(No Model.) 2 Sheets—Sheet 1.

E. M. HAMILTON.

TYPE WRITING MACHINE.

No. 444,490. Patented Jan. 13, 1891.

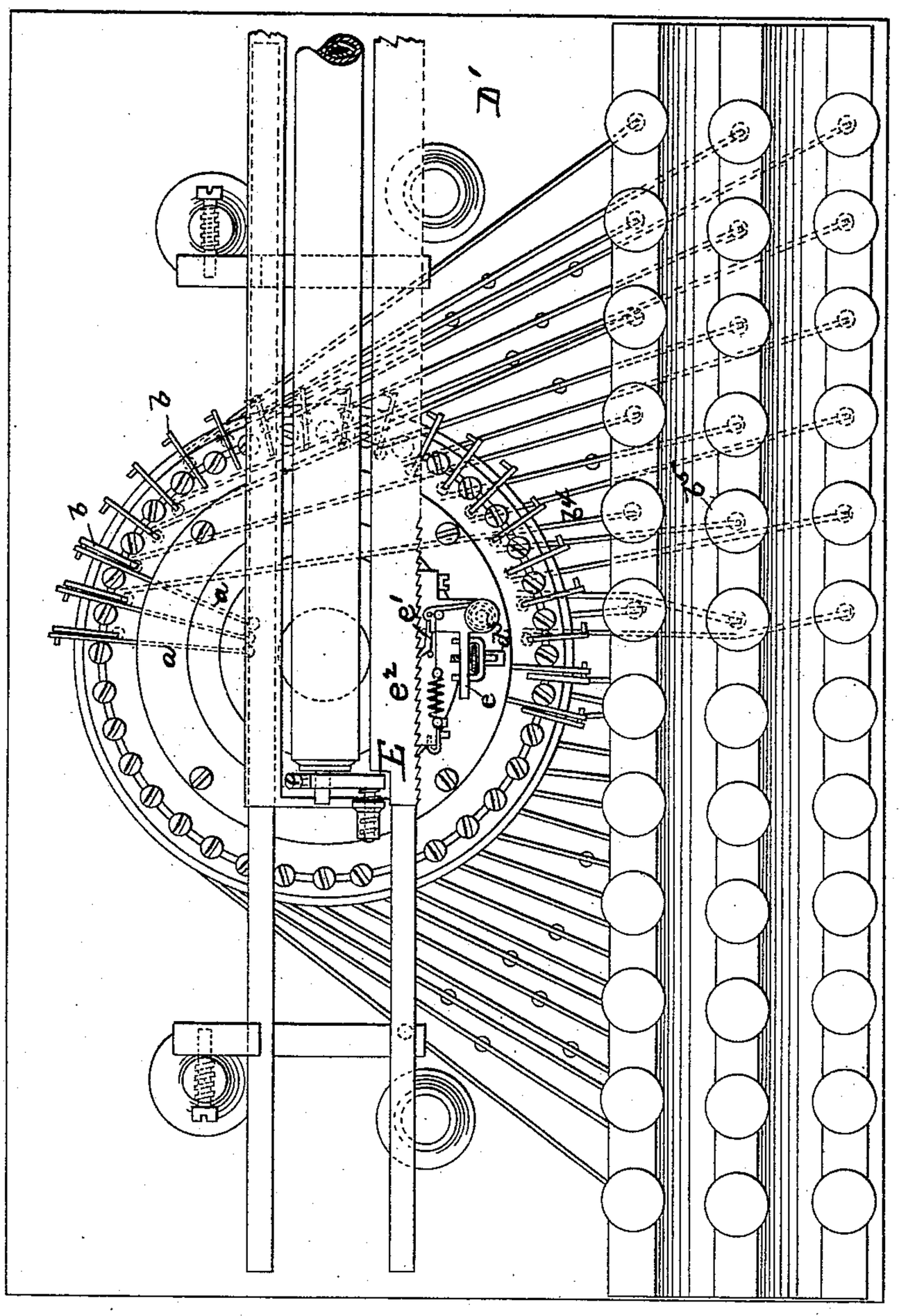

Fig. 1.

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Inventor
Emery M. Hamilton
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His attorney.

(No Model.) 2 Sheets—Sheet 2.

