

No. 640,352.

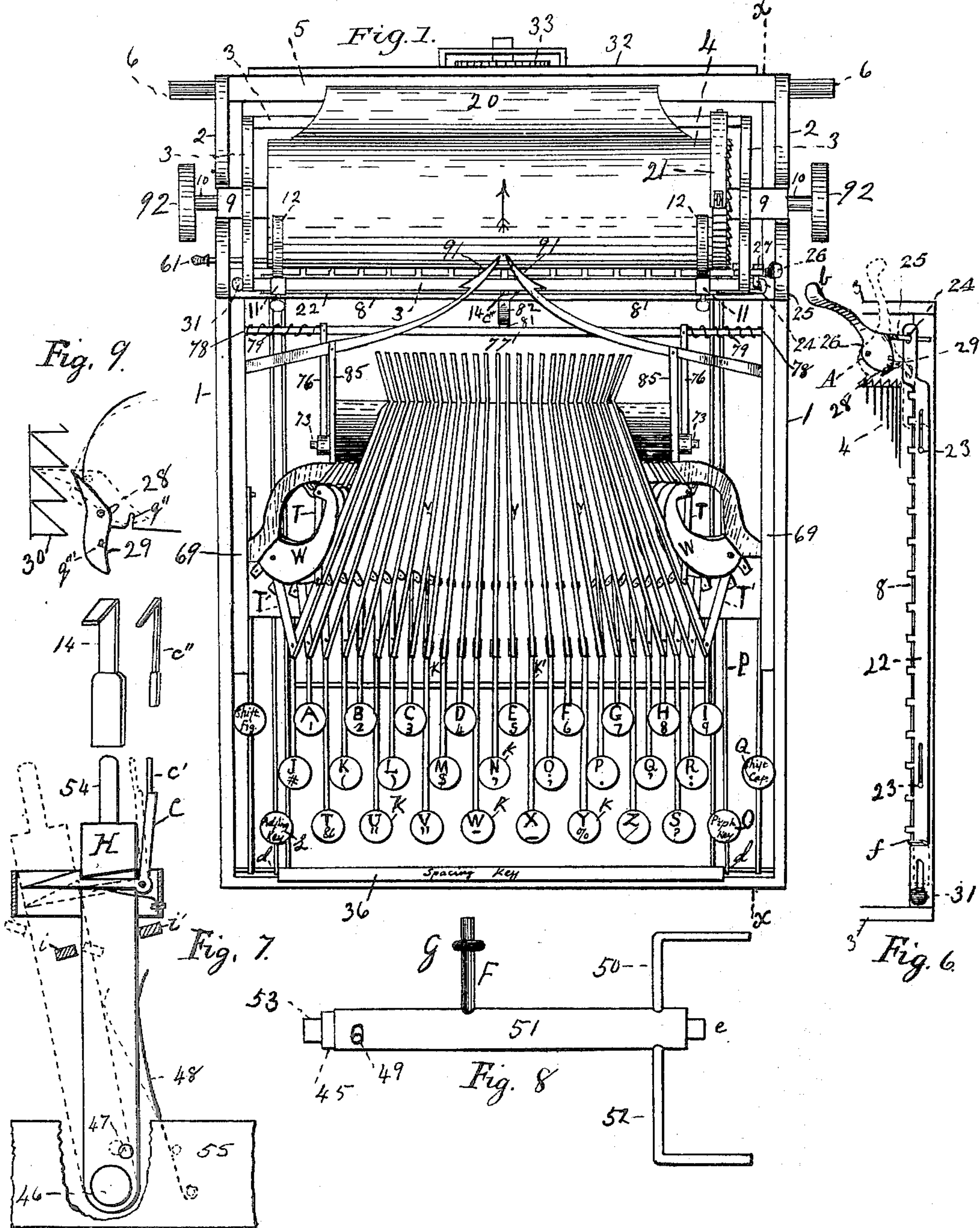
Patented Jan. 2, 1900.

J. D. AGUILAR.
AUTOMATIC TYPE WRITING MACHINE.

(Application filed May 20, 1897.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses
Herman N. Nashels
Leland C. Bacon

Inventor
Jose Delgado Aguilar.

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Patented Jan. 2, 1900.

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5 Sheets—Sheet 2.

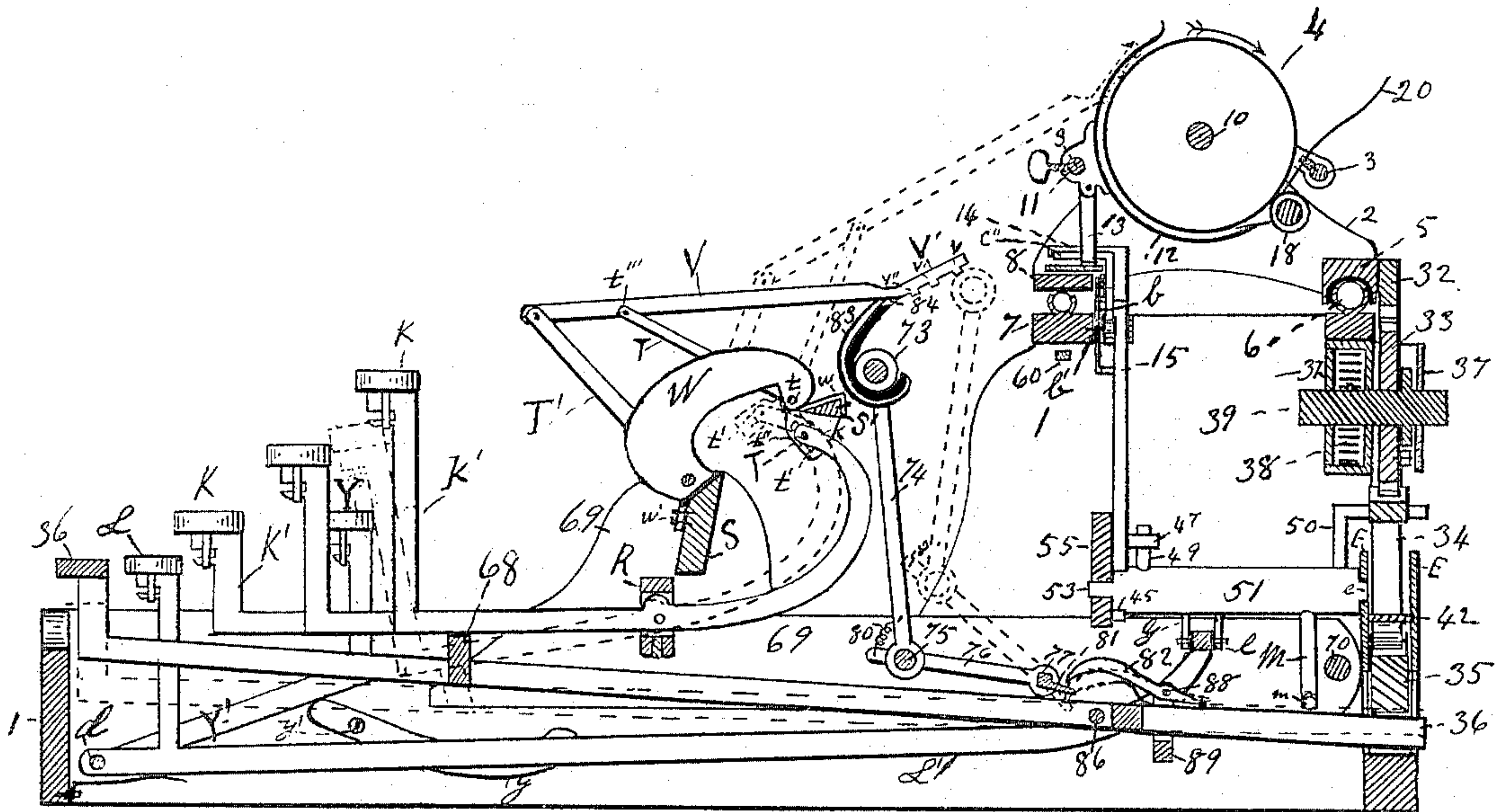


Fig. 2.

