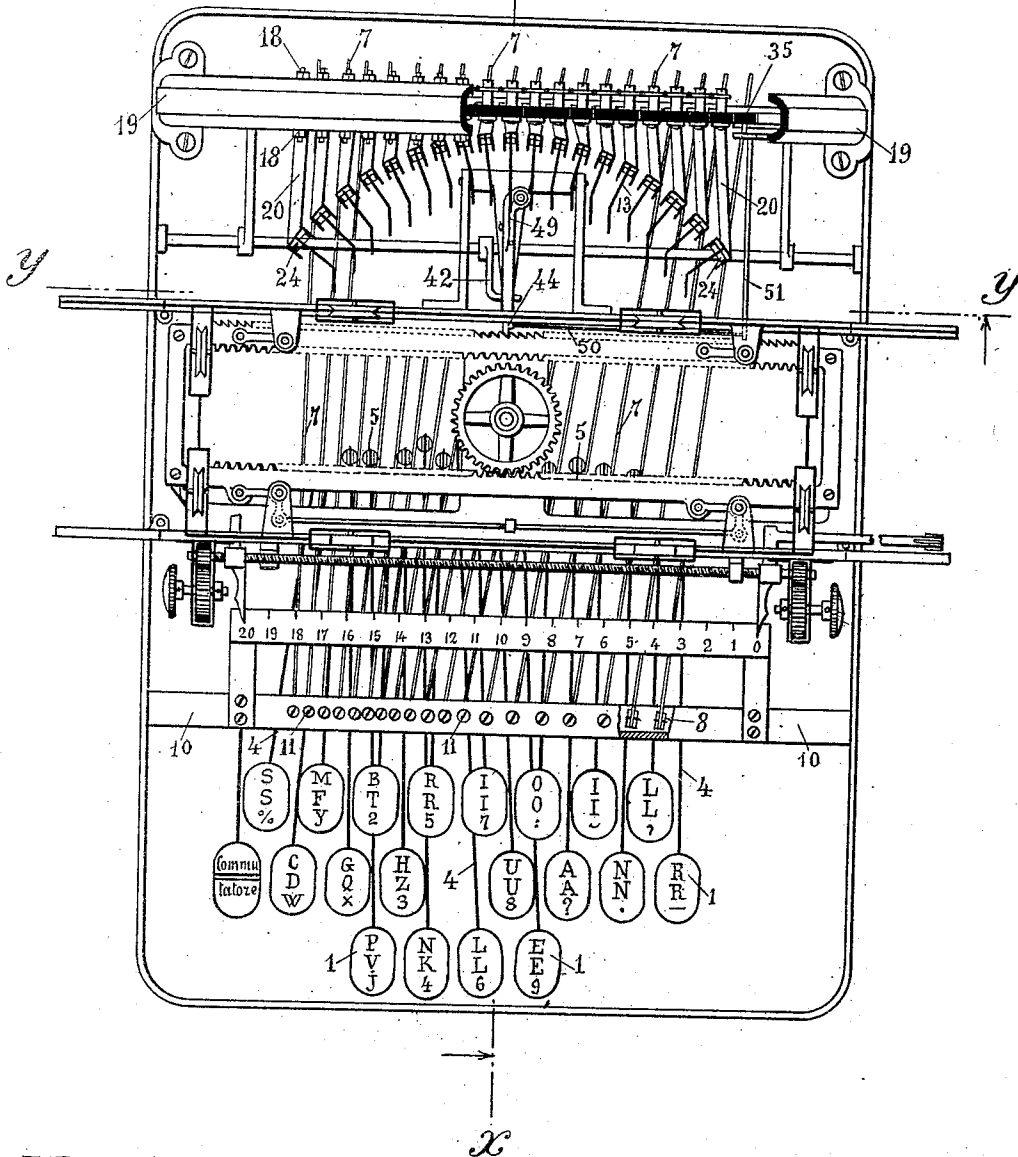


M. SCHIESARI.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 4, 1905.

1,035,750.

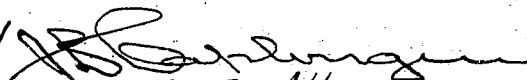
Patented Aug. 13, 1912.
2 SHEETS—SHEET 1.

