

No. 657,026.

Patented Aug. 28, 1900.

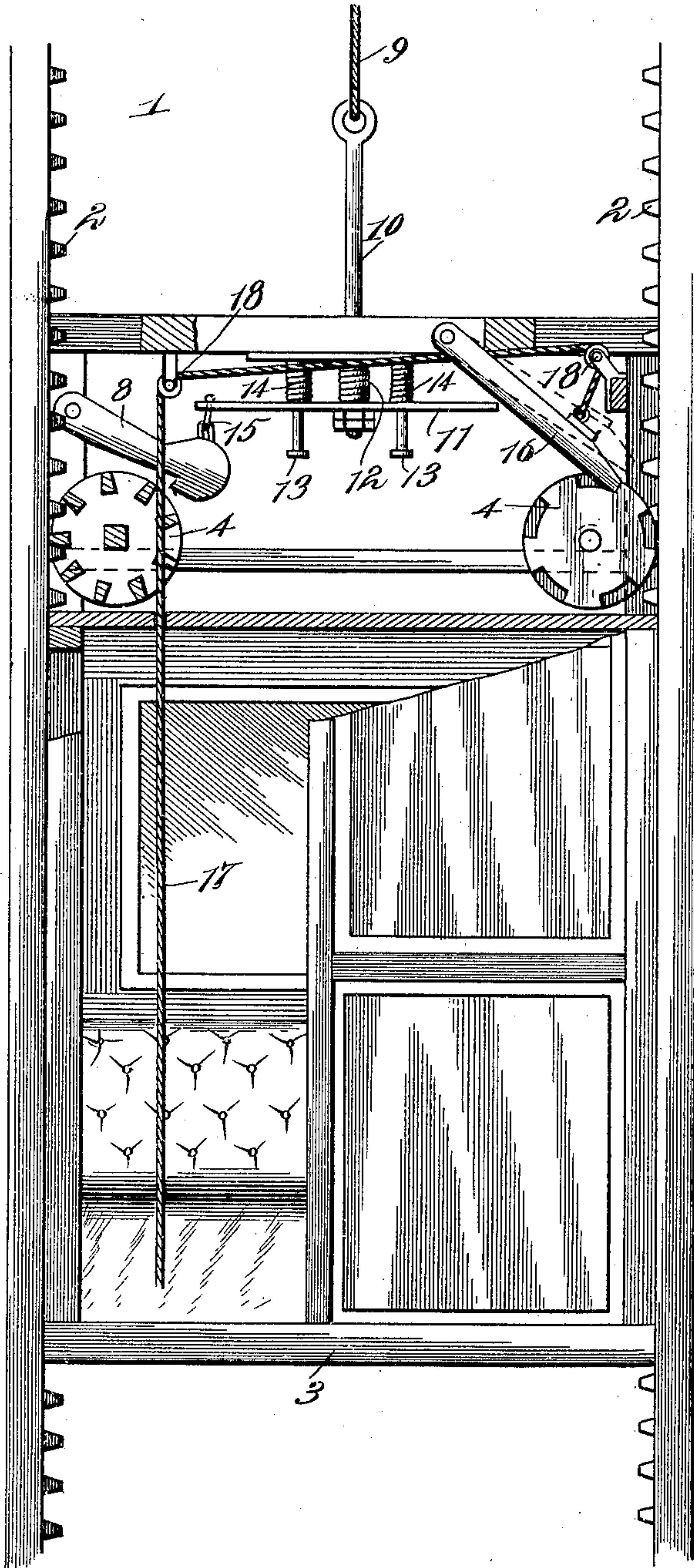
T. LEBIEDZINSKI.
SAFETY DEVICE FOR ELEVATORS.

(Application filed July 2, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses

L. M. Walker
J. W. Garmon

Thomas Lebiezinski Inventor
by *C. A. Snow & Co.*
Attorneys

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2 Sheets—Sheet 2.

Fig. 2.

