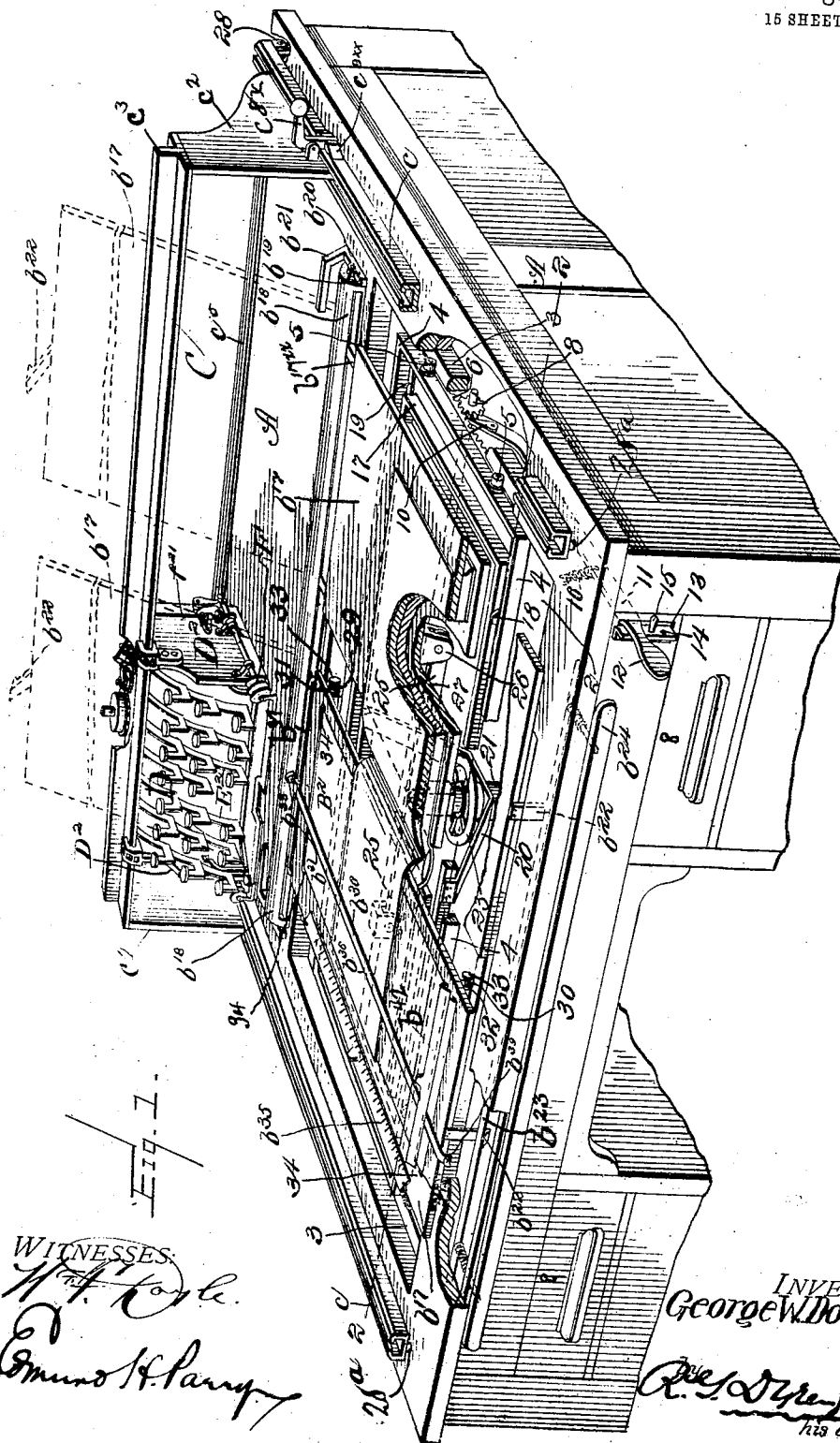


APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.

15 SHEETS—SHEET 1.



WITNESSES

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G. W. DONNING.
TYPE WRITER.
APPLICATION FILED JUNE 17, 1901.

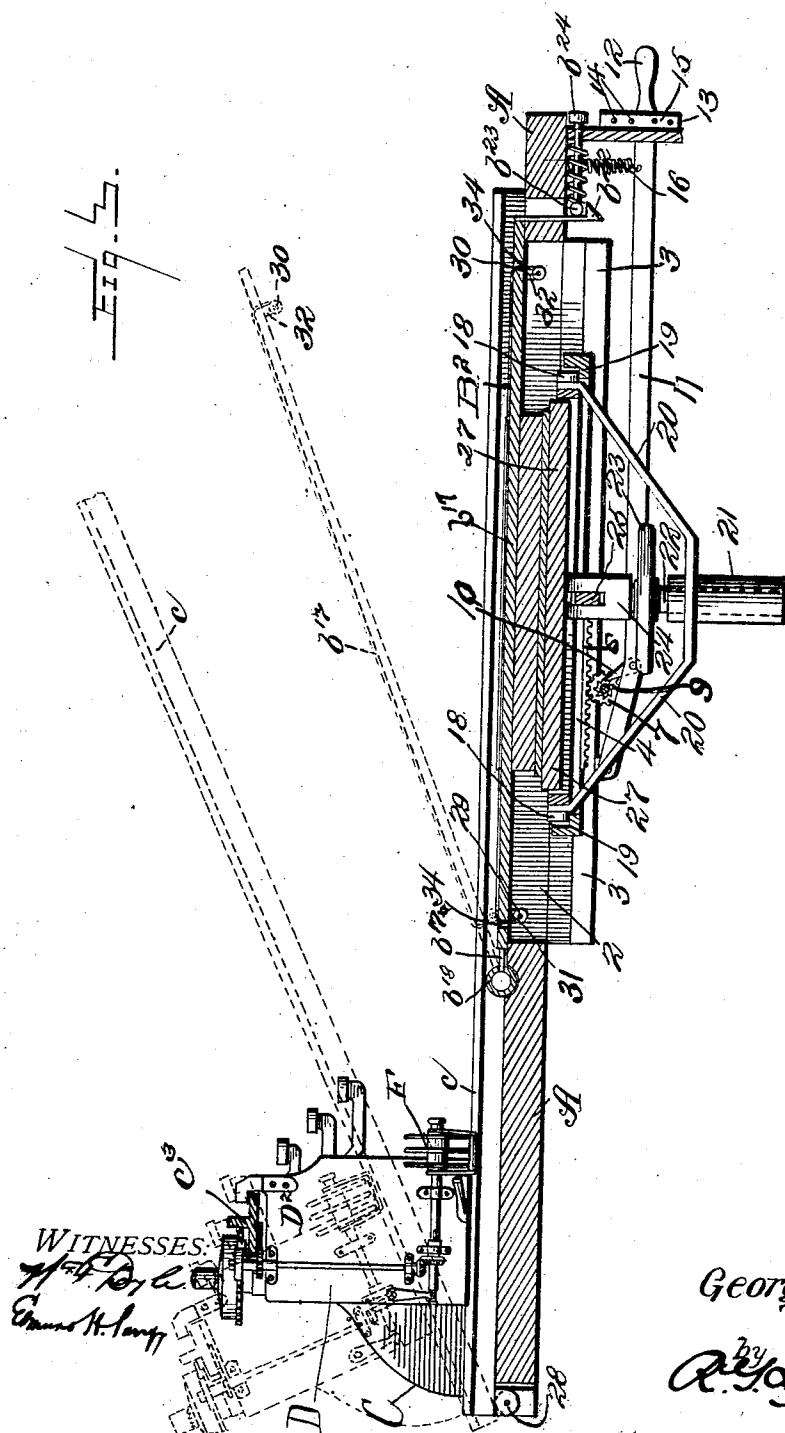
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931,689.

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APPLICATION FILED JUNE 17, 1901.

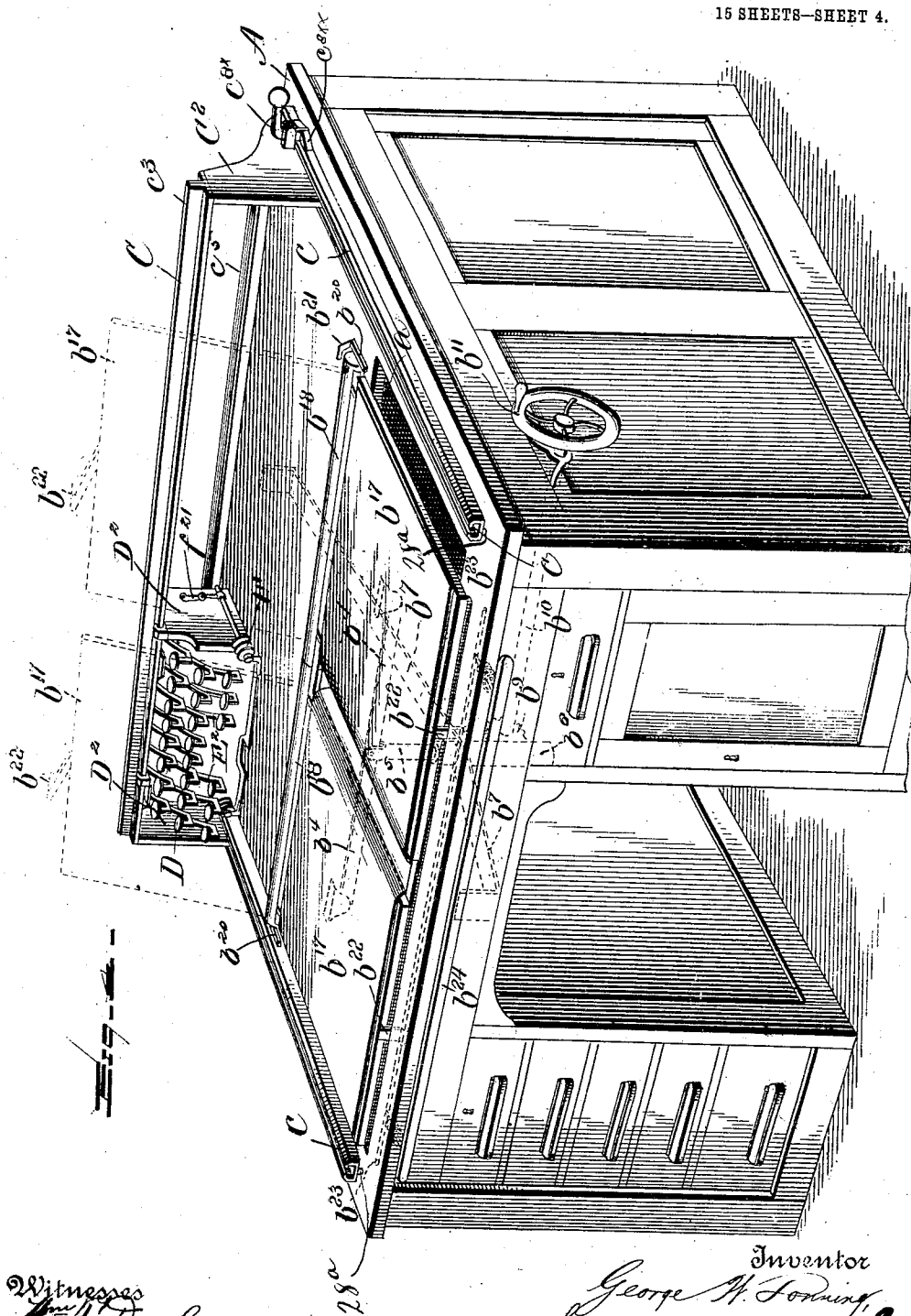
Patented Aug. 17, 1909.
15 SHEETS—SHEET 3.



931,689.

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APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.
15 SHEETS—SHEET 4.



Witnesses
J. H. Taylor
Edmund H. Perry

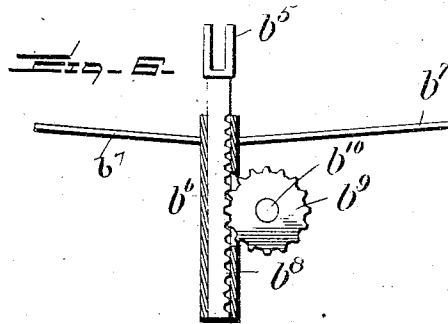
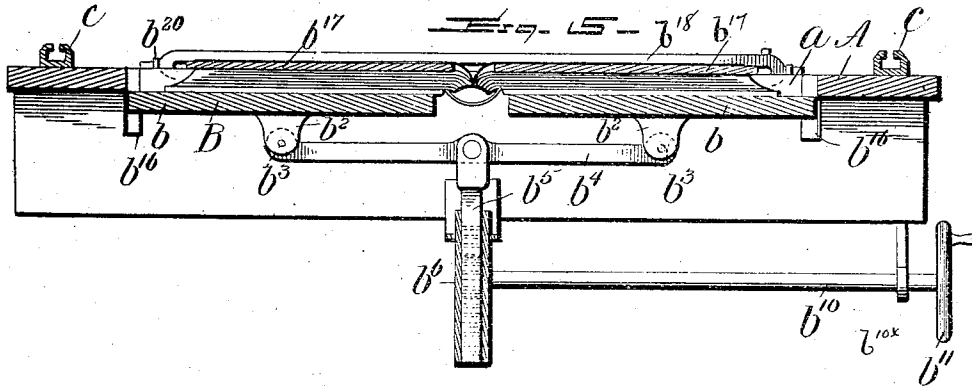
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APPLICATION FILED JUNE 17, 1901.

931,689.

Patented Aug. 17, 1909.

15 SHEETS—SHEET 5.



Witnesses
H. F. Doyle
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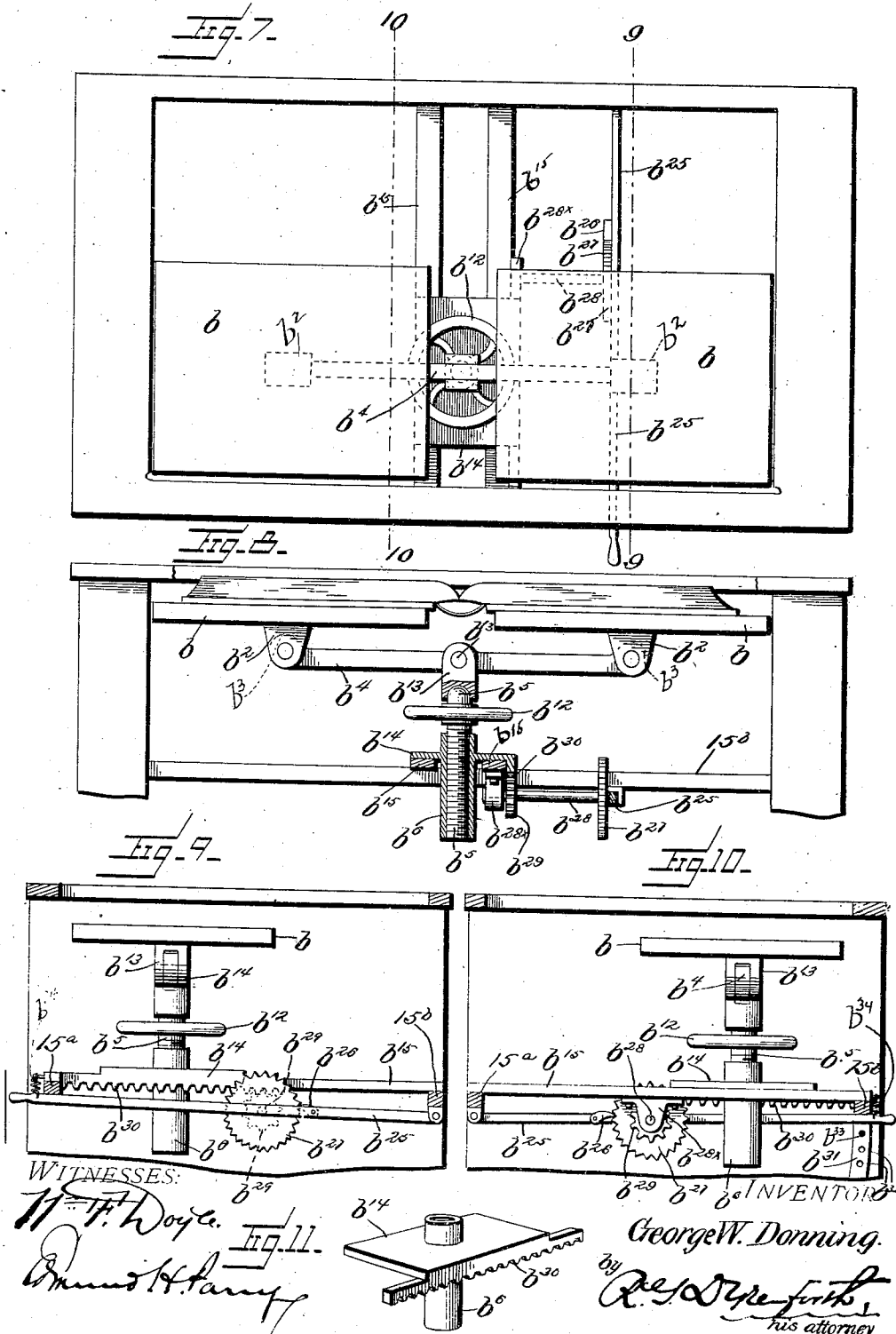
Inventor
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931,689.

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APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.

15 SHEETS—SHEET 6.



931,689.

Patented Aug. 17, 1909.
15 SHEETS—SHEET 7.

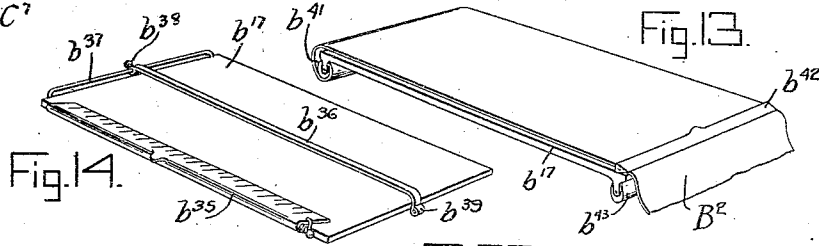
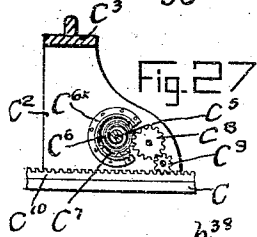
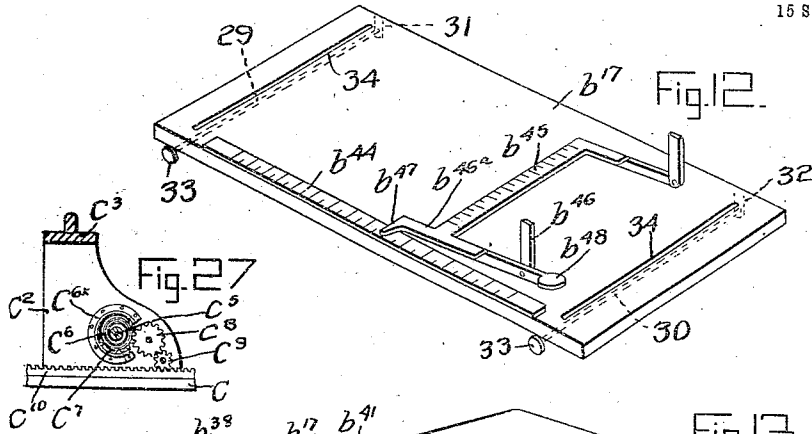


Fig. 14.

