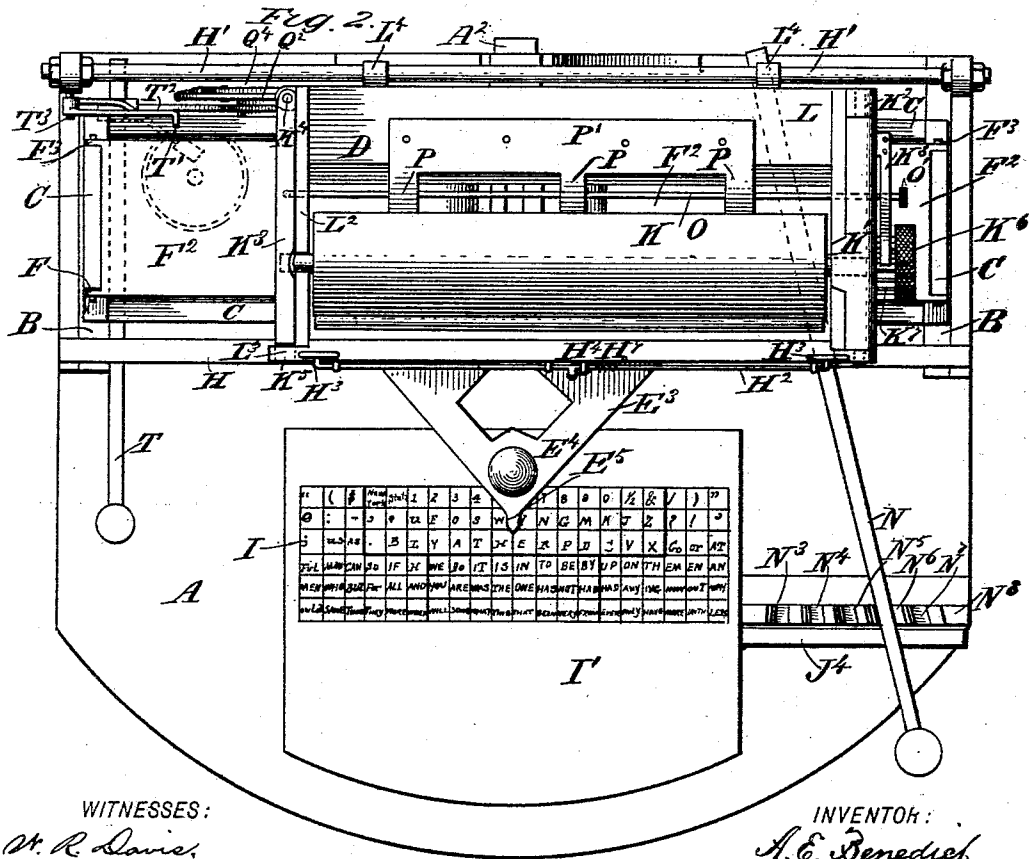


5 Sheets—Sheet 1.

No. 476,724.

Patented June 7, 1892.



WITNESSES:

W. R. Davis,
C. Sedgewick

INVENTOR:

A. E. Benedict
BY Munn & Co
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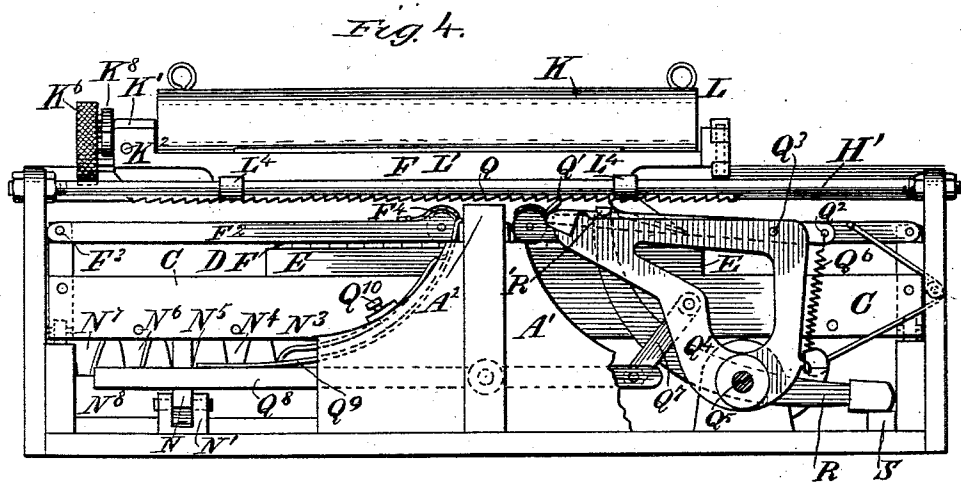
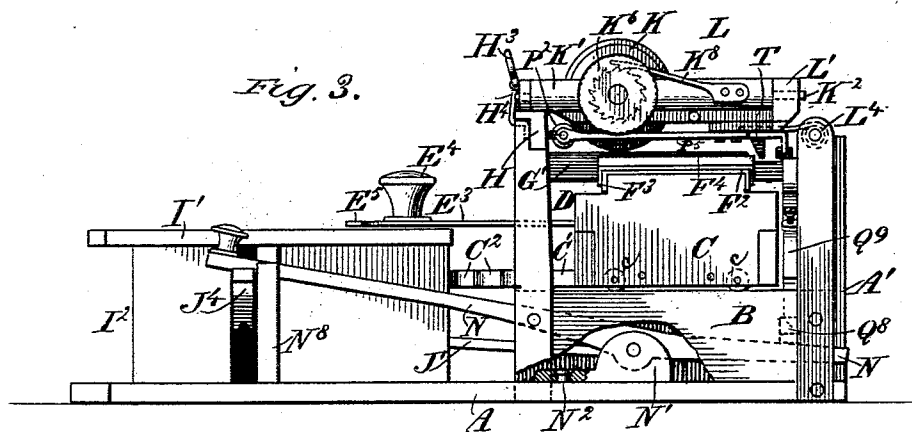
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5 Sheets—Sheet 2.

