

No. 696,726.

Patented Apr. 1, 1902.

G. DONNELLY.

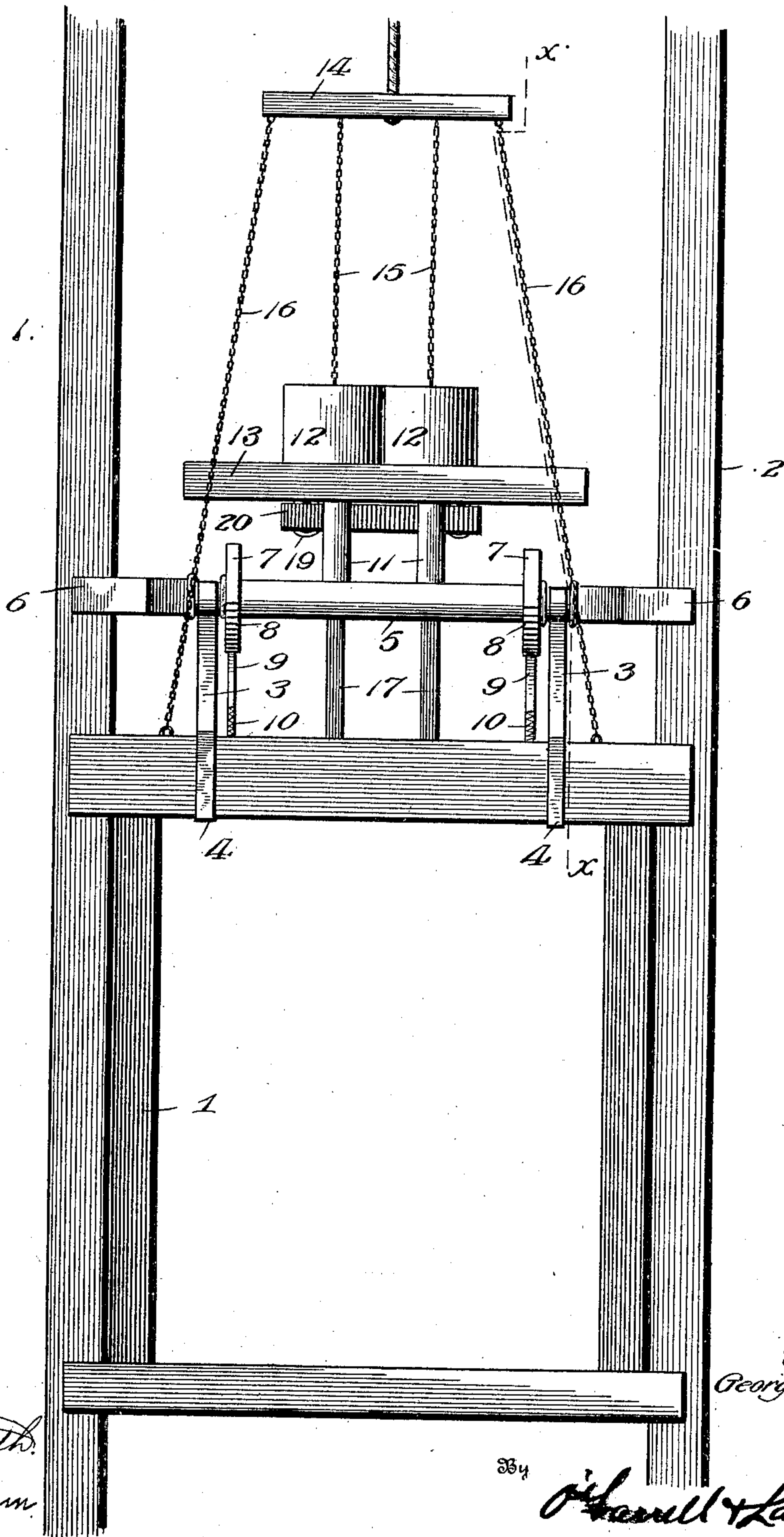
SAFETY ATTACHMENT FOR ELEVATORS.