Fig. 26

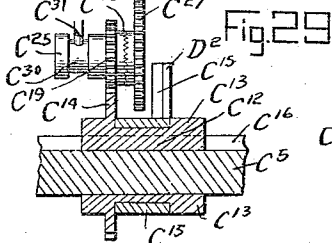
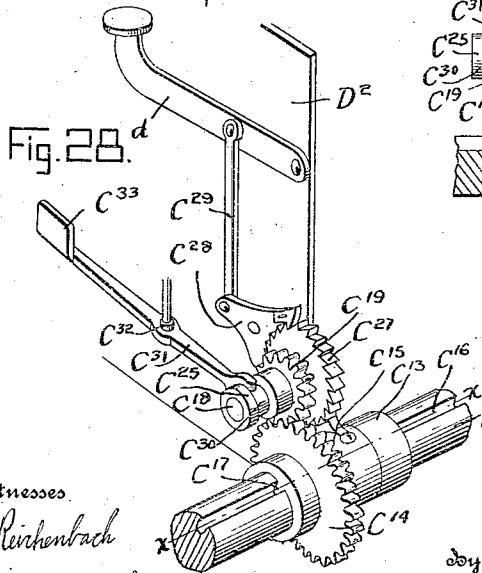
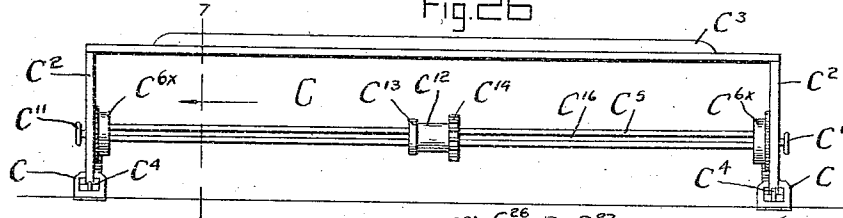
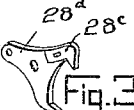
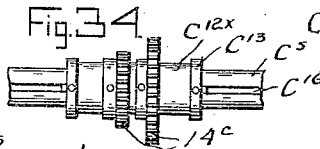
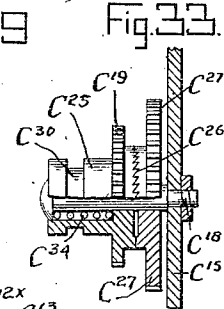


Fig. 33.



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APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.

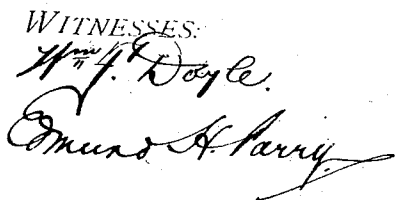
Fig. 25 is a perspective view of the printing press mechanism. It shows the frame, the printing plate, and the associated mechanical components. The frame is labeled with 'A' and 'A²'. The printing plate is labeled with 'b' and 'b¹'. The mechanical components are labeled with 'c' and 'c¹'. The frame is made of wood and has a curved shape. The printing plate is a flat surface that is held in place by the frame. The mechanical components are used to move the printing plate and to control the printing process.

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15 SHEETS—SHEET 9.

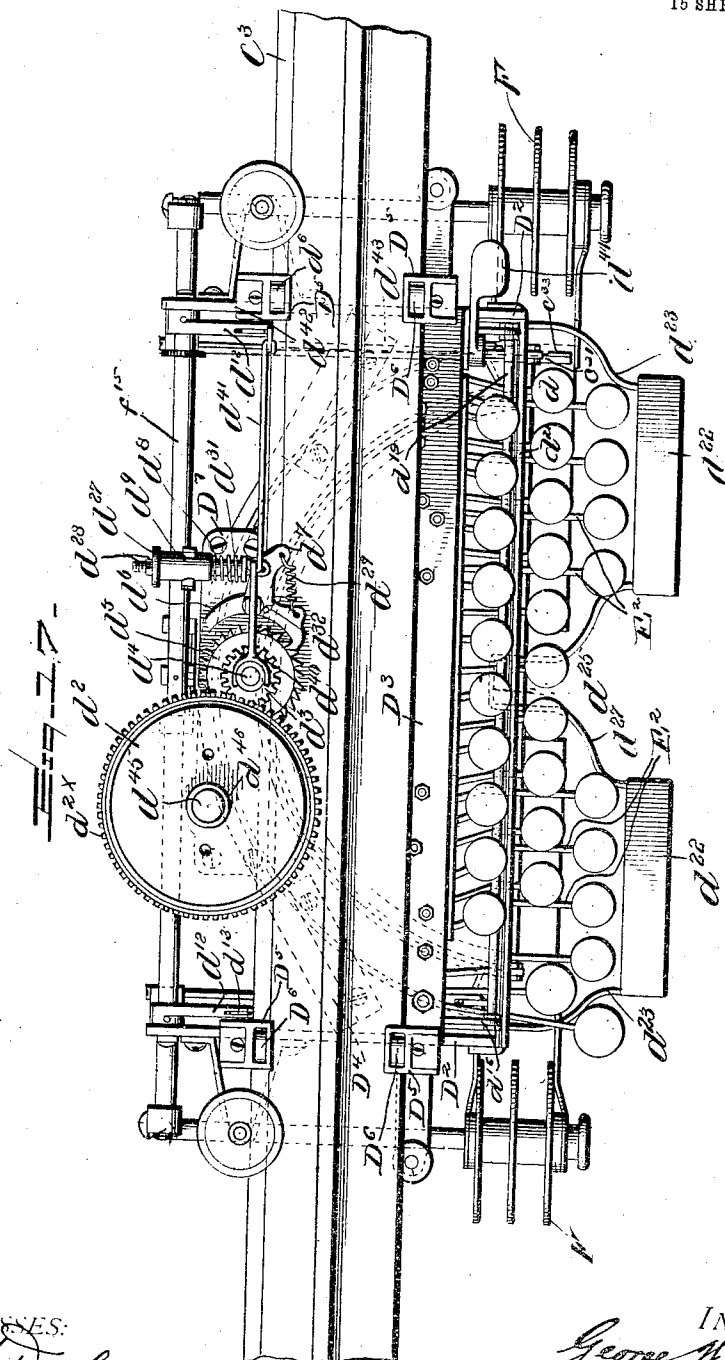


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931,689.

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APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.
15 SHEETS—SHEET 10.



WITNESSES:
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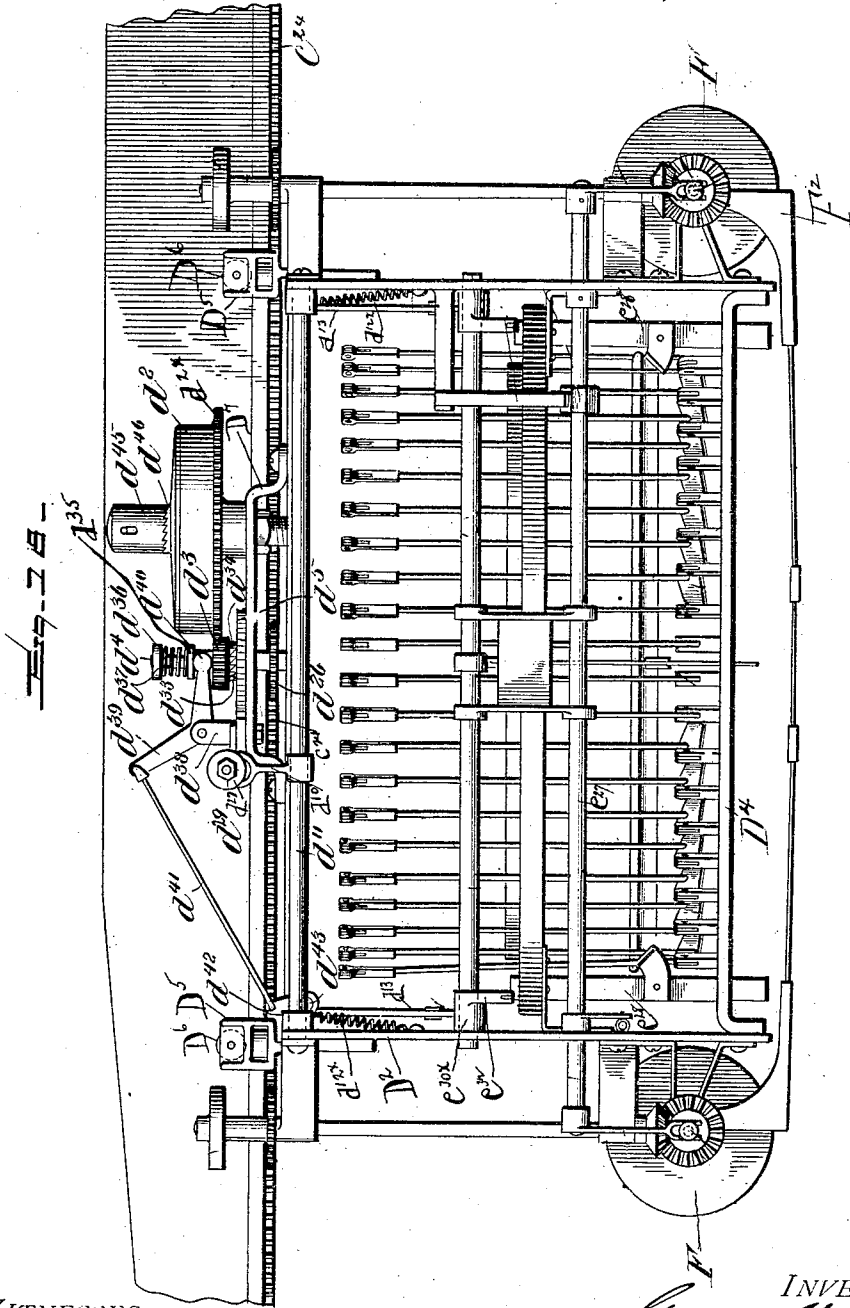
G. W. DONNING.
TYPE WRITER.

APPLICATION FILED JUNE 17, 1901.

931,689.

Patented Aug. 17, 1909.

15 SHEETS—SHEET 11.



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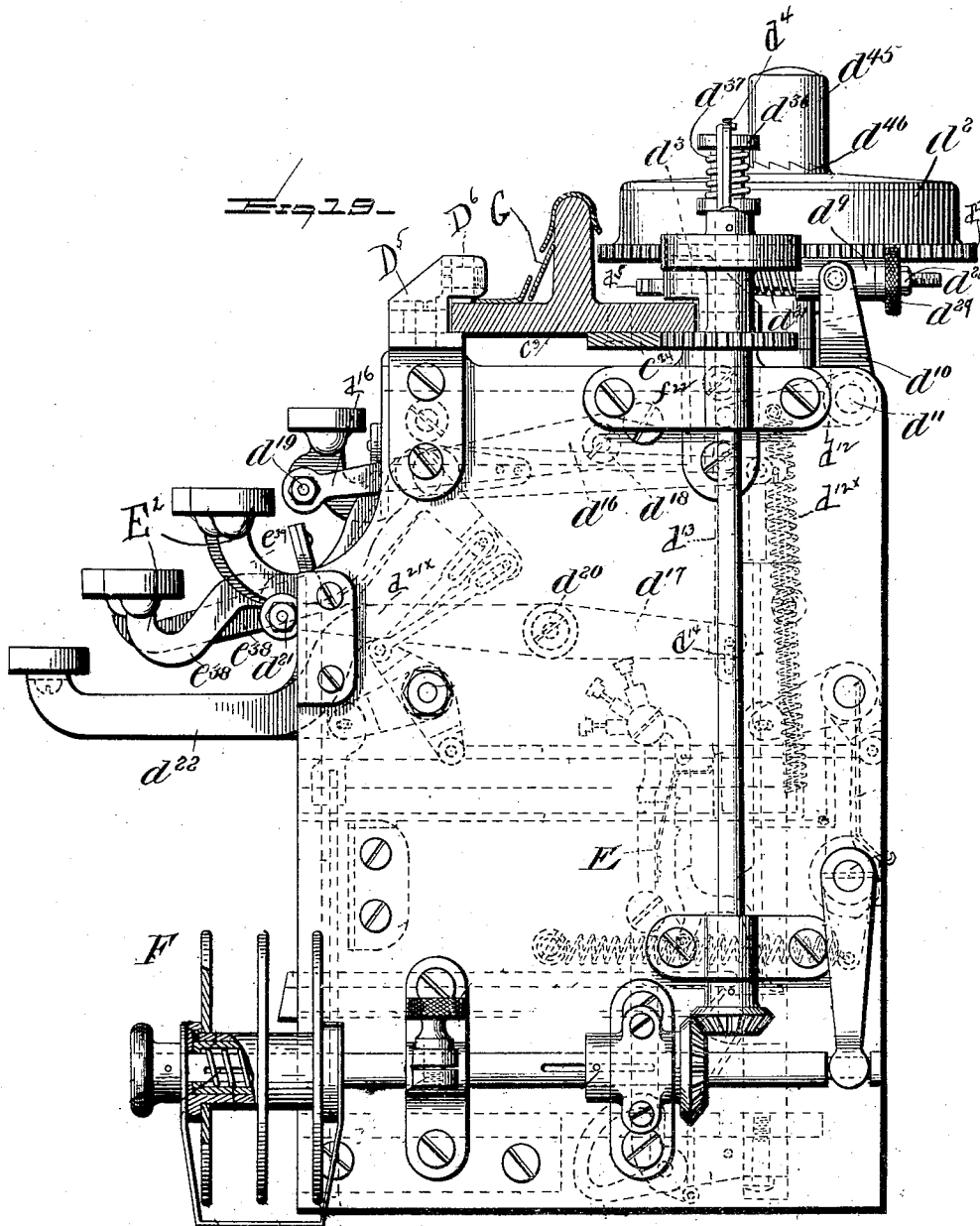
G. W. DONNING.
TYPE WRITER.

APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.

15 SHEETS—SHEET 12.

931,689.



WITNESSES:

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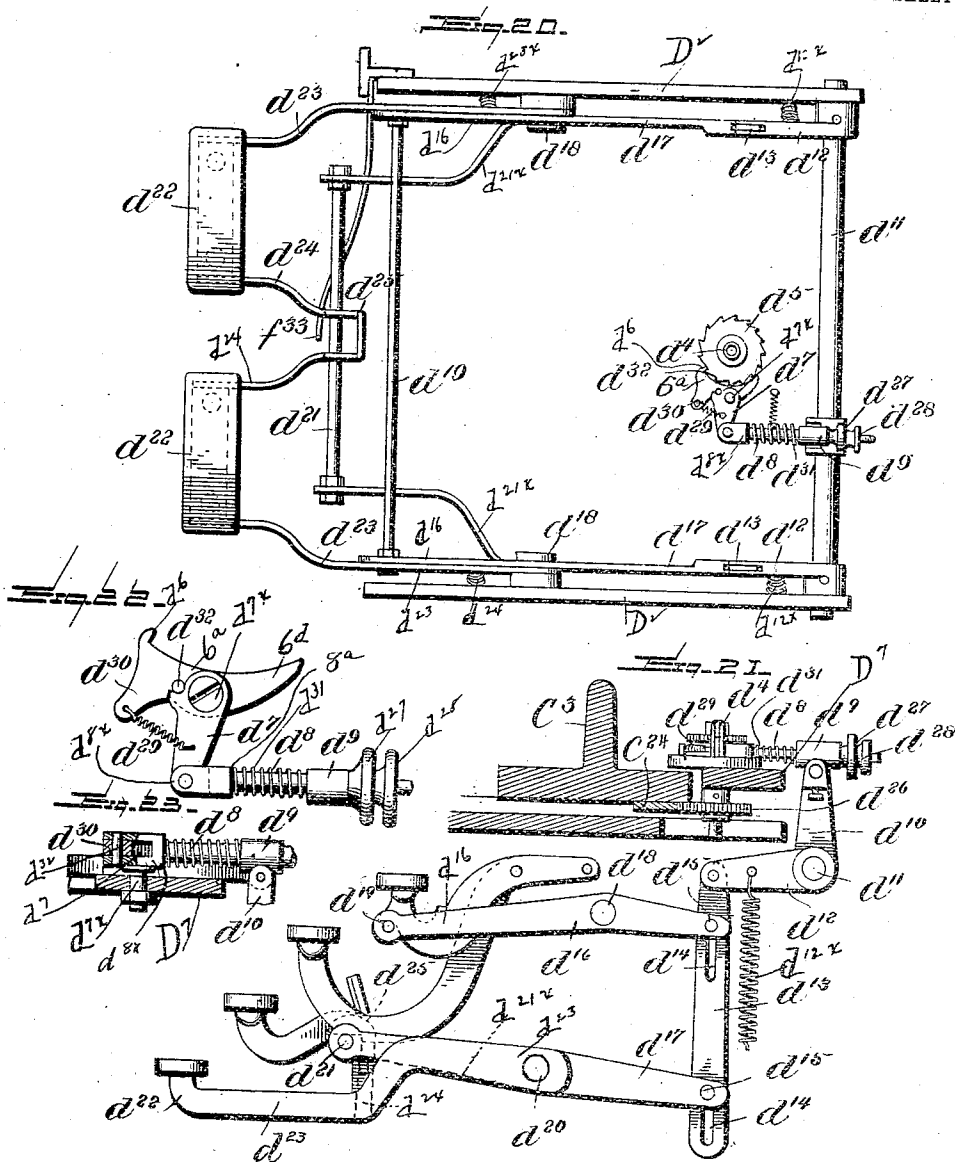
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931,689.

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APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.
15 SHEETS—SHEET 13.



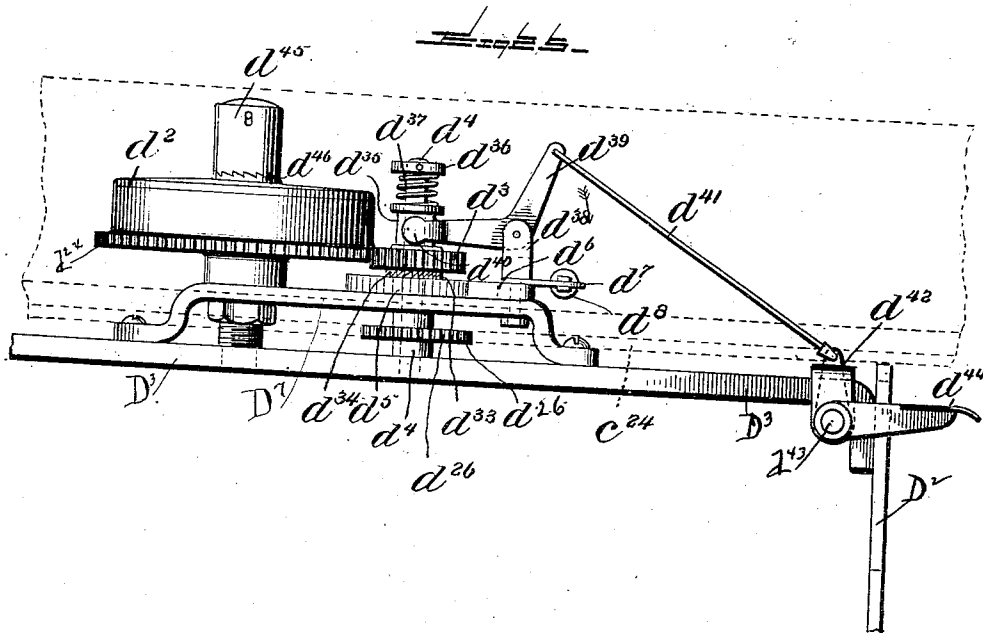
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APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.

15 SHEETS—SHEET 14.



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931,689.

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TYPE WRITER.
APPLICATION FILED JUNE 17, 1901.

Patented Aug. 17, 1909.
15 SHEETS—SHEET 15.