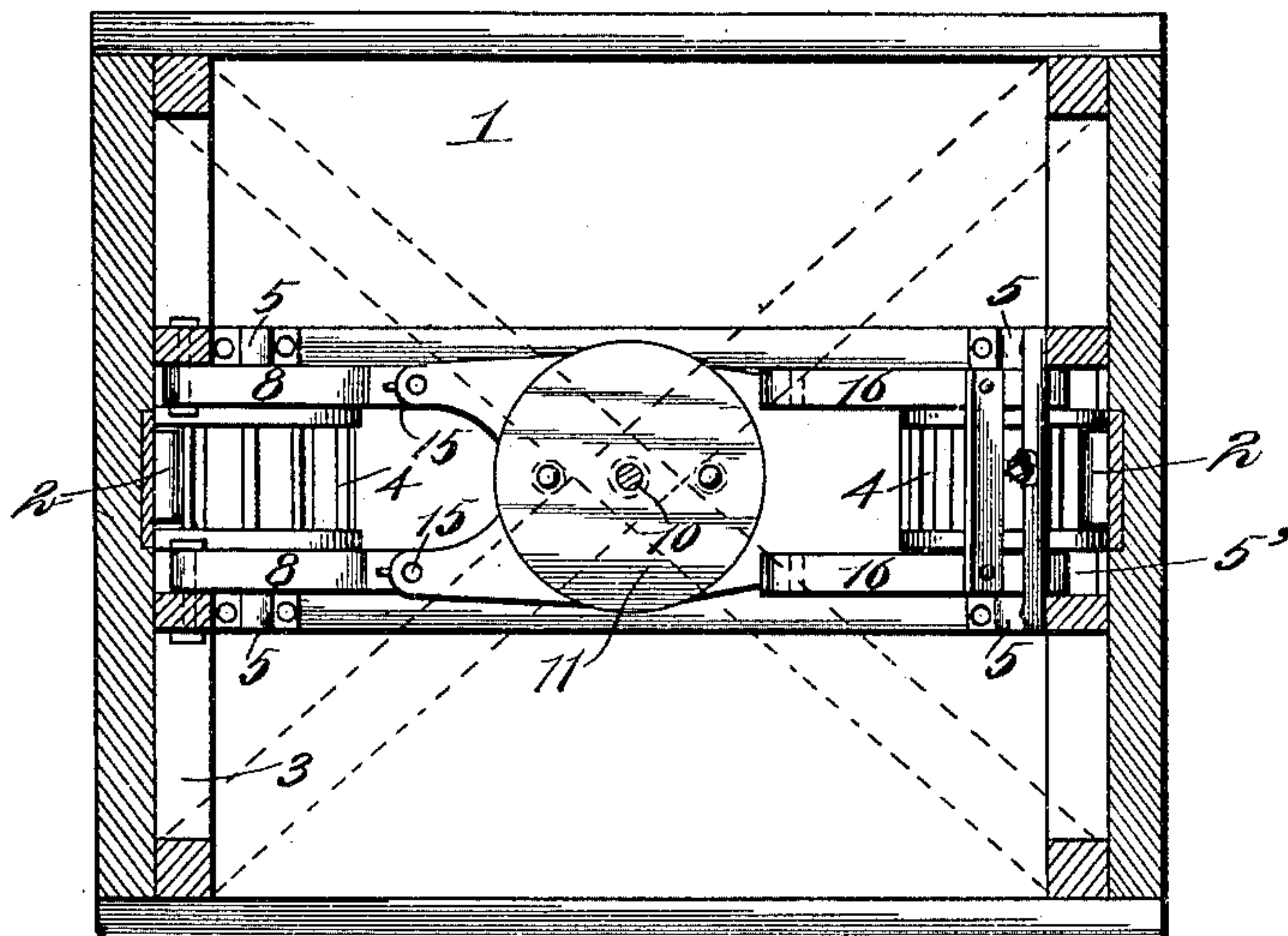