A. E. BENEDICT.
TYPE WRITING MACHINE.

No. 476,724.

Patented June 7, 1892.

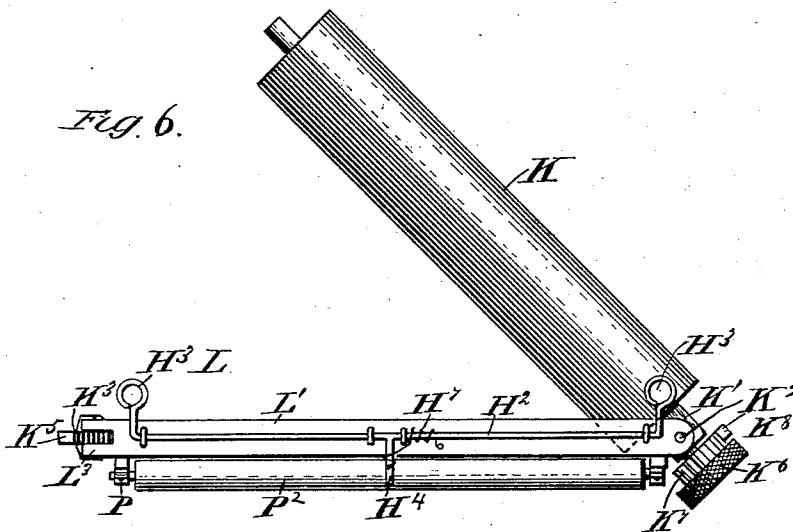


WITNESSES:
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5 Sheets—Sheet 3.

No. 476,724.



W. R. Davis
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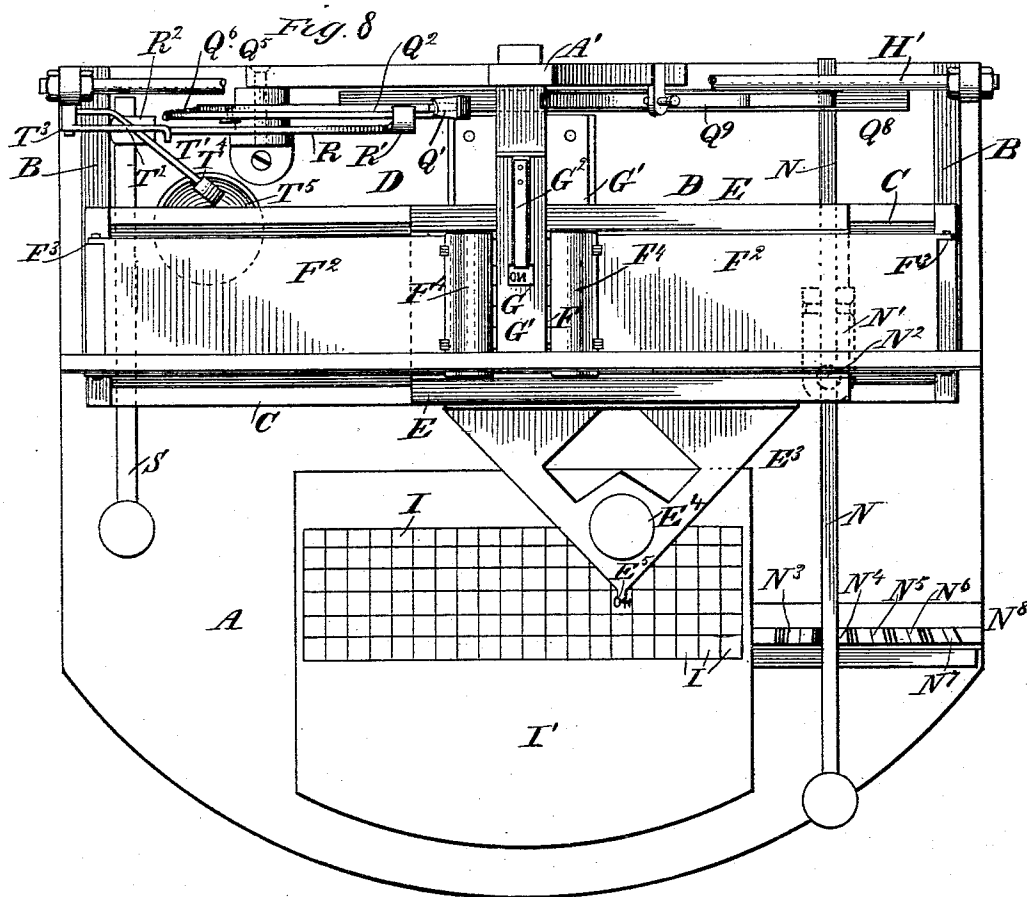
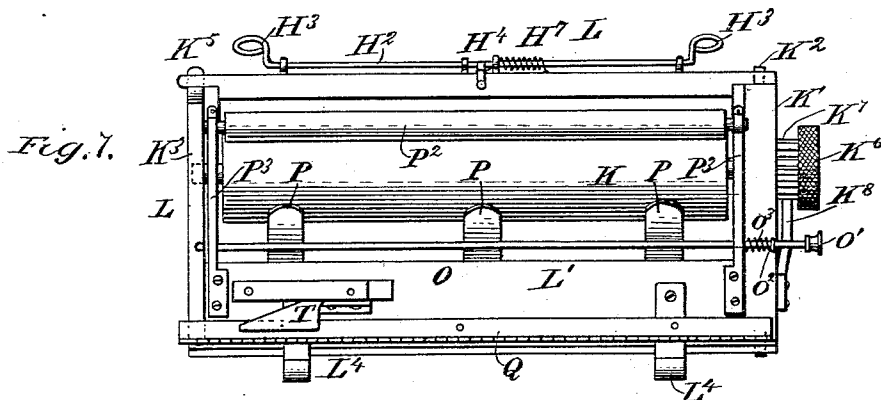
(No Model.)