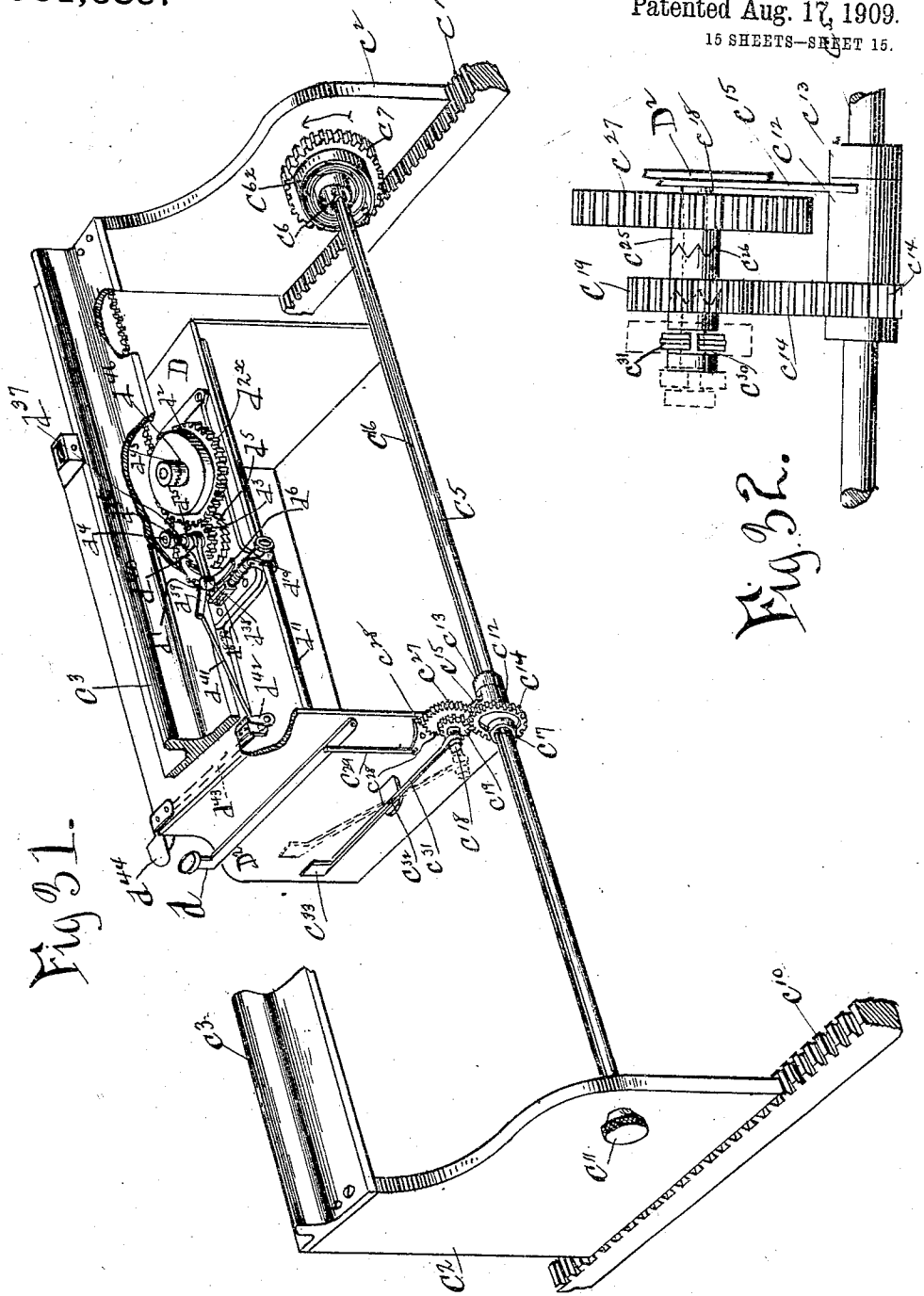


Fig. 31.

Fig. 32.

Witnesses
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by *A. S. Dyer*
his attorney.

UNITED STATES PATENT OFFICE.

GEORGE W. DONNING, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO HARRY T. AMBROSE,
OF ORANGE, NEW JERSEY.

TYPE-WRITER.

No. 931,689.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed June 17, 1901. Serial No. 64,890.

To all whom it may concern:

Be it known that I, GEORGE W. DONNING, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Type-Writers; and I do hereby declare the following to be a full, clear and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to typewriting machines and, more particularly, to that class thereof now known in the art as "flat-platen" and "book"-typewriters.

The object is to produce a typewriting machine of said class wherein the parts shall be combined in compact and conveniently-manipulated form; furthermore, to produce a typewriter wherein the several operating parts shall be conveniently disposed to facilitate their rapid manipulation; furthermore, to provide said machine with its key-board and other operating parts so arranged and positioned as to leave a clear and unobstructed view, not only of the printing-point, but, as well, of the printing-field across the work-sheet being written upon, thus presenting, in the strict sense, a "visible-writing" machine; furthermore, to provide, in connection with the writing-mechanism of such a machine, a book-support, constructed to be easily moved vertically, longitudinally and transversely, and having combined therewith the required means for positioning the same, whereby the book to be written upon may quickly be brought into proper operating relation with the writing-mechanism; and, finally, to produce a machine wherein manifolded-copies may be readily produced without necessity of frequent insertion of the work-sheets, the same being combined with means for maintaining said sheets in proper operative position.

The invention resides in various novel constructions and combinations and arrangements of parts, as will hereinafter be more fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, I have illustrated some embodiments of my invention; it being understood, however, that the constructions therein illustrated and hereinafter described may be vari-

ously modified and changed without departing from the spirit of the invention.

Figure 1 is a view in perspective of one form of embodiment of my typewriter, and illustrating, particularly, in connection with a platen and a desk provided with a depression in its top portion, a longitudinally-movable frame upon which a laterally-traveling book-support is sustained and which is arranged, also, for vertical movement to facilitate the positioning of books of different thicknesses; Fig. 2 is a view of the same, in vertical transverse section, on the line 2—2, Fig. 1; certain parts being omitted for the sake of clearness; Fig. 3 is a view of the same in vertical, longitudinal section, some parts being omitted; Fig. 4 is a view in perspective, exhibiting a modified form of book-typewriter and a flat-platen device disposed on a desk, the top-portion whereof is provided with a depression (the same as in the form illustrated in Figs. 1 to 3) in which is disposed a vertically-adjustable but non-slidable, book-support, to which is connected means for adjusting the book to the requisite levels for effecting proper work; and showing, also, the letter-spacing or transversely-traveling writing-mechanism-carriage, and the line-spacing or longitudinally-traveling-carriage which supports said letter-spacing-carriage; Fig. 5 is a view in transverse section thereof through the book-support and its adjusting-mechanism; Fig. 6 is a detached detail view, exhibiting one form of mechanism by which the book-support may be raised or lowered; Fig. 7 is a view in plan, exhibiting still another form of book-support, the same having no lateral movement, but capable of being shifted longitudinally of its overlying platen, and, also, adjusted vertically; showing also, the means for elevating the book-support, and, also, in dotted lines, the device for imparting movement to the book-support longitudinally of the platen to change the position of the book intermediate of the regular spacing of the writing-mechanism; Fig. 8 is a view in front elevation thereof, partly in section, the overlying platen being omitted; Fig. 9 is a view in transverse section, taken on the line 9—9, Fig. 7; Fig. 10 is a similar view, taken on the line 10—10, Fig. 7; Fig. 11 is a detail view, in perspective, of a part of the longitudinally-adjusting device of the book-support shown in Figs. 7 to 10; Fig. 12 is a

view in perspective, of the platen illustrated in Fig. 1, the same being detached from the typewriter-desk more clearly to illustrate the carbon-carrying spindles and scale-devices disposed thereon; Fig. 13 is a similar view with the carbon-element overlying the platen and a combined clamping cut-off member above end of the platen; Fig. 14 is also a view of the platen of Fig. 1, exhibiting more clearly the work-confining-band overlying and movable over the platen; Fig. 15 is a view in perspective, of still another modified form of book-supporting structure, consisting of the laterally-traveling book-rest provided with two leaves yieldingly supported; Fig. 16 is a view in front elevation of the letter-spacing, transversely-traveling-carriage or writing-mechanism, which supports the type-bars, ribbon-mechanism, etc.; Fig. 17 is a view in plan thereof; Fig. 18 is a view in rear elevation thereof; Fig. 19 is a view in side elevation of the same; Fig. 20 is a detached view, in plan, exhibiting, in assembled form, the mechanism for effecting spacing of the letter-spacing-carriage; Fig. 21 is a view in side elevation, partly in section, showing the connection between operating key-levers and the letter-spacing mechanism; Fig. 22 is a detail view, in plan, exhibiting particularly, the construction of the adjustable-speed device of the letter-spacing or carriage-escapement; Fig. 23 is a detail view, in elevation (and partly in section), of the device of Fig. 22; Fig. 24 is an enlarged view, in plan, exhibiting the general-carriage-release mechanism by which the dog for controlling the transverse, step-by-step movement of the letter-spacing-carriage may be released from engagement with its escape-wheel to permit free travel of the carriage transversely of the platen, in either direction; Fig. 25 is a view in side elevation of the same; Fig. 26 is a view in rear elevation, exhibiting the carriage-supporting-frame or line-spacing-carriage, and a part of the mechanism by which the step-by-step, longitudinal movement of the carriage for line-spacing may be effected; Fig. 27 is a view in elevation, partly in section, exhibiting the propelling-mechanism for imparting a longitudinal or forward step-by-step movement to the line-spacing-carriage; Fig. 28 is a view in elevation of the form of line-spacing-device illustrated in Fig. 26 and of the total- or general-release-key by which the line-spacing-carriage may be spaced, and, also, freely moved longitudinally of the platen in its entire traveling distance, when desired, and permit the writing-mechanism to be brought to another particular line; Fig. 29 is a longitudinal sectional view, taken on the line $x-x$. Fig. 28; Fig. 30 is a detached, detail view of a modification of the escape-dog shown in Fig. 28; Fig. 31 is a view in perspective of the transverse or letter-spacing-carriage, looking from the rear, and, in part, of the line-spacing-carriage; and showing, more particularly, the carriage-propelling and escapement-mechanism of the line-spacing-carriage; Fig. 32 is a fragmentary view, in rear elevation of the structure disclosed in Fig. 28; Fig. 33 is a detail view in elevation, partly in section, of the mechanism of Fig. 28; and Fig. 34 is a view of a modification exhibiting variable spacing mechanism for the line-spacing-carriage.

In describing this invention, the parts now to be discussed will include the book-support and its adjusting-mechanism (including different forms of book-supports); also the mechanism for adjusting the supports vertically, transversely and longitudinally—the first to position the book at the proper horizontal plane and the second and third to position the book under the writing-mechanism, which is, likewise, capable of being positioned relative to the book; also, platens, clamping-devices and manifolding devices (which may be used in connection therewith, or without necessarily simultaneous employment thereof); also, the letter-spacing and line-spacing carriages and their operating mechanism; and, finally, a line-finder and letter-pointer which is carried by the writing-mechanism-carriage.

Referring to the drawings and, particularly, to Figs. 1 to 3, A designates a table, which, as shown, may constitute the top of a desk, or be an ordinary typewriter table. The central portion of the top of the desk or table is, preferably, cut out to present an opening or longitudinal depression 2. At each end of the longitudinal depression 2 is a supporting guide-piece or track 3. A rectangular frame or carriage 4, provided with rollers or wheels 5 of width less than the width of the depression 2, is arranged to travel on the guide-piece 3. One edge of the frame 4 is provided with a rack-bar 6, in which meshes a gear-wheel 7, suitably supported on a shaft 8. On said shaft is also arranged a ratchet-wheel 9, which is designed to be engaged by a pallet 10, pivoted on a lever 11, the lever being pivoted, at its rear end, at any desired point on the guide-piece 3, and has its forward end or handle 12 extending out beyond the front of the table A. Arranged contiguous to the handle is a plate 13 provided with a plurality of perforations 14, designed to receive a pin 15. A retractile spring 16 is connected to the lever and, also, at any suitable point on the table. It is obvious that, when the lever is moved, it will, by means of the pawl and ratchet, already described, rotate the gear-wheel 7 and effect movement of the frame 4. The perforated plate 13 affords means for limiting the movement of the lever, and the spring 16 withdraws the lever to normal position.

after it is operated. A second or laterally-movable frame or carriage 17, of width and length somewhat less than the width and length, respectively, of the frame 4, is provided with rollers 18, designed to traverse track-rails 19 formed on the movable frame 4. Connecting with the side members of the laterally-movable frame 17 is a brace 20 (Figs. 1 and 3), which affords a support for a tubular member 21, into which is threaded a spindle 22, the upper portion of which carries a hand-wheel 23. The upper extremity of the spindle 22 is socketed into a bifurcated standard 24. Pivoted, centrally, in this bifurcated standard 24 is a rocking or equalizing-lever 25, the outer ends of which are provided with knuckles 26, upon which are arranged book-supporting leaves or plates 27, these leaves serving as a rest for the sides of a book.

By the arrangement, above described, I am enabled to facilitate the positioning of a book, since the same may be moved back and forth (relative to the operator) by means of the lever 11; also from right to left by means of the laterally-traveling carriage 17; and, also, be elevated and depressed by means of the hand-wheel 23 and its adjunctive parts.

It is to be understood, of course, that other mechanisms for effecting movement of the longitudinally-movable and laterally-traveling carriages, as well, for elevating the book-support vertically, may be employed to meet the exigencies of practical employment of the device. The laterally-traveling carriage or book-support facilitates the shifting of the book from one side to the other, in the course of the writing up thereof.

In Figs. 4, 5, and 6, I have shown a modified form of device for effecting vertical movement of the book-support, which, in this instance, is not arranged for lateral or longitudinal movement. In this structure, the upper central portion of the table is, preferably, cut out to present an opening or longitudinal depression *a*, Figs. 4 and 5, beneath which, in line with the walls thereof, may, if desired, be mounted a book-support B, comprising, in this instance, a plurality of leaves or surfaces *b*, (though there may be only a single leaf) preferably flat, upon which the sides of the book to be written upon will rest, and being preferably separated or spaced apart a distance sufficient for positioning the binding-portion of the book (Figs. 2 and 5). On the under-side, preferably, of each leaf *b* is a socket *b*², in which fits a knuckle *b*³ (indicated by dotted lines in Figs. 5 and 8), the knuckles being carried by a pivoted or equalizing lever *b*⁴ pivotally supported on standard *b*⁵, the upper end of which may be bifurcated, (or be provided with a head) between the mem-

bers of which bifurcated portion the lever rocks. The standard is preferably mounted for vertical movement in a tubular guide *b*⁶, which, by preference, is supported beneath the table by a brace-rod *b*⁷ (indicated by dotted lines in Fig. 4 and shown in full lines in Fig. 6). The standard may have formed on its side a rack-face *b*⁸, to be engaged by a pinion *b*⁹, carried by a transverse shaft *b*¹⁰, suitably journaled, and carrying on its outer end, preferably, a hand-wheel *b*¹¹ (Figs. 4 and 5). The tubular guide *b*⁶ is slotted to permit engagement of the pinion with the rack on the standard. By rotation of the hand-wheel *b*¹¹ and, thus, the pinion, the standard will be raised or lowered, (as will be readily understood by reference to Figs. 5 and 6) for adjusting the book-support vertically relative to an overlying platen. To guide the book-support during its vertical adjustment and to prevent lateral play, vertically-disposed angle-irons *b*¹⁶ (Fig. 5) may be provided at the four corners of the table-top.

In Figs. 7 to 11, I have shown a form of book-support embodying the elevating means of Figs. 1 to 3, with a form of device not illustrated in the preceding figures for producing longitudinal movement, the book-support, in this instance, not being adapted for lateral movement. According to this construction, I may thread the standard and the tubular guide *b*⁶, and dispose, on the upper portion of the standard, a hand-wheel *b*¹². When this form of adjusting-mechanism is employed, the upper end of the standard will preferably be loosely socketed in the head *b*¹³, on which will be pivoted the equalizing lever *b*⁴, so that rotation of the hand-wheel will cause the standard *b*⁵ to operate to adjust the book-support vertically, without of course turning it. The book-support of this last described construction is also capable of movement in a horizontal plane; and, to this end, the tubular support *b*⁶ may be supported by a plate *b*¹⁴ (shown in Figs. 7, 8, 9, 10 and 11), on one edge of which is formed a rack *b*²⁰, the function of which will appear farther on. The plate *b*¹⁴, preferably rests upon and is guided by parallel strips *b*¹⁵, said strips being arranged sufficiently below the plane of the leaves *b* as not to interfere with the vertical movement of the same, and being supported at the front and rear on transverse strips *b*^{15a}, *b*^{15b} (Figs. 8 and 10). By this arrangement, therefore, the book-support, comprising the two leaves, the equalizing-lever etc., may, in addition to its vertical adjustment, be capable of longitudinal adjustment with relation to the platen. In case an entry is to be made upon a page of a book that has already been written upon, and it is desired to re-insert this page for the purpose of

writing additional matter, or for correcting mistakes, the longitudinally-movable device of the book-support shown in Figs. 7 to 11, or any other proper form of device, may be employed, and then positioning of the work sheet without necessity of effecting operation of the regular line-spacing device hereafter to be described may be effected; or, when the book has not been properly positioned on the book-support and the operator, then, is unable to position the page of the book in the correct position on the platen with especial reference to the regular-line-spacing of the writing-mechanism, a fine adjustment of the book and its page can be effected relative to the platen and the writing-mechanism.

The adjusting-device (as shown in Figs. 7 and 10) for moving the book-support longitudinally, preferably comprises a lever b^{25} fulcrumed, at its rear end, on the transverse strip 15^b , and carrying a pawl b^{26} , to engage a pinion b^{27} , carried by one end of a shaft b^{28} , supported by a bracket b^{28x} formed on the strip b^{15} , the other end of which carries a pinion b^{29} to engage with the rack b^{30} (already referred to) formed on the under side of the plate b^{14} . It will be seen by this arrangement that, by operating the lever b^{25} , the pinion b^{27} (through the medium of the pawl b^{26}) will be rotated, thereby turning the pinion b^{29} , which, in turn, will move the plate b^{14} and with it the book-support and its book, thus enabling the bringing of any desired line on the book under the striking-point of the type without changing the position of the writing-mechanism. To regulate the throw of the lever, and make it accord with the spacing of the written line, I may provide a segmental plate b^{31} , having a plurality of openings b^{32} therein, preferably so spaced apart that during the swing of the lever between any two adjacent openings, the pawl b^{26} will engage the pinion b^{27} to rotate the shaft b^{28} sufficiently to move the book-support longitudinally a distance equal to the one-half spacing of the ordinary typewriter. In this instance, I have four of these openings (three of which are shown); so that, should it be desired to move a book or sheet a distance equal to one-half space, the lever would be moved from the first or highest opening to the next one; if a full space, to a third opening; if a space and a half, to the fourth one; and so on, as may be desired. To stop the lever at the desired adjustment, a pin b^{33} (Fig. 10) may be provided, which will be inserted in one of the openings.

The lever may be returned to its normal position after each operation by a spring b^{34} , the dog b^{35} , in this movement of the lever, merely slipping over the pinion without moving the book-support. It is to be understood that this mechanism for posi-

tioning the book-support longitudinally may also be utilized in lieu of the regular line-spacing of the writing-mechanism, hereinafter described. When the book-adjusting device is operated in connection with this line-spacing mechanism, I may position the book or the page to present the printing point thereon intermediate of the regular line, in which event it is not necessary to throw the lever b^{25} the full distance from one opening to another, as the described mechanism will effect positioning of the printing-point on the book between the points of any two of the openings. It is to be understood that, by simply reversing the direction of the opening a in the table-top and employing the same actuating-mechanism as that just described, this book-support may be given a movement transverse of the platen.

In any lateral adjustment of the book-support, it is to be understood, of course, that the platen (by reason of being laterally slidable, as hereafter described) may be moved to correspond in position with the book-support. The book-support may be constructed, also, to have free transverse travel, without longitudinal movement thereof, and this construction, I have illustrated, as a modified form of arrangement in Fig. 15. In order that it may be shifted laterally, *i. e.*, from one side of the table to the other, to change the position of the page of the book to be written upon, I provide in the table a transverse depression A^2 (Fig. 15), in which a rectangular carriage A^{2x} (provided, adjacent its corners, with rollers A^3) may travel, said rollers being designed to traverse the floor of the depression, or suitable tracks or guides arranged therein, as is obvious. Supported above the said carriage A^{2x} , as by the springs A^4 , are the book-leaves b already mentioned, the said springs serving to give a yielding surface for the book, and, also, to cause the same to be pressed up and against the underside of the platen b^{17} . Overlying the book-rest, is a flat writing-surface or platen b^{17} , which may either be a single one, as shown in Fig. 15, or a plurality, as shown in Figs. 1, *et seq.* It is to be understood that, by having the platen sufficiently narrow this will permit the tracks c to be raised independent thereof. Therefore, I am enabled to use sheets of writing material larger than the platen, if necessary, and move them into the proper printing position, from time to time, without danger of tearing or creasing the same during the raising or lowering of the tracks. Besides this, the operator is enabled to write close to the edge of the sheet. Furthermore, by reason of the fact that the tracks c , in the form of structure illustrated in Figs. 1 and 4, are independent of the platen and do not rest there-

on, the horizontal plane of the tracks is not affected if several sheets of paper or card-board are placed upon the platen. In other words, in some of the flat-platen machines now on the market, the tracks or track-frame normally rest upon the upper surface of the platen and are frequently used to retain the work in position thereon.

It is obvious that, if the work-sheets and card-board are of any appreciable thickness and are of width less than the distance between the track-rails or side-bar of the track-rails, if said work-sheets or card-board are placed under only one of the track-rails or side-bars of the track-frame, the other rail or side-bar will be unsupported and remain suspended; and furthermore, the weight of the writing-mechanism will naturally depress this unsupported rail or side-bar and effect the alinement of the machine. Such an objection does not obtain in construction of Figs. 1 to 4 as is obvious, because the tracks are not utilized to hold the work.

