





**No. 621,878.**

**Patented Mar. 28, 1899.**

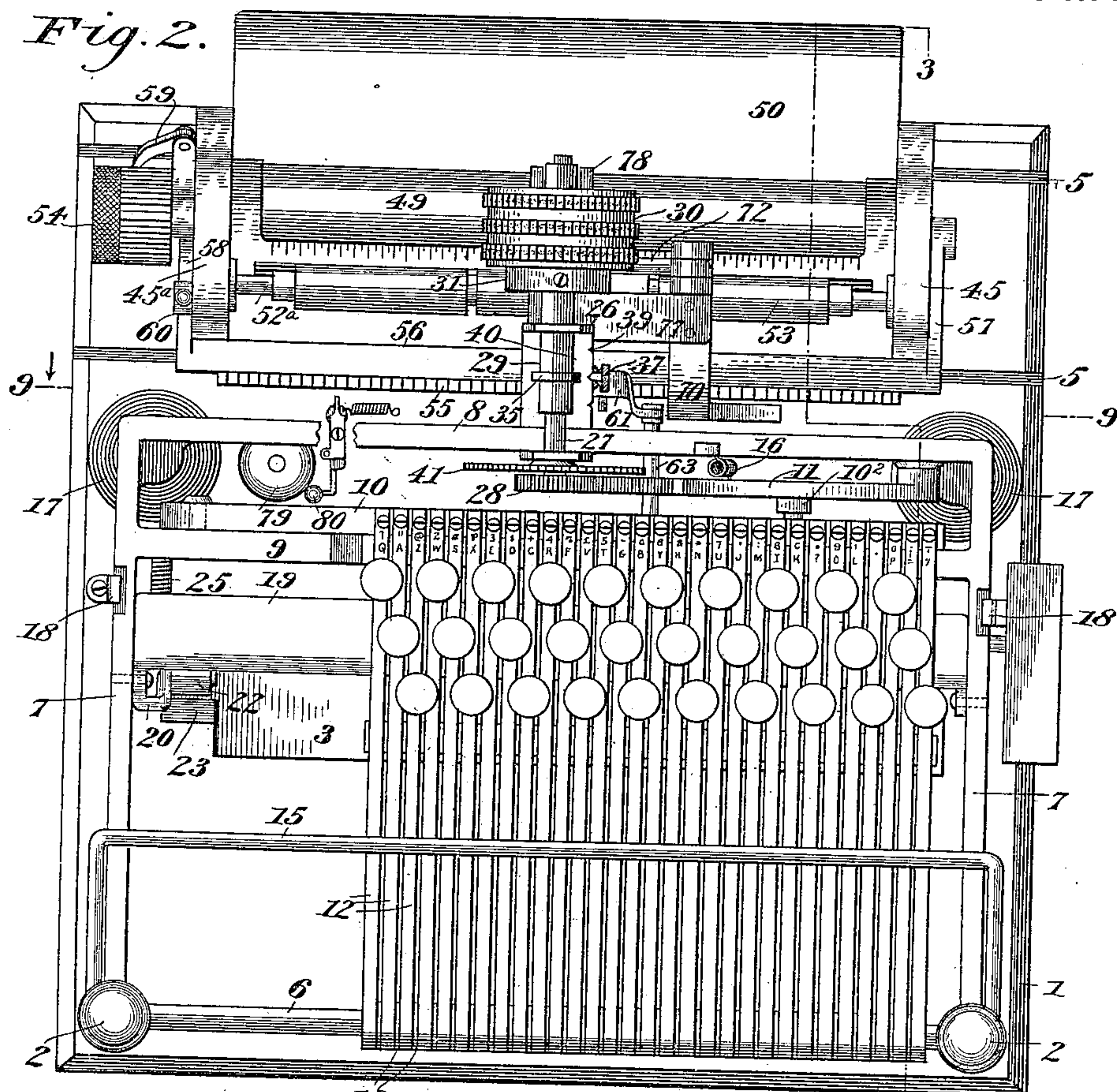
**G. A. WEST.**  
**TYPE WRITER.**

(Application filed Mar. 13, 1897.)

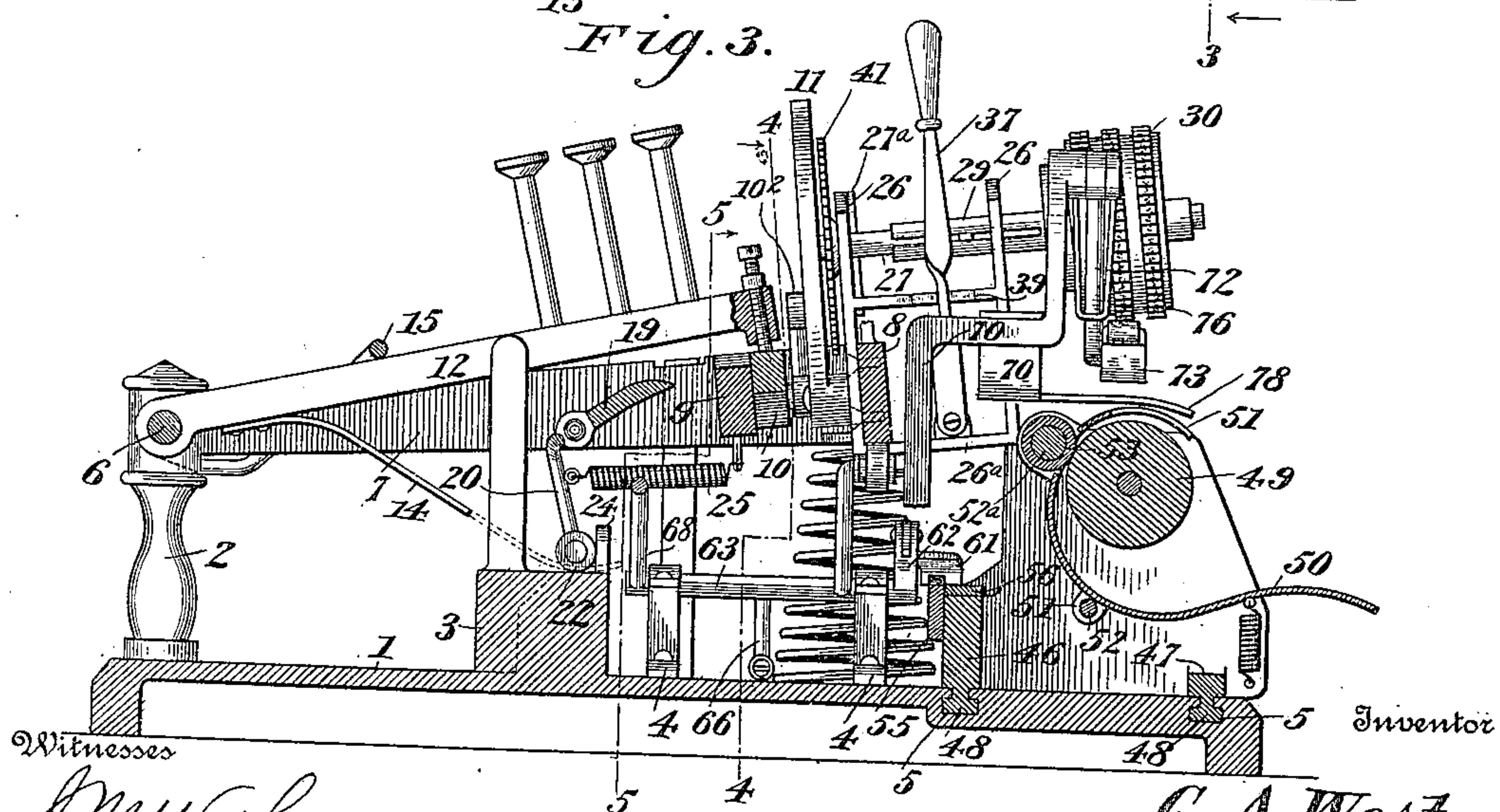
(No Model.)

**4 Sheets—Sheet 2.**

*Fig. 2.*



*Fig. 3.*



Witnesses

M. Witherow  
Charles Brock

Inventor

G. A. West,  
by *Plumacher*  
Attorneys



No. 621,878.

