

No. 773,866.

PATENTED NOV. 1, 1904.

P. G. GROBENGIESER.
SAFETY APPLIANCE FOR ELEVATORS.

APPLICATION FILED MAR. 4, 1904.

NO MODEL.

FIG. I.

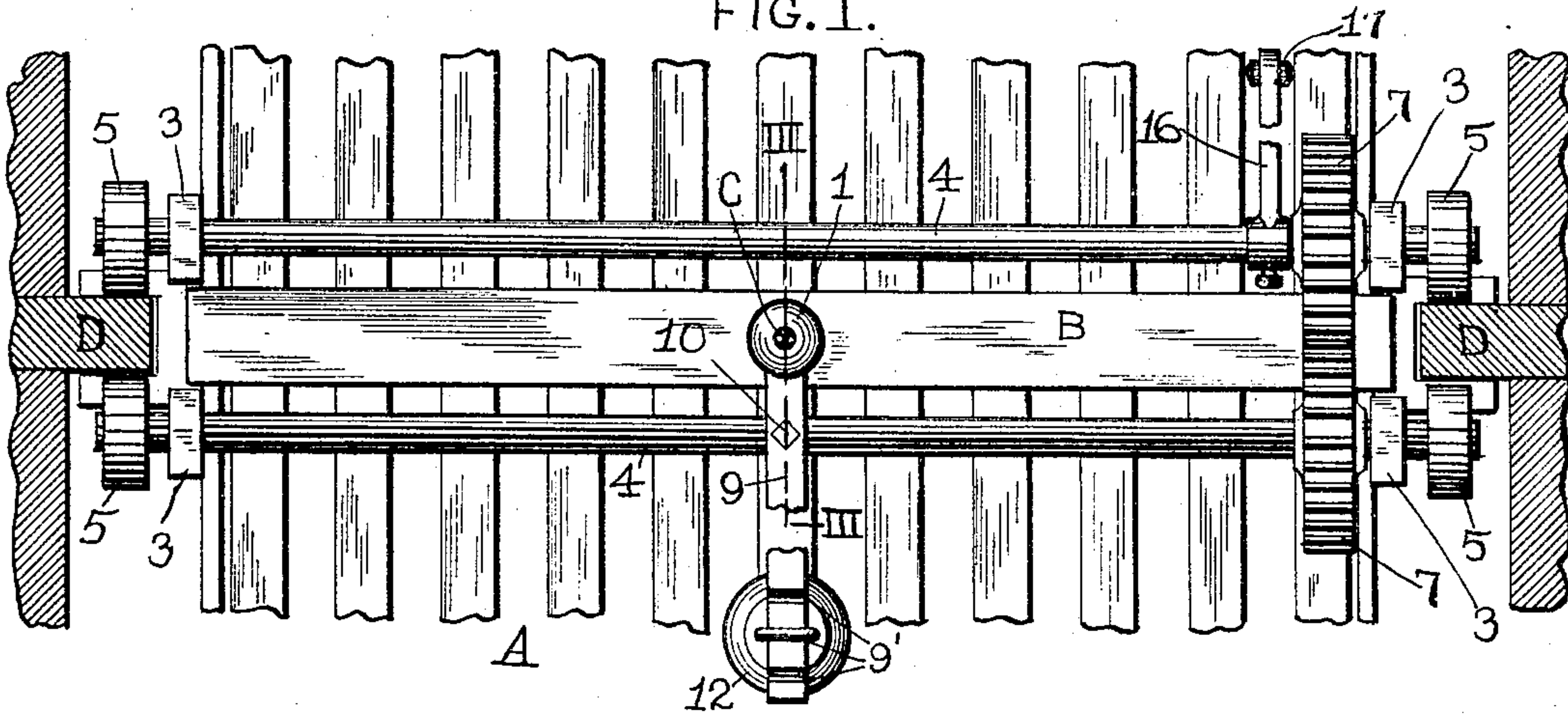


FIG. II.

