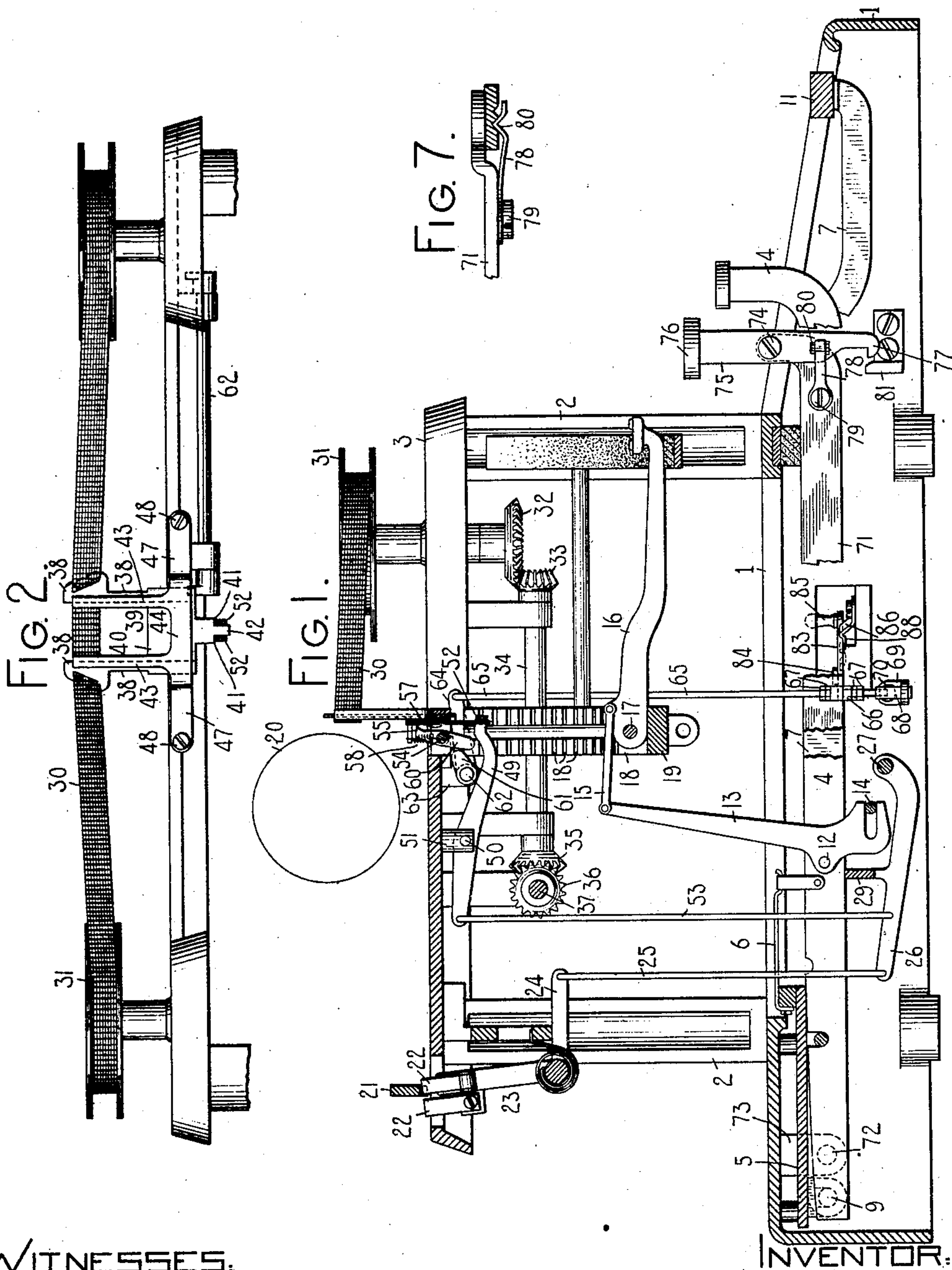


No. 824,582.

PATENTED JUNE 26, 1906.

M. W. POOL.  
TYPE WRITING MACHINE.  
APPLICATION FILED MAR. 20, 1905.

3 SHEETS—SHEET 1.



WITNESSES:

E. M. Wells.  
J. B. Reeves.

Morris W. Pool

By Jacob F. Feltel

HIS ATTORNEY

No. 824,582.

PATENTED JUNE 26, 1906.