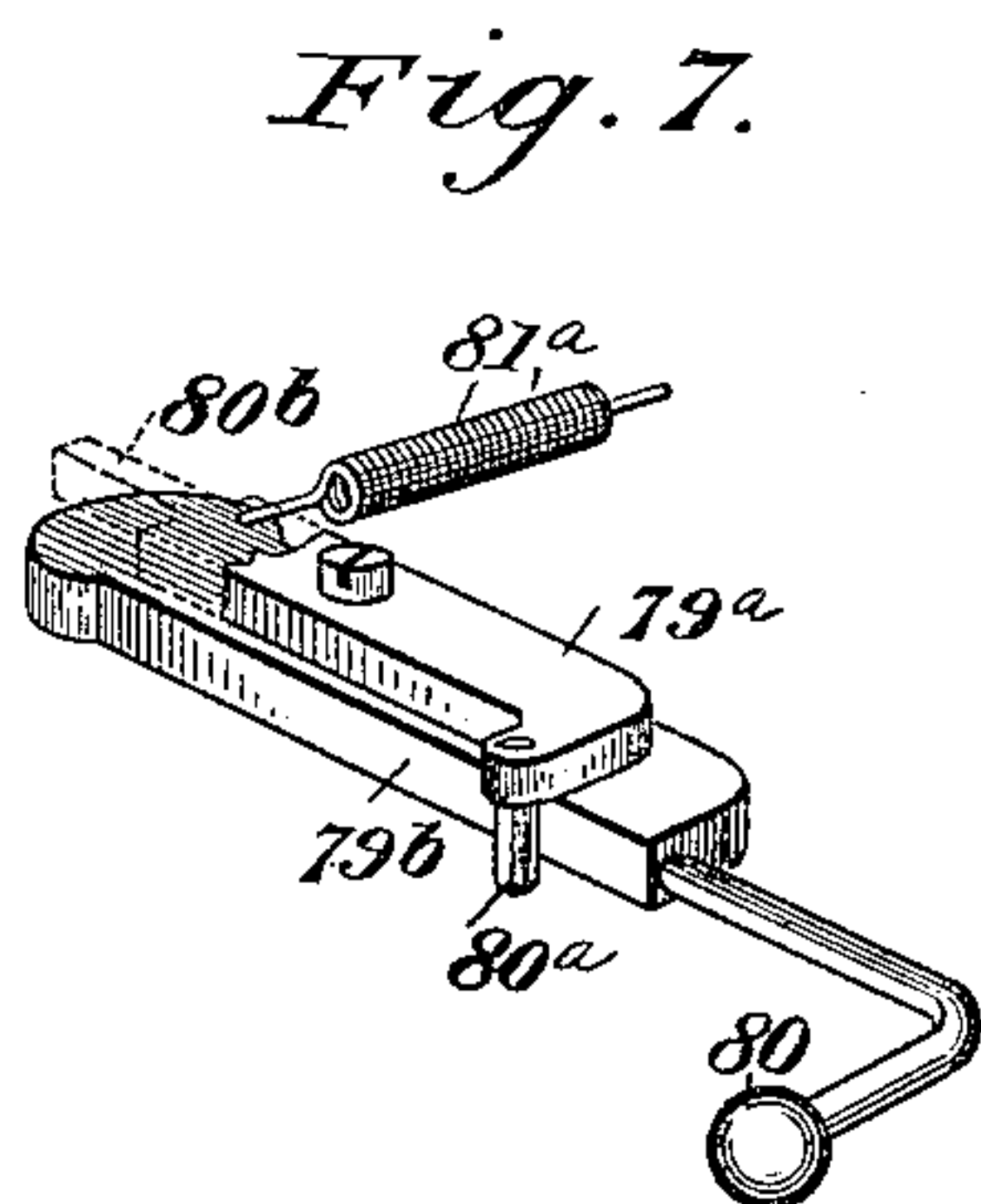
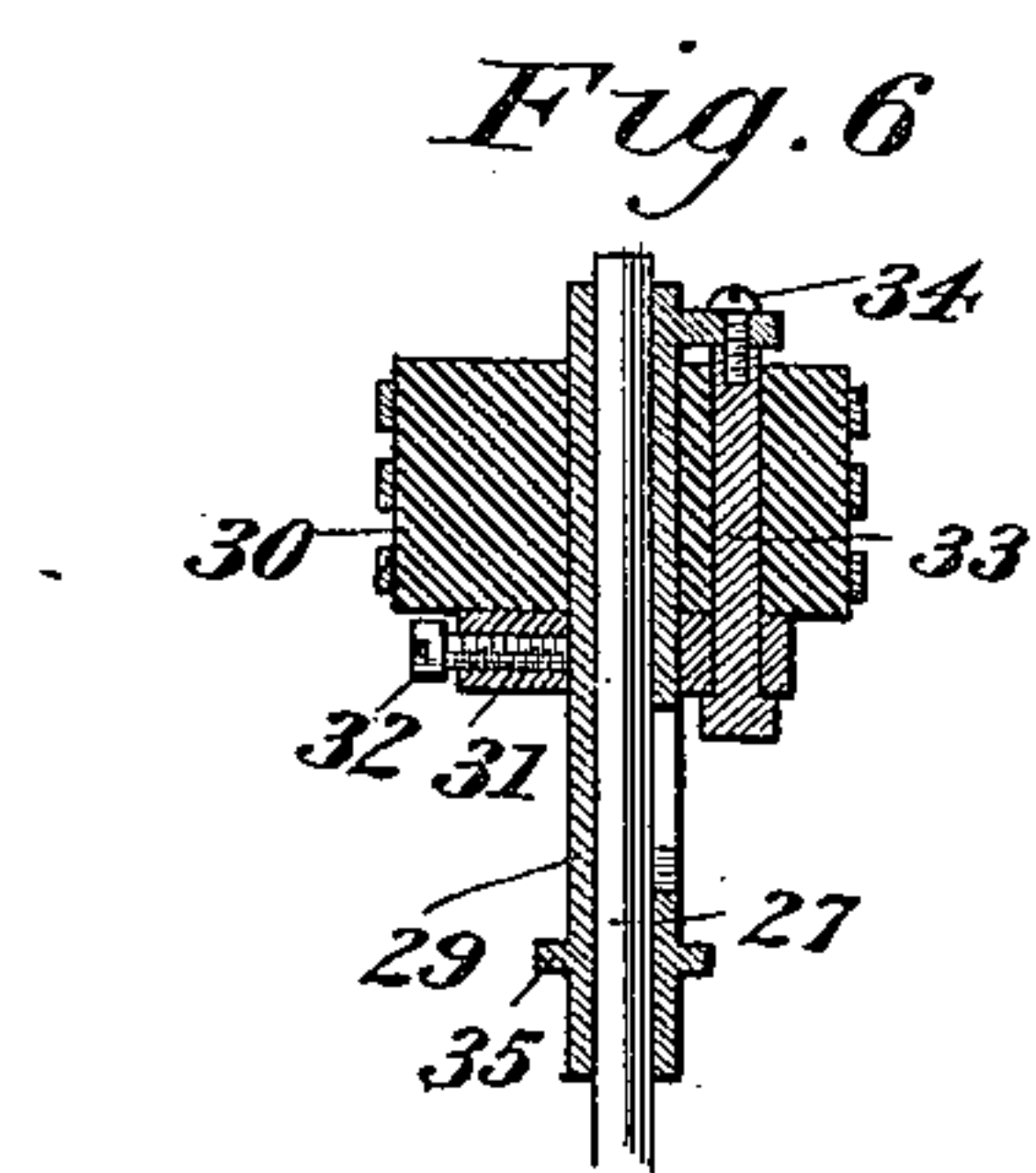
