

(No Model.)

C. O. BLANDIN.
WORD REGISTER FOR TYPE WRITERS.

No. 557,474.

Patented Mar. 31, 1896.

Fig 1.

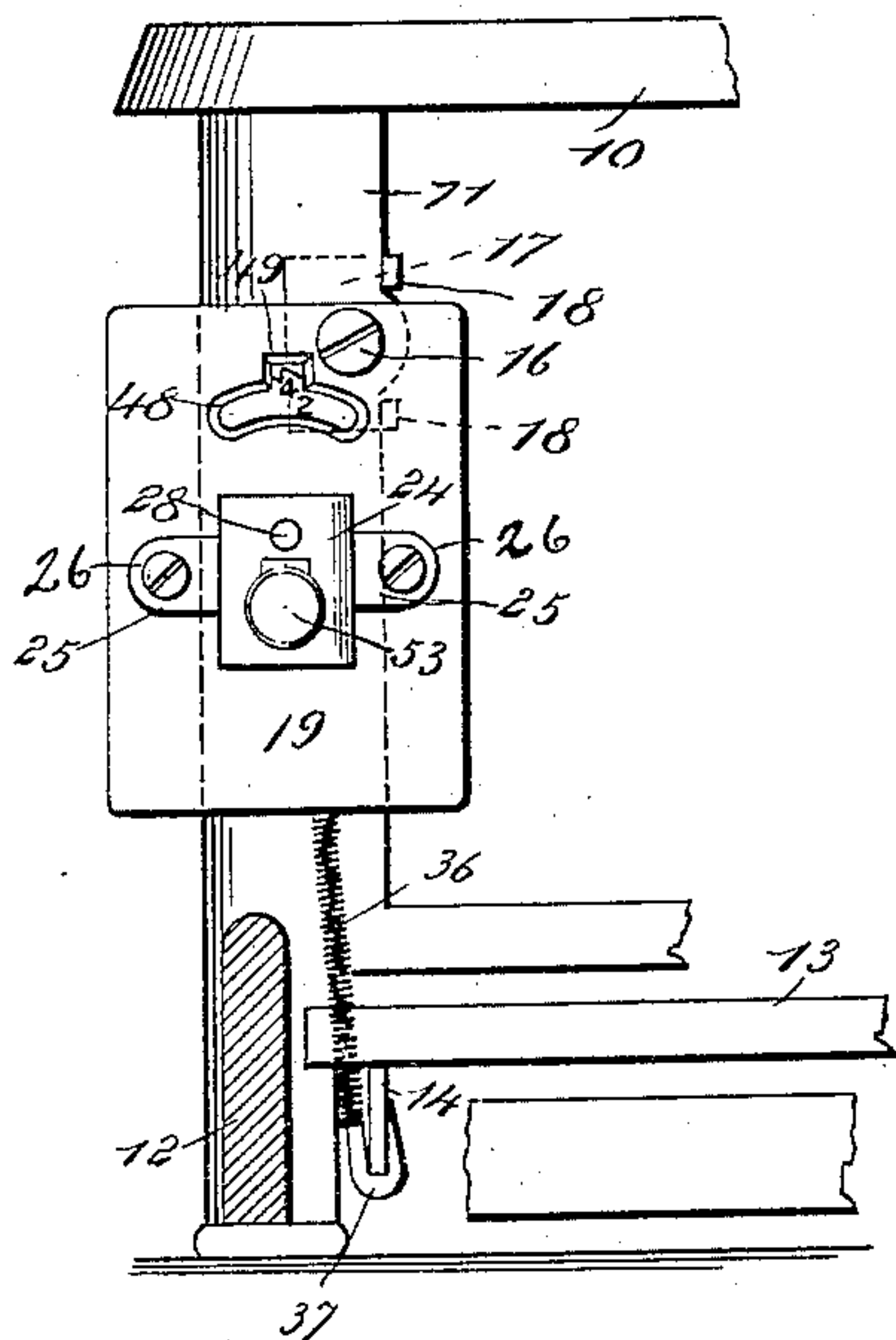


Fig 2.

