

No. 673,005.

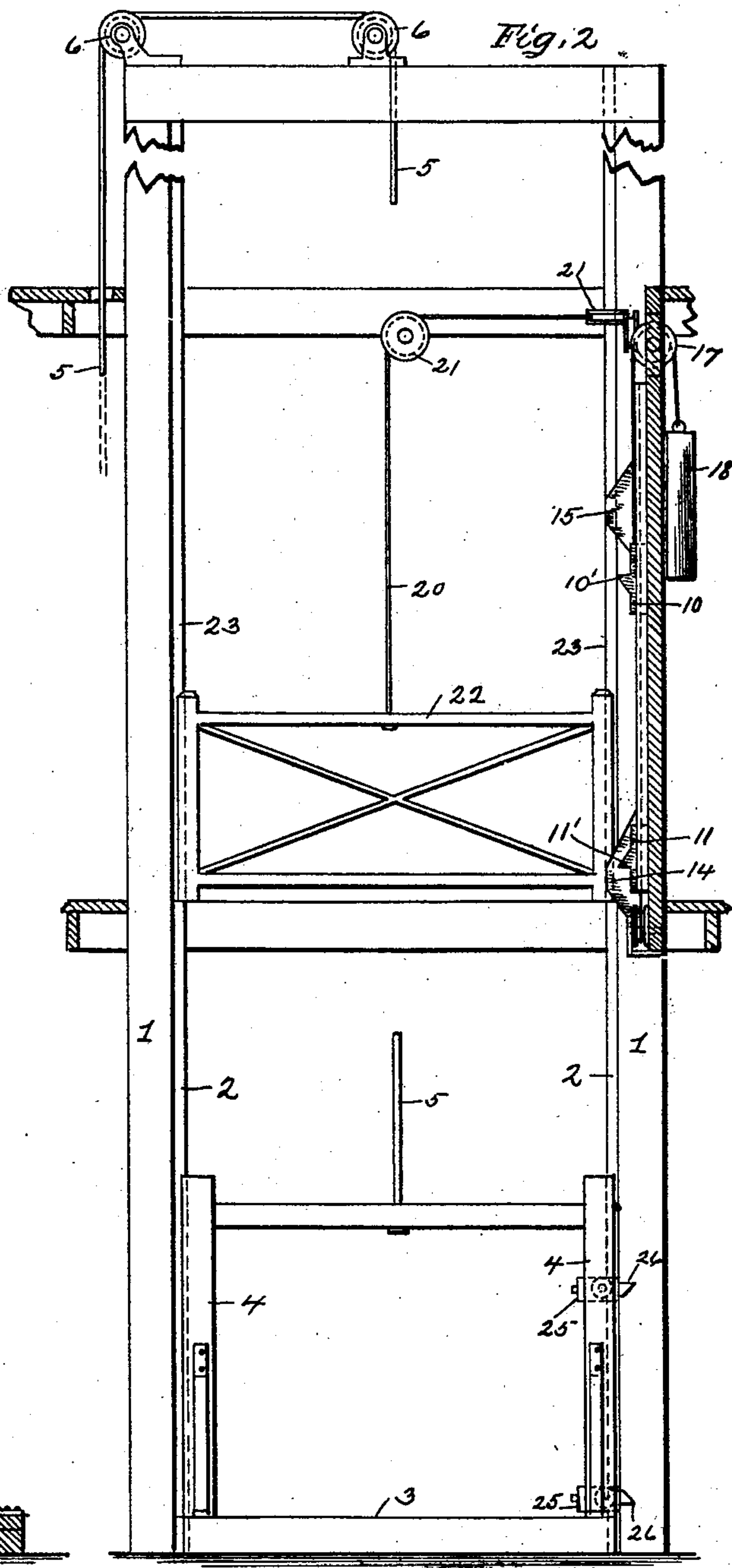
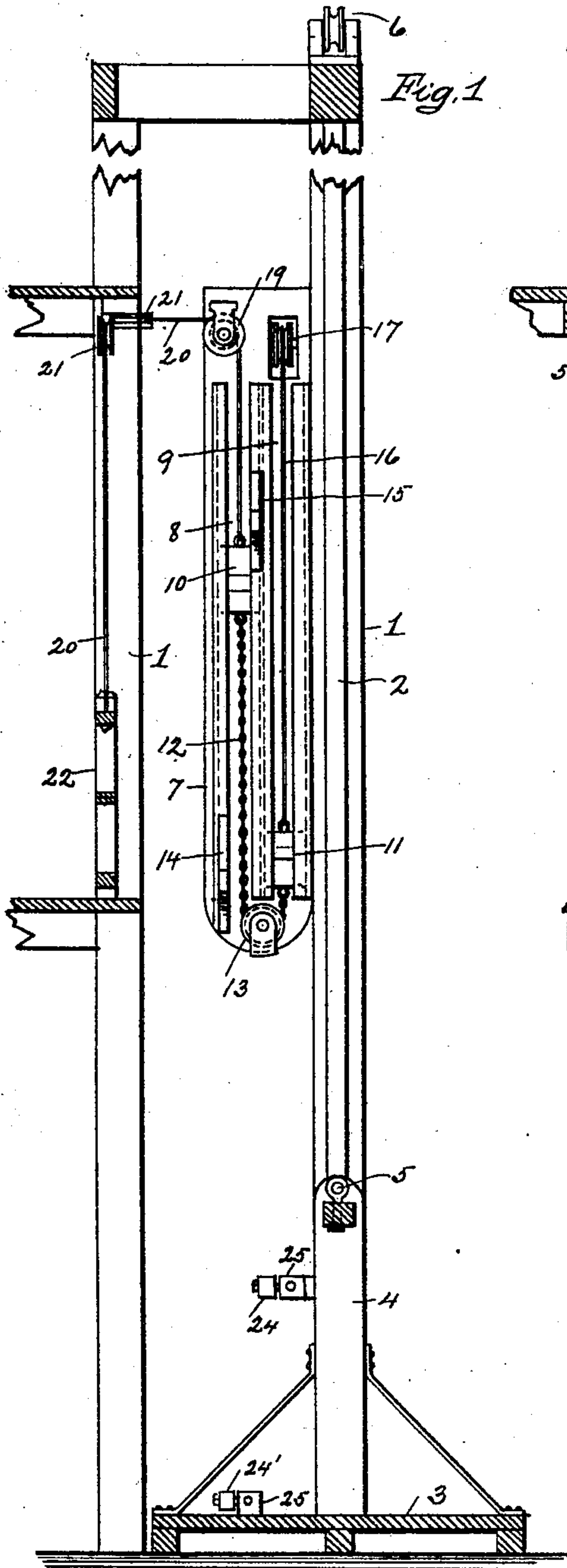
Patented Apr. 30, 1901.

