

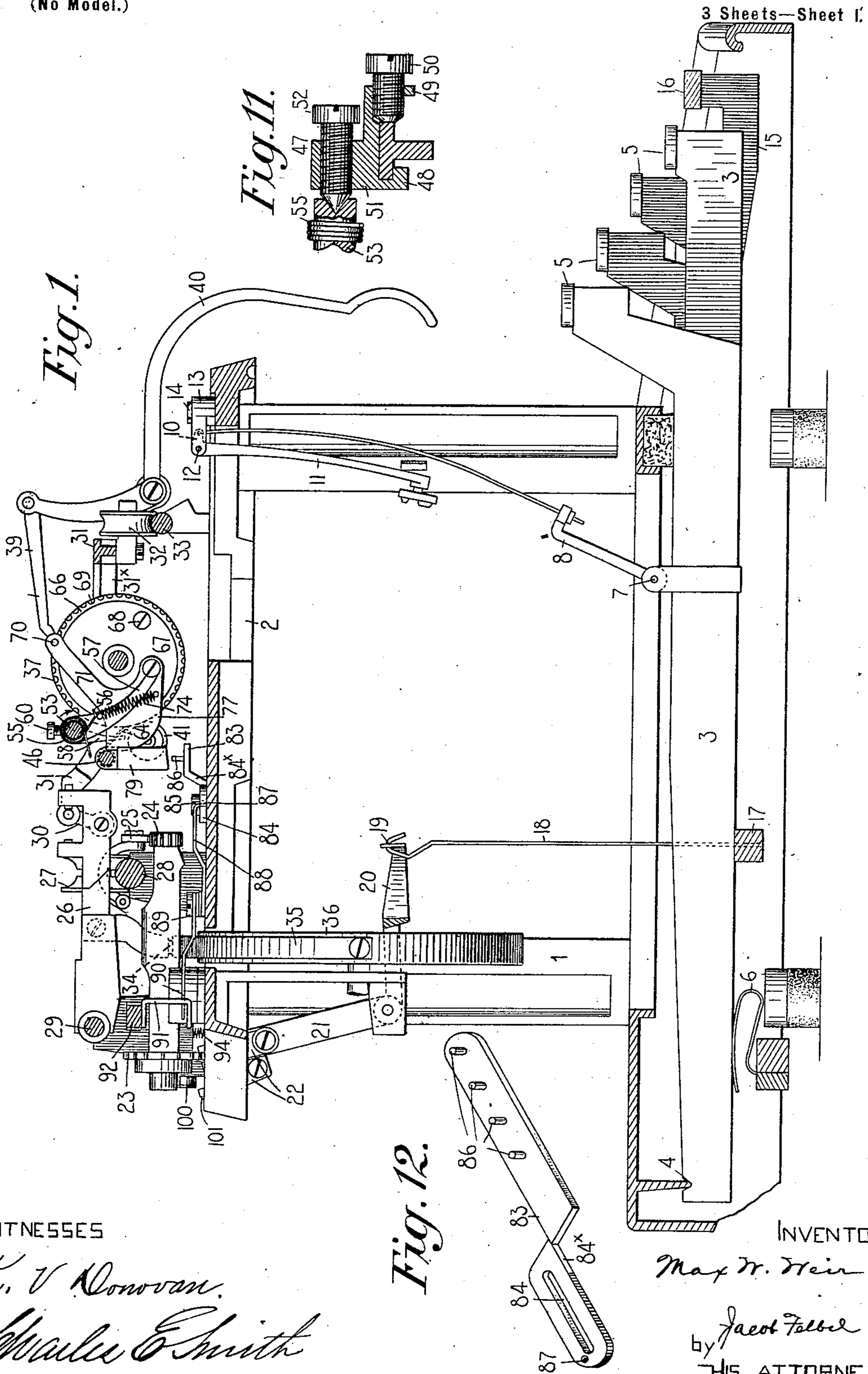
No. 706,136.

Patented Aug. 5, 1902.

M. W. WEIR.
TYPE WRITING MACHINE.

(Application filed May 31, 1902.)

(No Model.)



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3 Sheets—Sheet 2.

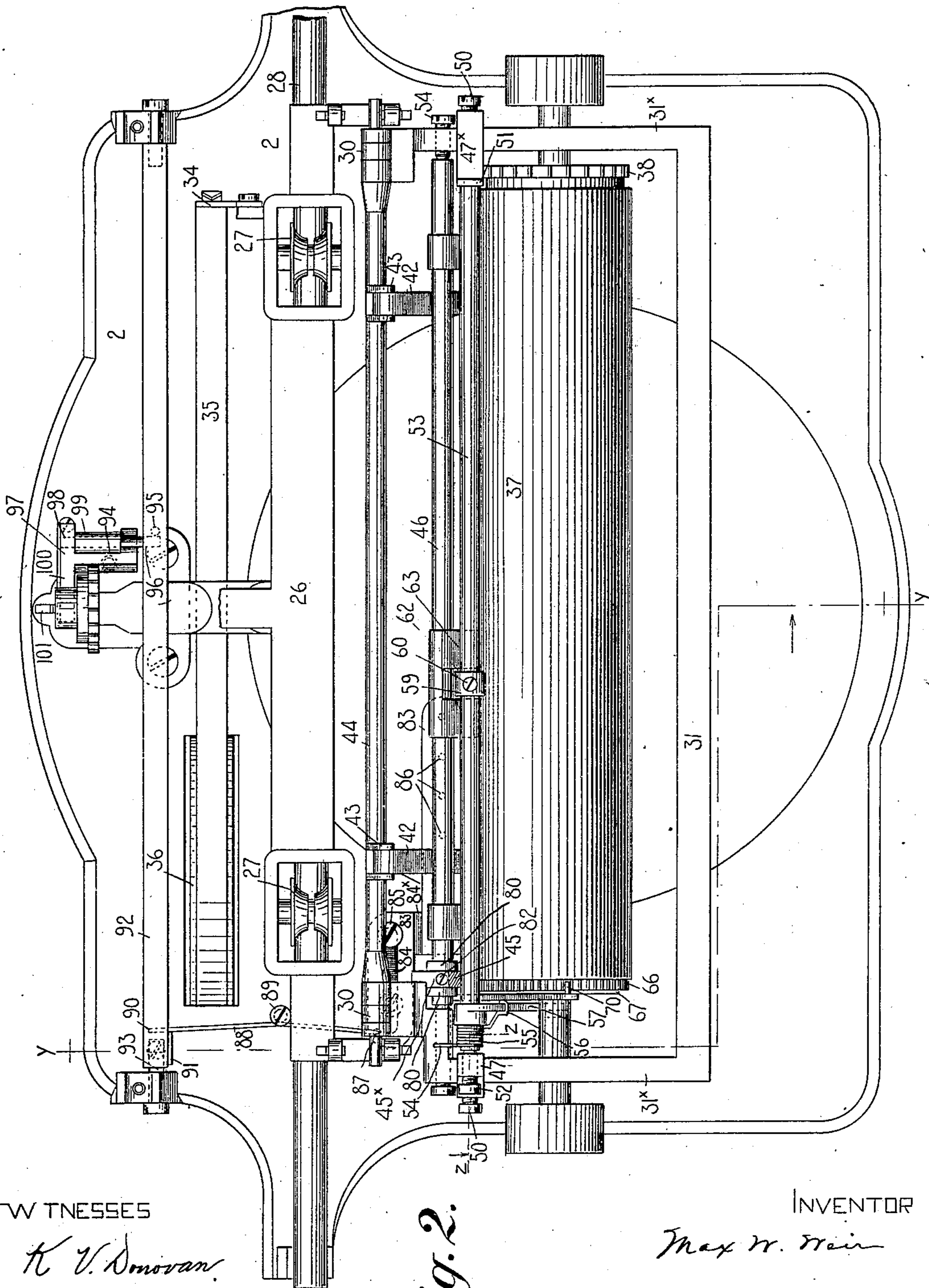


Fig. 2.

WITNESSES

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INVENTOR

Max W. Weir

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3 Sheets—Sheet 3.

Fig. 3.