M. W. POOL.  
TYPE WRITING MACHINE.  
APPLICATION FILED MAR. 20, 1905.

3 SHEETS—SHEET 2.

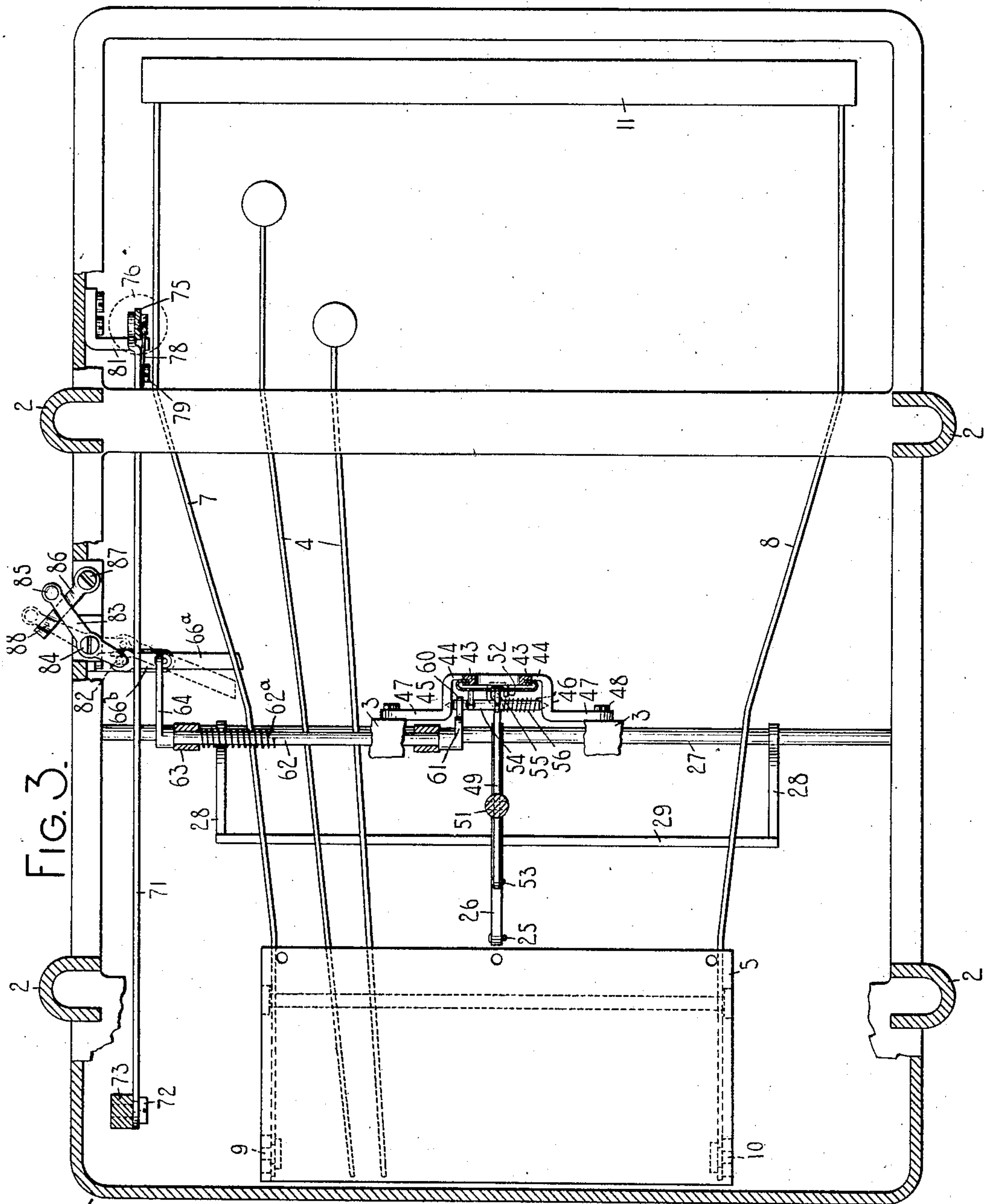


FIG. 3.

WITNESSES:

E. M. Wells.  
J. B. Reeves.

INVENTOR:

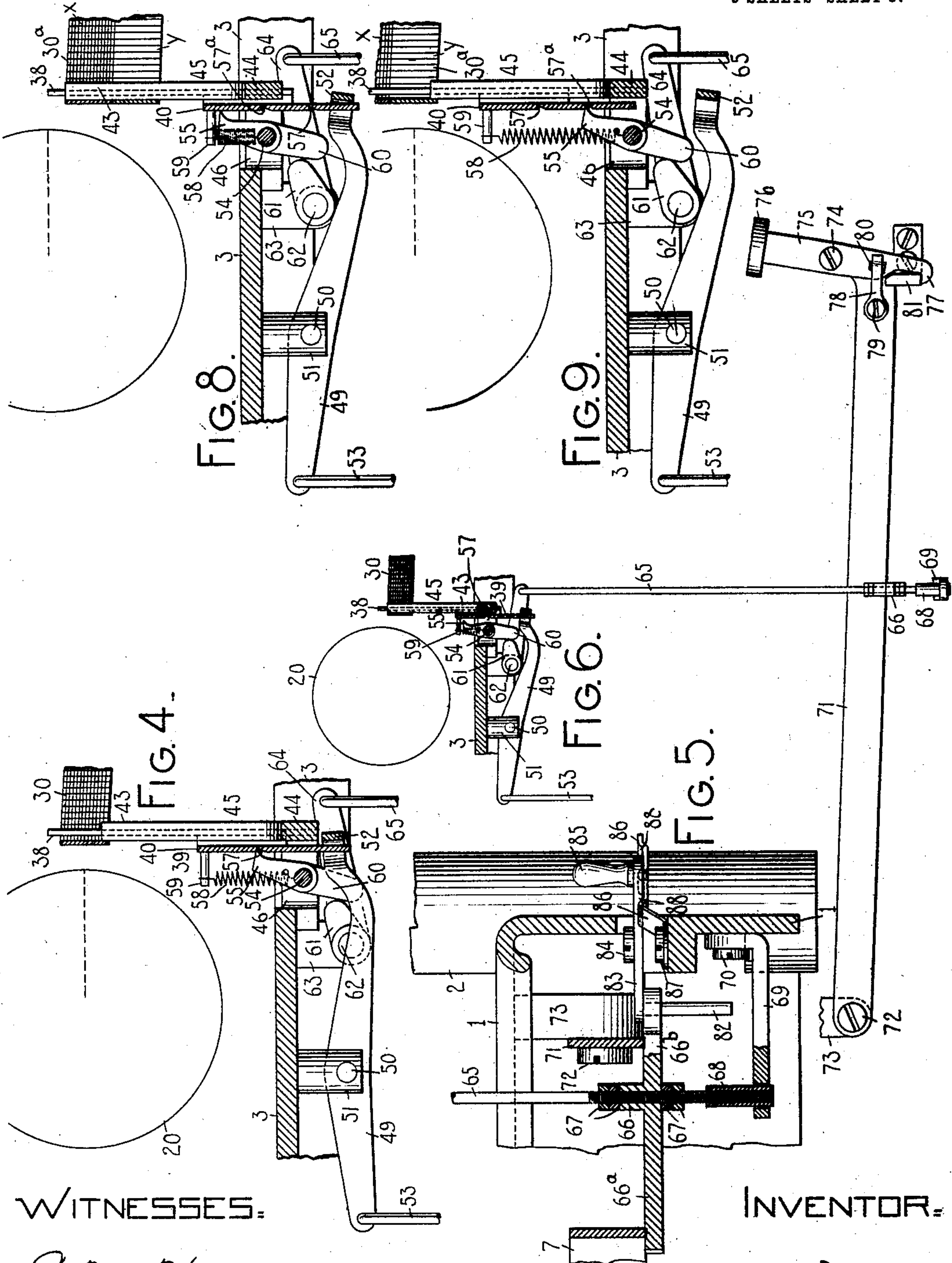
Morris W. Pool  
By Jacob Feld  
HIS ATTORNEY

No. 824,582.

PATENTED JUNE 26, 1906.

M. W. POOL.  
TYPE WRITING MACHINE.  
APPLICATION FILED MAR. 20, 1905.

3 SHEETS—SHEET 3.



WITNESSES:

E. M. Wells.  
J. B. Reeves.

INVENTOR:

Morris W. Pool  
By Jacob Felder  
HIS ATTORNEY



# UNITED STATES PATENT OFFICE.

MORRIS W. POOL, OF NEW YORK, N. Y., ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

## TYPE-WRITING MACHINE.

No. 824,582.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed March 20, 1905. Serial No. 251,105.

*To all whom it may concern:*

Be it known that I, MORRIS W. POOL, a citizen of the United States, and a resident of the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates more particularly to the ribbon mechanism of those machines in which type-writing as it is written is in view of the operator. In such machines, which are commonly called "visible-writing" machines, that portion of the ribbon between the ribbon-spools is usually controlled by a "ribbon-vibrator," which term as herein used comprehends any device for automatically moving the ribbon, which is normally away from the printing-point, to the printing-point and for thereafter moving the ribbon away from the printing-point. Usually whenever the type-actuating mechanism is operated the vibrator is affected so as to cause the ribbon to cover the printing-point on the platen and after an impression has been made to carry the ribbon back to normal position, leaving the printing-point uncovered.

The continuous vibration of the ribbon-vibrator during the operation of the machine is frequently a source of annoyance to the operator. Moreover, the vibrator itself and that part of the ribbon between the spools must be lifted at each printing operation, thereby increasing the amount of power which must be applied to the printing-keys in order to effect a successful operation of the printing mechanism.

The main object of the invention is to obviate these defects by providing a mechanism which will cause the ribbon-vibrator to be actuated automatically to cover the printing-point and then to be retained automatically in that position during further operation of the machine either until the spacing devices are actuated or as long as may be desired.

It is to be understood that wherever it is stated herein that the ribbon-vibrator is moved to cover the printing-point it is meant that the vibrator is moved so as to cause the ribbon it carries to cover the printing-point.

Another object is to provide means to ren-

der the mechanism just described inoperative and to permit the vibrator to be moved to and from the printing-point at each printing operation, as is common.

Another object is to provide means to enable a two-color ribbon to be employed with a vibrator of the character described.

Another object is to provide means to prevent the ribbon from being interposed between the platen and the types during printing operation.

Other objects will subsequently appear.