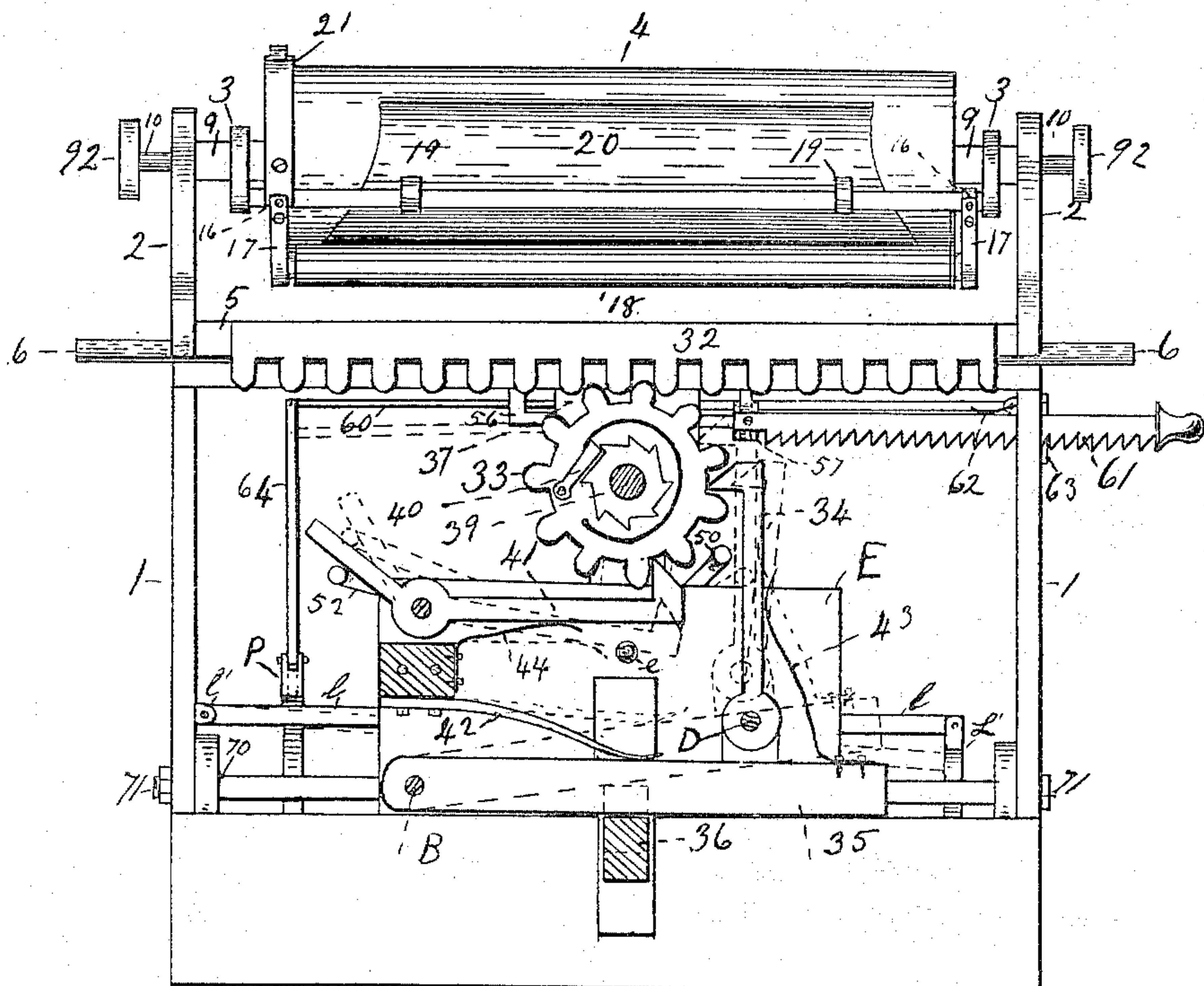


Fig. 3.

Witnesses
William H. Fisher
Leland C. Bacon

Inventor.
Jose Delgado Aguilar

No. 640,352.

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5 Sheets—Sheet 3.

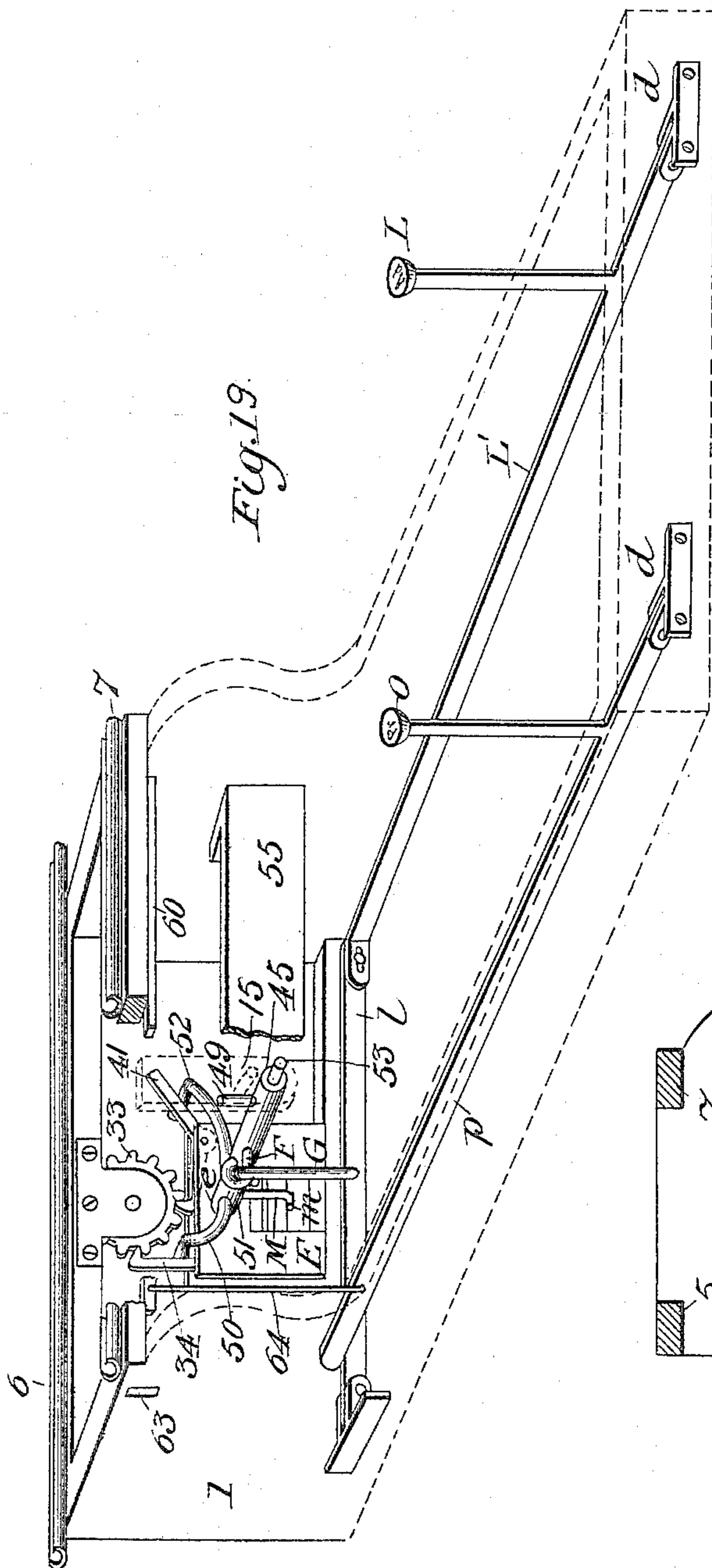


Fig. 19.

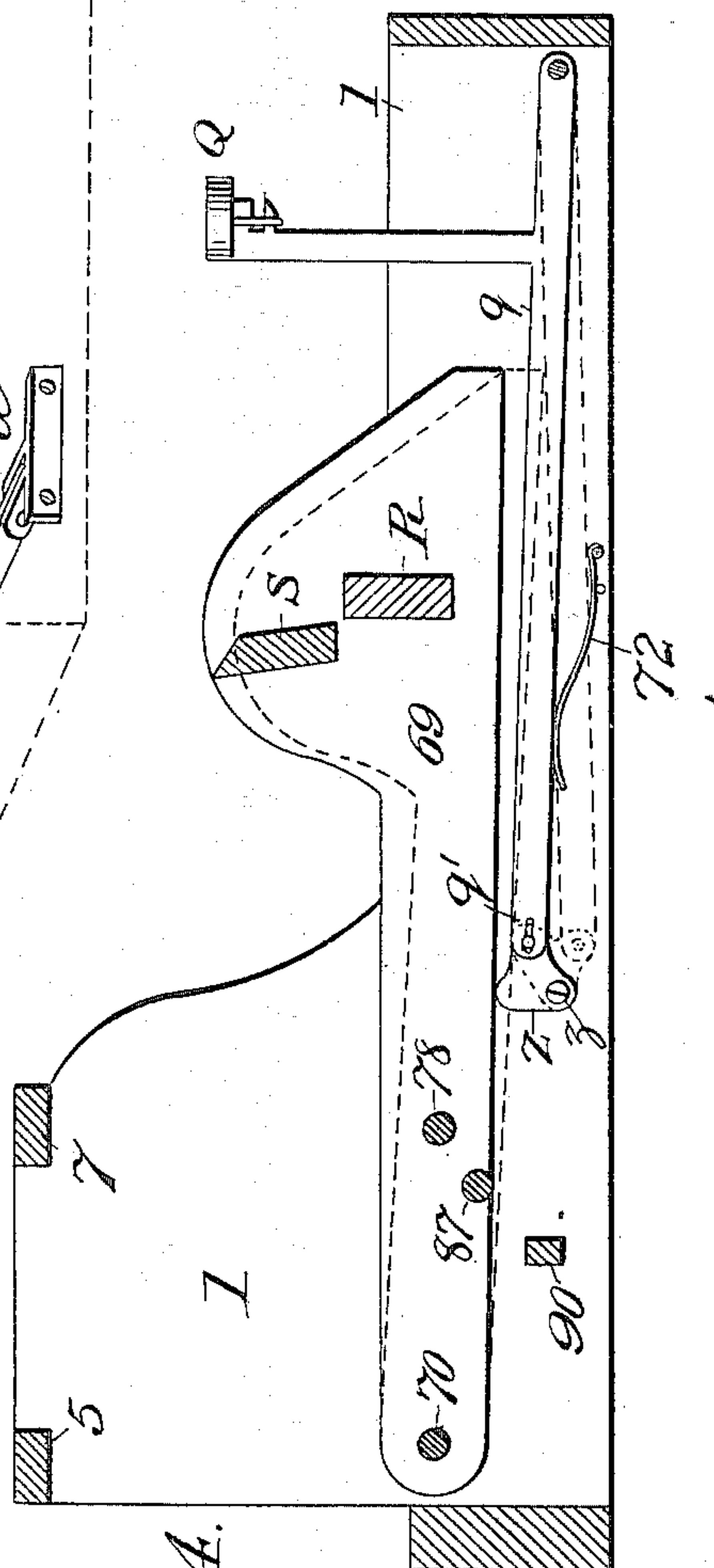


Fig. 4.

