

No. 607,135.

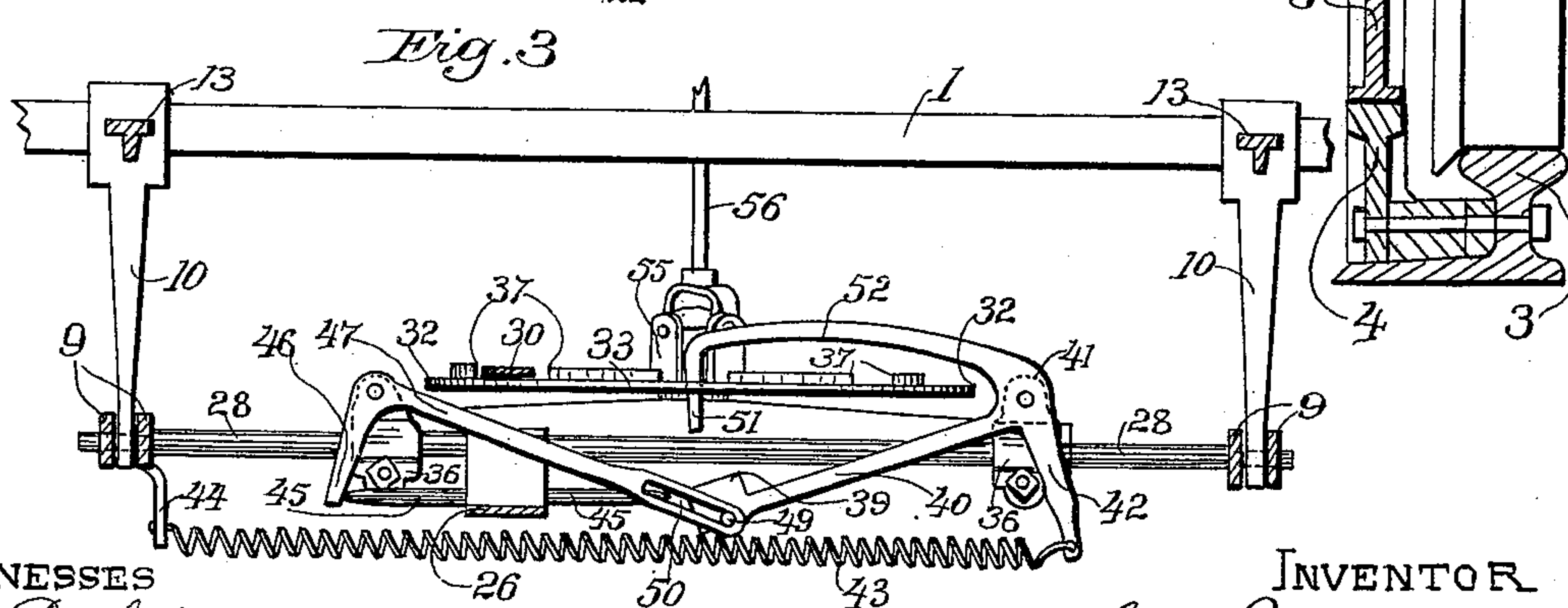
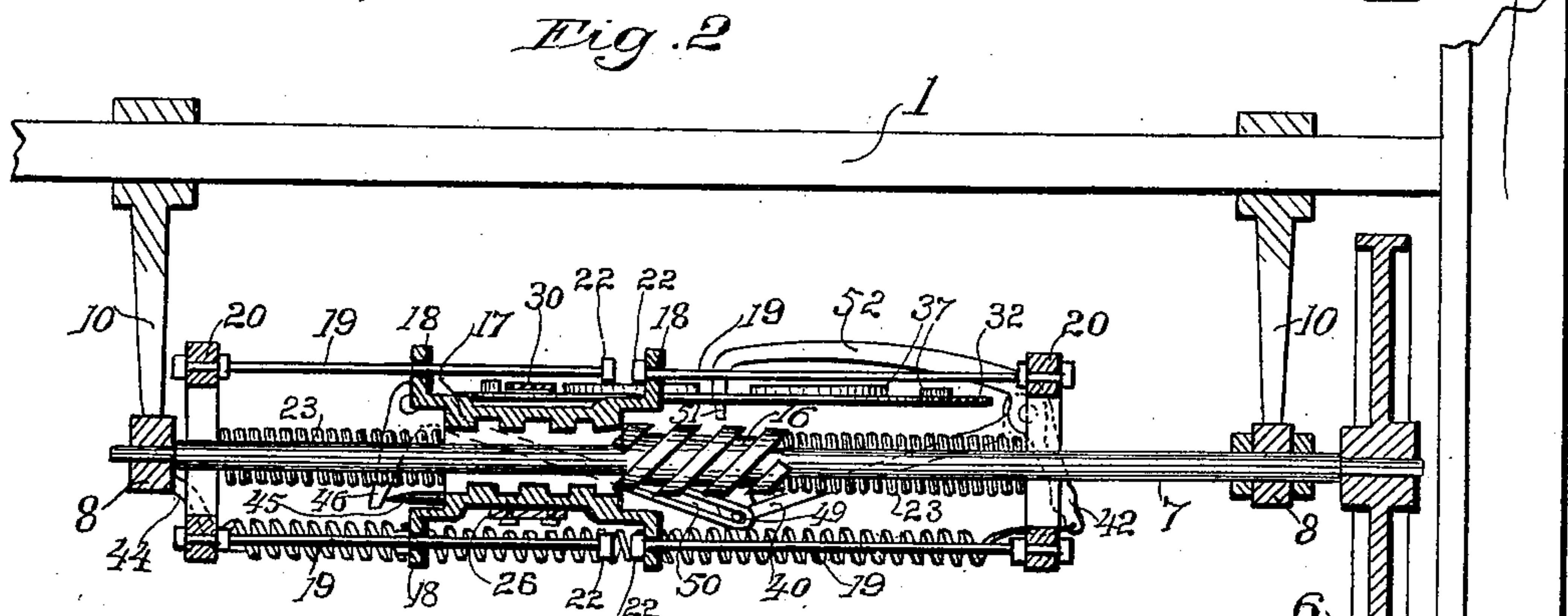