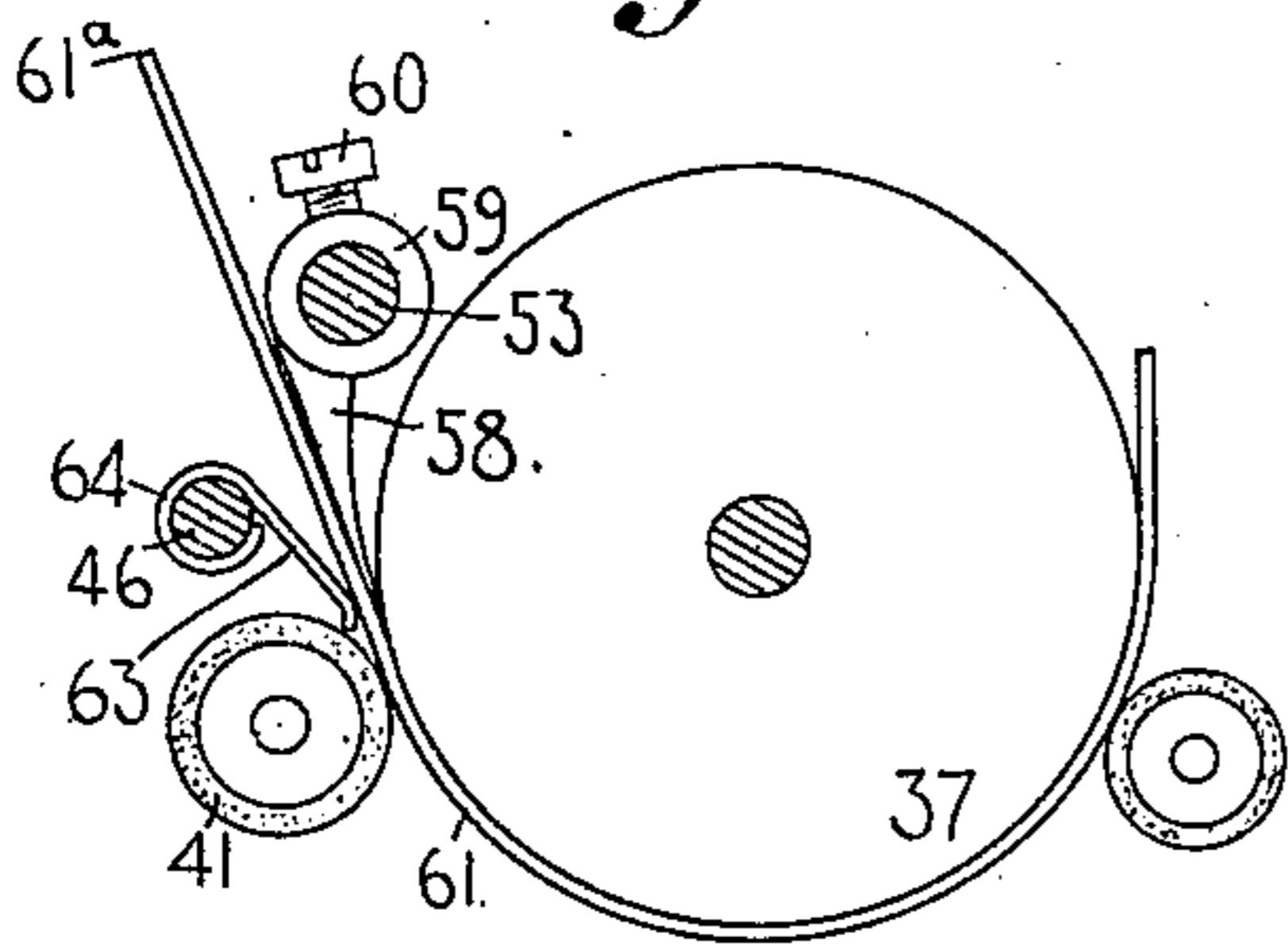


Fig. 5.

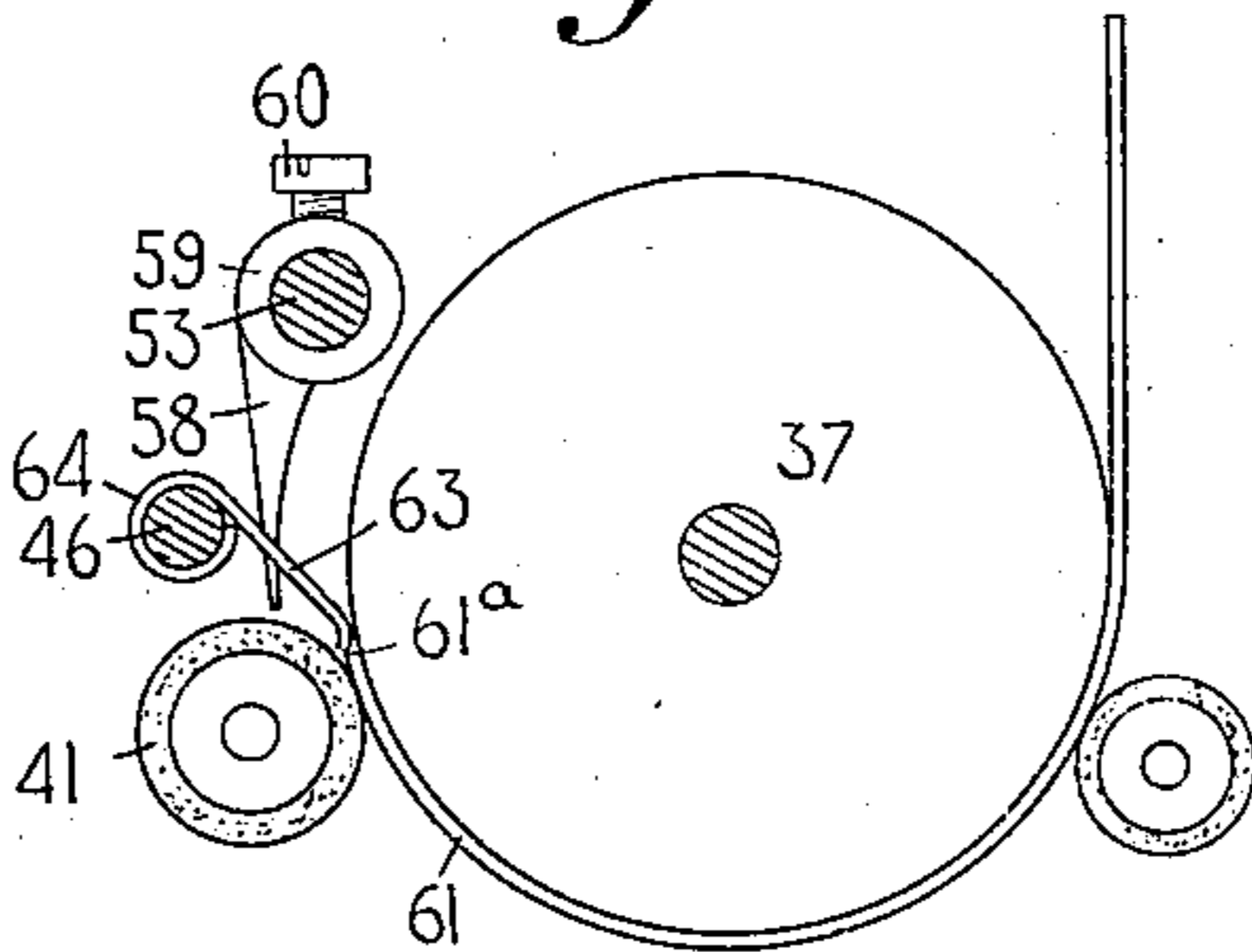


Fig. 4.