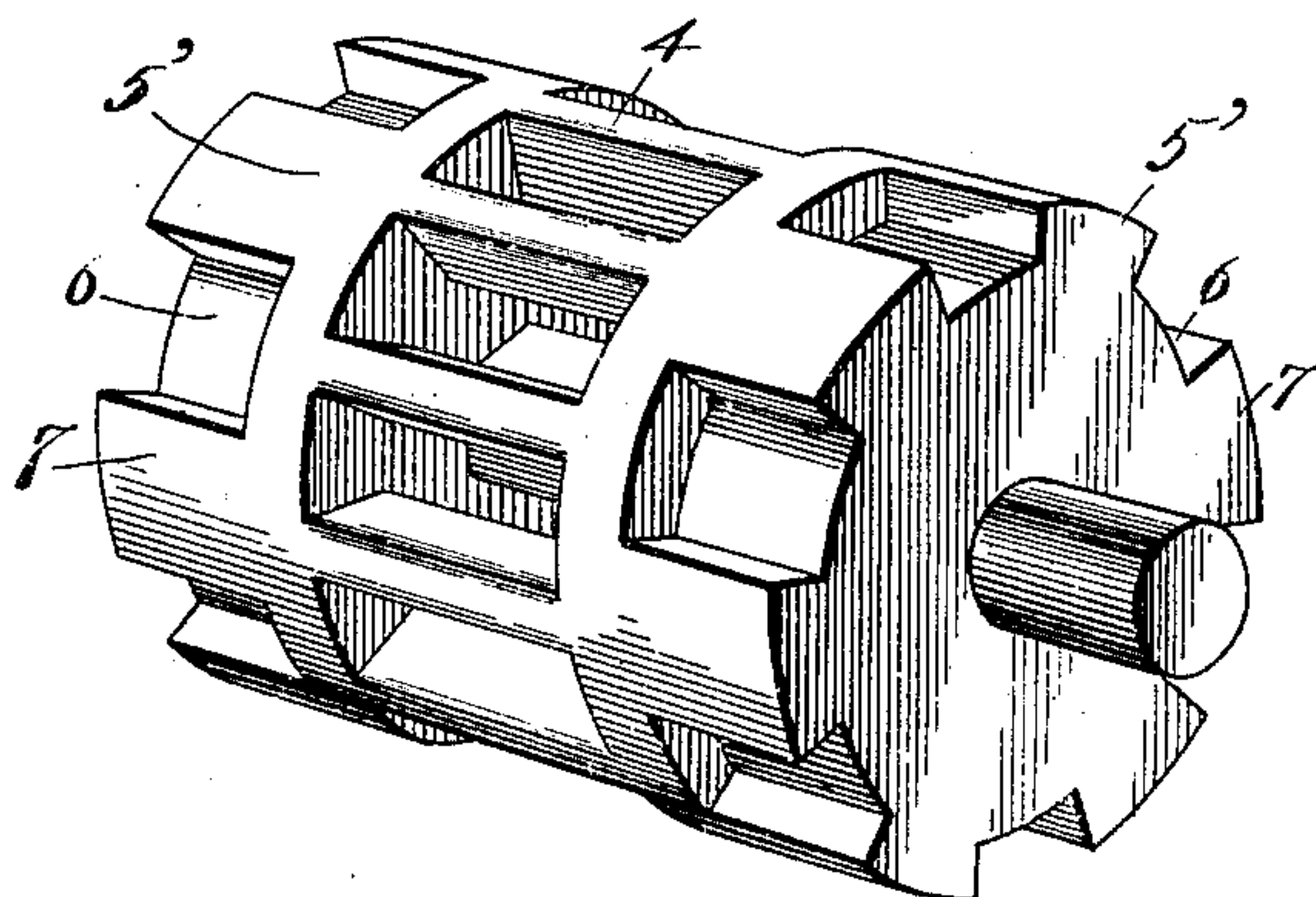


