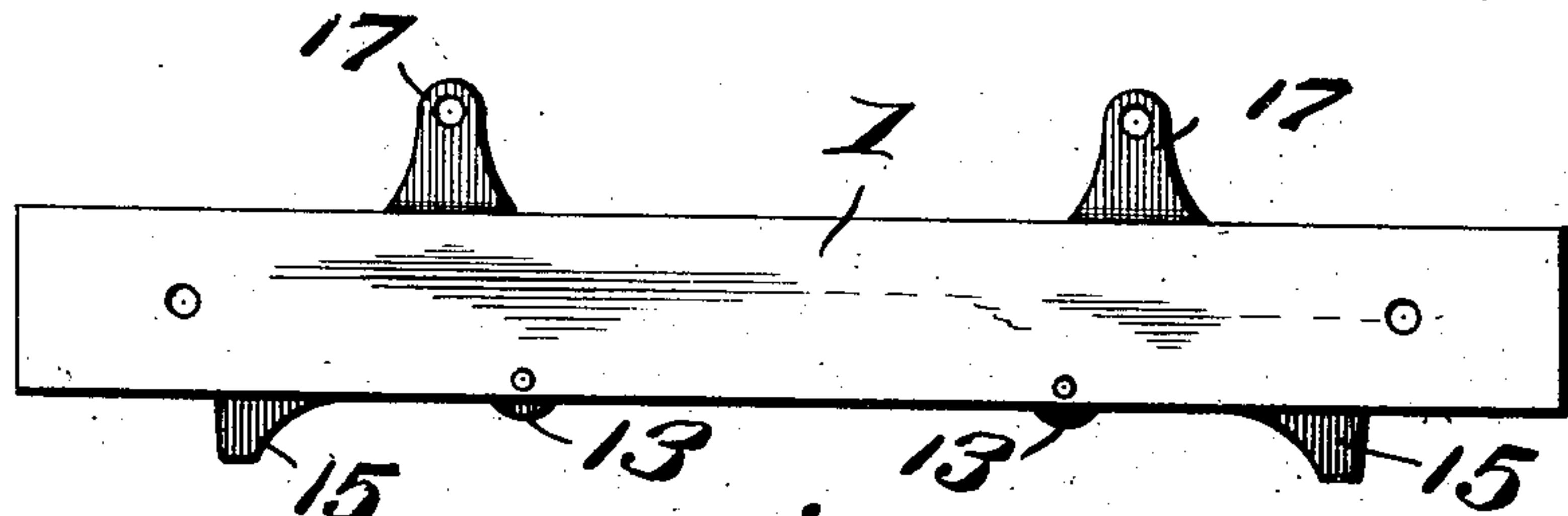
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SAFETY DEVICE FOR ELEVATORS.  
APPLICATION FILED FEB. 13, 1907.



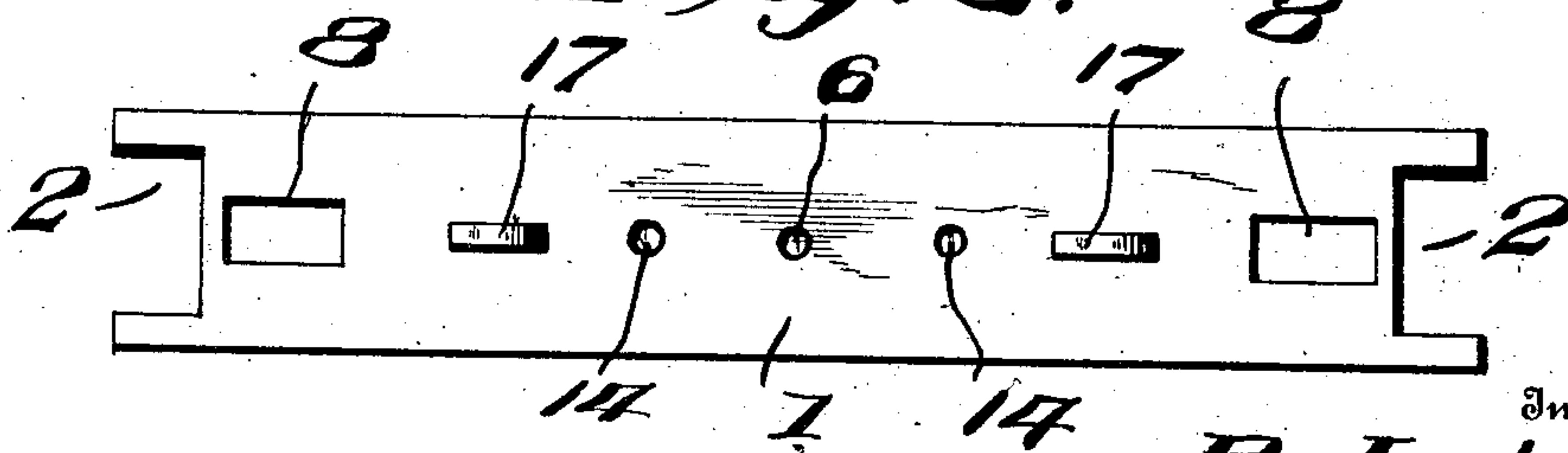
*Fig. 4.*



*Fig. 2.*



*Fig. 3.*



Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

BERNARD LEHN, OF ESCANABA, MICHIGAN.

## SAFETY DEVICE FOR ELEVATORS.

No. 855,646.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed February 13, 1907. Serial No. 357,197.

