

(No Model.)

2 Sheets—Sheet 1.

G. B. WEBB.
TYPE WRITING MACHINE.

No. 559,089.

Patented Apr. 28, 1896.

Fig. 1,

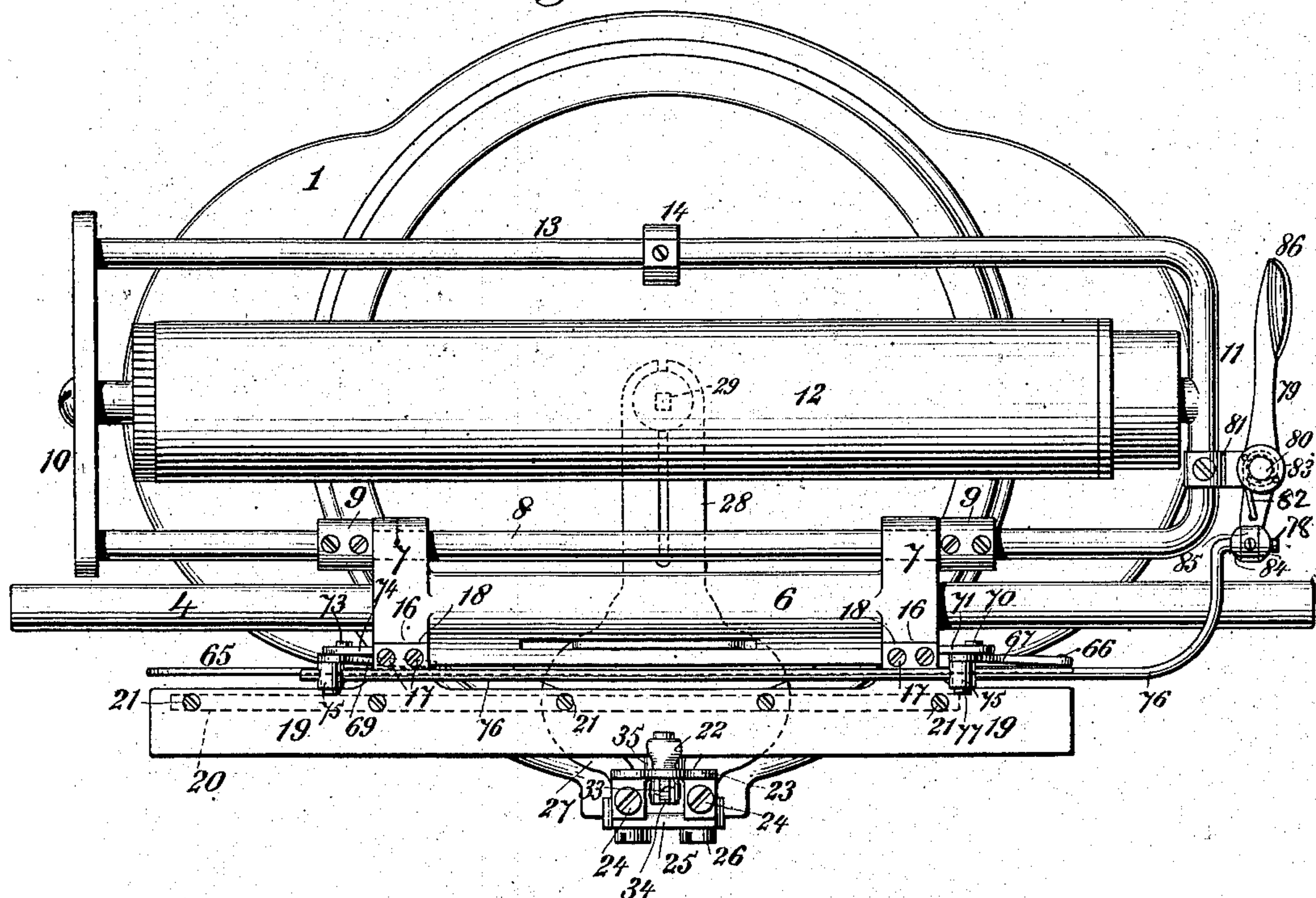
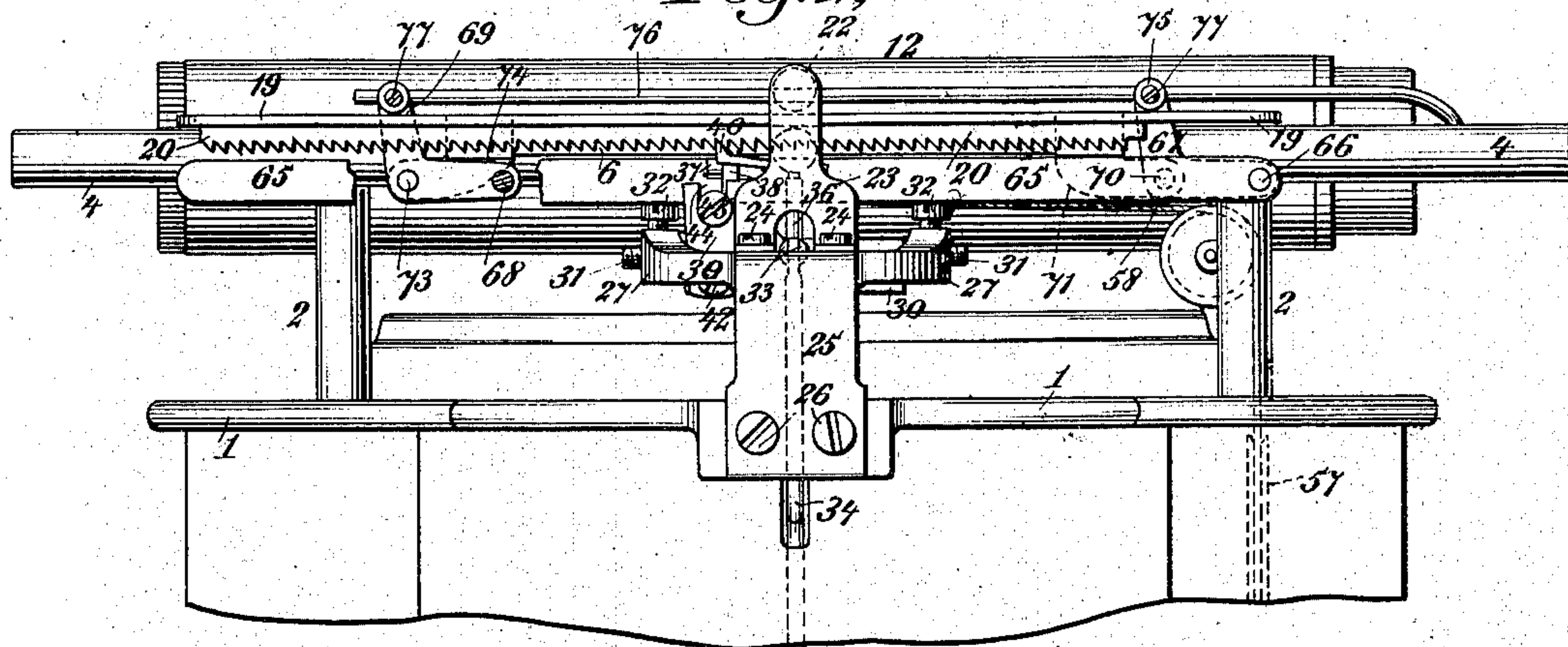