5 Sheets—Sheet 4.

A. E. BENEDICT.
TYPE WRITING MACHINE.

No. 476,724.

Patented June 7, 1892.



WITNESSES:
M. R. Davis.
C. Sedgwick

INVENTOR:
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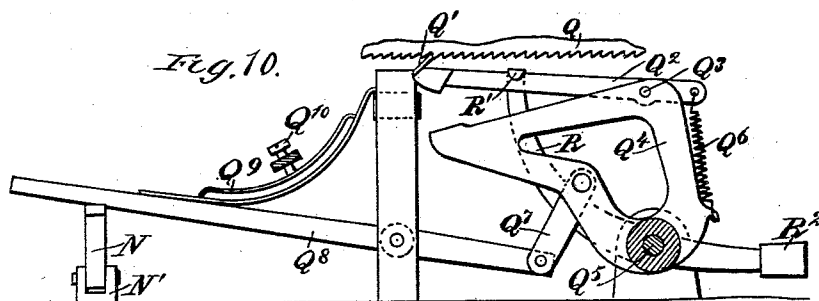
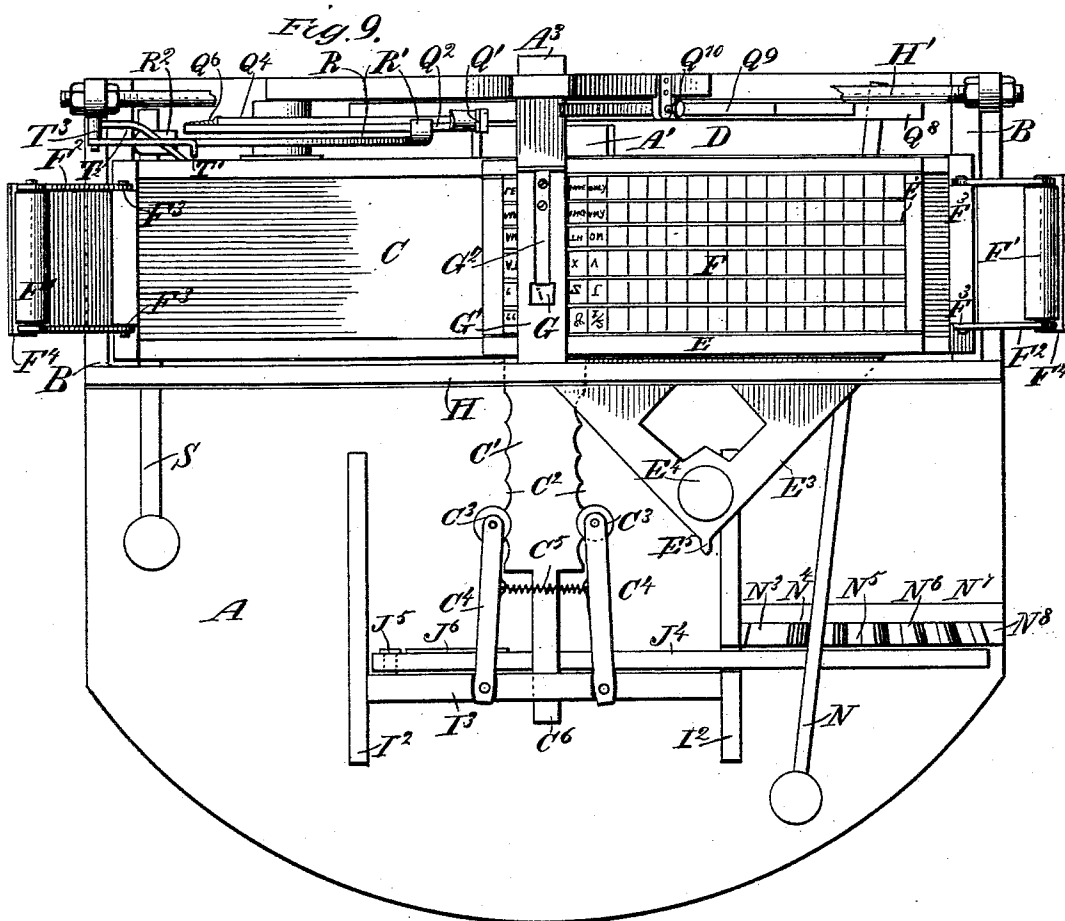
(No Model.)

5 Sheets—Sheet 5.

A. E. BENEDICT.
TYPE WRITING MACHINE.

No. 476,724.

Patented June 7, 1892.



WITNESSES:

W. R. Davis.
C. Sedgewick

INVENTOR:

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UNITED STATES PATENT OFFICE.

ALLARD E. BENEDICT, OF CAIRO, NEBRASKA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 476,724, dated June 7, 1892.

Application filed April 20, 1891. Serial No. 389,609. (No model.)

