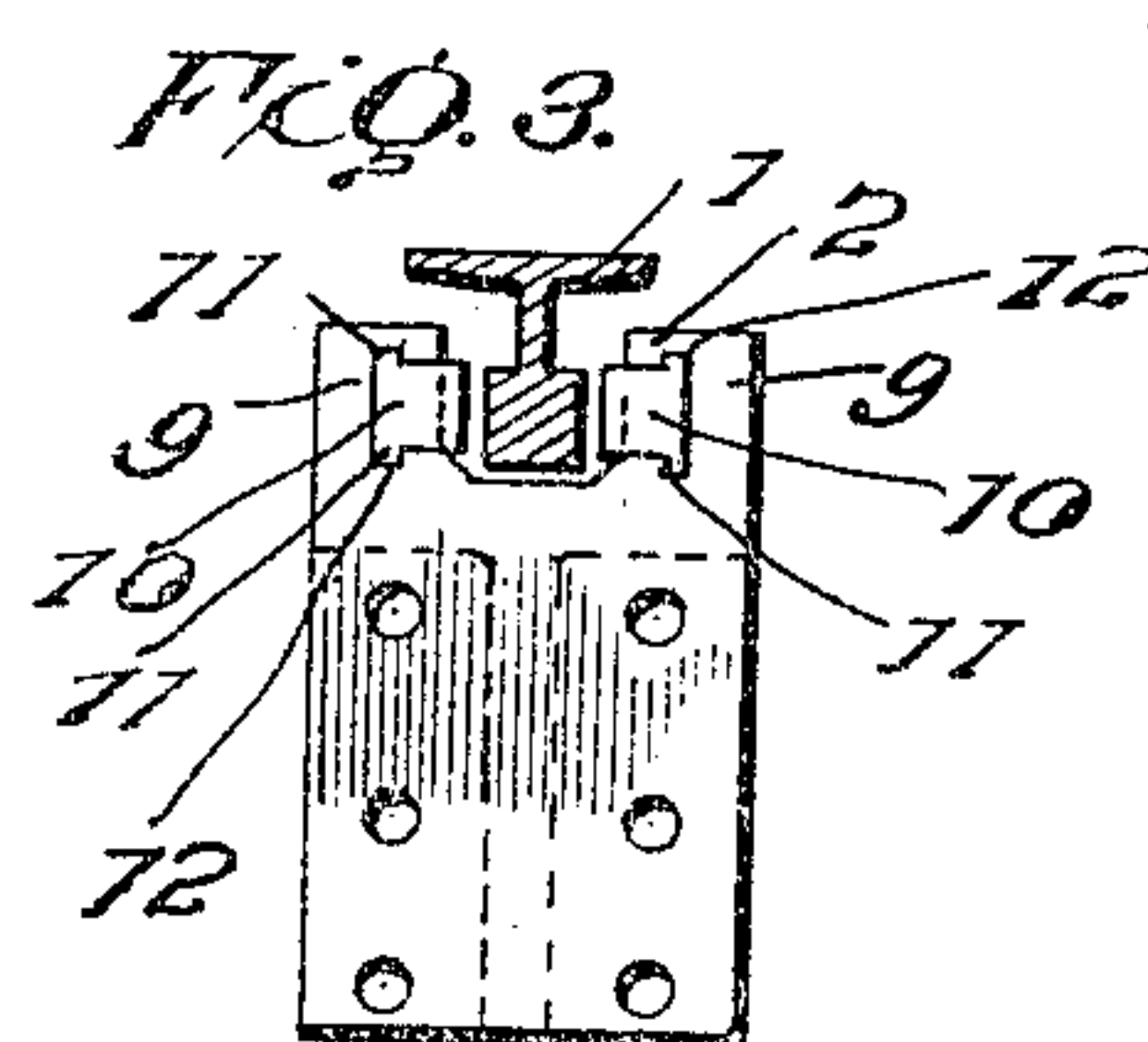