C. F. KURTZ.
SAFETY GATE FOR ELEVATORS.

(Application filed Nov. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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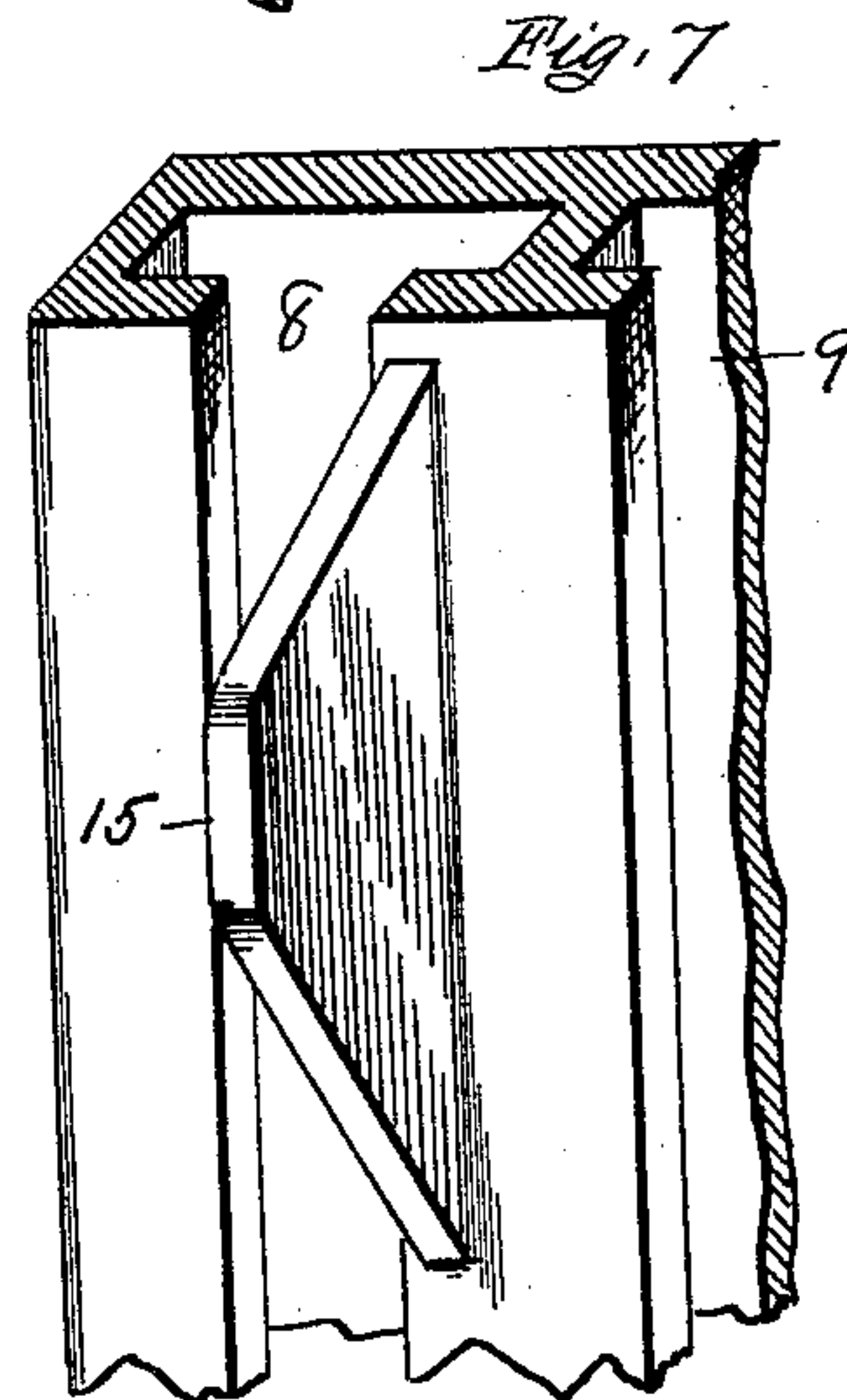
