(No Model.) 5 Sheets—Sheet 1.

W. J. BARRON.

TYPE WRITING MACHINE.

No. 565,716. Patented Aug. 11, 1896.

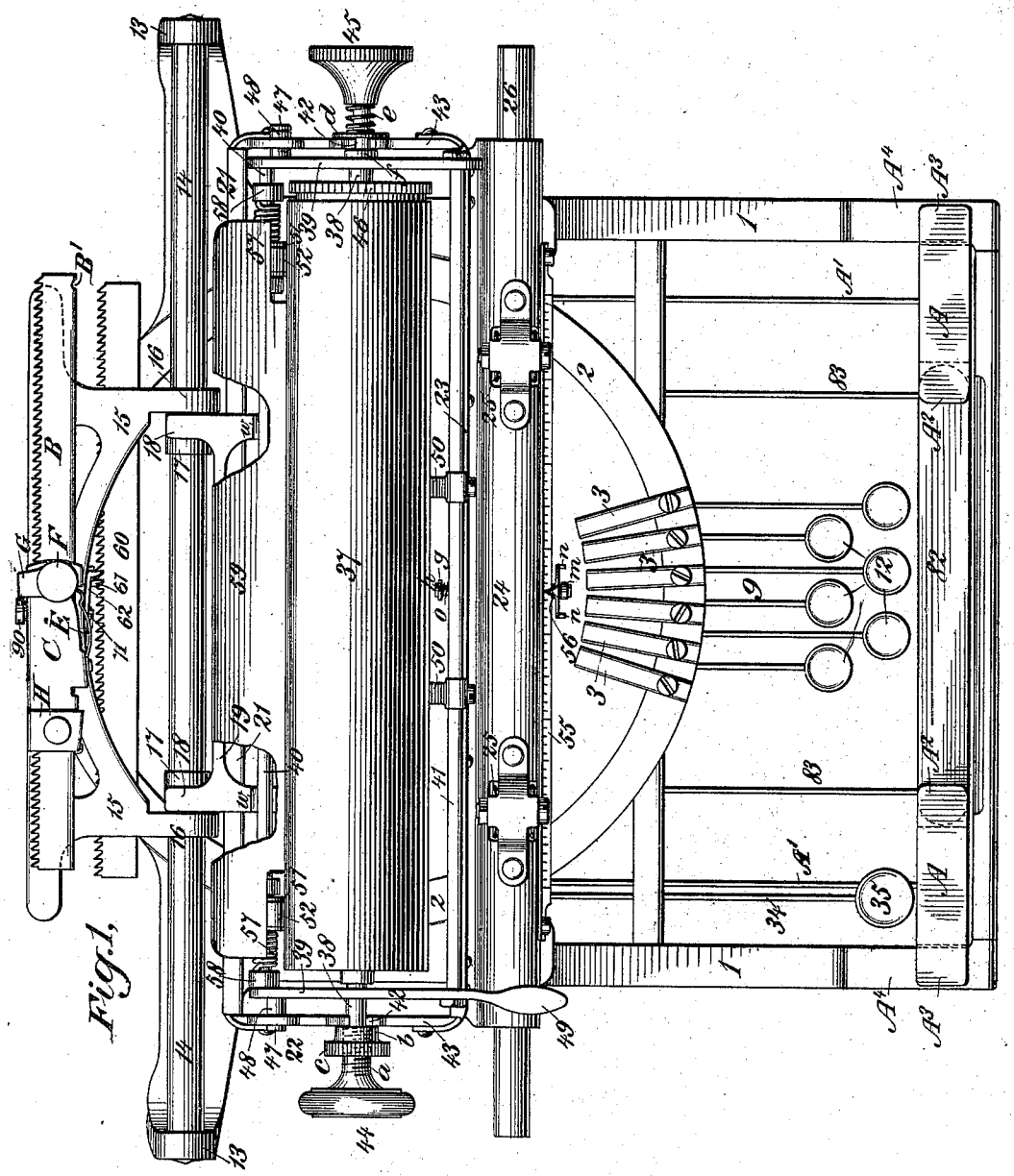

Fig. 1.

WITNESSES:

W. N. Haywood

I. Macdonald.

INVENTOR

Walter J. Barron

BY

Jacob Felbel

ATTORNEY

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(No Model.) 5 Sheets—Sheet 2.

W. J. BARRON.

TYPE WRITING MACHINE.

No. 565,716. Patented Aug. 11, 1896.

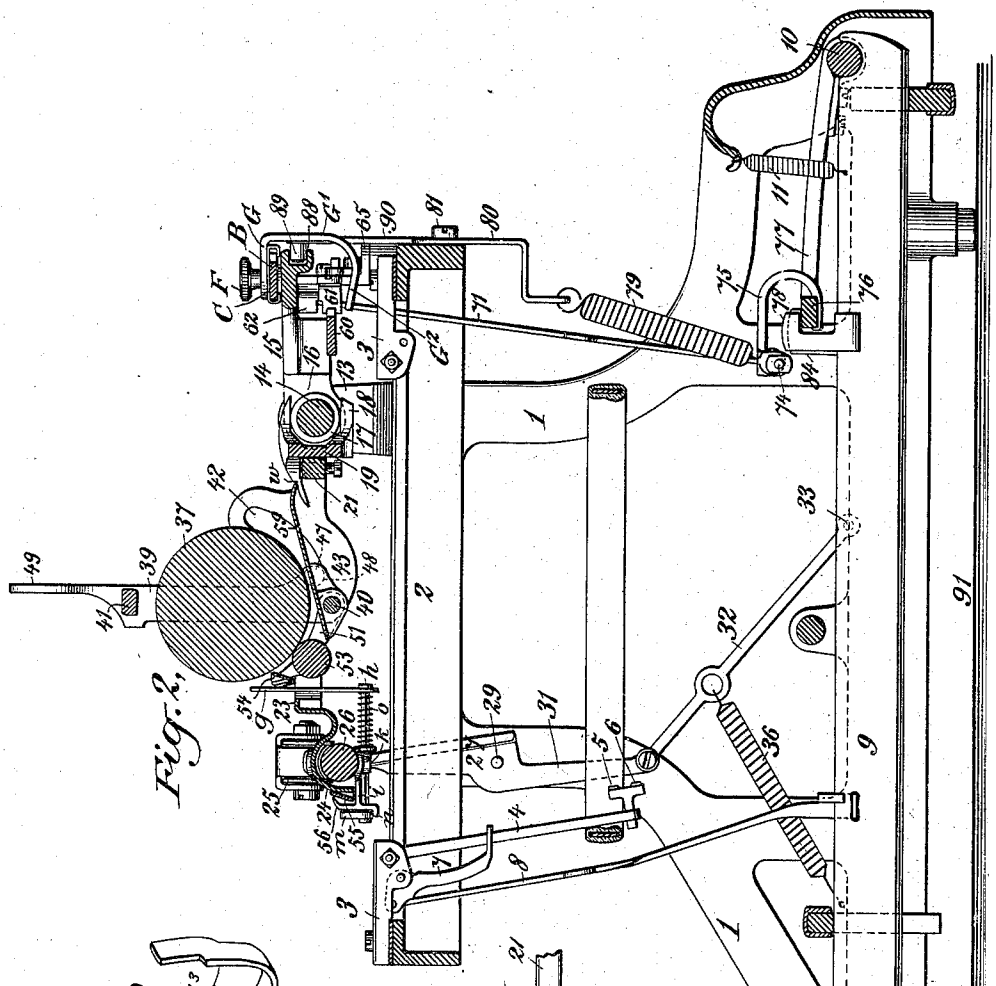

Fig. 2.