Fig. 2,



WITNESSES:

R. H. Bayne
J. C. Macdonald

INVENTOR

George B. Webb

BY

Jacob Felbel
ATTORNEY

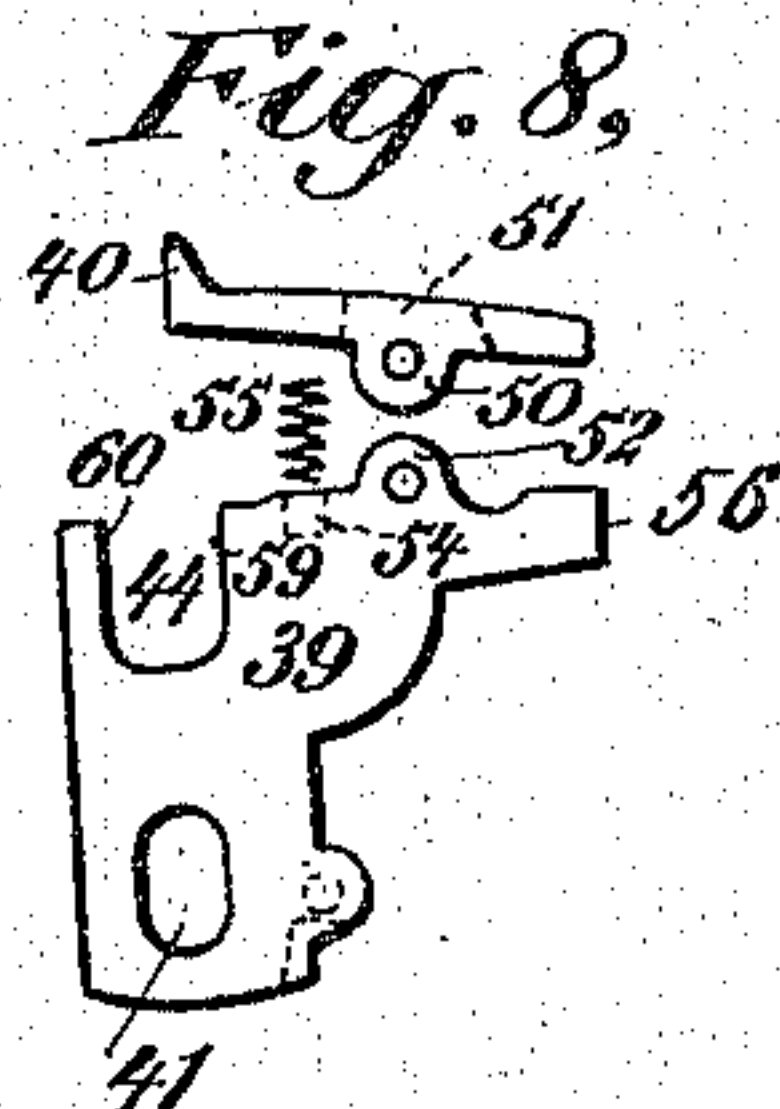
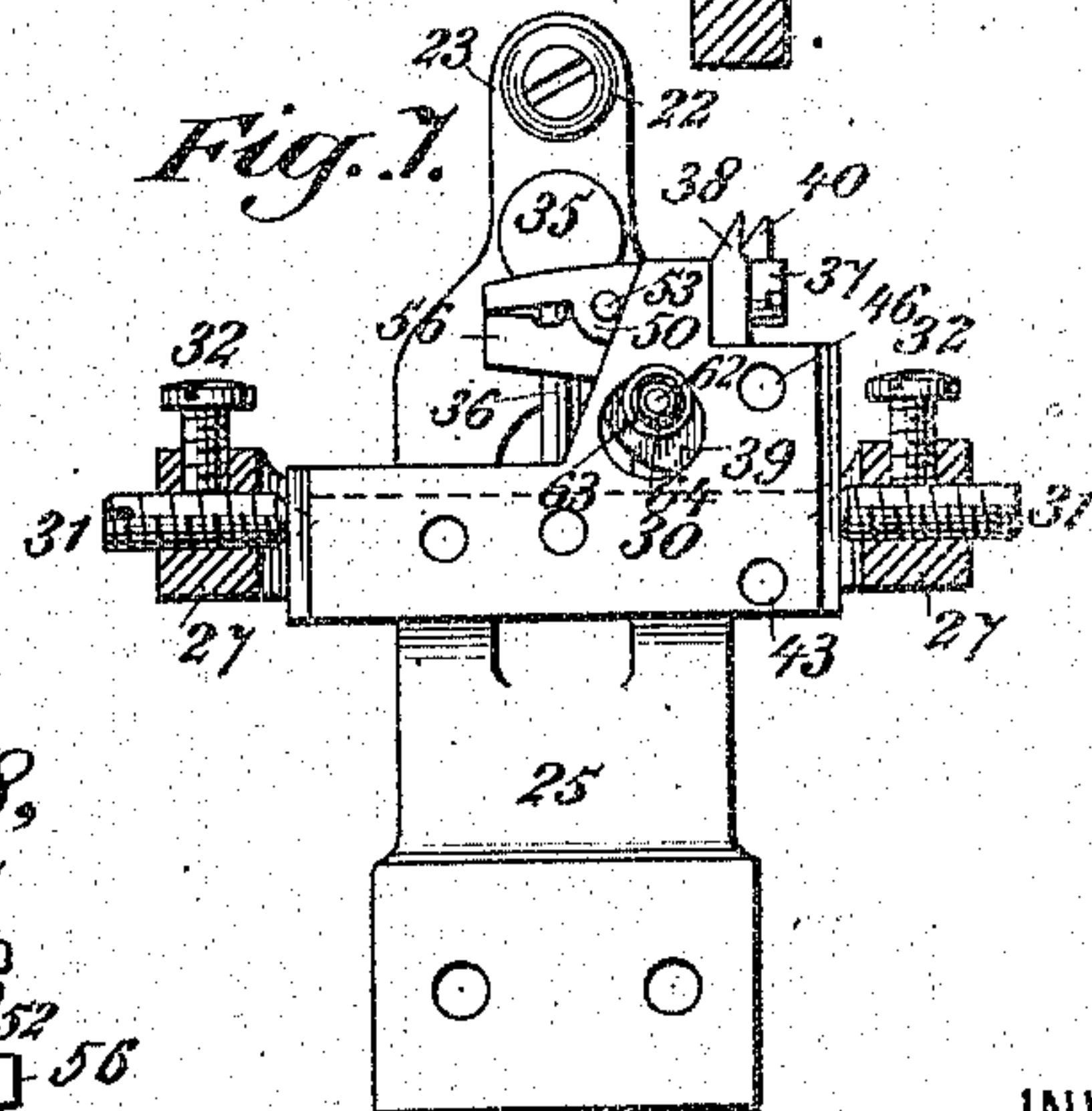