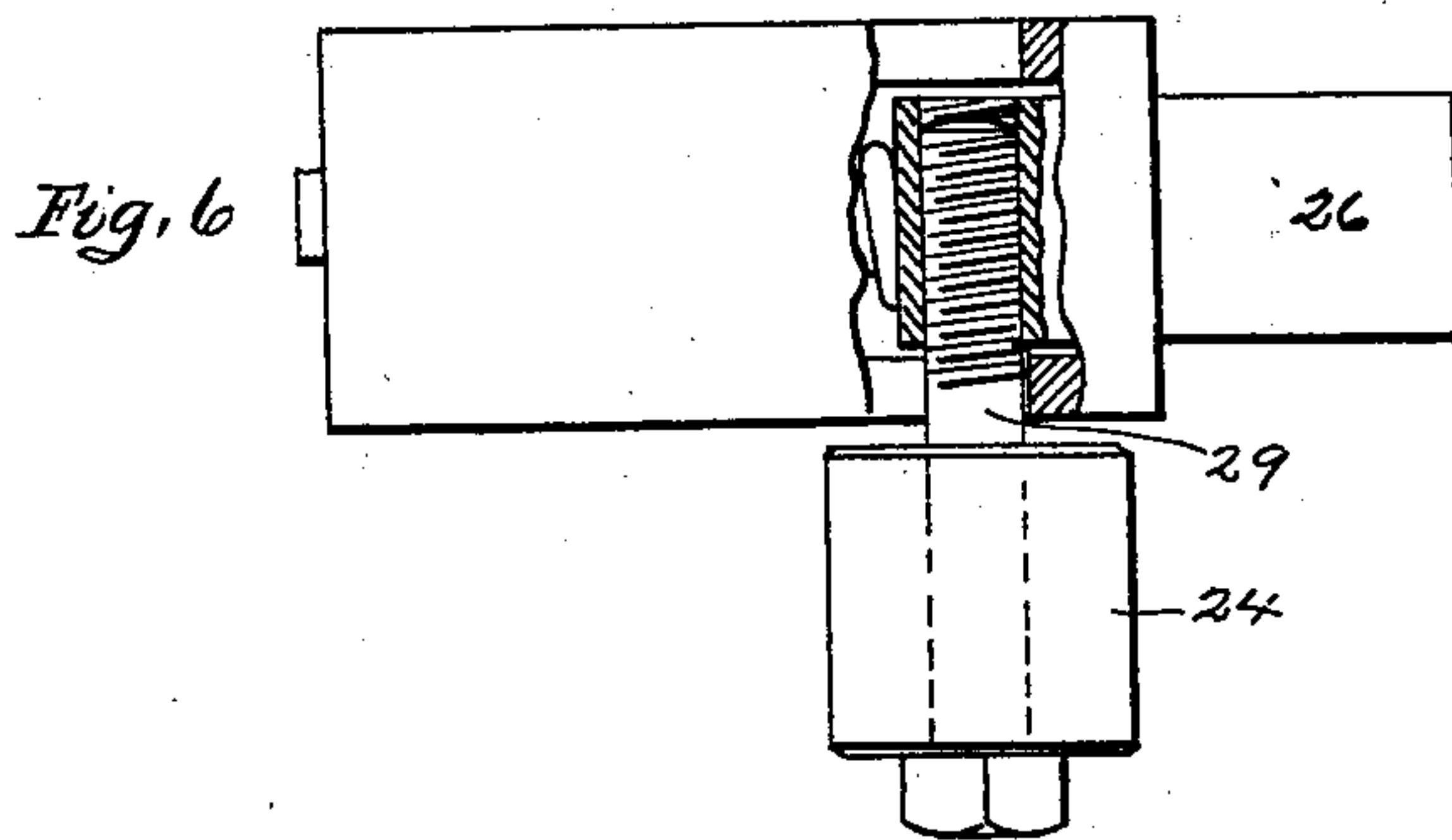
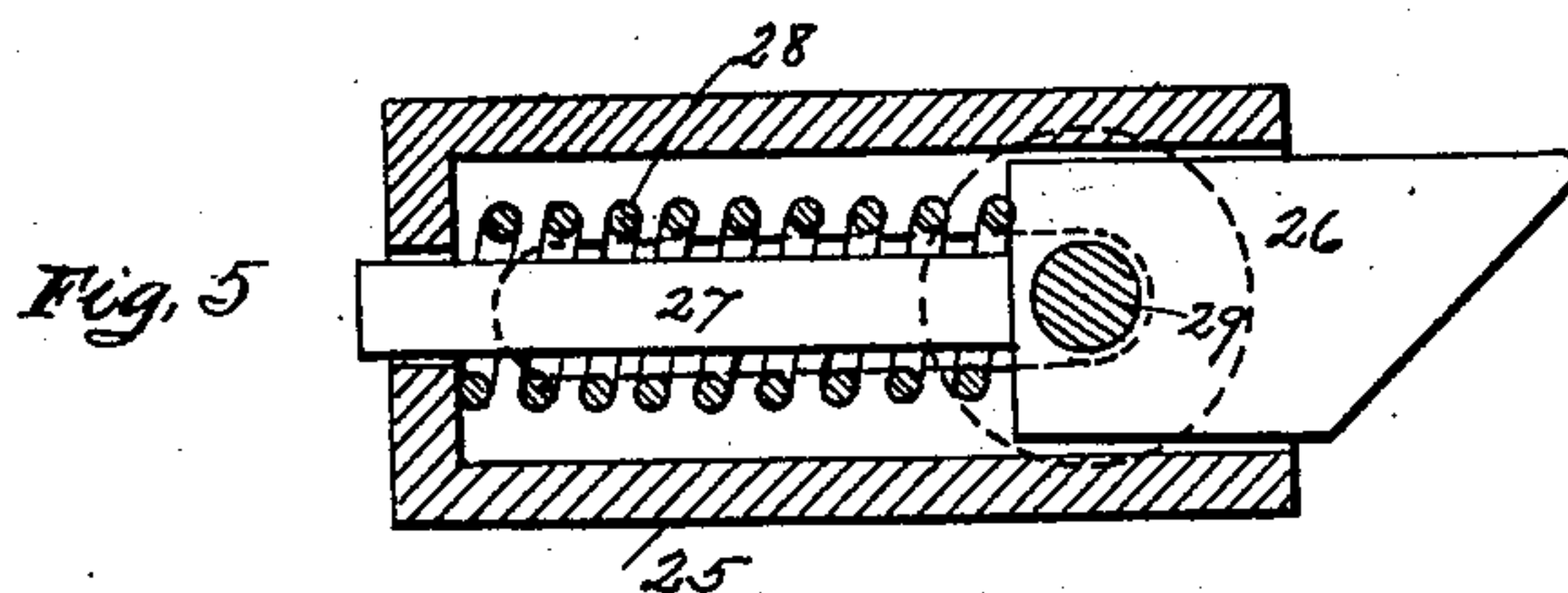
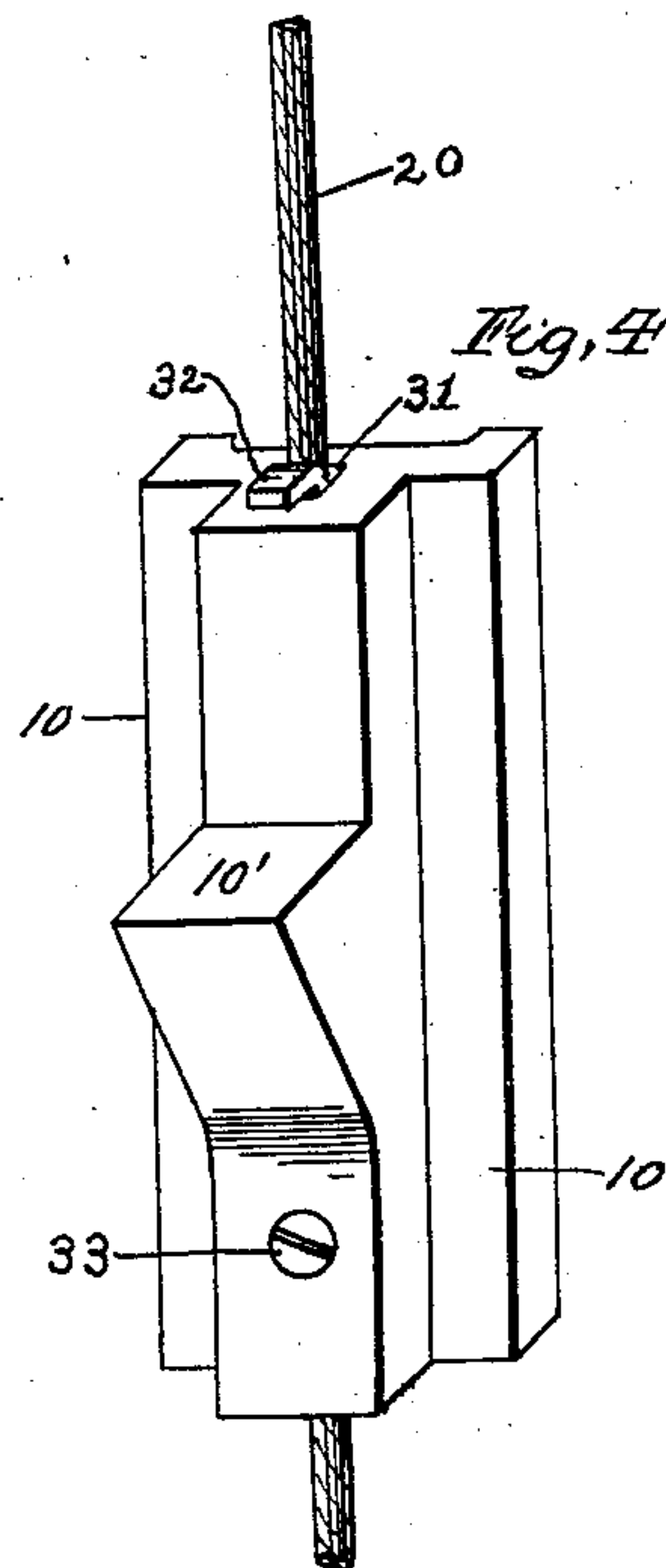