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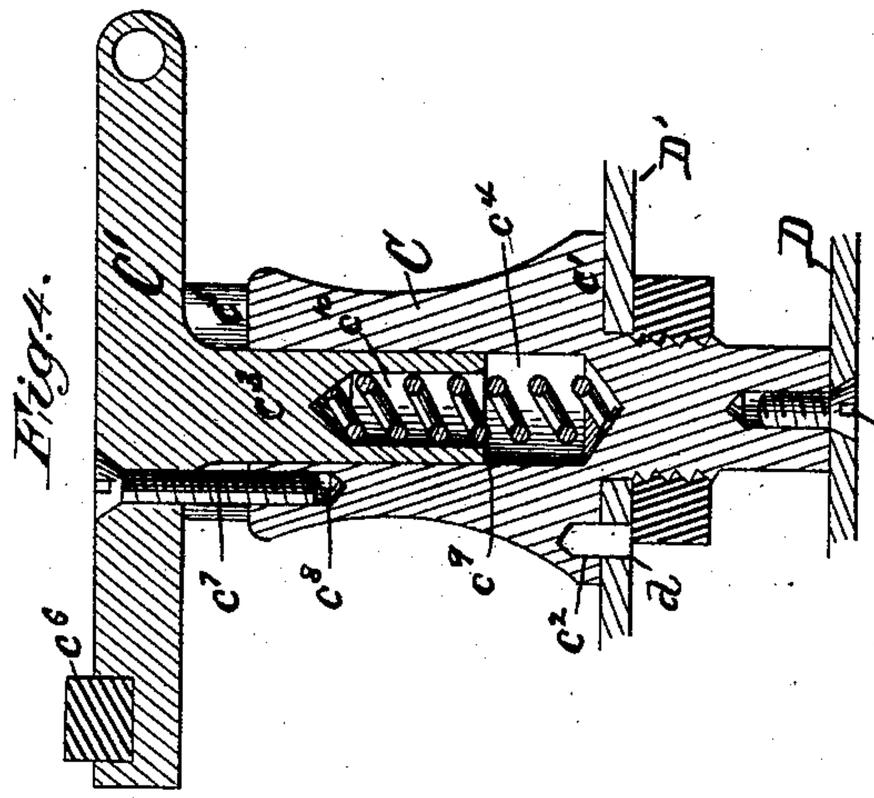

Fig. 4.