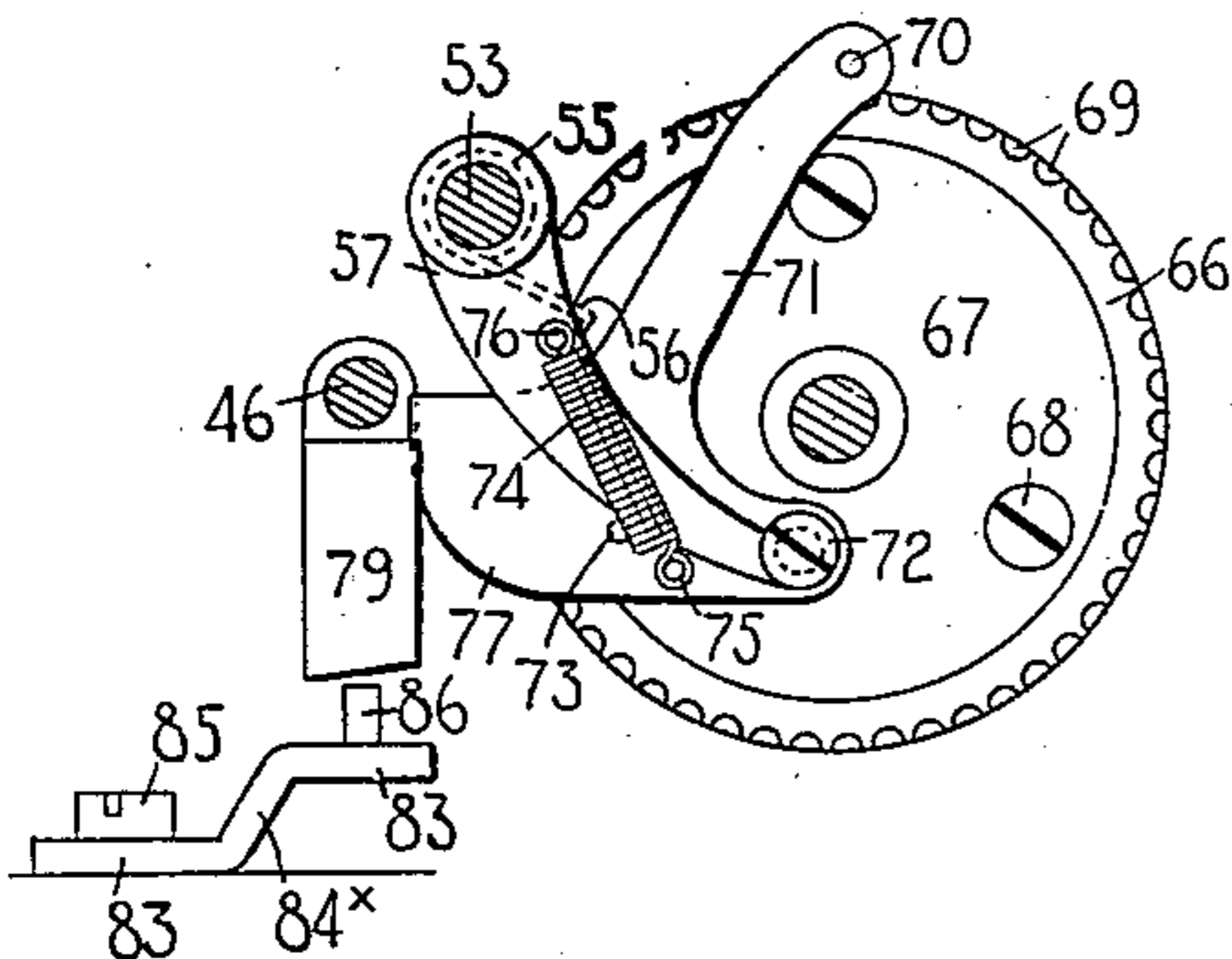


Fig. 6.

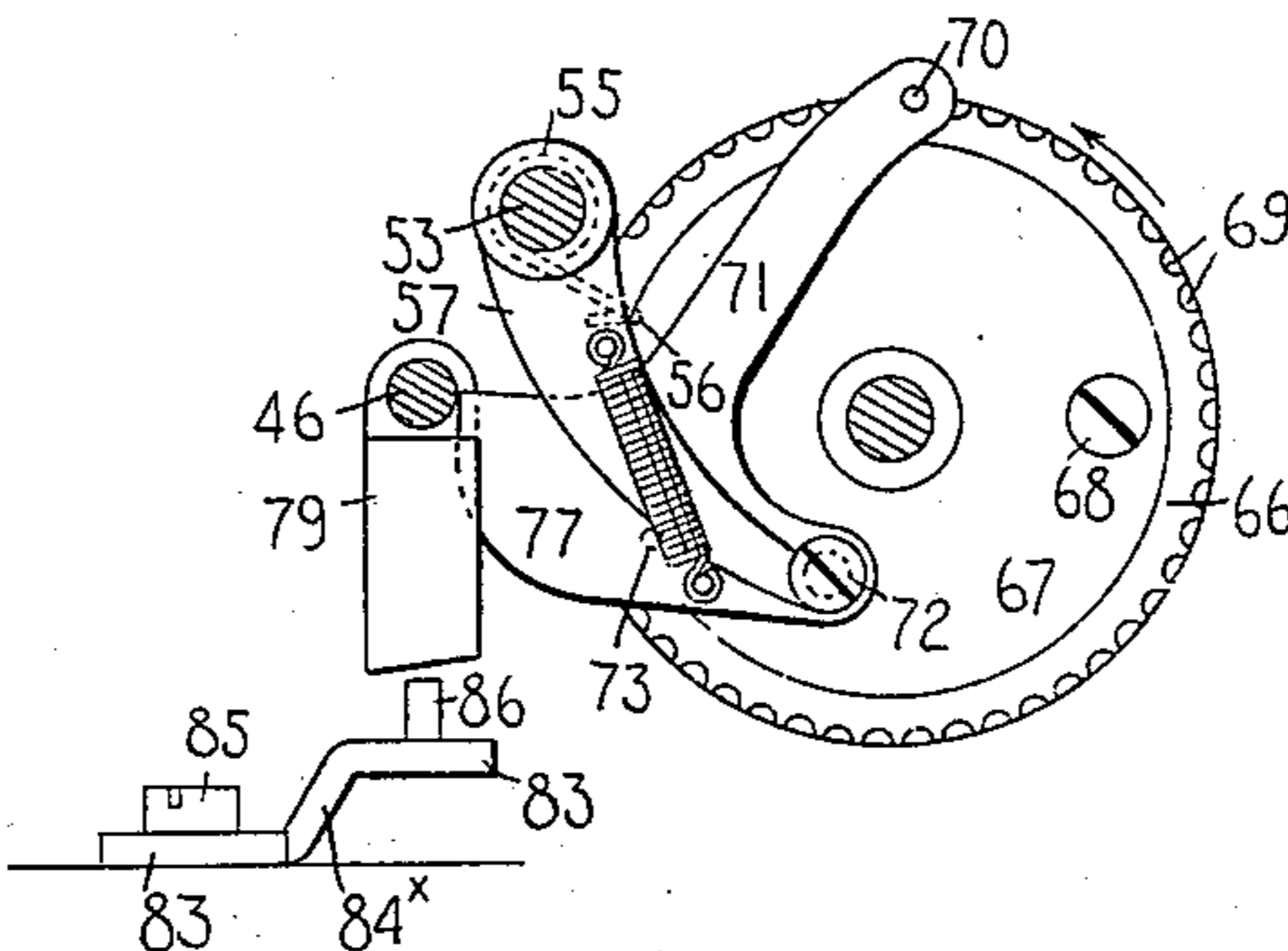


Fig. 7.

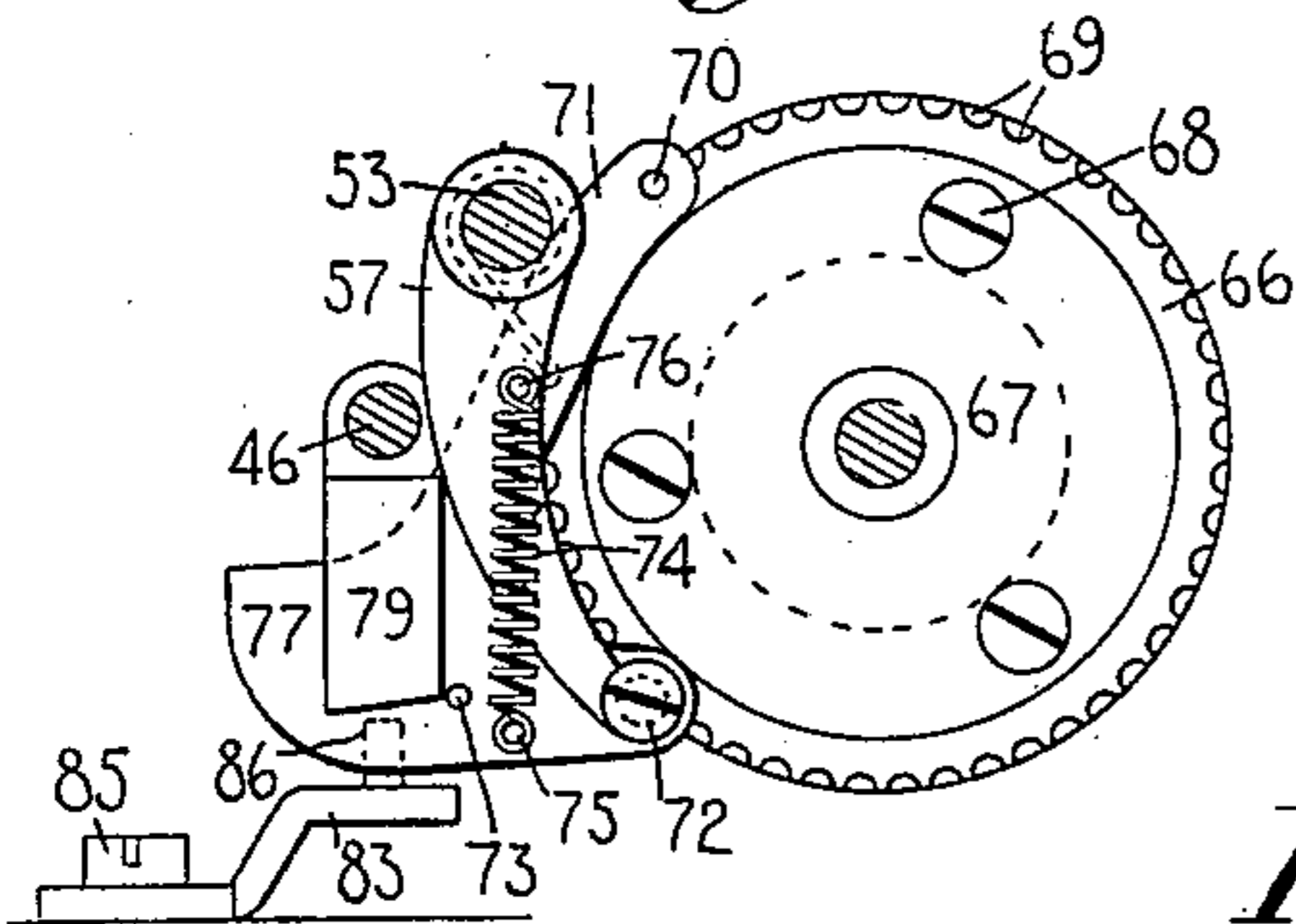


Fig. 8.

