

No. 619,725.

Patented Feb. 21, 1899.

J. CRUICKSHANK.

HAY PRESS.

(Application filed Oct. 18, 1898.)

(No Model.)

3 Sheets—Sheet 1.

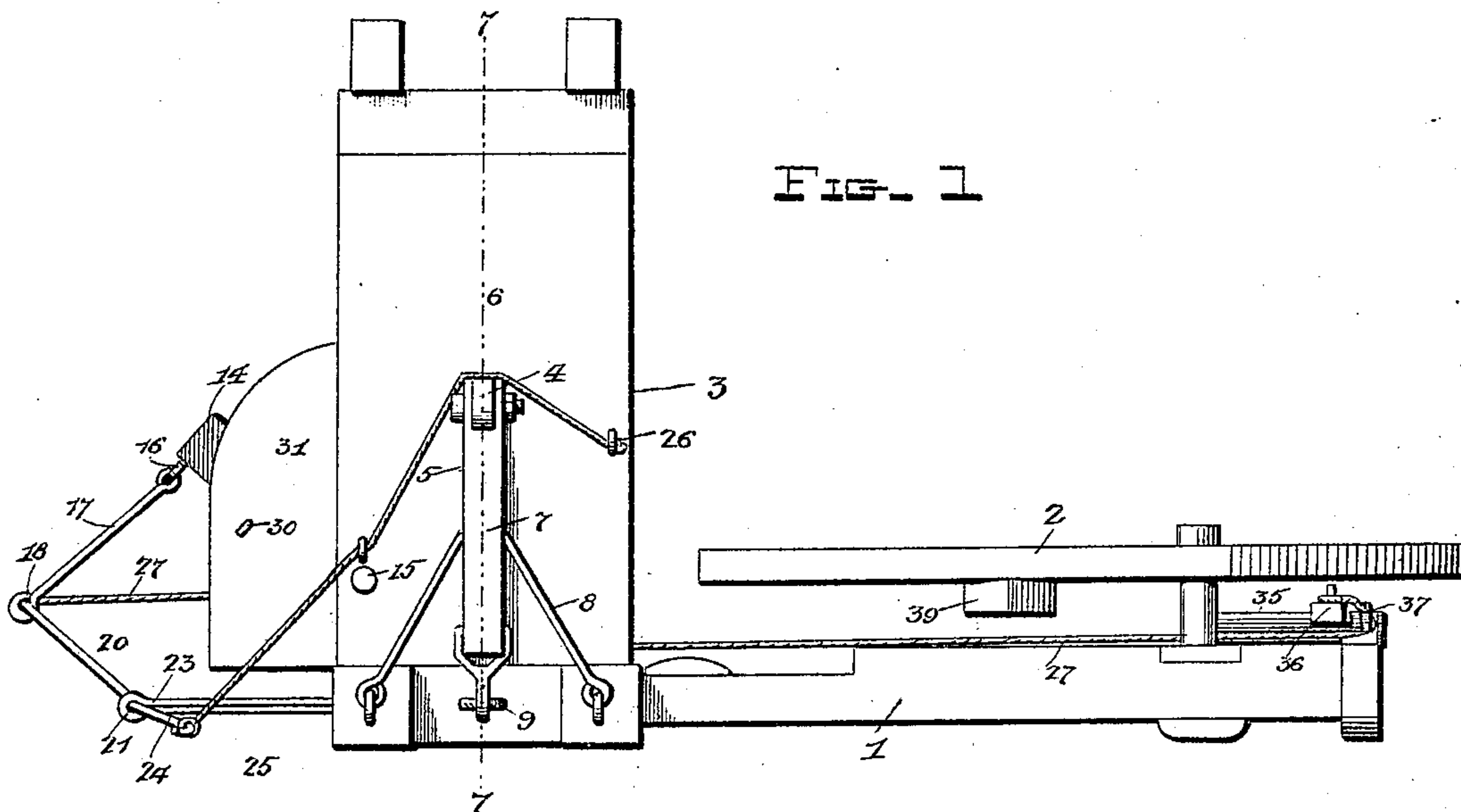


FIG. 1

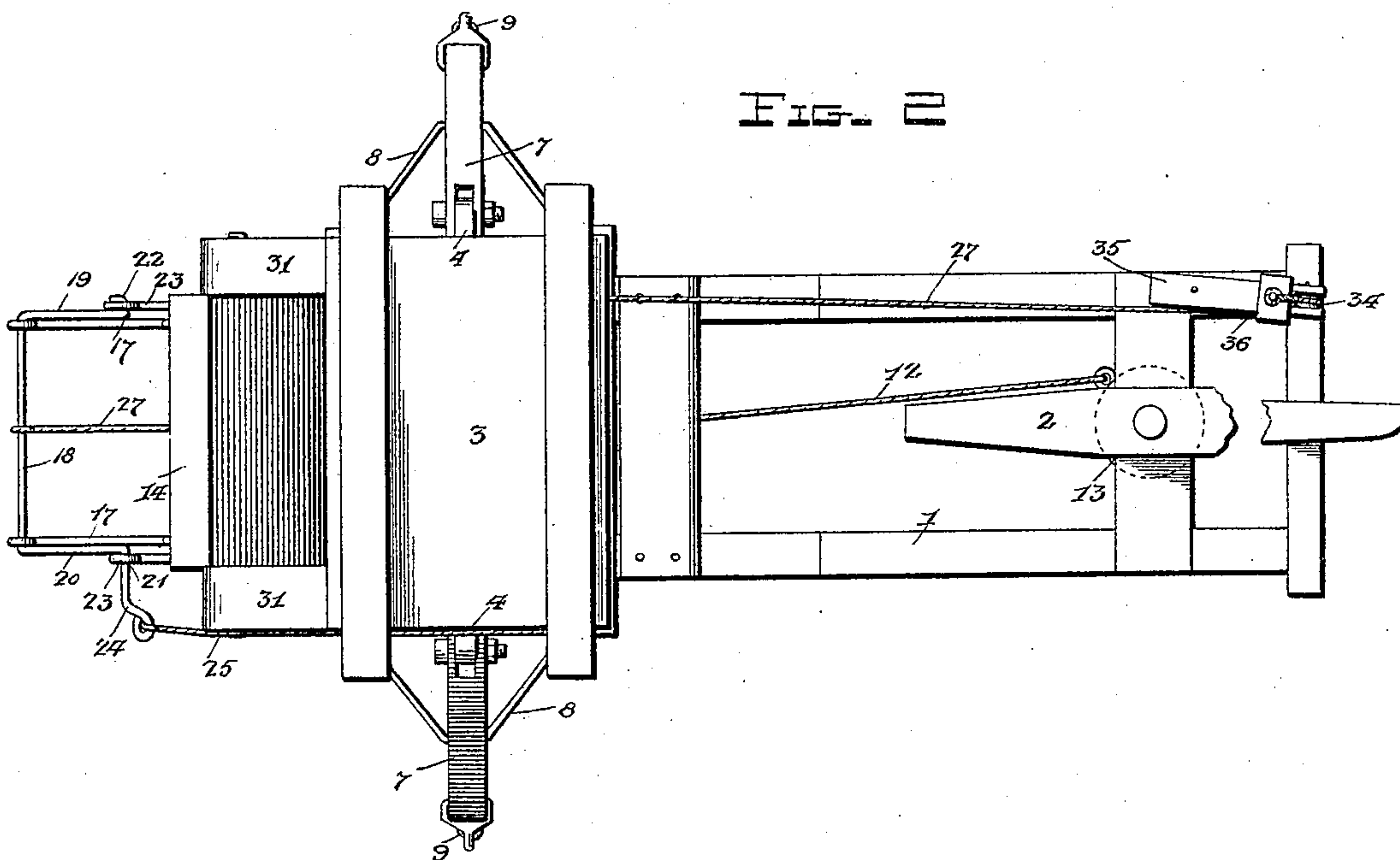