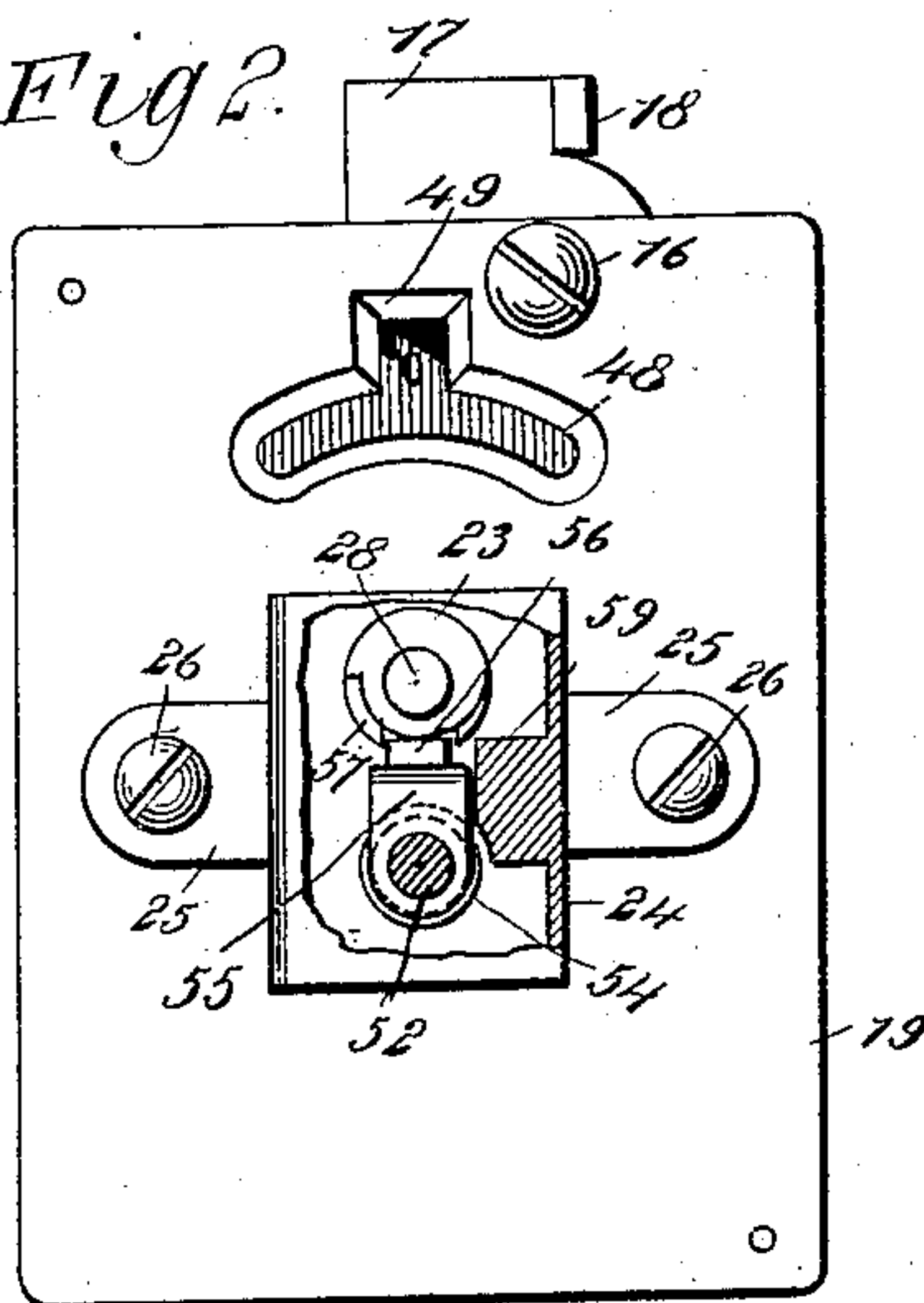


Fig 6.



Fig 7.

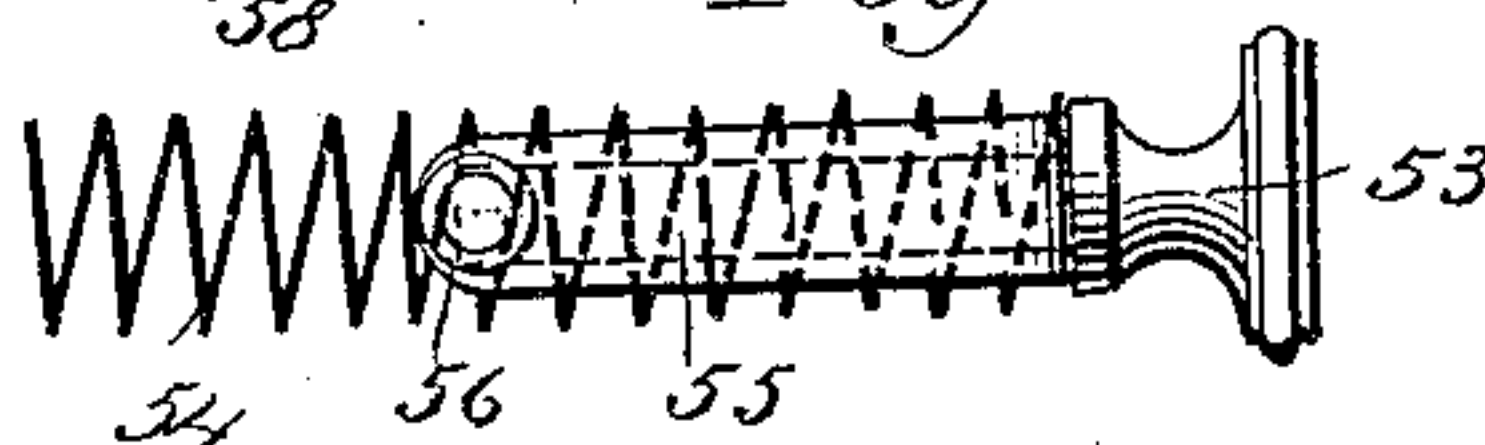


Fig 3.