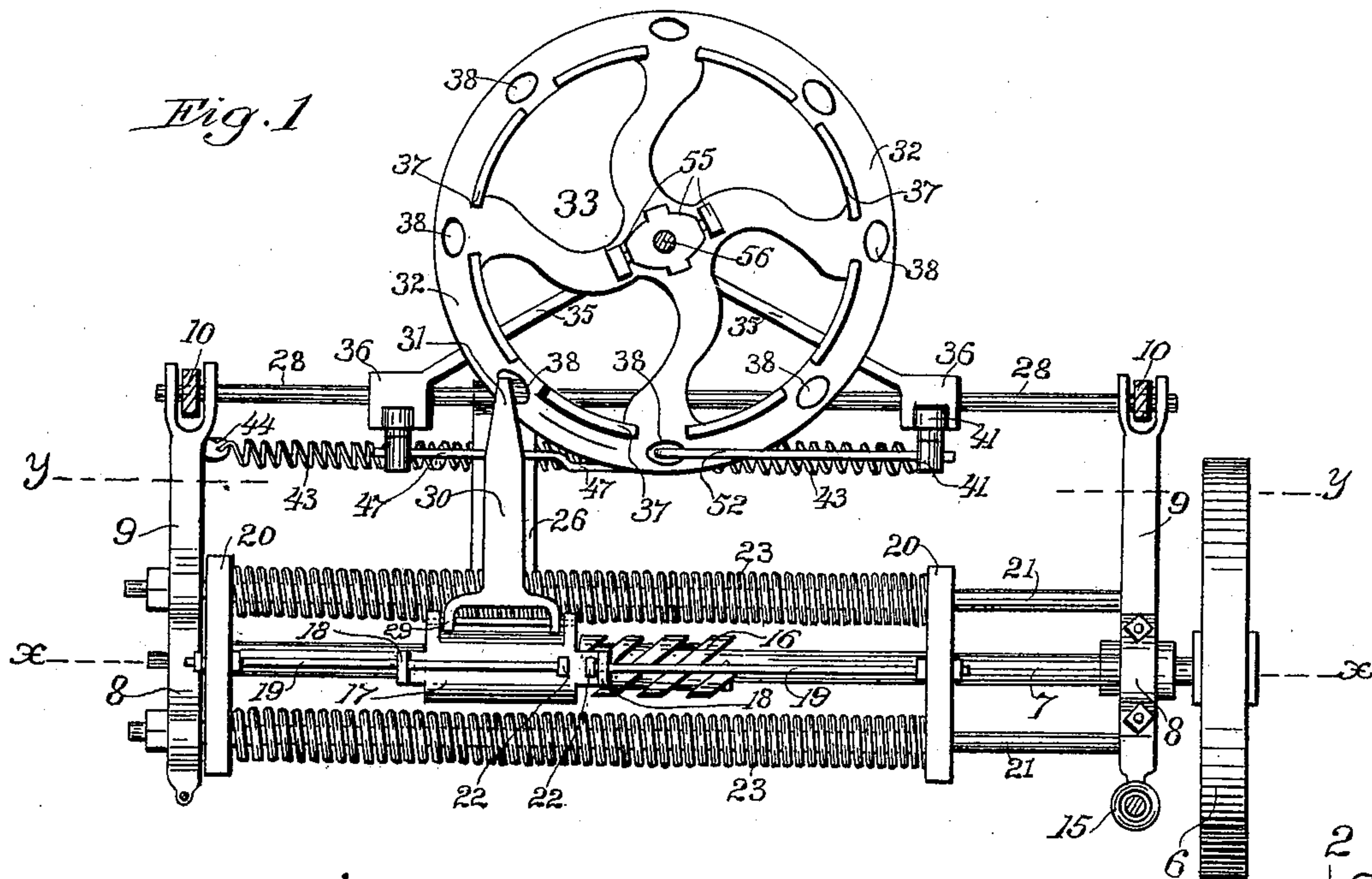
Patented July 12, 1898.