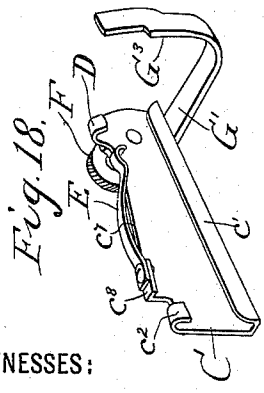

Fig. 18.

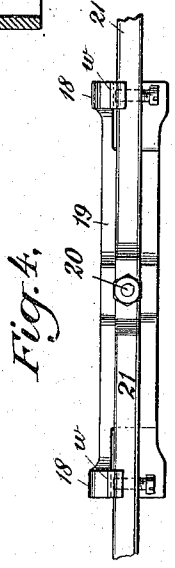

Fig. 4.

WITNESSES:

D. N. Maynard

I. Macdonald

INVENTOR

Walter J. Barron

BY

Jacob Felbel

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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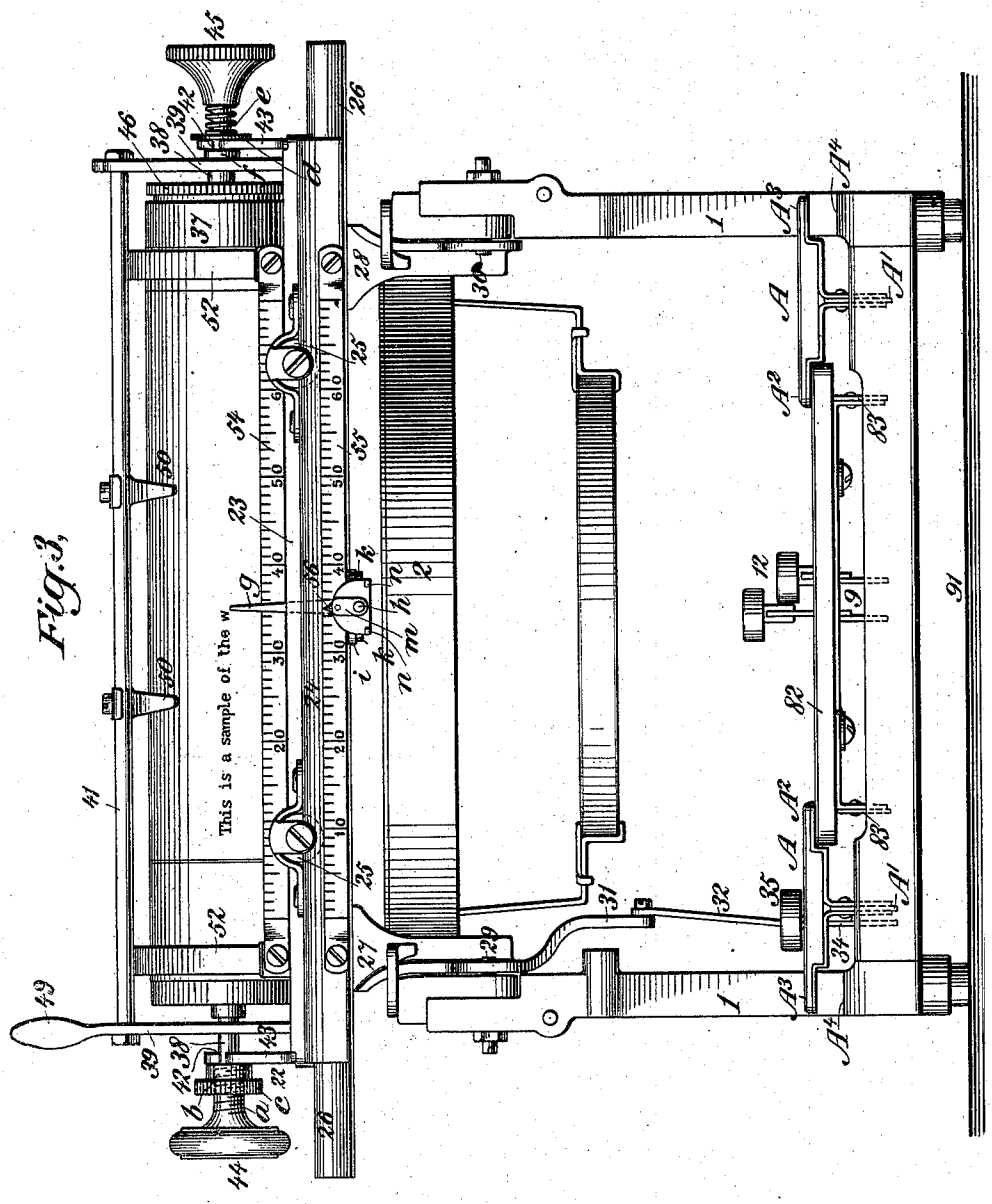
W. J. BARRON.

TYPE WRITING MACHINE.

No. 565,716. Patented Aug. 11, 1896.

Fig. 3.



WITNESSES:

D. K. Raymond

J. Macdonald

INVENTOR

Walter J. Barron

BY

Jacob Felbel

ATTORNEY

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(No Model.) 5 Sheets—Sheet 4.

W. J. BARRON.

TYPE WRITING MACHINE.

No. 565,716. Patented Aug. 11, 1896.

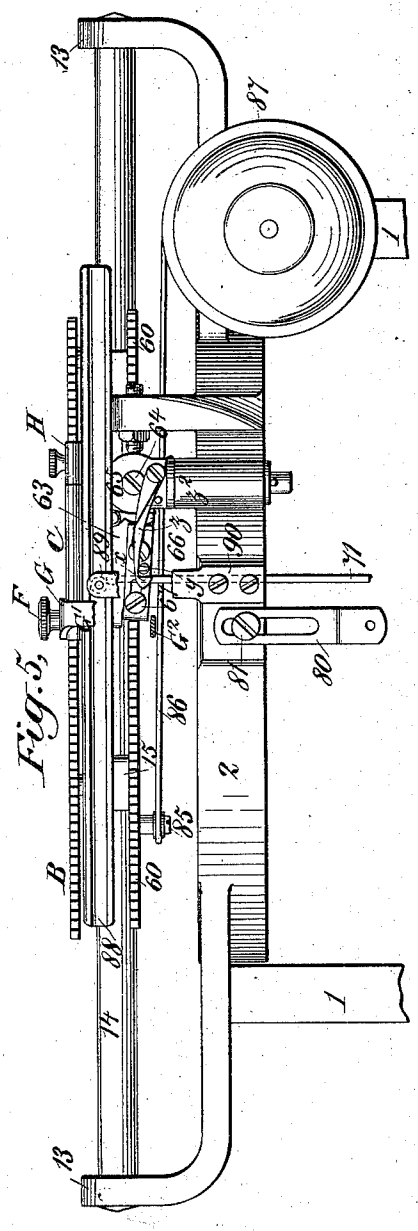

Fig. 5.