Witnesses:
Leland L. Baron
Lewis L. Rogers

Inventor:
Jose Delgado Aguilar.

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5 Sheets—Sheet 4.

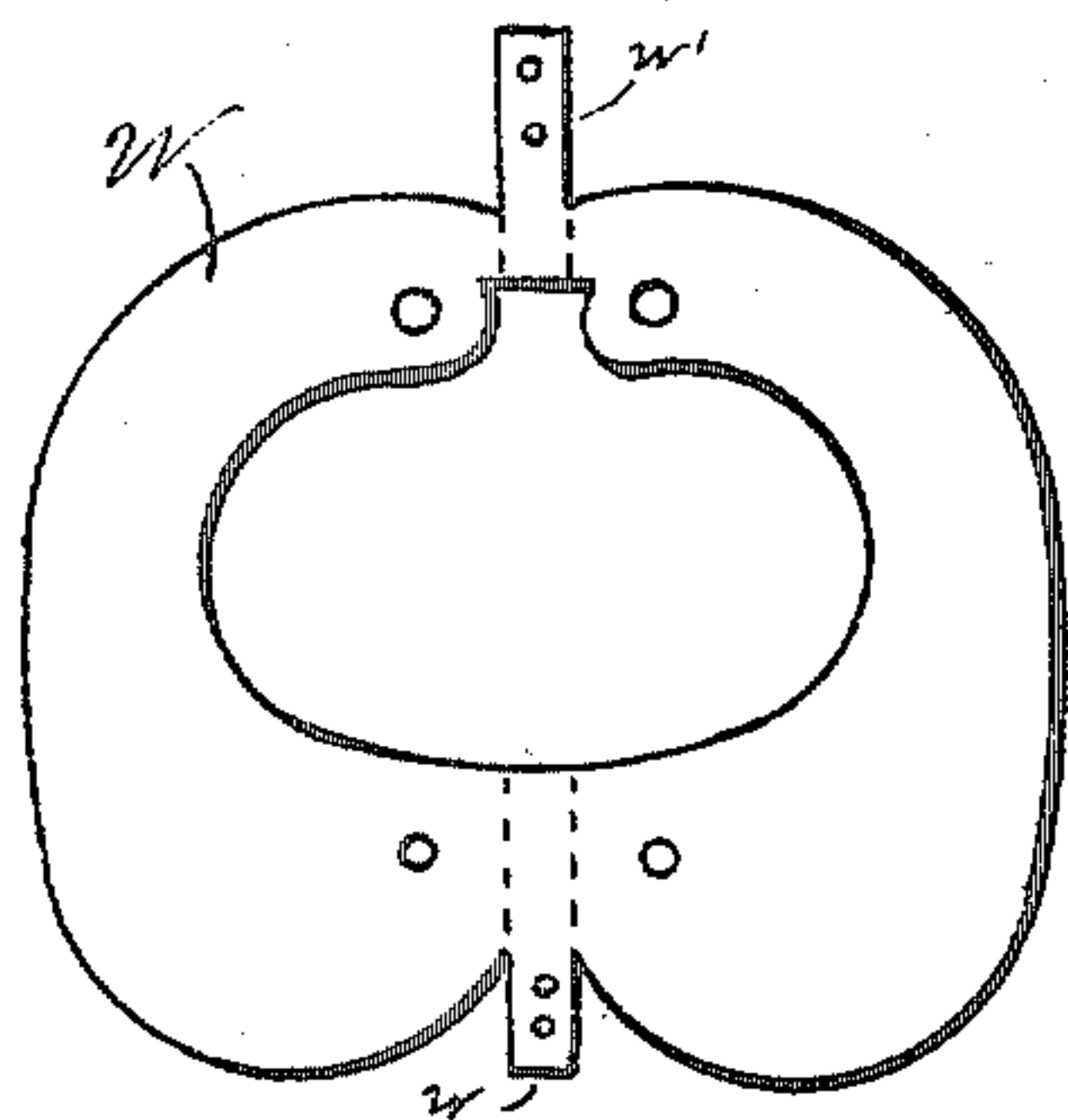
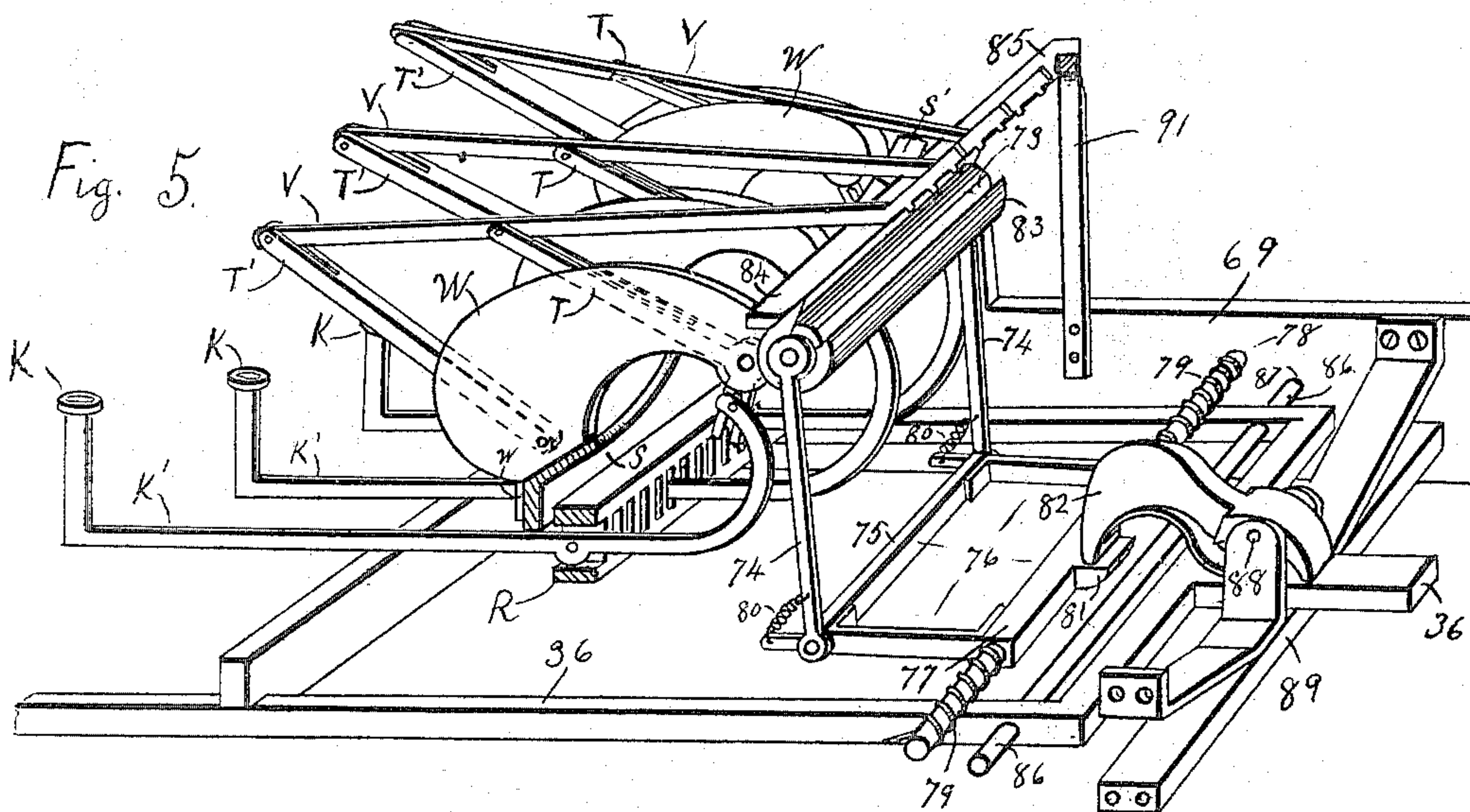


Fig. 14.