To these ends the invention consists in the features of construction, combinations of devices, and arrangements of parts to be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical front-to-rear sectional view taken about centrally of a type-writing machine embodying my invention, parts of the machine being omitted. Fig. 2 is a fragmentary front elevation of the upper part of the machine. Fig. 3 is a top plan view of the machine with the top plate and the top of the rear of the base removed and showing the ribbon-vibrator and its actuating mechanism, parts of the machine being omitted. Fig. 4 is an enlarged side elevation, partly in section and showing parts of the ribbon mechanism as they appear when the vibrator is retained in printing position. Fig. 5 is an enlarged front elevation, partly in section, taken at the right of the machine and showing parts of the ribbon-vibrator mechanism. Fig. 6 is a skeleton view showing the operative position of the mechanism for rendering the vibrator-retaining means inoperative. Fig. 7 is a detail view of part of the last-named mechanism. Figs. 8 and 9 are views similar to Fig. 4, but showing a modification of the invention designed to facilitate the use of a two-color ribbon.

Considering, first, Figs. 1 to 7, inclusive, the frame of the machine comprises a base 1, corner-posts 2, and a top plate 3, the base supporting the corner-posts and the latter sustaining the top plate. Key-levers 4 are fulcrumed on a fulcrum-plate 5, each key-lever being provided with a restoring-spring 6. Spacing-levers 7 and 8 are pivoted to the fulcrum-plate at 9 and 10 and are connected at the front of the machine by a spacing-bar 11,



Pivoted at 12 to each key-lever 4 is a sublever 13, the lower portion whereof coacts with a fixed abutment 14 and the upper end whereof is connected by a link 15 with a type-bar 16, which is one of a segmentally-arranged series. The type-bars may, as shown, be pivoted on a curved fulcrum-wire 17 and guided in slots 18 in a segmental type-bar support 19, or each type-bar may be provided with other kinds or styles of pivots and hangers, as desired. The type-bars are adapted to swing upwardly and rearwardly to coact with a platen 20, which is diagrammatically illustrated and is mounted in a carriage (not shown) which moves from side to side of the machine across the top plate. A carriage-feed element 21 is operatively connected with the carriage in a known manner. Adapted to cooperate with the carriage-feed element 21 are feed-dogs 22, mounted in the pivoted dog-rocker 23, the horizontal arm 24 whereof is connected by a link 25 with an arm 26, fixed to and extending rearwardly from a pivot-rod 27, which has bearings in the sides of the base of the machine. Rearwardly-extending side arms 28 are fixed to the rod 27, and fixedly supported by these side arms and by the central arm 26 is a universal bar 29, which passes from side to side of the machine beneath the series of key-levers 4 and the spacing-levers 7 and 8 and is adapted to be depressed by said levers when they are suitably actuated during the operation of the machine. A spring-drum (not shown) is operatively connected with the platen-carriage and tends constantly to draw the latter leftward across the top plate. The movement of the universal bar during printing or spacing operation causes the carriage-feeding devices above described to cooperate in a known manner to permit the carriage to move a letter-space in printing direction. A ribbon 30 is mounted on a pair of ribbon-spools 31, horizontally disposed, one at each side of the machine and forward of the platen. Each ribbon-spool is operatively connected with a small beveled gear 32, which meshes with a beveled pinion 33, fixed to the front end of a horizontally-disposed rotary shaft 34, secured to the rear end whereof is a beveled pinion 35. The beveled pinion 35 meshes with a beveled driving-pinion 36, which is mounted on a driving or power shaft 37, which latter is so connected with the spring-drum as to receive rotary motion therefrom during movement of the carriage in letter-space direction. It is to be understood that each ribbon-spool is connected with the driving-shaft 37 by a train of gears, as above described. The driving-shaft may be shifted endwise in a known manner to cause one of the other gear-trains to operate and wind the ribbon 30 on its associate ribbon-spool and off the spool at the other side of the machine. Between the ribbon-spools the ribbon is

threaded through slots formed in the side portions 38 of the ribbon-vibrator 39. The lower parts of the side portions of the vibrator are connected by a central body portion 40, and this central body portion is shouldered away at 41, terminating at its lower end in a narrow central depending lug 42. The side edges of the vibrator are bent inward and fit into oppositely-disposed grooves formed in the arms 43, extending upward from the central projecting portion 44 of a supporting-guide 45. The central base portion 44 of the guide 45 is connected by short rearwardly-extending side portions 46 with end portions 47, perforated to receive headed screws 48, which secure the guide to the top plate of the machine. The vibrator 39 vibrates vertically in the grooved supporting-guide 45, the portion 40 of the vibrator moving between the central projecting portion 44 of the guide and the front of the central part of the top plate. Motion is imparted to the vibrator by an operating-lever 49, fulcrumed at 50 in a lug 51, depending from the under side of the top plate. The forward end of the operating-lever is bent to form a loop or hook 52, as best indicated in Fig. 3. The loop 52 embraces or surrounds the depending lug 42 of the vibrator. The rear arm of the operating-lever is connected by an actuating member or link 53 with the arm 26 of the universal-bar frame, so that by the mechanism, as explained to this point, the ribbon-vibrator will be thrown upward from normal position to the printing-point and back again at each printing operation, while at the same time a longitudinal movement is imparted to the ribbon. The mechanism as thus far described is generally similar to but differs in detail from that of the Monarch type-writing machine, and it has not, therefore, been deemed necessary to describe the construction at length. It is to be understood, however, that although I have shown my invention as embodied in a type-writer resembling the Monarch machine, and although a large part of the mechanism hereinbefore described is to be found in said machine, yet nevertheless the invention may be adapted to other forms of writing-machines, and I do not desire to be limited to the particular construction and arrangement set forth and illustrated. The inner faces of the side portions 46 of the vibrator-guide 45 are formed with conical depressions to receive the cone-like ends of a pivot-rod 54, which is sprung into place in the side walls 46 before the vibrator-guide is secured to the machine. Any other suitable manner of pivotally mounting the rod 54 may of course be employed. Suitably secured about centrally of the pivot-rod is a locking or retaining member 55. The locking member 55, as herein shown, is in the form of a toothed latch or detent which is constantly pressed