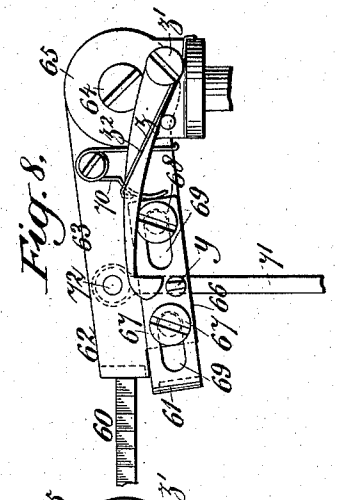

Fig. 8.

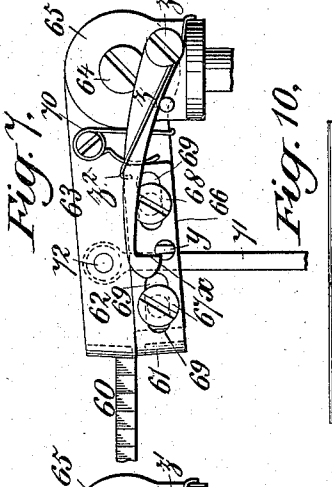

Fig. 7.

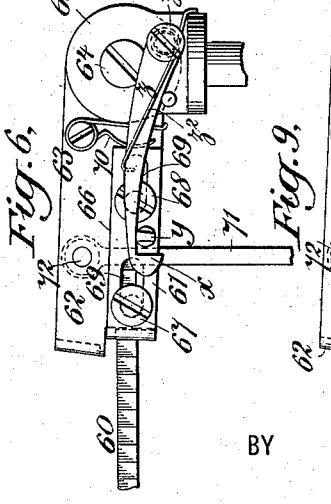

Fig. 6.

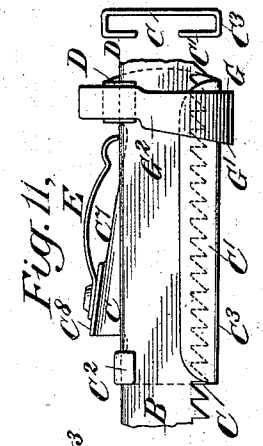

Fig. 11.

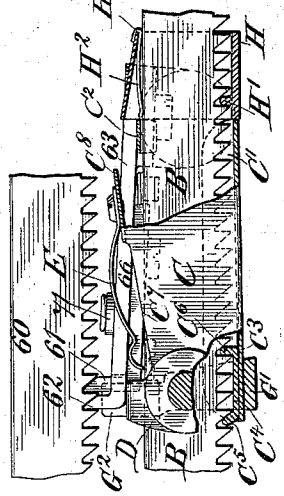

Fig. 10.

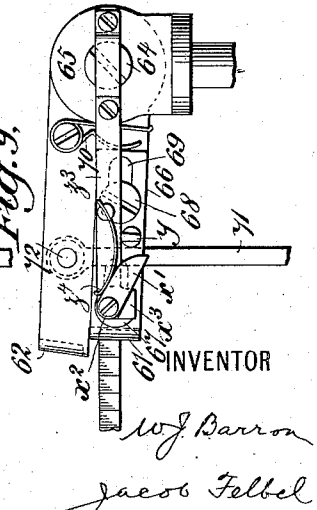

Fig. 9.

WITNESSES:

D. F. Haywood

J. Macdonald

INVENTOR

W. J. Barron

BY

Jacob Felbel

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 5 Sheets—Sheet 5.

W. J. BARRON.

TYPE WRITING MACHINE.

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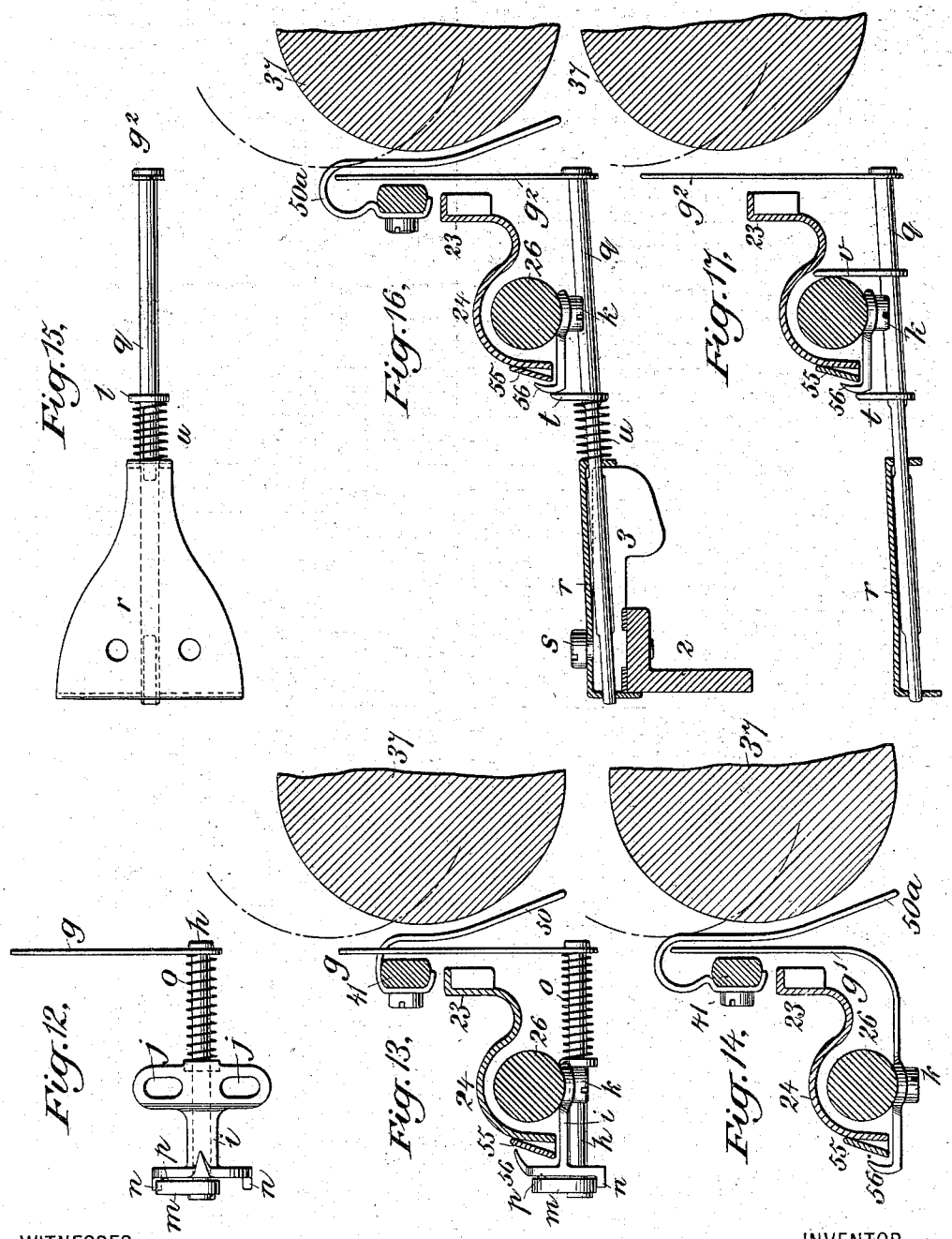

WITNESSES:

D. H. Haywood

I. Macdonald

INVENTOR

Walter J. Barron

BY

Jacob Felbel

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER J. BARRON, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE UNION TYPEWRITER COMPANY, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 565,716, dated August 11, 1896.