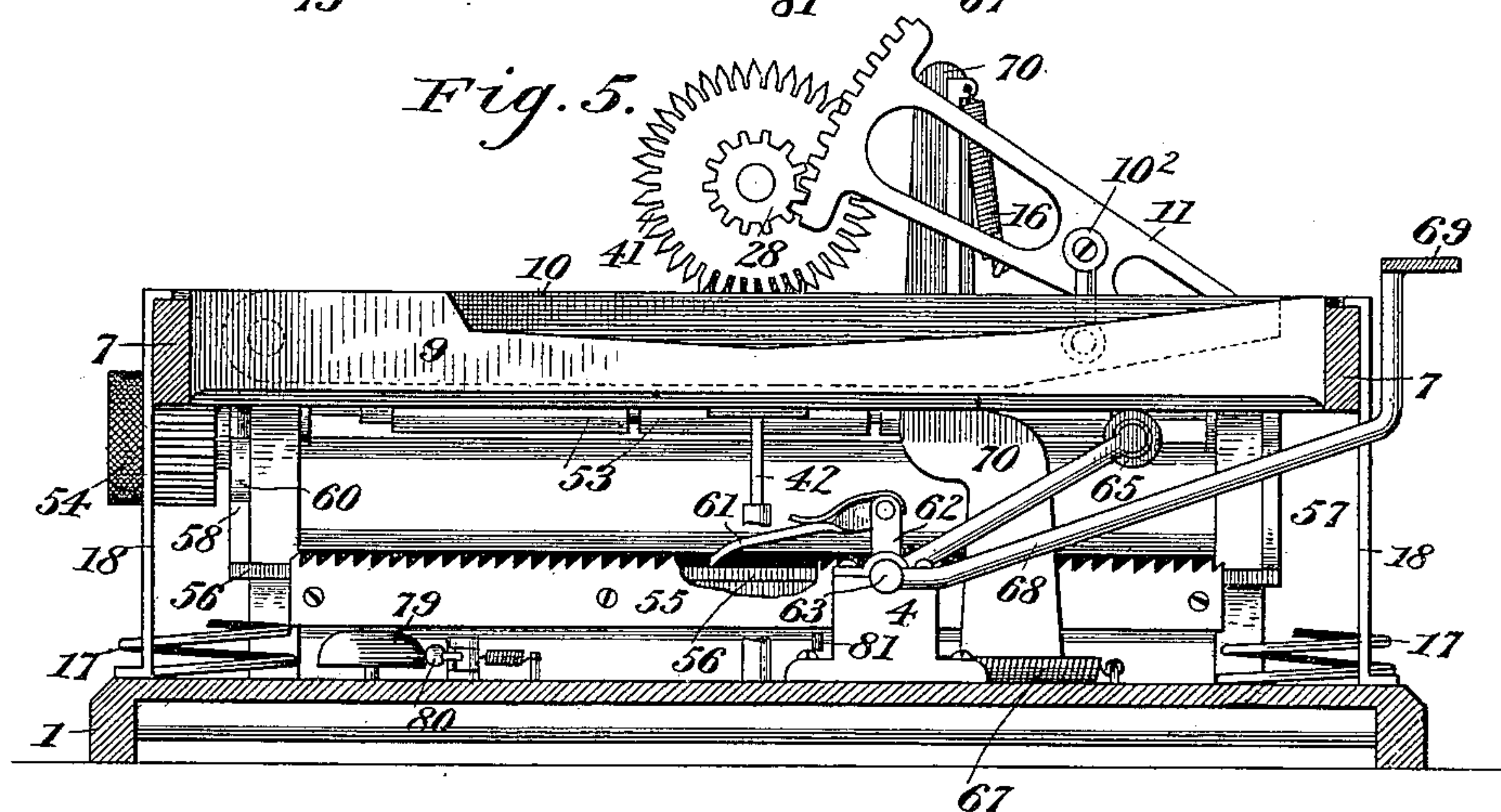
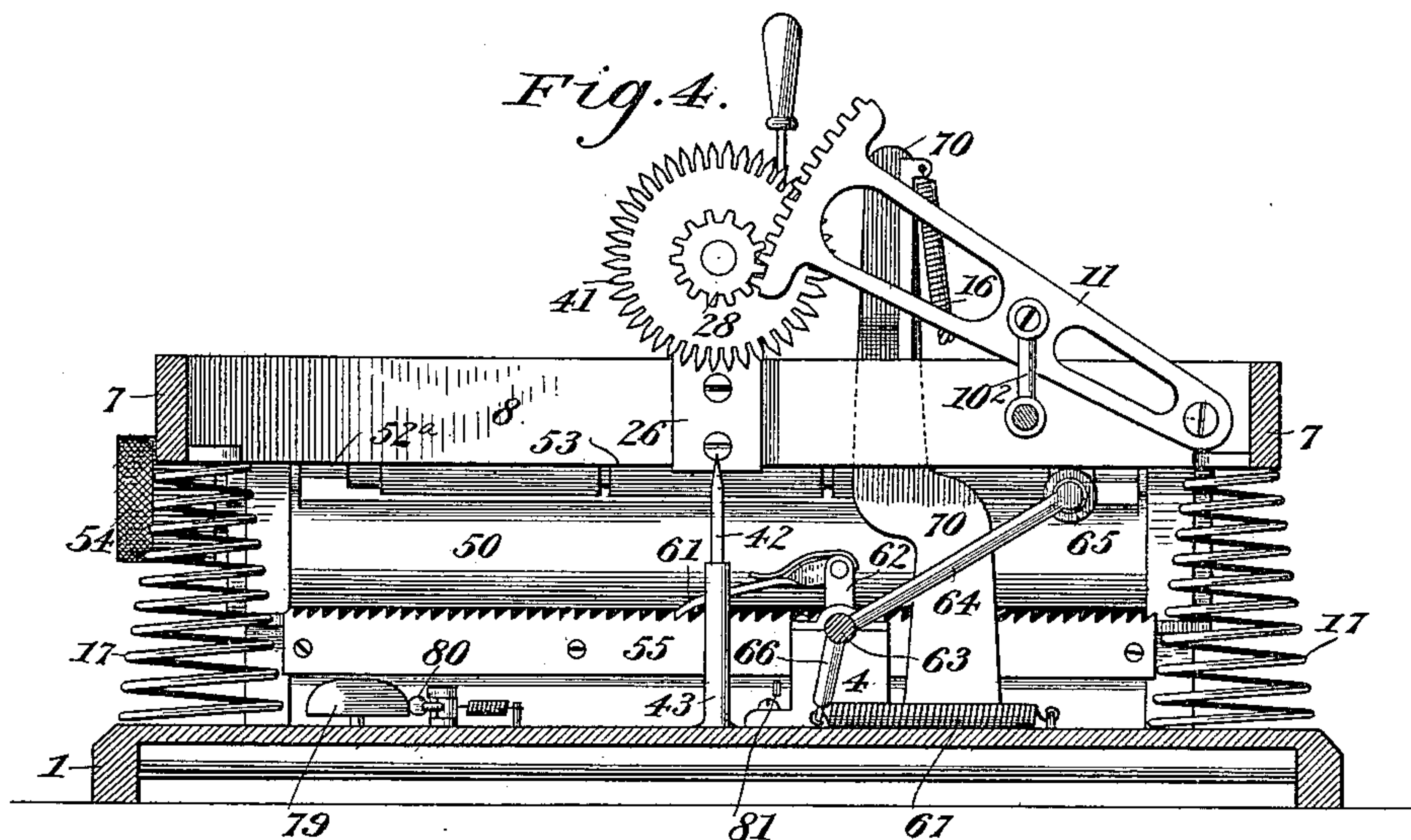
Patented Mar. 28, 1899.