Fig. 1
X



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2 SHEETS—SHEET 2.

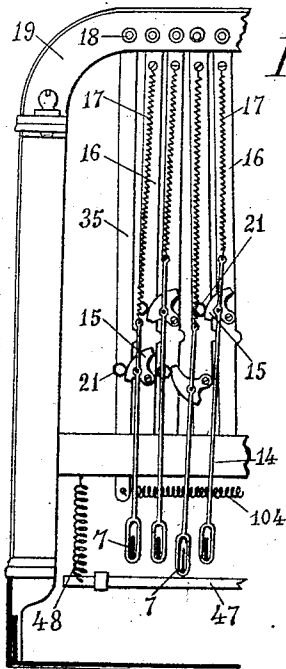


Fig. 4

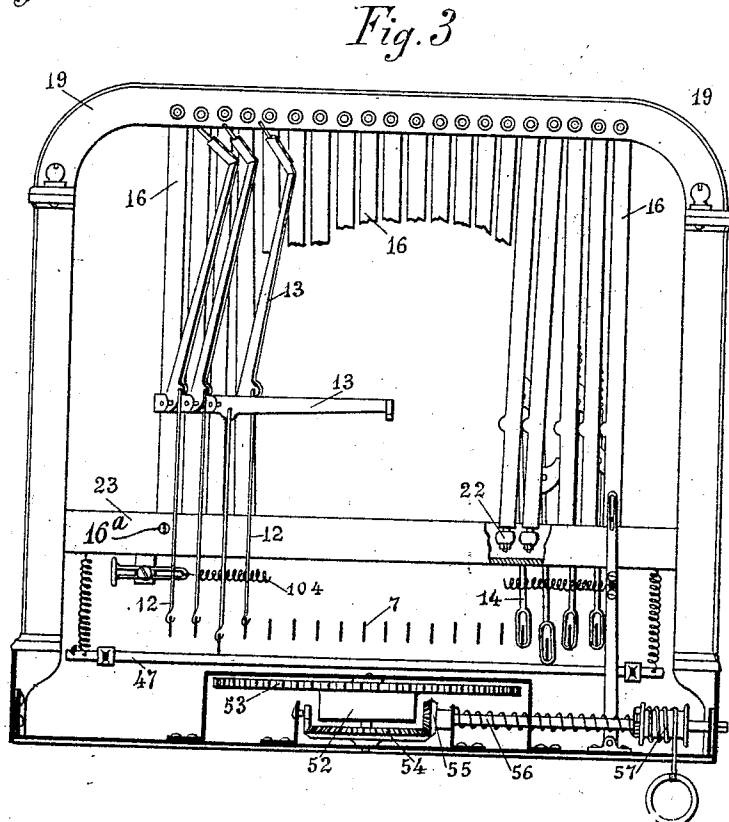


Fig. 3

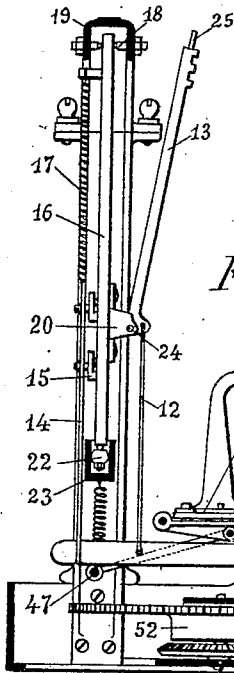


Fig. 2

Fig. 5.



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UNITED STATES PATENT OFFICE.

MARIO SCHIESARI, OF TURIN, ITALY.

TYPE-WRITING MACHINE.

1,035,750.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed October 4, 1905. Serial No. 281,326.

To all whom it may concern:

Be it known that I, MARIO SCHIESARI, a subject of the King of Italy, residing in Turin, Italy, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the general class of writing machines which are operated by the fingers and hence called dactylographic, and the object of the invention is to provide a writing machine of this general character of a simple and comparatively inexpensive nature and of a convenient and compact construction, having novel and improved means capable of operation whereby words or syllables up to six letters may be written at a single stroke by simultaneously depressing the corresponding keys thereby enabling the writer to operate about four times as fast as with ordinary typewriting machines and to take down the speech or dictation of the most rapid speakers.