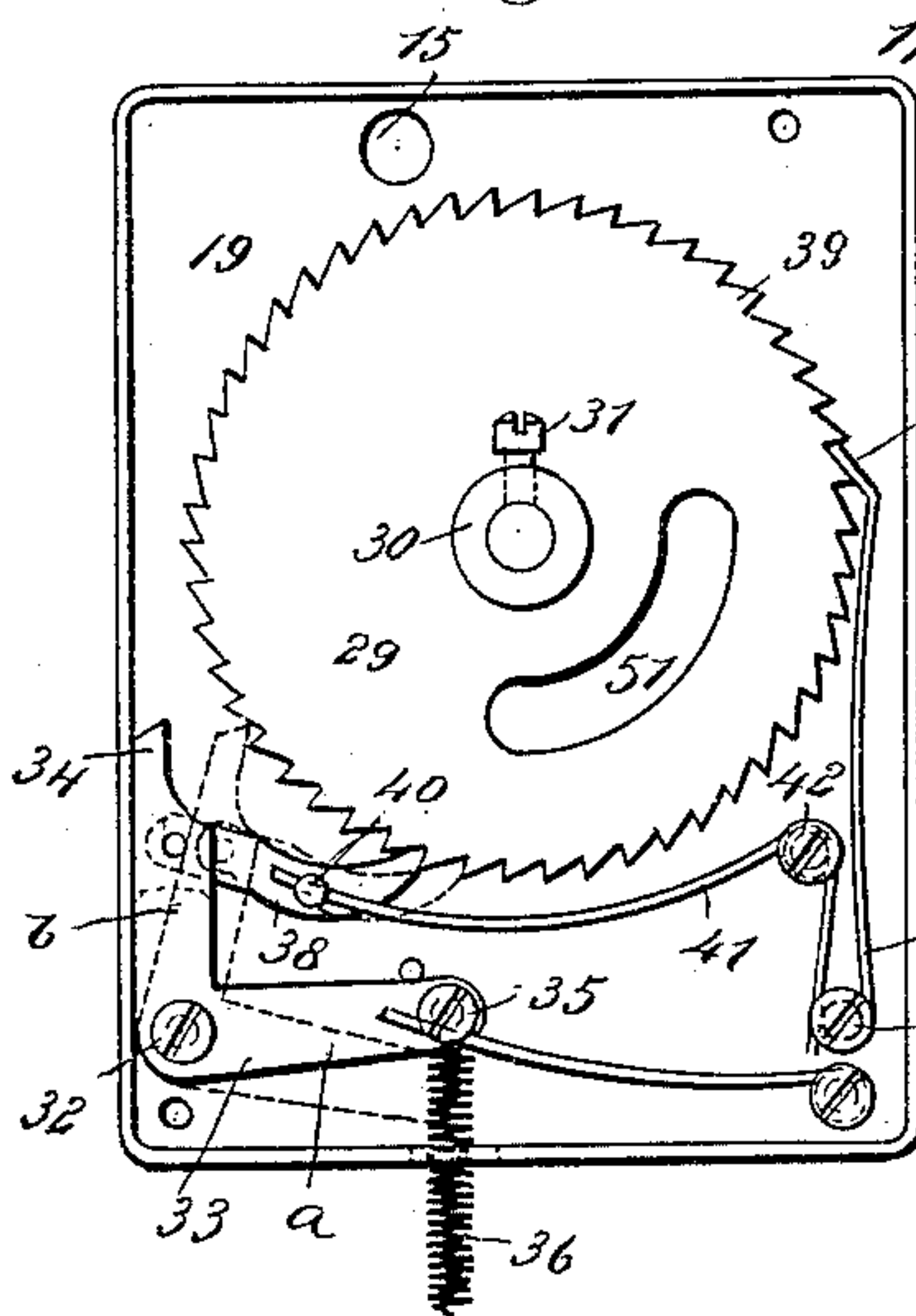


Fig 4.

