

No. 883,279.

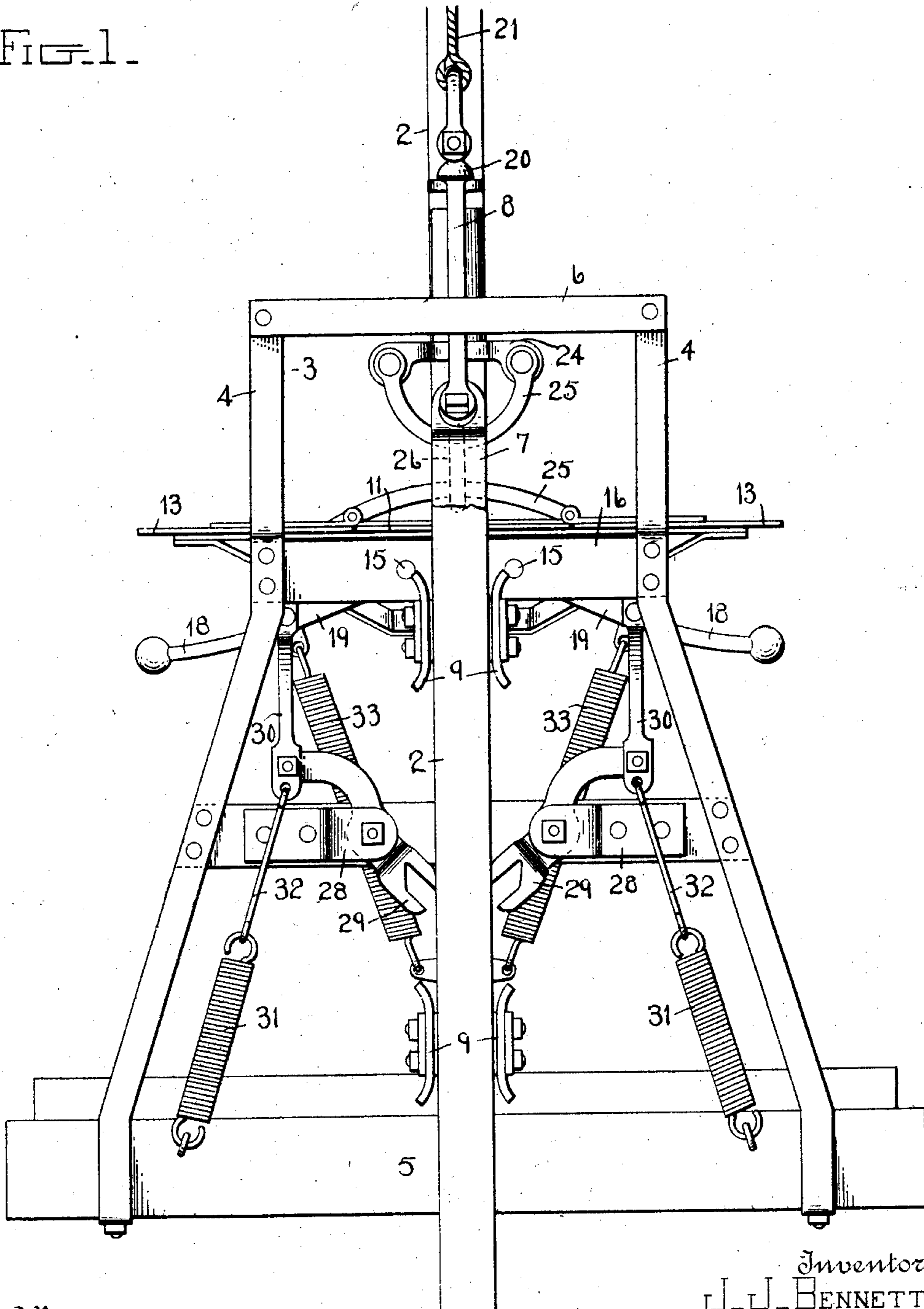
PATENTED MAR. 31, 1908.

J. J. BENNETT & J. KLEIN.
SAFETY DEVICE FOR ELEVATORS.

APPLICATION FILED APR. 15, 1907.

3 SHEETS—SHEET 1.

Fig. 1.