*To all whom it may concern:*

Be it known that I, BERNARD LEHN, a citizen of the United States, residing at Escanaba, in the county of Delta and State of Michigan, have invented certain new and useful Improvements in Safety Devices for Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to safety devices for elevators and my object is to provide means upon the elevator frame to engage the guides when the supporting cable for the elevator becomes broken and thereby stop the descent of the elevator.

A further object is to provide means for holding the locking device out of engagement with the guides and a still further object is to provide means for automatically directing said device into engagement with the guides when the supporting cable becomes broken.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1 is a central sectional view through a portion of an elevator and guides therefor showing my improved device secured thereto. Fig. 2 is a side elevation of that portion of an elevator to which my improved safety device is secured, Fig. 3 is a top plan view thereof, and, Fig. 4 is a detail plan view of the clamp employed in securing the auxiliary cables to the main cable.

Referring to the drawing in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates a supporting beam for an elevator which may be of the usual or any preferred form and is provided at each end with a channel 2 which channels are adapted to receive the usual form of elevator guides 3.

Extending vertically through the central portion of the beam 1 is a bolt 4 to the upper end of which is secured the usual form of supporting cable 5 and by which means the elevator is raised and lowered and in this connection I provide an opening 6 in the beam 1 of greater diameter than the diameter of the bolt 4 so that should the cable 5 become broken, the bolt 4 will be left free to readily

move longitudinally through the opening in the beam.

In order to suspend the elevator and prevent the same from descending should the supporting cable become broken I have provided my improved safety device which consists of levers 7, one for each end of the supporting beam 1 and which are pivotally secured in slots 8 extending vertically through the beam 1 said levers being provided at their lower ends with heads 9 which are so arranged that when the levers are swung in one direction upon their pivot points the heads will engage notches 10 disposed at intervals in the faces of the guides 3.

The slots 8 are so constructed that the levers 7 may be swung a predetermined distance in either direction so that when the elevator is in use the levers may be swung a sufficient distance in one direction to remove the heads from engagement with the guides 3 so that the elevator may freely travel upon the guides and in order to hold said levers in this position I secure auxiliary cables 11 to the lower ends of the levers 7 and dispose the opposite ends of said auxiliary cables into engagement with the supporting cable 5 and adjustably secure the same thereto by means of a clamp 12 and as long as the supporting cable 5 is suspending the elevator the auxiliary cables 11 will be held taut and the levers removed from engagement with the supporting guides.

The auxiliary cables in their passage from the levers 7 to the supporting cable 5 are directed around sheaves 13 which are rotatably mounted in the lower face of the beam 1 and through bores 14 so that should the supporting cable 5 become broken and the bolt 4 moved longitudinally through the opening 6 the auxiliary cables 11 will likewise yield and allow the levers 7 to move into engagement with the notches 10.

At the lower ends of the slots 8 I have provided depending shoulders 15 which are designed to be engaged by and limit the inward movement of the lower ends of the levers 7 thereby preventing the auxiliary cables 11 from moving the upper ends of the levers into engagement with the face of the guides 3.

In order to immediately rotate the levers 7 upon their pivot points and direct the heads 9 into engagement with the notches 10 when the supporting cable 5 becomes broken, I secure to the upper ends of the levers 7 one end



of tension springs 16, the opposite ends of which are secured to ears 17 carried by the upper surface of the supporting beam 1 so that as soon as the cable 5 becomes broken 5 the springs 16 will immediately operate the levers 7 and stop the descent of the elevator.

By securing the auxiliary cables 11 to the supporting cable 5 through the medium of a clamp 12 it will be seen that said clamp may 10 be adjusted at intervals upon the cable to compensate for any contraction or expansion of the supporting cable or auxiliary cables, thus holding the levers out of engagement with the guides.

15 It will now be seen that I have provided a very cheap, durable and efficient safety appliance for elevators and one that will be positive in its operation and it will further be seen that said appliance may be attached to 20 any form of elevator employing a cable for operating the same.

What I claim is:

1. In a device of the class described the combination with a supporting beam and 25 guides therefor; of a supporting cable for said beam, levers extending vertically through slots adjacent the ends of said beam and pivotally mounted therein, there being shoulders on the lower face of said supporting beam 30 and at one edge of said slots adapted to limit the inward movement of the lower ends of said levers, said levers having heads on the lower ends thereof adapted to engage notches in the guides; auxiliary cables secured at one 35 end to the lower ends of said levers and at their opposite ends to the supporting cable, means to adjustably secure the auxiliary cables to the supporting cable; there being ears

extending upwardly from said supporting beam and tension springs disposed between 40 said ears and the upper ends of said levers adapted to swing the levers and direct the heads into engagement with said notches when the supporting cable becomes broken.

2. In a device of the class described the 45 combination with a supporting beam and guides therefor; of a supporting cable, a bolt extending loosely through an opening in the center of said supporting beam adapted to receive the supporting cable, levers pivotally 50 mounted in slots in said beam, provided with heads at the lower ends thereof adapted to enter notches in the guides, there being depending shoulders on the beam adjacent one edge of the slots adapted to limit the inward 55 movement of the levers, auxiliary cables secured at one end to the lower ends of said levers and at their opposite ends to the supporting cable, a clamp for said auxiliary cables whereby the same may be adjustably se- 60 cured to the supporting cable; sheaves on said supporting beam around which said auxiliary cables take, there being upwardly extending ears on said supporting beam and tension springs disposed between said ears 65 and the upper ends of the levers whereby when the supporting cable becomes broken the springs will direct the heads into engagement with the notches.

In testimony whereof I have signed my 70 name to this specification in the presence of two subscribing witnesses.

BERNARD LEHN.

Witnesses:

O. V. LINDEN,  
AUGUST BENSON.