

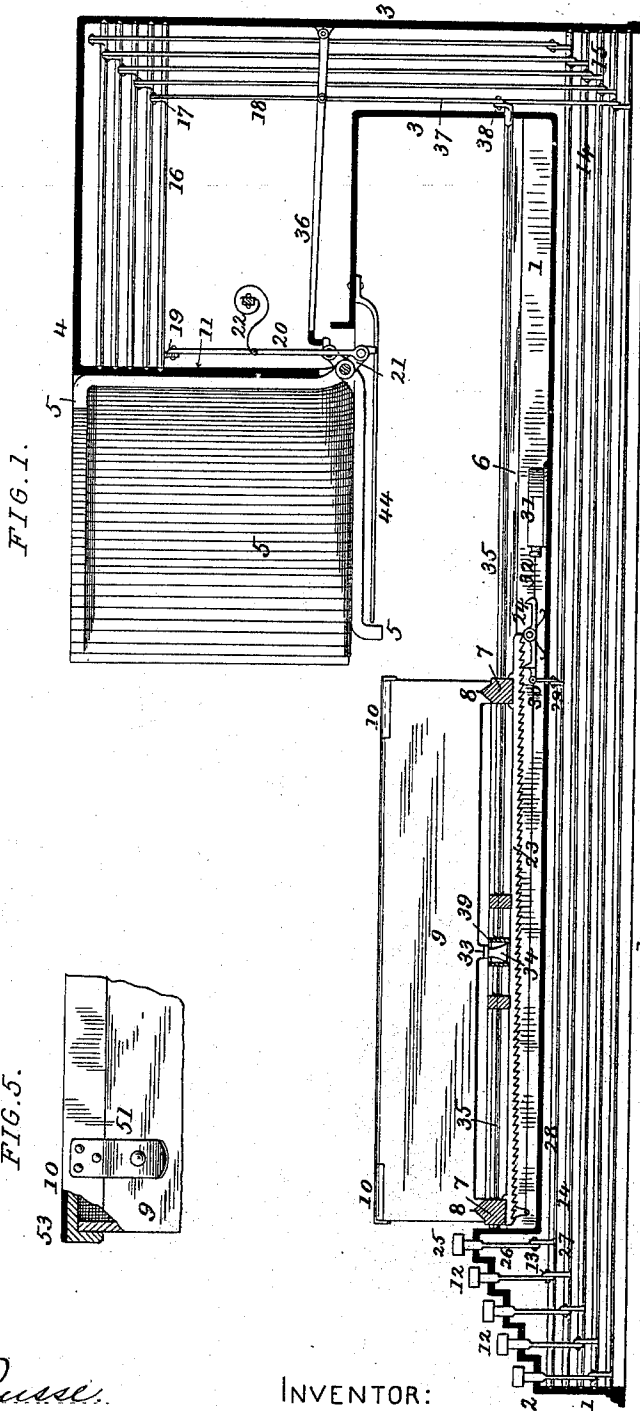
(No Model.)

4 Sheets—Sheet 1.

J. A. YOUNG.
TYPE WRITING MACHINE.

No. 509,461.

Patented Nov. 28, 1893.



ATTEST:

W. J. Bussell

Geo. H. Arthur

INVENTOR:

John A. Young,

by

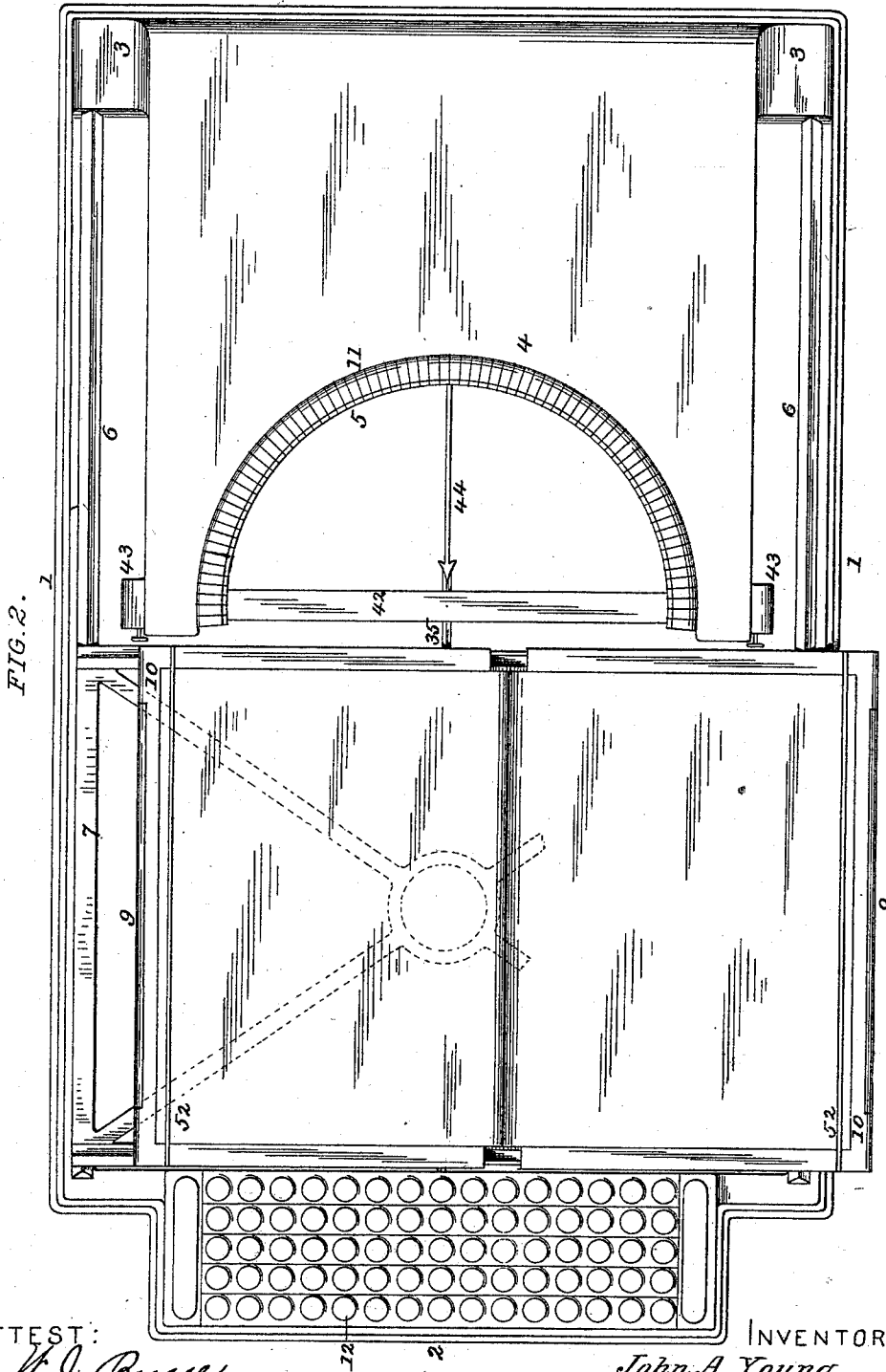
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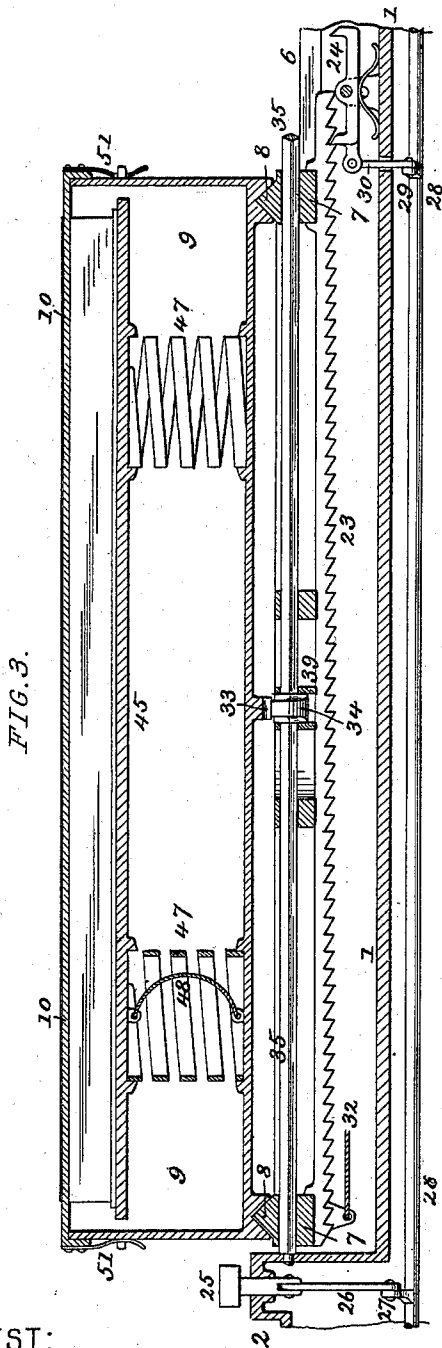


FIG. 3.