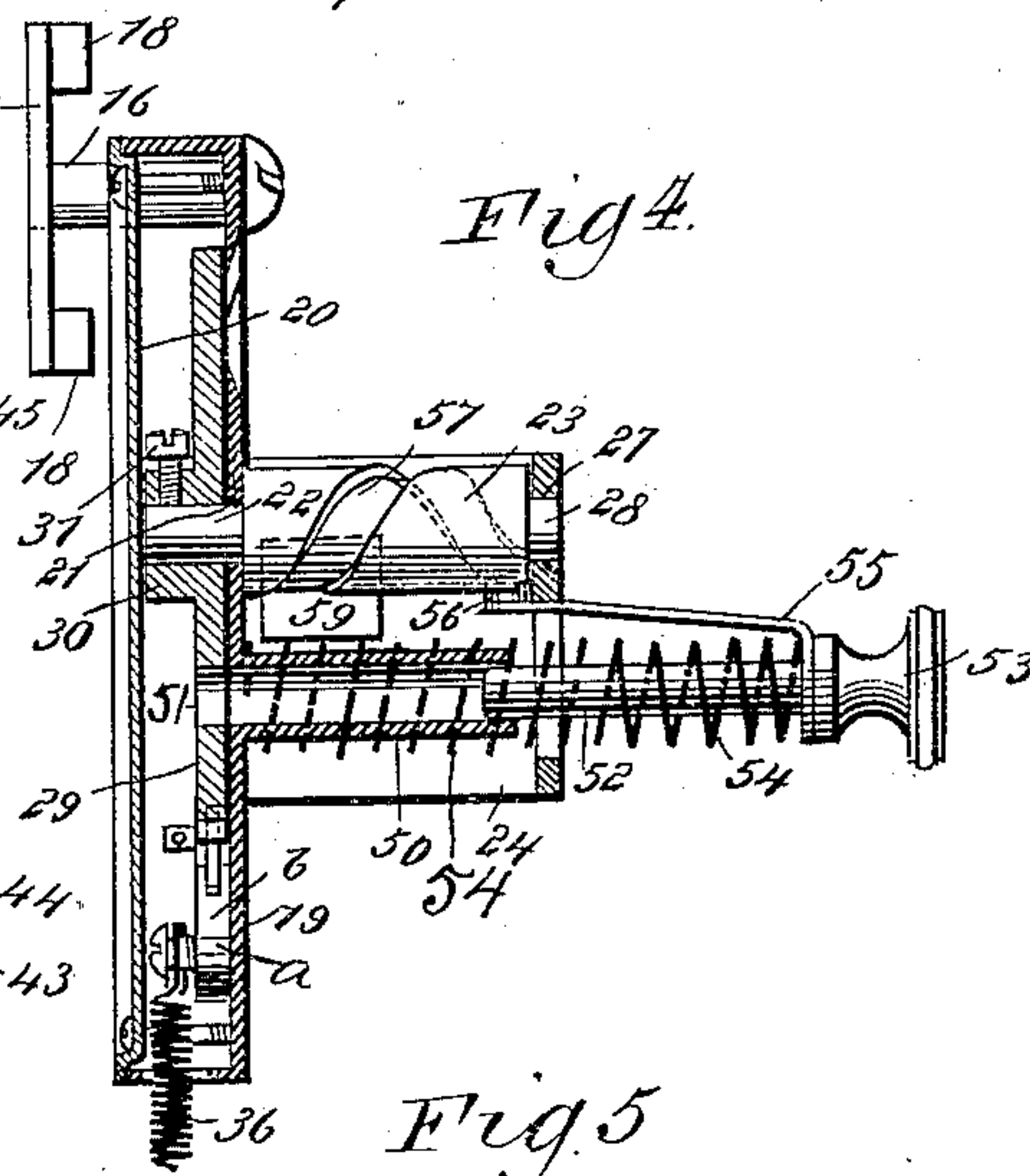
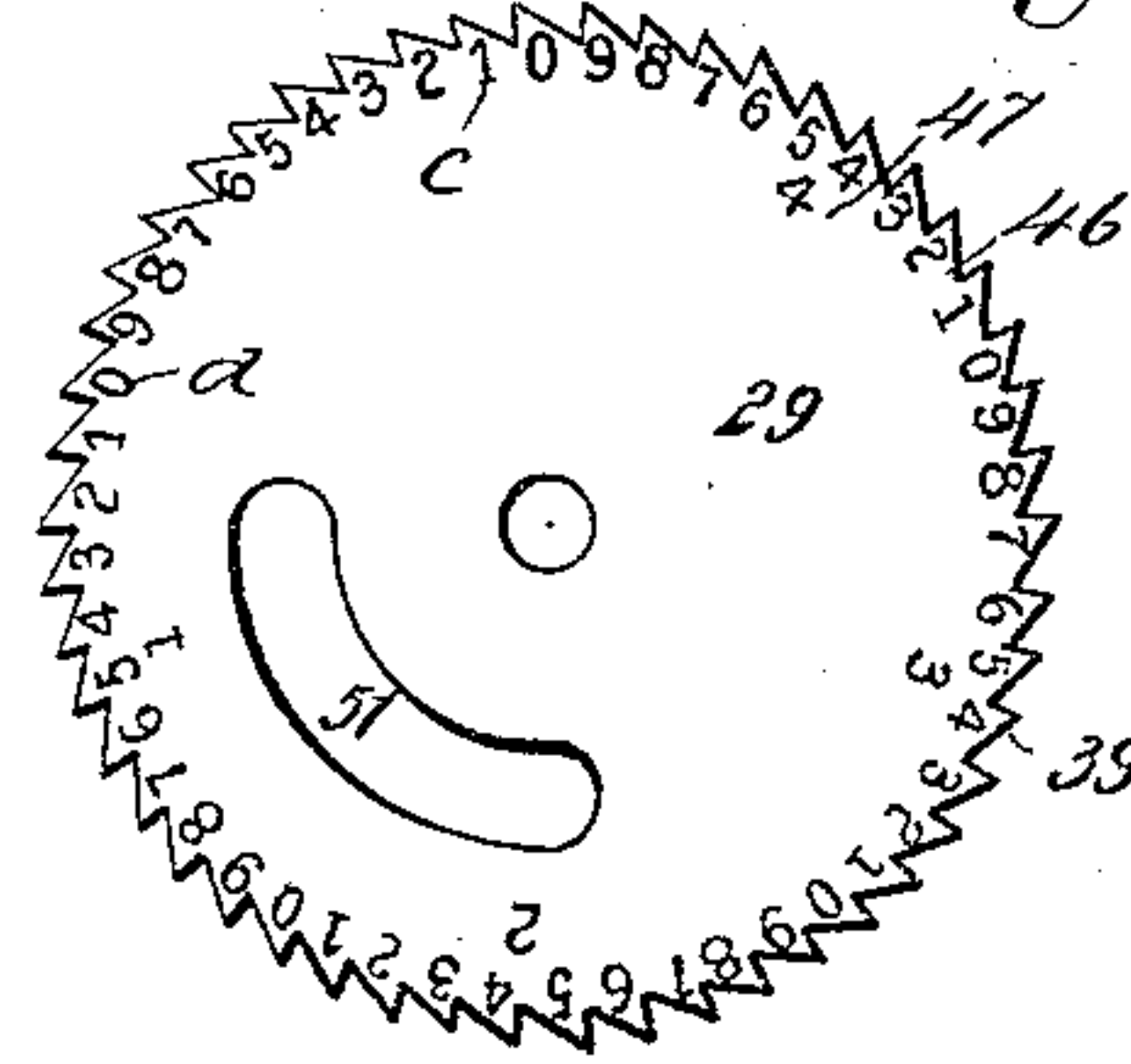


