

R. BOHLEN.  
SAFETY DEVICE FOR ELEVATORS.  
APPLICATION FILED MAR. 23, 1908.

900,473.

Patented Oct. 6, 1908.

2 SHEETS—SHEET 1.

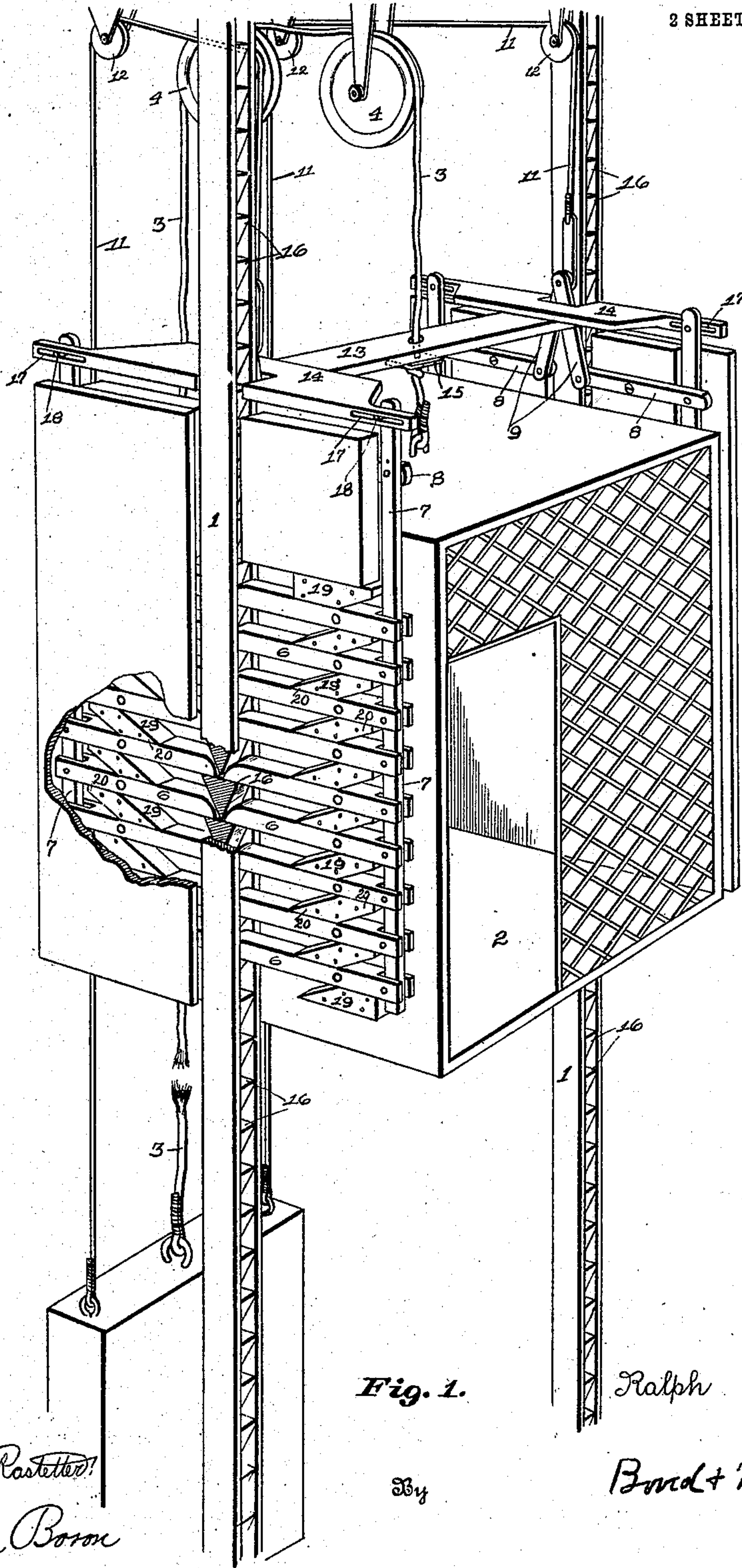


Fig. 1.