forward by a light coiled spring 56, which surrounds the rod 54 and, as best shown in Fig. 3, has one end secured in a side wall 46 and the other in the latch itself. The rear face of the body portion 40 of the vibrator is provided with a depression or notch 57, which is in the operating plane of the toothed latch or detent 55. A draw-spring 58, having one end secured to the pivot-rod 54 and the other end to a pin 59, projecting from the rear face of the vibrator, tends constantly to maintain the shoulders 41 of the latter in contact with the hook portion 52 of the operating-lever 49. As is indicated in Fig. 3, a downwardly-extending crank-arm 60 is fixedly secured to the rod 54 near its right-hand end, said crank-arm being adapted to be actuated by a short forwardly-extending crank arm 61, secured to the inner end of a rock-shaft 62, which has its bearings in lugs 63, depending from the top-plate, and is provided with a restoring-spring 62<sup>a</sup>. The outer or right-hand end of the rock-shaft 62 has fixedly secured to it a forwardly-extending crank-arm 64, pivotally connected with the forward end whereof is a depending connecting rod or link 65. As best seen in Fig. 5, the lower end of the link 65 is threaded and supports a rotary contact member 66, the latter being adjustable longitudinally of the rod 65 by means of nut-like bearings 67, which screw on the threaded part of the rod 65 above and below the hub portion of the member 66, which hub portion is perforated to embrace loosely the rod 65, so that the member 66 may be freely turned on said rod between the bearing-nuts 67. A sleeve 68 is screwed on the lower end of the connecting-rod 65 and coacts with a fixed guide 69, secured to the base 1 by a screw 70. The sleeve 68 serves to guide and steady the connecting-rod 65 as it is reciprocated in operation. The left arm 66<sup>a</sup> of the member 66 is ordinarily so positioned that it will be actuated by the spacing-lever 7 when the latter is depressed, while the right-hand arm 66<sup>b</sup> of the contact member 66 is adapted to be actuated by a special key-lever 71, which is pivoted at 72 to a lug 73, secured to the machine-base. Pivoted at 74 to the free end of the special key-lever 71 is a key-stem 75, terminating at the top in a key-button 76 and at the lower end in a hook 77. A check-spring 78 is secured to the special key-lever, as most clearly seen in Fig. 7, by a screw 79 and is adapted to coact with notches 80 in the key-stem 75 so as to maintain the latter in predetermined positions, in one of which the hook 77 will cooperate with an abutment 81, fixed to the base of the machine.

Referring now to Figs. 3 and 5, it will be noted that the outer end of the arm 66<sup>b</sup> of the member 66 is bifurcated. Engaging with the bifurcated portion is a stud 82, secured to and depending from the inner arm of a lever 83,

which is pivoted at 84 to a fixed part of the base and extends outwardly through an opening in the side of the latter, terminating in a finger-piece 85. A spring-positioning member 86, fixedly secured at 87, is provided with flutings or corrugations 88, said corrugations being adapted to receive the outer arm of the lever 83, and the member 86 being thereby adapted to maintain the lever 83 in either of a plurality of predetermined positions.

When the parts are in normal position, the locking or retaining member 55 is pressed lightly against the back of the ribbon-vibrator by the spring 56, the relations of the parts being indicated in Fig. 1. Thus positioned, whenever a printing-key 4 is depressed the universal bar is swung downwardly about its pivot, causing the link 53 to actuate the operating-lever 49 to throw the ribbon-vibrator upward until the ribbon 30 covers the printing-point on the platen, whereupon the notch 57 in the ribbon-vibrator is engaged by the locking or retaining member 55. Consequently when under the influence of its restoring-spring (not shown) the universal bar starts to return to normal position, carrying with it the link 53 and the operating-lever 49, the ribbon-vibrator, under the influence of the retaining member or detent 55, remains fixed at the printing-point, so that the hooked portion 52 of the operating-lever moves downward away from the shoulders 41 of the vibrator. The vibrator will now be positioned as indicated in Fig. 4 and during immediately succeeding operations of the printing-keys will serve as a fixed ribbon-guide through which the ribbon is fed longitudinally across the face of the platen at the printing-point. When the end of the word being written is reached, or when for any other reason it is desired to move the carriage a letter-space without printing, the spacing-bar 11 is depressed, thereby swinging downward the spacing-levers 7 and 8. As the spacing-lever 7 moves downward it depresses the arm 66<sup>a</sup> of the member 66, thereby lowering the connecting-rod 65, which rocks the rock-shaft 62 so as to cause the crank-arm or detent-releasing member 61 to press the crank-arm 60 forwardly and swing the retaining member 55 against the pressure of its spring 56 away from the notch 57 in the ribbon-vibrator. Freed from the member or detent 55, the ribbon-vibrator is at once drawn downward by the draw-spring 58 until the shoulders 41 contact with the hook portion 52 of the operating-lever. By this operation of the spacing mechanism it will be noted that the printing-point is again exposed, and it will remain exposed until the printing operation is resumed.