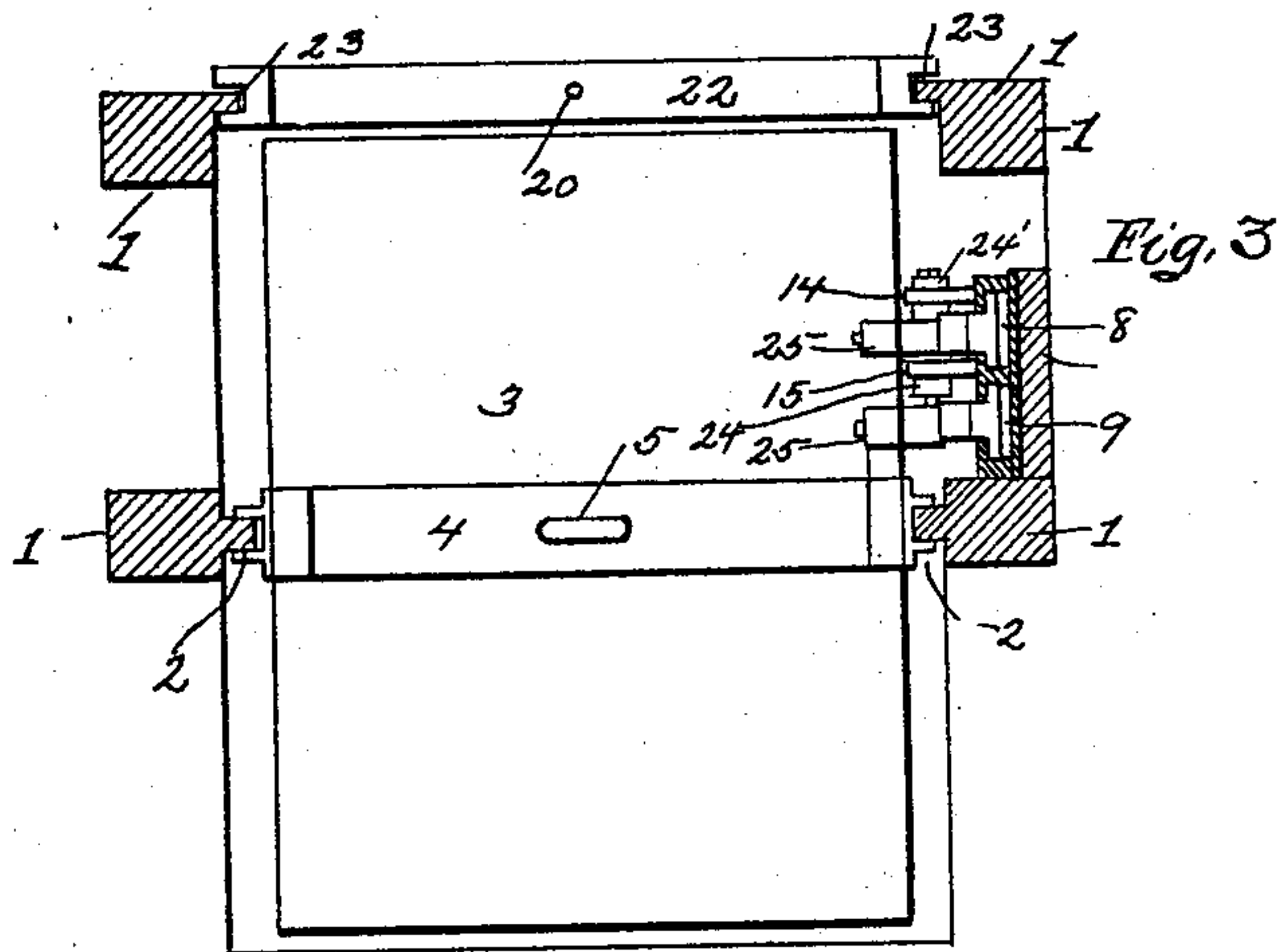
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2 Sheets—Sheet 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES F. KURTZ, OF PITTSBURG, PENNSYLVANIA.