It is to be understood, of course, that where the tracks do not rest upon the platen it is not essential to the proper operation of my machine that the platen shall occupy an exactly horizontal plane, as it may be inclined in position and yet be within the scope of my invention.

It is preferred to support the rear of the platen so that the same may be tilted away from the book-rest, either on a hinge b^{17x} , as shown in Fig. 15; or the platen may carry, at its rear edge, an extension b^{17x} , which is designed to engage and slide on a rotatable split-tube b^{18} provided with pintles b^{19} , journaled in standards b^{20} on the top of the desk or table (Figs. 1, 2 and 3). The platen may however, not be hinged, but may lie flatly upon the table-top and be secured in any desirable manner.

It is obvious that, as stated, I may employ one platen, or two, as the exigencies may require, and it is likewise obvious that one or both platens may be used with the movable book-rest or not. Of course, where necessary, the platen or platens are arranged with relation to the typewriter-carriage, which would be supported, relatively, at a predetermined height above the table, it being understood that the book-rest is movable relative to the platen and writing-mechanism wherever the platen and writing-mechanism are stationarily supported relative to the table-top.

Arranged contiguous to the edge of the platen b^{11} , (either independent thereof, as shown in Figs. 1 to 5, or adapted to contact therewith, as shown in Fig. 15) are track-rails or guides c , upon which the writing-mechanism (hereinafter described) travels for line-spacing.

Where two platens are used, the book-support herein described and shown may be stationary and not be slidable as heretofore described and shown. The purpose of arranging the platen to have a sliding movement upon the split tube b^{18} is to facilitate a slight lateral adjustment thereof and to secure the book-pages at the binding-edge.

In the lateral adjustment of the book-support, it is to be understood, that, in some instances, only one platen will be employed, thereby reducing the space between the tracks and the width of the writing-mechanism-carriage (hereinafter described) as shown in Fig. 15. The tracks and platen, in this particular arrangement, would be for tilting only and the platen would have no lateral adjustment. In another arrangement, where the lateral adjustment of the book-support is used, the two platens may be employed so that two pages of an open book may be adjusted with each manipulation of the necessary parts. In this instance, a fine lateral adjustment of the book, and not of the platens, is necessary owing to the creep which takes place as the leaves are being turned from time to time.

By employing the sliding book-support, as heretofore described, and illustrated in Figs. 1, 2, and 3, I am enabled to move the work transversely and longitudinally, that is, cross-wise of the platen and lengthwise thereof, and also vertically, that is up and down.

As shown in Fig. 1, the platen is suitably fulcrumed or pivoted so that it may be tilted. Moreover, by being mounted in the slots at the pivot-edge, it is, thus, slidable horizontally, and this enables the operator to insert a page beneath the platen, and then, by sliding the platen back to its original position and turning the leaf down upon the platen, the same result accrues as though the platen were raised vertically. By being pivoted at a point in advance of the rearmost position of the writing-mechanism it is possible to tilt the platen without its striking the writing-mechanism.

To limit the backward tilt of the platen, stops b^{21} formed on the standards b^{20} (Figs. 2 and 4) or other means may be employed. On the front edge of the platen or platens is preferably a latch b^{22} to pass through openings provided in the table-top and to engage a spring-pressed rod b^{23} , to which is connected a push-bar b^{24} , projecting outward from the front of the table, as shown in Fig. 1. When the platen is down, as shown in full lines in Fig. 1, the latch engages with the rod b^{23} , so that the platen is firmly held in position over the book to be written upon. To release the platen, the bar b^{24} is pushed in.

It is to be understood that I do not limit myself to the latches, spring-pressed rod, and

push-bar, as any other appropriate means for holding down the platen may be employed.

The operation of the book-support and its adjusting-mechanism so far described is as follows: When two pages of a book are to be written upon, the hand-wheel 23 in Figs. 1 to 3 (or the hand-wheel b^{11} in Figs. 4 and 5, or the hand-wheel b^{12} in Figs. 7 and 8), is turned to lower the leaves 27 (or the leaves b of Figs. 4 to 11) as far beneath the tabletop as may be desired, the platen or platens, in this instance, being tilted to the position shown in dotted lines in Fig. 1. The book is then laid upon the supports, with the back in the space provided for the purpose, and the page or pages to be written upon turned to a vertical position. The platens are then lowered and secured either by the latches b^{22} and spring-bar b^{23} , or by any other suitable means, and the page or pages are then spread flat upon the platen. The hand-wheel is then turned to elevate the book-support to cause it to position the book against the under-side of the platen and, by reason of the rocking movement of the equalizing lever, the book-supporting leaves, will automatically adjust themselves, so that, should there only be the thickness of one cover and a few pages of the book under one platen or part of the platen and the bulk of the pages and opposite cover under the other part of the platen, the book will be evenly pressed against the underside of the platen. When the writing on the page or pages has been concluded, and it is desired to change them, the platen is tilted, the written page is returned to its original position, the platen is lowered, and the new page is then positioned thereover, and this is all accomplished without requiring the elevation or lowering of the book-support unless a book of different thickness is to be inserted.

It is to be understood that this invention is not to be limited to having the platen shiftable, (as in Figs. 1, 3 and 4), since, in some embodiments of my invention, it may be arranged so as not to be shiftable (as in Fig. 15).

It is to be understood that the platen b^{17} is constructed so that not only may loose work-sheets be disposed thereon, but, also, so that paper may be fed thereover from rolls (as shown in Figs. 1 and 13). In Figs. 1, 3, 12 and 13, I show this platen provided with spindles 29, 30, journaled in brackets 31, 32, at the front and rear ends of the platen. The paper or carbon-sheet element B^2 is designed to be supported on the rear feeding-spindle 29 and be fed therefrom longitudinally across the platen b^{17} , and onto the front receiving spindle 30, the spindles being provided with turn-knobs 33 to rotate them and cause unwinding and winding of the sheets onto the spindles. Instead of having the

spindles at the extreme end of the platen, they may be disposed at a point somewhat removed therefrom, and the platen be provided with transverse slots 34, 34 through which the sheet passes, as shown.

The element B^2 is, as shown particularly in Figs. 1 and 13, preferably fed longitudinally of the platen, this arrangement facilitating the positioning of a new surface thereof relative to the normally stationary work-sheet. The operator may, therefore, by rotating the carrying members 29, 30, move the element B^2 without actually touching the manifolding-sheet and disturbing the work-sheet, such as the page of a book or the like.

If desired (and generally it will be found advantageous), I may employ, in connection with the platen b^{17} and work-sheets, suitable means, such as clamps, or other devices, for holding the sheets or the pages of a book, in position on the platen, or for holding cards and envelopes, when being addressed.

Some of the many forms of device is shown in Figs. 1 and 4 wherein, on the long side of the platen, is arranged a spring-clamp b^{35} , which may be hinged to the platen, as shown, or be detachable therefrom. The clamps, or other holding devices, may be attached to the platen, or be independent thereof (for example, to any suitable part of the structure other than the platen, as, for instance to the tracks or table) and bear against the platen, as will be readily understood. The edge of this spring-clamp is preferably graduated to correspond to the width of the spaces between the lines of the written work, and constitute, thus, one form of line-finder, and, also, a sheet measuring-up device. I may also employ another form of work-holder b^{36} (Figs. 11 and 14), comprising a tape or strip of metal having its rear end formed with an eye to work on a bail b^{37} secured at the rear of the platen, a set-screw b^{38} being provided to secure the eye at any desired point on the bail. The front end of this work-holder b^{36} is formed with a hook or toe b^{39} to catch over the front end of the platen, to hold the tape securely in position. The two forms of clamps and the manner of their securing, herein shown, are illustrative of many means that may be employed, and it is obvious that they may be varied.

As shown, the work-holders employed for retaining the work in position upon the platen may be attached to the platen, or to elements arranged in juxtaposition thereto, and be movable thereover as shown in Figs. 1 and 14.

In Figs. 1 and 13, I have particularly shown a holding member b^{42} at the front of the platen b^{17} , which is capable of being used as a confining-device and as a cutting-

edge, so that webs (such as the carbon-element I^{12} , and a continuous sheet of paper extending from any preferred source of supply and overlying the said carbon-element) may be severed, as desired after being written upon, said webs being retained, at the forward end by said combined confining-device and cutting-edge. This holding-device or cutter-edged clamp b^{42} may be used to hold or retain the free end of the sheet, as shown; and, in use, the operator would raise the clamp; then the sheet could be raised by hand, so that a fresh supply of the same may be drawn forward, the old portion being torn off at the cutting-edge of said clamp.

In Figs. 1 and 12 I have shown, particularly, a device for finding where a certain letter or character may be on the sheet or page disposed on the platen b^{17} , and also to line up the work. I may employ two scales b^{44} , b^{45} , one of which b^{44} may be fixed to the platen and the other b^{45} may be pivotally supported from the writing-mechanism, hereafter described, by the depending arms b^{46} . This latter scale carries an arm b^{46a} provided at its free end with a pointer b^{47} adapted to traverse the other scale. With this simple arrangement, by moving the carriage back and forth, the exact line may readily be found. The latter scale may be under spring-pressure, if necessary, or rely upon its own weight to hold it properly in position and may also serve as a weight to keep the paper in proper position and likewise the former scale. A suitable thumb-piece b^{48} at the lower end or that nearest the operator, may be provided and the pointer b^{47} may be suitably secured and reach out to the scale, this serving to show by relation to the scale the exact printing line of the machine. The thumb-piece b^{48} is employed to raise and lower the scale-frame, so that it will not interfere while feeding paper into the machine. Of course, where a web of paper is used, coming from the rear of the machine, it may not be necessary to raise and lower this scale.

The tracks, to provide for a tilting movement, are preferably hinged, near their rear ends, as shown in Figs. 1 et seq., upon the hinge-members 28, which in Fig. 1, are shown elevated somewhat, out of their normal position merely to disclose their construction and disposition. At the forward ends of these tracks, as shown in Figs. 1 and 4, pins 28^a are provided to retain the tracks in place on the table-top, and serving also to position the tracks in their proper position on the base or desk after being tilted. The tracks are, preferably, and as shown, hinged remote from the rear end of the platen in order that the platen and the work-sheet sustained thereby may be manipulated without interference with the writing-mech-

anism which, at such times, would occupy its rearmost position on the rear portions of the tracks. These tracks rest upon the table-top, in the construction shown in Figs. 1 to 5, and are grooved, the grooves being overhung by flanges (Figs. 1, 2, 4 and 5), between which work the lower ends of the two vertical standards or side-plates c^2 of the longitudinally-traveling line-spacing carriage C, the said standards being connected by a T-rail or top-plate c^3 (Figs. 1, 2, 3, 4 and 26) forming the support for the laterally-traveling or letter-spacing carriage D. Each standard c^2 , on its lower end, is provided with rollers c^4 (Fig. 26) to run on the base of the tracks or guides c , beneath the overhanging flanges to permit easy longitudinal movement of the carriage.

Extending from standard to standard and serving additionally as a brace and as a support for the carriage (Figs. 26 and 27) is a shaft c^5 , carrying at each end coiled spring c^6 inclosed in a barrel c^{6x} , which may be located at any suitable part of, and move with, the line-spacing carriage. One end of said spring is secured to said shaft c^5 , while the other end thereof is secured to the barrel. Also disposed on said shaft c^5 is a gear-wheel c^7 arranged to mesh with a pinion c^8 (Fig. 27) carried by the standard c^2 ; and engaging with said pinion c^8 is a second pinion c^9 arranged to mesh with the rack c^{10} formed on the upper edge of each of the inner flanges of the tracks c . Suitable means, such as a thumb-piece c^{11} , shown in Fig. 26 may be provided for putting the spring c^6 in the barrels c^{6x} under tension. It will be apparent that, when the springs c^6 are tensioned, they will effect rotation of the shaft c^5 and, thus, the gears c^7 , which, in turn, operates the pinions c^8 , c^9 , and, by the meshing of the pinion c^9 with the rack c^{10} , the line-spacing carriage is caused to be propelled forward toward the operator. Herein, I have provided a self-propelled line-spacing carriage, as distinguished from operator-propelled carriages. Moreover, by the arrangement of gears, shown, the power of the spring c^6 is conserved to cause the carriage to be propelled longitudinally of the platen in a certain and efficient manner with a maximum of travel and a minimum utilization of the power. The movement of the carriage is steady and smooth, so that correct lining up of the work is possible and perfect alinement insured. Moreover, in this device, the shaft c^5 may be either a tube or rod of any preferred form, and may have a groove, as shown in Fig. 28.

The form of arrangement of gears described is that which will be employed where the platen is of extraordinary length; but, should the platen be of ordinary length, and it be desired to make the machine traverse only the length of the platen, any well-

known form of gear may be utilized to effect this result, as by combining with the gear-wheel c^7 attached to the spring-barrel c^{6x} a smaller gear-wheel co-acting with the rack on the track. This has the effect of extending the power and function of the spring in the barrel. Any of the well-known means for changing from one form of gear to the other may, obviously, be employed.

To prevent the machine from becoming disconnected from the tracks when tilted, a pawl or pawls c^{8x} (Figs. 1 and 4), carried by the standards c^2 , may be employed to engage with two stops c^{8xx} one arranged in line with the other and both disposed near the rear ends of the tracks. The stops, being arranged in juxtaposition, but separated, as shown in Fig. 1, a space between the two provides a recess into which the pawl engages. I may, of course, employ any other suitable device, such as notches in or near the extremities of the tracks to hold the carriage in position. The pawl or pawls are, in this instance, weighted, as shown. When the weight-pawl is brought into engagement with the bevel-faced stop, it rides over the same and into the aforementioned recess, whereupon, it locks the carriage to the tracks, automatically. The operator merely pushes the carriage backward and the gravity-operated pawl engages with the stops; or, if the line-space carriage slides backward when the rails are tilted, said pawl will engage the stop, when the carriage gets back far enough, and automatically lock the carriage against further backward movement.

Encircling the shaft c^5 and preferably arranged to slide thereon, as shown in Figs. 26, 28, 31 and 32 is a slidable bearing-member c^{12} , one end thereof being enlarged to constitute a collar c^{13} , the other end thereof being also enlarged and being provided with a gear-wheel c^{14} . Intermediate of the collar c^{13} and the gear-wheel c^{14} , the said bearing-member is encircled by the outer portion of a bracket c^{15} , in which the said bearing-member is designed to rotate. The opposite end of said bracket is secured, in any preferred manner, to the side-plate D^2 , for instance, of the letter-spacing-carriage D, the same projecting rearward thereof, as shown in Figs. 28 and 31. To cause the bearing-member c^{12} to rotate with the shaft c^5 , said shaft is provided with a key-way c^{16} , in which a key or feather c^{17} carried by the bearing-member c^{12} is disposed. It will, therefore, be seen that the bearing-member c^{12} rotates with the shaft c^5 , though it is to be understood that the bracket c^{15} does not rotate therewith; but, the bearing-member c^{12} , rotates within the bracket. The bracket c^{15} also supports a short shaft c^{18} , upon which is arranged a collar c^{19} and a small gear-wheel c^{19} , which engages with the gear-wheel c^{14} , already described. Loosely mounted on

the shaft c^{18} , and contiguous to the gear-wheel c^{19} , is a ratchet-wheel c^{27} , which is designed to be engaged by an escape-dog c^{28} . The gear-wheel c^{19} and escape-wheel c^{27} are joined by a clutch c^{26} , which clutch is held normally operative (that is, engaged) by a spring c^{34} which encircles the shaft c^{18} . The collar c^{25} is provided with a groove c^{30} , which is engaged by the bifurcated end of a lever c^{31} fulcrumed at c^{32} and provided at its outer end with a finger-piece c^{33} .

It is to be understood that the power-springs c^6 , connecting with the shaft c^5 , are housed in a drum or barrel c^{6x} , carried by each standard c^2 . Normally, the tendency of the said power-springs is to rotate the shaft c^5 with which they connect, and, simultaneously, to rotate the gear-wheels c^7 , which, as already stated, mesh with the pinion c^8 , and these pinions, in turn, mesh with other pinions c^9 , which, in turn, mesh with the rack c^{10} , whereby the carriage is given a movement forward, toward the operator. Such movement, however, is governed by means of the escapement-mechanism, already described, and including the gear-wheel c^{14} , with which meshes the pinion c^{19} carried by the shaft c^{18} . The dog c^{28} is suitably pivoted to the side-plate D^2 of the carriage, and its opposite end is connected with a vertical arm c^{29} , which connects with a key-member d . It is to be understood that, when this key-member d is depressed, the dog c^{28} is operated to cause one of its pallets to disengage from the ratchet-wheel, and this permits rotation of the shaft c^{18} to turn the gear c^{19} , and this, in turn, permits rotation of the gear c^{14} and, thus, the shaft c^5 . By this means, the carriage is permitted to move one step for line-spacing. To effect general-release or free longitudinal movement of the carriage, the collar c^{25} , to which the small gear-wheel c^{19} is secured, is drawn away from the escape-wheel c^{27} by means of the lever c^{31} , in the manner already described, to disconnect the clutch, so that, then, the gear c^{19} is free to rotate, and this permits free rotation of the gear c^{14} , in either direction. The moment, however, that the general-release lever is released, the clutch-device causes the controlling-members again to become operative. It is to be understood that the bearing c^{12} slides transversely on the shaft c^5 by the movement of the letter-spacing carriage, to which the bracket c^{15} is connected, so that the line-spacing can be effected at any point in the operation of the machine.

Besides facilitating the general-release of the line-spacing carriage, in the manner already described, I may utilize the device described for another function, namely, to produce, in connection with the spacing-mechanism, a positioning of the carriage intermediate of the regular line-spacing; that

is to say, these parts will, when operated for the purpose, permit the line-spacing-carriage to carry the letter-spacing-carriage D to a point intermediate of the regular line-spacing, which result is accomplished in the following manner: If the lever c^{31} is moved to disengage the clutch-members, already described, the carriage may be moved in either direction (forward or backward) even only slightly, and then if permitted to reengage, the carriage will have been positioned to one side of the point to which the line-spacing mechanism has brought it, because the teeth of the clutch are cut finer than the gears of the spacing-mechanism. Then, if the spacing-key d is operated, the carriage will space regularly, but, of course, from a different position than it occupied before the lever c^{31} was operated. Should it be desired to cause more than one tooth of the escape-wheel to pass the escape-dog, at each depression of the spacing-lever d , to effect a greater travel of the carriage and make a broader space, the upper pallet 28^a (Fig. 30) of the escape-dog 28^a , may be made adjustable, as shown in Fig. 30, so that one, two, or more teeth of the escape-wheel may be made to pass the pallet at each depression of the spacing-lever.

The longitudinal movement of the carriage, as shown in Figs. 26 to 33, being effected by spring propulsion, that is, by means of the spring housed in the barrels located on each standard c^2 , obviates the necessity of the operator exerting great physical force to move the carriage forward for each line space, as is necessary in some forms of machines; and the spring serves, also, to aid the forward movement of the carriage when the general-release lever has been operated to permit free travel of the carriage. The standards c^2 and the connecting top-plate c^3 constitute the line-spacing-carriage, and upon this carriage is arranged a part of the line-spacing mechanism, already described. The top-plate C constitutes a support for the letter-spacing-carriage D, the same being suspended from said top-plate. By preference, the line-spacing-lever d is placed on the letter-spacing carriage, and its free end is assembled in the key-board with the key-members, as shown. When movement of the line-spacing carriage is required, for a line space, the lever d is operated to actuate the escape-dog and its contiguous parts, already described, whereupon the shaft c^5 , under the stress of the springs connecting therewith, at each end, tends to move the carriage forward. In this manner, I secure movement of the line-spacing carriage with the least possible amount of physical energy,—that is to say, I am able to effect movement of the line-spacing carriage, for line spacing, merely by the depression of the lever d . The finger-piece c^{33} of the gen-

eral-release lever c^{31} is arranged contiguous to the lever d , though the said lever c^{31} may be operated to effect general-release without the operator having to touch the line-spacing lever d .

In Figs. 1, 16 to 25 and 31, the letter-spacing-carriage D, is illustrated: The carriage itself is suspended from the rail c^3 constituting a part of the line-spacing-carriage C. This letter-spacing-carriage D comprises, preferably, a box-like structure having side plate D^2 , D^2 , a top-plate D^3 , and a base or fulcrum-plate D^4 . Secured to the side-plates D^2 are brackets D^5 , D^5 , which carry rollers or wheels D^6 , D^6 , designed to run upon the T-rail c^3 to facilitate travel of said carriage transversely of the platen.