G. RISCHMULLER.
STATION INDICATOR.

(Application filed Oct. 11, 1897.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

J. A. Bayless
W. R. Boone

INVENTOR

George Rischmuller,
By Boone & Wright.
Attys.

No. 607,135.

Patented July 12, 1898.

G. RISCHMULLER.
STATION INDICATOR.

(Application filed Oct. 11, 1897.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 5.

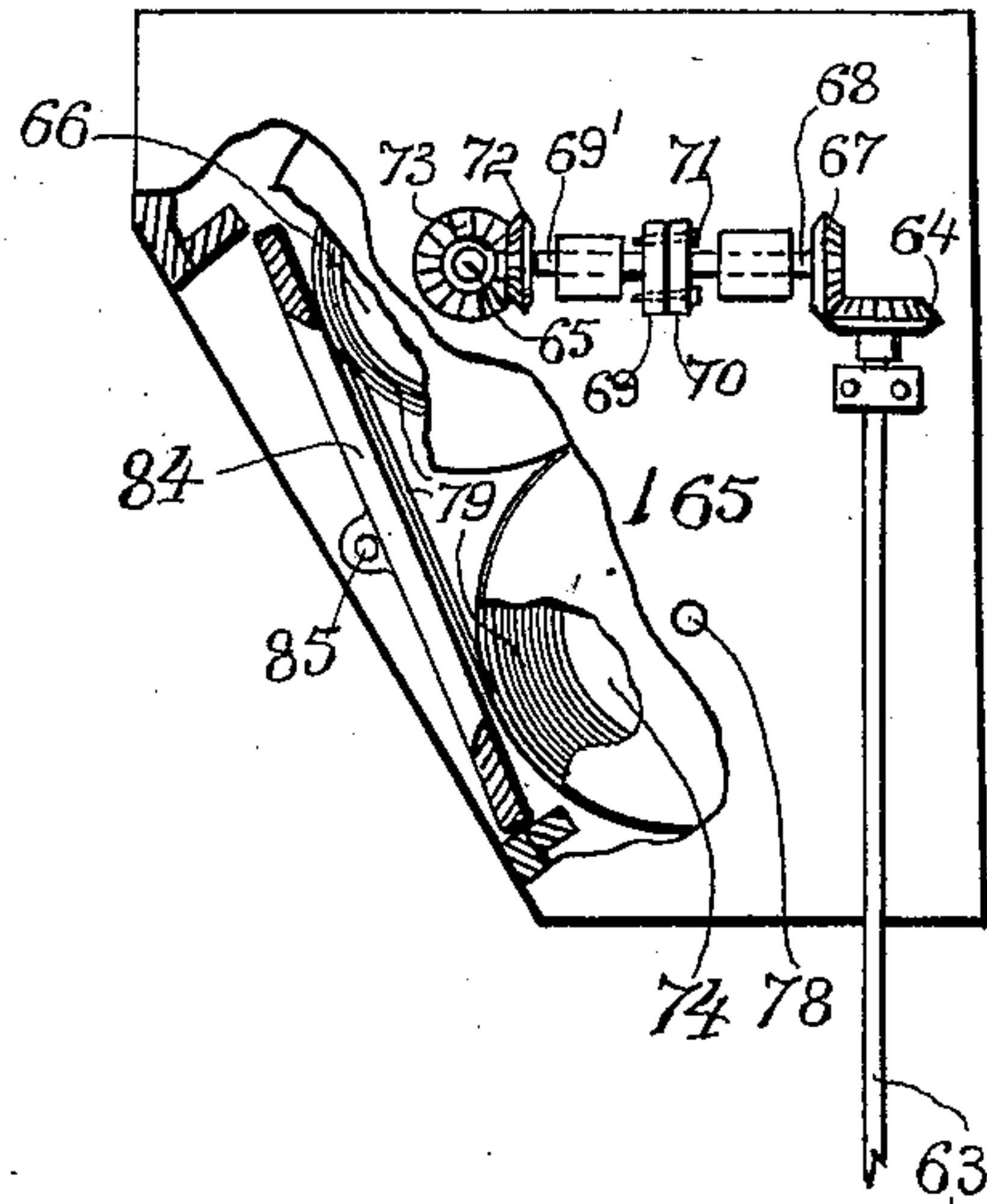
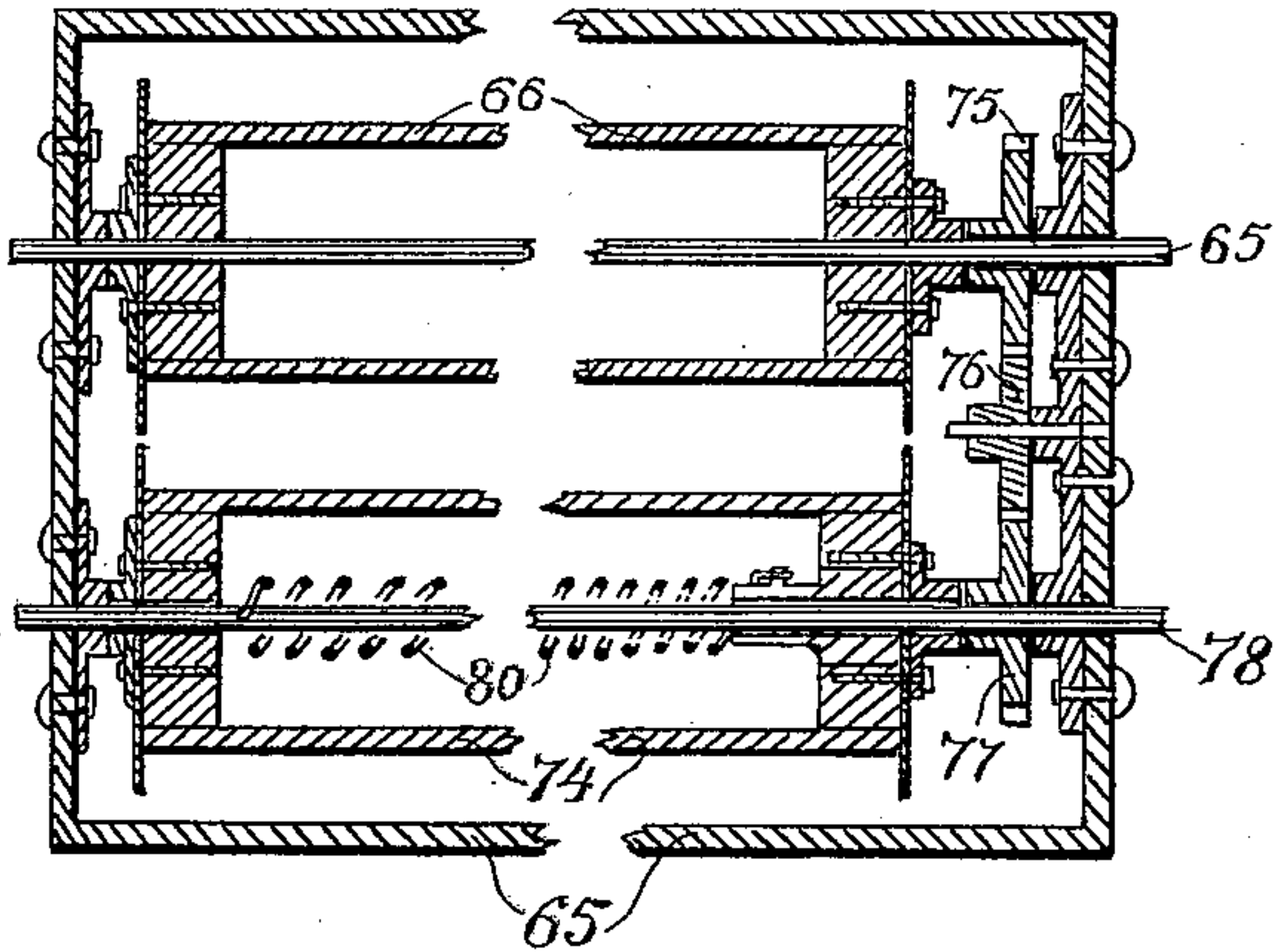