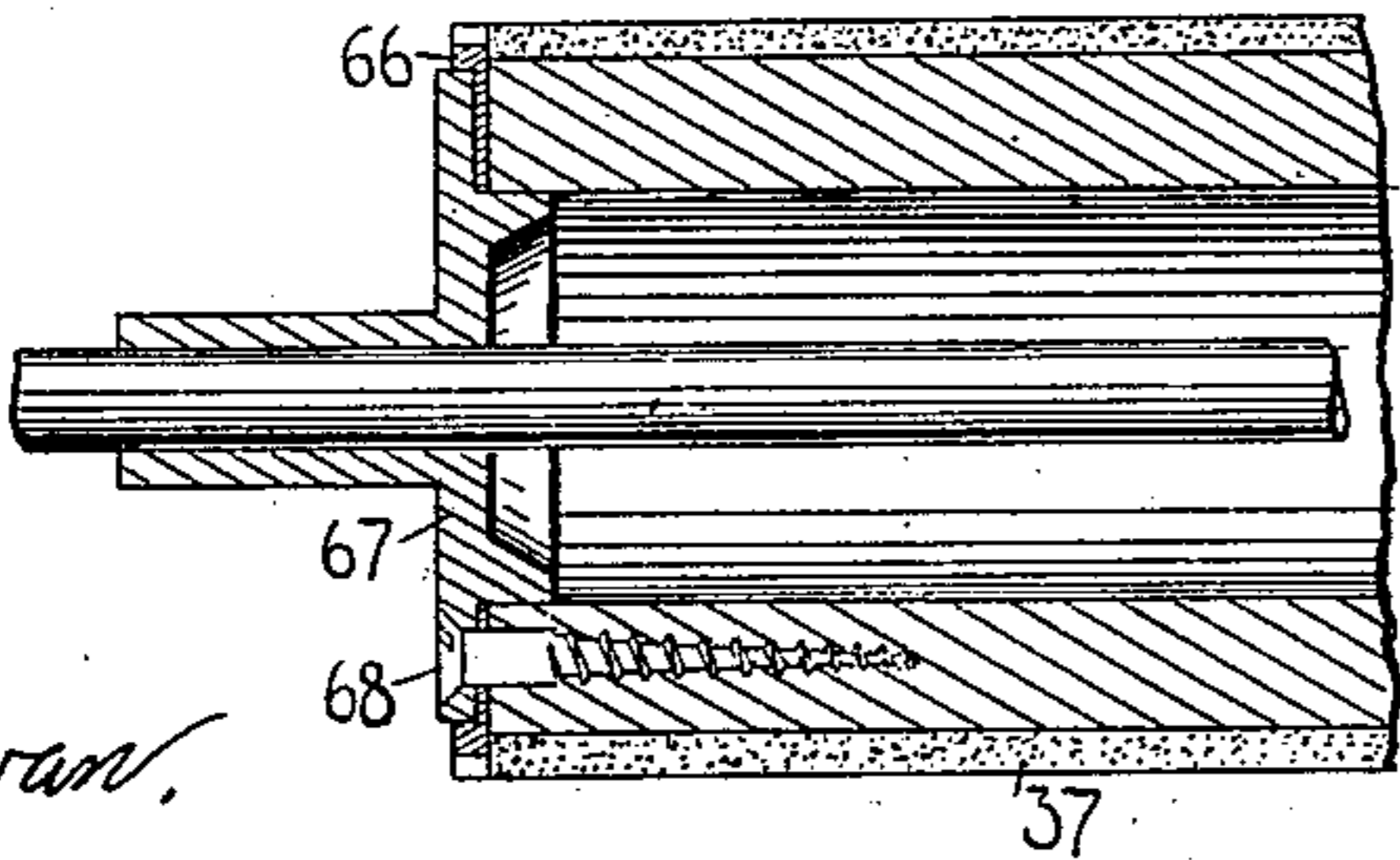


Fig. 9.

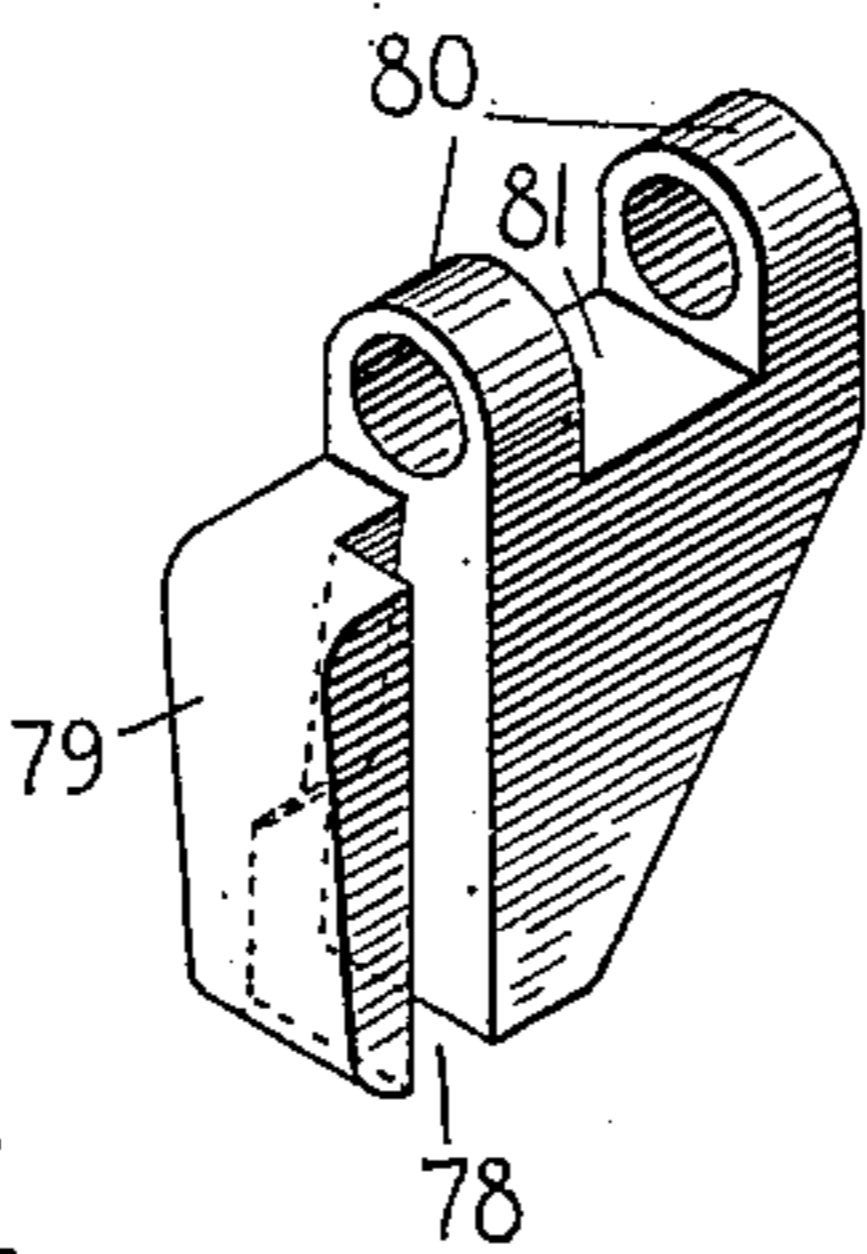
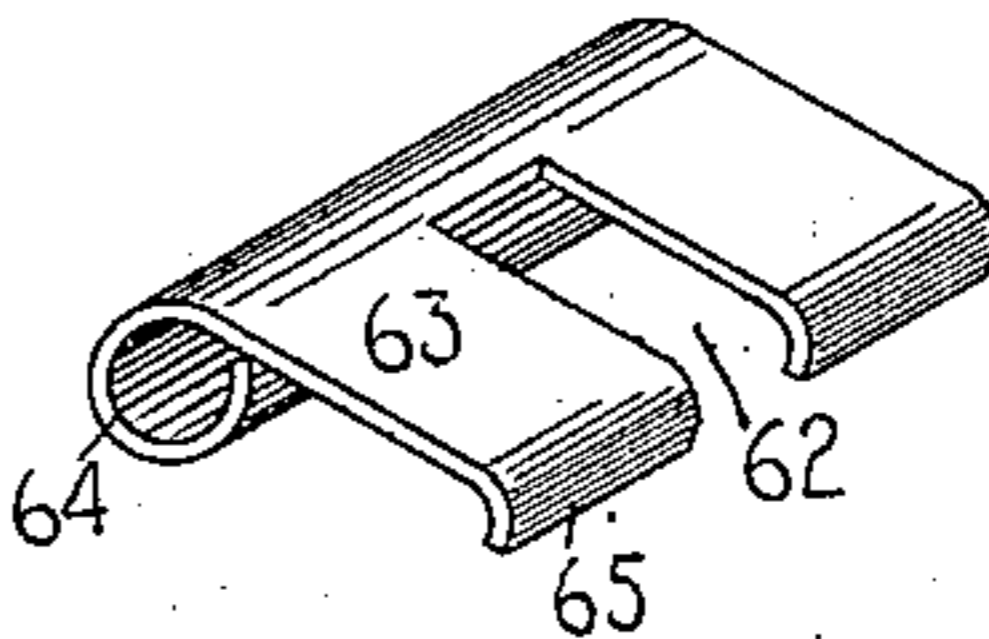