One form of mechanism which I may utilize for imparting transverse step-by-step letter-spacing movement to the carriage D is clearly shown in Figs. 17 to 25 and 31 and consists of a spring-barrel d^2 rotatably supported in a bracket D^7 disposed upon the top-plate D^3 and having a portion of its periphery provided with teeth d^{2x} , Figs. 17, 18, 19, 24 and 25 which mesh with a gear-wheel d^3 splined on a shaft d^4 , below which gear-wheel d^3 and loosely mounted on the shaft d^4 is the escape-wheel d^5 . The escape-wheel d^5 is engaged by the dogs d^6 and 6^a forming a part of a one-piece pallet 6^a , pivoted upon an arm d^7 , clearly shown in Figs. 17 to 24; the arm d^7 being pivotally-supported upon the bracket D^7 , as by the pivot-screw d^{7x} which also serves as the pivot for the pallet 6^a (Fig. 22). The arm d^7 is carried by a rod d^8 provided with a bifurcated head d^{8x} , between the members of which said arm d^7 is pivoted. The dog d^6 would normally be in engagement with the escape-wheel, whereas the dog 6^a would be normally disengaged. Upon the rod d^8 is mounted a collar d^9 , to which is pivoted a crank-arm d^{10} rigidly secured upon a rod or shaft d^{11} (Figs. 20 and 21) passing from side to side of the carriage and suitably journaled in the side-plates D^2 . Secured upon the rod d^{11} , at right-angles to the rod d^{10} and contiguous to said side-plates are two arms d^{12} , one at each end of the rod d^{11} , and depending from each of these arms d^{12} is a link or rod d^{13} (Fig. 21), provided with two slots d^{14} , through which pass pins d^{15} carried by the spacing-levers d^{16} and d^{17} , fulcrumed at d^{18} and d^{20} , respectively, on the side-plates of the carriage, the pins normally being in engagement with the top walls of each of the slots. A retractile spring d^{12x} (Figs. 18 to 21), connecting with the arms d^{12} and with the side-plates of the carriage, serves to return said arms to normal position, after being actuated.

Toward the front of the carriage, and extending from one side to the other thereof are two "universal-bars" d^{19} and d^{21} , the

bar d^{10} being supported on the outer ends of the levers d^{16} , and the bar d^{21} being disposed on the outer ends of arms d^{21x} . By means of these universal bars d^{19} and d^{21} motion is imparted to the connections d^{12} , d^{12} , d^{10} , d^8 , etc., and, thus to the pallet 6^a , at each depression of a key, the movement of the pallet actuating the arm d^{30} thereof and the connecting element d^{29} ; it being understood that the pivot for both the pallet 6^a and the arm d^7 is d^{7x} . Upon the return movement of the parts, after the universal bar has been actuated by a key-lever the pallet 6^a will resume its normal position by reason of the projection 7^a engaging the pin d^{12} (Fig. 22) and exerting force against the same to shift the pallet. The space-keys comprise two thumb-plates d^{22} , each supported on its outer side by a lever d^{23} , working on the pivots d^{20} (secured to the side-plate of the carriage, Fig. 20), and on its inner side by plates d^{24} contracted toward the center to present a hooked projection d^{25} (indicated by dotted lines in Fig. 17) to rest on the cross-bar d^{21} , as shown in Fig. 20. Retractable springs d^{23x} (Fig. 20) secured to the arms d^{23} and to the side-plates D^2 of the carriage serve to return the said spacing-bars d^{22} to normal position.

By the arrangement described, when any one key of the bank of keys for operating a typebar or the space-bar is depressed, the bars d^{19} or d^{21} and, thus, the levers d^{16} or d^{17} will be rocked, and, through the medium of the links d^{13} and arms d^{12} , the shaft d^{11} is rocked, causing the arm d^{10} to operate the dog to permit the carriage to move one space. The same operation takes place when any key of the two lower banks of keys is depressed, whereupon the lever of such key (bearing upon the cross-bar d^{21}) will operate the mechanism interposed between the levers d^{17} and the dog in the manner described. When, however, a letter-space is desired, one of the space-bars is depressed in the usual manner, and, by the hooked projection d^{25} engaging the bar d^{21} , the lever d^{17} will be rocked to release the dog, in the manner described, without imparting motion to any one of the keys of the different banks. It is obvious that the cross-rods or universal-bars d^{19} , d^{21} may be located in other situations than these described, and, when disposed in some situations only one rod or bar will be required.

Upon the lower end of the shaft d^4 is rigidly mounted a gear-wheel d^{26} which meshes with a rack-plate c^{24} on the rear side of the T-rail c^3 , the gear-wheel d^{26} receiving motion from the shaft d^4 and the latter, through the spring-barrel, in the manner already described.

As a means for adjusting the dog of the letter-spacing-carriage, to cause it to escape rapidly or slowly, that is to say, upon a

slight depression of a type-lever, or a long or full depression of a type-lever, (thus to accommodate the spacing to the speed of operation of the operator), I may provide screw-threads on the rod d^8 for two knurled or milled nuts d^{27} , d^{28} , respectively, the nut d^{28} being merely a binding nut. By screwing the nut d^{27} into contact with the collar d^9 , the rod d^8 will retract slightly and the first quarter-movement (more or less downward of a key-lever) will disengage the normally-engaged dog 6^a , this being due to the fact that the throw of the rod d^8 is shortened by the adjustment of the nut, above described. If, vice versa, the nut d^{27} be moved outward toward the end of the rod d^8 , the pallet will not be actuated quite so soon and, therefore, it will require a greater depression of a key-lever before the dog will be disengaged, and thus slower writing will ensue. The head d^{8x} of rod d^8 which connects with the arm d^7 is provided with a shoulder 8^a against which one end of the spring d^3 impinges, this spring, at its opposite end, pressing against the collar d^9 and maintaining it in engagement with the nut d^{27} . The collar d^9 has a sliding movement on the rod d^8 , in the nature of "lost motion" the extent of which can be diminished or increased at the will of the operator.

It is to be understood that where there is an extended adjustment, by the nut d^{27} , the normally-engaged dog 6^a will extend far into the tooth of the escape-wheel d^5 ; whereas, when the adjustment is less, the dog will occupy a position intermediate of its extended limit and the actual point of disengagement from the tooth, according to the adjustment. It will also be understood that the movement of the universal-bar is always the same, that is, full; whereas, the extent of shift of the pallet 6^a is changed, according to the adjustment.

It is to be understood that, where a slow operator is manipulating the machine, it may be desirable to effect spacing of the carriage before the imprint of a letter by the typebar, that is, at a time when the bar is about ready to strike the platen. Where a rapid operator is manipulating the machine, it is generally desirable to adjust the position of the dog, by the device just described, so that the spacing-mechanism will be operated to space the carriage at a point, say, one-third or one-half of the depressing movement of a key-lever, so that the time of actuation of the spacing-mechanism, relative to that of the operation of the regular key-mechanism, is thereby changed to accord with the speed of operation of the operator.

It is to be understood that, if desired, two dogs may, as in some escapements, be used, one being rigid and the other loose.

The operation of the letter-spacing mech-

anism is as follows: The crank-arm d^{10} , which, as before stated, is operated, through intermediate parts, by key-lever and spacing-lever action, always has a certain fixed or predetermined movement, and the collar d^9 , preferably being a part of, or rigid on, the arm d^{10} , moves with it. Upon depression of any key-lever or spacing-lever, the upper end of the arm d^{10} is moved through the arc of a prescribed circle, and forces the collar d^9 against the nut d^{27} , thus retracting the rod d^8 and, through the medium of a spring d^{20} , connecting the arm d^7 and a projection d^{30} on the back of the dog d^6 , causing the latter to escape one tooth, any additional movement of the arm d^{10} being taken up by the spring d^{20} . On return movement of key-lever or of the spacing-levers, the collar d^9 is resisted in its tendency toward inward movement by a spring d^{31} mounted on the rod d^8 between the collar d^9 and the headed end d^{8x} of the said rod, this spring being of sufficient tension to cause movement of the arm d^7 against a pin d^{32} carried by the dog d^6 , the contact thus insuring its operating to bring the dog back to its first position. Any over-throw by this movement of the dog is taken up by the spring d^{31} .

It is to be understood that, when the nuts d^{27} , d^{28} , are turned to cause the collar d^9 to move inwardly upon the shaft d^4 , the arm d^7 is drawn to the right, by reason of the fact that the arm d^{10} forces the collar d^9 to bear outwardly and, thus, be maintained in its normal position. The structure comprising the dog d^6 and projection d^{30} , while arranged contiguous to the dog d^6 , is not made integral therewith, and, when the nuts d^{27} , d^{28} are turned to cause the member d^{29} to be moved slightly, such adjustment will cause the time of operation of the escapement to vary with respect to the time of operation of the type-bar-actuating mechanism, as is obvious. This will be the more apparent by reference to Figs. 20, 21 and 22.

It is to be understood that the spring in the spring-barrel d^2 operates in the usual manner and, therefore, needs no specific description.

The arrangement of escapement-mechanism herein described is one of many that may be employed for spacing the carriage in a step-by-step manner; and it is to be understood that I do not limit myself to the precise arrangement of mechanism shown, as any other arrangement of mechanism suited to the purpose may be employed, without departing from the spirit of my invention.

In Figs. 18, 24 and 25, in detail, and in Fig. 17, in plan, I exhibit one means by which total-release of the letter-spacing carriage may be effected; it being understood that the mechanism therein exhibited is only

illustrative of one of many forms of mechanism that may be employed for the same purpose, and, for this reason, I wish it to be understood that I do not limit myself to the precise mechanism illustrated and described.

The escape-wheel d^3 is provided on its upper-surface (and extending at right-angles thereto) with a toothed projection d^{33} , forming one member of a clutch, the other member whereof is formed by a similarly toothed projection d^{34} (Fig. 25), carried by the gear-wheel d^3 , which latter, as before described, meshes with the teeth on the spring-barrel d^2 . Above this gear d^3 there is a flanged collar d^{35} , movable on the shaft d^4 , (which revolves in its bearings, and the gear d^3 , which is splined or keyed to said stud d^4 , is then permitted to have a vertical movement on, but independent of, the stud, though, when the stud rotates, the gear being keyed or splined thereto, as just mentioned, will revolve therewith) the shaft being provided at its upper end with a head d^{36} , rigidly connected therewith, between which and the upper surface of the collar is interposed a spring d^{37} , operating to keep the two clutch-members normally in engagement with each other. Secured upon the bracket D^7 , at any suitable point, is a support or standard d^{38} , preferably bifurcated at its upper end and serving as a support for a bell-crank lever d^{39} , one end of which is formed with a yoke d^{40} (clearly shown in Figs. 17, 18, 24 and 25) to span the collar d^{35} , the other member of the lever (which projects upward from the carriage) being engaged by one end of a rod d^{41} , the other end of which connects with a plate d^{42} , carried by a shaft d^{43} , mounted in suitable bearings and extending longitudinally of the carriage, as clearly shown in Figs. 17 and 22, the outer end of the shaft d^{43} , or that toward the front of the carriage, carrying a thumb-lever or key d^{44} . It is to be understood that I do not limit myself to the precise manner of connection between the key d^{44} and the gear d^3 , as other means may be employed for effecting the same result.

When it is desired to move the carriage transversely of the platen, back and forth, without necessity of operating the key-levers, or the spacing-levers, the letter-spacing-carriage release key d^{44} is depressed, thereby (through the connection parts d^{41} , d^{42} , d^{43}) rocking the bell-crank lever d^{39} in the direction indicated by the arrow in Fig. 25, and causing disengagement of the two clutch-members d^{33} , d^{34} , which leaves the gears d^3 and d^{26} and shaft d^4 free to rotate as the carriage is moved in either direction. Upon release of the key d^{44} , the clutch-members will, through the agency of the spring d^{37} , be automatically brought into engagement, so that the carriage may thereafter, upon depression either of a key-lever or of

the spacing-levers, be moved in the ordinary step-by-step manner.

To put the spring in the barrel d^2 under requisite tension, I provide, in this instance, a toothed projection d^{45} , to be engaged by a toothed collar d^{46} , pinned or otherwise secured to a spring-arbor (not shown); it being understood that one end of the spring will be secured by a stud to the inner wall of the barrel, and the other end to the arbor, in the usual manner, and, as this will be well understood, illustration is unnecessary. To put the spring in the barrel d^2 under tension, it will simply be necessary to raise and turn the projection d^{45} , as may be required.

It is to be understood that the total-release key d^{44} of the letter-spacing-carriage, and the total-release key c^{33} of the line-spacing-carriage, are preferably close together, so that the operator may, with one hand, (by reason of the fact that both shifting mechanisms are under spring-pressure) guide the carriage to any desired point on the platen or writing-surface.

The typebar E and its attending mechanism, namely, the type-head, the shifting, locking and restoring mechanisms therefor, the typebar actuating-device and the manner in which the typebars are mounted for swinging movement on the bed-plate B^4 of the machine, constitute the subjects matter of patents granted to me, Nos. 745,095 and 745,163 and will not, therefore, be claimed herein. In my machine fewer type-levers are employed, thereby saving space, and affording visible writing (which is a very important desideratum), and undesirable shifting of the type-head in the event of an interference between the typebars, is practically obviated.

The particular and preferred manner in which the key-levers are arranged and banked is clearly shown in Figs. 1, 4, 16 and 17; it being observed that there is an open space left in the front or lower bank of keys to permit ready inspection of the writing and give unison to the writing-field.

The ribbon-carriers F comprise, preferably, four ribbon spools, two on each side of the letter-space carriage where two ribbons are used; or, where there is but one ribbon only two spools, one on each side, would be used. The mechanism for feeding and shifting said carriers constitute the subject-matter of my Patent No. 826,481, and therefore, no claim thereto is made herein.

It is to be understood that, if desired, as clearly hereinbefore described, where more than a single sheet of paper is employed, one or more of the manifold elements B^2 may be interposed between the sheets of paper or between the paper and the upper surface of the platen and thus produce additional

original copies. The work-sheet, such as the page of the book, may, according to requirements, be heavy or only tissue. It is to be understood that, while I have disclosed, herein, several means for effecting manifold- ing in connection with a flat platen, the manifold- elements and their carriers may be varied. The combination of such manifold- ing instrumentalities with a flat platen or bed produces new and advantageous results not attainable in the so-called "round-platen" style of machine wherein it is not possible to keep the manifolding material in a flat spread-out condition and normally stationary with relation to the bed or platen and the work when the latter has to be adjusted or positioned, and to avoid handling of the manifolding material with resultant smearing of the work.

It will be apparent that, if desired, I may, in this machine, use the usual ribbons and their operating mechanism, and, also, manifold- ing material with their holding and feeding device, already described, so that one or more copies may simultaneously be produced in the same machine, and these may have movement dependent or independent one of the other.

As will be apparent in machines of this character, it is essential to provide a device, operating with certainty and readiness, by which the line to be written upon, and also a letter in the line, may be found, the latter being necessary where a letter is to be inserted, or where a word is to be commenced. Various forms of devices for this purpose may be employed and, as an example, have shown in Fig. 20 a form of device that may be utilized for this purpose. It consists of a plate f^{31} secured in any suitable manner to one of the side-uprights D^2 of the carriage and extending outward and in front of the carriage, and provided with a straight edge f^{32} , extending in the same plane as the front of the carriage and constituting a line-finder. Projecting from this line-finder is a wire plate f^{33} arranged directly in front and in line with the striking-point of the type. Now, should a line be desired, the line-spacing carriage and with it the letter-spacing carriage is moved longitudinally until the edge f^{32} strikes the line in the usual manner, thereby bringing this line into position for the type to strike; and, should a letter or space be desired, the letter-spacing-carriage alone is moved transversely until the printing-point of the letter is brought in position to be struck by the type in an accurate manner.

The particular manner in which the basket and carriage is constructed, as herein shown, is one of many forms that may be employed, and I do not, therefore, wish to be limited to the precise construction of these parts: Of course, it is apparent that

the form of typebar and its actuating mechanism as well, the line-spacing-mechanism of the carriage, and other pertinent parts, above described, are particularly applicable to flat-platen typewriters; but these mechanisms may, likewise, be utilized in connection with other than flat-platen typewriters, without requiring inventive modification. It is also to be understood that the carriage-spacing mechanism, both for imparting a step-by-step transverse and longitudinal movement, illustrate but two of many ways of carrying my invention into effect, and I do not, therefore, wish to be limited to these.

Having thus described my invention, what I claim and desire to secure by Letters-Patent is:

1. In a flat platen typewriter, the combination with longitudinal track-rails for a traveling-machine, of a hinged flat platen of a width less than the distance between and entirely free from the track-rails presenting a clearance-space between the outside edges of the platen and the inside edges of said rails and whereby it is arranged to be tilted upward without requiring elevation of the rails.

2. In a flat platen typewriter, the combination with longitudinal track-rails for a traveling machine, of a hinged and laterally-shiftable flat platen of a width less than the distance between and entirely free from the track rails, presenting a clearance-space between the outside edges of the platen and the inside edges of said rails and whereby it is arranged to be tilted and also shifted laterally without requiring elevation or lateral movement of the rails.

3. In a flat platen typewriter, the combination with a support, of longitudinal track-rails for a traveling-carriage pivoted to the support intermediate of their rear and front ends and having their axes stationary against bodily elevation, a flat platen mounted independent of the track-rails, said rails normally occupying a position to one side of the inside edges of the platen, and a pivotal and slidable connection between the platen and support constructed to permit the lateral shifting of the platen independent of the rails.

4. In a flat platen typewriter, the combination with a support, of a flat platen pivoted thereto to permit tilting thereof, and longitudinal track-rails disposed to each side of the edges of and free from said platen and pivoted to the support, for like movement, at points considerably in rear of the pivotal axis of the platen.

5. In a flat platen typewriter, the combination with a hinged, tiltable platen, a rotatable supporting-member for the rear end thereof and in which the platen is constructed to have lateral adjustment, writing-

mechanism constructed to travel transversely and longitudinally of the platen in an unchanging horizontal plane independent of the lateral adjustment of the platen, track-members for the writing mechanism extending longitudinally of the platen, and a rigid supporting hinge-member for the rear end of the tracks arranged stationary against movement in a vertical plane.

6. In a flat platen typewriter, the combination with a longitudinally-traveling writing-mechanism and a guiding-support therefor, of an underlying vertically adjustable book-support, and a platen intermediate the book-support and writing-mechanism and hinged to give access to the book-support and mounted for free lateral shifting independent of the writing-mechanism.

7. In a flat platen typewriter, the combination with a writing-mechanism mounted for longitudinal and transverse line and letter-spacing movement, of a platen therebeneath, a book-support mounted beneath the platen for longitudinal and lateral movement, and means for guiding the book-support in such movements.

8. In a flat platen typewriter, the combination with a writing-mechanism mounted for lateral letter-space movement, of a vertically and longitudinally adjustable underlying book-support, means for guiding said support in its vertical movement, a platen intermediate the book-support and writing-mechanism, and means for maintaining the platen in normal position irrespective of the movement of the book-support.

9. In a flat platen typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of an underlying stationary platen, a book-support disposed beneath the platen, means for permitting guided lateral movement of the book-support, and means for effecting longitudinal adjustment of said support and maintaining the same at the desired degree of adjustment.

10. In a flat platen typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of an underlying platen, a laterally-traveling book-support underlying the platen, means for adjusting and maintaining adjusted said book-support in a direction at an angle to its lateral travel, and means for adjusting the support vertically relative to the platen.

11. In a flat platen typewriter, the combination with a suitable base, of a longitudinally and laterally traveling-writing-mechanism, means carried by the base for supporting and guiding said mechanism, said supporting-means being stationary against bodily vertical adjustment away from the base, a laterally-traveling book-rest movable beneath said supporting-means, and means disposed beneath said book-rest for effecting

bodily vertical adjustment of the book-rest relative to said supporting-means.

12. In a book-typewriter, the combination with a suitable base, of a longitudinally and laterally-traveling writing-mechanism, tracks carried by the base for supporting and guiding said writing-mechanism and stationary against bodily vertical adjustment away from their base, a flat platen carried by the base, means for securing said platen normally in a substantially horizontal plane against vertical adjustment, a laterally-traveling book-support, supported to travel beneath the platen, and means disposed beneath said book-support for effecting bodily vertical adjustment of the book-support relative to the tracks.