SAFETY-GATE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 673,005, dated April 30, 1901.

Application filed November 7, 1899. Serial No. 736,188. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. KURTZ, a citizen of the United States of America, residing at 122 Eleventh street, south side, Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Gates for Elevators; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved safety-gate for elevators; and it consists in the certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a side sectional elevation of a store-service elevator provided with my improved automatic operating safety-gate, the same being constructed and arranged in accordance with my invention. Fig. 2 is a rear sectional elevation of the same. Fig. 3 is a sectional plan view. Fig. 4 is an enlarged detailed perspective view of one of the sliding pieces connected to the safety-gate and used in connection with a bolt to elevate the same. Fig. 5 is a sectional side elevation of one of the bolts, showing the same in detail. Fig. 6 is a plan view of the same, a part of which is shown in section. Fig. 7 is an enlarged perspective view of a portion of the slides, showing one of the bolt-releasing pieces.

To construct a device for operating elevator safety-gates in accordance with my invention, the said elevator consisting of the frame 1, provided with guides 2, a platform or lift 3, the frame 4 of which is attached to a cable 5, arranged over pulleys 6 and leading to a suitable power by means of which the platform may be raised or lowered in a manner well known in the art, I attach to the said frame 1 a base-board 7 in a suitable location and fitted with two slideways 8 and 9, the one parallel to the other and arranged in a vertical position. Operating in these two slideways 8 and 9 are sliding-pieces 10 and 11, the preferred form of which is shown at Fig. 4 of the drawings. Each of these sliding pieces consists of a block of metal capable of moving vertically in the slideways 8 and 9 and each provided with an opening 31, extending