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Witnesses  
Harry O. Rastetter  
Sylvia Boron

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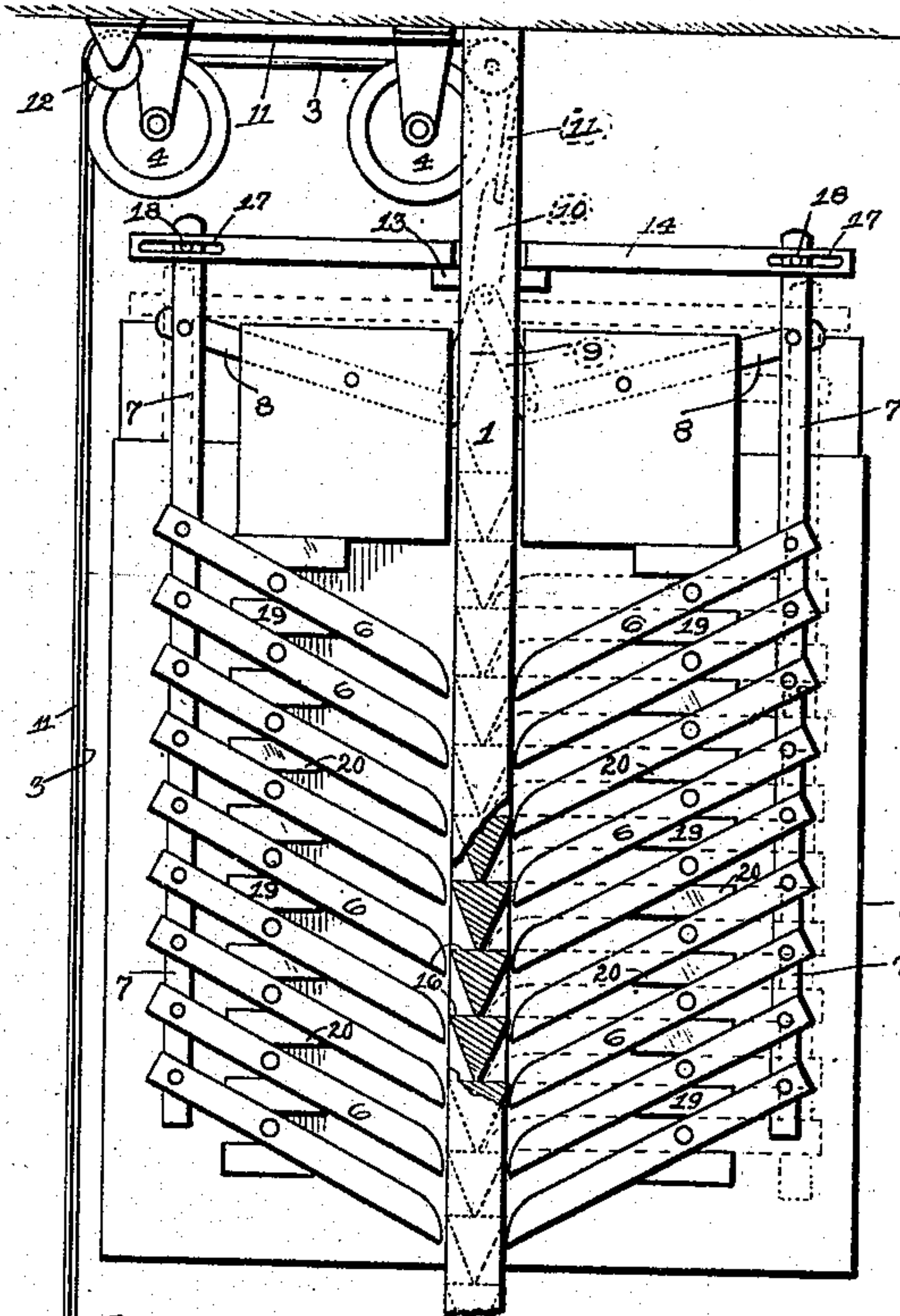


Fig. 2.