Application filed September 20, 1894. Serial No. 523,593. (No model.)

To all whom it may concern:

Be it known that I, WALTER J. BARRON, a citizen of the United States, and a resident of Brooklyn, 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 improvements relate to means for moving the platen and the paper thereon endwise for the purpose of adjusting the latter correctly with reference to the printing-point for making corrections; to a pointer or means for indicating the printing-point; to means for locking the platen in its upturned position for the purpose of steadying the same and facilitating erasures, corrections, &c.; to means for effecting double letter-spacing simultaneously with the impression of the last letter of a word; to auxiliary means for effecting single spacing at the end of a word when this may be desired; to means for arresting the travel of the paper-carriage; to means for preventing type-impressions when the carriage has come to the end of the line, and to means for enabling further progress of the carriage, after the operation of the last-mentioned means, for the printing of additional characters.

My improvements consist in the various features of construction and combinations of devices hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top plan view of a "Densmore" type-writer embodying my improvements, some of the parts thereof being omitted for the sake of clearness, and the paper-table being broken away at two points to show the construction beneath. Fig. 2 is a central vertical section thereof. Fig. 3 is a front elevation of the same with the platen turned or rolled up to expose the work. Fig. 4 is a detail view showing the mode of connection between the platen-carrier back rod and the sliding and shifting yoke. Fig. 5 is a back view of the upper portion of the machine, omitting the platen, and showing more particularly the carriage-escapement mechanism, the carriage-arresting means, and the type-locking means, &c. Fig. 6 is an enlarged detail back view of the escapement mechanism in its normal position. Fig. 7 is a similar view with the parts shown in the positions they occupy when the carriage feeds a single letter-space only. Fig. 8 is a similar view with the parts in the positions they assume when the carriage feeds a double letter space distance. Fig. 9 is a similar view showing a modification of the spacing mechanism. Fig. 10 is an enlarged detail view, in top plan and partly in section, of the escapement mechanism, carriage-arresting means, and the line-locking or print-preventing means, &c. Fig. 11 is a bottom plan view of the combined carriage-stop and line-lock contrivance; also an end view. Fig. 12 is a plan view of the preferred form of pointer mechanism detached. Fig. 13 is a side elevation of said pointer mechanism attached to the carriage shift-rail and in working position, a portion of the platen being shown in sectional lines in its normal position and in dotted lines in its upturned position. Fig. 14 is a view similar to Fig. 13, but showing a modified construction of pointer mechanism. Fig. 15 is a top plan view of another pointer mechanism detached. Fig. 16 is a side elevation of the pointer mechanism shown at Fig. 15 mounted on the top plate and in working connection with the shift-rail; and Fig. 17 is a similar view, but showing a different mode of connecting the pointer to the shift-rail. Fig. 18 is a perspective view of the carriage-stop plate C.

In the several views the same parts will be found designated by the same numerals and letters of reference.

1 1 are the side frames of the machine; 2, the top plate or type-ring; 3, the type-bar hangers mounted thereon; 4, the type-bars, provided each with two types 5 and 6; 7, the lifting-lever, pivoted in the type-bar hanger and connected to the type-bar; 8, the connecting-rod, attached at its upper end to the lifting-lever 7 and at its lower end to a key-lever 9, notched at its rear end and pressed upwardly against a transverse fulcrum-rod 10 by means of a spring 11, and provided at its front end with a key 12.

In upturned arms 13 from the top plate is

secured a guide-rod 14, upon which is mounted to slide a carriage 15, having arms 16, perforated to surround said rod. Said arms have each an inwardly-extending hub 17, which hubs are embraced by forks 18, connected together by a bar 19, which is pivotally attached centrally, as at 20, to the back bar 21 of the platen-carrier, designated as an entirety by 22.

To the front bar 23 of the platen-carrier is riveted a grooved plate 24, which is provided with grooved antifriction-wheels 25, which embrace the upper side of a shift-rail 26, arranged parallel with the guide-rail 14 and mounted at the upper ends of levers 27 and 28, the former being pivoted at 29 to the side frame and the latter at 30.

The lever 27 has a downwardly-extending arm 31, to which is pivoted the upper end of a link 32, the lower end of which is pivoted at 33 to a shift key-lever 34, attached to the fulcrum-rod 10, and having a finger-key 35. Upon the depression of said finger-key the shift-rail, through the vibration of said levers 27 and 28, is moved forwardly or toward the operator, and simultaneously the platen-carrier and its attachments are moved in the same direction therewith, the forks 18 sliding forward on the hubs 17, all in the usual way in the Densmore machine. The parts are returned to their normal positions by means of a spring 36, attached at one end to the link 32 and at the other end to the shifting key-lever.

37 is the cylindrical platen, the shaft, axle, or pivot 38 of which is mounted to rotate in end bars 39 of a platen-frame composed of said end bars, a back rod 40, and a front bar 41, all rigidly connected together. The shaft, axle, or pivot is prolonged at each end, and passing through slots 42 in end pieces 43 of the platen-carrier is provided with knobs or hand-wheels 44 and 45, whereby the platen may be rotated. The platen is provided as usual with a line-spacing ratchet-wheel 46 for engagement by a line-space pawl. (Not shown.) The said end bars 39 of the platen-frame are provided with outwardly-projecting studs 47, bearing antifriction-rolls 48, which travel in curved slots in the end pieces 43 of the platen-carrier as the platen is turned up for inspection of the work, or to the position illustrated at Fig. 2, the left-hand end bar 39 being provided with a finger-piece 49 to facilitate the raising and lowering of the platen.

The front bar 41 of the platen-frame is provided with two short guides 50, and the back rod 40 of the platen-frame is provided at each end with a pivoted hanger 51, which supports an end paper-guide 52. The ends of the pressure-roller 53 are mounted to turn in bearings in said hangers, which also support a scale-bar 54, that is graduated and marked from left to right to correspond with the scale-bar 55, attached to the grooved plate 24 at the front of the platen-carrier, a fixed index 56 being adapted to coöperate with the front scale 55 to indicate the plane of the printing-point and the progress and position of the carriage.

For each hanger 51 is provided a coiled tension-spring 57, which surrounds the back rod 40 and is attached at one end to the hanger and at the other end to a collar 58, adjustable on said rod for varying the tension of said spring.

Pivoted or hinged upon the back rod 40 is a spring-pressed paper-table 59.

On the under side of the carriage 15 in rear of the guide-rail 14 is secured a feed-rack 60, with which engage alternately a feeding-dog 61 and a holding-dog 62, the latter being made integral with an arm 63, which is pivoted horizontally at 64 in a bracket 65, and the former being made integral with a plate 66, supported by screws 67 and 68 on said arm 63, and slotted longitudinally, as at 69, to enable it to slide lengthwise independently of said arm under the influence of a spring 70, attached to a screw on said arm and bearing at its free end against the back of the sliding member 66.

The dogs are worked up and down by means of a connecting-rod 71, whose upper end is pivoted at 72 to the arm 63 and whose lower end is pivoted at 74 to an arm 75, attached centrally to a transverse universal bar 76, pivotally connected by side arms 77 to the fulcrum-rod 10. Each key-lever is provided with an overhanging hook 78, which is adapted to pull down said universal bar and said connecting-rod 71 and thereby actuate the dogs in one direction. The said dogs return to their normal positions on releasement of the key-lever through the medium of a coiled spring 79, the lower end of which is attached to the said arm 75, and the upper end to an adjustable bracket 80, attached to the top plate by a screw 81.