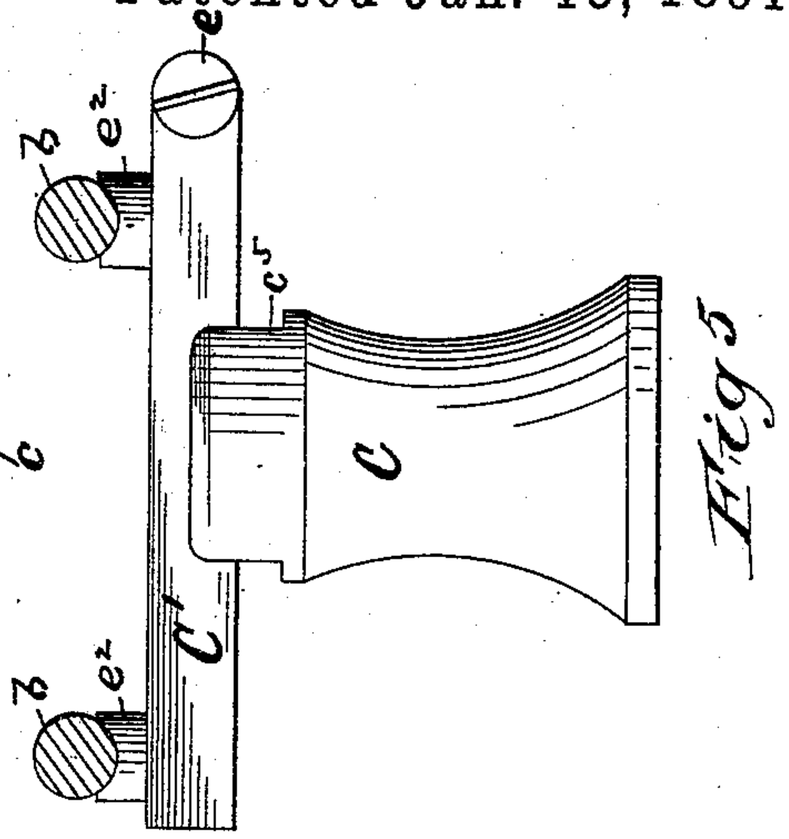

Fig. 5

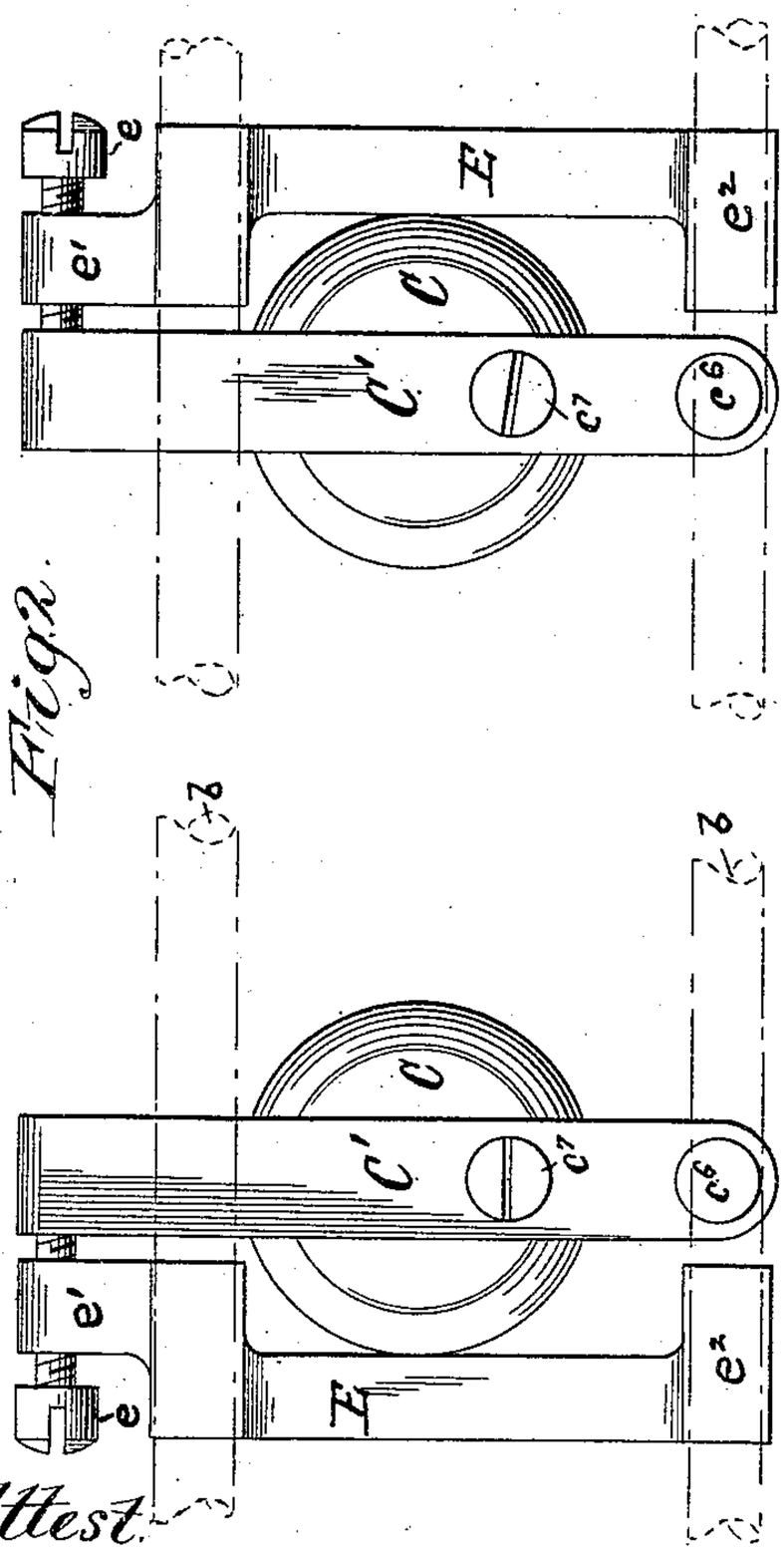

Fig. 2.