(Application filed Dec. 28, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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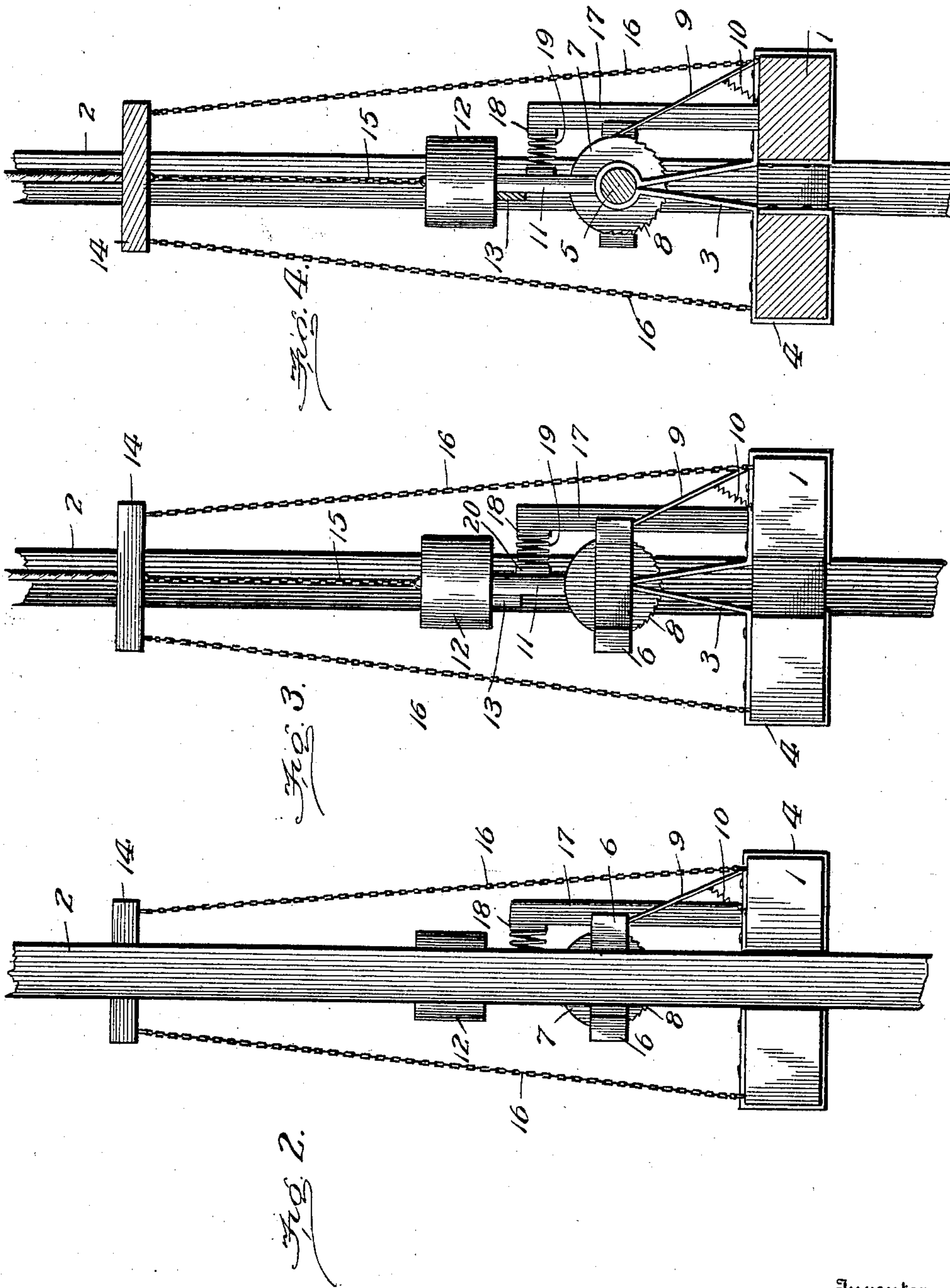
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3 Sheets—Sheet 2.