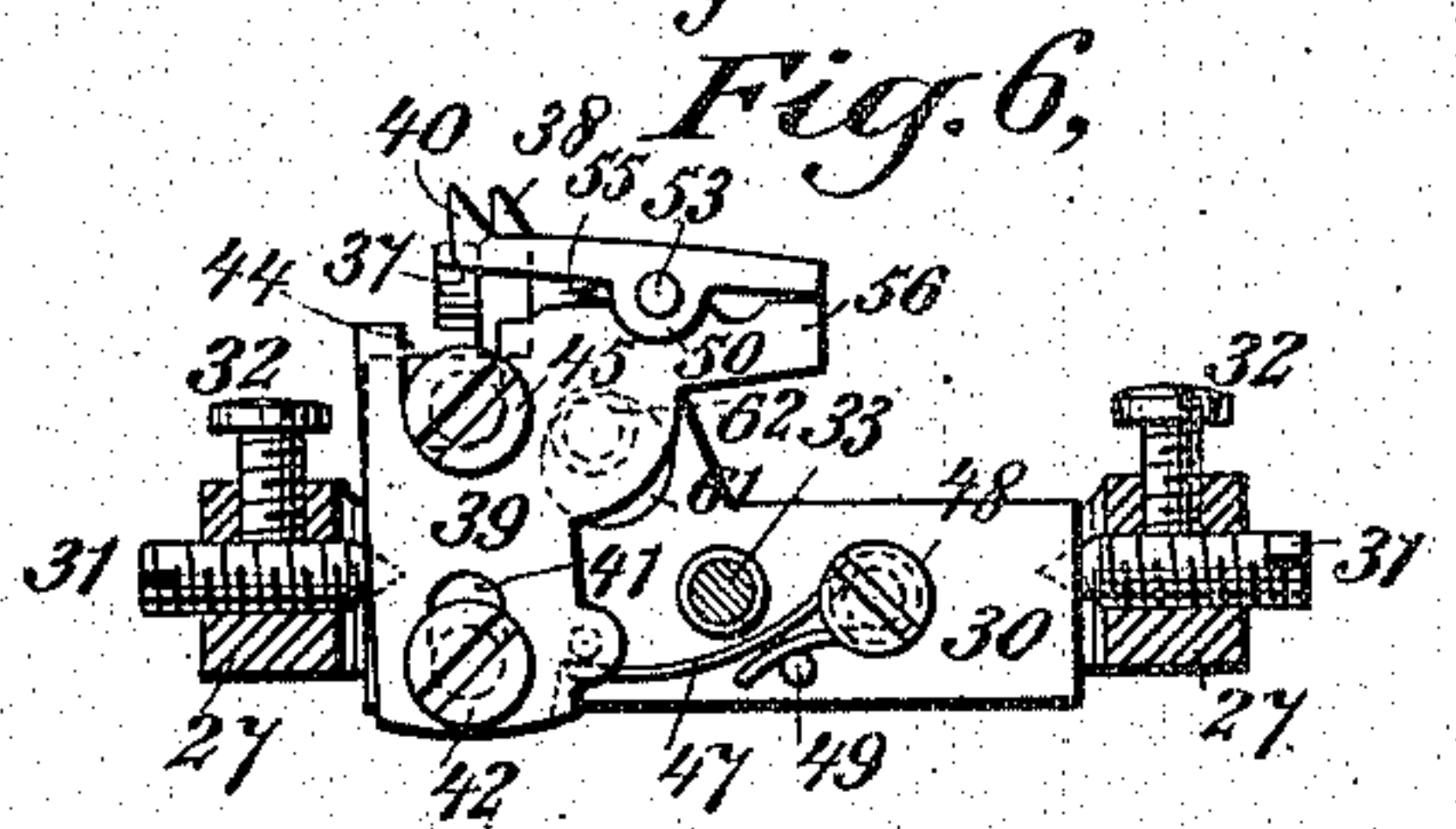
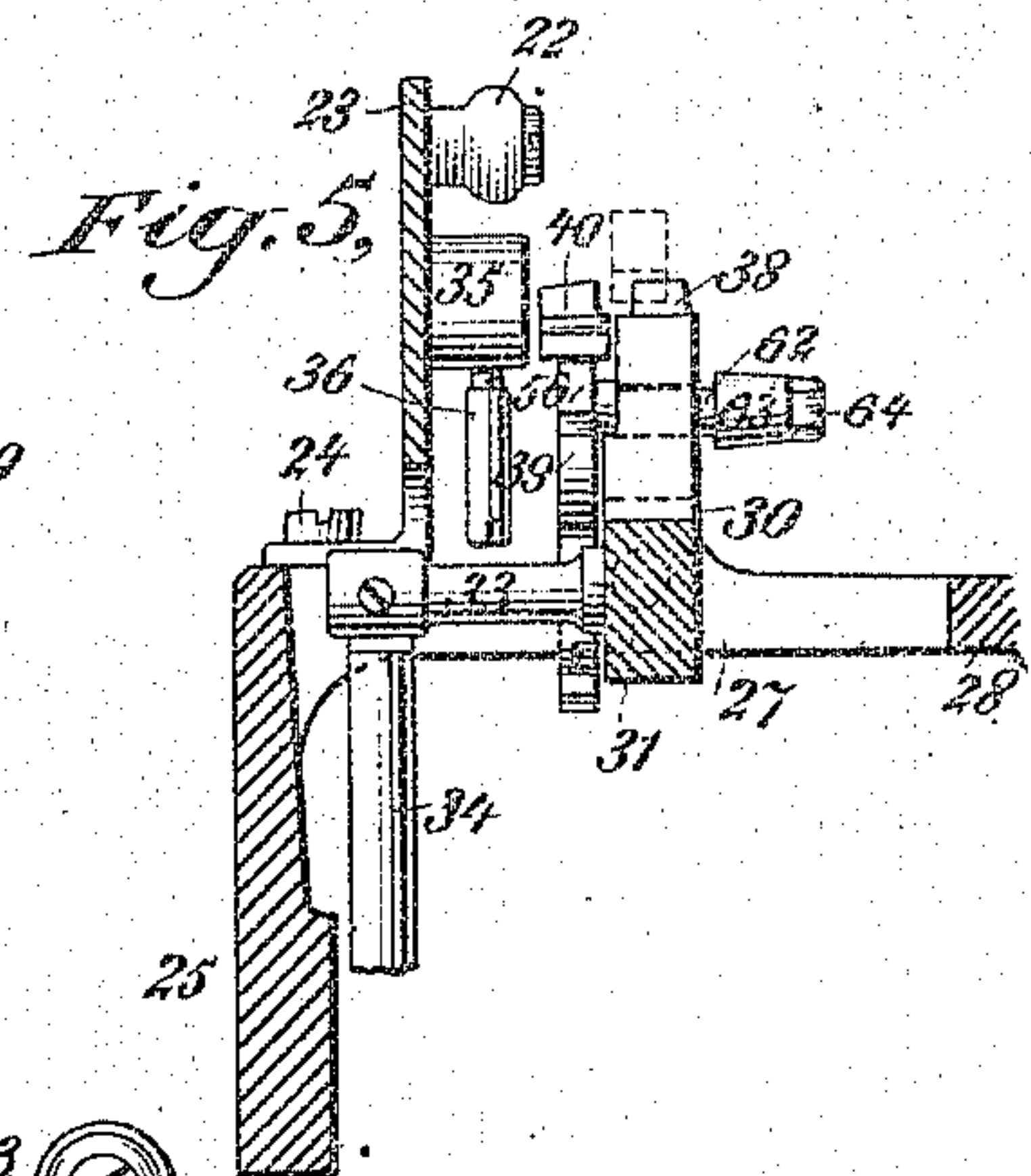