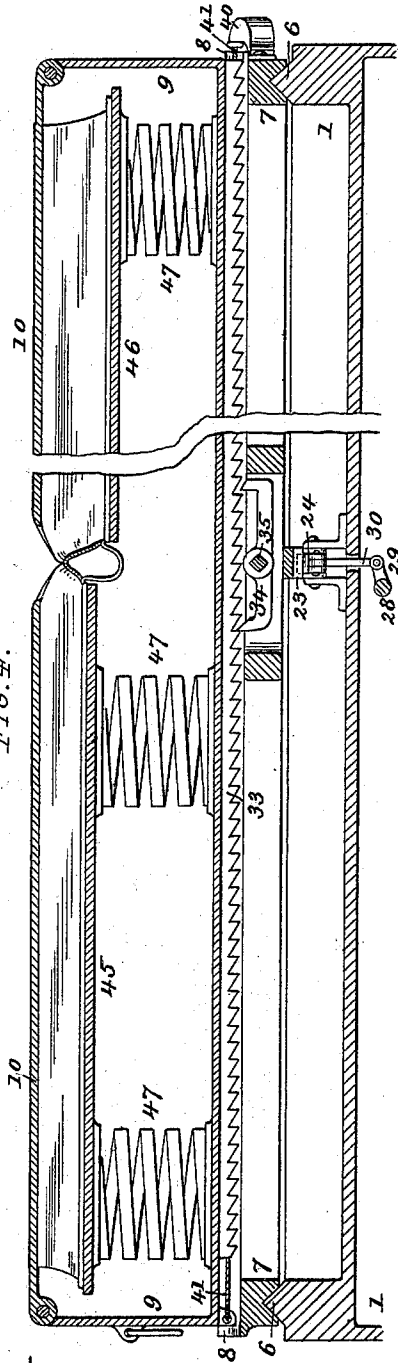


FIG. 4.

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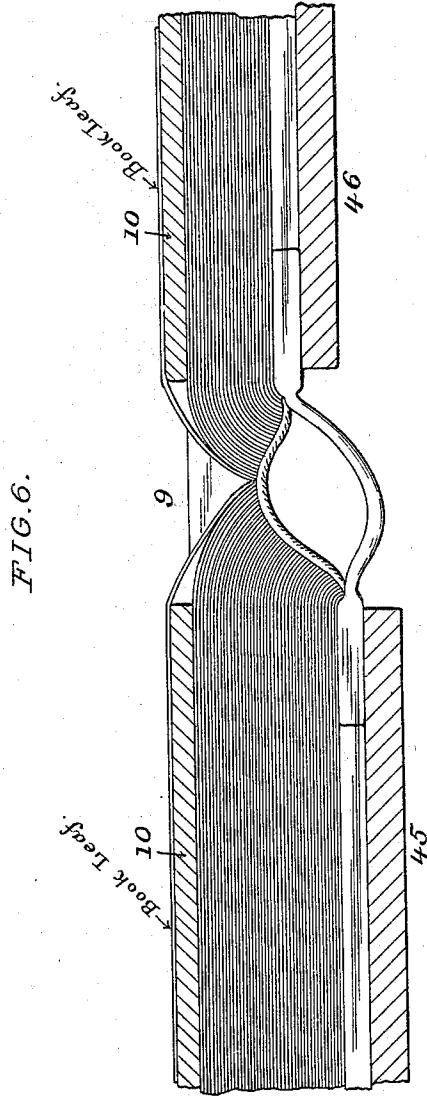
(No Model.)

4 Sheets—Sheet 4.

J. A. YOUNG.
TYPE WRITING MACHINE.

No. 509,461.

Patented Nov. 28, 1893.



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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN A. YOUNG, OF CHICAGO, ILLINOIS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 509,461, dated November 28, 1893.

Application filed May 23, 1890. Serial No. 352,929. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. YOUNG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines; 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.