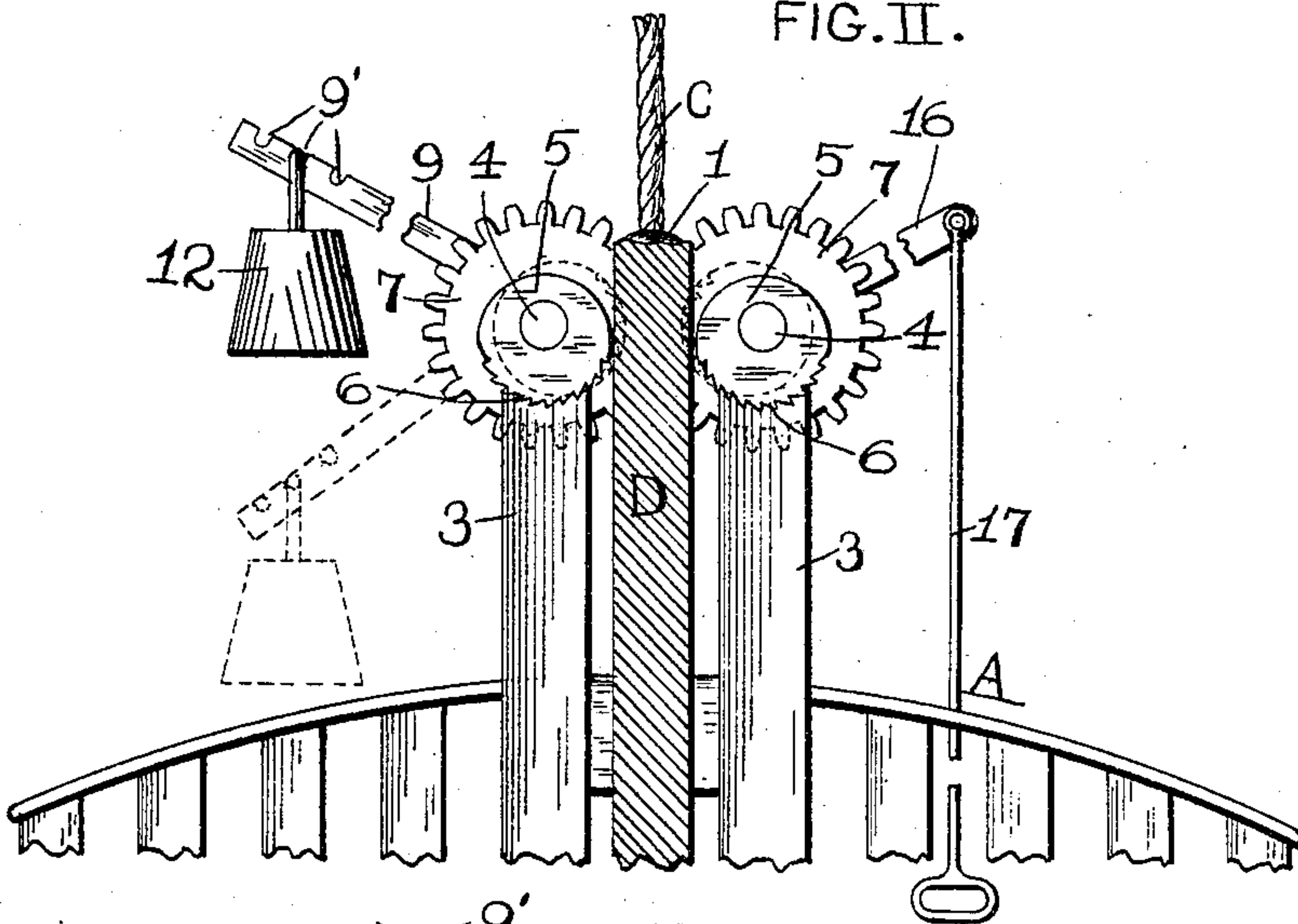


FIG. III.