Fig. 3.



Witnesses

C. H. Walker.
J. Warner

Thomas Lebiezinski Inventor
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

THOMAS LEBIEDZINSKI, OF CHICAGO, ILLINOIS.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 657,026, dated August 28, 1900.

Application filed July 2, 1900. Serial No. 22,344. (No model.)

To all whom it may concern:

Be it known that I, THOMAS LEBIEDZINSKI, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Safety Device for Elevators, of which the following is a specification.

My invention is an improved safety device for elevators, one object of my invention being to effect improvements whereby a slackening of the hoisting-cable, whether caused by the breaking thereof or otherwise, will instantly effect a locking of the car in the elevator-shaft and prevent the car from dropping.

A further object of my invention is to combine with a coacting rack-bar and pinion in an elevator shaft and car a gravity-pawl which engages the pinion on the ascent of the car and must be manually held out of engagement therewith on the descent of the car.

My invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of an elevator-car provided with my improved safety devices. Fig. 2 is a horizontal sectional view taken on the line *a a* of Fig. 1. Fig. 3 is a detail perspective view of one of the locking-pinions.

In the embodiment of my invention the elevator-shaft 1 is provided on opposite sides with rack-bars 2, which extend from the bottom to the top of the shaft. The elevator-car 3 is provided with pinions 4, journaled in suitable bearings with which the car is provided, as at 5, the said pinions engaging the said racks and revolving when the car ascends and descends. The said pinions are provided with detent-sections 5' on the sides thereof, which detent-sections have the locking-notches 6 and the shoulders 7, formed between the said notches. Pawls 8, which are carried by the car, are adapted to engage the notches and shoulders of the pinion on one side of the car. The hoisting-cable 9 has its lower end attached to a vertically-movable rod 10, which operates in an opening in the top of the car. A disk or plate 11, which is here shown as being circular in form, but

which may be of any suitable form, is attached to the lower portion of said rod 10 and is movable therewith. The said rod connects the car to the hoisting-cable and suspends the same therefrom, and under normal conditions the rod 10 does not move independently of the car. It will be understood, however, that if the hoisting-cable slackens or breaks the rod 10 and the plate 11 will drop. A spring 12 on the lower portion of the rod 10 coacts with the top of the car and the plate 11 to mechanically move the rod downward independently of gravity upon a breakage or slackening of the hoisting-cable. Guide-rods 13 depend from the top of the car and operate in openings in the plate 11 and limit the movement of said plate. As an additional precaution springs 14 are placed on the said rod 13 above the plate 11 and bear downward on the latter. The pawls 8 are connected to the plate 11 as shown at 15 or in any other suitable manner, and under usual conditions the said pawls are by the said plate kept out of engagement with the detent-section of the pinion. It will be understood that upon a slackening of the cable, whether caused by the breakage thereof or otherwise, the plate 11 will be moved downward by gravity and by the springs hereinbefore described and drop the pawls 8 into engagement with the detent-sections of the pinion, thereby locking the latter against rotation, and hence arresting the movement of the car and preventing the same from dropping.

In connection with the means hereinbefore described to prevent the car from dropping in the event of injury to the cable or elevating mechanism I provide gravity-pawls 16, which engage the detent-sections of one of the pinions. Said pawls are in constant engagement with said pinions during the ascent of the car, and before the latter can descend and while the same is descending the said gravity-pawls 16 must be disengaged from their coacting pinion. I provide a cord 17 for this purpose, which cord depends in the elevator-car, passes over suitable guide-sheaves 18 in the top of the car, and is attached to the gravity-pawls 16. The cord is drawn downward and held by the conductor during the descent of the car. In the event of an accident during the descent of the car

and any failure on the part of the pawls 8 to arrest the descent of the car the conductor by releasing the cord 17 will cause the gravity-pawls 16 to engage their coacting pinion, 5 lock the same instantly against rotation, and thereby keep the car from dropping, as will be understood. While the car is ascending the pawls 16, as hereinbefore stated, being in engagement with their coacting pinion, prevent reverse rotation of the latter and render 10 it impossible for the car to drop in the event that the cable breaks or slackens.

Having thus described my invention, I claim—

15 1. The combination with side racks in an elevator-shaft, of an elevator-car, pinions on the car engaging said racks, pawls connected to the hoisting-cable, adapted to engage one of said pinions when the cable slackens, and 20 while the cable is tight, held thereby normally out of engagement with said coacting pinion, gravity-pawls engaging another of said pinions when the car ascends and means

to disengage said gravity-pawls therefrom when the car descends, substantially as described. 25

2. The combination with side racks in an elevator-shaft, of an elevator-car, pinions on the car engaging said side racks, pawls connected to the hoisting-cable, adapted to engage 30 one of said pinions when the cable slackens, and while the cable is tight, held thereby normally out of engagement with said pinion, gravity-pawls engaging another of said pinions when the car ascends and a 35 cord connected to said gravity-pawls and adapted to disengage the same from the pinions when the car descends, substantially as described.

In testimony that I claim the foregoing as 40 my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS LEBIEDZINSKI.

Witnesses:

FRANK WINKLER,
LOUIS A. LEMKI.