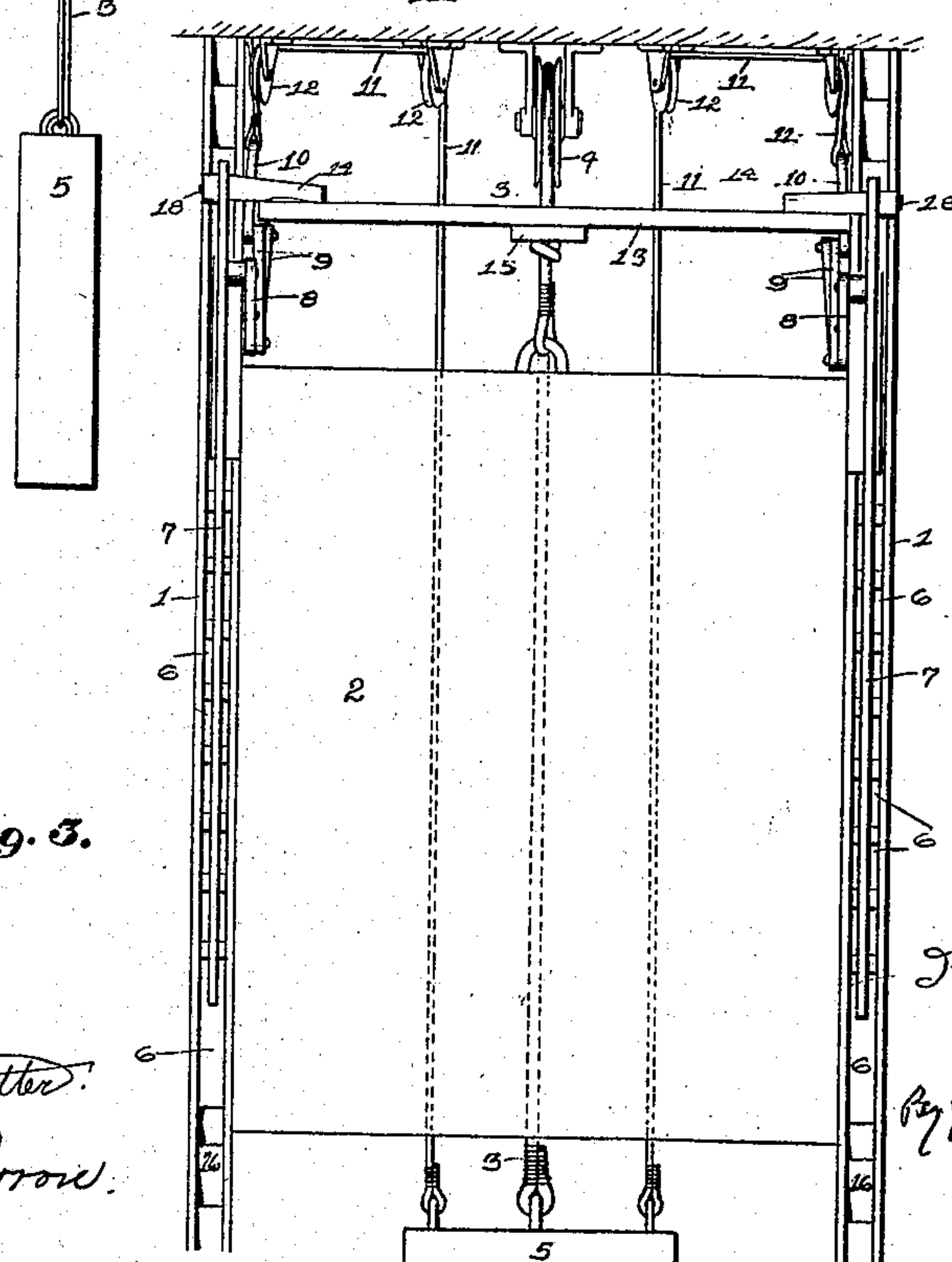


Fig. 3.

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# UNITED STATES PATENT OFFICE.

RALPH BOHLEN, OF CANTON, OHIO.

## SAFETY DEVICE FOR ELEVATORS.

No. 900,473.

Specification of Letters Patent.

Patented Oct. 6, 1908.

Application filed March 23, 1908. Serial No. 422,663.

*To all whom it may concern:*

Be it known that I, RALPH BOHLEN, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, 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.

My invention relates to elevators and particularly to the devices in connection therewith, the object of which is to provide an efficient construction and arrangement of parts whereby the severing of the hoisting cable will result in an immediate automatic application of a series of catches, whereby the downward movement of the elevator car or platform will be checked.

Additional objects and advantages of this invention will appear in the following description and the novel features and arrangements and operation will be more particularly pointed out and claimed.

In the drawings: Figure 1 is a perspective view of the elevator car, showing the guide bars in proper relationship with reference to the car and illustrating the car locked. Fig. 2 is a side elevation of the car showing the locking device out of action. Fig. 3 is a front elevation showing the different parts properly arranged.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 indicates the car or platform guide bars, which are held in parallel relationship with reference to each other in the usual manner, that is to say by properly connecting the same to the vertical walls of the elevator shaft proper. The car or carriage 2 is of the usual construction and within itself has no specific reference to the present invention.

To the top of the car is connected the cable 3, which cable is located over the proper pulleys 4 or their equivalents, and is extended downward and is connected to the counter weight 5. The drum and cable connection designed to operate the car is not illustrated, owing to the fact that these parts within themselves do not form any specific part of the present invention, but may be arranged in the usual manner. To the carriage are pivotally attached a series of bars or what might be more specifically termed holding or catch bars 6, which catch bars are rounded

or beveled at their inner ends as best illustrated in Figs. 1 and 2.

The catch bars 6 are pivoted intermediate their ends and to their outer ends are pivotally connected the bars 7, which bars are extended upward a short distance above the top or upper catch bars 6, and to their top or upper portions are connected the actuating bars 8, to the inner ends of which are connected the links 9, and to the links 9 are connected the short bars 10, to which short bars are connected the cables 11, which cables extend over pulleys 12, and extend to the counter weight 5, to which counter weight they are attached. The cables 11 are inactive so far as performing any function, except when the counter balance cable 3 becomes broken or partially broken or stretched, at which times the cables 11 come into action and perform the functions hereinafter described.