This invention relates more especially to that class of type-writing machines, designed for writing in books, or upon a sheet of paper lying flat upon a suitable bed or platen; and the present improvements have for their object, to provide an improved construction and arrangement of the parts of a type writing machine in which are embodied the following features: First, a firm and substantial holder or support for the leaf of the book that is being written upon, and which holder or platen is adapted to support in a fixed and unchangeable plane, the leaf that is being written upon regardless of what portion of the book such leaf may form a part, and thus insure under any and all conditions, a perfect and uniform impression from the type, when brought in contact with the paper; second, the holding of the book so that the writing can be done on either one of two adjacent pages thereof, without change or adjustment of the holder parts; and, third, the location of the type levers or arms and paper supporting platen in such relative position that the writing will be effected, in full and perfect view of the manipulator. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1, is a longitudinal section of a type writing machine, embodying my present invention; Fig. 2, a top view of the same; Fig. 3, an enlarged detail longitudinal section, of the book holder, &c.; Fig. 4, an enlarged detail transverse section of the same. Fig. 5, is a detail section of an upper corner of the book holder showing a modified construction of the removable leaf supporting bed plate or platen. Fig. 6, is an enlarged detail transverse section, illustrating the arrangement of the horizontal bed or platen for supporting

the leaf of the book, while the same is receiving the writing.

Similar numerals of reference indicate like parts in the several views. 55

Referring to the drawings 1, represents the main or stationary base of the machine, having at its front end the key board 2, and at its rear end a vertical extension or hollow standard 3, that supports the overhanging hood or frame 4, in which are the pivotal bearings for the type levers or arms 5. 60

The main or lower portion of the base 1, is made of a flat and level nature, and is provided with suitable slides or guides 6, extending longitudinally and upon which moves the longitudinally-sliding frame or carriage 7, that effects "line spacing" movement in the writing operation. 65

Upon the frame or carriage 7, are arranged transverse slides or guides 8, upon which the book holding casing or frame 9, moves in a transverse or lateral direction to effect the "word" and "letter spacing" movements in the writing operation. 70

The type levers or arms 5, are arranged to strike downward onto the top of the paper supporting platen or bed 10, that in the present invention forms the top of the book holding casing 9, and in order that the printing or writing as it is effected by such type arms may be in full view of the operator, I arrange the type bars or arms, in a concentric position around a vertically arranged skirt 11, at the front or forward end of the overhanging frame or hood 4, such skirt portion being concentric with a common axis or point at which the type bars are adapted to strike. As so constructed, and as clearly illustrated in Figs. 1 and 2, the arrangement of the type bars, and the shape of the skirt 11, will be a semi-circle, more or less, according to a greater or less number of keys, employed, and a clear space or opening will be left at the front of the same, to enable a full and clear view by the operator, of the writing as the same is being effected upon the top of the horizontal bed or platen 10. 85

The type bars or levers are pivoted at the lower part of the skirt 11, as illustrated in Fig. 1; an independent motion being communicated to each type lever, by its individual 90 100

operating mechanism, comprising the following parts: A depressible key 12, moving vertically in the key board 2, with its lower end connected to the arm 13, of a rock shaft 14, that
 5 extends longitudinally back through the base 1, and carries at its rear end an arm 15, by which motion is communicated to the secondary rock shaft 16, through the arm 17, and connecting rod 18, that extends up through
 10 the vertical extension 3, of the main base 1, as shown. The rock shaft 16, is also arranged in a longitudinal direction, and communicates motion to the type lever through the arm 19, and connecting rod 20, that is journaled to the
 15 short arm 21, of the type lever 5, as shown in Fig. 1.

The mechanism for operating each one of the series of type levers used, will be a separate and independent counter part of that
 20 above described.

A spring 22, of any usual form and arrangement will be employed for returning each of the keys, and type bars to their normal and proper raised position after a depression or
 25 movement of the same by the hand of the operator.

The movement of the line spacing carriage 7, along the slides 6, in a step by step manner, is effected by the following mechanism: 23, is
 30 a longitudinal rack bar secured to the carriage, and 24, an escapement ratchet or rocking lever pivoted to the base, and adapted to engage the teeth of the ratchet bar 23, as shown, motion being communicated to such
 35 escapement lever 24, by a spacing key as 25, link 26, arm 27, rock shaft 28, arm 29 and link 30, as illustrated in Figs. 1 and 3. I do not however confine my invention to the above
 40 described mechanism for operating by hand the escapement lever 24, and any well known automatically acting mechanism, that is adapted to operate the escapement lever 24, by the book holder or casing 9, as it is returned transversely by the hand of the operator at the commencement of a new line, may
 45 be substituted therefor without departing from the spirit of my invention.