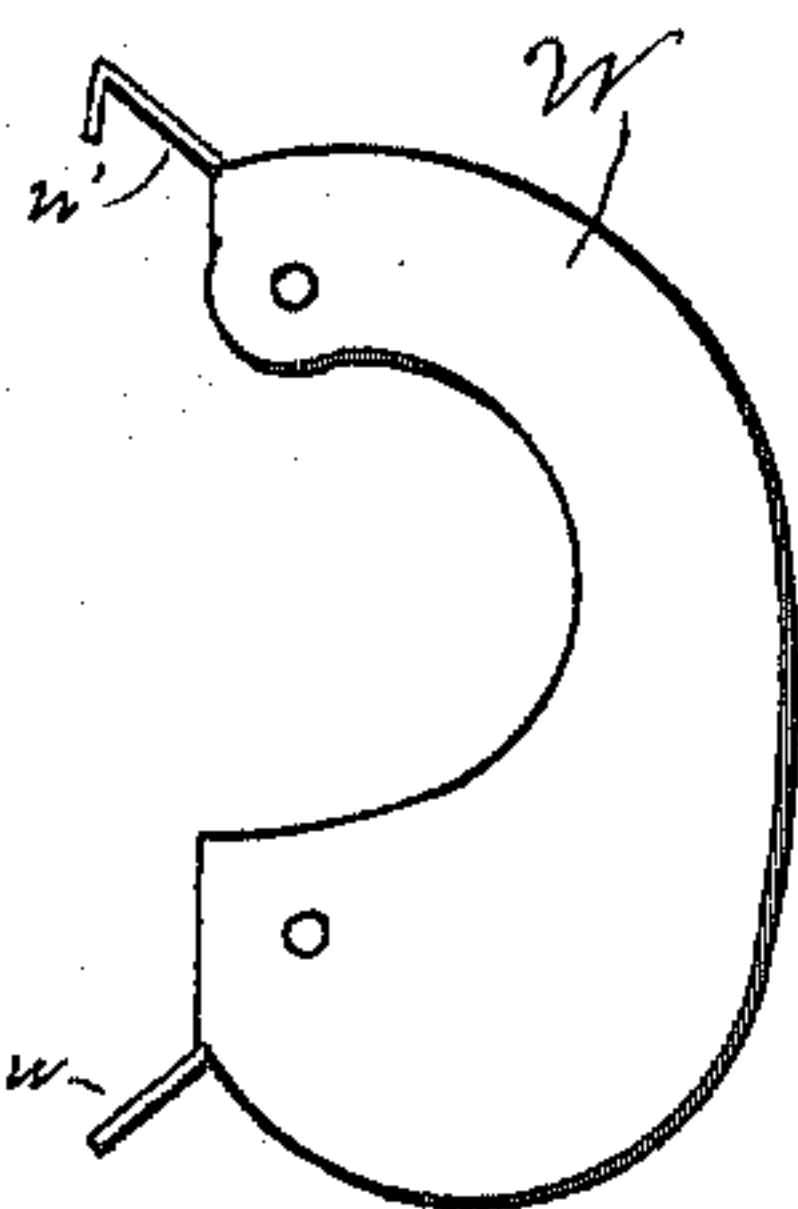


Fig. 15.

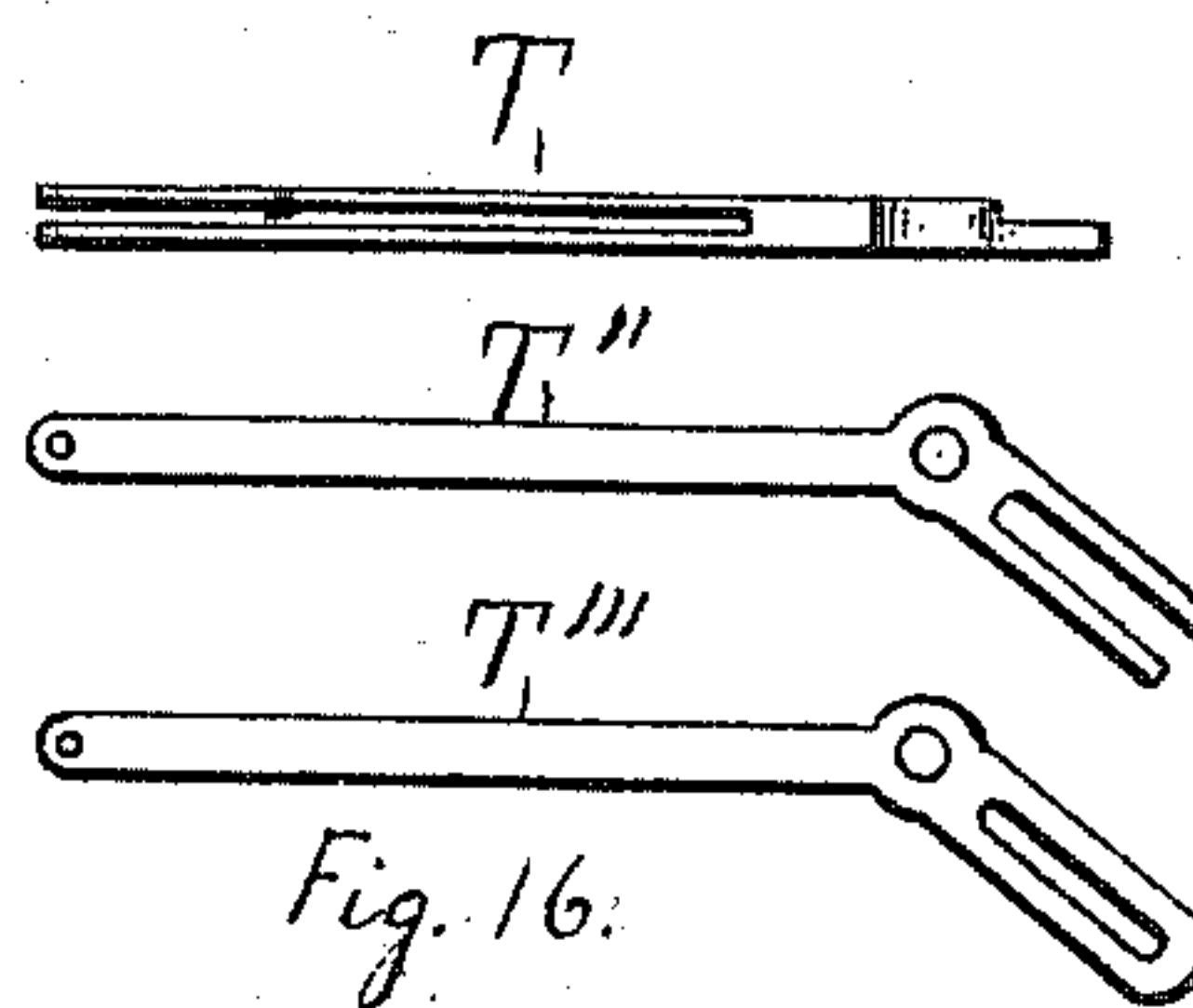


Fig. 16.

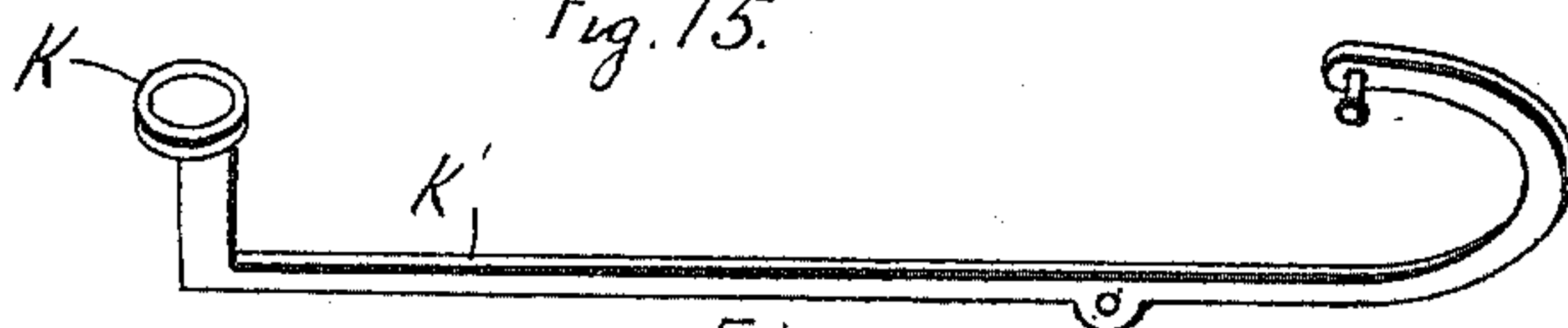


Fig. 17.

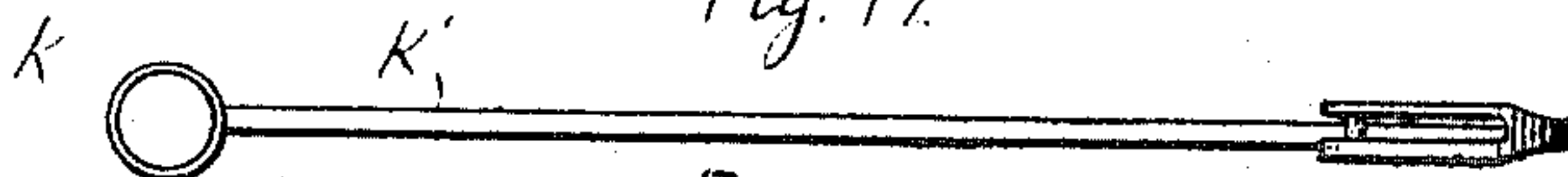


Fig. 18.