Fig. 10.



WITNESSES

K. V. Donovan,
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Max W. Weir

by Jacob Felbel
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

MAX W. WEIR, OF NEWARK, NEW JERSEY, ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 706,136, dated August 5, 1902.

Application filed May 31, 1902. Serial No. 109,758. (No model.)

To all whom it may concern:

Be it known that I, MAX W. WEIR, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My present invention relates to type-writing machines, and more particularly to means for automatically notifying the operator when the bottom of the page is being approached and for automatically locking portions of the machine out of operation when the bottom of the page has reached a predetermined point with relation to the printing-center, thereby avoiding writing too far down on the page or printing upon the platen after the bottom edge of the paper has been fed past the printing-point and conducing to greater uniformity in ending the pages and avoiding injury to the platen.

A further object of my invention is to provide simple and efficient mechanism of the character described, which may be regarded in the nature of an attachment, that can be applied to existing forms of type-writing machines and wherein little or no structural change in the machine itself is necessary in order to apply the attachment.

In the drawings, wherein sufficient number of parts of one form of type-writing machine are shown to illustrate my invention in its application thereto and wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical front to rear sectional view of a type-writing machine embodying my invention, the section being taken on the line *yy* of Fig. 2 and looking in the direction of the arrow at said line. Fig. 2 is a plan view of the machine with the keyboard and type-bars omitted and parts broken away. Fig. 3 is a diagrammatic transverse sectional view of the platen and certain of the cooperating parts, the parts being shown in their normal positions with the paper in place on the platen. Fig. 4 is a diagrammatic end view of the platen and certain of the cooperating parts, the parts being shown in their normal positions and corresponding to the positions of the parts in Fig. 3. Fig.

5 is a diagrammatic transverse sectional view corresponding to Fig. 3, except that the parts are shown in different positions. Fig. 6 is a diagrammatic end view of the parts illustrated in Fig. 4 and shown in the positions which correspond to the disposition of the parts in Fig. 5. Fig. 7 is a view similar to Fig. 6, except that the parts are shown in the locking position. Fig. 8 is a fragmentary longitudinal sectional view of the left-hand portion of the platen. Fig. 9 is a detail perspective view of the guiding or restraining block. Fig. 10 is a detail perspective view of the shield, to be hereinafter described. Fig. 11 is an enlarged detail fragmentary sectional view of one of the supporting-brackets and certain of the cooperating parts, the section being taken on the line *zz* of Fig. 2 and looking in the direction of the arrow at said line. Fig. 12 is an enlarged detail perspective view of the actuating-slide.

I have shown my invention applied to a No. 6 Remington machine, though obviously the invention may be applied to other characters of type-writing machine and various changes in the construction may be made to facilitate such application.

The frame 1 is surmounted by a top plate 2, and key-levers 3 are fulcrumed at 4 in the frame and are each provided with a finger-key 5 and a restoring-spring 6. The key-levers are each connected at 7 to a two-part link 8, which is pivotally connected at its upper end to an arm 10, that extends from a type-bar 11, pivoted at 12 to a hanger 13, that is secured by a screw 14 to the top plate. Extending beneath the key-levers 3 and the levers 15 of the space-bar 16 is a universal bar 17, that is connected to upright links 18, hung at their upper ends 19 on the transverse bar 20 of the dog-rocker 21, which carries feed-dogs 22, that cooperate with an escapement-wheel 23, operatively connected to a feed-pinion 24, that meshes with a feed-rack 25, pivoted to the paper carriage or truck 26, that carries traverse-rollers 27, which bear upon the traverse-rod 28 and is guided by a traverse-rod 29, both of said rods being supported upon the top plate of the machine. Connected to the truck by links 30 is a platen

frame or carriage 31, which carries a grooved traverse-roller 32, that coöperates with a shift-rod 33 and by means of which the platen-frame may be shifted transversely for upper 5 and lower case writing. The carriage is connected to one end 34 of a band 35, that has its opposite end connected to a spring-drum 36. The platen-frame 31 carries a platen 37, a line-spacing ratchet-wheel 38 being secured 10 to the right-hand end thereof, and a line-spacing pawl 39, controlled by a hand-lever 40, coöperates with the ratchet-wheel to effect a rotation or line-spacing movement of the platen.

15 The paper-feed rollers 41 are mounted upon a shaft, which is supported upon arms 42, that are pivoted to ears 43 on a fixed cross-bar 44 of the platen-frame and are released in the usual manner by an arm 45, that is secured to the rock-shaft 46. The parts thus 20 far described constitute portions of the well-known No. 6 Remington machine, and a more detailed description thereof is unnecessary.

The T-shaped end bars 31^x of the platen-frame 31 have brackets 47 and 47^x removably 25 secured thereto. Each of these brackets consists of an engaging finger 48, which is adapted to engage under the top and on the inner side of its end bar, as shown in Fig. 11, and 30 a downwardly-extending lug 49, that projects down on the outside of the bar. This lug 49 is tapped to receive a screw 50, the stem of which passes through the tapped opening in the lug and bears at its inner end against the 35 flange of the end bar, so as to securely connect the bracket to the platen-frame. Each bracket is provided with an upwardly-extending arm 51, that on the left-hand bracket being tapped to receive the stem of a screw 40 52, that has a coned end which constitutes a bearing for one end of a rock-shaft 53, which extends throughout the length of the platen adjacent to the point of introduction of the paper. The bracket 47^x is apertured to re- 45 ceive and constitute a bearing for the opposite end of the shaft. One end 54 of a coiled spring 55 is secured to the platen-frame near the left-hand bracket, whereas the opposite end 56 of the spring is connected to a crank- 50 arm 57, that is secured to the rock-shaft 53, as shown in Fig. 2, so that the tension of the spring is exerted to turn the rock-shaft in the direction of the arrow in Fig. 1. Secured near the center of the rock-shaft 53 is a down- 55 wardly-extending finger 58, formed integral with a sleeve 59, which surrounds the shaft and carries a set-screw 60, that passes through a threaded opening in the collar and bears at its inner end against the rock-shaft, thus se- 60 curing the finger and rock-shaft together. The tension of the spring 55 tends to turn the rock-shaft so that the finger will be projected across the path of the paper 61 as it is introduced into the machine, as will be apparent 65 from an inspection of Fig. 5. The finger projects through a slot 62, Fig. 10, in a paper-

shield 63, which is bent at 64 to surround the shaft 46 and be supported thereby, and the lower end of the shield or guide is bent at 65, 70 where it is adapted to rest upon the usual paper-apron, (not shown,) and thus constitutes a guide for directing the paper to the bight between the feed-rollers 41 and the platen 37, as indicated in Fig. 3, and the paper as it is introduced will tend to deflect 75 the finger from the position shown in Fig. 5 to that indicated in Fig. 3, thus turning the rock-shaft 53 against the tension of its spring, or the screw 60 may be employed as a finger- 80 piece to turn the shaft, and thus move the finger 58 out of the path of the paper and permit it to be freely introduced to the bight between the feed-rollers and platen. After the paper has been so introduced the finger-piece 85 or screw 60 may be released, thus permitting the finger 58 to bear under the tension of the rock-shaft spring upon the upper face of the paper, while the lower face is supported be- 90 neath the finger by the shield 63, as shown in Fig. 3.