FIG. 2

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Witnesses

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FIG. 3

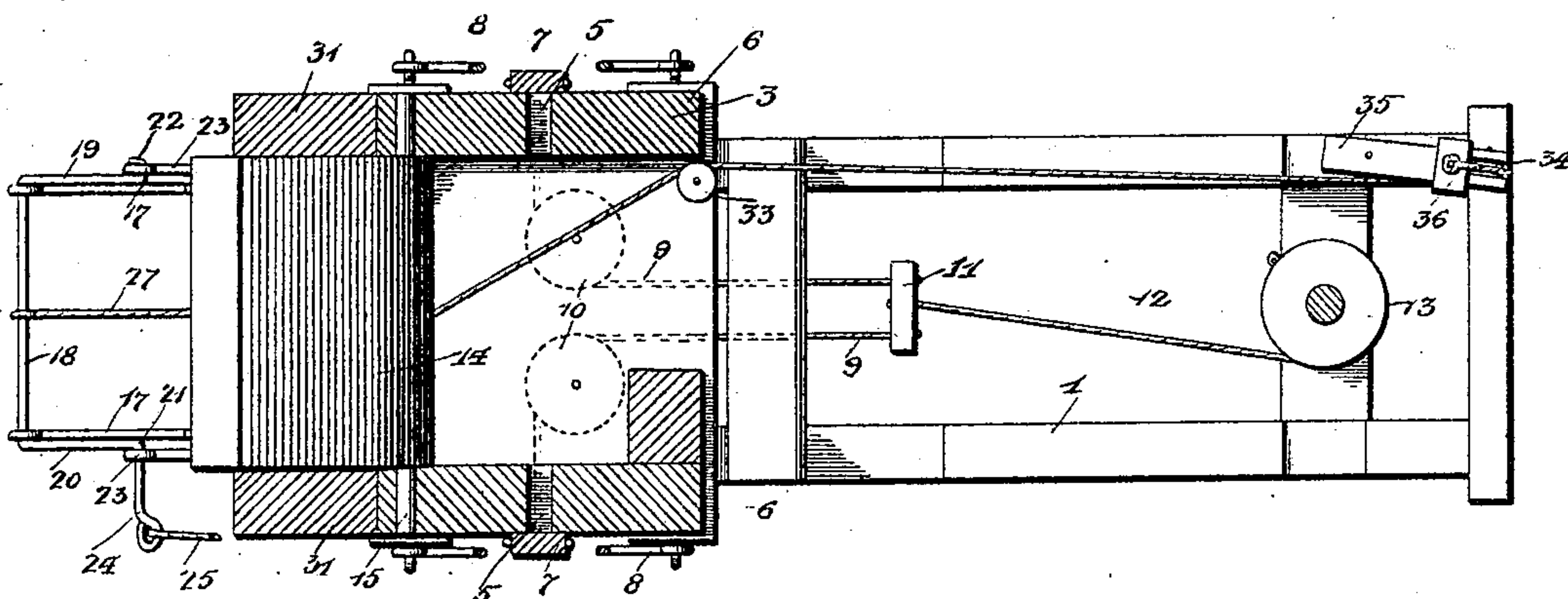
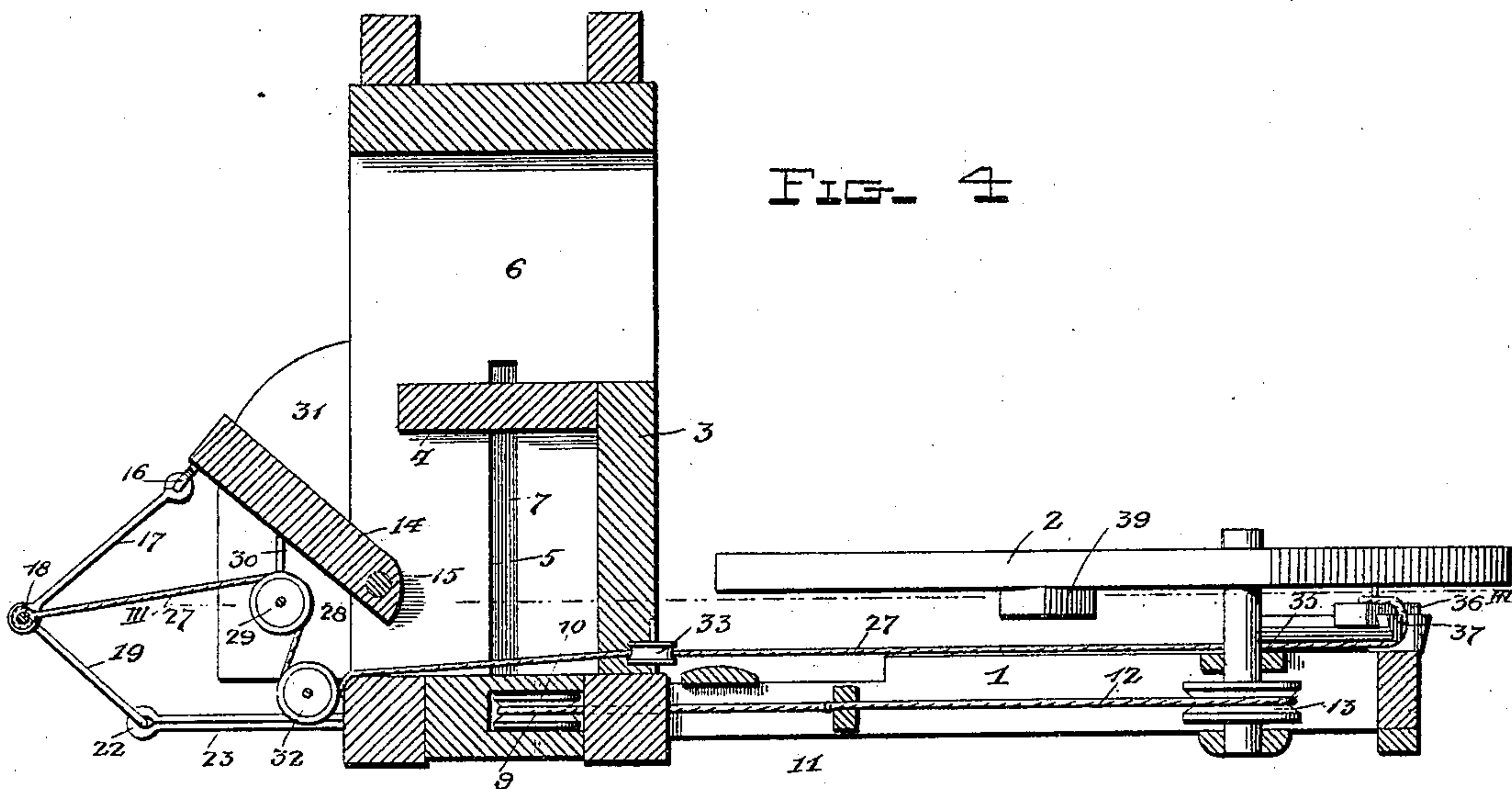