Fig 5.



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WORD-REGISTER FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 557,474, dated March 31, 1896.

Application filed May 31, 1895. Serial No. 551,231. (No model.)

To all whom it may concern:

Be it known that I, CLAYTON O. BLANDIN, of Hastings, in the county of Adams and State of Nebraska, have invented a new and Improved Word-Register for Type-Writers, of which the following is a full, clear, and exact description.

The invention relates to an improved apparatus for registering the number of words written by a type-writer. In commercial telegraphy the messages are usually written on a type-writer, and each movement of the space-bar thereof is regarded as one word in estimating the cost of the message. With this object in view I have provided a register which has a connection with the space-bar and which registers "1" at each operation thereof. By this means I am enabled to effectually register the number of words in a message.

The details of the device will be fully described hereinafter and the novel features finally embodied in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which the same characters of reference indicate the same or corresponding parts in all the figures.

Figure 1 represents a front elevation of a portion of the type-writer frame, showing my improvement attached thereto. Fig. 2 is an enlarged front elevation of my device, parts being shown in section. Fig. 3 is a plan view of the registering-wheel and the mechanism for operating the same, the back portion of the containing-box having been removed. Fig. 4 is a vertical section taken through the axis of the registering-wheel. Fig. 5 is a plan view of the registering-wheel, showing the part having numbering thereon. Fig. 6 is a side elevation of the worm-shaft for returning the registering-disk, and Fig. 7 is a side elevation illustrating the plunger-rod and its spring whereby the worm-shaft in Fig. 6 is operated.