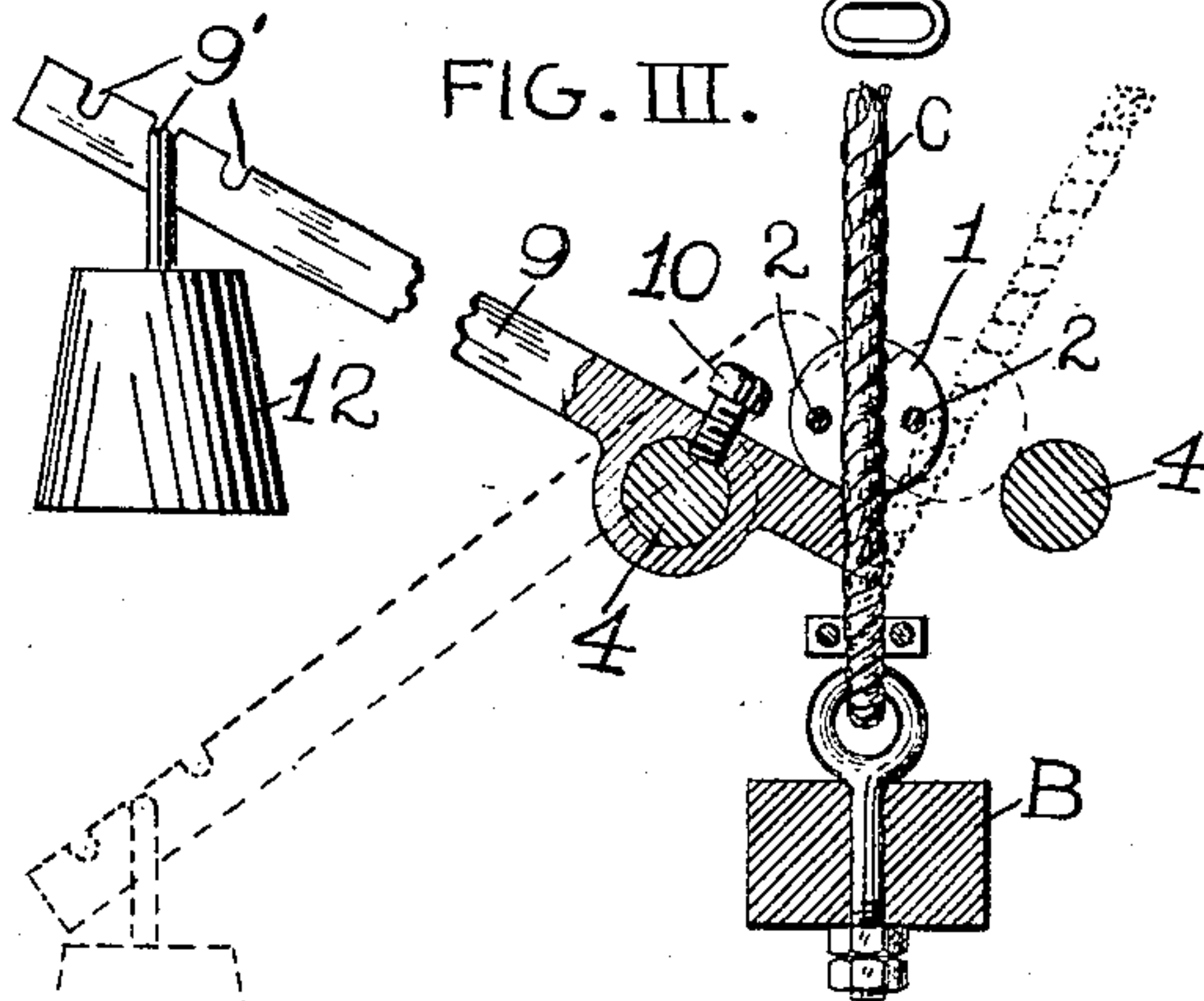