To all whom it may concern:

Be it known that I, ALLARD E. BENEDICT, of Cairo, in the county of Hall and State of Nebraska, have invented a new and Improved Type-Writing Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved type-writing machine which is simple and durable in construction, can easily be manipulated, and arranged so as to print directly without the use of a ribbon single characters, such as letters of the alphabet, numerals, signs, and the like, and also words composed of two, three, four, or more letters each.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

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

Figure 1 is a front elevation of the improvement. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of the same. Fig. 4 is a rear elevation of the same with parts broken out. Fig. 5 is a transverse section of the same on the line *x x* of Fig. 1. Fig. 6 is a front elevation of the paper-carriage with the paper-roller in an elevated position. Fig. 7 is an inverted plan view of the paper-carriage. Fig. 8 is a plan view of the improvement with the paper-carriage removed. Fig. 9 is a like view of the same with the paper-carriage and the indicating-table removed and with the inking-rollers in an open position, and Fig. 10 is a rear elevation of the shifting mechanism for the paper-carriage.

The improved type-writing machine is mounted on a suitably-constructed base A, on the ends of which are arranged transversely-extending guideways B, on which is mounted to slide laterally the carriage C, forming part of the type-case D, provided with a type-holder E, mounted to move longitudinally on the carriage C. The type-holder E contains the type F, each formed of a block arranged vertically and containing at its upper end either a single character—such as the letters of the alphabet, numerals, signs, &c.—or whole words composed of two,

three, or more letters. The type in the holder E are arranged in rows, preferably six longitudinal rows of about twenty type in a row, so that the entire holder contains one hundred and twenty different type.

The carriage C is provided with friction-rollers *c*, traveling on the guideways B, (see Fig. 3,) so as to reduce friction to a minimum. In a like manner the type-holder E may be mounted to travel longitudinally on the carriage C. The carriage C is made in the shape of a box open on the top, as is plainly illustrated in the drawings, the carriage C being of a sufficient length to permit the type-holder E to slide longitudinally therein by means of longitudinal cleats or rabbets *e*, resting on the upper longitudinal edges of the carriage C. The type-holder E is made in the shape of an open frame, as shown, and is formed with longitudinally-extending partitions *E'*, each of which is provided on its lower edge with a longitudinally-extending projection or flange *E''*, on which rest the lower ends of the type F. By thus arranging the carriage C and the type-holder E the type-case may be moved laterally and longitudinally in any desired direction, so that any one of the type F can be readily brought directly under the central point of the printing, which is in the shape of an opening G, formed in the transversely-extending bar G', having its front end secured on the line-indicating bar H and its rear end on a bracket A', secured to the base A. The opening G is preferably beveled, as is plainly indicated in Fig. 5, so that the corresponding type can be readily passed upward through the said opening, the beveled sides of the opening guiding the type to an exact position.

A spring G², held on the transverse bar G, is adapted to engage with its free end the top of the type-bar, so as to return the latter to its normal position after the impression is made. From the front end of the type-holder E extends a plate E³, provided on top with a knob E⁴, adapted to be taken hold of by the operator when using the type-writing machine. The front end of the plate E³ is formed with a pointer E⁵, adapted to indicate on characters I, arranged on an indicating-table I', supported on a suitably-constructed frame I², held on the front part of the base A. The characters I correspond to the type F in the holder

E and are arranged in rows corresponding to the rows of type in the holder E. Thus when the pointer E⁵ is moved upon any one of the characters I the corresponding type F is directly under the opening G, which latter is, as previously mentioned, the central point of printing. When the operator takes hold of the knob E⁴, he can readily shift the type-case forwardly or rearwardly or longitudinally, as desired, until the pointer E⁵ is over the character I, of which an impression on the paper is desired by the corresponding type F, the said type then being directly under the opening G.

In order to hold the type-case D in position after the pointer E⁵ has been moved to the desired character I on the indicating-table I', a longitudinally-extending bar C' is provided, which extends forwardly from the front end of the carriage C. The side edges of this bar C' are formed with segmental notches C², corresponding in number on each side to the number of longitudinal rows of type in the type-holder E. The said notches C² are adapted to be entered by rollers C³, journaled in links C⁴, pivoted on a longitudinally-extending bar I³ of the frame I², supporting the indicating-table I'. A spring C⁵ connects the two links C⁴ with each other, (see Fig. 9,) so that the said rollers C³ are firmly held in contact with the corresponding notches C², thus preventing an accidental displacement of the type-case while the impression is made. The segmental notches C², as well as the spring-pressed rollers C³, permit of readily shifting the type-case D longitudinally or laterally, as desired and as previously mentioned. The front end of the bar C' is formed with a tongue C⁶, guided in the plate I³, previously mentioned.

In order to ink the type F, inking-rollers F' are provided, each journaled in the ends of a frame F², pivoted on the end of the carriage C, so that the said rollers F' rest on top of the characters on the type F, and when the case is shifted longitudinally the said rollers F' travel over the type, thereby inking the same. The rollers F' are made of a suitable material and inked, which can be easily done when the rollers are in the position shown in Fig. 9 and whenever deemed necessary. In order to distribute the ink on the rollers F', a cap F⁴ is provided for each roller, hinged on the frame F² and extending over the top of the respective roller. When the latter is rotated by the longitudinal movement of the type-case E, the respective cap F⁴, resting on the said roller, causes distribution of the ink applied to the respective roller and protects the paper above from any blotting or soiling. The frames F² are covered to protect the type from dust, &c.

In order to move the respective type F, located under the opening G, upward, so as to make the impression, a pin J is provided, which has its upper end guided in a bar B², secured on top of a block B', erected on

the base A midway between the guideways B. The lower end of the pin is guided in the base. (See Fig. 5.) The bar B² also engages a transverse slot in the under side of the carriage C, so that the latter is guided in its transverse movement. The lower end of the pin J is engaged by the rear end of a lever J', pivoted at J² to a bracket erected near the front end of the base A. The front end of the lever J' engages the slot J³, arranged in a longitudinally-extending printing-lever J⁴, pivoted at J⁵ to the inside of the plate I³ of the frame I², previously mentioned, the said lever J⁴ being held in an uppermost position by a spring J⁶, engaging the underside of the said lever near its fulcrumed end, as is plainly shown in Fig. 9.