At the front of the machine and centrally is arranged the space-key 82, which is attached at its ends to the forward ends of two levers 83, which at their rear ends are fulcrumed on the rod 10, and which are provided each intermediately with a hook 84 for engagement with the universal bar 76, in a manner similar to the key-levers of the machine.

On the under side of the feed-rack is a pin 85, to which is attached one end of a strap 86, the other end of which is attached to the spring driving-drum 87.

The rear side of the carriage 15 is grooved longitudinally, as at 88, to receive a small roller 89, projecting inwardly from an arm 90, attached to the top plate, the said grooved roller operating to prevent any hinge or pivotal motion of the carriage about the guide-rail 14.

The parts thus far described are common in the Densmore machine.

I shall now describe more particularly the various improvements made by me, which, however, are not limited to their employment in a Densmore machine, as some of them may

be used equally well in other types or makes of machines. In referring to the new parts I shall employ generally letters of reference.

The platen is made adjustable longitudinally independent of its carrier 22, in order that characters may be inserted in a written line with greater nicety and without the usual pulling and shifting of the paper by hand. This longitudinal movement of the platen is effected by the following means: The left-hand end of the platen shaft or axle is provided with a screw-thread *a*, upon which turns an interiorly-threaded nut *b*, provided with a hand-wheel *c*. The right-hand end of the platen shaft or axle is provided with a washer or collar *d*, against which the inner end of a coiled spring *e* bears, the outer end of the spring pressing against the inner end of the knob 45. The power and tension of this spring are such as to move the platen, its frame, and attachments toward the right when the nut is screwed rearwardly, and this movement of the parts toward the right under the influence of the spring is limited by a boss *f* on the right-hand end bar 39, which strikes against the slotted portion of the end bar 43. The platen has a longitudinal motion independently of its carrier 22 a distance about equal to one letter-space, which is sufficient for all purposes. In making corrections, if it be desired to insert a letter in a word the paper is passed around the platen as usual and the line of print brought to the proper position to receive the letter to be inserted; but in thus adjusting the paper the blank spot to receive the letter to be inserted may and usually does not register exactly with the plane of the printing center, and hence the paper is required to be moved slightly widthwise or laterally, which adjustment is usually performed by pulling or tugging upon the sheet, with the consequent liability of tearing the same. By the means shown this lateral or sidewise adjustment of the paper may be quickly and accurately effected by simply screwing the nut forward and thereby drawing the platen-frame, platen, and the paper all together toward the left. As the inner end of the nut bears against the outer face of the slotted portion of the side bar 43 as the nut is turned upon the screw, the shaft or axle of the platen and the connected parts are all thereby drawn or fed toward the left, and by this means it will be understood that the paper may be adjusted laterally a thousandth of an inch, more or less, to bring the blank spot to register absolutely with the printing-point. After inserting the letter, the nut is screwed backwardly and the spring is thus permitted to return the platen to its normal position in the carrier.

I have found in practice that the means for thus adjusting the paper laterally possess the greatest utility when combined with a pointer arranged in the plane of the impression-point and contiguous to the paper when in its upturned position. Any suitable form or construction of pointer may be employed with said adjusting means. The pointers herein shown constitute a separate feature of my invention and will now be described.

The construction and arrangement of pointer shown at Figs. 12 and 13 is the preferred form, and is also shown at Figs. 1, 2, and 3. The pointer *per se* is designated by the letter *g*, and is made in the form of an arm, which is fast on a horizontal rock-shaft *h*, having bearings in a bracket *i*, which is provided with two transverse slots *j*, and which is secured adjustably to the under side of the shift-rail 26 by means of two screws *k*, which pass upwardly through said slots into threaded holes in said rail. The forward end of the bracket is formed or provided with a fixed indicator 56 to coöperate with the front scale-bar 55 of the platen-carrier. The front end of the rock-shaft is provided with a handpiece *m*, by which the pointer may be conveniently turned from a horizontal inoperative position to a vertical operative one, the movements of said handpiece *m*, and hence the pointer, being limited by studs *n*, projecting forwardly from the bracket *i*. Between the pointer and the inner end of the bracket is arranged a coiled spring *o*, which is adapted to hold a small conical point *p* on the handpiece in a recess in the bracket when the pointer *g* is turned up to working position, as indicated at Fig. 13, the rock-shaft being adapted to slide endwise slightly in its bearings for this purpose. In practice the pointer is used only for locating the printing-point and making corrections, and hence at all other times it may remain or lie in a horizontal or intermediate position on either side of the central line of the bracket. When it may be desired to use the pointer, the platen is turned up to bring the line of print to view, as shown at Fig. 3, and also by the dotted arc at Fig. 13, and the pointer *g* is then by hand turned to a vertical position, and so that its upper extremity will come adjacent to the bottom of said line, as shown at Fig. 3, whereat the pointer indicates the plane of the printing center and also shows that the paper is in correct position for the impression of the next character. If the right-hand side of the "w" were in alinement with the pointer, it would indicate that the paper should be moved slightly toward the left to obtain the required blank space for the next letter, which movement may be readily effected by the nut, as before explained. When the platen is turned down for resumption of work, the pointer may be left standing upright, as with the form of paper-guide 50 shown. When said guide, in the movement of the carriage, reaches the pointer, it will force the conical projection from its seat and turn the pointer down to an inoperative position, which of course is not necessarily a horizontal one. The progress and position of the paper-carriage are indicated always by the fixed index and scale 55, as usual.

Connecting the pointer to the shift-rail is an essential feature of this part of my invention. As the type-bars have each two types, an upper and a lower case letter, and as a shifting platen is employed in connection therewith, means must be provided to prevent the platen from pressing against the pointer when shifted and to enable the pointer to always bear a relatively fixed position close to the platen when turned up, both when the platen is in its normal lower-case position and when it is in its shifted forward position and all upper-case work is being done. For these reasons I have made the pointer bodily movable back and forth with the platen by connecting the same to the shift-rail, which effects the back-and-forth movements of the platen. This feature of moving the pointer by and with the shift-rail is carried out in all of the forms exhibited.

At Fig. 14 the bracket i is dispensed with and the pointer g' is made integral with the index 56, the piece 56 g' being attached by screws to the under side of the shift-rail. As the pointer g' in this case stands always in a vertical position, the paper-guide 50^a is bent at its upper portion to always escape said pointer during the travel of the carriage.

At Figs. 15 and 16 the pointer g^2, which likewise always stands in a vertical position, is fastened to the inner end of a sliding rod q, suitably supported in a bracket r, which is attached to the top plate 2 by means of screws s. The rod q is flattened where it passes through its bearings in order to prevent any rotation, and the said rod is provided with a lug t and a spring u, which operates to force said lug against the index 56, which coöperates with the scale 55, and which is attached to the under side of the shift-rail by screws k. In this construction when the shift-rail is moved forward the pointer g^2 is likewise moved forward by reason of the pressure of the index 56 against the lug t, thus causing the rod q to slide in its bearings, and when the shift-rail is released the spring u causes the rod q and pointer g^2 to return to their first positions simultaneously with the shift-rail and platen, thus, as before, maintaining a fixed relationship between the pointer and the platen.

At Fig. 17 the pointer g^2 and sliding rod q and fixed index 56 and lug t are employed as before, but in lieu of the spring another lug v is arranged on the inner side of the shift-rail, so that the pointer may be moved positively with the shift-rail in both directions, the lugs t and v operating as a yoke upon the shift-rail.