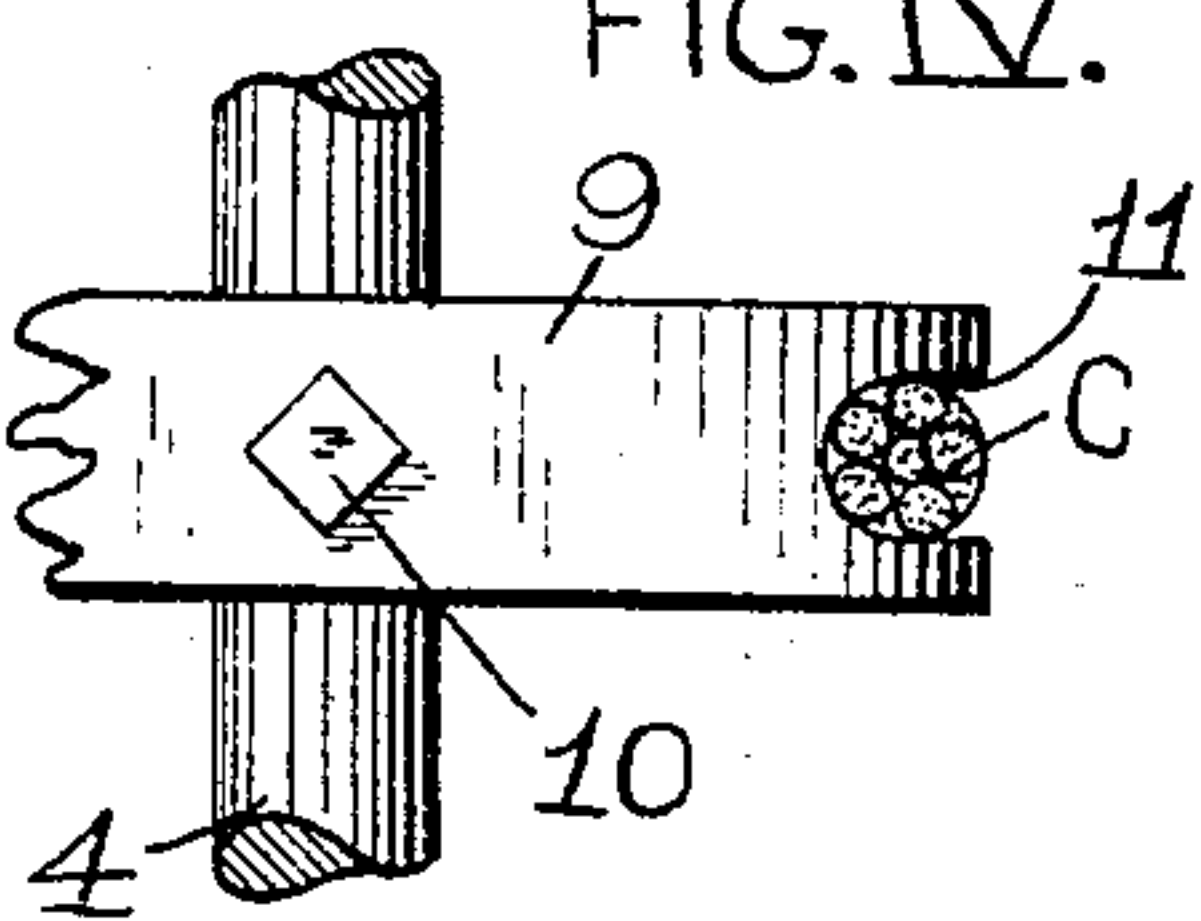