G. A. WEST.  
TYPE WRITER.

(Application filed Mar. 13, 1897.)

(No Model.)

4 Sheets—Sheet 3.



Witnesses

*J. M. Withrow*  
*Chas. E. Brock*

Inventor  
*G. A. West.*

by *Thurman*  
Attorneys

No. 621,878.

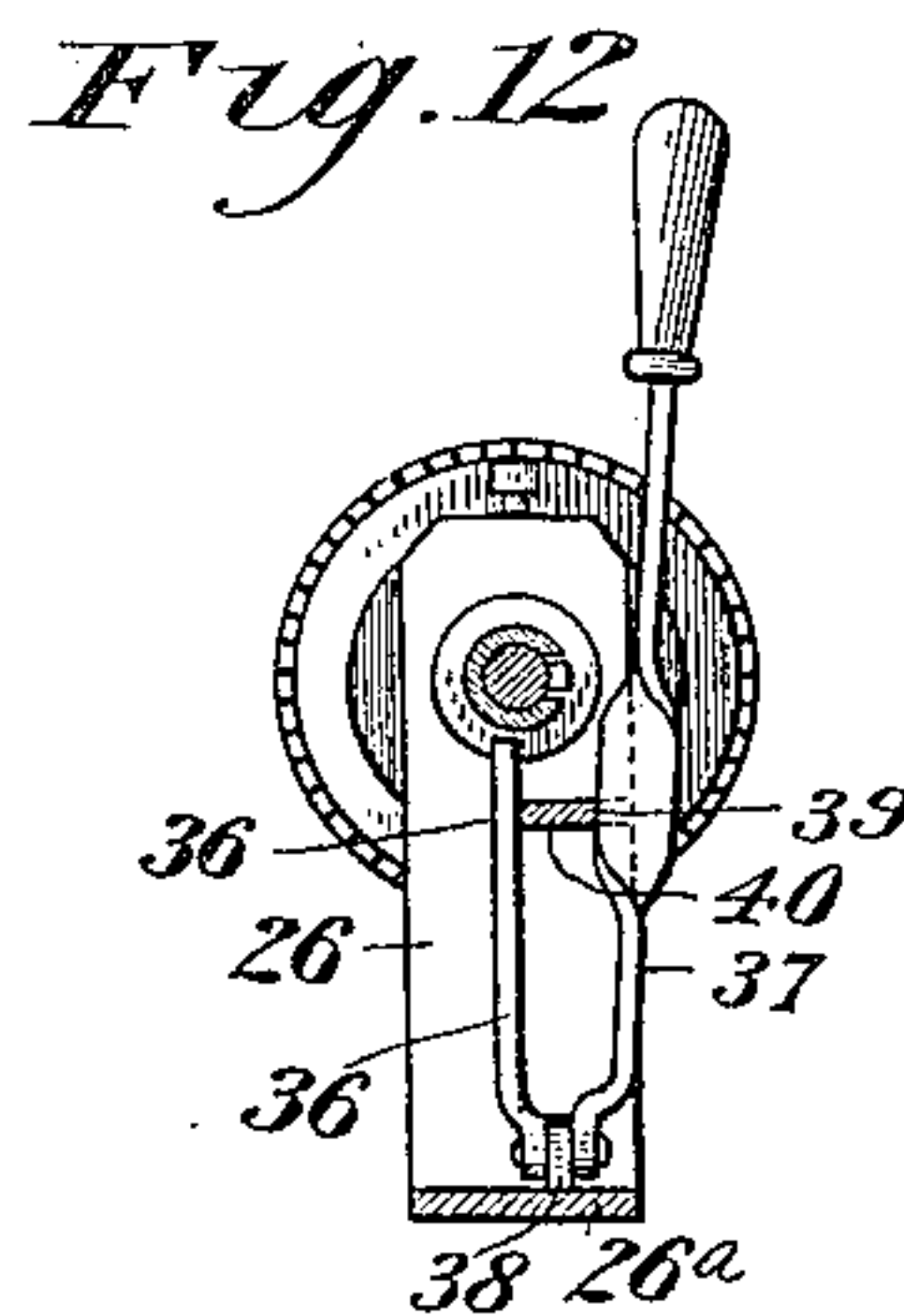
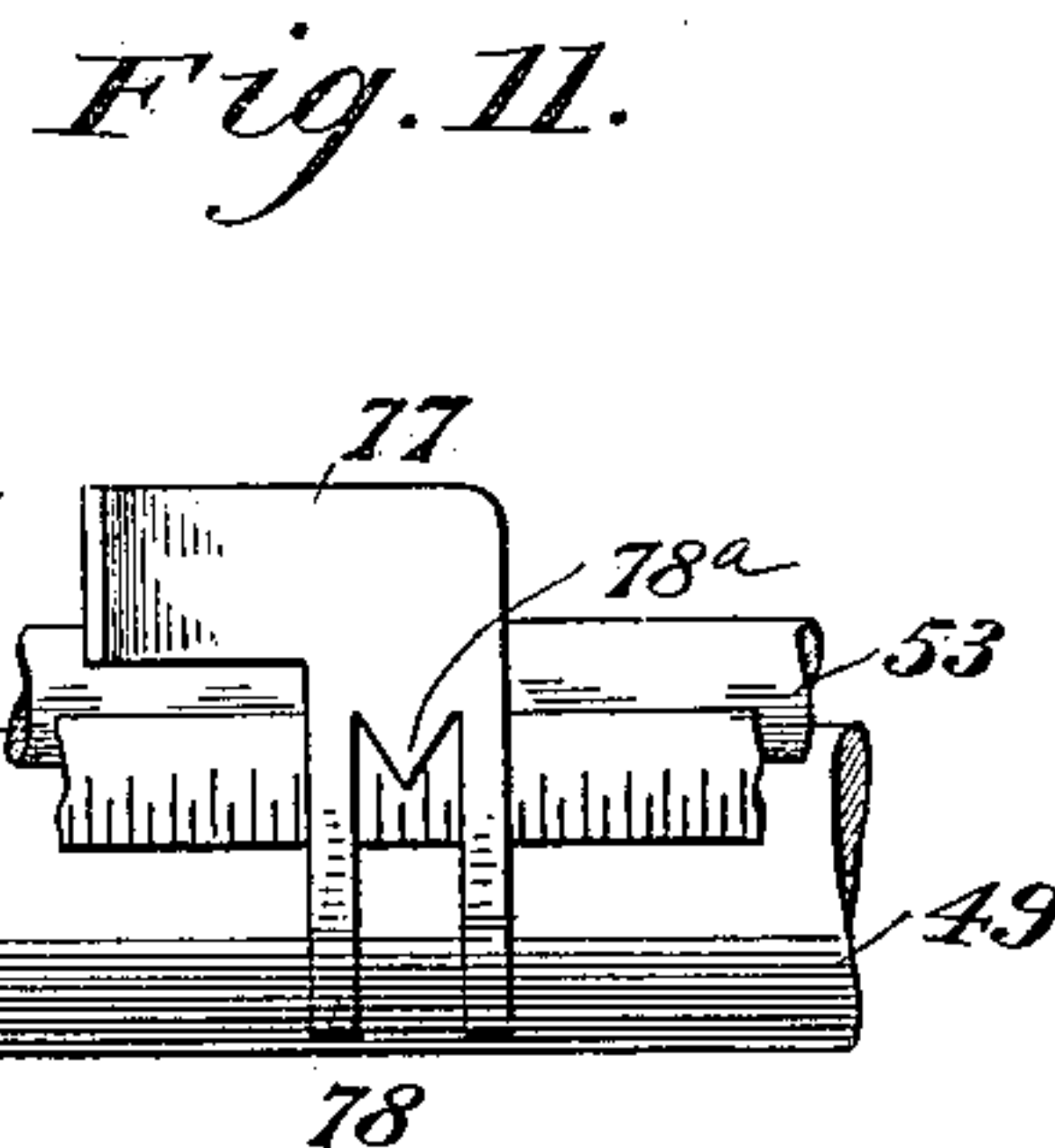
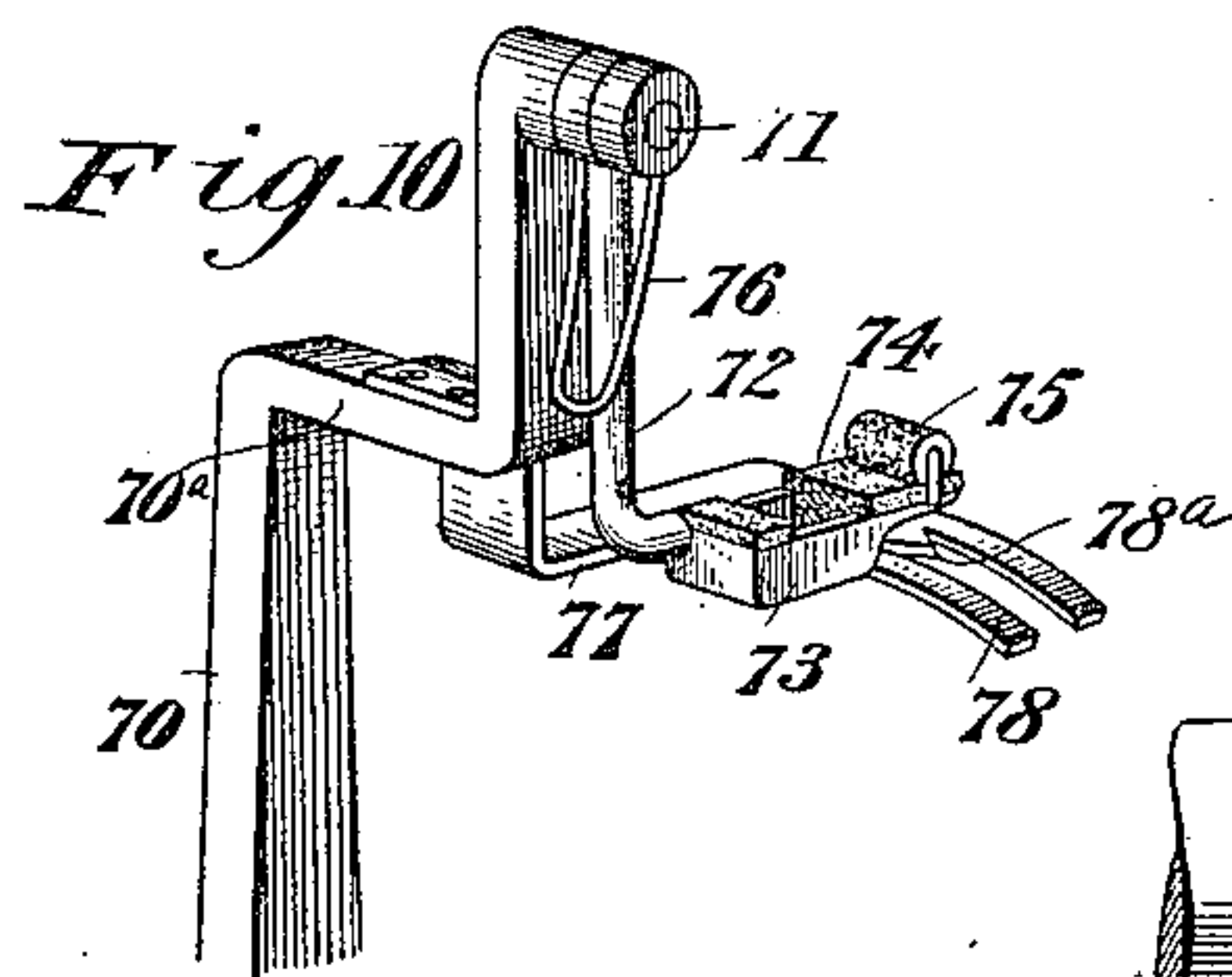
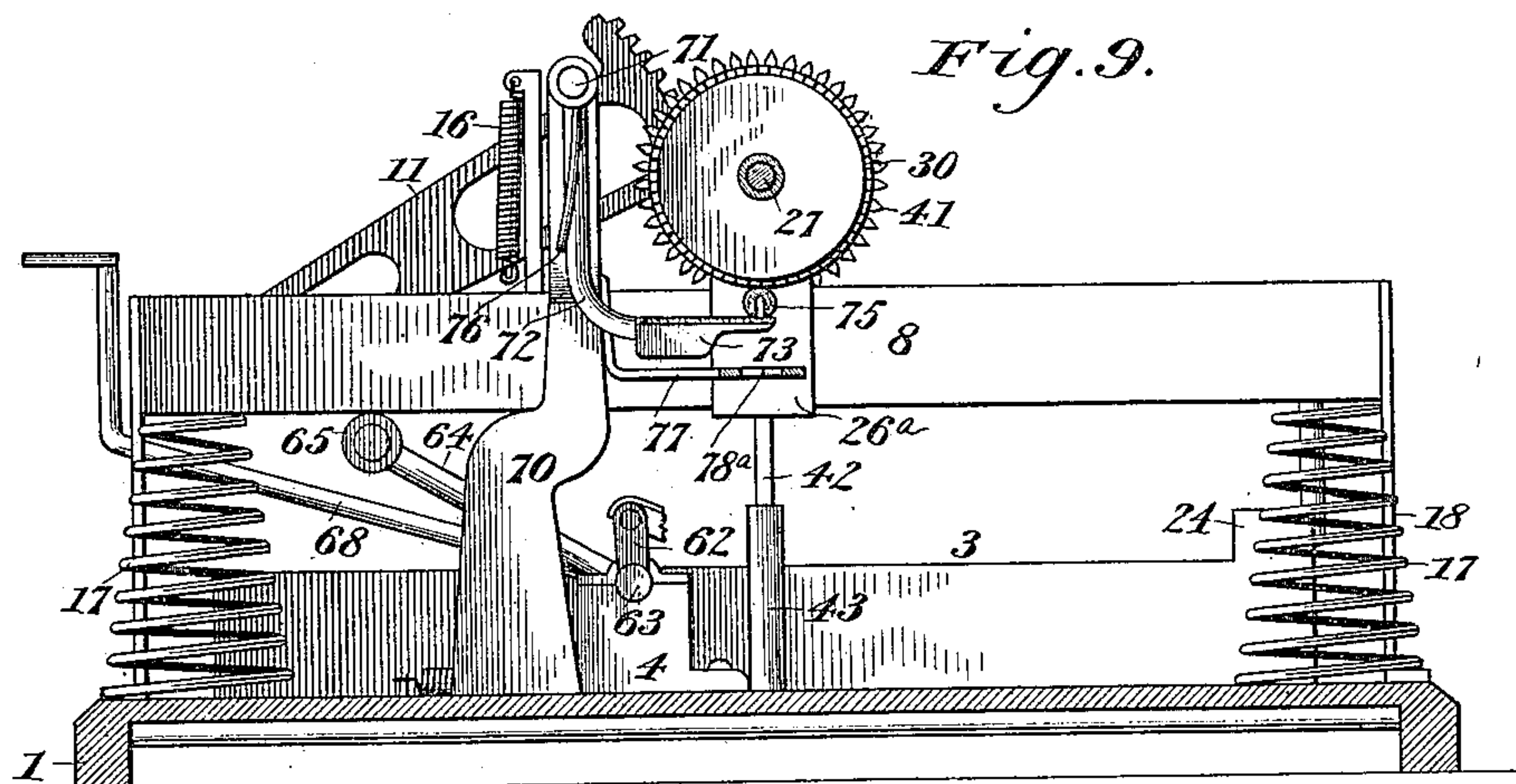
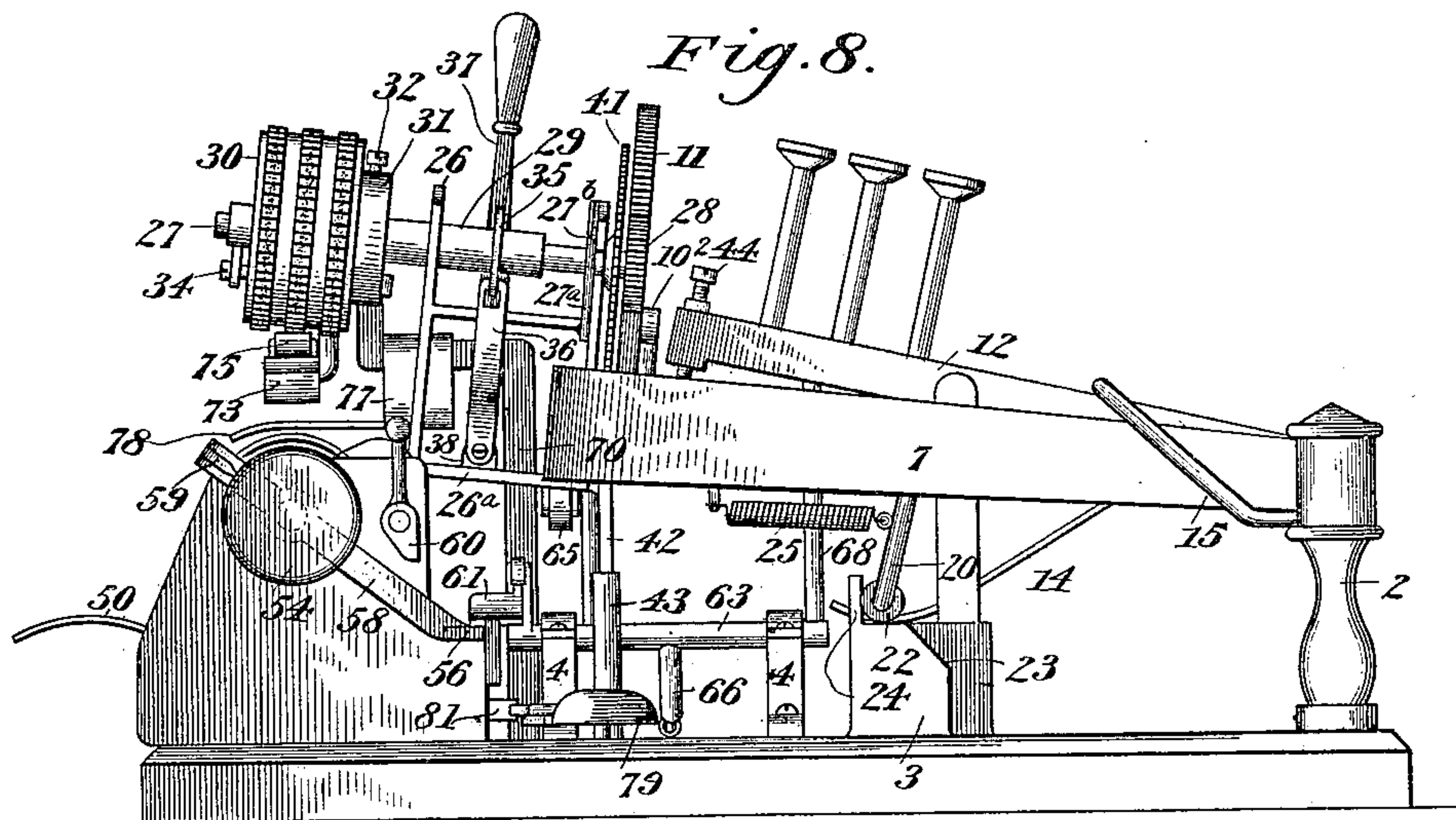
Patented Mar. 28, 1899.