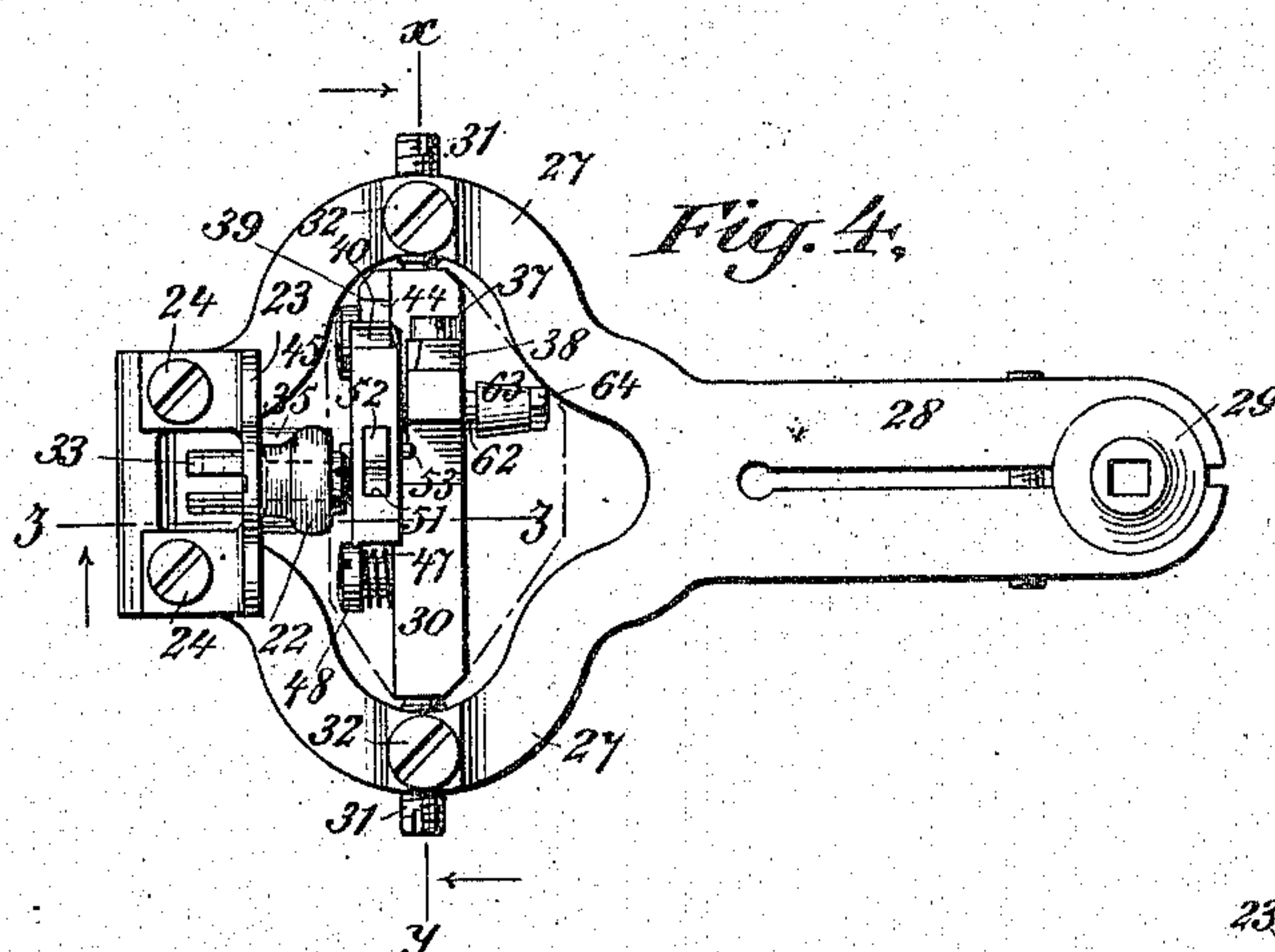
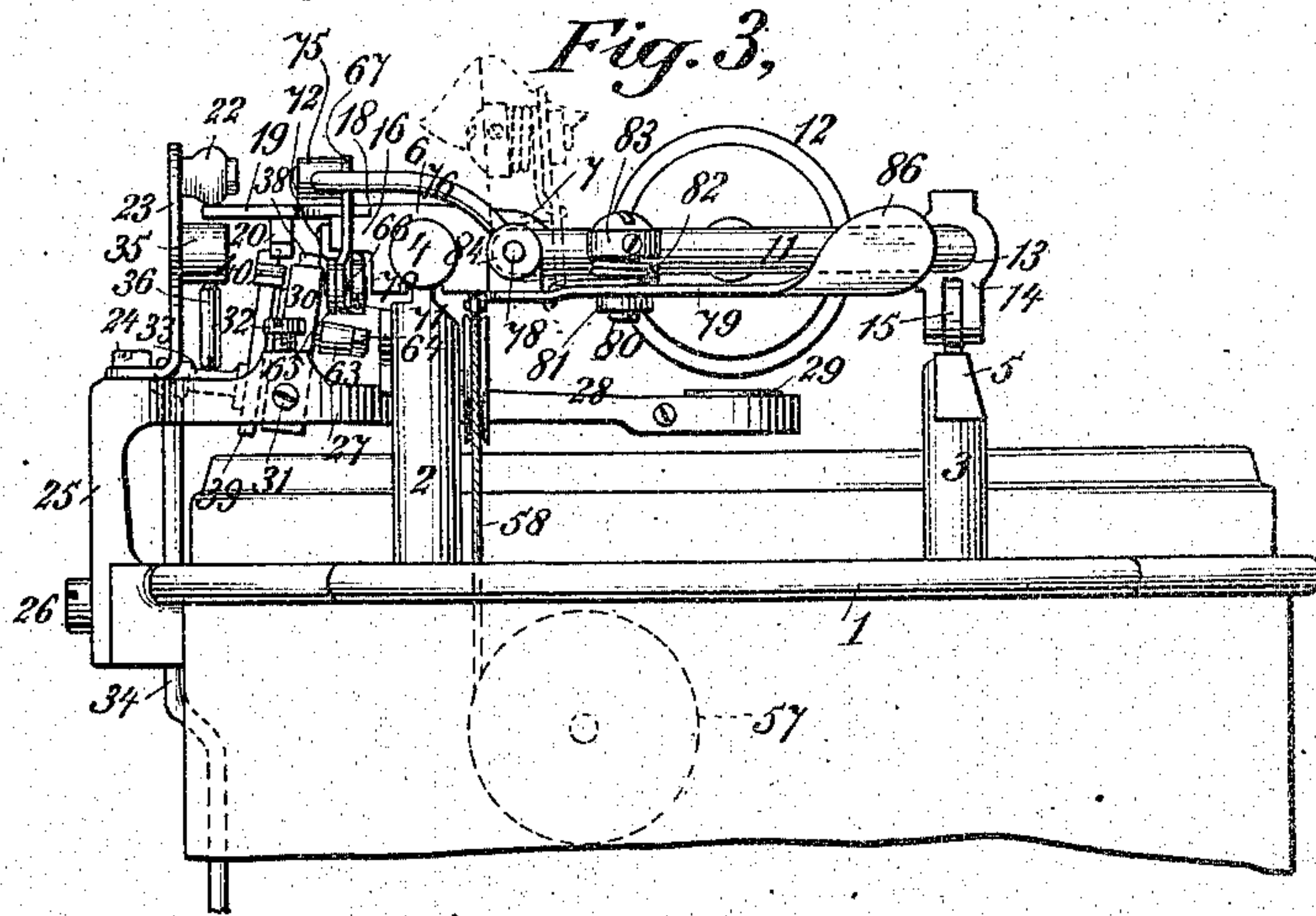
(No Model.)