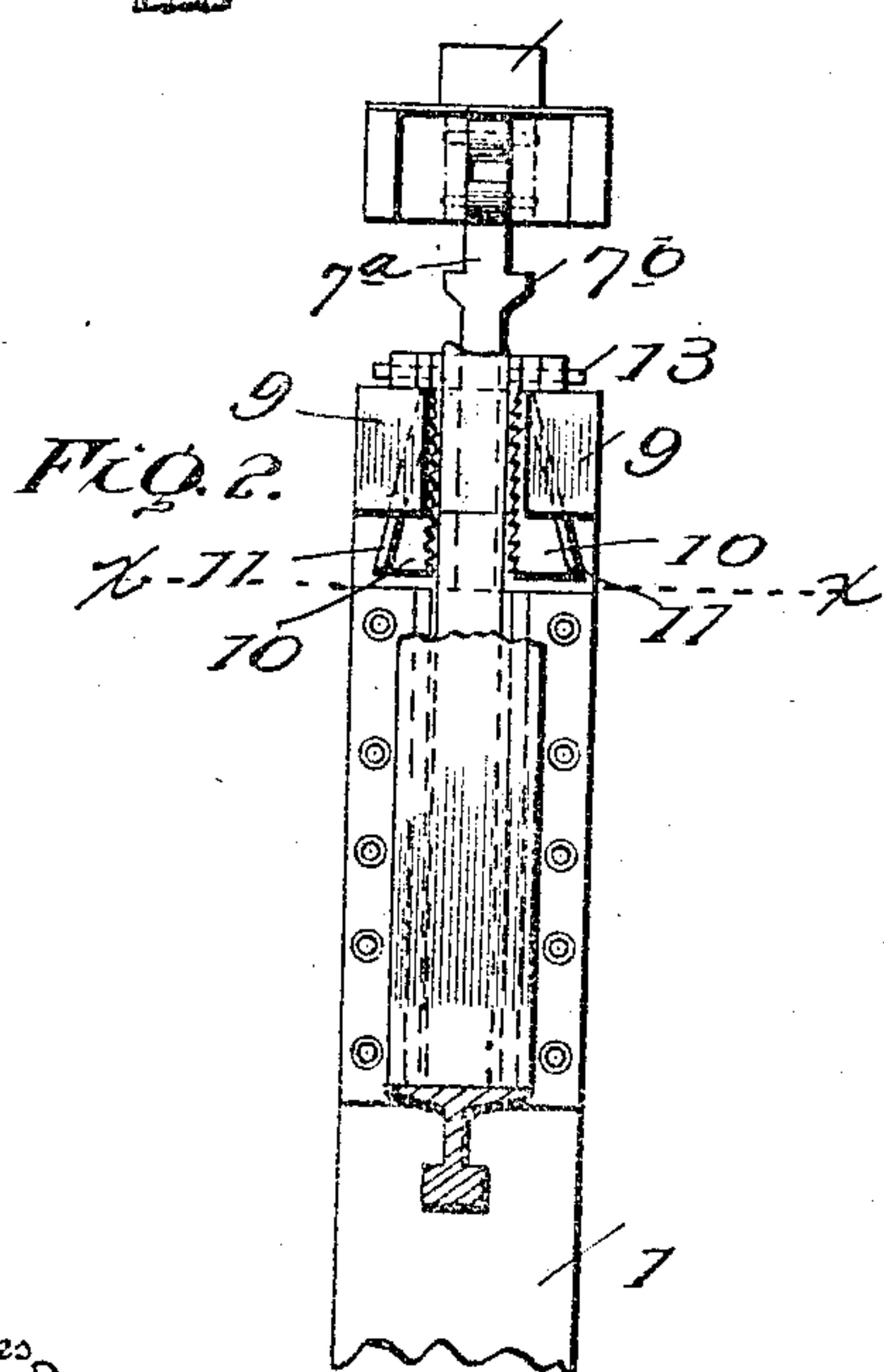