G. A. WEST.  
TYPE WRITER.

(Application filed Mar. 13, 1897.)

(No Model.)

4 Sheets—Sheet 4.



Witnesses

*M. Withrow*  
*Chas. E. Brock*

Inventor

*G. A. West.*

*By O. H. W. A. L.*  
Attorneys



# UNITED STATES PATENT OFFICE.

GUS A. WEST, OF GILMAN, ILLINOIS.

## TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 621,878, dated March 28, 1899.

Application filed March 13, 1897. Serial No. 627,362. (No model.)

*To all whom it may concern:*

Be it known that I, GUS A. WEST, residing at Gilman, in the county of Iroquois and State of Illinois, have invented a new and useful  
5 Type-Writer, of which the following is a specification.

The object of my invention is to provide an improved type-writing machine in which the type are carried by a revoluble wheel operated by the depression of the keys to bring  
10 corresponding characters in line for forming an impression. The revolution of the type-wheel is controlled through the intervention of certain mechanism operated by the depression of each key, and said type-wheel also has  
15 a longitudinal movement on its shaft to bring any one series or circumferential line of type in proper line above the platen of the paper-carriage.

20 The invention also embodies an improved form of paper-carriage and spacing mechanism operated through the interposition of a swinging frame on which the key-levers rest and improved mechanism for releasing the  
25 pawl in returning the carriage to its normal position or starting-point and at the same time shifting the paper in the carriage.

Having the above objects in view, the invention consists in the improved construction,  
30 arrangement, and combination of the several parts constituting my improved type-writing machine, all of which will be fully described hereinafter and the specific points of novelty particularly pointed out in the claims.

35 In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming a part of this specification, in  
40 which—

Figure 1 is a perspective view of a type-writing machine constructed in accordance with my invention. Fig. 2 is a plan view of  
45 the same. Fig. 3 is a longitudinal section taken on the line 3 3 of Fig. 2. Fig. 4 is a transverse section taken on the line 4 4 of Fig. 3. Fig. 5 is a similar section taken on the line 5 5 of Fig. 3. Fig. 6 is a detail sectional view of the type-wheel and its supporting-shaft. Fig. 7 is a detail perspective view of the bell-operating mechanism. Fig. 8 is a

side elevation of the left side of the machine. Fig. 9 is a transverse section taken on the line 9 9 of Fig. 2. Fig. 10 is a detail perspective  
55 view of the inking mechanism. Fig. 11 is a detail view of the spacing-indicator. Fig. 12 is a detail view of the mechanism for shifting the type-wheel.

In the drawings, 1 designates the base-plate, 60 which is provided at its forward end with uprights or standards 2 2, forming a support for the swinging frame hereinafter described. The base-plate has mounted on it a transverse bar 3, and in the rear of the said base-  
65 plate are two transverse grooves or channels 5, forming a guide for the paper-carriage. Between the uprights or standards 2 2 is fixed a transverse bar 6, upon which is pivoted a bail-shaped frame extending rearward there-  
70 from, the said frame consisting of side pieces 7 7, connected by a cross-piece 8. Between the side pieces 7 7 of this swinging frame is rigidly secured a bar 9, and to this bar, near one end thereof, is pivoted a second bar 10,  
75 extending parallel with the first-mentioned bar. To the portion 8 of the swinging frame is pivoted a segment-rack 11, connected near its pivot-point to the free end of the pivoted bar 10 by a link 10<sup>a</sup>. The teeth of the seg-  
80 ment-rack operate the type-wheel through the intervention of mechanism hereinafter described.

Upon the transverse bar 6 are pivoted key-levers 12, which correspond in number with  
85 the characters of each series on the type-wheel, and said key-levers project rearwardly from their supporting-bar. The key-levers are separated by the rings or washers 13, and each key-lever is provided with a flat spring  
90 14, which engages the cross-bar 3 and holds its said key-lever normally in an elevated position, the upward movement of the key-lever being limited by a cross-bar 15, supported by the standards 2. The upper edge of the piv-  
95 oted bar 10 is straight, while the lower edge near its free end is inclined upward and the bar 9 is cut away on its upper edge, as shown. By this arrangement it will be noted that upon the depression of a key the pivoted bar  
100 10 will have a movement independent of the bar 9, the extent of such movement depending upon the point at which the said pivoted bar is struck and the length of the set-screws



carried by the key-levers. The depression of the pivoted bar 10 governs the throw of the segment-rack 11, which is connected thereto, and these parts are returned to their normal position by a helical spring 16, attached at one end to said segment-rack and at its other end to an upright attached to the bar 8 of the swinging frame. The upward movement of the swinging frame is provided for by helical springs 17 and is limited in this direction by uprights 18, located at opposite sides of the machine and having inturned upper ends which engage the side pieces of said swinging frame.

Between the side pieces 7 7 of the swinging frame is a cross-bar or plate 19, so pivoted as to have an oscillating movement, and a depending bracket 20 at one of its ends. This bracket carries a roller which normally rests on the cross-bar 3 to prevent the downward movement of the swinging frame until the cross bar or plate 19 is operated upon to throw the said roller out of engagement with the cross-bar, so that when the swinging frame is depressed it will cause the roller to ride down on the incline 23. The transverse bar or plate 19 is brought to its normal position by a helical spring 25, connected to the bracket 20 and to the bar 9, and the roller is limited in its movement in this direction by the stop or shoulder 24.