13. In a typewriter, the combination with a suitable base, of a flat platen, means carried by the base for sustaining the platen in a single horizontal plane, a traveling writing-mechanism constructed to be propelled longitudinally of the platen for line-spacing and laterally thereof for letter-spacing, a supporting-device for the writing-mechanism carried by the base and arranged to sustain the same in a fixed horizontal plane, an independently-traveling book-support underlying the platen and constructed to be adjusted vertically relative to said platen and comprising independent, vertically-movable leaves, and means disposed beneath said book-support engaging said book-support for simultaneously adjusting both of said leaves vertically, whereby the book-supporting-structure is bodily elevated and depressed.

14. In a typewriting machine, the combination with a platen and a work-sheet sustained thereby, of a cooperating lining-up and gaging means disposed with relation to the surface of the platen and whereby the position of the work-sheet may be determined for lining up in one direction relative to the said device, and gaged relative thereto in a different direction.

15. In a typewriter, the combination with a platen and a work-sheet sustained thereby, of a combined gage and line-indicating device disposed with relation to the platen and in relation to which the work-sheet may be lined up in one direction and gaged in a different direction, substantially as described.

16. In a typewriter, the combination with a suitable base, of a book-support comprising a plurality of leaves, a rocking equalizing-member connecting said leaves whereby they are alternately raised or lowered, a normally-stationary platen, line- and letter-spacing carriages constructed to travel over the book-support, tracks for supporting the line-spacing carriage, supports for separately sustaining the platen and the tracks and being stationary against adjustment away from the base and book-support, and

means disposed beneath said book-support for adjusting said equalizing-member to lift and lower the leaves simultaneously relative to the platen.

17. In a typewriter, the combination with a platen, line- and letter-spacing carriages constructed to travel over said platen, a book-support comprising a plurality of leaves, an equalizing-lever connecting said leaves and pivoted centrally and operating to position said leaves in different horizontal planes, means for adjusting said book-support longitudinally of the platen, and means for guiding said book-support in its longitudinal movement.

18. In a typewriter, the combination with a platen, line- and letter-spacing carriages constructed to travel over said platen, a book-support comprising a plurality of leaves, an equalizing-lever connecting said leaves, means for adjusting said book-support longitudinally of the platen and also vertically relative thereto, and means for guiding said book-support in its longitudinal movement.

19. In a typewriter, the combination with a platen, line- and letter-spacing carriages constructed to travel over said platen, a book-support comprising a plurality of leaves, an equalizing-lever connecting said leaves, independent means respectively for adjusting said equalizing-lever vertically and for adjusting the book-support longitudinally, and means for guiding said book-support in its longitudinal movement.

20. In a typewriter, the combination with a platen, writing-mechanism-supporting-carriages overlying the platen, a plurality of movable book-supporting leaves underlying the platen, a rocking equalizing-lever underlying and supporting said leaves, a vertically-movable supporting-member for said equalizing-lever, means constructed to raise and lower said supporting-member independent of the movement and position of the book-supporting leaves.

21. In a typewriter, the combination with a flat platen, writing-mechanism-supporting-carriages constructed to travel over said platen, a plurality of vertically-movable book-supporting leaves underlying the platen, a rocking equalizing-lever underlying and supporting said leaves, a vertically-adjustable member for said lever, and means for moving said lever-supporting member in a horizontal plane.

22. In a typewriter, the combination with a flat platen, writing-mechanism-supporting-carriages constructed to travel over said platen, a plurality of vertically-movable book-supporting leaves underlying the platen, a rocking equalizing-lever underlying and supporting said leaves and constructed to elevate one of said leaves during the depressing movement of the other

leaf, a vertically-movable supporting-member for said lever, means for adjusting said lever - supporting member vertically, and means constructed to adjust said lever-supporting member in a horizontal plane independent of its vertical movement.

23. In a typewriter, the combination with a platen, writing-mechanism-carriages overlying said platen, a plurality of book-supporting-leaves underlying the platen, a rocking equalizing-lever underlying and supporting said leaves, a supporting member for said lever, means constructed to adjust said leaves vertically, and means whereby said supporting-member may be adjusted horizontally and maintained adjusted.

24. In a typewriter, the combination with a traveling writing-mechanism, means for supporting the same in a stationary horizontal plane, a platen coöperating with the writing-mechanism and adjustable laterally relative to the writing-mechanism and in the direction of its letter-spacing travel, a hinged member on which said platen is slidably supported, a traveling book-support underlying the platen, and means whereby the book-support is bodily elevated and guided and sustained at the desired elevation.

25. In a typewriter, the combination with a writing-mechanism-carriage, of means carried by the writing-mechanism carriage for effecting its transverse travel, a line-spacing-carriage for supporting the writing-mechanism-carriage, self-propelling means carried by the line-spacing-carriage for effecting its movement in a direction at right-angles to the direction of travel of the writing-mechanism-carriage, a support for a book to be written upon by said writing-mechanism, and a shiftable platen coöperating with the writing-mechanism.

26. In a typewriter, the combination with a writing-mechanism, of a coöperating flat-platen, an adjustable book-support, comprising two oppositely moving leaves, and means whereby the book-support is individually adjusted and guided in longitudinal directions.

27. In a typewriter, the combination with a writing-mechanism, of a coöperating flat platen, an adjustable book-support, and means whereby the book-support is individually adjusted and guided in longitudinal, transverse and vertical directions with reference to the platen.

28. In a typewriter, the combination with writing-mechanism, means for sustaining the same rigidly against vertical movement, a flat platen, supporting means therefor constructed to permit lateral movement thereof, a laterally-traveling book-support composed of two rising and falling leaves, and means whereby the entire book-support is vertically adjusted and guided.

29. In a typewriter, the combination with

laterally- and longitudinally-traveling writing-mechanism, of a platen arranged beneath the writing-mechanism, a book-support underlying the platen and writing-mechanism and comprising two rising and falling leaves, means connecting said leaves together to move in opposite vertical directions, mechanism for simultaneously adjusting both leaves vertically with relation to the platen irrespective of the position of either of said leaves, and means for imparting longitudinal travel to said book-support.

30. In a typewriter, the combination with writing-mechanism, of a platen coöperating with the writing-mechanism, of a book-support, comprising a plurality of movable leaves, means for connecting said leaves to move in opposite vertical directions, mechanism for adjusting, simultaneously, both leaves of the support vertically with relation to the platen, and mechanism for imparting movement to the support longitudinally of the platen and independent of the operation of the vertically-adjusting mechanism, substantially as described.

31. In a typewriter, the combination with writing-mechanism, of a normally-stationary flat platen coöperating therewith, a book-support comprising rising and falling leaves, a rocker-arm connecting said leaves to insure movement thereof in opposite directions, means for adjusting the arm vertically to produce corresponding vertical adjustment of both leaves, and means whereby the book-support is adjusted and guided laterally and longitudinally.

32. In a typewriter, the combination with writing-mechanism, of a flat platen, a hinge-support for the platen, tracks extending longitudinally of the platen, a vertically-adjustable, longitudinally-slidable book-support comprising two leaves, a rocking-lever extending between and connecting said leaves, a vertically-movable support connecting with said rocking-lever intermediate of its ends, and means for raising said lever-support vertically independent of the rocking-movement of said lever.

33. In a typewriter, the combination with writing-mechanism, of a flat platen, a hinge-support for the platen, tracks extending longitudinally of the platen, a vertically-adjustable, longitudinally-slidable book-support comprising two leaves, a rocking-lever extending between and connecting the two leaves, a vertically-movable support connecting with said rocking-lever intermediate of its ends, means for raising said lever-support vertically independent of the rocking movement of said lever, and means for guiding the horizontal travel of said book-support and of the parts which it sustains.

34. In a typewriter, the combination with writing-mechanism, of a flat-platen, a hinge-support for the platen, the platen being con-

structed to have a tilting movement and a laterally-sliding movement, one independent of the other on said hinge-support, tracks extending longitudinally of the platen, a vertically-adjustable, longitudinally-slidable book-support comprising two leaves, a vertically-movable support connecting with said rocking-lever intermediate of its ends, means for raising said lever-support vertically independent of the rocking-movement of said lever, and means for guiding the horizontal travel of said book-support and of the parts which it sustains.

35. In a typewriter, the combination with writing-mechanism, of a tiltable platen, a hinge-support therefor, an underlying book-support comprising two leaves or plates, a rocking-lever connecting said leaves and constructed automatically to position said leaves relative to the platen, a vertical support connecting with said rocking-lever intermediate of its ends to permit a rocking-movement of the lever whereby one leaf may be elevated toward the platen while its companion leaf will be depressed away from the same, means for raising and lowering said lever-support, track-rails arranged contiguous to the platen and independent thereof and adapted to sustain the writing-mechanism.

36. In a typewriter, the combination with writing-mechanism, of a tiltable platen, of a hinge-support therefor, an underlying book-support comprising two leaves or plates, a rocking-lever connecting said leaves and constructed automatically to position said leaves or plates relative to the platen, a vertical support connecting with said rocking-lever intermediate of its ends to permit a rocking-movement of the lever whereby one leaf may be elevated toward the platen while its companion-leaf will be depressed away from the same, means for raising and lowering said lever-support, track-rails arranged contiguous to the platen and independent thereof and adapted to sustain the writing-mechanism, and a frame for carrying the book-support.

37. In a typewriter, the combination with writing-mechanism, of a tiltable platen, of a hinge-support, an underlying book-support comprising two leaves or plates, a rocking-lever connecting said leaves and constructed automatically to position said leaves relative to the platen, a vertical support connecting with said rocking-lever intermediate of its ends to permit a rocking movement of the lever whereby one leaf may be elevated toward the platen while its companion leaf will be depressed away from the same, means for raising and lowering said lever-support, track-rails arranged contiguous to the platen and independent thereof and adapted to sustain the writing-mechanism, and a traveling-frame for carrying the book-support.

38. In a typewriter, the combination with

a tiltable flat platen, means for limiting the extent of tilt of the platen, track-rails arranged contiguous to but independent of the platen, a hinge-support therefor, a longitudinally-traveling-carriage supported on the tracks, means constructed to lock the longitudinally-traveling-carriage to the tracks when the same are tilted, a traveling book-support underlying the platen, the platen and tracks being, each, normally supported in a horizontal plane, means engaging the book-support and adapted to effect elevation of the same relative to the platen, the book-support comprising two leaves, a rocking-lever underlying and connecting with the leaves, a vertically-movable support connecting with the lever intermediate of its ends and adapted to elevate the same and its sustained leaves to position the latter relative to the platen, a work-holder extending over the platen and adapted to confine a leaf of the book sustained by the platen.

39. In a typewriter, the combination with a tiltable flat platen, means for limiting the extent of tilt of the platen, track-rails arranged contiguous to but independent of the platen, a hinge-support therefor, a longitudinally-traveling carriage supported on the tracks, means constructed to lock the longitudinally-traveling carriage to the tracks when the same are tilted, a traveling book-support underlying the platen, the platen and tracks being, each, normally supported in a horizontal plane, means engaging the book-support and adapted to effect elevation of the same relative to the platen, the book-support comprising two leaves, a rocking-lever underlying and connecting with the leaves, a vertically-movable support connecting with the lever intermediate of its ends and adapted to elevate the same and its sustained leaves to position the latter relative to the platen, and a work-confining tape extending over the platen to engage a sheet sustained thereby, and a supporting-member arranged at one edge of the platen for movably sustaining the rear end of the tape.

40. In a typewriter, the combination with a tiltable flat-platen, means for limiting the extent of tilt of the platen, track-rails arranged contiguous to but independent of the platen, a hinge-member therefor, a longitudinally-traveling carriage supported on the tracks, means constructed to lock the longitudinally-traveling carriage to the tracks when the same are tilted, a traveling book-support underlying the platen, the platen and tracks being each normally supported in a horizontal plane, means engaging the book-support and adapted to effect elevation of the same relative to the platen, the book-support comprising two leaves, a rocking-lever underlying and connecting

with the leaves, a vertically-movable support connecting with the lever intermediate of its ends and adapted to elevate the same and its sustained leaves to position the latter relative to the platen, a laterally-adjustable work-confining tape, and means for securing the rear end of the tape to its support, the said tape being provided at its forward ends with an engaging device constructed to engage the forward end of the platen.

41. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, of a track-support therefor, a flat platen arranged within the region constituted by the sides of the frame, and independent thereof, a work-support, a laterally-slidable work-confining tape extending across the platen, a supporting-element arranged at one end of the platen and upon which the tape has its movement, means for securing the tape to its support, against lateral movement, and an engaging-device formed on the opposite end of the tape.

42. In a typewriter, the combination with writing-mechanism, of longitudinal supporting-tracks therefor, an underlying pivoted platen narrower than the distance between the rails and laterally shiftable therebetween, and means for guiding and supporting the platen.

43. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, a tiltable track-frame for supporting the writing-mechanism, a tiltable platen narrower than the distance between the tracks and laterally shiftable and independent thereof, a hinge-support for the platen, means for guiding and supporting the platen in its lateral movement, a traveling work-support underlying the platen, and means engaging the work-support and adapted to impart vertical movement to said work-support and position it relative to the underside of the platen.

44. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, a tiltable track-frame for supporting the writing-mechanism, a tiltable platen narrower than the distance between tracks and laterally-shiftable therebetween and independent thereof, a hinge-support for the platen, means for guiding and supporting the platen in its lateral movement, a traveling work-support underlying the platen, means engaging the work-support and adapted to impart vertical movement to said work-support and position it relative to the underside of the platen, and mechanism also engaging the work-support for imparting a step-by-step longitudinal travel to the same.

45. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, a tiltable track-frame for supporting the writing-mechanism, a

tiltable platen narrower than the distance between tracks and laterally shiftable therebetween and independent thereof, a hinge-support for the platen, means for guiding and supporting the platen in its lateral movement, a laterally-traveling work-support underlying the platen, and means engaging the work-support and adapted to impart vertical movement to said work-support and position it relative to the underside of the platen.

46. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, a tiltable track-frame for supporting the writing-mechanism, a tiltable platen narrower than the distance between tracks and laterally-shiftable therebetween and independent thereof, a hinge-support for the platen, means for supporting and guiding the platen in its lateral movement, a laterally and longitudinally-traveling work-support underlying the platen, means engaging the work-support and adapted to impart vertical movement to said work-support and position it relative to the underside of the platen, and means for effecting a step-by-step longitudinal movement of the work-support.

47. In a typewriter, the combination with a writing-mechanism movable longitudinally for line-spacing and laterally for letter-spacing, of longitudinal line-spacing tracks supporting said writing-mechanism, a book-support movable laterally, longitudinally and vertically without affecting said tracks, and means for guiding and supporting the book-support in its several movements.

48. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, of a track-frame arranged to sustain the writing-mechanism, a table provided with a transversely-extending depression, a laterally-traveling work-supporting-carriage adapted to travel in said depression, and comprising two leaves, a rocking-lever movably connecting said leaves, a vertically-movable lever-support, and means arranged contiguous to said depression and adapted to effect vertical movement of said lever-support and position the leaves relative to the platen.

49. In a typewriter, the combination with a laterally- and longitudinally- traveling writing-mechanism, of a track-frame arranged to sustain the writing-mechanism, a table provided with a transversely-extending depression, a laterally-traveling work-supporting-carriage adapted to travel in said depression and comprising two leaves, a rocking-lever movably connecting said leaves, a vertically-movable lever-support, means arranged contiguous to said depression and adapted to effect vertical movement of said lever-support and position the leaves relative to the platen, guiding-mem-

bers arranged at the sides of said depression, and rollers carried by the work-supporting-carriage and adapted to travel on said guiding-members.

50. In a typewriter, the combination with a laterally- and longitudinally-traveling writing-mechanism, of a track-frame arranged to sustain the writing-mechanism, a table provided with a transversely-extending depression, a laterally-traveling work-supporting-carriage adapted to travel in said depression and comprising two leaves, a rocking-lever movably connecting said leaves, a vertically-movable lever-support, means arranged contiguous to said depression and adapted to effect vertical movement of said lever-support and position the leaves relative to the platen, guiding-members arranged at the sides of said depression, rollers carried by the work-supporting-carriage and adapted to travel on said guiding-members, and means for effecting horizontal travel of the work-supporting-carriage.

51. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of a track-frame arranged to sustain the writing-mechanism, a table provided with a transversely-extending depression, a laterally-traveling work-supporting-carriage adapted to travel in said depression and comprising two leaves, a rocking-lever movably connecting said leaves, a vertically-movable lever-support, means arranged contiguous to said depression and adapted to effect vertical movement of said lever-support and position the leaves relative to the platen, guiding-members arranged at the sides of said depression, rollers carried by the work-supporting-carriage and adapted to travel on said guiding members, means comprising an operating-lever, and a connection between said lever and said lever-support.

52. In a typewriter, the combination with a laterally- and longitudinally-traveling writing-mechanism, of a track-frame arranged to sustain the writing-mechanism, a table provided with a transversely-extending depression, a laterally-traveling work-supporting carriage adapted to travel in said depression and comprising two leaves, a rocking-lever movably connecting said leaves, a lever-support, means arranged contiguous to said depression and adapted to effect vertical movement of said support, said means comprising a threaded spindle connecting with said support, and a hand-wheel adapted to effect rotation of said threaded spindle.

53. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, tracks adapted to sustain the writing-mechanism, hinge-members to which said tracks are secured, a table upon which said hinge-members are secured, a platen lying between and independent of the tracks, a

platen-hinge-support arranged independent of the track-hinge, said table being provided with a rectangular depression, a rectangular frame constructed and arranged to travel in said depression, work-supporting leaves overlying said rectangular frame, and means connecting with said support for effecting vertical movement thereof and positioning of the leaves relative to the underside of the platen.

54. In a typewriter, the combination with a laterally- and longitudinally-traveling writing mechanism, tracks adapted to sustain the writing-mechanism, hinge-members to which the tracks are secured, a table upon which said hinge-members are secured, a tiltable platen lying between and independent of the tracks, means for locking the forward ends of the platen against tilting, a platen-hinge-support arranged independent of the track-hinge, said table being provided with a rectangular depression, a rectangular frame constructed and arranged to travel in said depression, work-supporting leaves overlying said rectangular frame, and means connecting with said support for effecting vertical movement thereof and positioning of the leaves relative to the underside of the platen.

55. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, tracks adapted to sustain the writing-mechanism, hinge-members to which said tracks are secured, a table upon which said hinge-members are secured, a tiltable platen lying between and independent of the tracks, means for locking the forward end of the platen against tilting, a platen-hinge-support arranged independent of the track-hinge, said table being provided with a rectangular depression, a rectangular frame constructed and arranged to travel in said depression, work-supporting leaves overlying said rectangular-frame, means connecting with said support for effecting vertical movement thereof and positioning of the leaves relative to the underside of the platen, and manually-operated means for effecting unlocking of said platen-locking-device.

56. In a typewriter, the combination with a traveling writing-mechanism, of a track-frame for supporting the same, a normally stationary platen, means for supporting the same, a vertically-adjustable work-support consisting of two leaves and a rocking-lever for supporting the leaves and fulcrumed to facilitate vertical movement of the leaves, a standard upon which said rocking-lever is fulcrumed, a spindle threaded into said standard, and a hand-wheel carried by the spindle, substantially as described.

57. In a typewriter, the combination with writing-mechanism, of means for supporting the same, a platen cooperating with the writing-mechanism, a vertically-adjustable work-support comprising a rocking-lever,

two leaves carried by said lever, and a standard connecting with said lever and adapted to effect raising and lowering of the leaves irrespective of the position and movement of the two leaves, a threaded spindle taking into said standard, and a hand-wheel carried by the spindle, substantially as described.

58. In a typewriter, the combination with writing-mechanism, of means for supporting the writing-mechanism, a normally stationary platen, a movable work-support adjustable with relation to the platen and consisting of two leaves, a rocking-equalizing-lever, and a movable standard constructed to effect raising and lowering of the leaves, and a traveling-support for said standard, substantially as described.

59. In a typewriter, the combination with writing-mechanism, of means for supporting the same, a normally stationary platen, means for supporting the same, a work-support constructed for vertical, longitudinal and transverse adjustment and comprising rising and falling leaves, a rocking-member for movably sustaining the leaves, means for normally supporting the rocking-member, and means constructed to effect vertical and longitudinal movement of said support-means, substantially as described.

60. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of tracks for supporting the writing-mechanism, means for tiltably supporting the tracks, a pivot-rod independent of the tracks, and a platen hingedly connected to said rod and narrower than the distance between the tracks whereby it is independent thereof.

61. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of tracks for supporting the writing-mechanism, means for tiltably supporting the tracks, a pivot-rod independent of the tracks, a platen hingedly connected to said rod and narrower than the distance between the tracks, whereby it is independent thereof, and a book-support underlying the platen.

62. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of tracks for supporting the writing-mechanism, means for tiltably supporting the tracks, a pivot-rod independent of the tracks, a platen hingedly connected to said rod and narrower than the distance between the tracks whereby it is independent thereof, a movable book-support underlying the platen, and means for effecting movement of said book-support.

63. In a typewriter, the combination with a laterally and longitudinally-traveling writing mechanism, of tracks for supporting the writing-mechanism, means for tiltably supporting the tracks, a pivot-rod independent of the tracks, a platen hingedly

connected to said rod and narrower than the distance between the tracks whereby it is independent thereof, a movable book-support underlying the platen, means for effecting movement of said book-support, and means for effecting vertical adjustment of the book-support to different positions relative to the platen.

64. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, of tracks for sustaining the writing-mechanism, of means for tiltably supporting the tracks, a pivot-rod independent of the tracks, a platen transversely shiftable independently of the tracks and tiltably connected with said rod, a movable book-support underlying the platen and constructed to travel in the direction of the transverse travel of the writing-mechanism and of the lateral movement of the platen.

65. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, tracks for supporting the writing-mechanism, means for tiltably supporting the tracks, a pivot-member independent of the tracks, a platen hingedly connected to said member and narrower than the distance between the tracks whereby it is independent thereof, and a book-support underlying the platen and constructed to have travel in a direction at right-angles to the longitudinal travel of the writing-mechanism.

66. In a typewriter, the combination with a transversely and longitudinally-traveling writing-mechanism, of a flat platen, means for supporting and permitting guided transverse movement of the platen, an underlying book-support, a frame constructed to sustain and permit transverse guided movement of the book-support, and means whereby the frame may have longitudinal guided movement.

67. In a typewriter, the combination with a laterally and longitudinally-traveling writing-mechanism, tiltable tracks upon which the writing-mechanism is supported, a flat platen normally supported in a stationary plane, and a gravity-operated device traveling with the writing-mechanism and adapted to lock the writing-mechanism to said tracks automatically as said tracks are being tilted.

68. In a typewriter, the combination with writing-mechanism comprising a line-spacing carriage, tracks upon which said carriage travels and adapted to be tilted away from a horizontal plane, an independently-supported flat platen, a gravity-operated device carried by said line-spacing carriage, and abutments carried by the tracks and constructed to be engaged by said gravity-operated device whereby when said tracks are tilted the line-spacing carriage is locked to the tracks.

69. In a typewriter, the combination with writing-mechanism, of a support therefor consisting of a supporting-bar and standards, the said bar extending between the standards and suspending the writing-mechanism therebetween, means carried by the writing-mechanism for effecting movement thereof upon the supporting-bar, a platen cooperating with the writing-mechanism, means for supporting the same, and an underlying laterally-traveling, vertically adjustable book-support, substantially as described.

70. In a typewriter, the combination with writing-mechanism, of a support therefor consisting of a supporting-bar and standards, the said supporting-bar extending between the standards and adapted to suspend the writing-mechanism therebetween, means carried by the writing-mechanism for effecting intermittent movement thereof upon the supporting-bar, a platen cooperating with the writing-mechanism, means for supporting the same, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism, substantially as described.

71. In a typewriter, the combination with a traveling writing-mechanism, of a supporting-carriage therefor comprising a supporting-bar and standards, the said bar extending between the standards and adapted to suspend the writing-mechanism between said standards, means for effecting intermittent movement of the supporting-carriage, means carried by the writing-mechanism for effecting intermittent transverse movement of the writing-mechanism upon the supporting-carriage, a platen, means for supporting the same, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the travel of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

72. In a typewriter, the combination with writing-mechanism, of a supporting-carriage therefor comprising a supporting-bar and standards, the said supporting-bar extending between the standards and adapted to suspend the writing-mechanism between said standards, means for effecting spacing-movement of the standards, mechanism carried by the writing-mechanism for effecting its movement upon the supporting-carriage, means connecting therewith for effecting intermittent action of the actuating-mechanism to produce transverse step-by-step move-

ment of the writing-mechanism, a flat-platen, means for supporting the same, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

73. In a typewriter, the combination with a traveling writing-mechanism, standards, a supporting-bar connecting said standards, carriage-propelling means carried by said supporting-bar, escape-mechanism carried by said supporting-bar and constructed to effect intermittent transverse, step-by-step movement of the writing-mechanism for letter-spacing, a connection between the key-levers and said escapement-mechanism, comprising a rod, an arm with which said rod connects, an escape-device with which said arm connects, spacing-mechanism connecting with the transverse rod, a platen cooperating with the writing-mechanism, and means for supporting the same, a book-support underlying but movable relative to the platen, a base provided with a depression to permit travel of the support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

74. In a typewriter, the combination with a traveling writing-mechanism, standards, a supporting-bar connecting said standards, carriage-propelling means carried by said supporting-bar, escape-mechanism carried by said supporting-bar and constructed to effect intermittent, transverse step-by-step movement of the writing-mechanism for letter-spacing, a connection between the key-levers and said escape-mechanism, comprising a rod, an arm with which said rod connects, an escape-device with which said arm connects, spacing-mechanism connecting with the transverse rod, a platen cooperating with the writing-mechanism, means for supporting the same, a universal-bar-device against which bear the key-levers, a book-support underlying but movable relative to the platen, a base provided with a depression to permit travel of the book-support therein in the same relative direction as that of the writing mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

75. In a typewriter, the combination with a traveling writing-mechanism, standards, a supporting-bar connecting said standards, carriage-propelling means carried by said supporting-bar, escape-mechanism carried by said supporting-bar and constructed to effect intermittent transverse, step-by-step movement of the writing mechanism for letter spacing, a connection between the key-levers

and said escape-mechanism comprising a rod, an arm with which said rod connects, an escape-device with which said arm connects, spacing-mechanism connecting with the transverse rod, a platen cooperating with the writing-mechanism, means for supporting the same, a universal-bar-device against which bear the key-levers, and means for actuating the escape-mechanism by one bank of keys without interference with levers of another bank of keys, a book-support underlying but movable relative to the platen, a base provided with a depression to permit travel of the book-support therein in the same relative direction as that of the writing mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

76. In a typewriter, the combination with a traveling-writing-mechanism, of a supporting-carriage for supporting the same, carriage-self-propelling mechanism carried by the supporting-carriage, means connecting with and operated by the writing-mechanism for actuating the same, and a platen; the writing-mechanism, including a plurality of banks of keys and the lowermost bank thereof being open at the center to present an open space in the writing field of the platen, and said supporting-carriage occupying a plane somewhat above that of the writing-surface of the platen, whereby inspection thereof is permitted without necessitating movement of the writing-mechanism.

77. In a typewriter, the combination with a platen, of traveling-writing-mechanism, a line-spacing carriage for supporting the same, carriage-self-propelling-mechanism carried by the supporting-carriage, spacing-mechanism for effecting step-by-step movement of the writing-mechanism transversely of the travel of the supporting-carriage, and means constructed to operate upon said spacing-mechanism to increase the step-by-step travel of said carriage over the platen, substantially as described.

78. In a typewriter, the combination with a platen, of a traveling writing-mechanism, a line-spacing-carriage for the same, carriage-self-propelling-mechanism carried by the supporting-carriage, spacing-mechanism for effecting step-by-step movement of the carriage longitudinally of the travel of the writing-mechanism, and means for effecting actuation of said spacing-mechanism to increase the step-by-step travel of said carriage.

79. In a typewriter, the combination with a traveling writing-mechanism, of a supporting-carriage therefor, actuating means for effecting movement of the writing-mechanism upon its supporting-carriage, actuating means for effecting movement of the supporting-carriage longitudinally of the travel of the writing-mechanism, and key-members

carried by the writing-mechanism for effecting total-release of the actuating-mechanisms of the writing-mechanism and of the supporting-carriage, the two total-release key-members being positioned to facilitate simultaneous operation thereof, whereby the writing-mechanism may be brought to any desired point, a platen, a book-supporting-structure underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism, substantially as described.

80. In a typewriter, the combination with writing-mechanism, of a laterally-adjustable platen for sustaining writing-material, a hinge-member disposed to the rear of the platen and constructed to support its rear end for lateral adjustment, tracks arranged parallel to the sides of the platen and constructed to support the writing-mechanism, a movable book-support underlying the platen, and means for adjusting the book-support to different heights relative to the platen, substantially as described.

81. In a typewriter, the combination with writing-mechanism, of a laterally-movable platen cooperating with the writing-mechanism, a fixed support for slidably supporting the platen, a movable book-support, and mechanism for adjusting the book-support longitudinally of the platen independent of the position of the same.

82. In a typewriter, the combination with writing-mechanism, of a platen for sustaining writing-material and cooperating with the writing-mechanism, independent hinge-supports for sustaining the platen and the writing-mechanism, respectively, and spring-actuated clamps arranged contiguous to the platen and movable relative thereto, substantially as described.

83. In a typewriter, the combination with writing-mechanism, of a platen for sustaining writing-material, independent fixed hinge-supports for sustaining the platen and writing-mechanism, respectively, spring-actuated clamps carried by the parts and bearing upon the writing-material to maintain it in position upon the platen, the clamps being provided with indicating-marks, substantially as described.

84. In a typewriter, the combination with writing-mechanism, of a platen for sustaining writing-material and cooperating with the writing-mechanism, independent hinge-supports, respectively, for the platen and writing-mechanism, and clamps arranged contiguous to the platen and constructed to constitute letter and line-indicators, substantially as described.

85. In a typewriter, the combination with

a traveling writing-mechanism, of a supporting-carriage therefor, a platen cooperating with the writing-mechanism, a hinge-support for the platen, and tracks disposed
 5 parallel to, and to one side of, and independent of, the platen for sustaining and carrying the writing-mechanism-supporting-carriage, substantially as described.

86. In a typewriter, the combination with
 10 a traveling writing-mechanism, of a supporting-carriage therefor, a platen cooperating with the writing-mechanism, a hinge-member supporting the same, tracks disposed parallel with and independent of the platen for
 15 sustaining and carrying the writing-mechanism-supporting-carriage, and means constructed to hold the platen in operative position, substantially as described.

87. In a typewriter, the combination with
 20 a traveling writing-mechanism, of a carriage for movably supporting the same, a platen cooperating with the writing-mechanism, a hinge-support for the same, tracks disposed parallel with the platen, and a hinge-support
 25 constructed to permit raising of the platen while the tracks occupy their normal, horizontal position, and, also, raising of the tracks without permitting the tilting of the platen, substantially as described.

88. In a typewriter, the combination with
 30 a traveling writing-mechanism, of a carriage for supporting the same, a platen cooperating with the writing-mechanism, a hinge-support for the same, tracks disposed parallel with the platen, a hinge-support
 35 constructed to permit raising of the tracks independent of the platen, and manually-operated means disposed and operable independent of the tracks for locking the platen
 40 in its horizontal position, substantially as described.

89. In a typewriter, the combination with
 45 a traveling writing-mechanism, of a supporting-carriage for sustaining the same, consisting of a supporting-bar and standards, tracks for supporting the standards, spacing-mechanism carried by the standards for effecting longitudinal movement of the
 50 carriage upon the tracks, and adjustable means connecting with said spacing-mechanism and effecting a variable movement thereof, a platen cooperating with the writing-mechanism, and means for supporting the same, substantially as described.

90. In a typewriter, the combination with
 55 a traveling writing-mechanism, a supporting-carriage for the same, tracks for sustaining the carriage, a laterally-adjustable platen, and a combined lining-up, gaging and retaining-device for maintaining the writing-
 60 material in position on the platen, independent of the tracks, substantially as described.

91. In a typewriting-machine, the combination with a traveling writing-mechanism,
 65 a carriage for supporting the same, tracks

for the carriage, movable platen, and a combined graduated, lining-up, gaging and retaining-device for maintaining the writing-material in position on the platen, independent of the tracks, substantially as described. 70

92. In a typewriter, the combination with writing-mechanism, of a table provided with a depression, a traveling book-support disposed in said depression, and a platen disposed above the book-support, the book-support being constructed to be adjusted vertically in the depression with relation to the
 75 platen, and, also, to have travel transverse of the platen, and a supporting-member movable longitudinally of the platen and adapted to position the book-support longitudinally thereof, and means for moving
 80 said book-support, substantially as described.

93. In a typewriter, the combination with writing-mechanism, of a table provided with
 85 a depression, a traveling book-support disposed in said depression and comprising leaves constructed to be vertically adjusted with relation to the writing-mechanism, said book-support being movable in a plurality
 90 of directions at angles one to the other independent of the adjustment of said leaves, and a platen disposed above the book-support and cooperating with the writing-mechanism, and a supporting-member movable
 95 longitudinally of the platen and adapted to position the book-support longitudinally thereof, substantially as described.

94. In a typewriter, the combination with writing-mechanism, of a table, having a depression in its top, a traveling book-support
 100 working in the depression and comprising leaves, one being alternately elevated or depressed with relation to the other, an equalizing-lever for sustaining the leaves, said
 105 book-support being movable in a plurality of directions independent of the adjustment of said leaves, and a platen disposed above the book-support and cooperating with the writing-mechanism. 110

95. In a typewriter, the combination with writing-mechanism, of a table provided with a depression in its top, a traveling book-support working therein and comprising leaves,
 115 one being alternately elevated or depressed with relation to the other, an equalizing-lever for supporting the leaves and constructed for adjustment with relation to the writing-mechanism, said book-support being
 120 movable in a plurality of directions independent of the adjustment of said leaves, and a normally-stationary platen, substantially as described.

96. In a typewriter, the combination with writing-mechanism, of a table having a depression in its top, a traveling book-support
 125 working in said depression and comprising leaves and an equalizing-device connecting the said leaves and constructed for effecting self-adjustment of the one leaf with relation
 130

to the other, of a platen disposed above the book-support and cooperating with the writing-mechanism, the book-support-equalizing-device being constructed to be vertically adjusted with relation to the platen whereby said leaves are, both, moved together in the same direction, and vertical adjustment means located underneath said book-support, substantially as described.

97. In a typewriter, the combination with writing-mechanism, of a table, a hinged track-frame disposed on the table, a platen operable independent of the track-frame, a rotatable slotted member in which the platen is hinged and constructed to permit lateral movement of the platen therein, substantially as described.

98. In a typewriter, the combination with writing-mechanism, a tiltable platen, tracks for supporting said writing-mechanism and on which it travels in one direction for line-spacing and which tracks extend to the rear of the pivoting of the platen to provide a rest-region for the writing-mechanism and permit tilting of the platen independent of the tracks, of a table, and a stop-member disposed in the path of tilting-movement of the platen and limiting the extent of tilt thereof.

99. In a typewriter, the combination with a writing-mechanism, of a table, a platen supported thereon and cooperating with the writing-mechanism, a hinge-member at the rear end of the platen, and an upstanding stop-member independent of the hinge-member and platen and disposed in the path of the tilting-platen and against which the platen abuts when tilted up, substantially as described.

100. In a typewriter, the combination with writing-mechanism, of a table, a tiltable platen disposed above the table, tracks for supporting said writing-mechanism and upon which the same travels in the direction of line-spacing and which tracks are disposed to the side of, and free from, each side-edge of the platen, and a locking-device for the platen operable independent of the tracks to permit tilting of the platen while the tracks are in normal position, substantially as described.

101. In a typewriter, the combination with writing-mechanism disposed at a stationary height relatively, of a table, a track-frame disposed contiguous to the table and capable of being tilted and upon which the writing-mechanism is supported, a platen disposed above the table and of dimensions somewhat smaller than the track-frame to permit the use of a sheet larger than the platen, and a work-confining device disposed independent of the track-frame and extending across the platen for engaging and retaining said sheet upon the platen independent of the track-frame, substantially as described.

102. In a typewriter, the combination with writing-mechanism disposed at a stationary height relatively, of a table, a hinge-member for tiltably supporting the track and maintaining the same in a fixed horizontal plane, and upon which the writing-mechanism is supported, tracks disposed contiguous to the table, a platen cooperating with the writing-mechanism and disposed above the table, and a hinge-member independent of the track-hinge member in which the platen is supported at its rear and held in a fixed horizontal plane, and means for effecting location of the work upon the platen.

103. In a typewriter, the combination with writing-mechanism, of a table, a track-frame disposed on the table, a tiltable platen disposed above the table, and of a width less than the distance between the side-members of the track-frame and tiltable within the field of the track-frame, a plurality of independent work-confining devices distinct from the track-frame and disposed contiguous to the platen and operable for retaining work contiguous thereto.

104. In a typewriter, the combination with writing-mechanism, of a table, tracks for supporting the writing-mechanism, a platen cooperating with the writing-mechanism and disposed above the table, a plurality of work-confining devices distinct from the tracks and disposed contiguous to the platen and having one edge extending parallel to the longitudinal edge of the platen and another edge extending parallel to the transverse edge of the platen, one of said work-confining devices being adjustable laterally over the platen, substantially as described.

105. In a typewriter, the combination with writing-mechanism, of a supporting-carriage therefor and from which the writing-mechanism is suspended, tracks for sustaining the carriage and in which said carriage travels for line-spacing, said supporting-carriage comprising standards, and a connecting-bar extending between said standards, a shaft extending between the standards, gear-wheels carried at the ends of the shaft, racks carried by the tracks and cooperating with the gear-wheels to effect movement of the carriage, springs arranged contiguous to the ends of the shaft for effecting movement of the gear-wheels, and a platen cooperating with the writing-mechanism, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism, substantially as described.

106. The combination with a traveling-writing-mechanism, of a supporting-carriage comprising standards, a shaft extend-

ing between said standards, a T-rail connecting the standards and affording means for movably supporting the carriage, gears carried at each end of the shaft, tracks, racks disposed thereon under the gears and coöperating therewith, springs connecting with the gears to effect rotation of the shaft and simultaneous movement of the carriage at both ends, and a platen coöperating with the writing-mechanism, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to the said writing-mechanism.

107. In a typewriter, the combination with a traveling writing-mechanism, a supporting-carriage therefor, carriage-self-propelling-mechanism carried by and movable with the supporting-carriage for effecting travel of the same in the direction of line-spacing, spacing-mechanism carried by the writing-mechanism and coöperating with a rack carried by the carriage for effecting letter-spacing movement of the writing-mechanism upon its supporting-carriage, and comprising escape-pawls, escape-wheels, and a gear-wheel coöperating with the rack, means for effecting movement of the gear-wheel over the rack, and means for disengaging the escape- and gear-wheels to permit general-release of the writing-mechanism, and a platen coöperating with the writing-mechanism, a book-support underlying but movable relative to the platen, a base provided with a depression to permit travel of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism, substantially as described.

108. In a typewriter, the combination with writing-mechanism, a platen coöperating with the writing-mechanism, a retaining-device comprising a strip of metal, a supporting-member disposed at the rear of the platen and with which one end of the retaining-device engages, and the other end connecting with the front end of the platen, the strip being constructed to be moved transversely of the platen to position it at any desired point, substantially as described.

109. In a typewriter, the combination with writing-mechanism, a platen coöperating with the writing-mechanism, a grooved hinge-member at its rear end and constructed to permit the platen to be tilted and slidable horizontally on the hinge-member, substantially as described.