When the printing-lever J⁴ is in a normal position, as illustrated in Fig. 5, then the top end of the pin J is about flush with the top of the bar B², so as to be below the under side of the type-holder E to permit the latter to be shifted longitudinally, as previously explained. When the free end of the printing-lever J⁴ is pressed downward, the spring J⁶ is compressed and the rear end of the lever J' is swung upward, so that the pin J moves vertically and engages the type F, held directly under the opening G, so that the type is pressed upward into the said opening and against the paper held on the paper-roller K of the paper-carriage L. As soon as the pressure on the printing-lever J⁴ is released, the spring J⁶ moves the said lever into its normal position, so that the pin J slides downward into the position illustrated in Fig. 5 and the type F in the opening G falls back into its normal position in the type-holder E by its own weight, assisted by the tension of the spring G².

The free end of the printing-lever J⁴ is not directly engaged by the operator, but by means of a space-lever N, which extends transversely over the top of the printing-lever J⁴ and has its pivot in a lug N', pivoted at N² to the base A, the said lug N' thus being free to swing on top of the base. The space-lever N is adapted to engage a series of notches N³, N⁴, N⁵, N⁶, and N⁷, arranged in a longitudinally-extending plate N⁸, erected on the base A next to the printing-lever J⁴, as is plainly illustrated in Fig. 9. The notches N³, N⁴, &c., are arranged radially, the center being the pivot N² of the lug N', carrying the space-lever N. The space-lever N is held in an uppermost position by the printing-lever J⁴, pressed on by its spring J⁶.

The paper-roller K is journaled at one end in a transversely-extending bearing K', provided on its ends with trunnions K², journaled in the frame L' of the paper-carriage L. The shaft of the other end of the paper-roller K passes into a notch in the end bar L² of the frame L', and is adapted to engage an opening in a bearing K³, pivoted at one end at K⁴ to the rear end of the paper-carriage frame L'. On the free end of the bearing K³ is arranged a

lug K⁵, adapted to pass into a slot L³, formed on the front bar of the paper-carriage frame L'. A rod O is connected with this pivoted bearing K³ and extends longitudinally in the rear of the roller K, the said rod O passing to the ends of the paper-carriage frame L', being formed at its right-hand end with a knob O' and with a collar O², against which presses the spring O³, pressing with its other end on the outside of the right-hand end of the paper-carriage L'. The spring O³ exerts a pressure on the rod O to the right, so that the pivoted bearing K³ is held in a closed position, whereby the aperture in the said bearing engages the outer end of the shaft of the paper-roller K, thus locking the latter in place on the frame L'. The right-hand end of the shaft of the paper-roller K is formed with a knob K⁶, adapted to be taken hold of by the operator to conveniently turn the paper-roller in its bearings, so as to shift the paper. Next to the knob K⁶ is arranged a toothed wheel K⁷, engaged by a spring-pawl K⁸, secured to the paper-carriage frame L'. The teeth in the toothed wheel K⁷ are so arranged that when the knob K⁶ is turned and the pawl K⁸ engages a succeeding tooth or teeth then the paper is shifted the desired distance. The pawl K⁸ serves to lock the paper-roller and the paper carried by it in place while the impression is made.

The paper is held in place on the under side of the roller K by guiding-tongues P, secured or formed on a plate P', fastened to the rear end of the paper-carriage frame L'. A roller P² is held in close proximity to the paper-roller K at the under side and near the front of the latter, as is plainly illustrated in the drawings. This roller P² is journaled in the free ends of bearings P³, preferably made of steel and secured to the rear end of the carriage-frame L'. The bearings P³ have the tendency to press the roller P² against the roller K, so as to hold the paper in place while the impression is made.

When the operator desires to place a sheet of paper on the guiding-tongues P and between the rollers P² and K, he takes hold, with his right hand, of the knob K⁶, at the same time pressing the handle O' of the rod O, so that the pivoted bearing K³ is disengaged from the left-hand end of the shaft of the paper-roller K. The operator now presses on the knob K⁶ and causes the bearing K³ to turn on its trunnions K², so that the paper-roller K swings upward into the position illustrated in Fig. 6. The operator can now conveniently place the sheet of paper upon the frame L', the paper resting on the tongues P and the roller P². The operator now swings the roller K downward, at the same time releasing the pressure on the rod O, so that the said paper-roller K again engages the pivoted bearing K³, moved to its forward position by the action of the spring O³. The paper is now firmly held between the roller K, the tongues P, and the roller P². Now by turning the

knob K⁶ the roller K is turned, and thereby the paper is shifted forward or backward, as desired.

The paper-carriage frame L' is formed at its rear end with eyes L⁴, engaging a longitudinally-extending rod H', held in suitable brackets or standards erected on the base A. The eyes L⁴ permit the frame L' to swing upward and rearward into the position shown in dotted lines in Fig. 5 to enable the operator to examine the impressions made by the type F. The front end of the carriage L' rests on the top of the longitudinally-extending line-indicating bar H and is adapted to be locked thereto to prevent lateral displacement during the time the carriage moves longitudinally and while the impressions are made. This lock is provided with a longitudinally-extending rod H², mounted to turn in suitable bearings on the front end of the carriage-frame L'.