This invention also consists in certain novel features of the construction and combinations and arrangements of the several parts of the improved typewriting machine, whereby certain important advantages are attained, and the device is rendered simpler, less expensive, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my improvements may be better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a plan view of a machine constructed in accordance with my invention, the upper part of the carriage being omitted; Fig. 2 is a vertical section on the line $x-x$ of Fig. 1; Fig. 3 is a rear elevation of the device disclosed; and Fig. 4 is a detail view of the rear or back part of the machine illustrating the disposition and operation of the spacers. Fig. 5 is a detail view of the winding key employed in connection with the embodiment of the invention disclosed.

Referring to Figs. 1 and 2, each key 1 is carried by a key lever 4, fulcrumed at 5, said key lever transmitting its movements to a second or intermediate lever 7 through a

coupling link 6. The lever 7 is fulcrumed at 8 and moves up and down, while its fulcrum is mounted in upright pivots 11 in a bar 10 so that the lever may swing laterally. The second levers 7 are coupled by links 12 to the respective type-levers or hammers 13, and also by links 14 to the spacers 15. When a key 1 is depressed it acts through the parts described to operate the type bar 13 to cause the type carried thereby to strike the paper and effect the printing impression and operates also the link 14 which controls the spacer 15, which, as will be seen later herein, has for its object to displace the suspension bars 16 from left to right. On removing the pressure of the finger from the key, a spring 17 aided by an auxiliary spring 104 (see Fig. 3) retracts the parts to their normal position. The depression of each key also sets in motion the carriage and the ink ribbon. If a key, and through it the type-lever which it controls, bears three characters there is added to the keyboard a key which controls the commutator, the object of which is to shift the character or letter desired into proper position with respect to the line being written.

Each type bar 13 (see Figs. 2 and 3) is fulcrumed on a pivot 24 carried by an arm 20 on a suspension bar 16, suspended from the upper part 19 of the frame by screws 18, in such a manner that it may oscillate laterally. Each suspension bar 16 carries at its lower part (see Fig. 4) a spacer 15 and a small roller 21, on which bears the spacer of the adjacent bar, and it is provided below with a little sphere or ball 22 (see Fig. 2) which bears against the sides of a U-shaped guide 23, so as to render more easy the lateral movement or displacement of the suspension bar 16 itself.

The bar 13 controlled by the key with which it is connected carries at its free end the types, and is also provided at its extreme end with a pin 25 which, when the hammer descends, engages a slot or groove in the final guide 101 for assuring alinement of characters in writing. The spacer 15 (see Fig. 4) consists of a small cam pivoted on the suspension bar 16 and disposed to bear against the small roller 21 on the adjacent bar as stated. On depressing a key, and consequently the intermediate le-

ver 7, the spacer link 14 is drawn down and this rocks the spacer cam 15 in such a manner as to cause it to act on the adjacent roller 21 and move laterally the suspension bar 16 on which said roller is mounted. As is believed to be obvious this will displace all of the bars successive to that which has been displaced by the key, as before stated. In the case, where for example, three keys have been depressed at the same time, the several displacements will be added together or combined in such a manner that the last letter printed will be displaced three times the usual letter space.

The movements of the carriage with the paper should, obviously, be proportional to the number of keys depressed. The power required for moving the carriage is supplied by a spring inclosed within a casing or drum 52 (see Fig. 3) which may be tensioned through the turning of the arbor 56, which acts to wind the spring through bevel wheels 54 and 55 and which is rotated either by means of a key 58 or by means of a pedal acting through a cord wound about a drum 57 mounted on the arbor 56. The drum 52 (see Fig. 2) is integral with a gear wheel 53 which gears with the second wheel 59 secured to an arbor 60 and this arbor transmits the motion to an upper wheel 61 which latter communicates its movement to the carriage.