In a turn-up or roll-up platen of the class found in the Densmore machine, it is inconvenient to make erasures from the sheet when the line of print is exposed, unless one hand be employed to hold up the platen against the pressure of the hand used for erasing, and to avoid this objection I have provided means for locking the platen when turned up to expose the print and make corrections. This is accomplished by having the rearmost edge of the hinged paper-table drop into or engage notches w w in the forward ends of the sliding forks 18, which engagement is automatically effected when the platen is turned up to expose the printing, as shown at Fig. 2, and in this position the pressure on the platen during the act of rubbing or erasing below the center line of the platen is met and resisted by the paper-table and the shoulders formed by the notches w.

When it may be desired to return the platen to its normal shifted position, the platen-frame and the platen-carrier are lifted slightly and at the same time the platen-frame is rotated in the proper direction, said lifting action serving readily to effect a disengagement of the paper-table from the notches. The back rod 21 of the platen-carrier having a slight rocking motion about the pivot 20, (the limiting-screws 92 standing out of contact with the under sides of the forward portions of the sliding forks,) the rear side of the platen-carrier may be lifted slightly and enough to enable the paper-table to readily escape from the notches.

It will of course be understood that when the platen is locked as above described a firmer support is afforded for making erasures, and at the same time the operator is free to use both hands for the work.

In order to increase the speed of the machine, I employ means for spacing between words simultaneously with the impression of the last letter of a word; or, in other words, the machine is organized so as to enable the carriage to feed two letter-spaces when a character-key and the space-key are simultaneously actuated. This is accomplished by the following means: The slots 69 in the independent spring-actuated dog-plate 66 are of a length sufficient to enable the feeding-dog 61 to be moved the distance of two notches or spaces on the rack 60 under certain conditions, as when the space-key 82 is fully depressed, but ordinarily, as when the character-keys are struck, the said dog can move the distance of only one notch or space on said rack, and hence during the writing of a word the carriage moves only single letter-spaces. When, however, the space-key is struck, the carriage moves the distance of two letter-spaces. If the last letter of a word and the space-key be struck simultaneously, two letter-spaces will occur, one for the last letter of the word and the other for the space between words. The feeding-dog 61 is prevented from moving a double space during the impression of the letters of a word by means of a stop x, arranged centrally in the path of a pin y, projecting rearwardly from the plate 66, the said stop being formed at the front end of an arm or lever z, pivoted at z', and provided with a spring z^2, having a downward tension.

Referring to Figs. 6 and 7, when the connecting-rod 71 of the escapement mechanism is pulled down during the printing of a letter the feeding-dog is withdrawn from the rack, as shown at Fig. 7, the holding-dog engages therewith, and at the same time the feeding-dog is driven toward the left (considered from the back of the machine) by the spring 70 until the pin *y* strikes against the stop *x*. At this time the impression is made, and when the finger-key is released the rigid dog escapes from the rack and the feeding-dog engages the next notch thereof, at which moment the carriage-driving spring operates to pull the rack and the feeding-dog toward the right until the left-hand ends of the slots 69 strike against the stop-screws 67 and 68. Thus the carriage is fed a single letter-space distance during each depression of a character-key, which has a downward movement or depression about one-half that of the space-key 82.

When the space-key 82 is depressed to its full extent, (which in the machine shown is when the forward ends of the levers 83 about strike the table-surface 91,) the dogs are pulled down a greater distance than when the character-keys are operated and enough farther to enable the pin *y* to pass below the plane of the stop *x*, whereby the arm 66 may be shot or moved by the spring 70 to the full length of the slots 69, as shown at Fig. 8, thereby causing the feeding-dog to move the distance of two notches on the rack. On return of the dogs to their normal positions the feeding-dog will hence engage the second notch from the one it formerly occupied, and in consequence the carriage will feed a double distance or two notches at this time. When the pin *y* is returning after releasement of the space-key, it first strikes the under side of the stop and lifts the arm or lever *z* sufficiently to enable the pin to move to the right during the feed of the carriage when the feeding-dog is in engagement with the rack, the spring z^2 operating instantly to return the stop to its normal position.

It will be understood, of course, that in the use of the mechanism it is intended that the operator shall actuate the space-key simultaneously with the depression of the last character-key of the word being written, so as to space at the same time for the last letter of a word and for the space after the word, in order that without further spacing the next word may be begun at once. By thus proceeding a considerable gain in speed may be obtained. As, however, the operator may desire at times to use the machine in the customary manner; that is, to space singly at all times, I have provided a supplemental space-key at each side of the machine, which when used will effect single spacing only. These supplemental space-keys are lettered A and are mounted at the ends of levers A′, which are fulcrumed on the rod 10. These single space-keys are provided each at their ends with extensions A^2 and A^3, the former of which overlie and contact with the ends of the central space-key 82, while the latter overlie horizontal portions A^4 of the side frames 1, which portions serve as stops for the descent of the supplemental space-keys, thus limiting their downward movements to such an extent as that the central double space-key 82 cannot be depressed far enough through the supplemental keys to effect the double spacing above described.

I shall now describe the means for arresting the forward movement of the carriage and for locking the line, the two being connected together and so constructed as that the carriage may be automatically arrested and the line locked at any desired point, and also such that thereafter if desired the contrivance may be moved or adjusted by hand, so as to permit the insertion or printing of one or more additional characters.

Mounted upon the top of the carriage 15, at its rear side, is a rack-bar B, preferably corresponding in number of teeth to the carriage-feed rack 60. Upon the rack-bar B is a plate C, provided with horizontal lips C′, C^2, and D on its under side to form a semitubular contrivance to embrace said rack-bar and slide thereupon. Underneath said plate is attached to the downwardly-bent vertical side C^3, integral with the lip C′, a strip C^4, provided at one end with a tooth C^5 and at the other end with a tooth C^6, said teeth being adapted to engage notches in the rack-bar B and hold the device firmly at any point to which it may be adjusted. The inner side or edge C^7 of the plate is made to diverge or widen at its rear end, and at its extremity is provided with a downwardly-extending lip C^8, to which is attached a leaf-spring E, which at its free end bears against the inner plain edge of the rack-bar and causes the teeth C^5 C^6 to normally engage with the notches in the toothed bar B. The contrivance is wider at its front end than at its rear end; that is to say, the distance on the inside between the vertical walls of the lips C′ and D is greater than the distance between the vertical walls of C′ and C^2, and in consequence of the pressure of the spring the vertical wall of the lip D stands normally away from the inner edge of the toothed bar.

In order to move the contrivance along the toothed bar, the front end of the plate is swung rearwardly until the vertical wall of the lip D strikes against the inner edge of the rack-bar, at which time the teeth C^5 and C^6 have been disengaged from the notches in said bar. While in this position the contrivance may be slid freely back and forth along said bar, a knob or finger-piece F being provided to facilitate the vibration of the contrivance and its longitudinal movement. The vibration or swinging movement of the contrivance at its front or toothed end takes place about the lip-corner C^2 and its wall as a center of motion, which portion of the contrivance bears

or fulcrums on the inner or plain edge of the rack-bar B. When the knob is released, the spring serves to return the plate to its normal position and to effect a reëngagement of the teeth C^5 C^6 with the notches in the bar.