from the top to the base in the direction of their length, for the reception of a rope 20, together with a binding-wedge 32 and impinging screw 33, by means of which the said rope and sliding piece may be rigidly attached the one to the other. One of these sliding pieces 10 is provided with an angular projecting portion 10', the horizontal surface of which is turned upward, and the other sliding piece 11 is formed with a similar projection 11', having the horizontal surface turned down, and the said projections 10' and 11' adapted to engage with suitably-arranged bolts, hereinafter described. The one sliding piece 10 is connected to a rope 20, arranged over sheaves 19 and 21 and attached to a vertically-sliding safety-gate 22, arranged across the opening leading to the elevator-shaft at the second landing. Connected to the lower end of this same sliding block 10 is a chain 12, which passes over a sheave 13 below, and the other extremity is connected to the base of the second sliding block 11. This last-mentioned block 11 is connected by means of a rope 16, arranged over a sheave 17, to a weight 18 to prevent any abrupt downward movement of the gate 22.

Attached to the frame of the platform 3 is a spring-actuated bolt, which consists of a casing 25, a bolt 26, projecting therefrom, a shank 27, projecting from the rear of the said bolt, a spring 28, arranged about the shank 27, a threaded pin 29, secured in one side of the bolt 26 and projecting through a slot formed in the side wall of the case 25, and a roller 24, operating upon the said pin, by means of which the bolt 26 may be moved in and out of the case. This pin 29 and roller 24 may be removed and arranged upon the opposite side of the case 25 when the location of the bolt requires it. Two of these bolts above described are used for each landing of the elevator and are arranged in positions upon the platform 3 or the frame 4 and are in line with the angular projections 10 and 11', with the flat or contact sides of the bolts 26 arranged to engage with the said projections.

Attached to or formed integral with the slides are two inclined outwardly-projecting pieces 14 and 15, which are arranged in line with the rollers 24 and 24' and are adapted

to force the same back and withdraw the bolts 26 from the angular projections to release the sliding pieces.

In operation when the elevator is at rest 5 the parts of the apparatus are in the position shown at Figs. 1 and 2 of the drawings. The lift or platform 3, moving upward, brings the bolt 26 (see Fig. 2) in contact with the angular projection 11', carrying the sliding block 10 11 upward, which operates the chain 12 and rope 20 to lift or elevate the gate 22. This upward movement of the parts continues until the roller 25 passes up the inclined surface of the piece 15, which disengages the 15 bolt 26 and permits the gate 22 when relieved from its catch to descend by gravity, as the weight of the gate is greater than that of its connected parts. This release does not occur until the platform is a short distance 20 above the landing, and upon the descent of the platform 3 the bolt 26' engages with the projection 10', carrying the sliding piece 10 downward, drawing upon the rope 20 to elevate the gate 22, and when the said platform 25 has passed the landing the roller 24' in passing over the projection 14 moves the bolt 26 inward to release its hold upon the sliding piece 10 and permit the gate to close.

Each landing in the building is provided 30 with a gate 22 and connected mechanism, as above described, the parts of which are ar-

ranged in line and are operated by the bolts attached to the platform 3 and frame of the same.

Various slight modifications may be made 35 in the construction and arrangement of the parts without departing from the spirit of the invention.

Having thus described my invention, what I claim, and desire to secure by Letters Pat- 40 ent, is—

In combination with the vertically-moving sliding pieces 10 and 11, for operating the safety-gate, the bolts attached to the plat- 45 form or lift, each of which consists of a casing 25, one end of which is open, a bolt 26 operating within the said casing, a rearwardly-extending shank formed upon the said bolt, a spiral spring 28 to project the bolt forward, a pin attached by means of a screw- 50 thread to the side of the bolt and projecting through a slot 34 formed in the side walls of the casing, and a roller 24 operating upon the said pin for moving the bolt inward, substantially as described. 55

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

CHARLES F. KURTZ.

Witnesses:

JOHN GROETZINGER,
H. J. LEVIS.