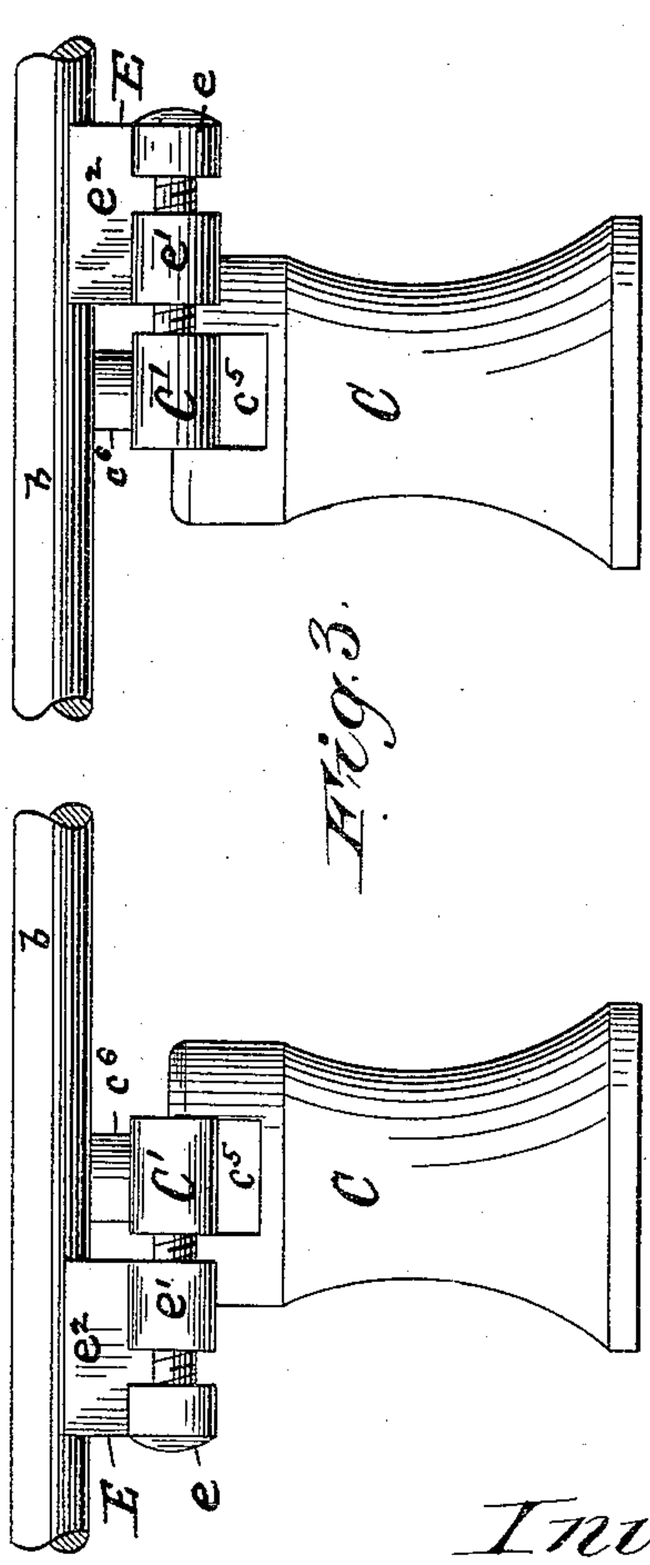

Fig. 3.

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Inventor.
Emery M. Hamilton
By Edward Stephens
His Attorney

UNITED STATES PATENT OFFICE.

EMERY M. HAMILTON, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NORTH AMERICAN MACHINE COMPANY, OF WEST VIRGINIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,490, dated January 13, 1891.

Application filed February 25, 1890. Serial No. 341,687. (No model.)

To all whom it may concern:

Be it known that I, EMERY M. HAMILTON, of the city, county, and State of New York, a citizen of the United States, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of type-writing machines in which the printing-types are arranged in a series upon vibratory type bars or levers, and are adapted to strike or print at a point common to all the type of the series, and in which the platen is mounted in and upon a carriage which is adapted to traverse ways extending across the machine, whereby the platen may be carried over the face of the type at the printing-point to effect the spacing between the letters printed on the paper carried by the platen.