To the transverse plate 8 of the swinging frame is rigidly secured a bracket 26<sup>a</sup>, having the uprights 26 26, in which is journaled a longitudinal shaft 27, at one end of which is keyed a pinion 28, in mesh with the segment-rack 11 hereinbefore mentioned. Upon the shaft 27 is a sleeve 29, longitudinally movable thereon and adapted to rotate therewith by means of a slot and lug, as shown in Fig. 6. Upon the other end of this sleeve is rigidly secured the type-wheel 30, having three series of types or characters arranged circumferentially of the wheel. The preferred manner of connecting the type-wheel 30 to the sleeve 29 is illustrated in the detail view Fig. 6 and provides for readily removing the type-wheel. The construction shown employs a collar 31, having a set-screw 32 for rigidly connecting the same to the sleeve, said collar having also a transverse opening registering with a similar opening through the type-wheel, and through these openings is passed a bolt 33, held at one end by a screw 34 to securely hold the parts in position. By this arrangement the type-wheel can be removed from the shaft and cleaned. I also provide a slot in one of the standards 26, in which one end of the shaft fits and closes the slot by means of a swing-key 27<sup>a</sup>, which engages a lug 27<sup>b</sup> on the standard 26. By this arrangement the shaft can be easily taken out and replaced.

The sleeve 29 between the uprights 26 26 is provided with an annular flange 35, engaged by an arm 36. A lever 37 is pivoted at its lower end to an ear or lug 38 on the

lower part of the supporting-bracket 26<sup>a</sup>, as is the arm 36, and the upper end of the lever is provided with a handle by which it is operated. The intermediate portion of said lever between the handle and pivot-point is twisted, as shown, to present an edge which engages notches 39 in a plate 40, forming part of the supporting-bracket. The lever 37 is constructed of spring metal, so that it will be thrown in positive engagement with the notches 39.

Adjoining the pinion 28 on the shaft 27 is mounted a toothed disk or wheel 41, which acts in engagement with an upwardly-projecting plate 42 at the end of a standard 43 on the base-plate 1, so that the type-wheel will make a clear impression.

The operation of my invention as hereinbefore described is as follows: Upon the depression of a key-lever the pivoted plate 10 is depressed to a certain extent and carries with it the segment-rack 11, which being in mesh with the pinion 28 turns the type-wheel 30 to bring the character corresponding with the key-lever in line to print. The further depression of the key-lever turns the pivoted plate 19 to be operated to move the roller 22 out of engagement with the shoulder of the cross-bar 3 and allows the frame to be moved downward to bring the type-wheel over the paper. This cross-bar and the parts carried therefore act as a lock to prevent the swinging frame being depressed until the pivoted bar 10 has been operated upon to properly operate the type-wheel. The key-levers are provided with the usual finger-keys, the letters being placed upon the upper edge of the said key-levers instead of upon the touch-surface of the finger-keys. It may be here mentioned that the key-levers 12 are provided with the adjusting-screws 44, which project below the lower edge of said key-levers and engage the cross-bar 9 of the swinging frame. By employing the set-screws each key is susceptible of minute adjustment to engage the bar 9 at the proper time and cause the type-wheel to rotate sufficiently to present the proper type.

The frame of the paper-carriage is made up of the end pieces 45 45<sup>a</sup>, which rest on the bed-plate, and the cross-bars 46 and 47, which connect the end pieces. The cross-bar 46 has a depending plate 48, which engages one of the grooves or channels 5 in the bed-plate 1, while the cross-bar 47 engages the other groove or channel 5. Between the end pieces 45 is journaled the platen-roll 49, and partially surrounding this platen-roll is a paper-shield 50, having projecting ears 51, by which it is fulcrumed upon a transverse rod 52, extending between the end pieces 45 and 45<sup>a</sup>. This paper-shield has a transverse slot running nearly its full length, and the edges adjoining this slot are turned inward to properly guide the paper. Carried by the rod 52<sup>a</sup> are the rubber rolls 53, which project through the slot to bear against the platen-roll to hold the paper. The shaft



of the platen-roll projects beyond one of the end pieces and is provided with a milled wheel 54, by which it may be turned. The bar 46 carries on its upper edge a rack-bar 55, the teeth of which project upward, and adjoining this rack-bar is a strip 56, connected at its ends to levers 57 and 58, pivoted upon the shaft of the platen-roll. The lever 58 carries at its upper end beyond the shaft a pivoted dog 59, adapted to be thrown into engagement with the milled wheel in order that when the platen-roll is turned the cross-bar 56 will be elevated simultaneously therewith and lift the pawl 61 of the step-by-step mechanism hereinafter mentioned, so that as the platen is turned to bring a new line in position this pawl is raised and allows the carriage to be pushed back to commence a new line of printing. On the end piece 45<sup>a</sup> of the carriage is pivoted a stop or cam 60, adapted to be moved to limit the upward movement of the lever 58, and consequently the rotation of the platen-roll.

The paper-carriage moves back and forth across the machine and is given a step-by-step movement toward the left by means of a pawl 61, pivoted to a crank-arm 62, projecting from a rock-shaft 63, journaled in the bearings 44. This rock-shaft is provided with an upwardly-projecting arm 64, having a friction-roller 65 bearing against the under side of the plate 8 of the swinging frame, so that when the said swinging frame is depressed it will rock the said shaft. This shaft 63 has a depending arm 66, to which is connected a helical spring 67, firmly attached at its other end to the bed-plate. The said shaft 63 is further provided with an arm 68, extending beyond one side of the swinging frame and bent upward to receive a space-bar 69.

70 designates a bracket, the upper end of which is bent, as shown, and it carries short shaft 71, from which swings an arm 72, the lower end of which carries a receptacle 73 to receive an absorbent packing 74, which acts as an ink-reservoir. Over this packing and in contact therewith is a felt roller 75, which receives a supply of ink from the packing. The swinging frame is so located that the roller 75 will be normally in contact with the type or characters of the type-wheel, being held in such engagement by a spring 76, extending from the bearings of the arm 71, but which allows the type-wheel to push it out the way when it is depressed. From the horizontal member 70<sup>a</sup> of the bracket 70 projects a plate 77, having a bifurcated portion 78, which overlies the platen-roll and provides a space between which the type pass to engage said platen-roll. The upper edge of the shield 50 is graduated, as shown, and the bifurcated plate is also provided with the pointer 78<sup>a</sup>, which works over the graduated shield to indicate the space. Upon the base-plate is mounted a device for ringing a bell to indicate the near approach to the end of a line of printing, the said device consisting of a bell 79 and

clapper 80; said clapper consisting of two members 79<sup>a</sup> and 79<sup>b</sup>, the under member 79<sup>b</sup> being moved by a pin 80<sup>a</sup>, carried by the upper member 79<sup>a</sup>, and the latter having a projection 80<sup>b</sup> in the path of a stud or lug 81 on the paper-carriage.

81<sup>a</sup> represents a spring for returning the parts to normal position after the carriage has passed.

From the foregoing description, in connection with the accompanying drawings, the construction and operation of my improved type-writing machine will be readily understood, for upon the depression of a key-lever the pivoted plate 10 is first operated to turn the type-wheel, after which the lever presses upon the bar 9 and depresses the swinging frame to carry the type-wheel down against the platen-roll. During this movement the swinging frame rocks the shaft 63 to bring the pawl 61 in engagement with the next tooth of the rack-bar 55, and when the swinging frame is returned to its normal position by the spring the pawl will push the paper-carriage one step.

It will be noted that the key-lever at the right of the machine will depress the bar 10 but a slight distance, or equal to the throw of one tooth of the segment-rack, while the key-lever at the left will depress the said bar to its greatest extent and therefore rock the segment a sufficient distance to give nearly a complete rotation of the type-wheel, the type being arranged on said wheel to correspond with the arrangement of the key-levers. By giving the type-wheel a longitudinal movement any one of the circumferential series of types or characters may be brought in proper position to act upon the platen-roll, and it may be here stated that one series includes the small letters, another the capital letters, and a third series the numerals and other characters.

Having thus described my invention, I do not care to be limited to the particular construction of the parts, but reserve the right to modify them within the spirit and scope of my claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the base of a type-writing machine and standards, at each front corner thereof, of a cross-rod mounted between the standards, a frame pivoted on the cross-rod carrying the type-wheel, a series of key-levers in number equal to one series of characters on the type-wheel, pivoted to the cross-rod at right angles thereto and extending rearwardly therefrom, and connections between the key-levers and pivoted frame whereby the depression of the key-levers depresses the type-wheel, substantially as described.