I have shown my invention as applied to a Remington type-writer; but it will be obvious that by slight changes in the arrangement of the screwing-bolt other type-writers may be used as well. In Fig. 1 the reference-numeral 10 indicates the horizontal portion of the type-writer frame, which is supported by the vertical standards 11. 12 indicates

the outrunning front portion of the frame, which carries the keys, and 13 is a representation of the space-bar, which is supported by the horizontally and rearwardly extending rods 14. To the inner end of the right-hand rod 14 is attached a device 36 for connecting the said rod with the operating lever of the word-register, as shown in Fig. 1, and will be fully described hereinafter. The frame of the indicating device consists, essentially, of a rectangular box, and this box is provided at its upper end with an opening 15, (see Fig. 3,) through which the screw 16 passes, and the said screw 16 is extended horizontally through an opening in the left-hand standard 11. The inner end of the screw 16 is connected with a plate 17 having lugs 18 embracing the edge of the standard 11, and whereby the plate is securely clamped against the standard and the rectangular box or frame of the indicating device made rigid with the standard 11. The frame or box of the registering device consists of a front portion 19, which has an open rear side in which the back plate 20 is secured by means of screws passing through the back plate and into the front portion 19.

Formed in the front plate 19 is an opening 21, which receives the reduced inner end 22 of the worm-shaft 23. The said reduced end of the shaft 23 projects into the box or frame of the device and is adjacent to the inner side of the back plate 20.

24 indicates a U-shaped supporting-frame which has at each of its ends a foot 25, the same being extended outwardly from the frame and provided with screws 26, whereby they are rigidly secured to the front portion of the plate 19. The frame 24 projects out horizontally from the front plate 19 and is provided in its outer portion with an opening 27, which receives the reduced outer end 28 of the shaft 23. Thus it will be seen that by means of the opening 27 and the opening 21 the shaft 23 is securely mounted in a horizontal position and made capable of free rotary movement in its bearings.

29 indicates the registering-disk of the device, and this is provided with a hub 30, which receives the reduced end 22 of the shaft 23, a set-screw 31 being provided, whereby the disk is fixed to the shaft so as to rotate there-

with. The hub 30 is of a length equal to the thickness of the box or frame, so that it fits snugly within the same and serves to steady the wheel 29 in its movements.

5 32 (see Fig. 3) indicates a screw-pin which is screwed into the inner side of the front plate 19 and which has its head directly adjacent to the inner side of the back plate 20. This pin 32 serves as a fulcrum for the bell-
10 crank lever 33, which bell-crank lever comprises an approximately horizontal arm *a* and an approximately vertical arm *b*, the latter arm being provided with a spur 34 at its free end. Connected by a pin 35 to the free end of
15 the arm *a* is a coil-spring 36, which projects downwardly through an opening in the bottom of the box or frame to the bar 14 of the type-writer, and is provided at its lower end with a hook 37, whereby it is connected to
20 said bar. Thus it will be seen that as the bar is swung vertically with the space-bar 13 the movement of the bar 14 will be communicated to the spring 36, and thence to the bell-crank 33, whereby the bell-crank will be swung on
25 its fulcrum and the arm *a* moved to the position shown by dotted lines in Fig. 3.

Pivotally connected to the arm *b* at the inner side thereof, and at a point just below the spur 34, is a pawl 38, which is extended
30 approximately horizontally and which has its point adapted to engage with the ratchet-teeth 39 of the disk 29. Projecting horizontally from the pawl 38, and at the rear side thereof, is a pin 40, which is formed with a
35 transverse passage therein, and in which passage the spring-rod 41 is slidably mounted.

42 indicates a pin which is, as the pin 32, screwed into the inner side of the front plate 19 and which serves to assist in securing the
40 spring-rod 41 in place. A second pin 43 is also connected to the inner front side of the plate 19 and operates with the pin 42 to hold the said rod 41 in proper position. The rod 41 has a tendency to push the pawl 38 into
45 engagement with the disk 29 and will cause said pawl to continually engage the disk, as is shown in Fig. 3 of the drawings. It will thus be seen that as the spring 36 is drawn downward and the movement thereof com-
50 municated to the bell-crank 33 the arm *b* of said bell-crank will be moved inwardly and toward the disk 29, so that the pawl 38 will operate the wheel 29. Immediately after this operation the spur 34 will engage the wheel
55 29 and thereby stop the movement of the bell-crank 33 and also lock the wheel 29 against excessive movement. Thus it will be seen that the wheel 29 is moved at each operation of the bell-crank for a distance equal to the
60 length of one of the ratchet-teeth 39.

44 indicates a leaf-spring which is secured to the pin 43 and which projects upwardly parallel with the left-hand side of the box or frame to a point just above the shaft 23, its
65 free end being formed with an inwardly-projected portion 45, which is substantially a pawl and which engages with the ratchet-

teeth 39 of the wheel 29, the tendency of the spring 44 being toward the wheel. By this means the wheel is prevented from back
70 movement, and by the contact of the spring therewith the wheel is prevented from any loose and excessive movement in the forward direction.