FIG. 4



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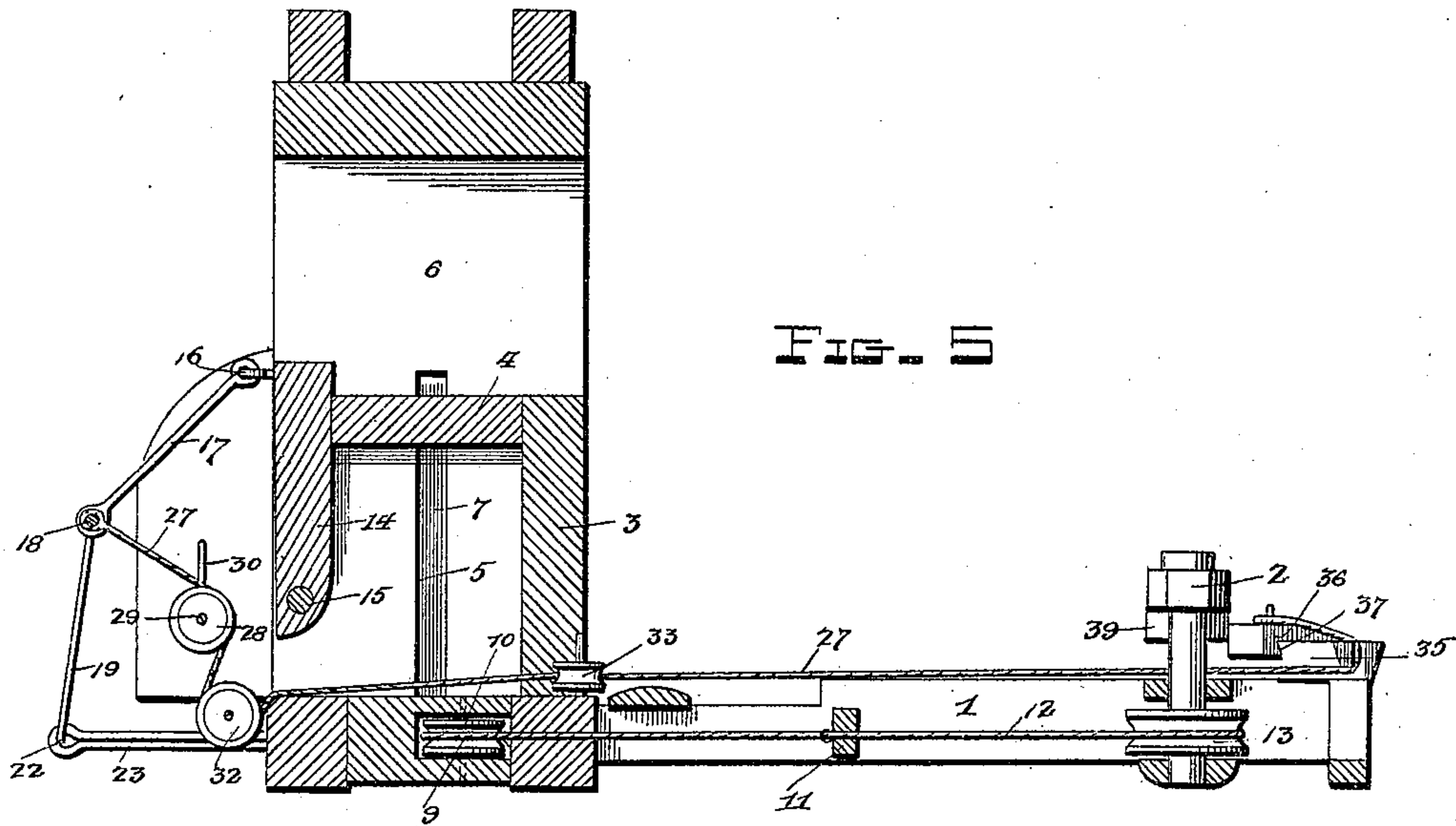