2. The combination with the base of a type-writing machine and standards, at each front corner thereof, of a cross-rod mounted between the standards, a frame pivoted on the



cross-rod carrying the type-wheel, a series of key-levers in number equal to one series of characters on the type-wheel, pivoted to the cross-rod at right angles thereto and extending rearwardly therefrom, and a yielding cross-plate mounted between the sides of the pivoted frame in the path of the key-levers and at right angles thereto, whereby their downward movement is communicated to the frame, substantially as described.

3. The combination with the base of a type-writing machine and standards at each front corner thereof, of a cross-rod mounted between the standards, a frame pivoted on said cross-rod carrying the type-wheel, key-levers pivoted on the cross-rod between the sides of the pivoted frame, a cross-plate pivoted between the sides of the pivoted frame in the path of the key-levers and having its rear edge held normally elevated, and a depending elbow-shaped bracket secured to the cross-plate and carrying a friction-roller at its lower end to engage on a fixed portion of the machine, substantially as described.

4. The combination with the base of a type-writing machine and standards at each front corner, of a cross-rod mounted between side standards, a frame pivoted on said rod, a type-wheel carried by said frame, a cross-bar connecting the sides of the frame, a parallel bar pivoted at one end alongside of the cross-bar, a normally upheld segment-rack for rotating the type-wheel pivoted to the frame, a link connecting the rack with the pivoted bar, and pivoted key-levers adapted to depress the pivoted rod, substantially as described.

5. In a type-writing machine the combination with a pivotal frame provided with a cross-bar connecting its sides and having its upper edge cut away forming a recess of graduated depth therein, a parallel cross-bar pivoted to the cross-bar at one end, a type-wheel and shaft carried by the pivotal frame, a gear-wheel on the type-wheel shaft, a normally upheld segment-rack engaging the gear-wheel and pivoted to the pivotal frame, a link connecting the rack with the pivoted cross-bar near its free end, and pivoted key-levers lying across the cross-bar of the pivotal frame and adapted to depress the pivotal bar when struck, the extent of said depression being determined by the contact of each key-lever with the bottom of the graduated recess, substantially as described.

6. In a type-writing machine the combination with the base, of standards erected at each front corner, a cross-rod connecting said standards, a frame pivoted on said cross-bar and carrying a type-wheel at its inner end, key-levers pivoted on the cross-rod between the sides of the frame resting upon and adapted to depress the frame and type-wheel, springs normally upholding the frame at its inner end, and a bail-frame extending across the key-lever and having its ends secured to the standards, whereby the upward move-

ment of the key-levers and frame is limited, substantially as described.

7. In a type-writing machine, the combination with a series of operating-keys, of a swinging frame carrying a type-wheel and mechanism for operating the same, a pivoted cross-bar 19 carrying a depending member having a roller, and a cross-bar 3 secured to the bed-plate and shaped to present a shoulder, with which the roller engages, substantially as shown and for the purpose set forth.

8. In a type-writing machine, the combination with a series of operating-keys, of a swinging frame carrying the type and depressed by said keys, a locking device comprising a bar 19 pivoted to the frame so that one end will project upward and be engaged by the keys, a depending member carried by the pivoted bar and presenting an outwardly-projecting arm upon which is mounted a roller, a helical spring connected to said member and to a part of the swinging frame, together with a cross-bar 3, cut away or shaped to present a shoulder which receives said roller, substantially as shown and for the purpose set forth.

9. In a type-writing machine, the combination with a series of operating-keys, of a swinging frame having a cross-bar, a second bar pivoted to said cross-bar and presenting an upper inclined edge, a type-wheel and mechanism interposed between said type-wheel and the pivoted bar for operating the former, together with the key-levers overlying the pivoted bar and cross-bar, and an adjusting-screw carried by the levers and adapted to engage the rigid cross-bar of the swinging frame, substantially as shown and for the purpose set forth.

10. In a type-writing machine, the combination with a swinging frame, of a shaft supported thereby, a sleeve mounted on said shaft and carrying a type-wheel, a pinion mounted on the shaft beyond the sleeve, a segment-rack in mesh with the pinion and pivoted to the cross-bar of the swinging frame, a pivoted cross-bar carried by the swinging frame and connected to the segment-rack, pivotal operating key-levers overlying the pivoted bar, and a parallel cross-bar of the swinging frame having an inclined upper edge, substantially as shown and for the purpose set forth.

11. In a type-writing machine, the combination with a series of operating-keys, of a swinging frame having a cross-bar presenting an inclined upper edge, a bar pivoted to the cross-bar, a segment-rack carried by the swinging frame and connected to the pivoted bar, a shaft having a pinion in mesh with the segment-rack, a sleeve on the shaft carrying the type-wheel and having an annular collar, a lever having a member with a bifurcated end that engages the collar, and a cross-bar having notches with which the lever engages, substantially as shown and described.



12. In a type-writing machine, the combination with a shaft, of a sleeve mounted to slide thereon and rotate therewith, said sleeve provided with a perforated lateral lug near its  
 5 outer end, a type-wheel mounted on the sleeve perforated in line with the perforation of the lug, a collar rigidly secured on the sleeve inside of the type-wheel, perforated in line with the type-wheel and the lug, and a bolt passing through the perforations of the collar,  
 10 type-wheel and lug and secured by a nut, substantially as described.

13. In a type-writing machine, the combination with the base having parallel transverse  
 15 undercut grooves, the paper-carriage having tongues to fit said grooves, a rack on the paper-carriage, a pivoted pawl engaging the rack, a strip parallel with the rack-bar engaging the free end of the pawl, and levers  
 20 pivoted on the platen-roll shaft engaging said strip, substantially as described.

14. In a type-writing machine, the combination with the paper-carriage carrying a rack, of a rock-shaft journaled in bearings  
 25 mounted on the base of the machine at right angles to the rack, a pawl carried by and above said rock-shaft, a downward-projecting arm on said shaft, a spring connecting it with the base of the machine to throw the pawl forward, a frame pivotally mounted at the front  
 30 of the machine, and an arm projecting upwardly and laterally from the rock-shaft carrying a roller at its upper end bearing upon the under side of the pivoted frame to return the pawl by the depression of the pivoted  
 35 frame, substantially as described.

15. In a type-writing machine, the combination with the paper-carriage carrying a rack, of a rock-shaft journaled in bearings  
 40 mounted on the base of the machine at right angles to the rack, a pawl carried by and above said rock-shaft, a downward-projecting arm on said shaft, a spring connecting it with the base of the machine to throw the  
 45 pawl forward, a frame pivotally mounted at

the front of the machine, a spacing-bar projecting laterally and upwardly from the rock-shaft to the outside of the pivoted frame, whereby the shaft may be rocked to return  
 50 the pawl against the action of the spring, and an arm projecting upwardly and laterally from the rock-shaft carrying a roller at its upper end bearing upon the under side of the pivoted frame to return the pawl by the depression of the pivoted frame, substantially  
 55 as described.

16. In a type-writing machine, the combination with the base of the machine, of a bracket mounted thereon carrying a laterally-projecting pin, an elbow-shaped lever swinging  
 60 from the pin, the horizontal arm of which carries an ink-pad and frame, an ink-roll in contact with the pad journaled in brackets on the ink-pad frame, a type-wheel carried by a pivoted frame above and in line with the roll,  
 65 and a spring to normally hold the ink-roll in the line of the movement of the type-wheel when brought down to make an impression, but permitting the roll and ink-pad to be pressed aside by the type-wheel, substantially  
 70 as described.

17. In a type-writing machine, the combination with the base and the paper-carriage carrying a graduated strip, of a bracket  
 75 mounted on the base, a spring-impelled arm pivotally mounted on the bracket, an ink pad and roll carried by said swinging arm in the path of movement of the type-wheel, and a plate secured to the fixed bracket having a  
 80 bifurcated portion extending under the ink-roll and over the graduated strip on the paper-carriage, a pointer provided at the base of the bifurcated arms to indicate the number on the graduated strip, substantially as described.

GUS A. WEST.

Witnesses:

OTTO HEISE,

WILLIAM J. DICK.