In order to render the movement of the carriage proportional at all times to the number of type keys that may be simultaneously pressed, there is a mechanism comprising a detent 43 fixed against lateral play, which also prevents the rack and carriage from displacement and a special detent 44 which allows a lateral displacement equal to the sum of all the displacements caused by the spacers. The displacement of the last suspension bar 16 is communicated to the special detent 44 through levers 50 and 51 against which a spring 49 presses the said detent 44. When the pressure is removed from the type keys, the detent 43 is disengaged from the rack the moment after the special detent 44 is engaged therewith. Then the rack, with the carriage, following the rotation of the upper wheel 61 is displaced laterally to an extent up to that when the special detent 44 shall reach its position of repose, this detent being capable of movement in a horizontal plane only. The return of the carriage may be automatically controlled by a special mechanism and as is believed to be obvious, and the machine is provided with an ink ribbon feeding device. It is also thought to be well to mention that in a machine of this character it is necessary that the carriage and the key board be disposed in such a manner as will permit of writing any syllable in going from left to right without having to return or go back.

If the characters are distributed over the key board in rows or lines, all the characters required must be found in the same line.

The disposition of the letters and other characters on the key board may be more or less modified according to the phonetic peculiarities of the particular language, each letter or character occupying a position, such as will permit all of the combinations in which they enter in the composition of any syllable. In general, in considering that in all languages there are syllables consisting of a vowel preceded or followed by one or more consonants, we conclude at once that it is advantageous to place the vowels in the central part of the key board and the consonants in the lateral parts of the same.

Suppose we wish to write any word, for example "encre." We first write the syllable "en" by depressing the keys bearing these letters. Then the key lever 4 (see Figs. 1 and 2) commanded by the key *e* through the intermediate lever 7 draws down its link 12 which causes the type bar to strike the paper at the central part of the impression at the same time that the intermediate lever 7 draws down the spacer link 14 (see Fig. 4), thus operating the spacer 15 which displaces the whole system of suspension bars 16 toward the right, in such a manner that the bar bearing the letter "n" also actuated will strike the paper and print the letter "n" thereon a letter space to the right of the center of the impression. The suspension bar 16 which carries the letter "n" also displaces the suspension bars at its right to the same extent and in consequence, the last suspension bar 16 will be displaced two letter spaces. This displacement is communicated by the bar 50 to the special detent 44, disengaged from the outer rack on the bar 45 (see Fig. 1) by the action of the intermediate lever 7 on the bar 47 and the detent operating arm 42. When pressure on the keys is removed, the springs, hereinbefore referred to, bring all the parts to their normal or initial position, the special detent 44 engaging the rack two teeth farther to the right than before and accompanying the movement of the carriage up to the position of rest. That is, for two letter spaces. Thus the sheet, moving with the carriage presents a space free from impression to receive the second syllable of the word, which is written by depressing simultaneously the three corresponding letters.

Having thus described my invention, I claim—

1. A machine for the purpose specified having type keys, type bars provided with printing types, means operatively connecting said keys and type bars, suspension bars capable of being swung laterally about their points of suspension, and whereon said type bars are mounted, means operated by the

depression of the keys for moving said suspension bars laterally for spacing, means assuring alinement, a carriage for the paper and means for variably moving said carriage proportionately to the spacing.

2. A machine of the character described comprising keys adapted for simultaneous operation, pivoted type bars actuated in unison with the respective keys, and means operated in unison with the movement of the respective type bars for shifting the pivots of said type bars laterally from their normal printing position.

3. A writing machine having a carriage provided with a platen, means for feeding the carriage, a plurality of type bars, movable relatively to the platen in and out of printing position, and controllable means independent of the carriage feeding means for moving the type bars longitudinally of the platen.

4. A writing machine having a carriage provided with a platen means for feeding the carriage, a plurality of pivoted type bars, movable relatively to the platen in and out of printing position, and controllable means for moving the pivots of the type bars longitudinally of the platen.

5. A writing machine having a carriage provided with a platen means for feeding the carriage, a plurality of type bars movable relatively to the platen in and out of printing position, and controllable means independent of the carriage-feeding means for moving the type bars longitudinally of the platen, and means for assuring alinement of the type bars.

6. A writing machine comprising a platen, suspension bars movable longitudinally of the platen, and type bars mounted on the suspension bars and capable of operation into and out of printing position.

7. A writing machine comprising a platen suspension bars mounted for movement longitudinally of the platen, type bars carried by the suspension bars and capable of movement into and out of printing position; and means carried by the suspension bars capable of operation to move such bars longitudinally of the platen.