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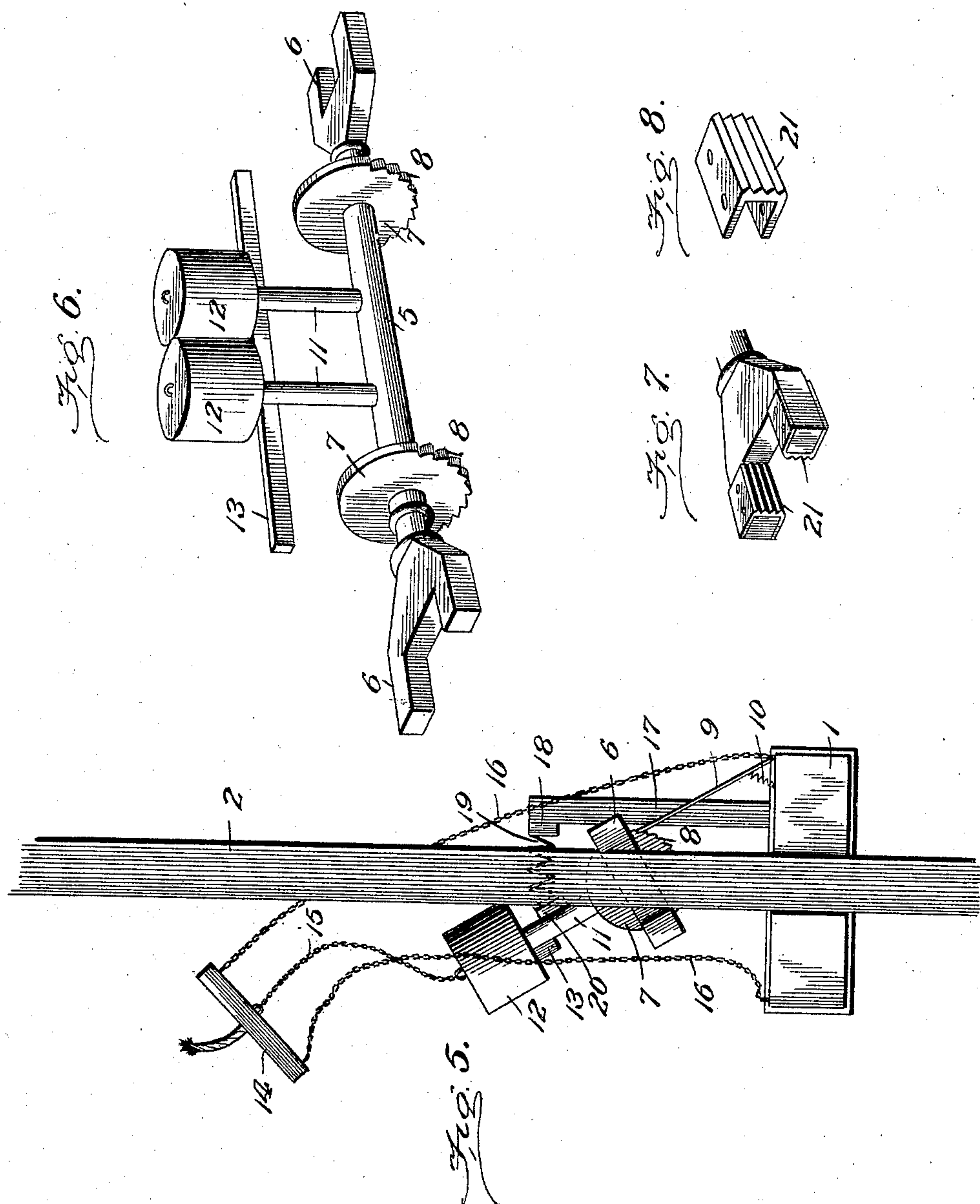
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

GEORGE DONNELLY, OF DIAMOND, INDIANA.

SAFETY ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 696,726, dated April 1, 1902.

Application filed December 28, 1901. Serial No. 87,520. (No model.)

To all whom it may concern:

Be it known that I, GEORGE DONNELLY, a citizen of the United States, residing at Diamond, in the county of Parke and State of Indiana, have invented certain new and useful Improvements in Safety Attachments for Elevators, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved safety attachment for elevator-cars, mine-cages, &c. Its primary object is to provide a strong, simple, and durable automatically-operating device which may be readily attached to elevator-cars of various forms and which will effectually prevent the dropping of the elevator.

Another object is to employ means for automatically locking the attachment.

With these and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a front elevation of an elevator-car with my improved attachment thereon. Fig. 2 is a side elevation showing the attachment in engagement with a guide of the elevator-car. Fig. 3 is a similar view with the guide removed. Fig. 4 is a section on line *x x*, Fig. 1. Fig. 5 is a side elevation showing the operation of the safety attachment. Fig. 6 is a detail view of the attachment. Fig. 7 is a view of a modified form of jaw, and Fig. 8 is a detail view of the shoe thereof.