Fig. 6

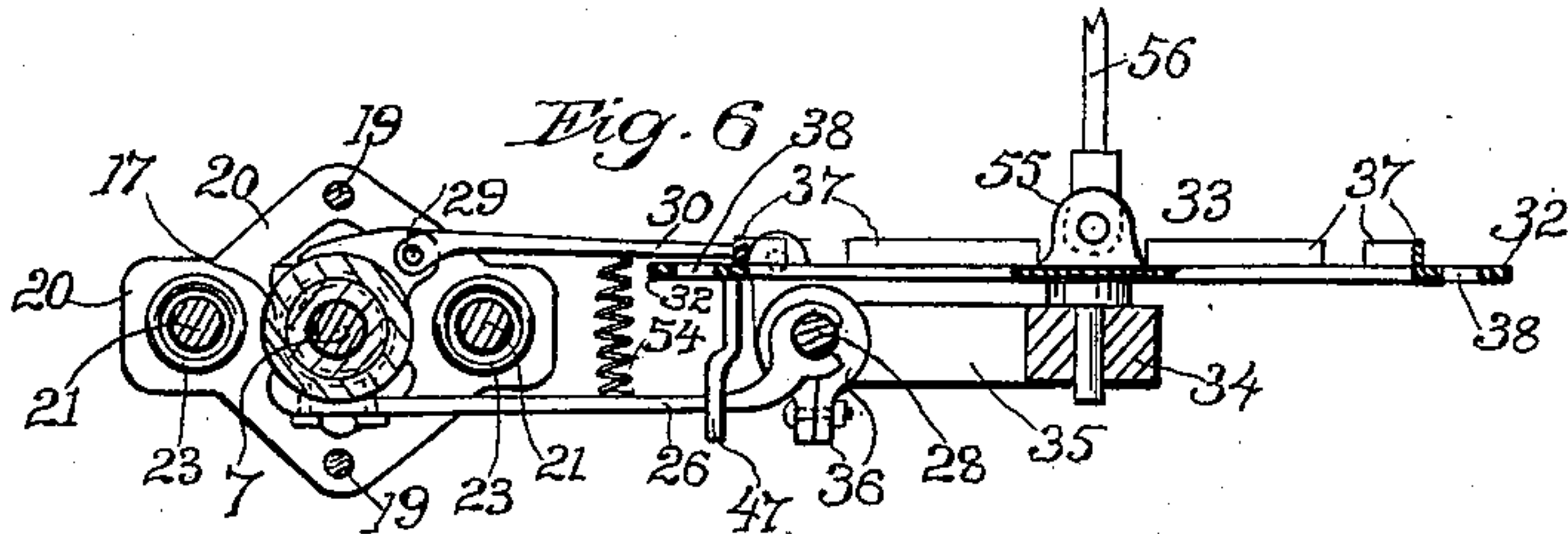
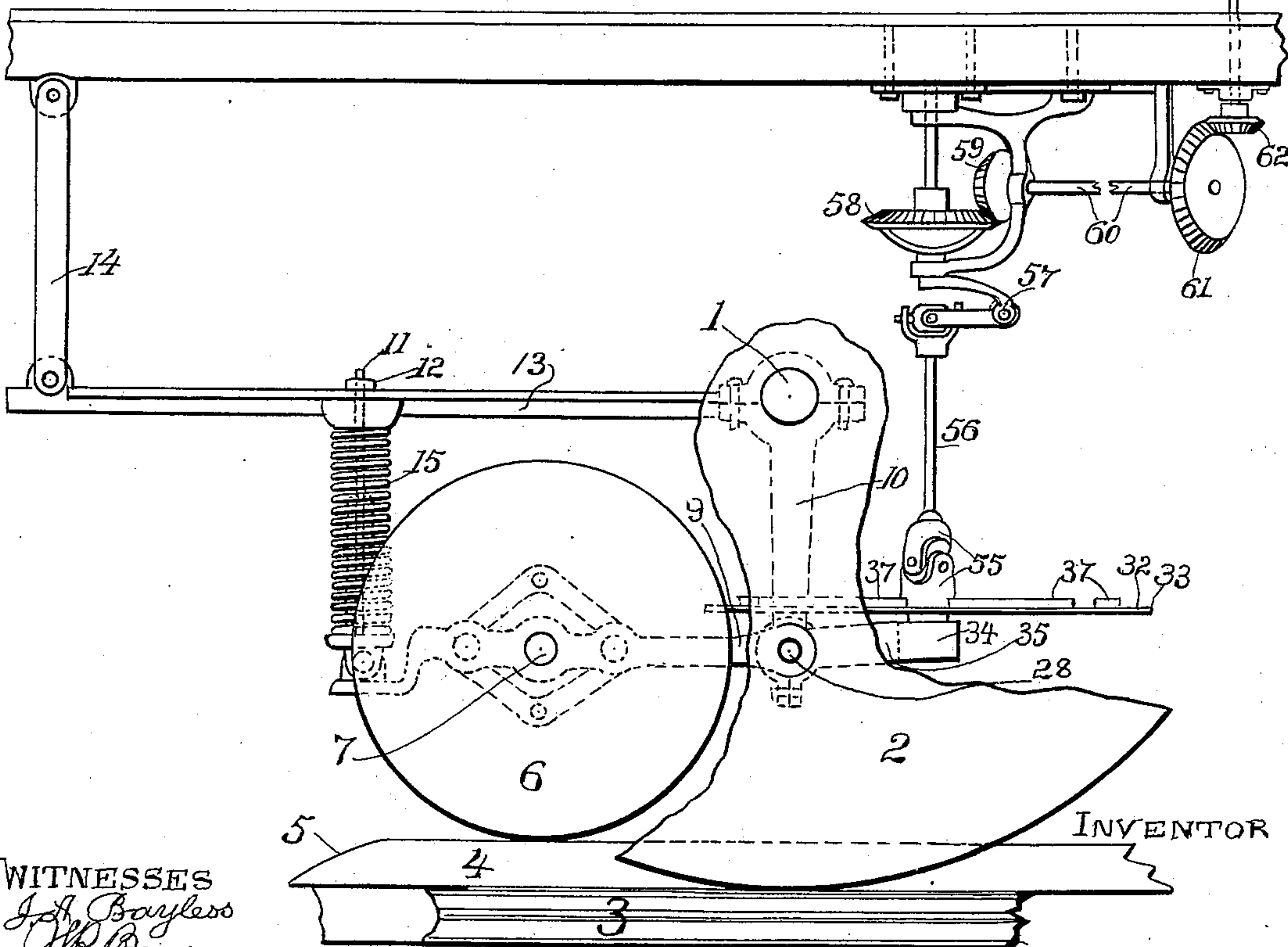