The usual spring drum 31 and cord 32, will be used for pulling the carriage 7, in a backward direction, and may be of any usual construction common to type writing machines.

The movement of the book holding casing or frame 9, to attain the proper letter and word spacing is effected by a substantially similar mechanism to the above, to-wit: A transversely extending ratchet bar 33, on the bottom of said frame 9, an escapement ratchet or rocking lever 34, engaging said ratchet, and arranged on a longitudinally extending
 55 square or non-circular operating shaft 35. An intermittent automatic rocking movement is imparted to the shaft 35, and escapement lever 34, to admit, an escape of one tooth of the ratchet bar 33, and a corresponding transverse "letter feed" of the casing or frame 9, by the movement of any one of the type levers 5, the rear ends 21 of which are adapted

to lift the lever frame 36, which in turn rocks the shaft 35, through the link 37, and rock arm 38, at the rear end of the shaft 35, as
 70 shown in Fig. 1. In the construction shown the front end of the lever frame 36, will be of a semicircular form so as to be in the path of, and be lifted by the short arm 21 of any one of the type levers 5. The rock shaft 35, has
 75 bearings in the main frame or base as shown in Figs. 1 and 3, and the escapement lever 34, slides thereon, in a longitudinal direction, along with the line spacing frame or carriage 7, to which it is attached by hub plates 39 as
 80 shown in Figs. 1 and 3. Motion however may be imparted to the rock shaft 35, by a connection from any other portion of the operating mechanism of the type bars, if desired, without departing from the spirit of this part
 85 of my invention.

Space between words will be effected in the usual manner by an ordinary space key, which is struck by the operator when a word space is required, the same as in striking or writing
 90 any other letter.

The usual spring drum 40, and cord 41, will be employed for pulling the book holding frame or casing in a transverse direction at the commencement of a fresh line, and such
 95 spring drum and cord may be of any usual construction common to type writing machines,

The inking appliance for the type levers form no part of the present invention, and any suitable form of the same may be employed. In the drawings I illustrate an ordinary transverse ribbon 42, extending between drums 43 attached to the lower end of the overhanging frame 4. See Fig. 2.
 105

44, is a pointer finger for indicating upon the leaf or sheet of paper to be written on the point at which the type levers will strike to make an impression.

The main novelty of my present invention
 110 relates to the construction of the frame or casing 9, in which the book is supported and carried, in proper position for printing. In this the book holder or casing 9, is made of a box form, within which are arranged in a transverse
 115 direction, a pair of counter part plates or platforms 45, 46 capable of an independent adjustment in a vertical plane, which adjustment may be attained by any suitable and well known mechanism. In the construction
 120 shown, spiral springs 47, are used, to force the platforms 45, 46 upward and are preferred on account of simplicity and cheapness of construction; the upward movement of such platforms being limited by check cords or chains
 125 48, extending from the platforms to the bottom of the casing or frame 9, and preferably arranged in the interior of the springs as illustrated in Figs. 3 and 4. The adjacent edges of these platforms 45, 46, will be arranged
 130 some distance apart, so as to leave a longitudinally extending gap or space between the two platforms, to accommodate the back or base portion of the book, as clearly illustrated

in Fig. 4. Upon the platforms 45, and 46, the book to be written in, is supported in an open condition as shown in Fig. 4, and the same is held down even with the top of the book holding casing 9, by the top plates or platens 10 and 10, preferably hinged to the outer or right and left hand sides or ends of the casing as shown, and provided with suitable catches 51, by which they are locked or fastened to the top of the book holding casing 9, in a perfectly horizontal position with relation to the other parts of the machine. These hinged platens are so arranged as to leave a longitudinally extending gap or space between their adjacent edges, through which any two adjacent leaves of the book extend or project outward, so as to be spread and rest upon, and be supported on the top surface of said platens, while said leaves are receiving the written or printed matter.

In practice the single sheet or leaf that rests upon the top of its appropriate platen will be held down by any suitable form of clip or holder; in the form shown, a spring band 52, attached to the sides of the top platen, is employed as a clip or holder for the sheet or book leaf.