FIG. IV.



ATTEST.

H. G. Fletcher.
Blanche Hogan.

INVENTOR.

P. G. GROBENGIESER.

BY *Wm. B. B.*
ATTYS.

UNITED STATES PATENT OFFICE.

PHILIP G. GROBENGIESER, OF ST. LOUIS, MISSOURI.

SAFETY APPLIANCE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 773,866, dated November 1, 1904.

Application filed March 4, 1904. Serial No. 196,596. (No model.)

To all whom it may concern:

Be it known that I, PHILIP G. GROBENGIESER, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Safety Appliances for Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an appliance for arresting the descent of an elevator-car in the event of the breakage of the hoisting-rope connected thereto.

The invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Figure I is a top or plan view of my appliance shown applied to the central portion of an elevator. Fig. II is an end elevation of the appliance. Fig. III is an enlarged view, partly in elevation and partly in vertical section, taken on line III III, Fig. I. Fig. IV is a top view of the rope-engaging end of the weighted lever of the appliance.

A designates part of an elevator-car having a top cross-piece B, to which the hoisting-rope C is connected. (See Fig. III.) Fixed to the hoisting-rope above its point of connection to the cross-piece B is a ball or button 1, that is preferably made of two halves and joined to the rope by clamping-bolts 2, uniting the halves.

D designates the guides at the sides of the elevator-shaft by which the travel of the elevator-car is directed.

3 designates uprights carried by the car A, and 4 represents rock-shafts loosely mounted in these uprights to rotate therein. Fixed to each rock-shaft at its ends are eccentrics 5, that occupy positions at the sides of the guides D and move adjacent to said guides during the travel of the elevator-car. These eccentrics are preferably serrated, as seen at 6, Fig. II, so that when they are thrown into engagement with the guides D they will bite thereinto. The rock-shafts 4 are geared together through the medium of pinions 7, fixed to the shafts and meshing with each other.

9 is a lever fixed to one of the rock-shafts

4 by any suitable means, such as a set-screw 10. (See Figs. I, III, and IV.) The inner end of this lever is bifurcated, as seen at 11, so that it fits beneath the button 1 on the hoisting-rope C, as seen most clearly in Fig. III.

12 is a weight suspended from the outer free end of the lever 9 and acting to normally hold the inner end of the lever seated beneath the rope-carried button 1. The lever 9 is preferably provided with a series of notches 9', in either of which the eye of the weight 12 may seat, according to the degree of depressing action it may be desired to have the weight exert.

In the practical use of my safety appliance the parts of the appliance remain in inactive position, as shown by full lines, Figs. I, II, and III, as long as the hoisting-rope C is intact, during which time the rock-shafts 4 remain immovable, due to the engagement of the weighted lever 9 beneath the rope-carried button 1. In the event of breakage of the hoisting-rope resistance to descent of the outer end of the weighted lever 9 is removed and the weight 12 causes the outer end of the lever to be thrown downwardly into the position seen in dotted lines, Figs. II and III, during which action the rope-carried button 1 is thrown to one side, as seen in dotted lines, Fig. III. On the descent of the lever rotation is imparted to the rock-shaft 4, by which it is carried, and like rotation is communicated to the other rock-shaft through the medium of the intermeshing pinions 7 on the two shafts. As a consequence of such rotation of the rock-shafts the eccentrics 5 are thrown upwardly and inwardly to the guides D, in which position they bite into the guides and serve to arrest the downward travel of the elevator-car, as will be readily understood.

For the purpose of providing for manual actuation of my appliance in the event of breakage of the hoisting-rope and the appliance being thrown into operation, in which event the elevator-car would be brought to rest, I provide means through the medium of which the operator on the car may release the appliance gradually and permit slow descent of the car. This means consists of a rocker-lever 16, (see Figs. I and II,) that is fixed to

one of the rock-shafts 4 and has connected thereto an operating-rod 17. Should the safety appliance be thrown into action by the breakage of the car-hoisting rope, the operator on the car may push the operating-rod 17 upwardly, thereby rotating the rock-shafts 4 and eccentrics 5 carried thereby, so that said eccentrics will be freed from the guides D or partially freed therefrom to permit the descent of the car, and should such descent proceed too rapidly the operating-lever may be released or drawn downwardly to a sufficient degree to check the speed of the movement of the car.

15 I claim as my invention—

In a safety appliance for elevators, the combination with the elevator-car guides and hoist-

ing-rope; of a pair of rock-shafts geared together, toothed eccentrics carried by said rock-shafts for engagement with said guides, 20 a lever attached to one of and tending to rock both of said shafts, a weight adjustably mounted on the free end of said lever, and a button carried by said hoisting-rope to receive the engagement of the unweighted end of said lever to overcome the tendency of said weight 25 to rock said shafts.

In testimony whereof I have hereunto set my hand, at the city of St. Louis, Missouri, this 1st day of March, 1904.

PHILIP G. GROBENGIESER.

In presence of—

E. S. KNIGHT,

NELLIE V. ALEXANDER.