Referring to the figures by numerals of reference, 1 is an elevator-car of suitable construction and mounted on guides 2, as shown. Mounted on the top of the elevator-car are standards 3, which are secured to said car by straps 4, extending under the top of the elevator-car. Journaled within the standards is a horizontal shaft 5, having a jaw 6 at each end thereof, said jaws being arranged so as to slide upon the guides 2, before referred to. The jaws are of sufficient size to permit the shaft to make about one-eighth or one-quarter of a turn before they clamp upon the guides 2. Arranged upon the shaft near each end thereof is a disk 7, having teeth 8 extending partly therearound. These teeth are

adapted to be engaged by pawls 9, mounted on the elevator-car and held normally in contact with the disks by springs 10.

Extending vertically from the shaft 5 are a suitable number of arms 11, each of which is provided at its end with a weight 12. A cross-strip 13 is secured to the arms and is for the purpose hereinafter more fully described.

The hoisting-cable of the elevator-car is secured to a block 14, as shown, and chains or cables 15 extend downward therefrom to each of the weights 12. Chains or cables 16 also extend from this block to the corners of the elevator-car, and these chains and the chains 15 are of such length that all will be taut when the elevator is suspended by the hoisting-cable.

Extending upward from the top of the elevator-car are standards 17, connected by a cross-strip 18, from which extend a suitable number of springs 19, connected to a second strip 20, normally bearing upon the arms 11.

The operation of the attachment is as follows: When the hoisting-cable breaks, the chains 15 and 16 immediately slacken, and as the arms 11 are released from tension the springs 19 will expand and throw the arms and their weights 12 forward, turning shaft 5 therewith. As this shaft turns the jaws 6 will engage the guides 2, acting as a clutch and preventing downward movement of the car. The pawls 9 engage the teeth of the disks 7 as they turn and prevent the shaft from turning backward after once moving the jaws into clamping position. When the arms 11 are thrown forward, the strip 13 comes into contact with a pair of the chains 16 and throws the block 14 and the chains connected thereto forward with the weights, thereby adding to the pressure exerted by the jaws upon the guide-strips. If desired, each jaw may be provided with a toothed shoe 21, as shown in Figs. 7 and 8. These shoes are preferably angular and may be replaced when worn. The teeth are adapted to increase the purchase of the jaws upon the guides 2.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve

the right to make such changes as fairly fall within the scope of my invention.

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

1. The combination with a revoluble jaw; of a weight connected thereto and adapted to revolve said jaw and clamp or bind it upon the guide of an elevator-car, a normally tensioned spring adapted, when released, to start the weight in its rotary movement, and a lock for the weight.

2. The combination with a revoluble jaw; of a weight connected thereto and adapted to revolve said jaw and clamp or bind it upon the guide of an elevator-car, means for automatically imparting rotary movement to the jaw and its weight in one direction, and means for preventing movement of said jaw in the opposite direction.

3. The combination with a revoluble jaw; of a weight connected thereto and adapted to revolve said jaw and clamp or bind it upon the guide of an elevator-car, means for automatically imparting rotary movement to the jaw and its weight in one direction, a toothed disk revoluble with the jaw, and a stop normally engaging the disk and adapted to prevent movement of the jaw in the opposite direction.

4. The combination with a revoluble shaft; of a jaw at each end thereof, normally vertical weighted arms extending from the shaft, toothed disks upon the shaft, stops engaging

the same and adapted to prevent movement in one direction, a flexible connection between said arms and a hoisting-cable, whereby the arms are retained normally vertical, and normally tensioned springs adapted, when said connections are slacked, to automatically impart a rotary motion to the arms and jaws.

5. The combination with an elevator-car and guides therefor; of standards upon said car, a revoluble shaft journaled in said standards, a jaw at each end of the shaft adapted to travel upon the guides, normally vertical weighted arms extending from the shaft, toothed disks upon the shaft, stops engaging the same and adapted to prevent movement in one direction, a flexible connection between said arms and a hoisting-cable whereby said arms are retained normally vertical, flexible connections between the car and said hoisting-cable, normally tensioned springs adapted, when said connections are slacked, to automatically impart a rotary motion to the arms and jaws, and a strip upon the arms adapted, during the rotary movement of said arms, to contact with the connections and carry them in the direction of movement of the arms.

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

GEORGE DONNELLY.

Witnesses:

JAMES MCKILLOP,
JAMES WALSH.