Fig. 4



WITNESSES
J. H. Boylston
W. R. Boone

INVENTOR

George Rischmuller,
By Boone & Wight, attys

UNITED STATES PATENT OFFICE.

GEORGE RISCHMULLER, OF SAN FRANCISCO, CALIFORNIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 607,135, dated July 12, 1898.

Application filed October 11, 1897. Serial No. 654,884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE RISCHMULLER, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Station-Indicators; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention relates to improvements in station-indicators, the object of my invention being to provide an indicator of this character which shall be automatically operated by the arrival of the car at successive stations, and which shall be durable in construction and not liable to be broken by sudden or violent changes of motion, and one that may be operated either backward or forward, so as to require no attention from the conductor when once arranged for a given return trip.

My invention therefore resides in the novel construction, combination, and arrangement of parts hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the portion of the operating mechanism beneath the floor of the car. Fig. 2 is a vertical section on the line *x x* of Fig. 1. Fig. 3 is a vertical section on the line *y y* of Fig. 1. Fig. 4 is a vertical section of a portion of a car, showing my improved apparatus in position; and Figs. 5 and 6 are detail sectional views.

Referring to the drawings, 1 represents a car-axle, and 2 a car-wheel. On the inner side of the track-rail 3 and in close proximity thereto is secured at each station that it is desired to indicate by the device an indicator-rail 4. Said indicator-rail is somewhat higher than the rails of the track and has sloping ends 5, so that upon the arrival of the car-wheel at the indicator-rail said rail forces upward a wheel 6, secured at the end of a shaft 7, mounted in bearings 8 on bars 9, said bars being pivotally secured at one end to hangers 10, suspended from the axle 1, and at the other end being supported by rods 11, suspended by nuts 12 from bars 13, forming rearward extensions of the upper ends of the hangers 10, the rear ends of said bars 13 be-

ing suspended by hangers 14 from the floor of the car. A compressed spring 15 is interposed between the bars 9 and 13 on the side on which the wheel 6 is located. This construction allows for the oscillation of the car upon the axles, while the spring 15 insures a powerful pressure between the wheel 6 and the indicator-rail and a rotation of said wheel when it arrives at the station to be indicated.