The left-hand end of the platen has a so-called "locking-wheel" 66 secured thereto be- 95 tween the usual platen-head 67 and the body of the platen, the usual platen-head screws 68, Fig. 8, passing through holes in the platen-head and through corresponding holes in the 100 body of the locking-wheel. One face of the locking-wheel is recessed to receive the platen-head, so as to reduce the thickness of the wheel and not add materially to the length 105 of the platen. This locking-wheel has peripheral depressions 69 therein, which form teeth, and these depressions are adapted to receive a pin 70, that projects inwardly from a platen-locking device 71, which is pivoted 110 at 72 to the crank-arm 57, hereinbefore referred to. The locking device carries an outwardly-projecting pin 73, that is adapted to abut against the arm 57 and limit the move- 115 ment of the device in one direction relatively to the arm. A coiled contractile spring 74 is secured at one end to a pin 75, which projects from the locking device, and at its oppo- 120 site end to a pin 76, which projects from the crank-arm 57, thus tending when the parts 125 are in the positions shown in Fig. 4 to maintain the locking-pin 70 out of engagement with the locking-wheel.

The locking device has a rearwardly-ex- 130 tending abutment trip or stop 77 formed thereon, and this stop is seated in the groove 78 of a guiding or restraining block 79. (Shown in detail in Fig. 9.) The block is provided with apertured ears 80, which form 135 a bifurcation 81 between them. The shaft 46 extends through these ears, Fig. 2, and the boss 45^x of the arm 45 (for actuating the shaft 46) is seated on the shaft in the bifurcation of the block, and the boss and arm being se- 140 cured to the rock-shaft by a set-screw 82 pre- 130 vents the block from moving along the shaft. The purpose of the block is to afford a sup-

porting means for the abutment 77 to prevent a lateral deflection thereof when it contacts with a cooperating abutment on the frame of the machine, as will hereinafter more clearly appear.

Supported upon the top plate of the machine is a slide 83, which is shown in detail in Fig. 12. This slide has a slot 84, and the stems of headed screws 85 pass therethrough and into threaded openings in the top plate to guide the slide and limit the movement thereof transversely of the machine or in the direction of the travel of the carriage. The slide is in the nature of an angle-iron, which has a base portion through which the slot 84 is formed, an inclined bracket-like portion 84^x, and a supporting part that extends to the right of the part 84^x, Fig. 2, and from which stop-pins or abutments 86 project upwardly and extend in a series in the direction of the travel of the carriage. The slide is also apertured at 87 for the reception of a bent end of a stiff spring 88, which is loosely coiled around a screw 89, projecting upwardly from the top plate and extending rearwardly where the end 90 extends to the right of a depending arm 91 of a longitudinally-movable rod or bar 92 of the line-lock mechanism, which mechanism is illustrated in the present instance as the same as that employed on the No. 6 Remington machine and for which a patent was issued to George B. Webb February 22, 1898, No. 599,428, though it should be understood that any suitable line-lock mechanism may be employed. The line-lock mechanism comprises the longitudinally-movable rod or bar 92, which is movable on pivot-pins 93 and is normally maintained toward the right by a spring 94, as will hereinafter more clearly appear. This bar 92 has a downwardly-projecting pin 95 extending from the lower side thereof, Fig. 2, and which is to the right of a rearwardly-extending pin 96 on a line-locking device 97, that is pivoted at 98 to a bracket 99, secured to the top plate. The device 97 has an arm 100, that projects in the direction of the travel of the carriage and is adapted to be moved down in front of a locking-finger 101 on the dog-rocker and prevent a forward movement thereof, and thus prevent a depression of the universal bar and finger-keys.

The spring 94, hereinbefore referred to, normally maintains the free end of the locking-arm 100 out of the path of the finger 101 on the dog-rocker and at the same time causes the pin 96 to bear on the pin 95 to maintain the bar 92 toward the right.

The stiff spring 88 is loosely seated on the screw 89 and normally affords no tension upon the parts, the screw merely acting as a pivot upon which the spring turns, and while the action of the spring is in the nature of a lever it also has a resilient function, as will hereinafter appear.

In the operation of the device the paper is inserted in the machine in the usual manner

after turning the spring-pressed finger 58 out of the path thereof, as indicated in Fig. 3. This results in turning the rock-shaft 53 against the tension of the spring 55. The finger 58 will at this time bear upon the upper side of the paper, and the pin 70 and abutment or trip 77 will be maintained out of the engaging or operative position, as illustrated in Fig. 4. The operator may continue to write until the edge 61^a passes beyond the finger 58, as illustrated in Fig. 5, when the paper no longer constitutes a support for the finger, and the spring 55 turns the rock-shaft and forces the finger into the aperture 62 in the shield 63. This results in moving the locking device from the position shown in Fig. 4 to that illustrated in Fig. 6, thereby bringing the locking-pin 70 into a depression 69 in the locking-wheel. A rotation of the platen in the direction of the arrow in Fig. 6 for one, two, or three line-space distances, accordingly as the line-spacing is set for half, full, or double space distances, will result in moving the locking device 71 from the position shown in Fig. 6 to that illustrated in Fig. 7, when further movement thereof will be arrested and the locking-wheel and platen will be prevented from further rotation. The movement of the locking-piece 71, just described, carries the abutment or trip 77 into the path of the pins 86 on the slide 83. Should the carriage be at the left-hand side of the machine and the operator attempt to return the carriage to the right to begin a new line of writing, the trip 77 will be brought into contact with the pins 86 and the slide 83 will be moved for the limited distance with the carriage toward the right. This movement is effective to turn the spring 88 on its pivot 89, at the same time placing the spring under tension, and effect a longitudinal movement of the bar 92 toward the left, which movement of the bar results in a depression of the locking-arm 100 through the pins 95 and 96. A depression of the locking-arm 100 projects it into the path on the dog-rocker, and the dog-rocker, universal bar, and finger keys will be locked against operation. It will be understood that only a comparatively slight movement of the carriage from the extreme left-hand position toward the right is permitted before the trip 77 is brought into contact with the stop-pins 86, so that the operator is warned when the end of a page has been reached. The locking of the finger-keys against depression and the locking of the platen against line-space movement, however, precludes an operation of the machine at this time. Should the operator for any reason desire to release the locking mechanism, it may be readily accomplished by turning the rock-shaft 53 through the finger-piece or screw 60—that is to say, a rearward movement of the finger-piece will cause the finger 58 to be moved forwardly, at the same time turning the rock-shaft 53 to release the pin 70 from the depression 69 in the lock-

ing-wheel, and the tension of the spring 74 will restore the device 71 to the normal position indicated in Fig. 4, thereby at the same time moving the trip 77 away from the pin 86, with which it is in contact, and the slide 83, spring 88, and line-locking mechanism will be restored to the normal or unlocked positions by springs 88 and 94 and the carriage is free to be moved in either direction and the platen is free to be rotated to effect a line-spacing movement. When the end of the page passes the finger 58 and the pin 71 engages the locking-wheel, one or more line-spacing movements of the platen may be effected, or the platen may be rotated until the locking device 71 has reached the limit of its movement, as indicated in Fig. 7. As before explained, this limit of line-spacing movement of the platen after the pin 70 engages the locking-wheel is dependent on the character of the line-space and the platen will be arrested from rotation accordingly as a half, full, or double line-space is employed; but in any event the platen is always locked against rotation when the edge 61^a of the paper reaches a certain distance from the printing-center.

If the locking device 71 is moved to the position shown in Fig. 7 when the carriage is at the extreme right, a movement of the carriage from right to left will be prevented, and if the carriage has traveled to a position where the trip or abutment 77 is opposite a space between two of the pins 86 and locking device 71 is moved to the position shown in Fig. 7 at this time a movement of the carriage in either direction is prevented or limited.

From the foregoing description it will be understood that means are provided which are controlled by the paper for affording an actuation of the line-locking mechanism for arresting a line-spacing movement of the platen and for preventing a complete travel of the carriage in either direction when the bottom edge of the paper reaches a predetermined point with relation to the printing-center and that the operator is not only warned by locking the several parts referred to, but is actually prevented from operating the machine either to move the carriage, to turn the platen, or to depress the finger-keys.