FIG. 5

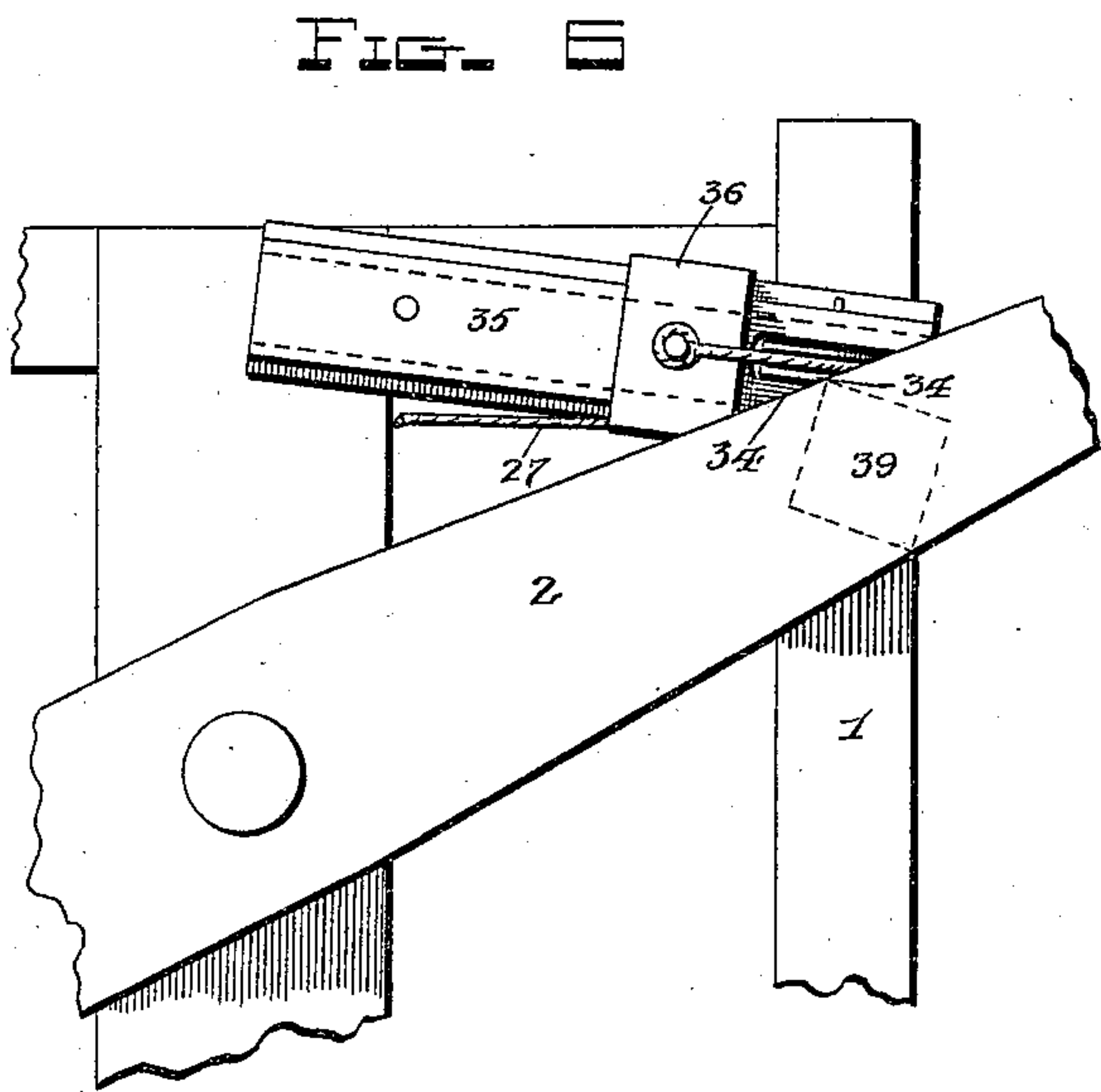


FIG. 6

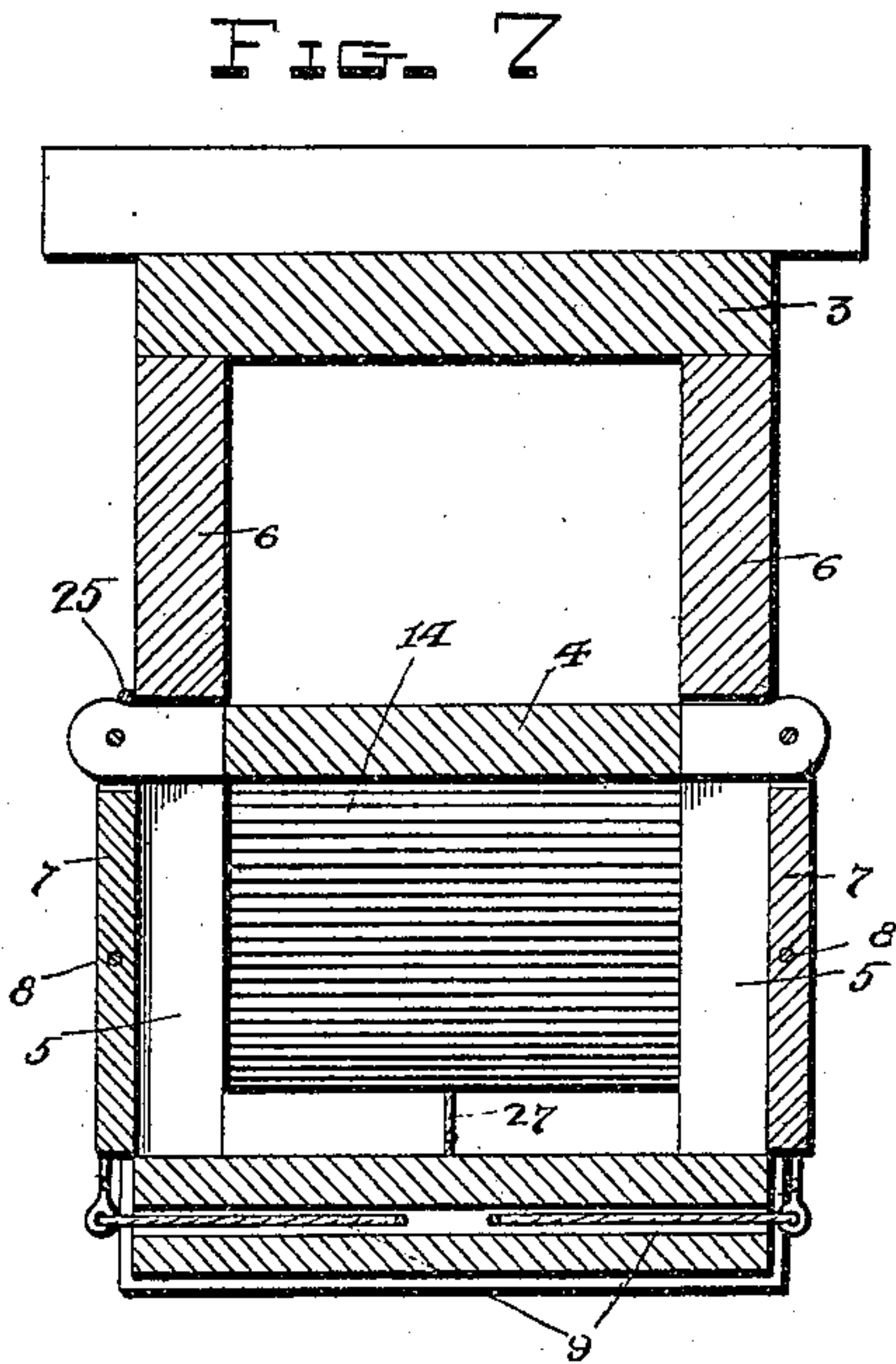


FIG. 7

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UNITED STATES PATENT OFFICE.

JAMES CRUICKSHANK, OF WOODLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO FRANK YOUNG, OF SAME PLACE.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 619,725, dated February 21, 1899.

Application filed October 18, 1898. Serial No. 693,907. (No model.)

To all whom it may concern:

Be it known that I, JAMES CRUICKSHANK, a citizen of the United States, residing at Woodland, in the county of Yolo and State of California, have invented certain new and useful Improvements in Hay-Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to improvements in hay-presses, and more particularly to a novel means of automatically operating the door of the baling-chamber; and the object is to pro-
15 vide a simple and effective device for this purpose.

To this end the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully
20 described, and particularly pointed out in the claims.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be
25 made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claims at the end of this specification.

The same reference characters indicate the
30 same parts of the invention.

Figure 1 is a side elevation of my improved hay-press. Fig. 2 is a top plan view. Fig. 3 is a horizontal section on the line 3 3 of Fig. 4. Fig. 4 is a longitudinal section with the
35 door of the baling-chamber open. Fig. 5 is a similar view with the door closed. Fig. 6 is a detail view of the sweep-operating device for closing the door. Fig. 7 is a transverse vertical section on the line 7 7 of Fig. 1.

40 1 denotes the platform or framework, 2 the sweep, and 3 the press.

4 represents the follower, the lateral projecting arms of which extend through vertical guide-slots 5 5 in the sides 6 6 of the press, and to these arms are pivoted the inner ends
45 of the solid levers 7 7, which are fulcrumed on the bifurcated levers 8 8, which in turn are fulcrumed at their lower ends on the frame, and to the lower ends of the levers 7 7' are
50 fixed the ropes or chains 9 9, which pass in-

wardly under the press and around the grooved guide-pulleys 10 10, their free ends being connected to the yoke 11, from which a single chain or rope 12 extends to the capstan 13, on which the sweep is mounted. 55