The rotation of the wheel 6 and its shaft 7 through the medium of a threaded central portion 16 produces a longitudinally movement in a correspondingly internally-threaded nut or sleeve 17, having upper and lower terminal extensions or ears 18, through which are passed rods 19, said rods being secured at their outer ends to frames 20, sliding on rods 21. Normally the sleeve 17 is midway between the bars 9, and the ears 18 abut against stops 22, formed on the inner ends of the rods; but when the wheel 6 is rotated the sleeve 17 will be moved longitudinally and will carry with it in one direction or the other, according to the direction in which the wheel 6 is revolved, one or the other of the frames 20, thereby compressing the springs 23, which are inclosed between the two frames 20 and encircle rods 21, secured between the bars 9.

To the under side of the sleeve 17 is secured a guide-arm 26, the end of which slides upon a bar 28, secured between and supported by the hangers 10. The sleeve 17 is thus additionally guided and restrained from turning.

Upon the upper side of the sleeve 17 is pivotally mounted at 29 an arm 30, the free end of which is slightly tapered, as shown at 31. When the sleeve has been moved to its terminal position, said free end 31 of the arm 30, carried by the sleeve, will rest upon the rim 32 of a wheel 33. Said wheel 33 has a step-bearing 34, supported by arms 35, extending from boxes 36, firmly secured to bar 28.

When the wheel 6 runs off the rail 4, the sleeve 17 will be carried back to its normal position by the force of the compressed springs 23, and the free end 31 of the arm 30 will abut against the end of one of a number of sectional curved ribs 37 and will cause said wheel to rotate through a fraction of a revolution. The rotation of the wheel will be automatically arrested by the entrance into an oblong aperture 38 in the portion of the rim under-

lying the arm 52 of a tooth 39, carried by a bell-crank lever 40, pivotally mounted on a lug 41, projecting from one of the boxes 36, and having a short arm 42, operated by a spring 43, secured to a lug 44, extending from the more remote of the bars 9. Said tooth 39 will have been withdrawn from engagement with the aperture 38 by means of one of two pins 45, secured to the guide-arm 26 and projecting in opposite directions therefrom, said pin impinging on the arm 42 of the bell-crank lever 40 or on a similar arm 46 of a like bell-crank lever 47, mounted on a lug 48, said levers 40 and 47 being connected to move in unison by means of a pin 49 in one lever engaging a slot 50 in the other. The tooth 39 is withdrawn from the aperture 38 only at the end of the first movement of the arm 30, so that the wheel 33 is held firmly in position so long as the arm 30 is being carried along the top of the sectional rib, and at the end of said first movement when said tooth 39 is withdrawn from the aperture 38 a tooth 51, carried by a third arm 52 of the bell-crank lever 40, extending above the rim of the wheel, drops into said aperture and thereby holds the wheel from rotation. On the return movement of the arm 30, when the wheel is being rotated by said arm, the tooth 51 is first withdrawn and the tooth 39 slides along the under side of the rim 32 until the next aperture 38 in the rim comes above said tooth 39, whereupon said tooth, forced upward by the spring 43, rises in said aperture, and thereby raises the arm 30 to a level above the top of the rib 37, so that said arm will be in position to be moved along the top of the succeeding rib on the next operation of the machine. In order to insure the fall of the arm 30 upon the rim 32 when it has passed the end of the rib, there is provided a stretched spring 54, secured to said arm 30 and the guide-arm 26, the contraction of which spring tends to draw the arm 30 downward upon the rim 32.

The rotation given to the wheel 33 is transmitted to the band-carriers by the following mechanism:

The wheel 33 is connected by a gimbal-joint 55 to a short shaft 56, similarly hinged to an elbow-joint 57, and by means thereof transmitting rotation to a bevel-wheel 58. This rotation is further transmitted by means of the bevel-pinion 59, shaft 60, bevel-wheel 61, and bevel-pinion 62 to a shaft 63, passing up through the floor of the car in proximity to the door and by means thereof to a bevel-pinion 64 in a casing 165 above the door. Said pinion 64 communicates rotation to the shaft 65 of the upper band-carrying cylinder 66 by means of a bevel-wheel 67, shaft 68, disks 69 and 70, adjustably connected together by pins 71, shaft 69', bevel-wheel 72, and bevel-wheel 73 on the shaft 65.