If after the vibrator has been moved to the printing-point and while it is retained thereat, as indicated in Fig. 4, it be desired to ex-



pose the printing-point without causing a letter-space movement of the carriage, the special key-lever 71 is depressed. As it swings downward, it will act upon the arm 5 66<sup>b</sup> of the contact member 66 so as to move the connecting-rod 65 downward, thereby causing the parts to coöperate to free the vibrator from the retaining means in the manner above described. The special key and 10 the other parts of the unlocking mechanism up to and including the crank-arm 61 will be restored to normal position by the restoring-spring 62<sup>a</sup>. From an inspection of Fig. 3 it will be noted that the special key 71 is to the 15 right of the universal bar 29, so that the depression of said special key will not affect the letter-spacing mechanism, and the carriage will therefore not be moved, but such depression of the special key will move the contact 20 member 66 out of the path of the spacing-lever 7, so that the latter cannot operate the link 65 while the special key 71 is maintained depressed.

If after the ribbon-vibrator has been automatically moved to the printing-point and 25 while it is automatically retained thereat in the manner above described to serve as a fixed ribbon-guide it be desired to space between words or to use the spacing mechanism for any other purpose without affecting 30 the ribbon-vibrator this result may be accomplished in the following manner: The lever 83 by means of the finger-piece 85 is swung from the full-line position indicated in Fig. 3 to the dotted-line position in said figure, thereby causing the depending stud 82 35 to coact with the bifurcated end of the arm 66<sup>b</sup> to rotate the member 66 about the connecting-rod 65. As indicated by dotted lines in said Fig. 3 this rotary movement 40 swings the arm 66<sup>a</sup> rearwardly out of the plane of operation of the spacing-lever 7, so that when the spacing mechanism is thereafter actuated the ribbon-vibrator will not be 45 affected, but will remain motionless at the printing-point. With the contact member 66 positioned as last described the ribbon-vibrator may be disconnected from its latch and restored to the position indicated in Fig. 50 1 at any time by actuating the special-key mechanism. Upon swinging the handle 85 forwardly again the member 66 may be restored to the full-line position, Fig. 3, so that the vibrator may be again unlatched by 55 either of the described means.

If at any time it is desired to cause the vibrator to move to and from the printing-point at each actuation of a printing-key, this result may be attained by first depressing 60 the key-button 76 and then pulling it forward until the hook 77 engages with the fixed abutment 81, as indicated in Fig. 6. This operation, as will be noted from an inspection of said figure, causes the crank-arm 61 to remain

in engagement with the crank-arm 60, thereby 65 by holding the retaining member 55 away from the ribbon-vibrator, so that the latter may be vibrated at each printing operation without being affected by the locking or retaining mechanism. The key-button 76 70 may be swung forward at any time, thereby permitting the parts to act as before.

In the modified construction illustrated in Figs. 8 and 9 the rear face of the central 75 portion 40 of the vibrator is provided, in addition to the notch 57, with a second notch 57<sup>a</sup> below and in the same plane with the first notch. The ribbon 30<sup>a</sup> shown in these views is provided with two longitudinal 80 stripes or fields *x* and *y*, which are preferably colored black and red, respectively. When a printing-key is operated, the vibrator will be thrown upward, as hitherto described, until the retaining member 55 engages with the 85 notch 57, thereby so positioning the vibrator at the printing-point that the types will co-operate with the black field *x* of the ribbon, and during the operation of the parts, as hitherto described, the printing will always 90 be done on the field *x* or black field. Frequently it is desired to write a word in red in the body of matter type-written in black, and this may readily be accomplished by manually moving the vibrator upward when 95 the notch 57 is engaged by the retaining member until the second notch 57<sup>a</sup> engages with said member. The parts will then be positioned, as indicated in Fig. 9, with the red field *y* of the ribbon opposite the printing-point, so that the next word written will ordinarily be in red. When the space-bar is 100 actuated, the parts will be automatically restored in a manner hitherto described to the position indicated in Fig. 8, so that the next succeeding type-impression will be in black, 105 thus automatically changing from the red field to the black field. If several words or lines of type-writing are to be written in red, it is only necessary to render the spacing mechanism inoperative to release the vibrator 110 from the printing-point and thereafter to maintain the spacing mechanism thus inoperative as long as it is desired to print in red. This manipulation of the spacing mechanism is accomplished in the manner described 115 above.