My invention consists in the combination, with the printing-type of a type-writing machine and the paper-carriage carrying the platen on which the type print at a common printing-point, of ways or tracks for said paper-carriage spring-seated in and adapted to have vertical play upon supporting-pillars and set-screws adapted to control the seat-springs in said pillars, substantially as hereinafter set forth, whereby the paper-carriage and its platen may be given a fixed adjustability in the machine in the direction perpendicular to the plane of the face of the printing-type when said type is in the act of striking the platen.

Figure 1 is a plan of a type-writing machine containing my invention. Fig. 2 is an enlarged view in plan of the pillars and their attached devices upon which the carriage is adjustably mounted in accordance with my invention. Fig. 3 is a rear elevation of the same. Fig. 4 is a vertical central section of one of the pillars and its attached devices, and Fig. 5 is a side elevation of the same.

In the machine illustrated the type are carried by vibratory type-bars arranged in a circular series, as shown at A, and adapted to strike or print at a printing-point which is common to all the type-bars of the series. The type-bars are actuated by key-levers *a*, provided, respectively, with finger-keys *a'*, arranged in the usual manner.

B is the paper-carriage, carrying the platen B', journaled therein, and said carriage is adapted to traverse tracks or ways *b*, which extend across the machine, so that the platen will be carried over the face of the type at the common printing-point in the manner customary in machines of this class. The feed or step-by-step movement of the carriage over the type-system A on its ways may be accomplished by any of the known devices employed in machines of this description for this purpose—as, for example, by the devices illustrated at *e'*—and which do not need further description herein, as they are well known and form no part of my present invention.

In carrying out my present invention I support the carriage ways or tracks *b* on suitable pillars in the machine, on which pillars the said ways have play vertically over the printing-type, as hereinafter set forth, and I provide springs seated in said pillars, which springs bear against and serve to sustain and tend to thrust upward on the pillars, the said ways, and the carriage thereon, and I also provide set-screws engaging said ways and working in said pillars and adapted to control the springs at the way-seats thereon. The following-described arrangement of devices is desirably employed for this purpose.

At C C are shown pillars which rise from and are fixed upon the base or standard of the machine, which may be accomplished, as shown in Fig. 4, by means of a screw *c* passing through the base D into the pillar, while the pillar may have a shoulder *c'*, adapted to be seated upon a disk D', said disk being the support in the machine for the type-bar system. A pin or stud *d*, set in the disk D', may be employed to enter a corresponding recess c^2 in the shoulder on the pillar to assist in holding the pillar in position. These pillars are located in the machine on opposite edges of the type-bar system, as shown.

C' C' are bars, each of which has on its under face or side an arm c^3, extending at a right

angle to the bar, and one of said bars is seated in and upon each of said pillars by means of its said arm c^3, the pillars being longitudinally recessed, as at c^4, to correspond to and permit the play therein of the arm, while the top face of each pillar is preferably slotted, the slots being parallel to each other in said pillars laterally, as at c^5, to permit the seating of the bars C′ loosely in said slots in parallel position relatively to each other, as shown. To the rearward ends of the bars C′ the yoke-pieces or supports E for the carriage ways or tracks b are hinged—as, for example, by screws e passing transversely through lugs e' on the ends of said yokes and into threaded recesses in the bars, as shown. The ways b may be in the form of rods, as shown, and fixed in corresponding saddles e^2 on the yokes E. The hinging of the yokes E to the bars C′ permits the paper-carriage to be turned upward and backward on its supports to expose the line of printing, as is usual in these machines. The forward ends of the bars C′ may be provided with buffers c^6, of elastic or yielding material, to receive the front track or way of the carriage when the same is dropped or turned down on its hinge into normal position.

At c^7 are shown set-screws, one of which engages each bar C′, as by passing vertically through it, as shown, and into a correspondingly-threaded aperture c^8 in the top face of each pillar. This screw c^7 is preferably located in each bar to one side, and desirably forward of the arm c^3, with its seating-aperture c^8 in each pillar located therein eccentrically to the aperture c^4, in which said arm c^3 has play.