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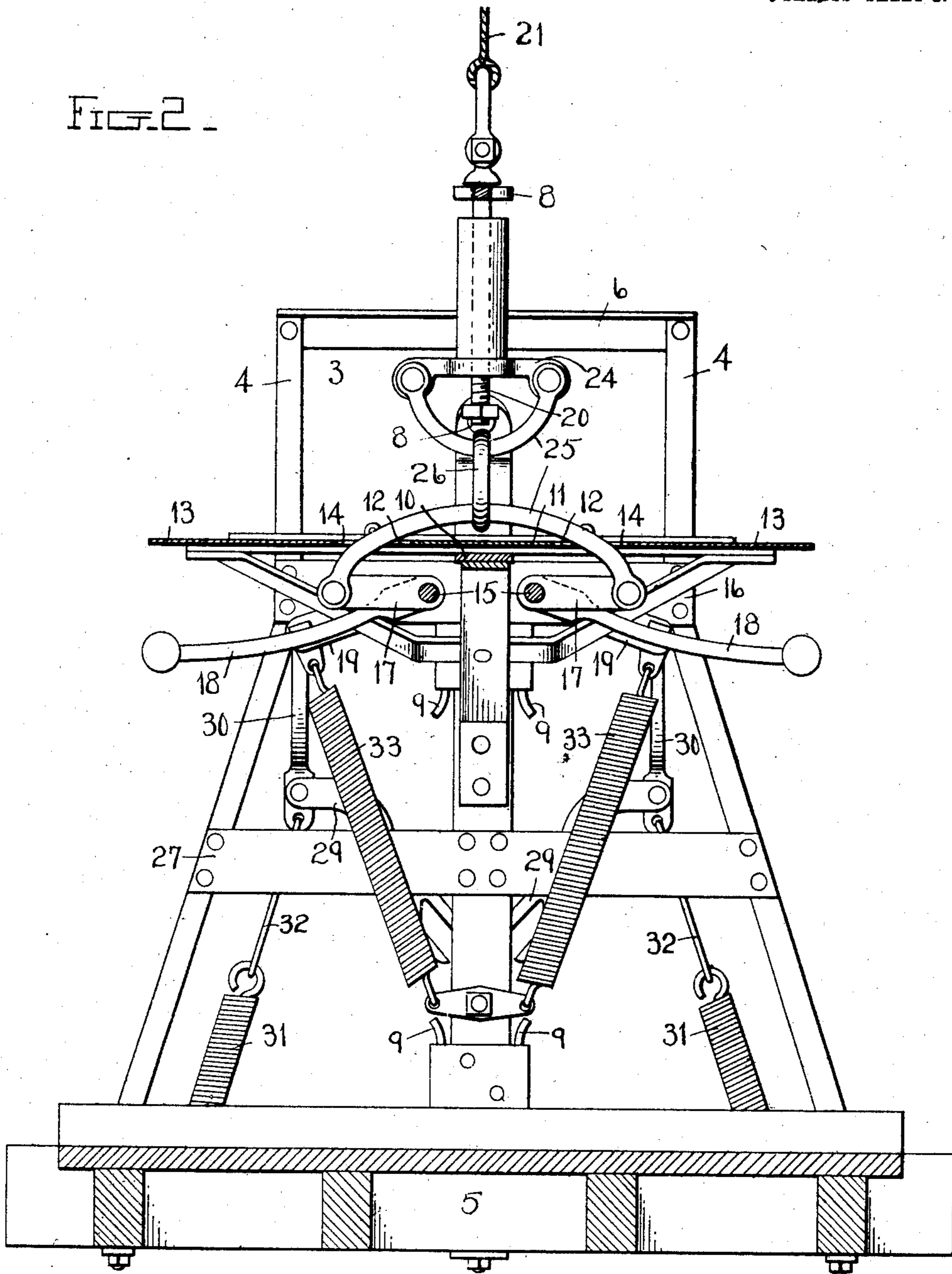
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3 SHEETS—SHEET 2.

FIG. 2.