2 Sheets—Sheet 2.

G. B. WEBB.
TYPE WRITING MACHINE.

No. 559,089.

Patented Apr. 28, 1896.



WITNESSES:

R. H. Raymond

J. C. Macdonald

INVENTOR

George B. Webb

BY

Jacob Felbel

ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE B. WEBB, OF NEW YORK, N. Y., ASSIGNOR TO THE YOST WRITING MACHINE COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,089, dated April 28, 1896.

Application filed March 27, 1894. Serial No. 505,284. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. WEBB, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to the paper-carriage feeding or escapement mechanism and to the paper-carriage-releasing mechanism which coacts therewith, and has for its main objects to provide simple, durable, and effective means.

To these ends my improvements consist in the features of construction and combinations of devices hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top plan view of so much of a "Yost" writing-machine as is necessary to illustrate my invention. Fig. 2 is a back view thereof with a portion of the releasing rod or bar broken away. Fig. 3 is an end view thereof, looking from the right-hand side. Fig. 4 is an enlarged top plan view of the arm or bracket which supports the escapement-dogs. Fig. 5 is a central vertical section on the line $z z$ of Fig. 4, with a feed-rack added and with the dogs in their abnormal position. Fig. 6 is a vertical section taken at the line x to y of Fig. 4 and looking in the direction of the arrow at x . Fig. 7 is a vertical section on the line y to x of Fig. 4 and looking in the direction of the arrow at y , and Fig. 8 is a detail view of the feeding or spacing dog and its plate or support.

In the several views the same parts will be found designated by the same numerals of reference.

On the top plate 1 of the machine is mounted on each side and at the rear a post 2, and on each side at the front a post 3. To the posts 2 is secured a round guide-rail 4, and to the posts 3 is attached a track or way 5. 6 is a yoke arranged to slide on the guide-rail 4 and provided with inwardly-extending ears 7, which are perforated for the passage of the back rod 8 of the paper-carriage, said rod being prevented from moving endwise independ-

ently of said yoke by means of two collars 9, screwed to said rod and arranged one on the outside of each of said lugs and abutting there-against. The said back rod 8 while thus held in a fixed position relatively to the yoke may, nevertheless, be turned in the eyes or bearings in the lugs 7, in order that the paper-carriage may be lifted or swung upwardly, as upon a hinge-joint, for the purpose of inspecting the work on the under side of the platen and making corrections, &c. At Fig. 3 I have shown a portion of the carriage thus turned up in dotted lines. Between the end bars 10 and 11 of the carriage is mounted to rotate a cylindrical platen 12, and upon the front bar 13 is secured a small bracket 14, containing an antifriction-wheel 15, which travels upon the track or way 5.

Projecting rearwardly from each of the yokes is a lug 16, and to these lugs are fastened by screws 17 forwardly-projecting portions 18 of a horizontally-arranged bar 19, which carries on its under side a toothed rack 20, attached to said bar by screws 21. The rearmost edge of the bar 19 bears and rides against an overhanging roller 22 on a pin projecting inwardly from a stand 23, which is attached by screws 24 to a bracket 25, that is secured by screws 26 to the top plate, at the rear and centrally of the machine. The said bracket extends first upwardly and then inwardly at right angles, and at this portion is branched or formed with two curved arms 27, which meet at the front and from which extends preferably a shank or arm 28, carrying at its forward end a center guide 29, as usual in the Yost machine.

In the space or opening between the arms 27 is arranged a trunnion or rocker 30, supported at either end by a conically-pointed screw 31, horizontally arranged and held against casual displacement by a vertical set-screw 32. Projecting rearwardly from the center of the trunnion is an arm 33, to the forked outer end of which is pivoted the uppermost end of a vertically-arranged pull-rod 34, which, as in the Yost machine, is connected to the universal bar and finger-key mechanism. (Not shown.) Projecting downwardly from a boss 35 on the stand 23 is a screw 36, which forms an adjustable stop for the arm

33 to strike against on its return movement and thus limit the forward rocking movement of the trunnion and its appendages under the returning action of its spring, (not shown;) but which, as well known in the Yost machine, is arranged under the base-plate of the machine and connected to oppose and return the actuating-rod 34 and its connections.

In a rectangular notch at the upper portion of the trunnion is affixed by a screw 37 a dog 38, adapted to engage with the feed-rack 20, and hereinafter described as the "rigid" or "detaining" dog. On the rear side of the trunnion is attached loosely a plate or support 39, which at its upper end carries another dog 40, adapted to also engage said feed-rack, and known hereinafter as the "yielding" or "feeding" dog. The said plate or support 39 is provided with a slot 41 at its lower end, through which passes an attaching-screw 42, whose point enters a threaded hole 43 in the trunnion, and the said plate or support is formed at its upper end with another slot or cut-away 44, slightly wider than the slot 41, but arranged in alinement therewith. Through this upper slot passes another screw 45, whose threaded point engages a tapped hole 46 in the trunnion. The heads of the screws 42 and 45 are larger in diameter than the widths of the slots, and hence prevent any accidental lateral detachment of the plate, while at the same time permitting said plate to slide freely up and down and also to oscillate. To a pin or stud on said plate at its lower end is connected one end of a wire spring 47, which is wound about a screw 48 in the trunnion and bears at its other end against a fixed pin 49 therein. This spring performs the two-fold function of lifting said plate on release of the force employed to depress it and also of oscillating or vibrating the said plate about the screw 42 as a pivot when the feeding-dog is vibrated from the rack, as will hereinafter more fully appear.