Attached to the upper side of the plate is an arm or bracket G, which is bent downwardly, as at G′, and then inwardly or forwardly, as at G^2, which arm at its vertical portion G′ is adapted to contact with the fixed arm 90, attached to the top plate, and to thereby arrest the paper-carriage. At the same time the inwardly-extending substantially horizontal portion G^2 of said arm is adapted to pass beneath the feeding-dog, as shown in section at Fig. 5, and thus prevent the spacing mechanism from being actuated. The interposition of this arm in the path of depression of the spacing-dog prevents the descent of the universal bar, and hence of any of the key-levers in the machine, and as a result the types are incapable of rising to the printing-point, whereby when the carriage has come to a stop at the end of a predetermined line it is impossible to accidentally print one character over or upon another. If, however, it should be desired to add one or more characters to the line, the plate C, bearing the intercepting-arm, may be manipulated and moved toward the left, (considered from the back of the machine,) after which the printing may be resumed until the vertical portion G′ of the arm again strikes the fixed arm 90.

In order that the combined sliding carriage-stop and line-locking contrivance may thereafter return exactly to its former desired position, I employ a gage-piece H, which is made tubular or semitubular to slide upon the bar B and serve as an abutment for the back edge of the plate C. This device H is provided with a tooth H′ to engage a notch in the bar B, and with a flat spring H^2, which bears upon the inner edge of the bar B and causes said tooth to normally engage said notch.

The device H is made flaring or wider at its front end at the inner side to enable the device to be swung about the point H^3 as a center for the purpose of disengaging the tooth H′ when it may be desired to adjust the device H to a new position. The adjustments of the contrivance C and device H may be performed with reference to the machine-scales and the bar B may be graduated to correspond with said scales. Between the right-hand edge of the vertical portion G′ of the arm and the right-hand end of the plate C (considered from the back of the machine) the plate covers or embraces about fifteeen notches on the bar B. Hence if it be desired, for example, to arrest the carriage and lock the line at, say, "35" on the scale, the inner end of the device H, against which the right-hand end of the device C abuts, is slid to register with the twentieth notch on said bar. If after the carriage is arrested and the line locked it be desired to add one or more additional characters, the contrivance C is slid toward the left and the printing resumed to the desired extent. Then if it be desired in succeeding lines to again arrest the carriage at "35" the plate C is slid back to abut against the device H, as before. It will thus be seen that the device H acts particularly as a gage to enable the slide C to be readily reset to its former predetermined position, after having been moved to permit the insertion of additional characters, and without recourse to the scales.

While the device H when combined with the contrivance C is useful, the latter may of course be employed without the former, and I therefore do not wish to be limited altogether to the use of this combination of parts.

It will also be understood that the contrivance C may be made longer or shorter than shown and described, although I have found in practice that the dimensions given work satisfactorily.

In order to prevent casual detachment of the contrivance C, the inner edge of the bar B is provided with a notch B′, Fig. 1, into which the free end of the spring E jumps when brought into alinement with said notch, thereby stopping the movement of the contrivance C; but if it should be desired to remove said contrivance the spring may, by hand, be disengaged from the notch and the contrivance thus readily slipped off of the bar B.

Referring to Fig. 9, which shows a modification of the escapement mechanism, a stop x' is pivoted at x^2 upon a bar z^3, rigidly attached by screws to the bracket 65, and said pivoted stop rests normally against a ledge x^3 on said arm, a spring z^4 being provided to bear upon the upper edge of said stop. When the dogs are pulled down for a single space, the pin y strikes the free end of said stop, but when the dogs are pulled down for a double space the said pin passes below the free end of said stop and shoots slightly beyond the same. When the dogs are released, the said pin at first operates to slightly lift said stop but soon parts company with it and returns to its normal position, (shown at Fig. 9,) the spring z^4 operating simultaneously to return the stop to its initial position.

Various changes in design and detail construction may be made without departing from the gist of the several features of my invention.

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

1. In a type-writing machine, the combination of a platen capable of independent movement longitudinally, and a screw and nut arranged axially of the platen for effecting such movement.

2. In a type-writing machine, the combination of a platen, a screw and nut arranged axially of the platen for moving the same longitudinally in one direction, and a spring for returning the platen to its normal position.

3. In a type-writing machine, the combina-

tion of a platen-carrier, a platen-frame mounted on said carrier and containing a platen, and a screw and nut arranged axially of said platen for moving the said platen-carrying frame endwise independently of its carrier.

4. In a type-writing machine, the combination of a platen-carrier, a platen-frame mounted on said carrier and containing a platen, a screw and nut arranged axially of said platen for moving said platen-carrying frame in one direction independently of said carrier, and a spring for moving said platen-carrying frame in the opposite direction.

5. In a type-writing machine, the combination of a platen-carrier having upright side pieces, a platen-frame, a platen, a platen-axis mounted in said platen-frame and prolonged at one end to extend to one of said platen-carrier side pieces, and provided thereat with a screw or threaded portion, and a nut working on said screw or threaded portion and against said side piece to effect an independent longitudinal feed for making corrections.

6. In a type-writing machine, the combination of a platen-carrier having upright side pieces, the platen-frame, the platen, the platen-axis mounted in said platen-frame and prolonged at both ends to extend to said upright side pieces, one end of said axis having a screw and nut for moving the platen endwise in one direction, and the other end of said axis having a spring for moving the platen in the opposite direction and restoring it to normal position.

7. In a type-writing machine, the combination of a turn-up platen, means for moving it endwise independently of its carrier, and a pointer arranged in the plane of the impression-point and contiguous to the paper on the platen to indicate the required amount of adjustment of the platen and the paper thereon in making corrections.

8. In a type-writing machine, the combination of a turn-up platen, a screw and nut for moving the same endwise independently of its carrier, and a pointer arranged contiguous to the paper on the platen to facilitate and render exact the endwise adjustments of the platen and the paper for the making of corrections.

9. In a type-writing machine, the combination of a turn-up platen, a screw and nut for moving it endwise independently of its carrier, a returning spring for said platen, and a pointer arranged in proximity to the paper on the platen.

10. In a type-writing machine, the combination of a platen adapted to be rolled up to expose to view the last line of printing, a pointer arranged to register with said line of printing when exposed and also to indicate the plane of the impression-point, and means for moving the platen and the paper thereon endwise independently of its carrier and relatively to said pointer.

11. In a type-writing machine, the combination of type-bars provided each with a plurality of types, a shifting platen, a shift-rail for moving said platen, and a pointer adapted for use in connection with the paper on the platen and connected to said shift-rail to move therewith and with the platen during the reciprocations of said members.

12. In a type-writing machine, the combination of type-bars having each a plurality of types, a platen, a platen-frame mounted upon a shifting carrier, a shift-rail for the latter, a pointer connected to said shift-rail to move therewith and with the platen and adapted for adjustment in connection with the paper on said platen.

13. In a type-writing machine, the combination of type-bars having a plurality of types, a platen, a platen-frame mounted on a shifting platen-carrier which bears at its front side a scale, a shift-rail, a pointer connected to said shift-rail for use in connection with the paper on the platen, and an index also connected to said shift-rail for use in connection with said scale.

14. In a type-writing machine, the combination of type-bars having a plurality of types, a shifting platen, a shift-rail, and a vertical pointer connected thereto and mounted upon a rock-shaft or horizontal axis.