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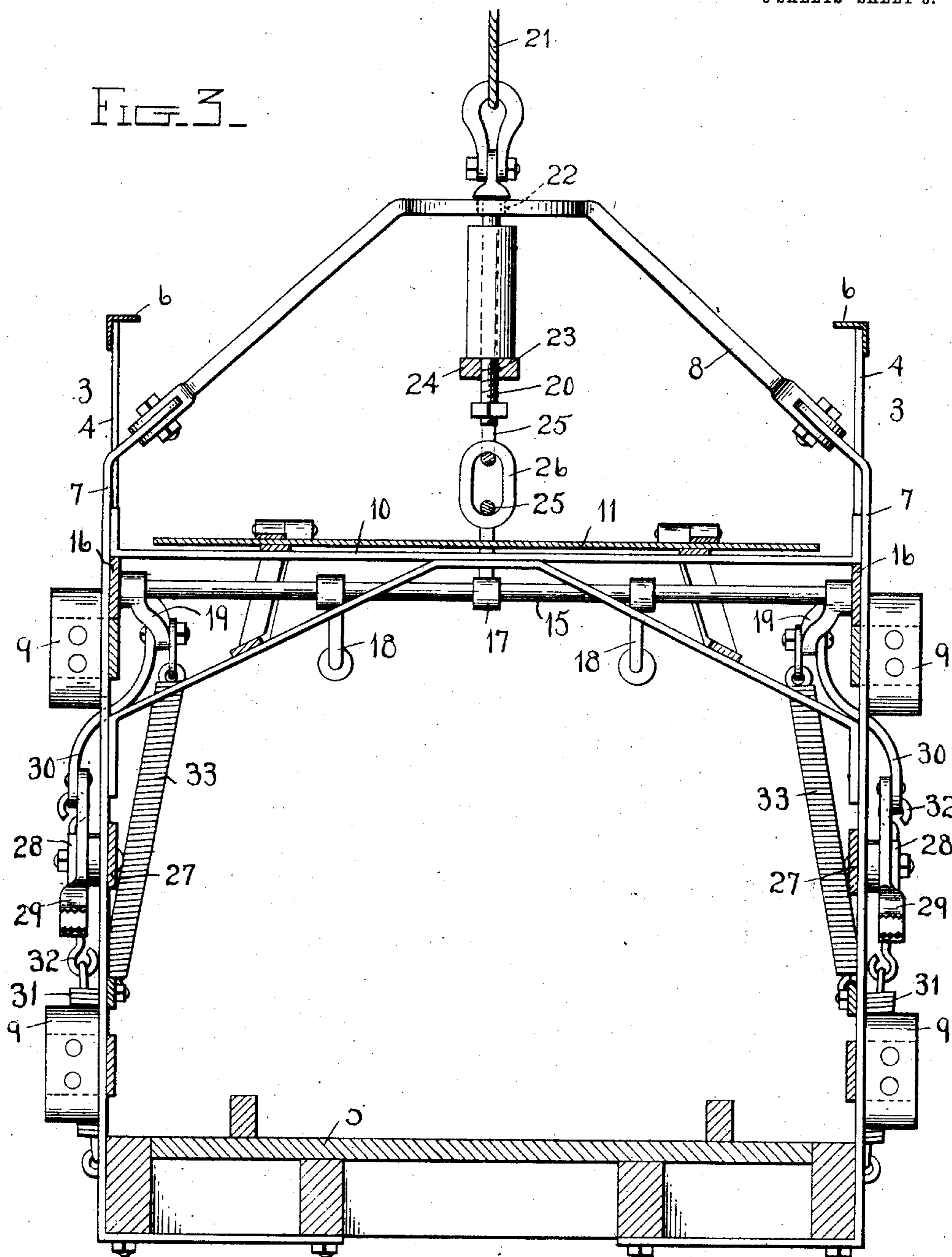
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3 SHEETS—SHEET 3.

FIG. 3.



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UNITED STATES PATENT OFFICE.

JOHN J. BENNETT AND JOSEPH KLEIN, OF CENTRALIA, ILLINOIS.

SAFETY DEVICE FOR ELEVATORS.

No. 883,279.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed April 15, 1907. Serial No. 368,337.

To all whom it may concern:

Be it known that we, JOHN J. BENNETT and JOSEPH KLEIN, citizens of the United States, residing at Centralia, in the county of Marion and State of Illinois, have invented certain new and useful Improvements in Safety Devices for Elevators; and we do 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.

Our invention has a relation to new and useful improvements in safety devices for elevators, and is primarily designed to be used in connection with mining elevators or cages.

The object of our invention is to provide an elevator with simple, economical and efficiently operating means for insuring against any liability of the car falling when in operation.

With these and other objects in view, as will readily appear as the nature of the invention is better understood, our invention consists in the construction, combination and arrangement of devices illustrated in the drawings and particularly pointed out in the specification and claims hereunto appended.

Figure 1 is a side elevation of a car provided with my improved means secured in operative position to an elevator guide frame partially broken away; Fig. 2 is a central vertical sectional view; and Fig. 3 is a central cross sectional view.

Referring now more particularly to the drawings, it will be seen that the elevator is provided with the usual vertical guide bars 2.

3 indicates the side supporting frames, which comprise each two vertically-disposed bars 4 secured at their lower ends to the sides or bottom of the car or cage 5 and connected at their upper ends by cross bars 6.

The numeral 7 indicates two vertical central guide bars, which are connected at their ends in the bifurcated ends of an angle bar 8 and are provided on their inner faces, near their upper and lower ends with oppositely-disposed vertical guide plates 9, adapted to work against opposite edges of the vertical guide bars 2.

10 indicates the horizontal supporting bar, which is secured at its ends to the inner faces and inner upper ends of said vertical guide bars 7 and has securely bolted or otherwise secured to its upper face a stationary plate 11, having recesses 12 in its side edges and

provided at its side edges with hinged plates 13 having recesses 14 in their inner side edges, corresponding with and opposite the recesses in the side edges of said stationary plate 11.