14 represents the door of the bale-chamber, and it is pivoted at its lower end on the transverse rod 15, fixed in the sides of the press, and its outside upper edge is provided with eyebolts 16 16, from which the rods 17 17 extend to the cross-bar 18. The depending parallel arms 19 and 20 of one are turned outwardly to form the journals 21 22, which have a bearing in the eyebolts 23 23, fixed in the frame. The outer end of the journal 21 is
60 turned downwardly and outwardly to form the crank 24, from which a chain 25 extends across the path of the follower-arm, and its free end is fixed to an eyebolt 26 in the same side of the press. From the cross-bar 18 a
70 rope or chain 27 extends over a pulley 28, loosely mounted on the drop-arm 29 of the cross-bar 30, fixed in the brackets 31 31, secured to the sides of the press. From the pulley 28 the rope or chain 27 extends down
75 under a similar guide-pulley 32, fixed to a bracket secured to the frame, and thence on the outside of a guide-pulley 33, and its free end passes around a guide-pulley 34, fixed in the forward end of a dovetail guide-rail 35, 80
and its free end is fixed to a carriage or slide-block 36, formed on its under face with a corresponding dovetail groove 37, so as to permit it to travel back and forth on the rail 35. This rail 35 is arranged at a tangent to and
85 in the path of a dog 39, fixed to the under side of the sweep.

The operation is as follows: The press being in the position shown in Fig. 4, with the door 14 open and resting upon the bar 18 and
90 the slide-block 36 at the forward end of the rail 35, the follower is down and the bale-chamber is ready to receive its charge of hay. After the bale-chamber is charged the sweep is moved in the direction of the arrow. The
95 dog 39 strikes against the forward end of the block 36, sliding along the rail 35, and thereby drawing the chain 27 forward, which in turn draws the bar 18 inwardly toward the press and through the medium of the rods 17 17 100

forces the door 14 into a vertical position, so as to close that side of the bale-chamber, as shown in Fig. 5. The rods 17 17 and the arms 19 20 are thus brought into alinement, so as
 5 to form braces which retain the door in place against the internal pressure. The sweep winds up the chains 12 and 9 9 drawing the levers 7 7' and 8 8' to force the follower up-
 10 ward limit of its stroke the end of the follower-arm exerts a pressure on the chain 27, so as to force the chain upward, thereby drawing the crank-arm 24 inward toward the press and carrying the bar 18 in the opposite direction,
 15 and thereby opening the door 14 to the position shown in Fig. 4.

From the above description it will be understood that the door 14 is automatically opened and closed in the ordinary operation of baling
 20 and without any care or attention whatever on the part of the operator.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States,
 25 is—

1. The combination, in a baling-press, of the hinged door 14, the bar 18, operatively connected to said door and having its depending parallel arms fulcrumed in the press-
 30 frame, the sweep 2, the fixed guide-rail 35, mounted tangential to the axis of rotation of said sweep, the block 36, traveling on said rail, the chain 27 connecting said block 36 and bar 18, the dog 39 carried by the sweep and
 35 adapted to engage said block 36, as the sweep

is rotated, substantially as shown and described.

2. The combination, in a baling-press, of the follower 4, the lever 7 pivoted to said fol-
 lower, the hinged door 14, the bar 18 oper- 40
 atively connected to said door and having depending parallel arms 19 20 fulcrumed in the press-frame, the arm 19 being formed with a crank 24, and the chain 25 fixed at one end
 to said crank and at the other end to a point 45
 on the press and extending across the path of said follower-lever 7, substantially as shown and described.

3. The combination in a baling-press, of the sweep 2, the dog 39 fixed to said sweep, 50
 the fixed rail 35, the block 36 traversing said rail in the path of said dog, the hinged door 14, the bar 18 operatively connected to said door and having its depending parallel arms
 19 20 fulcrumed on the press-frame, the arm 55
 19 terminating in a crank 24, the follower 4, the lever 7 pivoted to said follower, the chain 27 connecting the block 36 and bar 18 and the chain 25 connected at one end to said crank
 24 and extending across the path of said lever 60
 7 and having its opposite end fixed to said frame, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES CRUICKSHANK.

Witnesses:

J. W. SNOWBALL,

E. S. YOUNG.