110. In a typewriter, the combination with a normally-stationary flat platen, of tracks arranged in juxtaposition to the platen, a supporting-carriage constructed to traverse

said tracks and comprising standards, and a connecting-bar extending between said standards, a shaft extending between said standards, a spacing-mechanism disposed on said standards, carriage-self-propelling mechanism carried by and movable with said standards and constructed to be engaged by said spacing-mechanism, and with which said shaft connects, a toothed member arranged to slide on said shaft, a traveling writing-mechanism supported on said connecting-bar, a key-member disposed in said writing-mechanism, and an escape-wheel supported adjacent to and connecting with said key-member, a gear-wheel disposed adjacent said escape-wheel and engaging said toothed-member, and means for effecting disengagement of first-mentioned gear-wheel from said escape-wheel, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling therein of the book-support in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

111. In a typewriter, the combination with a normally-stationary flat-platen, of a supporting-carriage arranged to travel thereover and comprising standards and a connecting-bar, a traveling writing-mechanism arranged to be movably supported upon said supporting-carriage, a rack formed on said connecting-bar, spacing-mechanism mounted on said writing-mechanism and comprising an escape-wheel, a gear-wheel disposed in juxtaposition to said escape-wheel and in engagement with said rack, an escape-dog normally in engagement with the escape-wheel, a clutch-device constructed to be operated to disconnect the escape-wheel from the gear-wheel to effect general-release of the spacing-mechanism without disengaging the gear-wheel from its rack, and an adjusting-device connecting with said escape-device, a book support underlying, but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

112. In a typewriter, the combination with a normally-stationary, flat-platen, of a traveling writing-mechanism, a supporting-carriage therefor, and from which the writing-mechanism is movably suspended, said writing-mechanism comprising a frame consisting of side-plates, a top plate, and a base or fulcrum-plate and constructed to support the operating parts of said writing-mechanism, tracks, and carriage-self-propelling mechanism supported on and movable with said supporting carriage and constructed to effect travel of the carriage on said tracks, a book-

support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

113. In a typewriter, the combination with a traveling-writing mechanism, a supporting-carriage therefor, carriage self-propelling mechanism carried by and movable with said supporting carriage, spacing-mechanism carried by and traveling with the writing-mechanism, typebars supported in said writing-mechanism, key-members for operating said typebars, a universal-bar disposed in juxtaposition to said key-members and constructed to be operated by the same, and a connection between said universal-bar and the spacing-mechanism and constructed to operate said spacing-mechanism, a book-support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

114. In a typewriter, the combination with two independently-operable, normally-stationary flat platens slidable horizontally toward and away from each other, of a traveling writing-mechanism, a book-support underlying the two flat platens and comprising a plurality of leaves, and an operating-lever connecting with said leaves and constructed to effect raising of one leaf toward one of the platens and depression of its companion leaf away from the other platen.

115. In a typewriter, the combination with a normally-stationary flat-platen, of a traveling writing-mechanism, a supporting-carriage therefor, spring-propelling means mounted on the writing-mechanism and constructed to effect its travel on the supporting-carriage, spacing-mechanism engaging with said propelling-mechanism, a general-release device carried by the writing-mechanism and constructed to effect free travel of the writing-mechanism; spring-propelling mechanism disposed on the supporting-carriage and cooperating therewith for effecting an intermittent movement of the carriage, and a general-release device carried by the writing-mechanism and engaging with said carriage spacing mechanism, the propelling-mechanism of the writing-mechanism and supporting-carriage being constructed, when the general-release of the devices is operated, to effect free travel of the writing-mechanism and the carriage, a book-support underlying, but movable relative to, the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direc-

tion as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

116. In a typewriter, the combination with writing-mechanism, of a table, a tiltable platen disposed above the table, a tiltable track-frame overlying the table, a locking-device for the platen, and a track-frame locking-device comprising a movable member supported distinct from said rails, a book support underlying but movable relative to the platen, a base provided with a depression to permit traveling of the book-support therein in the same relative direction as that of the writing-mechanism, and means for adjusting said book-support vertically relative to said writing-mechanism.

117. In a typewriter, the combination with a normally-stationary flat-platen for sustaining a work-sheet or the like, writing-mechanism constructed to travel laterally and longitudinally thereover, an underlying laterally-traveling book-supporting carriage and a longitudinally movable carriage, book-supporting leaf members supported by one of said carriages and movable vertically, and means for raising said book-supporting element vertically independent of the movement of the book-supporting carriages.

118. In a typewriter, the combination with a normally-stationary flat-platen for sustaining a work-sheet or the like, writing-mechanism constructed to travel laterally and longitudinally thereover, an underlying laterally-traveling carriage and a longitudinally traveling carriage, book-supporting leaf members supported by one of said carriages and movable vertically, means for raising one of said book-supporting elements vertically independent of the movement of the book-supporting carriages, mechanism independent of said vertically-moving means for effecting longitudinal movement of the other of said carriages.

119. In a typewriter, the combination with a flat horizontally-slidable platen, writing-mechanism adapted to travel thereover, an underlying traveling book-supporting device comprising two members operatively connected and constructed, each, to have an alternative rising and falling movement to position one of said members, and means for elevating said book-supporting-device independent of traveling movement of the leaves.

120. In a typewriter, the combination with writing-mechanism, an underlying flat platen, a traveling book-support underlying the platen, manually operated rotatable spindles mounted on the platen and independent of the book-support, whereby the sheet carried by the spindles may be positioned over the platen independent of the position and movement of the writing-mechanism.

121. In a typewriter, the combination with

a tiltable flat-platen, writing-mechanism constructed to travel over said platen, manually-operated rotatable members mounted on said platen and movable therewith when tilted and constituting means for carrying manifolding material, said rotatable members being provided with turning heads whereby the same may be rotated independent of the operation and position of the writing-mechanism.

122. In a typewriter, the combination with a tiltable flat-platen, writing-mechanism constructed to travel over said platen, manually operated rotatable members mounted on said platen and movable therewith when tilted, said rotatable members being provided with turning heads whereby the same may be rotated independent of the operation and position of the writing-mechanism, and a book-support underlying the platen and constructed to travel beneath the same independent of said rotatable members.

123. In a typewriter, the combination with a traveling writing-mechanism, an underlying flat-platen, rotatable spindles disposed contiguous to the edges of said platen and constructed to carry thereon a web, the platen being provided with slots contiguous to said spindles and through which the web passes from over the surface of the platen to and around said spindles.

124. In a typewriter, the combination with a traveling writing-mechanism, of two platens hinged for tilting movement, a slotted hinged member with which the said platens engage and adapted to maintain said platens normally in a stationary horizontal plane said slotted hinged members being common to both platens, and said platens being constructed to be moved laterally in said hinged member.

125. In a typewriter, the combination with a traveling writing-mechanism, of a slotted hinged member, two flat-platens adapted to be supported in the same horizontal plane by said hinged member and to be moved laterally thereon toward, or away from, each other.

126. In a typewriter, the combination with a traveling writing-mechanism, of a slotted hinged member, two tiltable flat-platens adapted to be supported in the same horizontal plane by said hinged member and to be moved laterally thereon toward, or away from, each other.

127. In a typewriter, the combination with a traveling writing-mechanism, of a slotted hinged member, two flat-platens adapted to be supported in the same horizontal plane by said hinged member and to be moved laterally thereon toward, or away from, each other, and a platen locking-device.

128. In a typewriter, the combination with a flat-platen and a traveling writing-mechanism, of a movable book-supporting car-

riage for sustaining and positioning a book relative to the platen, and means operating independent of the operation of the writing-mechanism for effecting movement of said book-supporting carriage in a plurality of directions to position the writing-surface of said book.

129. In a typewriter, the combination with writing-mechanism, of a table, a tiltable platen disposed above the table, a track-frame overlying the table, a locking-device cooperating with the track-frame, and a locking-device, distinct from the tracks, for locking the platen, substantially as described.

130. The combination with a supporting-member, a platen, hinged track-rails, a traveling-writing-mechanism to traverse said rails, and means carried by the writing-mechanism and the rails and cooperating to effect a locking of the writing-mechanism upon the rails at a point to the rear of the platen.

131. The combination with a traveling writing mechanism, of a flat platen, a base or supporting-member, track-rails mounted free of the edges of the platen and extending to the rear of the platen to present a support for the writing-mechanism when in its rearmost position.

132. In a typewriter, the combination with a traveling writing-mechanism, of a laterally-shiftable flat-platen, a base or supporting-member, track-rails mounted in juxtaposition thereto and free of the edges of the platen and extending to the rear of the platen to present a support for the writing-mechanism when in its rearmost position.

133. In a typewriter, the combination with a supporting-member, of writing-mechanism, a platen hinged for a tilting movement, and track-rails disposed free of edges of the platen and extending a distance to the rear of the platen whereby, when the writing-mechanism occupies its rearmost position on said tracks, that portion of the writing-field of the platen entirely forward and for a distance to the rear of the uppermost printing-line is cleared for inspection or adjustment of the work-sheet.

134. In a typewriter, the combination with a supporting-member, of writing-mechanism, a platen hinged for a tilting movement, and hinged track-rails disposed free of edges of the platen and extending a distance to the rear of the platen whereby, when the writing-mechanism occupies its rearmost position on said tracks, that portion of the writing-field of the platen entirely forward and for a distance to the rear of the uppermost printing-line is cleared for inspection or adjustment of the work-sheet.

135. In a typewriter, the combination with a supporting-member, of a platen, tracks disposed free of the edges of the platen and independent thereof, a supporting-base, and

means carried by the track-rails whereby positive position of the forward ends of the tracks upon the supporting-base is accomplished.

5 136. In a typewriter, the combination with a supporting-member, of a platen, tiltable tracks disposed free of the edges of the platen and independent thereof, a supporting-base, and means cooperating with the
10 track-rails whereby positive position of the forward ends of the track-rails upon the supporting-base is accomplished after said rails have been tilted and returned to normal position.

15 137. In a typewriter, the combination with a supporting-member, of a platen, tiltable tracks disposed free of the edges of the platen and independent thereof, a supporting-base, and track-positioning devices independent of the platen for positively positioning the tracks upon the base after the rails
20 have been tilted and returned to normal position.

25 138. In a typewriter, the combination with a supporting-base, of a platen, tiltable, laterally-unshiftable tracks disposed free of the edges of the platen and independent thereof, and track-positioning devices independent of the platen and operating with
30 reference to the forward ends of said track-rails whereby positive positioning of the rails upon the base is accomplished when said rails are returned to normal position after being tilted.

35 139. In a typewriter, the combination with a base, a tiltable and laterally-shiftable platen, and a manually-operated locking-device at one edge of the platen and operative to engage the same in any of its shiftable
40 positions and lock it against tilting away from the base.

45 140. In a typewriter, the combination with a base, of a tiltable and laterally-shiftable platen, and a locking-device at an edge of the platen and operative to engage the same in any of its shiftable positions to lock it
50 against tilting away from the base, and including a hand-lever, a bar, connections therebetween, and a returning-spring, substantially as described.

55 141. In a typewriter, the combination with a base, of a book-support comprising a plurality of rising and falling-leaves, an equalizing-device connecting with said leaves, an overlying normally-stationary flat platen,
60 line and letter-spacing carriages constructed to travel over said book-support, tiltable tracks hinged intermediate of their ends for supporting the line-spacing carriage either over the platen or to the rear thereof, supports for the platen and tracks mounted upon said base and stationary against vertical adjustment away therefrom, and means
65 including a rotatable member for adjusting said book-supporting-structure to lift and

lower the leaves simultaneously relative to the platen.

142. In a typewriter, the combination with a flat platen, writing-mechanism-carriage constructed to travel over said platen, a plurality of vertically-movable book-supporting leaves underlying the platen, an equalizing device underlying the said supporting-leaves, a vertically-adjustable device for moving said equalizing-device, said equalizing-device being constructed to have a traveling movement in a horizontal plane.
75

143. In a typewriter, the combination with a writing-mechanism, of a laterally-shiftable platen cooperating with the writing-mechanism, a support for the platen, a traveling book-support, and mechanism for adjusting the book-support in a horizontal plane beneath and relative to the platen, substantially as described.
85

144. In a typewriter, the combination with a base, machine-supporting tracks or guides supported thereon, a writing-mechanism supported on said tracks or guides and having lateral and longitudinal travel, and a work-support independently shiftable in the same directions as said writing-mechanism.
90

145. In a typewriter, the combination with a base, machine-supporting-tracks or guides supported thereon, writing-mechanism supported on said tracks or guides and having a lateral and longitudinal travel, and a work-support independently shiftable in the same directions as said writing-mechanism and comprising a movable carriage and interdependently rising and falling leaves supported on and movable with said carriage.
100

146. In a typewriter, the combination with a base, machine-supporting tracks or guides supported thereon, writing-mechanism supported on said tracks or guides and having a lateral and longitudinal travel, and a work-support independently shiftable in the same directions as said writing-mechanism and comprising a movable carriage and rising and falling leaves supported on and movable with said carriage, and means for effecting vertical adjustment of said shiftable work-supporting-structure irrespective of the position of said rising and falling leaves, substantially as described.
115

147. In a typewriter, the combination with a laterally and longitudinally traveling writing-mechanism, of longitudinal supporting tracks therefor, a pivoted platen underlying the writing-mechanism and narrower than the distance between the tracks and laterally-shiftable in the direction of lateral travel of the writing-mechanism, and means for supporting and guiding the platen.
125

148. In a typewriter, the combination with a traveling writing-mechanism, of a
130

carriage for movably supporting the same, a platen cooperating with the writing-mechanism, tracks disposed parallel with and free from the edges of the platen, and a hinge-support for the platen constructed to permit tilting of the platen independent of the tracks.

149. In a typewriter, the combination with writing-mechanism, a line-spacing-carriage for sustaining the same, longitudinal tracks for supporting said carriage and provided with teeth, line-spacing-mechanism carried by and movable with the writing-mechanism, an operating-device therefor also carried by and movable with the writing-mechanism, and a work-support underlying said writing-mechanism.

150. In a typewriter, the combination with the writing-mechanism thereof, of a line-spacing-carriage for sustaining said writing-mechanism, longitudinal tracks or guides for supporting said carriage, line-spacing-mechanism carried by and movable with the writing mechanism and comprising an engaging-dog, an escape-member, and an operating-device carried by and movable with the writing-mechanism, and an underlying work-support, substantially as described.

151. In a typewriter, the combination with a base, of a supporting-member carried thereby, tracks or guides supported on said base, writing-mechanism supported on said tracks, and a flat platen slidable in said supporting-member and being maintained independent of said tracks and movable irrespective of the movement and position of said writing-mechanism.

152. In a typewriter, the combination with a base, of a supporting-member carried thereby, tracks or guides supported on said base, writing-mechanism supported on said tracks, and a flat platen slidable in said supporting-member and being maintained independent of said tracks and movable irrespective of the movement and position of said writing-mechanism, and a traveling book-supporting structure having rising and falling leaves.

153. In a typewriter, the combination with a base, of a supporting-member carried thereby, tracks or guides supported on said base, writing-mechanism supported on said tracks, and a flat platen slidable in said supporting-member and being maintained independent of said tracks and movable irrespective of the movement and position of said writing-mechanism, and a traveling book-supporting-member having rising and falling leaves, and means for effecting vertical adjustment of the book-supporting-structure to elevate or depress said rising and falling leaves simultaneously.

154. In a flat platen typewriter, the com-

bination of a traveling writing-mechanism, a flat platen underlying and normally stationary relative to said writing-mechanism, a book-supporting structure independent of the platen and provided with interdependently rising and falling leaves, and a supporting carriage therefor having a horizontal travel beneath and relative to the platen, and means disposed beneath and in front of the vertical plane of the rear of said carriage for vertically adjusting said book-supporting structure toward and away from the platen.

155. In a typewriter, the combination with a base, a traveling writing mechanism, tracks for supporting the same, and a flat platen, said tracks and platen being supported in a stationary horizontal plane relative to the base, a book-support underlying and movable with relation to the platen and comprising a plurality of interdependently movable leaves, means disposed beneath and in front of the vertical plane of the rear of said carriage for adjusting said book-support vertically irrespective of the position or movement of the movable leaves, said book-supporting structure having a travel transverse of the platen and in the direction of travel of the writing-mechanism.

156. In a typewriter, the combination with a traveling writing-mechanism, tracks for supporting the same, a flat platen, and an underlying traveling book-supporting structure comprising a plurality of movable supporting-leaves, said tracks and platen and book-supporting structure being, each, supported independently of each other, whereby the platen may be moved without adjustment or movement of the tracks, and whereby also the tracks may be moved without movement of said platen, and whereby also the book-support may be moved without adjustment or movement of said platen or said tracks.

157. In a typewriter, the combination with a base, of a supporting member carried thereby, tracks or guides supported on said base, writing-mechanism supported on said tracks, and a flat platen slidable in said supporting member and being maintained independently of said tracks and movable irrespective of the movement or position of said writing mechanism, and a traveling book-supporting structure having rising and falling leaves, and means for effecting vertical adjustment of the book-supporting structure to elevate or depress said rising and falling leaves simultaneously, and means for securing said book-supporting structure in position after being moved.

158. In a typewriter, the combination with a supporting base, a platen slidably and pivotally connected at its rear to said base, track-rails independently pivoted at

its rear to said support, whereby the platen has a tilting and lateral movement independent of the tilting of the rails.

159. In a typewriter, the combination with a work-support, an overlying platen, a stationary support for the platen whereby the platen is maintained in a stationary horizontal plane, tracks or guides extending longitudinally of the platen, writing mechanism supported on said tracks and traveling over the platen in longitudinal and lateral directions relative to the platen, the platen being constructed to have a movement laterally of the tracks and independent thereof and independent of the position and travel of the writing mechanism, and means for positioning the work-support vertically relative to the writing mechanism, said work-support being also movable transversely.

160. In a typewriter, the combination of a book-support, a flat tiltable platen overlying the book-support, a hinge-member for sustaining the platen in a stationary horizontal plane relative to the book-support, tracks extending longitudinally of the platen and independent thereof, said book-support being constructed to be adjusted longitudinally and vertically relative to the platen and, also, to have travel laterally of the platen.

161. In a flat platen typewriter, a combination with a laterally and longitudinally-traveling writing-mechanism, supporting tracks therefor, a supporting member, a platen supported thereon and shiftable in the direction of the lateral travel of the writing-mechanism, a book-support underlying the platen and having travel in the direction of movement of the writing mechanism and platen, and mechanism for effecting vertical adjustment of the book-support toward and away from the platen irrespective of the travel of said book-support.

162. In a typewriter, the combination with a flat platen, of a transversely traveling writing mechanism, carriage-self-propelling mechanism carried by and movable with the traveling writing mechanism, a supporting carriage therefor, carriage-self-propelling mechanism carried by and movable with the supporting-carriage, the writing mechanism being suspended from the supporting carriage, a traveling book-supporting structure underlying the platen and comprising two leaf-supporting members, and means constructed to elevate said leaf-supporting members vertically irrespective of the position of said supporting-leaves.

163. In a typewriter, the combination with a flat platen, of a transversely traveling writing-mechanism, carriage-self-propelling mechanism carried by and movable with the traveling writing-mechanism, a supporting carriage therefor, carriage-self-

propelling mechanism carried by and movable with the supporting carriage, the writing-mechanism being suspended from the supporting-carriage, a traveling book-supporting structure underlying the platen and comprising two leaf-supporting members, and means constructed to elevate said leaf-supporting members vertically irrespective of the position of said supporting leaves, and a key-member carried by the writing-mechanism and operating to actuate the supporting-carriage and cause it to travel longitudinally of the platen.

164. In a typewriter, the combination with a laterally traveling writing-mechanism, carriage self-propelling-mechanism carried thereby for effecting travel of the writing-mechanism in the direction of letter-spacing, a supporting carriage from which the writing-mechanism is suspended, carriage-self-propelling mechanism carried by and movable with the supporting-carriage for effecting travel thereof in the direction of line-spacing, a platen underlying the writing-mechanism for sustaining the work sheet of an underlying book, a book-supporting structure underlying the platen and movable with relation to the same, and rotatable members arranged in juxtaposition to the platen and operable independent of the movement and position of the writing-mechanism and with relation to the worksheet of the underlying book.

165. In a typewriter, the combination with a writing-mechanism, of a work-supporting member comprising two interdependently movable leaves capable of movement, alternately, in opposite directions and, also, together, in a vertical direction, hinged tiltable track-rails, and a platen having its side edges arranged inside of and free from the inside edges of the rails.

166. In a typewriter, the combination with a support provided with a printing or work-element sustaining surface, writing-mechanism movable thereover, and machine-track-rails disposed and contiguous to, but, entirely independent of, said surface and extending rearward beyond the rear limit of said surface, said rearward-extension constituting a support for the writing-mechanism entirely remote from said surface, whereby the adjustment of the work-element, without disturbing said rails, may be effected.

167. In a typewriter, the combination with a support provided with a printing or work-element sustaining surface, writing-mechanism movable thereover, and hinged machine track-rails disposed contiguous to, but entirely independent of, said surface and extending rearward beyond the rear limit of said surface, said rearward-extension constituting a support for the writing-mechanism entirely remote from said surface,

whereby the adjustment of the work-element, without disturbing said rails, may be effected.

168. In a typewriter, the combination
5 with a support, a hinged work-sustaining
platen, writing-mechanism movable there-
over, and machine-track-rails disposed con-
tiguous to, but entirely independent of, said
19 platen and extending rearward beyond the
rear limit of said platen, said rearward ex-
tension constituting a support for the writ-

ing-mechanism entirely remote from said
platen and whereby the adjustment of the
work-element sustained by the platen may
be effected without disturbing said rails. 15

In testimony whereof, I affix my signature,
in the presence of two subscribing witnesses.

GEORGE W. DONNING.

Witnesses:

HENRY BIRRELL,
W. L. BILLMYER.