Each end of the rod H² is formed with a handle H³, adapted to be taken hold of by the operator when unlocking the carriage-frame to examine the impressions made. At or near the middle of the rod H² is formed or secured a downwardly-extending L-shaped arm H⁴, adapted to pass under a longitudinally-extending projection H⁶, arranged on the front of the line-indicating bar H. The lower end of the arm H⁴ is formed into a pointer, indicating on the graduation H⁵, formed on the line-bar H, the said graduation indicating the position of any letter in a line on the paper. A spring H⁷ is coiled on the rod H² and secured with one end to the frame L', the other end of the spring pressing on the arm H⁴, so as to hold the latter in a lowermost or a locking position. The arm H⁴ is so arranged as to permit a longitudinal shifting of the carriage L to prevent an upward swinging of the said carriage unless the handles H³ are pressed to swing the arm H⁴ from under the projection H⁶.

On the under side and near the rear end of the carriage-frame L' is secured a longitudinally-extending rack Q, adapted to be engaged by the upwardly-bent end Q' of a lever Q², fulcrumed at Q³ on a plate or lever Q⁴, (see Fig. 10,) pivoted at Q⁵ to a lug erected on the base A. A spring Q⁶ connects the outer end of the lever Q² with a hook on the lever Q⁴, the said spring serving to press the bent end Q' upwardly into engagement with the teeth of the rack Q. The lever Q⁴ is pivotally connected by a link Q⁷ with a lever Q⁸, extending longitudinally and fulcrumed at the rear end of the base A. The free end of the lever Q⁸ is adapted to be engaged by the rear end of the transversely-extending space-lever N, as is plainly shown in the drawings. A spring Q⁹ presses on top of the free end of the lever Q⁸, so that the latter is returned to its former position after the operator releases the pressure on the knob on the front end of the space-lever N. A set-screw Q¹⁰ engages the spring Q⁹ and serves to increase or diminish the ten-

sion thereof, so as to cause the said spring to press on the lever Q^8 with the necessary force.

The top of the lever Q^2 is adapted to be engaged by a hook R' , held on a lever R , pivoted on the pivot Q^5 next to the lever Q^4 . The lower end R^2 of the lever R is adapted to be engaged at its under side by a transversely-arranged lever S , extending to the front of the base A , within convenient reach of the operator. This lever S when pressed serves to move the hook R' of the lever R downward, so that the lever Q^2 has its end Q' disengaged from the teeth of the rack Q to permit of shifting the paper-carriage L to right or left on the rod H' and the line-indicating bar H .

When the carriage is in the position illustrated in Fig. 5 and the operator presses the space-lever N , then the free end of the lever Q^8 is moved upward, so that the link Q' pulls on the lever Q^4 , whereby the lever Q^2 , pivoted on the said lever Q^4 , swings to the right and the bent end Q' slides over the backs of the teeth of the rack Q . As soon as the operator releases the pressure of the space-lever N , the spring Q^9 exerts its force on the lever Q^3 , so that the latter, as well as the lever Q^4 , is moved back to its former position, whereby the lever Q^2 is drawn to the left and by its end Q' , engaging one of the teeth of the rack Q , pulls on the latter, thereby drawing the paper-carriage L to the left. The lever O^4 firmly holds the end of the lever Q^2 in the teeth of the rack, so as to lock the carrier in a certain position. As the space-lever N swings with the lug N' , the end of the lever engaging the lever Q^8 may be moved nearer to or farther from the fulcrum of the said lever Q^8 , so that when the front end of the space-lever N is pressed into one of the notches N^3, N^4, N^5, N^6 , and N^7 then the free end of the lever Q^8 is caused to swing a lesser or a greater distance upward, whereby the lever Q^2 is moved a lesser or greater distance to the right, and the return movement of the lever Q^2 , being correspondingly more or less, causes more or less shifting of the paper-carriage L . Thus when the lever N is pressed—for instance, into the notch N^3 —the paper-carriage is moved such a distance that two single characters of type F , printed on the paper, stand close to each other. When the lever is pressed in the succeeding notch N^4 , then a space is formed between the two single characters printed, and so on, as hereinafter more fully described.

On the under side of the frame L' of the paper-carriage L and near the left end of the same is secured an inclined arm T , adapted to engage a projection T' , formed on the striker T^2 , pivoted at T^3 on a bracket erected on the base A . The ball T^4 of the striker T is adapted to sound a bell T^5 , held on the base A . When the carriage L travels to the left and approaches its outermost left-hand position, the lug or projection T' passes up the inclined arm T , so that the striker T^2 is raised, and when the carriage has reached its left-hand position then the lug T' drops off the right-

hand end of the arm T , so that the striker, with its ball T^4 , swings downward to sound the bell T^5 . The operator then shifts the carriage back to the right-hand position by first pressing on the lever S , so as to disengage its end Q' from the rack Q to permit the return movement of the carriage.

The operation is as follows: When the paper-carriage is in the right-hand position and the paper has been placed in position on the roller K , as previously explained, then the operator takes hold of the knob E^4 of the plate E^3 with his left hand and with the right hand he actuates the space-lever N . The operator by pushing or pulling on the knob E^4 can move the pointer E^5 to the desired character I on the indicating-table I' , so that the respective or corresponding type indicated by the pointer E^5 is under the opening G . Now when the operator presses the lever N the printing-lever J^4 is actuated, so that the pin J slides upward and forces the respective type F upward into and through the opening G , so that the character of the type is impressed on the paper held on the under side of the roller K . As soon as the operator releases the pressure on the space-lever N the levers J^4 and N move to their former position, thus returning the pin J to its normal position (indicated in Fig. 5) and at the same time the paper-carriage is shifted to the left, as previously explained, so as to present a blank space of paper over the opening G in the bar G' . When the operator now again shifts the type-case D in the manner above described, to bring another type under the opening G , and the lever N is again pressed, then this type is printed under the blank space on the paper over the opening G . In moving the type-holder E longitudinally the type F are inked by the rollers F' , so that a ribbon is not necessary. It will be seen that as the type are always brought into the proper position under the opening G and the latter remains stationary and guides the type perfect alignment is assured. If the character to be printed is a single character, such as a letter, then the space-lever N is pressed down in the slot N^3 and if it is the last letter or character of a word then the lever N is pressed down in the slot N^4 , so that the paper-carriage L is shifted a distance to leave sufficient space between the last word printed and the new one to be printed. In case a word of two letters is printed and the lever N is pressed down in the slot N^5 , so as to move the paper-carriage N a distance equal to the width of three letters or single characters, and in case a word of three or more letters is to be printed, then the lever N is pressed into the corresponding notches N^6 or N^7 to move the paper-carriage the desired distance to the left. If it is desired to print a compound or a word formed by two characters indicated on the indicating-table I' —say the word “doing”—then the operator moves the pointer E^5 first to the character “do” and then presses the lever N in