15. In a type-writing machine, the combination of type-bars having a plurality of types, a shifting platen, a shift-rail, an adjustable pointer attached to said shift-rail, and a handpiece for moving said pointer into and out of operative position.

16. In a type-writing machine, the combination of type-bars having a plurality of types, a shifting platen, a shift-rail, an adjustable pointer attached to said shift-rail, and means for holding said pointer in its operative position.

17. In a type-writing machine, the combination of type-bars having a plurality of types, a shifting platen, a shift-rail, and an adjustable pointer mounted on a rock-shaft movable endwise and provided with a spring and a handpiece, the latter having a projection to engage with a stationary seat to hold the pointer in operative relation to the paper on the platen.

18. In a type-writing machine, the combination of the type-bars having a plurality of types, a shifting platen, a shift-rail therefor, a bracket attached to said shift-rail and having an index to coöperate with a scale on the platen-carrier, a rock-shaft provided at its inner end with a pointer and adapted to turn in bearings in said bracket, and a handpiece on said rock-shaft for moving the pointer into or out of operative position.

19. In a type-writing machine, the combination of the type-bars having a plurality of types, the shifting platen, the shift-rail, the bracket attached thereto having an index for the platen-carrier scale, the rock-shaft mounted in bearings in said bracket, the pointer at the inner end of said rock-shaft, the handpiece at the outer end of said rock-shaft, stops

to limit the turning of said handpiece, the spring on said rock-shaft, and the holding projection and seat therefor.

20. In a type-writing machine, the combination with a shifting-platen frame, and the hinged paper-table thereon, of locking recesses or shoulders to engage the rear edge of said paper-table when the platen is turned to expose the printing and make corrections.

21. In a type-writing machine, the combination of the paper-carriage feed-rack, the escapement mechanism including a feeding-dog and a holding-dog, the feeding-dog having an independent movement in the direction of the length of the feed-rack the distance of two notches or spaces on said feed-rack, and also a vibratory movement transversely of said feed-rack, a stop for preventing said dog from moving more than a single notch or space when the character-keys are actuated, and a space-key adapted to vibrate said feeding-dog a greater distance out of said feed-rack than when the character-keys are actuated and to thereby cause it to pass by and wholly avoid the restraint of said stop, whereby the feeding-dog may move the distance of two notches or spaces on said feed-rack and the carriage in consequence be fed a like distance.

22. In a type-writing machine, the combination of the paper-carriage feed-rack, the escapement mechanism including a feeding-dog and a holding-dog, the latter being on a pivotal arm, and the former on a sliding plate supported on said arm, said plate being slotted longitudinally and being capable of moving longitudinally of the feed-rack the distance of two notches or spaces thereof, a spring for moving said plate in one direction, a pin on said feeding-dog plate, a stop to arrest said pin and said feeding-dog when the character-keys are actuated, and a space-key having a greater depression than the character-keys and adapted to move the pin down below the plane of said stop and to thereby enable the feeding-dog to move its full distance or two notches or spaces on the feed-rack.

23. In a type-writing machine, the combination of a carriage feed-rack, an escapement mechanism including a feeding-dog and a holding-dog, the latter being made integral with a horizontally-pivoted arm, and the former being made integral with a plate supported by said arm and having elongated slots and a pin, a spring for moving said slotted plate, a pivoted spring-actuated stop to be engaged by said pin and limit the throw of the feeding-dog to one notch or space when the character-keys are actuated, and a space-key having a greater depression than the character-keys to move said pin below the plane of said stop and to thereby permit the feeding-dog to be moved under the influence of said spring the distance of two notches or spaces on said feed-rack.

24. In a type-writing machine, the combination of the carriage feed-rack, the escapement mechanism including a feeding-dog and a holding-dog, a stop to prevent the feeding-dog from moving more than the distance of one notch or space on the feed-rack when the character-keys are actuated, a space-key having a greater depression than the character-keys to enable the said feeding-dog to avoid said stop and thereby move the distance of two notches or spaces on said feed-rack, and a supplemental space-key coacting with said double space-key to effect therethrough single spacing when desired, and a stop for preventing the supplemental space-key from being depressed as far as the double space-key may be.

25. In a type-writing machine, the combination of the paper-carriage, a rack-bar thereon, the plate C adapted to slide on said bar and carrying one or more teeth to engage the notches on said bar and made wider at the toothed end to enable the said tooth or teeth to be freed from said rack-bar by a swinging movement, and a returning-spring for said plate.

26. In a type-writing machine, the combination of a paper-carriage, a rack-bar mounted thereon, a plate C provided with underlying lips one of which fulcrums on the plain edge of said rack-bar and one or more holding-teeth, a spring, and an arm to engage a fixed device on the framework of the machine.

27. In a type-writing machine, the combination of a paper-carriage having a feed-rack, an escapement mechanism, a printing mechanism, the sliding, toothed spring-pressed plate C fulcrumed at one corner and carrying an arm as G^2 adapted to move into the path of vibration of the escapement-dogs and to thereby arrest the same and the printing mechanism in connection therewith.

28. In a type-writing machine, the combination of a paper-carriage having a feed-rack, the escapement mechanism, the printing mechanism, a rack-bar on said carriage, the sliding, toothed spring-pressed plate C fulcrumed at one corner and having an arm as G′ to contact with a fixed device on the framework, and an arm as G^2 to intercept the escapement-dogs simultaneously with the stoppage of the travel of the carriage and to thereby lock the printing mechanism.

29. In a type-writing machine, the combination of a paper-carriage having a feed-rack, an escapement mechanism, a printing mechanism, a rack-bar on said carriage, the sliding, toothed spring-pressed plate C having a carriage-arresting member and a dog-locking member, and an adjustable resetting-gage also mounted on said rack-bar.

30. In a type-writing machine, the combination of a paper-carriage, a feed-rack, an escapement mechanism, a printing mechanism, an adjustable carriage-arresting and line-locking contrivance mounted on said carriage, and an adjustable resetting-gage for said contrivance.

31. In a type-writing machine, the combina-

tion of a paper-carriage having a feed-rack, an escapement mechanism, a printing mechanism, a rack-bar on said paper-carriage, a carriage-arresting and line-locking contrivance comprising the adjustable, toothed spring-pressed plate fulcrumed at one corner on said rack-bar and carrying an arresting-arm and a locking-arm.

32. In a type-writing machine, the combination with the rack-bar B having the notch B′, the toothed, swinging and adjustable plate C having a leaf-spring adapted to engage said notch.

33. In a type-writing machine, the combination of the rack-bar B, the carriage-stop, and the resetting device H, having a tooth and a spring and adjustable by swinging and sliding movements on said rack-bar.

34. In a type-writing machine, the combination of a paper-carriage, an escapement mechanism, a rack-bar, a spring-pressed plate thereon provided with a holding-tooth and having a bearing or fulcrum at one corner, and provided with a depending arm G′ to engage with a contact-piece, and with a horizontal arm to engage with the escapement mechanism.

35. In a type-writing machine, the combination of a paper-carriage, an escapement mechanism, a rack-bar, the spring-pressed plate C having the lips C′, C² and D and the holding-tooth, the said plate being adapted to swing about the lip C², and the wall of the lip D being adapted to stop or limit the movement.

Signed at Boston, in the county of Suffolk and State of Massachusetts, this 18th day of September, A. D. 1894.

WALTER J. BARRON.

Witnesses:
E. G. THORP,
FRANCIS B. PATTEN.