Witnesses:

Samuel L. Bacon
William Lash

Inventor.

Jose Delgado Aguilar

No. 640,352.

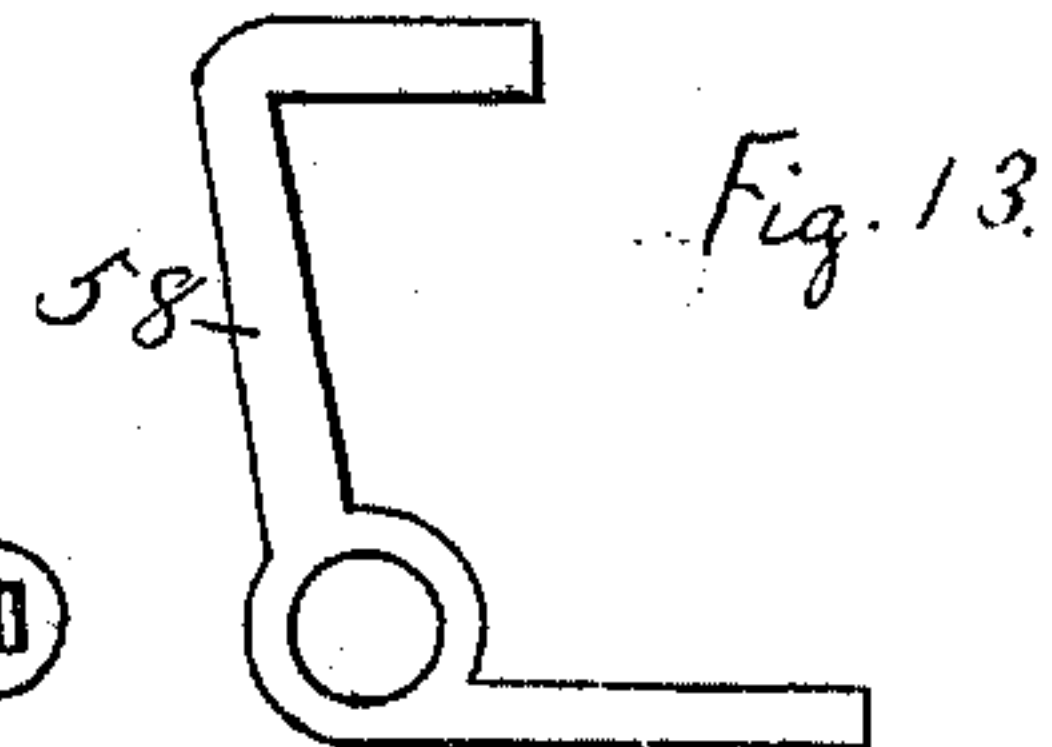
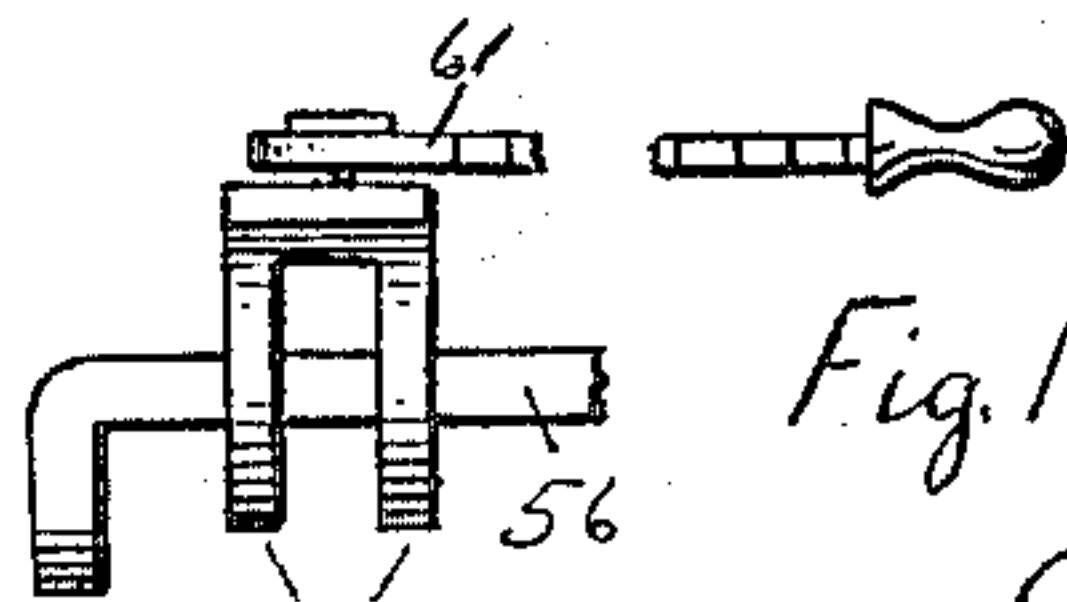
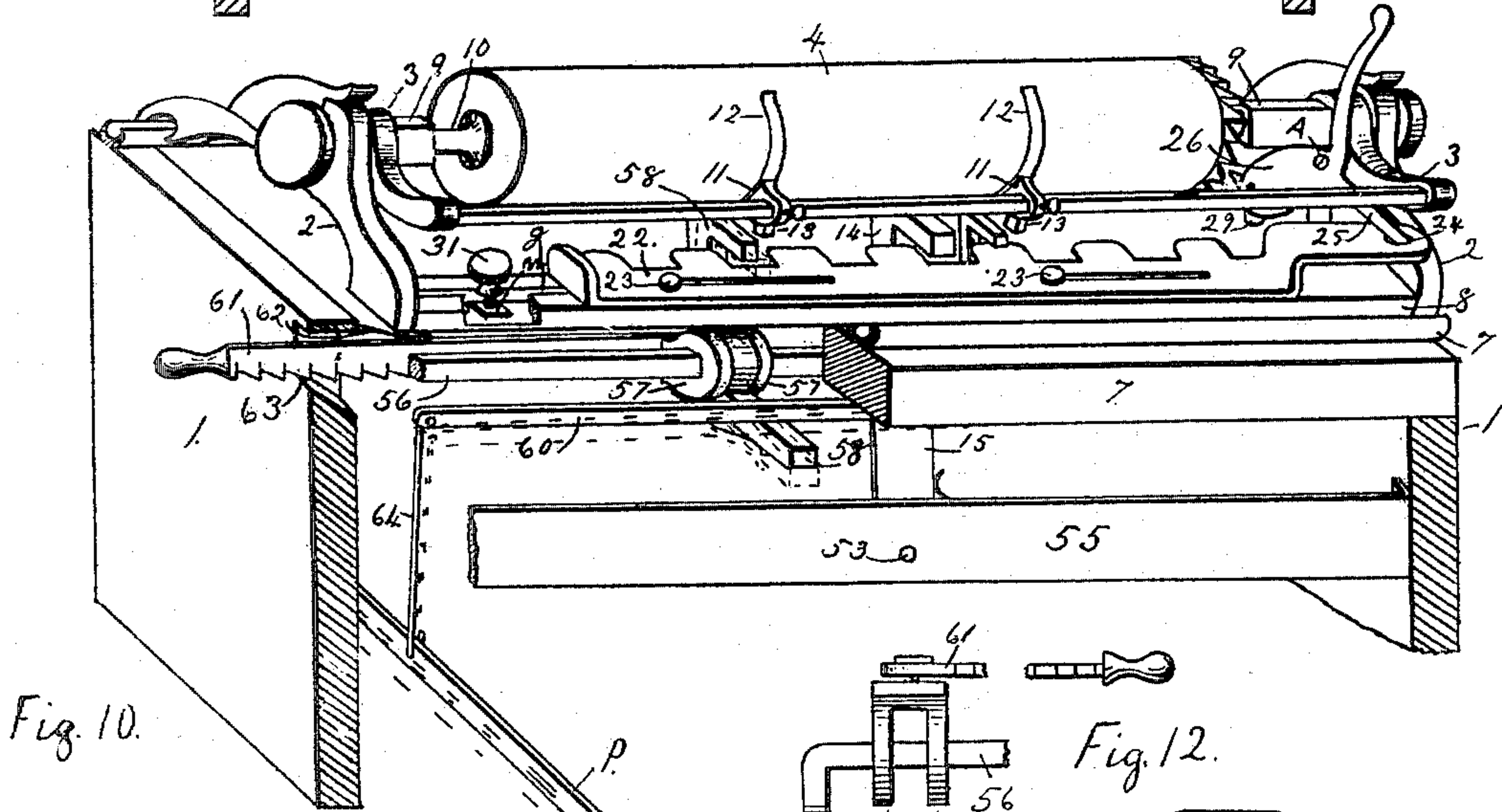
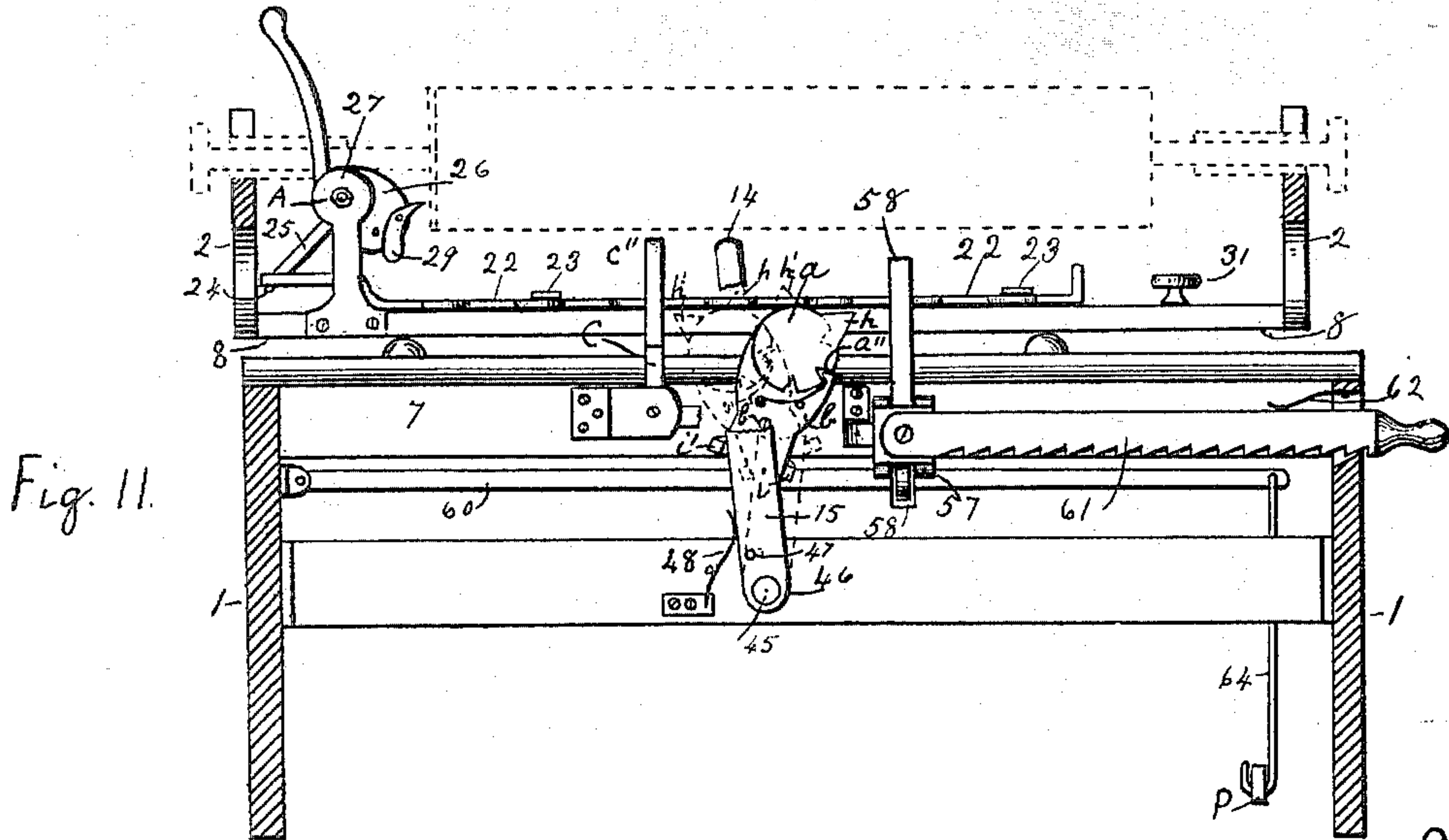
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AUTOMATIC TYPE WRITING MACHINE.