The feeding-dog 40 is preferably pivotally mounted upon the plate 39, in order that the carriage may be returned as noiselessly as possible, but as far as the main feature of my invention is concerned this dog may be applied fixedly to said plate or be made integral therewith. In the construction shown the shank of the dog is provided with two depending ears 50, and between these ears the stock is milled or cut away through to the top of the shank, as indicated at 51. Into this milled or cut-away portion extends a lug 52 on the upper end of the plate, which is perforated to coincide with perforations in the ears 50 and receive a transverse pivot-pin 53. In the top of the plate 39 is formed a recess 54 to receive the lower end of a coiled spring 55, which at its upper end bears against the under side of the shank of the dog 40 in front of the pivot 53, and to cause the rear end of the shank to normally abut against a stop 56, formed integral with the plate, and thus hold the dog 40 up in the proper plane

to cooperate with the feed-rack during the printing operation. During the return of the carriage to the right, as for the beginning of a new line, the teeth of the rack slide over the dog 40 and cause it to vibrate about its pivot 53, the spring 55 causing the dog to bob up into the spaces between the teeth of the rack as the teeth are successively passed over the dog, and when the push or pull on the carriage is released the dog 40 occupies a position between two adjacent teeth of the rack. From this it will be observed that the dog 40 stands normally in engagement with the rack, and it will also be observed that during the return movements of the carriage by a push or pull thereupon the plate 39 is not moved, but only the small vibratory dog, and that hence the movement of the carriage is accomplished with little or no noise.

Before describing the carriage-releasing mechanism I shall first describe the mode of operation of the carriage-feeding devices above referred to, it being understood that the paper-carriage is connected as usual to a spring-power or driving-drum tending always to move the carriage toward the left. I have shown merely in outline the spring-drum 57 and the cord or chain 58 running therefrom to the paper-carriage.

At Fig. 3 it will be observed that the feeding or yielding dog 40 stands in engagement with the feed-rack 20, connected to the paper-carriage, and at this time the said dog operates to hold the paper-carriage against movement toward the left under the influence of its driving-spring. If a character-key or a space-key be struck, the rod 34 is pulled down, the trunnion rocked rearwardly, and the dog 40 carried out of engagement with the rack, and the rigid or detaining dog 38 into engagement with the rack and just before the complete escape of the dog 40, so that during this stroke of the finger-key the carriage is still maintained in its arrested condition, as shown at Fig. 5.

Upon release of the finger-key the return-spring before referred to operates to lift the rod 34 and rock the trunnion in the reverse direction or back to the position shown at Fig. 3. During this movement the feeding-dog engages the rack just before the disengagement of the detaining-dog, and as soon as the latter has departed entirely from the rack the spring-drum is enabled to feed the carriage one letter-space distance, or the distance from center to center between two teeth of the rack. This feed is accomplished in the following manner. When the rod 34 is pulled down and the dog 40 vibrated from the rack, the said dog is instantly thrown toward the right (standing at the front of the machine) the distance of one tooth, by reason of the oscillation or tilting of the plate 39 by the spring 47, which acts to turn said plate about the screw 42 as a pivot until the side 59 of the slot 44 strikes against the screw 45. When the rod 34 is released and returned by its

spring, the dog 40 hence enters the next notch on the right as the trunnion rocks forward. At the time this takes place the driving-spring is free to act, and in pulling upon the carriage and the rack the dog 40 is carried to the left one letter-space and then arrested, the plate at this time oscillating toward the left with the dog. The plate, the dog, and the carriage are all stopped in this movement by reason of the right-hand side 60 of the slot 44 coming into contact with the shank of the screw 45. From this it will be understood that the plate 39 at the slot 44 has a throw in either direction equal to the width of one letter-space, or the distance between two teeth on the rack from center to center, and it will also be understood that during the movements of the plate with the dog 40 toward the left under the feeding action of the carriage-spring the spring 47 is put under tension, and hence will operate to again throw the plate and the dog toward the right when the latter is next vibrated from the rack in the printing operation.

I shall now describe the construction and operation of the carriage-releasing mechanism. Crosswise of the trunnion is made a hole 61, through which projects from the front side of the plate 39 a pin or stud 62, which is preferably provided at its free protruding end with an antifriction-roller 63, held in place preferably against a shoulder on the pin by a nut 64. The opening 61 in the trunnion is sufficiently large to permit the pin to move up and down therein a sufficient distance to move the plate a distance equal about to one-half of the length of the slot 41, which is sufficient to carry the dog 40 vertically into and out of engagement with the feed-rack. Normally the pin rests at the upper end of the opening 61 and is adapted to be depressed to carry down the plate 39 and dog 40 by a bar 65 of substantially the length of the platen and arranged parallel therewith. The said bar is pivotally connected at one end, at 66, to the end of the horizontal arm of a bell-crank 67, and said bar 65 is pivotally connected at near its opposite end, at 68, to the end of the horizontal arm of another bell-crank 69. The bell-crank 67 is pivoted at 70 to a hanger 71, which is secured by a screw 72 to the rear edge of the left-hand lug 16, and the bell-crank 69 is pivoted at 73 to a hanger 74 similarly secured to the right-hand lug 16.