By reference to Fig. 5 it will be seen that
75 two concentric lines of numbers are marked on the outer face of the wheel 29. The reference-numeral 46 indicates the outer line of numbers, which are one for each ratchet-
80 tooth on the wheel and which run from "0" to "9," there being four sets of numbers running from "0" to "9" in the said line 46. The line 47 is within the line 46 and comprises four numbers—"1, 2, 3, 4." These
85 numbers "1, 2, 3, 4" are arranged between the "4" and "5" of four of the sets of numbers comprised in the outer line 46 and compose the first figure of every number composed of tens and units which the device is
90 capable of registering. Thus the numeral "1" of the inner line 47 will compose the first numeral of all numbers within the "teens," while the next numeral, "2," of the line 47 will form the first numeral of all the num-
95 bers within the series of twenty.

Formed in the front plate 19, and at the upper edge thereof, is an arc-shaped slot 48, which has at its upper side and midway its
100 length an offset portion 49, and this slot 48 and its offset portion 49 are so arranged that the numbers of the outer line 46 will pass by the offset 49 and will successively show
105 through the same, while the main portion 48 is arranged to expose the numbers of the line 47; and the two parts of the slot are so arranged that at each step of the disk 29 a separate numeral will be exposed through the
110 offset 49, while the main part 48 will expose the same numeral for ten steps of the disk 29, which is attained by means of the elongated character of the main part 48. Thus it will be seen that as the disk begins to rotate (the parts having been previously ad-
115 justed so that the numeral indicated by the letter *c* in Fig. 5 will be first exposed through the slot 49) none of the numerals in the line 47 will be exposed until the disk has moved the numeral *d* (see Fig. 5) to the offset 49, whereupon the numeral "1" of the line 47 will
120 appear at the left-hand end of the main part 48 of the slot. This numeral "1" will continue to be exposed by the main portion of the slot until the numeral "9" of the series with which the numeral "1" operates is exposed by the offset 49, whereupon the nu-
125 meral "1" will disappear and the next numeral—namely, "2"—in the line 47 will be presented to view.

50 indicates a tube which is formed integral with the outer plate 19 and which pro-
130 jects out horizontally therefrom and parallel with the worm-shaft 23. This tube communicates with the interior of the box or frame and is so disposed that the segmental slot 51

of the disk 29 will be directly adjacent to its inner end when the position of the disk 29 is such as to place the slot 51 at the lower side of the disk. Reciprocally mounted within the tube 50 is a plunger-rod 52, which has an enlargement or head 53 formed at its outer end, and which has secured to said enlargement or head an expansion-spring 54, the said spring being arranged to embrace the tube 50 and to bear against the plate 19 at the base of tube 50, so as to give the rod 52 a tendency outward and to the position shown in Fig. 4.

55 indicates a spring-arm which is fixed to the rod 52 directly adjacent to the head or button 53, and it is bent at the upper side of the said rod so as to extend approximately parallel therein. From the bend at the upper side 52 the arm 55 extends inwardly to the inner end of the rod 52 and is provided at the upper side of said inner end with an anti-friction-roller 56. The said anti-friction-roller 56 is adapted to fit snugly within the spiral groove 57 of the main or enlarged portion of the worm-shaft 23, and this helical groove 57 is arranged to extend from the inner to the outer end of the shaft 23 and to make a complete circuit thereof.

58 indicates a groove extending parallel with the shaft 23 and having its inner end communicating with the inner end of the groove 57, while the outer end of the groove 58 rises to the surface of the shaft just inward of the outer end of the groove 57, so that said groove 57 will have an unbroken shoulder forming its inner side, for a purpose hereinafter described. This mechanism is for setting or returning the disk 29 to the condition of zero, as indicated in Fig. 2, after the disk has registered the words of a message and when it is desired to register the words of a second message. This is effected as follows: When the disk 29 rotates under the influence of the bell-crank 33 and its pawl 38, the shaft 23 will be moved in unison therewith, and as the shaft 23 revolves the roller 56 will travel in the groove 27 and be drawn downwardly, owing to the helical disposition of the groove. When now it is desired to return the disk 29 to the position in Fig. 2—namely, to “0”—the rod 52 should be pushed into the tube 50, which will cause the arm 55 to move inwardly and will force the roller 56 to traverse the remainder of the groove 57, and since the arm 55 is incapable of any lateral movement the shaft 23 will be caused to rotate, so as to complete that single rotation of which the first-described movement of the shaft 23 was the beginning. As the shaft 23 rotates and is made to complete the rotation which was once started, the disk 29 will be caused to operate similarly, and upon completing its rotation will be placed in the position which it first occupied. The arm 55 is prevented from lateral movement by means of the frame 24, which has an opening receiving the arm and allowing it to slide therein, but which is so small that the arm will have no