At c^9 are shown springs, which are preferably in the form of coil-springs, and which are seated and have play, respectively, in the recesses c^4 in the pillars and are adapted to bear against the arms c^3 therein, which arms c^3 are desirably recessed, as at c^{10}, to receive the springs, as shown. The springs c^9 should possess a resiliency when flexed which will render them capable of overcoming the weight of the bars C′ and the ways and paper-carriage supported thereon, so that when they are free to act they will tend to force the arms c^3 upward in their described seats in the pillars and so lift the bars C′ and the carriage and its ways. Now it is evident that when the set-screws c^7 are turned upward in the pillars the springs c^9 thus released will force the bars C′ upward by their action on the arms c^3, and that when said set-screws are turned downward the bars C′ will be forced downward on the pillars, the springs c^9 being thereby flexed or compressed in the said recesses, and that, the springs c^9 possessing the requisite resiliency, as set forth, the paper-carriage and the platen and the carriage-ways carried by the bars C′ will be lifted or depressed on the pillars, thereby giving to the platen a fixed adjustment vertically over the printing-line or in the direction perpendicular to the plane of the printing-face of a type when in the act of printing on the platen. The purpose of this vertical adjustment of the platen over the types is to enable the platen to be readily and quickly brought to a position on the machine relatively to the entire type series in which a uniformity of desirable and proper impressions shall be effected by all and every one of the types on the platen at the common printing-point of the type series.

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

1. In a type-writing machine, the combination, with the printing-type adapted to print at a common printing-point and a paper-carriage carrying the platen and adapted to move therewith over and across said printing-point of the type, of ways or tracks for said carriage seated in and adapted to have vertical play upon supporting-pillars, springs seated in said pillars and bearing against said ways or tracks, and set-screws engaging said ways or tracks and working in and adapted to control the seat-springs in said pillars, substantially as and for the purpose set forth.

2. In a type-writing machine, the combination, with the printing-type and the paper-carriage carrying the platen upon which the type are adapted to print at a common printing-point, and which carriage is adapted to move on ways or tracks over and across said printing-point of said type, of pillars C C, recessed longitudinally at c^4, bars C′ C′, supporting said carriage-ways and mounted to play vertically on said pillars by arms c^3, working in said recesses, springs c^9 in said recesses and bearing against said arms, and set-screws c^7, engaging said bars and working in said pillars, substantially as and for the purpose set forth.

3. In a type-writing machine, the combination, with the printing-type and paper-carriage carrying the platen upon which the type are adapted to print at a common printing-point, and which carriage is adapted to move on ways or tracks over and across said printing-point of the type, of pillars C C, laterally slotted on their top faces at c^5 and recessed longitudinally at c^4, bars C′ C′, supporting said carriage-ways and adapted to fit in said top face slot and provided with arms c^3, playing in said recesses in said pillars, springs c^9 in said recesses, bearing against said arms, and set-screws c^7, engaging said bars and working in said pillars, substantially as and for the purpose set forth.

4. In a type-writing machine, the combination, with the printing-type adapted to print at a common printing-point and the paper-carriage carrying the platen and adapted to move on ways or tracks over and across said printing-point, of bars C′ C′, supporting said carriage-ways and each provided with an arm c^3, recessed endwise at c^{10}, pillars C C, recessed at c^4 to receive and permit play therein of the bar-arms, springs c^9, seated in said pillar-recesses and engaging and bearing against said bar-arms in the recessed ends, and set-

screws c^7, engaging said bars and working in said pillars, substantially as and for the purpose set forth.

5. In a type-writing machine, the combination, with the printing-type adapted to print at a common printing-point and the paper-carriage carrying the platen and adapted to move on ways or tracks over and across said printing-point, of the recessed pillars C C, the bars C′ C′, to which are hinged the yokes E, that support the carriage ways or tracks, and which have arms c^3, playing in said recessed pillars, springs c^9, seated in said recessed pillars and bearing against said bar-arms, and set-screws c^7, engaging said bars and working in said pillars, substantially as and for the purpose set forth.

EMERY M. HAMILTON.

Witnesses:
E. C. COOKE,
E. M. DAWSON.