If a narrow ribbon, such as the ribbon 30, be employed with the modified construction shown in Figs. 8 and 9, thereby dispensing 120 with the red field *y*, (shown in said figures,) it will be apparent that when the parts are positioned, as indicated in Fig. 9, the printing devices will coact with the platen without the ribbon being interposed between them. Accordingly when it is desired to prepare a stencil 125 for mimeograph work or when for any other purpose it is desired to dispense with the services of the ribbon during printing



operations it is only necessary to manipulate the mechanism in a manner hitherto described in order to bring about this result.

Various changes in the details of construction and in the arrangements of parts may be effected and parts of the invention may be used without other parts, all without departing from the spirit and scope of the invention.

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

1. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator adapted to be moved to the printing-point when said keys are actuated; means for automatically retaining said vibrator at the printing-point when moved thereto by said keys; and key-actuated means independent of the printing-keys for restoring said vibrator to normal position.
2. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to automatically move said vibrator to the printing-point; means for automatically locking said vibrator at the printing-point when moved thereto by the printing-keys; and key-actuated means independent of said printing-keys for unlocking said vibrator.
3. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically moving said vibrator to and from the printing-point; means adapted to maintain the ribbon-vibrator against movement as long as desired, said means being automatically brought into play; and key-actuated means adapted to release said vibrator at will from its position at the printing-point.
4. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically actuating said vibrator at a printing operation; means adapted to maintain said vibrator quiescent during printing operations, said means being automatically brought into play; and key-actuated means adapted to release said vibrator at will from the control of said last-named means.
5. In a type-writing machine, the combination of a ribbon; means normally maintaining the ribbon away from the printing-point; printing-keys; means operated thereby for automatically moving the ribbon to cover the printing-point at printing operation; means automatically brought into play for maintaining the ribbon in position to cover the printing-point during printing operations and to render said moving means inoperable on said ribbon; and a separate key-actuated means for releasing said ribbon from its position at the printing-point.
6. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to actuate said vibrator; automatic means for disconnecting said vibrator from said printing-keys; and separate key-oper-

ated means for reconnecting said vibrator with said finger-keys.

7. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to actuate said vibrator; automatic means for disconnecting said vibrator from said printing-keys; and key-operated means independent of said printing-keys for reconnecting the latter with said vibrator, the vibrator being adjusted to cause the ribbon normally to uncover the printing-point when the vibrator is connected with the printing-keys and to cover the printing-point when the vibrator is disconnected from the printing-keys.

8. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to move said vibrator to the printing-point; means for automatically maintaining the vibrator at the printing-point when so moved thereto; and separate key-actuated means for moving the vibrator from the printing-point independently of the printing-keys.

9. In a type-writing machine, the combination of printing devices; finger-keys for actuating said devices; a ribbon-vibrator adapted to be moved automatically by said finger-keys to interpose the ribbon in the path of said printing devices at the depression of said finger-keys and to thereupon be caused automatically to remain fixed in the path of said printing devices during succeeding depressions of the finger-keys; and separate key-actuated means for releasing said vibrator from its fixed position.

10. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator; connections between said printing-keys and said vibrator; automatic means for moving one portion of said connections relatively to another so that succeeding depressions of said printing-keys may be ineffective to transmit motion to said vibrator; and key-actuated means independent of said printing-keys for reconnecting said printing-keys and said vibrator.

11. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to move said vibrator to the printing-point; a detent adapted to maintain the vibrator at the printing-point automatically when said vibrator is moved thereto by the printing-keys; and separate key-actuated means for unlatching said detent.

12. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to move said vibrator to the printing-point; a detent adapted to maintain the vibrator at the printing-point automatically when said vibrator is moved thereto by the printing-keys; separate key-actuated means for unlatching said detent; and means for automatically restoring said vibrator to nor-



mal position after the detent has been unlatched.

13. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means controlled by said keys for moving the ribbon-vibrator to the printing-point; and means for retaining said vibrator at the printing-point during the entire return stroke of a key.

14. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means for moving said vibrator to the printing-point during the printing stroke of a key; means for holding said vibrator at the printing-point during the entire return stroke of said printing-key; and means independent of said printing-key adapted to restore said vibrator to normal position.

15. In a type-writing machine, the combination of a ribbon-vibrator; a detent operating automatically to retain said vibrator at the printing-point; and a special key adapted to affect said detent to release said vibrator.

16. In a type-writing machine, the combination of a ribbon-vibrator; a detent operating automatically to retain said vibrator at the printing-point; and a spacing-lever adapted as it is depressed to affect said detent to release said vibrator.

17. In a type-writing machine, the combination of a ribbon-vibrator; a detent operating automatically to retain said vibrator at the printing-point; a special key adapted to affect said detent to release said vibrator; and a space-key adapted as it is depressed to affect said detent to release said vibrator.

18. In a type-writing machine, the combination of a ribbon-vibrator; a detent for retaining said vibrator at the printing-point; a special key adapted to affect said detent to release said vibrator; a space-key also adapted to affect said detent to release said vibrator; and means to render said space-key inoperable to affect said detent.

19. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to disconnect said detent from said vibrator; a contact member on said link; a spacing-lever adapted to act on said contact member to affect said detent to release said vibrator; and means for rendering said spacing-lever inoperable on said detent.

20. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to disconnect said detent from said vibrator; a contact member on said link; a spacing-lever adapted to act on said contact member to affect said detent to release said vibrator; and means for rotating said contact member to a position where the spacing-lever will be inoperative on it.

21. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted

to retain said vibrator at the printing-point; a link adapted to release said detent; a contact member on said link; a spacing-lever adapted to act on said contact member; and a special key-lever also adapted to act on said contact member.

22. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to release said detent; a contact member on said link; a spacing-lever adapted to act on said contact member to affect said detent to release said vibrator; a special key-lever also adapted to act on said contact member for the same purpose; and means for locking said special key-lever to render said detent inoperable on said vibrator during the operation of the machine.

23. In a type-writing machine, the combination of printing-keys; a spacing device; a ribbon-vibrator adapted to be moved to the printing-point when said printing-keys and said spacing device are actuated; a detent adapted to retain said vibrator at the printing-point; a link adapted to rotate said detent, said spacing device being adapted to actuate said link; a special key-lever also adapted to actuate said link; and means for locking said special key-lever, the locking of said special lever rendering said spacing device inoperable on said link.

24. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator adapted to be moved to an unvarying position at the printing-point when said printing-keys are actuated; means for automatically retaining said vibrator at the printing-point, said vibrator being adapted to have its position altered in respect of the printing-point from the unvarying position to which said vibrator is thrown when the printing-types are actuated.

25. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to an unvarying position at the printing-point when a printing-key is actuated; means for automatically retaining said vibrator at the printing-point so that the type-impressions will follow a straight path longitudinal of the ribbon; and means for changing the position of the vibrator while at the printing-point and maintaining said vibrator automatically in another position so that the types will strike below the first-described path.

26. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operated to retain the vibrator in an unvarying position at the printing-point when said vibrator is moved thereto during the operation of the machine; and hand-operated means for altering the position of the vibrator in respect of



the printing-point, said detent being adapted to retain the vibrator in its altered position.

27. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operating to retain the vibrator in an unvarying position at the printing-point when said vibrator is moved thereto during the operation of the machine; hand-operated means for altering the position of the vibrator in respect of the printing-point, said detent being adapted to retain the vibrator in its altered position; and independent key-actuated means for affecting said detent to release said vibrator.

28. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operating to retain the vibrator at the printing-point; and means for rendering said detent inoperative.

29. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operating to retain the vibrator at the printing-point; and means for moving said detent to and locking it in inoperative position.

30. In a type-writing machine, the combination of a shouldered ribbon-vibrator provided with notches or depressions; an operating-lever therefor provided with a hook which normally engages with the shoulders of said vibrator; a spring-pressed, pivoted latch adapted to engage one of the notches of said vibrator to maintain the latter at the printing-point when it is moved thereto by the operating-lever, the hook portion of said lever being adapted to separate from the shouldered portion of the ribbon-vibrator when the vibrator is latched; printing-keys adapted to actuate said operating-lever; separate key-actuated means adapted to release said vibrator from said latch; and a draw-spring adapted to reconnect the shouldered portion of said vibrator with the hook portion of said operating-lever.

31. In a type-writing machine, the combination of a shouldered ribbon-vibrator provided with two notches or depressions; an operating-lever therefor provided with a hook

which normally engages with the shoulders of said vibrator; a spring-pressed, pivoted latch adapted to engage the upper notch of said vibrator to maintain the latter at the printing-point when it is moved thereto by the operating-lever, the hook portion of said lever being adapted to separate from the shouldered portion of the ribbon-vibrator when the vibrator is latched, said vibrator being adapted to be manually moved upward from the first position at which it is maintained by the latch until the lower notch will be engaged by said latch; separate key-actuated means adapted to release said vibrator from said latch; and a spring adapted to reconnect said vibrator with said operating-lever.

32. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means controlled by said keys for moving said vibrator to the printing-point; and means automatically operative to retain said vibrator at the printing-point during the entire return stroke of a printing-key.

33. In a type-writing machine, the combination of a ribbon-carrier operative to be moved bodily by hand transversely of the printing-line to any of a plurality of predetermined positions; and means operating automatically to retain said carrier in each of said predetermined positions when said carrier is bodily moved thereto.

34. In a type-writing machine, the combination of a ribbon-carrier normally maintaining the ribbon away from the printing-line; printing-keys operative to move said carrier automatically to the printing-line, said carrier being operative to be moved bodily by hand from normal position transversely of the printing-line to any of a plurality of predetermined positions; and means operating automatically to retain said carrier in each of said predetermined positions when said carrier is bodily moved thereto whereby the ribbon may be used in any one of a plurality of straight paths.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 17th day of March, A. D. 1905.

MORRIS W. POOL.

Witnesses:

E. M. WELLS,  
M. F. HANNWEBER.