While I have shown one manner of carrying out my invention, it is obvious that various changes may be made without departing from the spirit of my invention and that certain features of the invention may be employed with or without the others.

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

1. In a type-writing machine, the combination of paper-feeding devices, printing instrumentalities and means controlled by the paper for affording a locking of said paper feeding and printing instrumentalities.

2. In a type-writing machine, the combination of a platen, type-bars, finger-keys, and means controlled by the paper for preventing a line-spacing movement of said platen

and for affording a locking of the type-bars against printing.

3. In a type-writing machine, the combination of a platen, and means controlled by the paper for preventing a letter and line space movement of the platen.

4. In a type-writing machine, the combination of a carriage, a rotary platen, and means controlled automatically by the paper for locking the platen against rotation and for preventing a complete travel of the carriage in either direction.

5. In a type-writing machine, the combination of a carriage, a platen, key-actuated printing instrumentalities, line-lock mechanism, and means controlled by the paper for automatically affording an actuation of said line-lock mechanism and for locking the platen against line-spacing movement.

6. In a type-writing machine, the combination of a platen, key-actuated printing instrumentalities, line-lock mechanism, and means controlled by the platen during the line-spacing movement thereof, for affording an actuation of said line-lock mechanism.

7. In a type-writing machine, the combination of a carriage, a rotary platen carried thereby, printing instrumentalities, line-lock mechanism, controlling means carried by the carriage for actuating said line-lock mechanism, and means operatively connected to the platen for actuating said controlling means by a line-space movement of the platen.

8. In a type-writing machine, the combination of a carriage, a platen carried by said carriage, key-actuated printing instrumentalities, line-lock mechanism, a trip carried by the carriage for actuating said line-lock mechanism, a locking-wheel carried by the platen, and intermediate mechanism between said locking-wheel and trip, for moving the trip to the operative position.

9. In a type-writing machine, the combination of a carriage, a platen carried by said carriage, key-actuated printing instrumentalities, line-lock mechanism, a trip carried by the carriage for actuating said line-lock mechanism, a locking-wheel carried by the platen, intermediate mechanism between said locking-wheel and trip, for moving the trip to the operative position, and means controlled by the paper for automatically effecting an engagement between the intermediate mechanism and the locking-wheel.

10. In a type-writing machine, the combination of a carriage, a platen carried by said carriage, key-actuated printing instrumentalities, line-lock mechanism, a trip carried by the carriage for actuating said line-lock mechanism, a locking-wheel carried by the platen, intermediate mechanism between said locking-wheel and trip for moving the trip to the operative position, and means controlled by the paper for normally preventing an engagement between the locking-wheel and intermediate mechanism and for automatically effecting an engagement between said wheel

and intermediate mechanism to afford an actuation of the trip and a locking of the trip when a predetermined point on the paper is reached.

5 11. In a type-writing machine, the combination of a platen, a movable part intermediate of the ends of the platen and which stands in the path of the paper in the introduction thereof into the machine, said movable part
10 being maintained in one position by the paper in the machine and being adapted to automatically move to another position when an edge of the paper moves beyond said part, line-lock mechanism, and means controlled
15 by said movable part for affording an actuation of the line-lock mechanism.

12. In a type-writing machine, the combination of a platen, a movable part maintained by the paper in one position and adapted to
20 move to another position when an edge of the paper moves beyond said part, line-lock mechanism, means for locking the platen against line-spacing movement, and means controlled by said movable part for affording an actua-
25 tion of said line-lock mechanism and platen-locking means.

13. In a type-writing machine, the combination of a platen, a locking-wheel carried thereby, a movable part maintained by the
30 paper in one position and adapted to move automatically to another position when an edge of the paper moves beyond said part, line-lock mechanism, a trip for actuating said line-lock mechanism, locking means coöper-
35 ating with the locking-wheel, for locking the platen against line-spacing movement, and means controlled by said movable part for affording an actuation of said line-lock trip and of the locking means for the platen.

40 14. In a type-writing machine, the combination of a carriage, key-actuated printing instrumentalities, line-lock mechanism, a movable trip on the carriage for actuating
45 said line-lock mechanism, means controlled by the paper for moving said trip into the operative position, and means coöperating with the trip to prevent a complete travel of the carriage in either direction.

15. In a type-writing machine, the combination of a power-driven carriage, key-actuated printing instrumentalities, line-lock
50 mechanism, a movable trip on the carriage for actuating said line-lock mechanism, means controlled by the paper for moving said trip into the operative position, and means car-
55 ried by the frame of the machine and coöperating with the trip to prevent a complete travel of the carriage to the right when it has been moved to the left and for preventing a
60 complete travel of the carriage to the left when it has been moved to the right.

16. In a type-writing machine, the combination of a power-driven carriage, key-actuated printing instrumentalities, line-lock
65 mechanism, a movable trip on the carriage for actuating said line-lock mechanism, means controlled by the paper for moving said trip

into the operative position when an edge of the paper reaches a predetermined point, and means carried by the frame of the machine
70 and coöperating with the trip to prevent a movement of the carriage when it has been moved to the extreme right to begin a new line of writing and the trip has been moved to the operative position.

17. In a type-writing machine, the combination of a power-driven carriage, a platen carried by said carriage; key-actuated print-
75 ing instrumentalities, line-lock mechanism, a movable trip on the carriage for actuating said line-lock mechanism, means controlled by the paper for moving said trip into the
80 operative position when an edge of the paper reaches a predetermined point, means carried by the frame of the machine and coöperating with the trip to prevent a movement
85 of the carriage when it has been moved to the extreme right to begin a new line of writing and the trip has been moved to the operative position, and means for simultane-
90 ously locking the platen against line-spacing movement.

18. The combination of a platen, a line-spacing ratchet-wheel at one end of the platen,
95 line-spacing mechanism coöperating therewith, a line-locking wheel at the other end of the platen, and means coöperating with said locking-wheel to lock the platen against rota-
tion.

19. The combination of a platen, a line-
100 spacing ratchet-wheel at one end of the platen, line-spacing mechanism coöperating therewith, a line-locking wheel secured to the platen at the other end thereof, and means controlled
105 by the paper and coöperating with said locking-wheel to lock the platen against rotation when an edge of the paper reaches a predetermined position.

20. In a type-writing machine, the combination of a carriage, printing instrumental-
110 ities, line-lock mechanism, a series of stops and a coöperating trip which are normally out of each other's path but which are adapted to actuate the line-lock mechanism and to
115 arrest the carriage in its movement in either direction, and means controlled by the paper for moving one of said series of stop and trip elements into the path of the other.

21. In a type-writing machine, the combination of a carriage, a platen, printing instru-
120 mentalities, line-lock mechanism, and a device which is adapted to engage the platen and be moved thereby to afford an actuation of the line-lock mechanism.

22. In a type-writing machine, the combination of a carriage, a platen, printing in-
125 strumentalities, line-lock mechanism, and a device which is adapted to engage the platen and be moved thereby for a limited distance and then arrest it against line-spacing move-
130 ment and to afford an actuation of the line-lock mechanism.

23. In a type-writing machine, the combination of a carriage, a platen, printing instru-

mentalities, line-lock mechanism, a device which is adapted to engage the platen and be moved thereby to afford an actuation of the line-lock mechanism, and means controlled by the paper for bringing about the engagement of said device with the platen.

24. In a type-writing machine, the combination of a carriage, a platen, printing instrumentalities, line-lock mechanism, an engaging device which is adapted to engage the platen and be moved thereby for a limited distance and then arrest it against line-spacing movement and to afford an actuation of the line-lock mechanism, and means controlled by the paper for normally maintaining said engaging device disengaged from the platen and for affording an engagement thereof with the platen when an edge of the paper reaches a predetermined point.

25. In a type-writing machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, line-lock mechanism, a locking-wheel carried by the platen, an engaging device which is normally out of engagement with said locking-wheel but is adapted to be moved thereby, a trip carried by the carriage, and adapted to actuate said line-lock mechanism, and means for effecting an engagement between the engaging device and locking-wheel, to afford a movement of the trip and an actuation of the line-lock mechanism.

26. In a type-writing machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, line-lock mechanism, a locking-wheel connected to the platen, an engaging device which is normally out of engagement with said locking-wheel but is adapted to be moved thereby for a limited distance and then arrest the line-spacing movement of the platen, a trip carried by the carriage and adapted to actuate said line-lock mechanism, and means for effecting an engagement between the engaging device and locking-wheel to afford a movement of the trip and an actuation of the line-lock mechanism and to lock the platen against line-spacing movement after the trip has been moved.