(Application filed May 20, 1897.)

(No Model.)

5 Sheets—Sheet 5.



Witnesses:

Leand L. Bacon
William Lash

Inventor.
Jose Delgado Aguilar.

UNITED STATES PATENT OFFICE.

JOSÉ DELGADO AGUILAR, OF NEW YORK, N. Y.

AUTOMATIC TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,352, dated January 2, 1900.

Application filed May 20, 1897. Serial No. 637,476. (No model.)

To all whom it may concern:

Be it known that I, JOSÉ DELGADO AGUILAR, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented a new and useful Automatic Type-Writing Machine, of which the following is a specification.

My invention relates to that class of type-writing machines in which a number of type-bearing arms are thrown successively against the paper or other substance to be written on by the depression and release of a series of keys, and while the type and key are going back to place the paper or substance is moved a type-space distance.

The main object of my invention is to provide a simple and fast writing-machine. With this object in view I have provided means by which those features of the type-writing machines in use that annoy and waste the time of the operator are corrected. These are, first, pulling the carriage back; second, turning the platen for the required space between lines; third, the blind writing and top or front visible writing, and, fourth, the margins.

I correct the first feature by providing the machine with an automatic carriage, which when writing from margin to margin it moves leftward a type-space distance at the time, but at the end of the line of writing it suddenly returns to the right and stops at the proper place for the beginning of the next. The second is corrected by an automatic platen-turning device, the third by arranging the type-bars in such way as to write at an angle of forty-five degrees, from the top of the platen, and on the side fronting the operator, and the fourth by placing the marginal stops on the front bar of the paper-carriage, on which they slide, and can be secured at any desired place. The machine is also provided with a paragraph device to avoid the adjustment at the beginning of a paragraph and with an inking-roller to improve the inking of the types. The features of construction and combinations by which these improvements are effected are hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top view of a type-writing machine embody-

ing my improvements. Fig. 2 is a central vertical section of same; and Fig. 3, a rear elevation of same, showing the impelling mechanism. Fig. 4 is a vertical section on the line $x x$ of Fig. 1, showing only enough of the machine to illustrate the capitals-shifting device. Fig. 5 represents the spacer or universal bar and the position of the inking-roller and pawl. Fig. 6 illustrates the platen-turning device. Fig. 7 shows the tension-release blade in its two positions. Fig. 8 is a top view of the release-shaft. Fig. 9 shows the action of the platen-turning pawl, and Fig. 10 the action of the paragraph-stop; Fig. 11, the automatic platen-turning device; Figs. 12 and 13, the paragraph-stop; Figs. 14, 15, 16, 17, and 18 the type guides, moving arms, and key-levers, respectively, and Fig. 19 shows the adjusting-key and release-shaft in position.

In the several views the same part will be found designated by the same numeral or letter of reference.

1 represents the bed-frame, and 2 the carriage or platen support, the rear bar 5 of which is grooved in its lower side, so as to telescope a channel 6, firmly secured across the rear of the elevation of the bed-frame 1 and on which slide over two balls inclosed in said channel. This arrangement affords an easy sliding place to the carriage and prevents it from being pushed upward by the tension-gear. The front bar of the carriage 8 rests by gravity and slides on two balls inclosed in another channel 7, fastened across the front of the elevation of the bed-frame 1.

3 is the paper-frame, which is held in position by means of bars 9, projecting outwardly from the center of its two lateral sides and fitting in openings made for the purpose in the corresponding sides of the carriage 2. These projecting bars 9 are bored lengthwise in the center for the passage of the platen-shaft 10, to which they serve as bearings.

On the front bar of the paper-carriage slide two marginal stops 11, consisting of small blocks bored for the passage of the bar and provided with thumb-screws to secure them firmly at any desired place. In the inner side of these blocks are secured the paper fingers or guides 12, which encircle about half of the periphery of the platen and are brought as near to it as possible. In the lower ends of

these marginal stops are attached arms 13, projecting downward and of sufficient length to knock against the bend 14 of the release-blade 15.

5 On the rear bar of the paper-carriage are secured, by means of blocks 16, rigidly secured to it, and springs 17, the pressure or feeding roller 18 and, by blocks 19, the paper-table 20.

10 On the front side 8 of the carriage 2 is a sliding blade 22, checked by pins 23 and having its two ends bent upward, as seen in Figs. 6, 10, and 11. One of the ends is again bent in the former direction and prolonged for a short distance, being provided with a bore or hole 24, through which passes the projecting arm of the platen-turning device 26. The sliding blade 22 is also provided with a number of teeth on its inner side or that toward the platen to be engaged by the automatic platen-rotating device hereinafter referred to.

26 is a vertical lever pivoted at A to a support 27, firmly fastened to the inner side of the front bar 8 of the carriage 2 and having its upper end so shaped as to fit the fingers of the operator. On one side of its lower end is pivoted a pawl or dog 29, Fig. 9, which when raised engages the ratchet-wheel of the platen, causing its rotation. Opposite to the pawl, in the same end of lever 26, is a downward projection or arm 25, that goes through the bore 24 of sliding blade 22.

31 is the line-space regulator, consisting of a thumb-screw sliding in an inverted-T groove 35 *g* on the upper left-hand side of the front bar 8 of the carriage 2 and provided with a nut *n*, placed in the inner and wider side of the groove, which it loosely fits to allow it a sliding motion in the direction of the groove and by means of which the thumb-screw can be secured at any desired place within the length of the groove.

32 is a ratch or toothed plank firmly secured to the back of carriage 2, rear bar 5, and being engaged by the tension-gear 33. This tension-gear is rigidly attached to the lower side of channeled support 6 (in the rear of the elevation of the bed-frame 1) by plates 37, forming the cam or inclosure of the watch-spring 38, attached to the shaft 39 of the tension-gear 33. The gear is provided with a check 40 to fix it on the shaft 39, to which is attached a small ratchet-wheel.