15 indicates two corresponding horizontal operating rods, which are journaled in parallelism at their ends in cross bearing plates 16, secured at their ends to the inner faces and inner upper ends of said vertically-disposed bars 4, each of said rods being provided at its center with an outwardly-extending operating arm 17. Each of said horizontal operating rods 15 is provided outwardly of said outwardly-extending operating arm 17 with two outwardly-extending holding arms 18, and at its extreme ends with outward-extending operating arms 19.

The numeral 20 indicates a rod or bolt having a thread at its lower end and provided at its upper end with suitable means for attaching one end of a cable 21 or other equivalent means thereto. The upper end of said threaded rod or bolt 20 works through a corresponding perforation or opening 22 in said angle bar 8 and at its lower end through a corresponding perforation or opening 23 in a horizontal supporting plate 24, connected at its eyed ends with the free ends of said outwardly-extending operating arms 17 by elev- ises 25 or other equivalent means, and links 26. Said horizontal supporting bar 24 may be connected with the free ends of said outwardly-extending operating arms 17, by any means having a suitable amount of flexibility to permit of a slight lateral movement of said car when being raised or lowered.

The numeral 27 indicates two transverse bearing bars, which are secured at their ends to the inner faces of said vertically-disposed bars 4 and said central vertical guide bars 7, a suitable distance below said horizontal operating rods 15 and are provided on their outer faces with suitable bearings 28, preferably in the form of angle plates, having pivoted to their inner faces near their inner ends safety catches 29, which are preferably bifurcated and toothed at their inner or engaging ends and are connected at their outer or opposite ends to the outer ends of said outwardly-extending operating arms 19 by connecting bars 30 or other equivalent means.

31 indicates coiled springs, which are secured at their lower ends to the sides of said elevator platform 5, and at their upper ends by eyed rods 32 or other means to the lower ends of said connecting bars 30, and serve to

maintain a pull on the free ends of said safety catches 29, so as to operate to throw the inner ends of said safety catches in engagement with the vertical guide bars 2 of the said elevator guide frame, should the cable or other means employed for raising the car become broken.

33 indicates coiled springs, which are connected at their lower ends by suitable means to the inner faces of said central vertical guide bars 7, and at their upper ends by suitable means to the outer or free ends of said outwardly-extending operating arms 19, and serve to maintain a pull on the free ends of said operating arms 19 so as to coact with said springs 31 in throwing the safety catches in engagement with the guide bars of the elevator guide frame should the cable 21 or other means employed for raising the elevator car becomes broken.

In the operation of my invention, the pull exerted on the cable 21 by the mechanism employed to raise or lower the car serves through the medium of the mechanism described to raise the outer ends of said outwardly-extending operating arms 17 and effect a partial rotation of said horizontal operating rods 15, which in turn, through the medium of said outwardly-extending operating arms 19 and connecting bars 30, raise the outer or free ends of said safety catches 29 and throw the inner or engaging ends of the same out of engagement with the sides of the vertical side bars of said elevator guide frame. Said holding arms 18 afford a means for the passengers riding on the platform to hold to. Should the cable 21 or other means employed to raise or lower said car become broken, and the pull exerted on the outer ends of said outwardly-extending arms 17 be thereby removed, said coiled springs 31 and 33 throw the inner or engaging ends of the safety devices into engagement with the vertical bars 2 of the elevator guide frame, and prevent a further descent of said car.

While the two separate springs 31 and 33 respectively, normally coact to throw the safety catches in engagement with the guide bars 2 of the elevator guide frame and there-

by check the descent of the car 5 should the cable 21 or other means employed to raise said car become broken, should either set of springs become inoperative for any reason the other set will independently throw the safety catches.

From the foregoing, it will be seen that danger of the elevator accidentally falling is a practical impossibility.

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

In an elevator, a pair of vertical guides, a car arranged for movement between said guides, guide plates carried by the car for travel on the vertical guides, horizontal operating rods journaled in the car frame and having long, outwardly extending operating arms and short operating arms fixed for movement therewith, safety devices pivoted on the car for engagement with the guides to lock the car against downward movement, links connecting the outer free ends of the safety devices with the outer ends of the long operating arms a perforated extension on the lower end of each of said links, coiled springs connecting said extensions with the floor of the car, coiled springs connecting said operating arms with the sides of the car, an angle bar with a perforation at its middle point connected to the car, a vertical bolt slidable in said perforation and supported by a cable, and supporting said angle bar and car, an eyed supporting plate on the lower end of said bolt, a clevis connecting the eyed ends of said supporting plate, a clevis connecting the free ends of the short operating arms, a link connecting the first and second-named clevises, and a removable washer on said bolt between said angle bar and said supporting plate.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN J. BENNETT.
JOSEPH KLEIN.

Witnesses:

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