Directly above the car 2 is located the cross bar 13, through which cross bar the elevating cable 3 passes, and in order to provide a means for holding the cross bar 13 together with the two bars 14 in proper elevation during all of the time the cable 3 is in proper condition, said cable is provided with the block or its equivalent 15, which is located directly under the bar 13, and is so adjusted upon the cable that a sufficient lifting force will be exerted to hold the bar 13 in proper elevation, and at the same time will elevate the outer ends of the catch bars 6 and hold them in the position illustrated in Fig. 2, and when in such position their inner ends are out of engagement with the parallel bars, 1, thereby allowing the car to be operated in the usual manner and without any interference with the movements of the car. The outer ends of the catch bars 6 are held directly in elevation by the vertical bars 7, which are carried by the cross-bar 14. When the cable 3 breaks or becomes dangerously stretched so as to transfer the weight of the counter-balance 5 upon the cables 11, said cables will elevate the inner ends of the actuating bars 8 and depress their outer ends, which movement will lower the bars 7, owing to the fact that the actuating bars 8 are pivoted intermediate their ends thereby lowering the outer ends of the catch bars 6, and elevating their inner ends so that the inner ends of the catch bars will come into engagement with the proper notches 16 formed in or upon the opposite sides of the



parallel bars 1, these notches should be in close relationship with reference to each other and extend practically the entire length of the parallel bars 1, or in other words the parallel bars should be notched or ribbed for a length equal to the extreme length of travel of the car 2 or substantially so.

It will be understood that there will be a slight lateral movement of the bars 7, owing to the fact that said bars are connected to the catch bars 6 some distance from their pivotal points, and in order to allow for this movement the right angled bars 14 are provided with the elongated slots 17, through which elongated slots the pins or bolts 18 pass, which pins or bolts are for the purpose of connecting the cross bars 14 and the vertical bars 7 together.

For the purpose of limiting the upward movement of the locking bar 6 the holding blocks or stops 19 are provided and are located directly above and below the locking bars 6. These blocks 19 also hold the locking bars 6 in proper relationship with reference to the parallel bars 1 when in their normal position and in such position that a slight downward movement of the vertical bar 7 will bring the inner ends of the locking bars 6 into engagement with the recesses 16, and the locking bars 6 into horizontal planes, but by reason of the blocks 19 they cannot rock upon their pivotal points, owing to the fact that the top edges of the locking bars 6 come in contact with the under edges of the blocks 19. In order that the proper rocking movement may be imparted to the locking bars 6 the blocks 19 are provided with the beveled ends 20.

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

1. In a safety device for elevators, the combination of an elevator car, catch-bars carried by said car and pivoted intermediate their ends, vertical bars connected to the outer ends of the catch-bars, cross bars connected to said vertical bars, a bar adapted to lift the cross bars and the vertical bars, a cable located through the bar adapted to lift the cross bars, a counter balance connected to said cable, actuating bars pivoted to the vertical bars, links pivoted to said actuating

bars, cables adapted to lift the inner ends of the actuating bars, said cables being connected to the counter balance and parallel bars provided with a series of notches adapted to receive the inner ends of the catch-bars, substantially as and for the purpose specified.

2. In a safety device for elevators, the combination of parallel bars provided with a series of notches, an elevator car or platform, a series of catch-bars pivoted intermediate their ends and carried by the elevator car, vertical bars connected to the catch bars and cross bars connected to said vertical bars, actuating bars pivoted intermediate their ends and their outer ends pivoted to the vertical bars, means for lifting the inner ends of the actuating bars and a cable connected to the car, substantially as and for the purpose specified.

3. In a safety device for elevators, notched parallel bars, an elevator car guided by said parallel bars, a cable connected to said car, a counter weight connected to said cable, catch bars adapted to engage the notches of the parallel guide bars, stop blocks located between the catch bars and provided with beveled ends, and means for actuating the catch bars, substantially as and for the purpose specified.

4. In a safety device for elevators, notched guide bars a car or platform guided by said notched-bars, a counter weight, a cable connected to said counter weight and to the car respectively, bars located above the car and adapted to be lifted by the aforesaid cable, catch bars pivoted intermediate their ends and carried by the car, means for holding the outer ends of the catch bars in elevated positions, said means carried by the bars located above the car, bars adapted to actuate the catch bars and cables adapted to actuate the actuating bars by the down pull of the counter weight connected to the car cable, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

RALPH BOHLEN.

Witnesses:

J. A. JEFFERS,  
F. W. BOND.