27. In a type-writing machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, line-lock mechanism, a locking-wheel connected to the platen, an engaging device which is adapted to be moved by said locking-wheel, a trip carried by the carriage and adapted to actuate said line-lock mechanism, and means controlled by the paper for normally maintaining the engaging device out of engagement with the locking-wheel and for effecting an engagement between the engaging device and locking-wheel when an edge of the paper reaches a predetermined point, to afford a movement of the trip and an actuation of the line-lock mechanism.

28. In a type-writing machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, line-lock mechanism,

a locking-wheel carried by the platen, an engaging device which is adapted to be moved by said locking-wheel for a limited distance and then arrest the line-spacing movement of the platen, a trip carried by the carriage and adapted to actuate said line-lock mechanism, and means controlled by the paper for normally maintaining the engaging device out of engagement with the locking-wheel and for effecting an engagement between the engaging device and locking-wheel when an edge of the paper reaches a predetermined point, to afford a movement of the trip and an actuation of the line-lock mechanism and to lock the platen against line-spacing movement after the trip has been moved.

29. In a type-writing machine, the combination of a carriage, a platen carried thereby, a locking-wheel secured to rotate with said platen and having teeth thereon, a spring-pressed engaging device which is adapted to cooperate with the teeth of said locking-wheel to arrest the line-spacing movement of said platen, a spring-pressed finger which is adapted to stand in the path of the paper in its introduction into the machine and to be maintained by the paper against its spring tension, and intermediate connections between said finger and engaging device, whereby when the paper passes beyond the finger it will be released and the engaging device will be thrown into engagement with the locking-wheel.

30. In a type-writing machine, the combination of a carriage, a platen carried thereby, key-actuated printing instrumentalities, line-lock mechanism, a trip which is adapted to actuate said line-lock mechanism, a locking-wheel secured to said platen and having teeth thereon, a spring-pressed engaging device which is adapted to cooperate with the teeth of said locking-wheel to limit the line-spacing movement of said platen and to be moved thereby for a limited distance, a spring-pressed finger which is adapted to stand in the path of the paper in its introduction into the machine and to be maintained by the paper against its spring tension, and intermediate connections between said finger and engaging device and between the engaging device and said trip, whereby when the paper passes beyond the finger it will be released and the engaging device will be thrown into engagement with the locking-wheel to limit the line-spacing movement of the platen and to effect a movement of the trip and thereby bring about the locking of the line-lock mechanism.

31. In a type-writing machine, the combination of a platen, a platen-frame, a line-lock wheel secured to rotate with the platen, a spring-pressed rock-shaft carried by the platen-frame, a finger which is carried by the rock-shaft and is adapted to bear against the paper and maintain the rock-shaft against its spring tension, a crank-arm secured to said shaft and an engaging device connected to

said crank-arm and adapted to engage the locking-wheel and limit the line-spacing movement of the platen when the paper passes beyond said finger.

5 32. In a type-writing machine, the combination of key-actuated printing instrumentalities, line-lock mechanism, a platen, a platen-frame, a line-lock wheel secured to the platen, a spring-pressed rock-shaft carried by
10 the platen-frame, a finger which is carried by the rock-shaft and is adapted to bear against the paper and maintain the rock-shaft against its spring tension, a crank-arm secured to
15 said shaft, an engaging device connected to said crank-arm, and adapted to engage the locking-wheel and limit the line-spacing movement of the platen when the paper
20 passes beyond said finger, and a trip connected to said engaging device and adapted to be actuated thereby to afford a locking of
the line-lock mechanism when the engaging device locks the platen against line-spacing movement.

25 33. In a type-writing-machine, the combination of a platen, a platen-frame, a toothed line-lock wheel secured to the platen, a spring-pressed rock-shaft which extends longitudinally of the platen and is carried by
30 the platen-frame, a finger which is rigidly secured to said rock-shaft and is adapted to bear against the paper and maintain the shaft against its spring tension, an independently
spring-pressed engaging device which is provided with a locking pin or projection that is
35 adapted to engage the teeth of the locking-wheel to arrest the line-spacing movement of the platen, and a crank-arm secured to said rock-shaft and to which the engaging device
is pivoted.

40 34. In a type-writing machine, the combination of a carriage, type-bars, finger-keys for actuating said type-bars, line-lock mechanism, a platen, a platen-frame, a toothed
45 line-lock wheel which rotates with the platen, a spring-pressed rock-shaft which extends longitudinally of the platen and is carried by the platen-frame, a finger which is rigidly
50 secured to said rock-shaft and is adapted to bear against the paper, and maintain the shaft against its spring tension, an independently spring-pressed engaging device which
is provided with a projection that is adapted to engage the teeth of the locking-wheel to
55 limit the movement thereof and thus arrest the line-spacing movement of the platen, a trip or abutment carried by said engaging device and adapted to be moved to the operative
position to afford a locking movement of the line-lock mechanism when the platen
60 is locked against line-spacing movement and a crank-arm secured to said rock-shaft and to which the engaging device is pivoted.

35. In a type-writing machine, the combination of a platen, a platen-frame, a toothed
65 line-lock wheel secured to the platen, a spring-pressed rock-shaft which extends longitudi-

nally of the platen and is carried by the platen-frame, a finger which is rigidly secured to said rock-shaft and is adapted to
70 bear against the paper and maintain the shaft against its spring tension, an independently spring-pressed engaging device which is provided with a projection that is adapted to
engage the teeth of the locking-wheel to arrest the line-spacing movement of the platen, a
75 crank-arm secured to said rock-shaft and to which the engaging device is pivoted, and hand-actuated means for releasing the platen and permitting a line-spacing movement
thereof. 80

36. In a type-writing machine, the combination of a carriage, type-bars, finger-keys for actuating said type-bars, line-lock mechanism, a platen, a platen-frame, a toothed line-
85 lock wheel secured to the platen, a spring-pressed rock-shaft which extends longitudinally of the platen and is carried by the platen-frame, a finger which is rigidly secured to said
rock-shaft and is adapted to bear against the paper and maintain the shaft against its
90 spring tension, a crank-arm secured to said rock-shaft, an independently spring-pressed engaging device pivoted to said crank-arm and which is provided with a projection that
is adapted to engage the teeth of the locking-
95 wheel to limit the movement thereof and thus arrest the line-spacing movement of the platen, a trip or abutment carried by said engaging device and adapted to be moved to
the operative position to afford a locking
100 movement of the line-lock mechanism when the platen is locked against line-spacing movement, and hand-actuated means for releasing the platen and the line-lock mechanism.
105

37. In a type-writing machine, the combination of paper-feeding devices, printing devices, automatically-actuated means controlled by the paper for locking said paper-
110 feeding and printing devices and hand-operated means for releasing said devices after they have been automatically locked.

38. The combination of a platen, key-actuated type-bars, line-lock mechanism, automatically-actuated means controlled by the
115 paper for arresting the rotation of the platen and affording an actuation of the line-lock mechanism, and hand-operated means for releasing the platen and line-lock mechanism
after they have been automatically locked. 120

39. In a type-writing machine, the combination of a line-spacing mechanism, letter-spacing mechanism, and means controlled by
125 the paper for automatically locking the line-spacing and letter-spacing mechanisms.

40. In a type-writing machine, the combination of line-lock mechanism, line-spacing mechanism and a spring-pressed finger which
130 is adapted to bear upon the paper, and to be released therefrom when an edge of the paper and the printing-center attain predetermined relations one to the other, and means

controlled by said finger for affording an actuation of said line-spacing and line-lock mechanisms.

41. In a type-writing machine, the combination of a carriage, a removable spring-pressed rock-shaft carried thereby, a finger carried by said rock-shaft and adapted to bear upon said paper, line-lock mechanism, line-spacing mechanism, a locking device carried by said rock-shaft, and means cooperating therewith for locking the line-spacing mechanism and for affording a locking movement of the line-lock mechanism.

42. In a type-writing machine, the combination of a carriage, a spring-pressed rock-shaft carried thereby, a paper-shield having an aperture therein and against which shield the paper is adapted to bear, a finger carried by said rock-shaft and adapted to bear upon said paper opposite the aperture in the shield, line-spacing mechanism, a locking device

carried by said rock-shaft, and means cooperating therewith for locking the line-spacing mechanism.

43. In a type-writing machine, the combination of a carriage, feed mechanism therefor, a platen, a locking-wheel carried by the platen, a locking device normally maintained out of engagement with the locking-wheel by the paper and adapted to be moved into locking engagement with the wheel when the paper reaches a predetermined point relatively to the printing-center, and means controlled by said locking device for locking said carriage-feed mechanism.

Signed at Newark, in the county of Essex and State of New Jersey, this 15th day of May, A. D. 1902.

MAX W. WEIR.

Witnesses:

FREDK. C. FRAENTZEL,
W. B. FRAENTZEL.