To the upper ends of the vertical arms of the bell-cranks 67 and 69 are riveted or otherwise secured rearwardly-projecting bosses 75, which are perforated transversely for the passage therethrough of a long round rod 76, which is preferably secured in said bosses by means of horizontally-arranged set-screws 77, the bosses being interiorly threaded to receive them. The rod 76 at its left-hand end is bent to extend forwardly and over the guide-rail 4, and then laterally and parallel with the guide-rail for a short distance, as at

78. This portion 78 lies in the plane of the hinge-joint of the paper-carriage and forms a pivot, about which an actuating-lever 79 may swing when the carriage is turned up for inspection of the work, &c. The said lever is vertically pivoted at 80 in a bracket 81, extending laterally from the side bar 11 of the carriage. About this pivot is coiled a spring 82, one end of which is attached to a collar or head 83 on said pivot, and the other end to the lever 79, and is provided for the purpose of retracting said lever and its connected parts. The rearmost end of the lever is provided with a vertically-arranged bifurcated lug 84, which is perforated transversely to receive the pivotal portion 78 of the rod 76. Between the forks of the lug 84 is arranged a washer or filler 85, which is secured upon said pivot 78 by a screw and forms an abutment for the forks to act against when the lever is actuated to move the rod 76 endwise.

The release-bar 65 stands normally above and out of contact with the roller 63, but when it may be desired to release the escapement mechanism for the purpose of moving the carriage quickly toward the left, or, in fact, in either direction, the finger-piece 86 at the forward end of the lever 79 is pressed toward the end bar 11, and thereby the rear shorter arm of said lever is moved toward the left and carries with it in the same direction the rod 76, which in this movement operates to rock the bell-cranks and thereby cause the release-bar to descend bodily and carry down with it, by contact with the roller 63, the plate 39, and thus remove the dog 40 from engagement with the rack. When this is accomplished while the finger-piece of the lever is still held toward or against the end bar 11, the carriage is free to be moved rearwardly in either direction—toward the left by the unrestrained power of the driving-spring, and toward the right by the pull or push of the operator. When the finger-piece is released, its spring operates to restore the lever, the rod 67, the bell-cranks, and the release-bar all to their normal positions, and simultaneously the spring 47 acts to return the plate 39 and the dog 40 to their normal positions. The carriage may be released when in an upward position.

By reason of hanging the release-bar upon the bell-cranks in the manner shown said bar is always maintained in a horizontal position, whether up or down, and hence during the movements of said bar over the antifriction-roller at the time the carriage is being moved rapidly, after the release has been effected, the dog 40 is always kept depressed to a given point and at a sufficient distance below the teeth of the rack to prevent any accidental re-engagement during said rapid movements of the carriage.

By reason of mounting the plate 39 so that it has a vertical movement, or a substantially straight up-and-down movement, the dog 40

on its upward reëngaging movement is adapted to arrest the carriage at exactly a given point or instantaneously, as it is designated—that is to say, if the carriage be released when the pointer is at “10,” for instance, on the front scale, and it be desired to rearrest it at, say, “50,” the construction is such that if the pressure upon the release key or lever is removed when the pointer arrives at “50” the dog 40 will immediately enter the notch corresponding to “50” and at once stop any further movement of the carriage, instead of, as in many prior machines, permitting the carriage to feed one or more letter-spaces until the dog is straightened up or carried against its left-hand stop, whereby in such cases the carriage instead of stopping just where it is wanted, or at just the locality intended by the pointer, it is stopped one or more notches beyond that point. The importance therefore in the present construction of the vertically-moving dog will be apparent.

In lieu of the particular form of releasing mechanism shown some other may be employed in connection with the escapement dogs.

Various other changes in detail construction and arrangement may be made without departing from the gist of the several features of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocking detaining-dog, and a feeding-dog having a rocking motion similar to the detaining-dog at right angles to the feeding-rack, and also an oscillatory motion longitudinally of the feed-rack and to the right, as well as an independent straight up-and-down sliding bodily movement.

2. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a detaining-dog, and a feeding-dog loosely supported on said rocker or trunnion and guided to have a straight up-and-down bodily movement at right angles to the axis of motion of the rocker.

3. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a detaining-dog, and a feeding-dog on a vertically-movable plate or support loosely connected to said rocker or trunnion, and having an up-and-down sliding movement, and means for guiding said plate or support.

4. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a de-

taining-dog, a plate or support carrying a feeding-dog and provided with vertical slots, guide pins or screws passing through said slots, and a spring for moving said plate and dogs upwardly.

5. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a trunnion or rocker carrying a detaining-dog, a plate or support carrying a feeding-dog and provided with vertical guides to cause the same to slide straight up and down in the releasing movements, a pivot for said plate or support and said dog to oscillate about in the feeding movements, and a spring to effect the oscillation of said plate in one direction.

6. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a detaining-dog, a plate or support carrying a feeding-dog and loosely connected to and vertically guided upon said rocker or trunnion, a pivot about which said plate or support oscillates, a spring for oscillating said plate or support to the right, a stop for limiting this movement, and a stop for limiting its movement in the opposite direction during the feed of the carriage.

7. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a detaining-dog, a plate or support carrying a feeding-dog and having the slots 41 and 44, the screws or pins 42 and 45, and the spring 47.

8. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a detaining-dog, a vertically-movable feeding-dog also connected to said rocker or trunnion and guided to slide bodily thereupon, a lateral pin or projection connected to said vertically-movable dog, and a vertically-movable release-bar connected to the paper-carriage.

9. In a type-writing machine, the combination with the paper-carriage having a feed-rack, of a rocker or trunnion carrying a detaining-dog, a plate or support carrying a feeding-dog and provided with slots 41 and 44, the screws 42 and 45, the spring 47, the lateral pin or projection 62, the vertically-movable release-bar connected to the paper-carriage, and means for depressing and elevating said bar.

Signed at New York city, in the county of New York and State of New York, this 23d day of March, A. D. 1894.

GEORGE B. WEBB.

Witnesses:

JACOB FELBEL,

L. C. MACDONALD.