34 is a catch fulcrumed at its lower end to impelling-lever 35 and serves to impel the carriage by successively engaging the teeth of gear 33.

35 is a lever of the third class fulcrumed at B to plates E (one of them being removed for clearness) and serving to raise and lower the impelling-catch 34.

41 is a retaining-catch fulcrumed on plates E and serving to retain the tension-gear 33 as the catch 34 ascends to engage the tooth of the gear next above it.

42 is a spring which, acting on lever 35,

when raised, rotates by means of catch 34 the tension-gear 33.

43 and 44 are two weak springs serving to keep catches 34 and 41 in constant engagement with the tension-gear.

15 is a release-blade fulcrumed at its lower end 46 to end 45 of release-shaft 51, on which it rotates freely. It bears near that end an inward-projecting pin 47 to engage another pin 49, attached to that end of shaft 51. In its upper end it has a projection in which fits the hollow end of bend 14 and an enlargement at H, by which the bent catch C holds it in the position shown in Fig. 7. The bent catch C is also provided with a bend *c''*, fitting on its projection *c'*. These bends when in the machine almost rest on the sliding blade 22 and serve to release and lock the tension-gear 33 and to prevent the carriage from sliding out of the machine.

51 is a release-shaft journaled at the end *e* to plate E and at the other, 53, to support 55, held fast on both sides of the bed-frame 1. It has firmly secured near end *e* two bent wires 50 and 52 to act when the shaft is rotated on catches 34 and 41, causing the release of gear 33.

F is a projecting wire firmly secured to the left side of release-shaft 51 and on which rests a bent wire G, pivoted on the cross-lever *l* of adjusting-key L. This combination causes the rotation of shaft 51 when the key L is depressed.

M is a downward-projecting wire rigidly secured to shaft 51 and bent in its lower end *m*. This bend when the shaft rotates passes over the rear end of spacer-bar 36 and locks the keyboard.

58 is a small bent lever, as seen in Figs. 10 and 13, having near its lower bend an enlargement where it is fulcrumed on a horizontal bar 56, which extends from the left side of the bed-frame to about the center of channeled support 7. On this horizontal bar the bent lever 58 easily slides between two guides 57, in the back of which is fulcrumed the paragraph-adjusting lever 61. Paragraph-adjusting lever 61 projects out of the bed-frame 1 on the left side and is toothed on the under side to fix it after adjustment on catch 63, secured to the bed-frame. It is provided with a knob in its outer end and with a graduated scale on its front side. A spring 62, pressing on its upper side, prevents it from slipping out of catch 63.

The upper bend of lever 58 or paragraph-stop is so placed that when slightly turned, as seen by dotted lines in Fig. 10, it gets in the way of the bent end of sliding blade 22 of the platen-rotating device.

60 is a cross-bar pivoted on the upper side of the bed-frame and connected by rod 64 to the rear end of paragraph-key lever P. It passes over the lower bend of paragraph-stop 58 and serves to turn the stop when the paragraph-key is depressed.

P is a lever of the third class, pivoted at *d* and having an upward-projecting arm, on which fits the key O. Its rear end almost rests on cross-lever *l*, which it carries down when depressed.

K represents the keys, K' the key-levers, and R the cross-bar, on which the key-levers are fulcrumed. These levers belong to the first class, having a straight upward bend on the front arm to receive the keys and a semi-circular one on the rear arm to engage the lower arm of type-moving lever T, for which purpose they are provided with a pin, as seen in Fig. 17, to engage the fork of lever T.

T is a gun-shaped lever of the first class, pivoted on the front of guide W. Its lower or smaller arm is bifurcated, as seen at T'', Fig. 16, to receive the pin of the key-lever. T''', Figs. 16 and 18, show another construction, based on the same principle of lever T and key-lever K'. The upper or longer arm is pivoted to the type-bars V.

V are the type-bars. They are pivoted by one end to guiding-arms T' and on the other are secured the types. Guiding-arms T' are pivoted at their other end to their respective guides W. Guides W are formed by two sheets of metal (steel, preferably) of sufficient thickness to rigidly guide the type-bars from rest to the platen. Every type-bar is provided with an independent guide. They may be stamped out with a die, as shown in Fig. 14, and bent, as indicated by dotted lines, to their proper shape, as in Fig. 15, the projections *w* and *w'* serving to secure them to supports S and S'. Each type-bar V has in the end V' three types *v*, *v'*, and *v''*. Types *v* are the capitals, *v'* the small letters, and *v''* the numerals and other characters. When the type-frame 69, on which are fulcrumed or fastened the types, key-levers, spacer or universal bar, and the inking device, rests in its natural position, the small letters *v'* are printed on the paper. When depressed by means of the capitals-shifting key, the capitals *v* are printed, and when raised by the figures-shifting key the figures and other characters *v''* are printed.

Q is the capital-shifting key, attached to an upward projection of the third-class lever *q*, fulcrumed at *d* and pivoted at *q'* to a shoulder Z. This shoulder is fulcrumed at *z* to the bed-frame and, rotated by lever *q*, slips away from under the type-frame. As the type-frame is fulcrumed at 70 on cross-bolt 71 of the bed-frame 1 and has no support on its front side, it falls by gravity to the position shown by dotted lines in Fig. 4.

Y is the figures-shifting key, attached to a lever of the second class Y', fulcrumed at *d* and resting on the short arm of the first-class lever *y*. This lever *y* is fulcrumed at *y'* to the bed-frame, its longer arm reaching under the type-frame 69, which it raises when the key Y is depressed.

b is a small blade or lever fulcrumed at *b'*

on the inner side of cross-channeled support 7 of the bed-frame. Its lower end is bifurcated and bent inwardly, so as to receive the release-blade 15 between the two sides *i* and *i'*, as seen at Figs. 7 and 11. In its upper end is fulcrumed a catch-wheel *a*, having a horn or projecting tooth *h* and two notches, in which catches the bent end of spring *a''*, serving to arrest the rotation of the wheel. When in the machine, this device is moved by blade 15, and when the horn is in an upward position it arrests the motion of sliding blade 22, causing the platen to turn.

73 is the inking-roller, consisting of an iron core or shaft covered in all its length, except the ends, by an inking coating of some suitable material. Both ends of the roller fit on bearings attached to two connecting-bars 74, which are fulcrumed on cross-bar 75 of the inking-frame 76. The two connecting-bars 74 may be joined together by one or two cross-bars in order to give more rigidity to the structure. The rear cross-bar 77 of the inking-frame is prolonged beyond the two lateral bars 76 to meet both sides of the type-frame, on which they are fulcrumed at 78. On these prolongations are placed two spiral springs 79, so attached to both frames as to cause the downward push of side 75 of the inking-frame. The lateral sides have also a short prolongation beyond the cross-bar 75 to attach the ends of two springs 80, secured to bars 74 and serving to bring these bars in the direction of the sides 76. At the center of bar 77 is a small projection 81, to be acted on by pawl 82.

The inking-pad consists of a metal casing 83, supported by the type-bars resting-bar 84 and the type-bars guide-support S'. The inner side of this casing is lined with some suitable material for holding the ink that the inking-roller will impart to the types and so shaped in its lower part as to surround and embed half the periphery of the roller. On both sides of this pad and aiding to its support are two roller-guides 85, Fig. 1, to prevent it from going in an upward direction and guiding it to follow the surface of the types.

The inking-roller acting pawl 82 is placed so that its rear end rests on the spacer-bar and its front one on the projection 81 of the inking-frame. It is fulcrumed at 88 on cross-support 89, fastened on both sides of the bed-frame 1.

The spacer or universal bar 36, as seen more clearly in Fig. 5, is a rectangular frame ending at the rear in a single bar. It is fulcrumed, by means of cross-bar 86, to both sides of the type-frame 69 at 87. On its front side is placed the spacing-key and farther back a cross-bar 68, on which rest all the type-levers.

91 are two general guides rigidly secured to the type-frame 69, one on each side, and to the ends of the roller-guides 85, being bent toward a common point in the platen. They serve to guide all the types to that common point, securing, in conjunction with the guides

W of each type, a perfect alinement. Two knobs 92 are also provided for rotating the platen by hand.