8. A writing machine comprising a platen, suspension bars mounted for movement longitudinally of the platen, type bars carried by the suspension bars and capable of movement into and out of printing position, means for moving the type bars and means operable simultaneously with the type bar operating means for imparting movement to the suspension bars longitudinally of the platen.

9. A writing machine comprising a platen, suspension bars capable of movement about their suspension longitudinally of the platen, means for guiding the suspension bars in their movement and type bars mounted on

the suspension bars and capable of operation into and out of printing position.

10. A writing machine comprising a plurality of suspension bars mounted for movement, type bars carried by the suspension bars operable into and out of printing position, and movable devices on the suspension bars capable of engagement with an adjacent suspension bar for imparting movement to the suspension bars.

11. A writing machine comprising a plurality of suspension bars, stationary devices on the suspension bars, movable devices on the suspension bars, said movable devices co-acting with the stationary devices of adjacent suspension bars for imparting movement to said suspension bars and type bars mounted on the suspension bars and capable of operation into and out of printing position.

12. A writing machine of the character described comprising a platen, suspension bars mounted for movement longitudinally of the platen, type bars mounted on the suspension bars and capable of operation into and out of printing position, operating keys for the type bars adapted for simultaneous operation, and means operated in unison with the movement of the type bars for imparting movement to the suspension bars longitudinally of the platen.

13. A writing machine comprising a plurality of suspension bars, normally parallel means for holding said suspension bars in such normal position, type bars mounted on the suspension bars and capable of operation into and out of printing position, and means for moving the suspension bars out of their parallel positions.

14. A writing machine comprising a platen, a frame adjacent the platen, suspension bars pivoted to the frame for movement longitudinally of the platen, type bars mounted on the suspension bars and capable of operation into and out of printing position, and means for simultaneously operating the type bars and moving the suspension bars on their pivots.

15. A writing machine comprising a plurality of suspension bars normally parallel, means for holding the suspension bars in normal position, eccentric devices for spreading the suspension bars and type bars carried by the suspension bars and capable of operation into and out of printing position.

16. A writing machine comprising suspension bars mounted for oscillation, a cam mounted on each suspension bar to engage an adjacent bar, type bars mounted on the suspension bars and capable of operation into and out of printing position and keys for operating said type bars, said keys being also capable of moving the cams of the suspension bars into contacting position.

17. A writing machine comprising a plu-

ality of suspension bars, type bars mounted on the suspension bars and capable of movement into and out of printing position, means carried by the suspension bars and contacting with adjacent suspension bars to impart movement to the same, and means for holding the contacting means normally inoperative.

18. A writing machine comprising a plurality of suspension bars, type bars mounted on the suspension bars and capable of operation into and out of printing position, keys for operating the type bars, projections on the suspension bars, movable devices on the suspension bars adapted to engage projections on adjacent suspension bars to impart movement to such suspension bars, and means under control of the keys for putting such devices in motion.

19. A writing machine comprising a plurality of suspension bars mounted for movement, type bars carried by the suspension bars and operable into and out of printing position, and co-acting means on adjacent suspension bars capable of operation simultaneously with the movement of the type bars for imparting movement to the suspension bars.

20. A writing machine comprising a plurality of suspension bars mounted for movement, type bars carried by the suspension bars and operable into and out of printing

position, and devices on the suspension bars mounted for rotatory movement and capable of engagement with an adjacent suspension bar for imparting movement to the suspension bars.

21. A writing machine comprising a plurality of suspension bars mounted for relative movement, type bars mounted on the suspension bars and capable of operation into and out of printing position, the line of movement of the suspension bars being substantially at right angles to the path of travel of the type bars.

22. A writing machine comprising a plurality of suspension bars mounted for movement, type bars mounted on the suspension bars and capable of operation into and out of printing position, means operable simultaneously with the movement of the type bars into printing position for moving the suspension bars in one direction, and automatic means capable of operation upon the return of the type bars to move the suspension bars in the opposite direction.

In witness whereof I have hereunto signed my name this 13th day of September 1905, in the presence of two subscribing witnesses.

MARIO SCHIESARI.

Witnesses:

ANDY GRIZORI,
SECONDO CORTA.