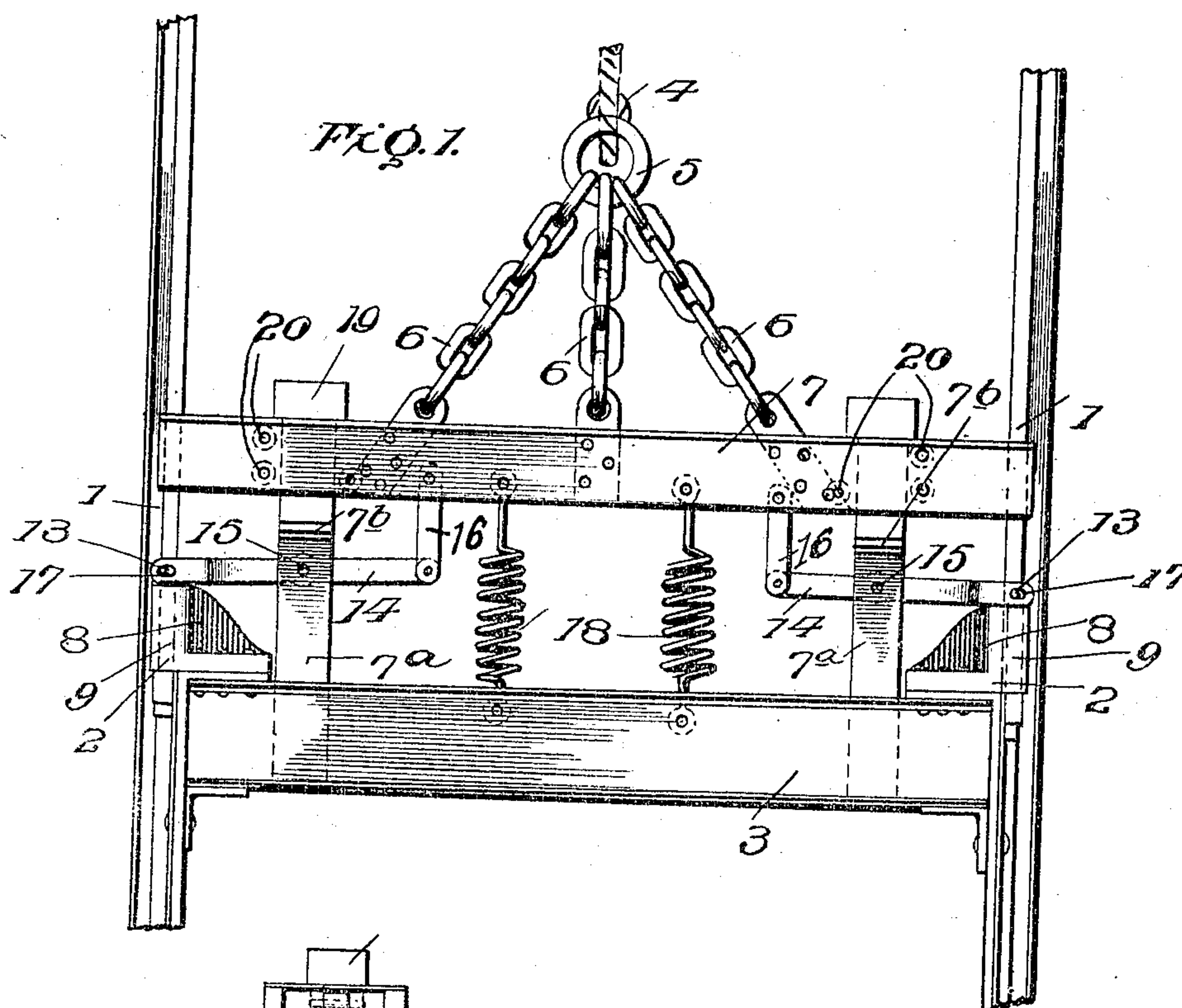