The upper and lower band-carrying cylinders 66 and 74 are operatively connected by means of the gear-wheel 75 on the shaft 65, intermediate gear-wheel 76, and gear-wheel

77 on the shaft 78. The cylinder 74 is not, however, rigidly mounted on the shaft 78, but for the purpose of taking up the slack in the band 79, wound on the two cylinders, is loosely mounted on the shaft 78, and is connected therewith by a spring 80, so that while the shafts 65 and 78 revolve at a uniform rate the cylinders 66 and 74 may be permitted to revolve at different rates as required for different thicknesses of the band 79 on the two cylinders and consequent difference in the winding diameters. Any retardation of the cylinder 74 relative to the shaft 78 in consequence of this winding will be taken up by the winding of the spring 80.

The casing 65 is provided with a glass front 84, trunnioned at the middle, as shown at 85, so as to swing as nearly as possible parallel with the band that is being wound from one cylinder to the other.

Having thus described my invention, I claim—

1. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a shaft for said wheel having a screw-threaded portion, a nut longitudinally moved by the rotation of said screw-threaded portion, a spring for retracting the nut, when no longer operated by the rotation of said wheel, a band-cylinder, and means, actuated by the return movement of the nut, when so retracted, for rotating said band-cylinder, substantially as described.

2. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a spring compressed by said wheel when so rotated, a band-carrier, and means for operating said band-carrier arranged to be set in motion by said compressed spring when released from the compressive force of said wheel, substantially as described.

3. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, means for imparting rotation to said shaft, a spring for operating said means, said spring being energized by the rotation of the wheel, and an operative connection between said wheel and said means for carrying the same into position to be actuated by said spring, substantially as described.

4. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, a wheel on said shaft, projections on said wheel, a reciprocating arm arranged to abut against the projections in succession, and partially rotate said wheel, a spring for so moving said arm, and an operative connection between the first-mentioned wheel and the arm, whereby said arm is, by the rotation of said first wheel, moved in a direction contrary to that rotating said secured wheel, said arm being connected with the

spring to energize the same in the latter movement of the arm, substantially as described.

5 In a station-indicator for cars, the combination of a main wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, a wheel on said shaft, ribs on said wheel, a reciprocating arm moved in one direction by said main wheel, a spring energized by said wheel, a connection between said spring and the arm whereby the released force of the spring moves the arm in the other direction, and means whereby said arm engages one of said ribs when moving in the latter direction and is disengaged therefrom when moving in the former direction, substantially as described.

6 In a station-indicator for cars, the combination of a main wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, a wheel on said shaft, ribs on said wheel, a reciprocating arm moved in one direction by said main wheel, a spring resisting said movement, and retracting the arm when freed from the force so transmitted by said main wheel, a lever arranged to engage the wheel on the shaft at the end of the retractile movement, and means whereby the arm withdraws said lever and releases said wheel before commencing said movement, substantially as described.

7 In a station-indicator for cars, the combination with the shaft and the wheel thereon provided with apertures, and means for rotating said wheel in either direction, of a pin for engaging one of said apertures to lock the wheel and connected levers actuating the pin, said levers being so arranged that one or the other will be actuated by said rotating means in whichever direction the wheel is rotated thereby, substantially as described.

8 In a station-indicator for cars, the combination with the shaft and the wheel there-

on provided with apertures, of the lever having two arms, one vibrating above and one below the apertured circumference, each lever carrying a pin arranged to engage an aperture, whereby when one of said pins is withdrawn from an aperture the other will be moved in a direction to enter an aperture, a reciprocating arm arranged to be thrown out of operative engagement with said wheel when one of said pins enters the aperture, means for reciprocating the arm, and means whereby said arm withdraws the latter pin out of engagement with the aperture at the end of the reciprocatory movement, substantially as described.

9 In a station-indicator for cars, the combination with the car-body and car-axle, of hangers from the car-axle, a bar connecting the lower portions of the hangers, arms secured thereon, a bearing supported by said arms, a wheel pivoted in said bearing, a shaft rotated by said wheel, bars extending longitudinally of the car from said hangers and supported at their other ends from the car-body, a wheel supported by a longitudinal bar and adapted to be revolved by a rail on the car-track and mechanism carried by said longitudinal bars whereby the force imparted to said wheel by said rail is transmitted to the first-mentioned wheel and the shaft rotated thereby, substantially as described.

10 In a station-indicator for street-cars, the combination of a casing, cylinders revolubly mounted on the sides of the casing, a band wound from one cylinder to the other, and a glass front for said casing, pivotally mounted on a horizontal axis substantially midway in front of the cylinders, whereby said front can lie substantially parallel with the band, substantially as described.

GEORGE RISCHMULLER.

Witnesses:

F. M. WRIGHT,
J. A. BAYLESS.