the slot N⁴, after which the pointer E⁵ is moved to the character "ing," and the lever N is pressed down in the slot N⁶, so that the character "ing" is printed alongside "do," and when the lever N is released the paper-carriage is shifted so as to leave a space between the last letter "g" of the word "doing" and the next following word to be printed. It is understood that the end Q' of the lever Q³ moves over one tooth when the lever N is pressed into the first notch N³, two teeth when pressed into the notch N⁴, three teeth when pressed in the notch N⁵, and so on. The distance between two teeth corresponds to the width of a single character on the type F, so that the operator readily knows in which notch to press the lever N when using the machine. It will further be seen that it is impossible to print two type at once or to bend or spoil the face of the type, as no type can be moved unless the type is in the proper position, directly under the opening G, so that the pin J can engage the said type at its under side. It will further be seen that by this arrangement no separate key or lever is pressed for making space between two succeeding words.

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

1. In a type-writer, the combination, with the frame having transverse guideways at its ends and the laterally-movable carriage resting at its ends on said ways, the type-frame sliding longitudinally in the carriage and having parallel rows of vertical type-receiving spaces open at both ends, and a knob or handle provided with a pointer and connected with the said sliding type-frame to move it and the carriage simultaneously toward and from the operator or slide the said frame along the carriage, of a paper-carriage over the type-case and provided with a roll and spacing mechanism, a central vertical plunger beneath the said case to engage the lower ends of the type as they are successively brought in line therewith, an index-plate having rows of characters corresponding with those on the type and with which the pointer co-operates, and a lever through the medium of which the plunger and spacing mechanism are operated, substantially as set forth.

2. The combination, with the frame having a central transverse bar provided with a type-aperture, a vertically-aligned plunger or pin therebelow, of the carriage sliding laterally between the aperture and plunger and provided with a type-frame sliding longitudinally therein and having vertical type-receiving spaces, a handle or knob projecting from the frame for operating it and the carriage, a longitudinally-extending printing-lever connected with the said plunger or pin, a paper-carriage above the apertured bar, and a spacing mechanism connected therewith and having a transverse operating-lever crossing the

printing-lever, substantially as shown and described.

3. The combination, with the frame, the laterally and longitudinally sliding type-case having a series of vertical type-spaces, the central vertical plunger or pin thereunder, a longitudinally-extending printing-lever therefor, and a vertically slotted or notched bar or piece across the slots or notches of which said lever projects, of the longitudinally-sliding paper-carriage above the type-case and a spacing mechanism therefor, having a spacing-lever pivoted to the frame to swing laterally and vertically and adapted to enter any of said slots or notches and crossing the printing-lever to operate it, substantially as shown and described.

4. The combination, with the frame, the laterally-sliding carriage thereon, and a type-frame sliding longitudinally on the carriage, of a tongue or arm projecting at right angles from the carriage and provided with notches, and spring-actuated retaining-arms mounted on the frame to engage said notches and retain the carriage against accidental displacement, substantially as shown and described.

5. In a type-writing machine, the combination, with a fixed bar having a central opening, of a type-case mounted to slide longitudinally and laterally, type set vertically in the type-case and adapted to slide vertically therein and through the said central printing-opening in the fixed bar, a pin adapted to slide vertically to engage the under side of one of the type to force the latter upward into and through a central printing-opening, and a spring held on the said fixed bar and adapted to press with its free end on the upwardly-movable type to return the same to its former position when the said pin recedes, substantially as shown and described.

6. The combination, with the frame, the central vertical printing plunger or pin, and the longitudinally-extending printing-lever connected therewith, of the laterally-sliding carriage, the transverse center of which is over said plunger or pin, the longitudinally-sliding type-frame on the carriage, having vertical parallel type-spaces, a horizontal plate projecting from the forward side of the frame and provided with a pointer and a knob or handle, an indicating-table under the pointer, a paper-carriage sliding longitudinally over the type-frame and provided with a spacing-lever crossing the printing-lever to one side of the said indicating-table, whereby the type may be properly located above the plunger by one hand and the printing and spacing be effected simultaneously by the other hand, substantially as shown and described.

7. The combination, with the laterally-sliding carriage and the type-frame sliding therein across the central printing-point, of two vertically-swinging frames hinged at their outer ends, respectively, to the ends of the

carriage and each provided at its inner end with a transverse inking-roller under which the type-frame slides, substantially as shown and described.

5 8. In a type-writer, the combination, with the type-case, paper-carriage, the printing-lever, and the mechanism operated thereby, of a horizontally and vertically swinging spacing-lever crossing the printing-lever, a vertically swinging spring-depressed lever under
10 the outer end of which the inner end of the spacing-lever projects, and connections between the inner end of said spring-depressed lever and the paper-carriage, substantially as shown and described.