The operation of the devices mentioned is as follows: To place the paper in the machine, it is pushed downward between the platen 4 and the paper-table 20 until it reaches the pressure or feeding roller 18, when by turning the platen in the direction of the arrow the paper, slipping between the platen and paper-fingers 12, will appear on the front side of the platen. When it reaches over the general guides 91 the desired distance, the marginal stops 11 are to be adjusted to any required distance from the edge of the paper. This is done by loosening their thumb-screw and sliding them in either direction required and when at the desired place securing them again. Then the distance for the beginning of paragraphs is adjusted. This is accomplished by slightly lifting the paragraph-lever 61 and sliding it in either direction until the scale has the number desired over catch 63, when the lever is released. The scale of the lever starts at the knob, and whatever distance there be between the knob and catch 63 that same distance will be left between the margin and the beginning of the paragraph. To bring the spot on the paper where the writing is to be started between the two points of the general guides 91, the carriage is pushed to the left, if it is to the right; but if it is to the left it must be released. To release the carriage, the adjusting-key is depressed. This causes its lever *L'*, which is fulcrumed at *d*, to be depressed in its rear end, carrying with it the left end of cross-lever *l*, to which it is pivoted. As this lever is connected by bent wire *G* to projecting wire *F* of release-shaft 51, it will cause the rotation of this shaft and the release of the tension-gear 33 through the action of release-wires 50 and 52 on catches 34 and 41. Gear 33 being released, the carriage is free to move in either direction and can be left at any desired place. If the carriage is left alone when the adjusting-key is depressed, it will go to the right until the left-hand marginal stop 11 knocks against the bend 14 of release-blade 15, when it will stop. If the writing is then started, it will begin just at the margin; but if space is desired the carriage is pushed to the left the required distance. When a key is depressed, it pushes the front end of the spacer down, as it rests on cross-bar 68 of the same; but being fulcrumed on cross-bar 86 its rear end will be raised, carrying with it lever 35. This will push upward catch 34, which will engage the tooth of gear 33 next above it, as seen in dotted lines of Fig. 3. The tension-gear 33 is held meanwhile by the retaining-catch 41. As soon as the key is released spring 42, acting on lever 35, will cause its downward movement, pulling by catch 34, which, being engaged to the tension-gear 33, will cause its rotation, and as this gear engages the catch 32, attached to the carriage, it will be moved a type-space

distance to the left. As the key-lever is depressed, it being fulcrumed at *R*, its rear end will ascend, but as it is bent in a semicircle the extreme end will be directed toward the operator, pulling by the lower arm of the type-bar-moving lever *T*, which it engages. The upper arm of *T* will go in the opposite direction of that toward the platen, taking along the type-bar *V*, to which it is pivoted, and causing the impression of a type in the paper. When the rear end of spacer-bar 36 is raised; it pushes up the end of the pawl 82, resting over it, and depresses thereby the opposite one. This will push down the projection 81 of the inking-frame 76, causing the upward motion of the opposite side of the frame and of the inking-roller to the position shown in Fig. 2. While reaching this position the roller rolls under the guides 85 and surface of the types, to which it imparts sufficient ink for the impression. The roller is returned to its position when the spacer is released by the springs 79 acting on the frame. When another key is depressed, the action of the parts referred to above will be repeated, so that each time a key is depressed a type will be printed on the paper and the carriage will move a type-space distance to the left. When the end of the line of writing is reached, the right-hand marginal stop 11 will knock and push to the left the bend *c''* of catch *C*, that holds the release-blade 15 in the position shown in Fig. 7. This will cause the catch to release the blade, which is then forced to the position shown by dotted lines by spring 48. During the change of position of blade 15 pin 47, attached to its lower end, pushes pin 49 of the release-shaft 51, causing the rotation of this shaft, which by means of release-wires 50 and 52, acting on catches 34 and 41, releases the tension-gear 33. The rotation of the shaft locks the keyboard by passing the bent end *m* of its downward-projecting wire *M* over the rear end of the spacer-bar 36. The tension-spring 38, acting on gear 33, gradually increases in tension as the carriage is moved to the left. This increase of tension when the gear is released causes the carriage to return to the right. The carriage will travel to the right until the left-hand marginal stop 11 knocks against bend 14 of release-blade 15, which is brought to its first position before the carriage is stopped. In the change of position of blade 15 when released by catch *C* it pushes side *i* of the bifurcated end of the automatic platen-rotating device *b*, Fig. 11, leaving it in the position shown by the dotted lines; but the horn will then be at *h*, in which position it will engage one of the teeth of sliding blade 22 as the carriage brings it to the right, and as the resistance occasioned by spring *a''*, to the rotation of catch-wheel *a*, is greater than that for turning the platen, blade 22 is forced to slide to the left until it reaches the line-space regulator 31, when, being of greater resistance than that of spring *a''*, the catch-wheel is turned, leaving the horn in

the position shown at h' , in which it will not interfere with sliding blade 22. As the release-blade 15 is returned to its first position by the left-hand marginal stop 11 it pushes side i' of the same device, causing it to take the position shown by full lines, in which, by a similar action to the one already explained, blade 22 is returned to its former position, leaving the horn as shown at h in full lines. When the blade 22 is slid to the left, it pulls by arm 25 of the platen-rotating lever 26 and raises the side of the lever where the pawl is fulcrumed. This causes the pawl to engage the ratchet-wheel of the platen and its rotation. When a paragraph is finished, to begin the next the paragraph-key is depressed. The depression of this key causes the paragraph-lever P to descend in its rear end, pulling by the right-hand end of cross-lever 60 by means of connecting-rod 64 and turning the paragraph-stop 58 as cross-lever 60 rests on its lower bend 59. This causes its upper bend to get in the way of the left-hand bend of sliding blade 22. In the depression of lever P, as its rear end almost rests on cross-bar l of adjusting-key L, this cross-lever is pushed down, causing, as already stated, the release of the tension-gear 33 and the return of the carriage to the right. In this return the bent end of sliding blade 22 knocks against the paragraph-stop 58, which after turning the platen stops the carriage. Now by releasing the key the new paragraph can be started.

By this mechanism, as may be clearly seen, after the machine is properly adjusted and the writing started it may be continued without interruption until the page is finished. In cases where errors or insertions are to be made by depressing the adjusting-key the carriage is free to move in either direction required, and as the type is printed between the two ends of the general guides 91 by placing the spot where the correction or insertion is to be made between these two ends it can be readily done.

What I claim, and desire to secure by Letters Patent, is---

1. In a type-writing machine, in combination with a rotating platen and a ratchet-wheel to rotate the platen, a rotating device consisting of a vertical lever vibrating in a plane parallel to the axis of the platen, on a support on the carriage, a pawl pivoted on the lever to engage the ratchet-wheel when the lever rotates, a sliding blade bearing projecting teeth, to act on the lever, and means to act on the teeth of the sliding blade and cause its forward-and-return motion, substantially as described.

2. In a type-writing machine, the combination in an automatic platen-rotating device, consisting of a vertical lever, a pawl, and a sliding blade, a vibrating blade or lever fulcrumed on the bed-frame, bifurcated in one end to receive and be acted on by the release-blade, and bearing a catch-wheel on the other end, provided with a horn and two notches to

engage and slide the sliding blade, substantially as and for the purpose described.

3. In a type-writing machine, in combination with a rotating platen, a ratchet-wheel, a pawl, a vertical lever, a sliding blade and means acting on same, a line-space regulator consisting of a thumb-screw sliding into an inverted-T groove, and a sliding nut inside of the groove, serving to secure the thumb-screw at any distance on said groove and arrest the motion of the sliding blade, substantially as described.

4. In a type-writing machine, in combination with a tension-gear meshing with a rack on the carriage, a propelling and retaining catch acting on the gear and a rocking shaft acting on the catches to release the gear, a release or adjusting key attached to a lever of the third class, a cross-lever of the second class connected to the key-lever, and a wire or link connecting the cross-lever with a projection on the rocking shaft to rotate same and cause the release of the tension-gear, substantially as described.

5. In a type-writing machine, in combination with an automatic carriage and an automatic platen-rotating device a paragraph-adjuster, consisting of a key attached to a lever of the third class, connected to a cross-lever of the second class, this lever acting on a paragraph-stop, the stop sliding between two guides on a horizontal bar, an adjusting-lever, toothed on one side to be fixed on a catch, and bearing a graduated scale on its front side, this lever being pivoted at one end to the stop-guides, and provided with a knob on the other, and a spring pressing on the lever, substantially as and for the purpose described.

6. In a type-writing machine, the combination of a rectangular frame, fulcrumed by one side to the lateral sides of the type-frame and provided with a small projection on the rear of this side of the inking-frame, to be acted on by the inking-pawl, two connecting-bars fulcrumed on the opposite side of this frame, an inking-roller journaled on these connecting-bars, an inking-pad to surround and impart ink to the inking-roller, and a pawl, fulcrumed on a cross-support of the type-frame, being acted on by the spacer-bar and acting on the inking-frame, substantially as described.

7. In a type-writing machine, a series of type-levers, consisting in levers of the first class, their front arms resting on a cross-bar attached to the spacer-bar and on which they act, these front arms being provided with a straight bend to receive the keys, and the rear one with a semicircular one to engage the moving levers of the type-bars by means of a pin on its end, substantially as described.

8. In a type-writing machine, in combination with a series of types, type-carrying arms, type-guiding arms, and key-levers, type-carrying arm-moving levers consisting in a lever of the first class, fulcrumed near its lower end on a type-guide W and having its

shorter and downward-projecting arm bifurcated to receive the pin in the key-lever end and its longer arm pivoted to the type-carrying arm to which it transmits the motion received from the key-lever, substantially as described.

9. In a type-writing machine, in combination with type-carrying arms, type-guiding arms and type-carrying arm-moving levers, a series of type-bar guides W, one for each set of type-bars, on which are fulcrumed both the type-carrying arm guiding-arm T' and type-carrying arm-moving lever T and serve them

as a guide in their motion to carry the type from rest to the platen, being provided with two projections to fix them in the type-frame, substantially as described.

In testimony that I claim the foregoing improvement in type-writing machines, as above described, I have hereunto set my hand this 14th day of May, 1897.

JOSÉ DELGADO AGUILAR.

Witnesses:

WILLIAM H. D. LASHED,
LELAND C. BACON.