No. 837,253.

PATENTED NOV. 27, 1906.

R. D. SECOY.  
SAFETY DEVICE FOR ELEVATORS.  
APPLICATION FILED MAY 23, 1908.



## Witnesses

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# UNITED STATES PATENT OFFICE.

RUFUS D. SECOY, OF ATHENS, OHIO.

## SAFETY DEVICE FOR ELEVATORS.

No. 837,253.

Specification of Letters Patent

Patented Nov. 27, 1906.

Application filed May 23, 1906. Serial No. 318,289.

*To all whom it may concern:*

Be it known that I, RUFUS D. SECOY, a citizen of the United States, residing at Athens, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

This invention embodies improvements in that class of safety devices for elevators including clutch means operable on breakage of the elevator cable or rope to effect automatic stoppage of the elevator-cage and prevent likelihood of accident or breakage due to fall of said cage in the elevator-shaft.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a view partially in section and partially in elevation, showing the mechanism which is primarily comprised in the invention. Fig. 2 is a view in elevation, showing the safety-catches, the guide-rail being broken away to illustrate these parts; and Fig. 3 is a sectional view on the line  $x x$  of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the practical embodiment of the invention it is designed to employ the customary guide-rails 1 in the elevator-shaft, which rails coöperate with guides 2, carried by the cage 3, to guide the same in its vertical movement. The elevator cable or rope 4 is connected with a ring 5, said ring being attached to the cage 3 by means of chains or connections 6, the lower ends of which are secured to a cross-head 7, slidably mounted on vertical studs 7<sup>a</sup>, secured rigidly to the upper portion of the elevator in any substantial way. The automatic clutch mechanism for stopping the elevator should the rope or cable 4 break is comprised in suitable brackets 8, attached rigidly to the top portion of the elevator-cage 3 by suitable fastenings. The brackets 8 are formed with integral spaced bracket members 9, projecting laterally therefrom and extending a short distance from opposite sides of the cage 3, so as to be arranged at opposite sides of the guides 1. The guides 1 consist of guide-rails, and the bracket members 9 are provided upon the inner sides thereof with vertically-movable catches 10, nor-

mally spaced from opposite sides of the guides 1. Each of the catches 10 is formed longitudinally thereof with laterally-projecting flanges or ribs 11, which operate in grooves 12 in the bracket members 9. Said catches 10 are of wedge form, tapering toward their upper ends and having their sides adjacent to the guides 1 toothed or serrated to facilitate the gripping action of the catches with respect to said guides. Each catch 10 is formed with an opening at its upper extremity, through which fastenings or bolts 13 pass to attach the pairs of catches to the outer ends of levers 14, pivoted between the ends, as shown at 15, to the studs 7<sup>a</sup>. The outer end of each lever 14 is longitudinally slotted, as shown at 17, the slots receiving the member 13, connecting such lever to the adjacent catches 10. The inner ends of the levers 14 are connected by links 16 to the cross-head 7. Springs 18 connect head 7 with the car 3 and by reason of the elastic connection afforded thereby remove strain from the levers 14 with regard to the manner of connecting said levers with the elevator-rope. Upward movement of the cross-head 7 is limited by the heads 19, formed at the upper ends of studs 7<sup>a</sup>.

In operation should the cable or rope 4 break as the cage 3 is moving or in a stationary position the tension of the springs 18 will actuate the cross-head 7 downwardly, and this will force the inner end portions of the levers 14 downwardly, causing the catches 10 to be forced upwardly into engagement with the opposite sides of the guides 1.

The advantages and operation of the parts will be obvious from the foregoing.

Each of the studs 7<sup>a</sup> is formed with a shoulder 7<sup>b</sup> below the cross-head to limit the downward movement of the latter. Further, anti-friction-bearings in the form of rollers 20 are interposed between the studs and the cross-head, so as to reduce the friction between these parts to a minimum.

Having thus described the invention, what is claimed as new is—

1. In a safety device for elevators, the combination of an elevator-cage, a rope or cable connected therewith, brackets secured to said cage and having spaced guide members projecting laterally therefrom, guide-rails at opposite sides of the cage, catches movably mounted in the guide members projecting from the brackets aforesaid and located upon opposite sides of the guide-rails, the guide



members of each bracket having an interlocking connection with the catches to normally hold the same out of engagement with the guide-rails, levers pivotally connected at  
5 a point between their ends with the cage, connections between the inner ends of the levers and the rope, means loosely connecting the outer ends of the levers with the catches for actuation of the latter, and a cross-head connecting the levers with the cable of the cage  
10 for the purpose specified.

2. In a safety device for elevators, the combination of a car, studs projecting upwardly from the top portion of the car, a cross-head  
15 slidably mounted on said studs and having means for connecting the same with the elevator-cable, springs connecting the cross-

head with the car, rails for guiding the car in its vertical movement, catches carried by the car and adapted to engage said rails, anti-  
20 friction-bearings between the cross-head and the studs on which it is mounted, said studs having heads at the upper end to limit the movement of the cross-head, levers pivoted between the ends thereof to the studs and connected to the outer ends thereof with the  
25 catches, and links connecting the inner ends of the levers with the cross-head.

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

RUFUS D. SECOY. [L. s.]

Witnesses:

ARTHER McGRANER,  
EDWARD A. SECOY.