lateral play. To further insure the rigidity of the arm 55, the frame 24 is formed at its right-hand inner side with a projecting portion 59, which extends inwardly and bears against the arm 55 when the same reaches the inner portion of the frame 24, so that when the outer part of the frame 24 will no longer exercise a strengthening influence on the arm 55 the projection 59 will take the place of the frame 24 and prevent any lateral movement of the arm. Simultaneously with the return of the disk 29 the inner end of the rod 52 will be projected into the space inclosed by the box or frame, and this projection of the rod 52 will not take place until the return of the disk 29 is almost completed and until the slot 51 of the disk is located directly adjacent to the inner end 52. By this arrangement of the parts the inner extremity of the rod 52 is permitted to project into the slot 51, and the disposition of the slot 51 in relation to the cooperating parts is such that one end of the slot will engage with the rod at the moment the disk has been completely returned, so that the engagement between the slot and the rod will make it impossible for the disk to move further, and will, therefore, be an automatic stop which insures the proper return of the disk. After the arm 55 has been moved inwardly and the anti-friction-roller 56 has completed its operation in the helical groove 57 and the return of the disk 29 has been effected the spring 54 may be allowed to act on the rod 52 and its arm 55 and to return the same to the position shown in Fig. 4, this action being made possible by the return-groove 58, which furnishes a passage-way for the roller 56. As the roller travels up the groove 58 it will be gradually moved toward the tube 50, owing to the taper in the depth of the groove, until, at the outer end of the groove, the roller will engage the side of the worm-shaft, and next snap over the side of the groove 57 and again enter the said groove. The return movement will now be complete and the device ready for a second operation.

From the foregoing description the use and operation of my invention will be clear, and it is only needed for me to add that when it is desired to register the number of words comprised in a message written on a type-writer having my improvement applied thereto all that is necessary is to adjust the parts to the position of Fig. 1, whereupon every movement of the space-bar 13 will be communicated to the disk 29 through the medium of the spring 36 and bell-crank 33. This movement of the space-bar 13 will result in a step-by-step movement of the disk 29 and a consequent display of numerals at the slots 48 and 49, and in this display of numerals the lower number and that which is disclosed by the main part 48 of the slot will be the first of every number indicated which is formed of tens and units, while the upper number and those disclosed by the branch 49 will be the second number. Thus in Fig. 1 the register is shown as indicat-

ing the number "24," and in Fig. 2, where the device is supposed to be at rest, the character of "0" is shown to be exposed through the offset part 49 of the slot. When the message
 5 has been completed and the number indicated by the register noted, it will be desirable to change the said device, and this is effected by simply pushing in the rod 52, which will produce the operation thus desired and return
 10 the parts to the position of Fig. 2—namely, to "0".

It will be obvious that my invention is susceptible of slight changes in the form and embodiment of the elements, and particularly
 15 such changes as will adapt the frame or box to different styles of type-writer. Indeed, I contemplate various such minor changes, so that the device will be capable of use on every style of type-writer, or, rather, so that devices
 20 capable of use on the respective forms of type-writers may be manufactured.

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

- 25 1. In a word-registering device for type-writing machines, the combination of an indicating wheel or disk having a slot therein, a connection between the wheel or disk and a moving part of the type-writer, a return or resetting device for the wheel or disk, and a rod
 30 movable toward and from the wheel or disk and capable of entering the slot therein simultaneously with the operation of the return or resetting device, substantially as described.
- 35 2. In a word-registering device for type-writing machines, the combination of an indicating wheel or disk having a slot therein, a connection between the disk or wheel and a mov-

ing part of the type-writer, a worm-shaft on which the wheel or disk is mounted, a rod
 40 movable toward or from the wheel and capable of entering the slot therein, and an arm fixed to the rod and operating with the worm-shaft simultaneously with the inward movements of the rod, substantially as described. 45

3. In a word-register for type-writers, the combination with a casing, of a registering-disk within the casing, means for operating said disk, a worm-shaft formed on the axis of said disk, a frame fixed to the casing, a tube
 50 rigid with the casing, a rod movable in said tube, and an arm carried by the rod and operating with the worm-shaft, substantially as described.

4. In a word-register for type-writers, the
 55 combination with a casing, of an operated registering-disk, a worm-shaft connected with the axis thereof, a frame surrounding the worm-shaft, a tube on the casing, a rod movable in the tube and longitudinally with the
 60 worm-shaft, an arm carried by the rod, and a block or projected portion carried by the frame and juxtaposed to the arm, substantially as described.

5. In a word-register for type-writers, the
 65 combination of an operated registering-disk having a slot therein and resetting mechanism for the disk, said mechanism comprising a member movable into the slot of the registering-disk immediately prior to the comple-
 70 tion of its return, substantially as described.

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