With the above improved construction, the two top platens 10 and 10, form a stiff and unyielding bed to receive the impact of the type levers in the writing operation, and at the same time afford a support in an unchangeable plane for the book leaf or sheet that is receiving the printing or writing. And it is within the province of the present invention to make such platens wholly of a non-resonant material, or to provide the same with a non-resonant upper face 53, as shown in Fig. 5, to deaden the sound in the writing operation.

While it is preferable to hinge the platens 10 and 10, so that they will swing open in an upward direction to afford access to the interior of the book holding casing, in introducing or removing the book from the same, yet in some cases said platens may be made wholly separate and attached and held in place by a series of spring latches, or like fastening devices, as illustrated in Fig. 5, the distinguishing feature of the present invention, being the support of a single book leaf or sheet, upon a rigid base, and in an unchangeable plane, while being printed or written upon. And while I illustrate a machine, for writing successively upon, two adjacent leaves of a book, it is evident that the parts may be simplified and omitted, so that only one leaf will be supported, in the above manner, at the one time. It is also within the province of my invention so far as it relates to the means above described for holding and supporting the book, to arrange such book holder or casing in a stationary position and cause the type writing mechanism to move longitudinally and transversely, the arrangement in this case being simply a re-

versal of the arrangement illustrated in the drawings, and hereinbefore described.

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

1. The combination with the book holding frame or casing of a type writing machine, of a platen secured to the top of said casing, and adapted to form in an unchangeable plane a bed or rest for the book leaf that is being written upon and a stop to limit the upward movement of the body of the book substantially as herein described.

2. The combination with the book holding frame or casing of a type writing machine and a platen secured to the top of said casing and adapted to form in an unchangeable plane a bed or rest for the book leaf that is being written upon, and a stop to limit the upward movement of the body of the book of a vertically adjustable platform for supporting the body of the book within the casing substantially as herein described.

3. The combination with the book holding frame or casing of a type writing machine, of a pair of platens secured to the top of the casing with a longitudinal gap between their adjacent edges, such platens forming a bed or rest for the two top leaves of an opened book, and stops, to limit the upward movement of the body of the book and a pair of vertically adjustable platforms within said casing, for supporting the body of the book substantially as and for the purpose set forth.

4. The combination with the book holding frame or casing of a type writing machine, of a pair of platens, pivoted to the outer ends of the casing and provided with catches near their inner edges, such platens forming a bed or rest for two top leaves of an opened book, and stops, to limit the upward movement of the body of the book and a pair of vertically adjustable platforms within said casing, for supporting the body of the book substantially as and for the purpose set forth.

5. The combination with the book holding frame or casing of a type writing machine, and a pair of leaf supporting platens secured to the top of the casing, of a pair of vertically adjustable platforms, for supporting the body of the book arranged within the casing, and springs for forcing said platforms upward, substantially as set forth.

6. The combination with the book holding frame or casing of a type writing machine, and a pair of leaf supporting platens secured to the top of the casing of a pair of vertically adjustable platforms for supporting the body of the book arranged within the casing, springs for forcing said platforms upward, and chains or cords for limiting the upward movement thereof, substantially as set forth.

7. In a type writing machine, the combination with the book carrying frame, arranged to move transversely on the line spacing carriage, and the line spacing carriage arranged

to move longitudinally on the main base, of the main base having at its front end the key board, and at its rear end an overhanging frame that projects forwardly toward the key
5 board, type levers pivoted in said overhanging frame, and mechanism essentially as herein described for transmitting motion from the
10 keys to the type levers, substantially as herein described.

8. In a type writing machine the combination with the book carrying frame, arranged to move transversely on the line spacing carriage, and the line spacing carriage arranged to move longitudinally on the main base, of
15 the main base, having at its front end the key board, and at its rear end an over hanging frame, that projects forwardly toward the key board formed with a curved open fronted skirt, type levers pivoted concentrically in
20 said skirt, and mechanism essentially as herein described for transmitting motion from the

keys to the type levers, substantially as herein described.

9. In a type writing machine, the combination with the book carrying frame arranged
25 to move transversely on the line spacing carriage, and the line spacing carriage arranged to move longitudinally on the main base, of the main base having at its front end the key board, and at its rear end an overhanging
30 frame, that projects forwardly toward the key board carrying a pointer or finger, type levers pivoted in said overhanging frame, and mechanism essentially as herein described for transmitting motion from the keys to the type
35 levers, substantially as herein described.

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

JOHN A. YOUNG.

Witnesses:

ROBERT BURNS,
GEO. H. ARTHUR.