9. In a type-writing machine, the combination, with a paper-carriage mounted to slide longitudinally and provided with a rack, of a spring-pressed lever having a bent end engaging the rack, a second lever on which the first-named lever is pivoted, a third lever pivotally connected with the second lever for rocking it, a spacing-lever actuating the third lever, a lever pivoted alongside of said second lever
25 and having a hook crossing the first-named lever and provided with a lever whereby it may be operated to hold the bent end of the first-named lever out of engagement with the rack, substantially as shown and described.

30 10. The combination, with the paper-carriage provided at one end on its lower side with a vertically-swinging arm T, inclined upward from its outer end, of a bell having a pivoted striker, the upper end of which has a lateral lug or projection T', under which the inclined arm passes to raise the striker and from which the lug drops when the upper end of the incline is passed, substantially as shown and described.

40 11. In a type-writing machine, a paper-carriage comprising a frame, a paper-roller, a bearing pivoted at one end of the said frame and adapted to support one end of the said roller, a second bearing pivoted on the said frame and adapted to be swung outward to disengage the end of the said roller, and a spring-pressed rod connected with the said second bearing to swing the latter outwardly, substantially as shown and described.

50 12. In a type-writing machine, a paper-carriage comprising a frame mounted to slide longitudinally and pivoted at its rear end to be swung upwardly, a bearing having trunnions journaled in one end of the said frame, a second bearing pivoted at the other end of said frame and adapted to swing laterally, a roller journaled in the said bearings, and a knob held on the said roller for conveniently turning the same in the bearings, substantially as shown and described.

60 13. In a type-writing machine, a paper-carriage comprising a frame mounted to slide longitudinally and pivoted at its rear end to be swung upwardly, a bearing having trunnions journaled in one end of the said frame, a second bearing pivoted at the other end of the said frame and adapted to swing laterally, a

roller journaled in the said bearings, a knob held on the said roller for conveniently turning the same in the bearings, a toothed wheel held on the said roller, and a spring-pressed pawl engaging the said toothed wheel, substantially as shown and described.

14. In a type-writing machine, a paper-carriage comprising a frame mounted to slide longitudinally and pivotally at its rear end to be swung upwardly, a bearing having trunnions journaled in one end of the said frame, a second bearing pivoted at the other end of the said frame and adapted to swing laterally, a roller journaled in the said bearings, a knob held on the said roller for conveniently turning the same in the bearings, a plate provided with tongues held on the said frame and passing in close proximity to the said roller to guide the paper, and a second roller journaled in spring-bearings and arranged in line with the said first-named roller to permit the paper to pass between the two rollers, substantially as shown and described.

90 15. In a type-writing machine, the combination, with a paper-carriage mounted to slide longitudinally and provided with a rack, of a spring-pressed lever having a bent end adapted to engage the said rack, a second lever on which the first-named lever is pivoted between its ends, a spring connecting the short arm of the first-named lever with the second lever, a third lever pivoted between its ends and connected at one end by a link with the said second lever, and a space-lever actuating the opposite end of said third lever, substantially as shown and described.

105 16. In a type-writing machine, the combination, with a paper-carriage mounted to slide longitudinally and provided with a rack, of a spring-pressed lever having a bent end adapted to engage the said rack, a second lever on which the first-named lever is pivoted, a third lever connected by a link with the said second lever, a space-lever actuating the said third lever, and a pivoted lug in which the said space-lever is pivoted to permit of moving the latter, so that its end engaging the third lever can be moved nearer to or farther from the fulcrum of the said third lever, substantially as shown and described.

115 17. In a type-writing machine, the combination, with a paper-carriage mounted to slide longitudinally and provided with a rack, of a spring-pressed lever having a bent end adapted to engage the said rack, a second lever on which the first-named lever is pivoted, a third lever connected by a link with the said second lever, a space-lever actuating the said third lever, a pivoted lug in which the space-lever is pivoted to permit of moving the latter, so that its end engaging the third lever can be moved nearer to or farther from the fulcrum of the said third lever, and an adjustable spring pressing on the said third lever, substantially as shown and described.

130 18. In a type-writing machine, the combination, with a type-case comprising a carriage

mounted to slide transversely, and a type-holder mounted to slide longitudinally in the said carriage, of a frame pivoted on the said carriage, and an inking-roller journaled in the
 5 said frame and adapted to travel on the type contained in the said holder, substantially as shown and described.

19. In a type-writing machine, the combination, with a type-case comprising a carriage
 10 mounted to slide transversely and a type-holder mounted to slide longitudinally in the said carriage, of a frame pivoted on the said carriage, an inking-roller journaled in the said frame and adapted to travel on the type con-
 15 tained in the said holder, and a cap hinged on the said frame and extending over and in contact with the top of the inking-roller, substantially as shown and described.

20. In a type-writing machine, the combination, with a paper-carriage mounted to slide
 20 longitudinally and provided with a rack, of a spring-pressed lever adapted to engage the said rack, a second lever pivoted between its ends and formed with a hook at its upper end
 25 engaging the said first-named lever, and a

hand-lever adapted to engage the lower end of said second lever to depress its upper end, and under the control of the operator to disengage the said first-named spring-pressed lever from
 30 the rack when the carriage has reached a left-hand position, substantially as shown and described.

21. In a type-writing machine, the combination, with a paper-carriage mounted to slide
 35 longitudinally and formed with a rack, of a spring-pressed lever having a bent end adapted to engage the said rack, a second lever having a hook at its upper end adapted to engage the said first-named lever and provided
 40 at its lower end with a weight, and a transverse lever projecting at its inner end under the weighted end of said hook-lever to raise its lower end and depress its upper end to
 45 move the first-named lever out of engagement with the said rack, substantially as shown and described.

ALLARD E. BENEDICT.

Witnesses:

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 NELLIE E. BENEDICT.