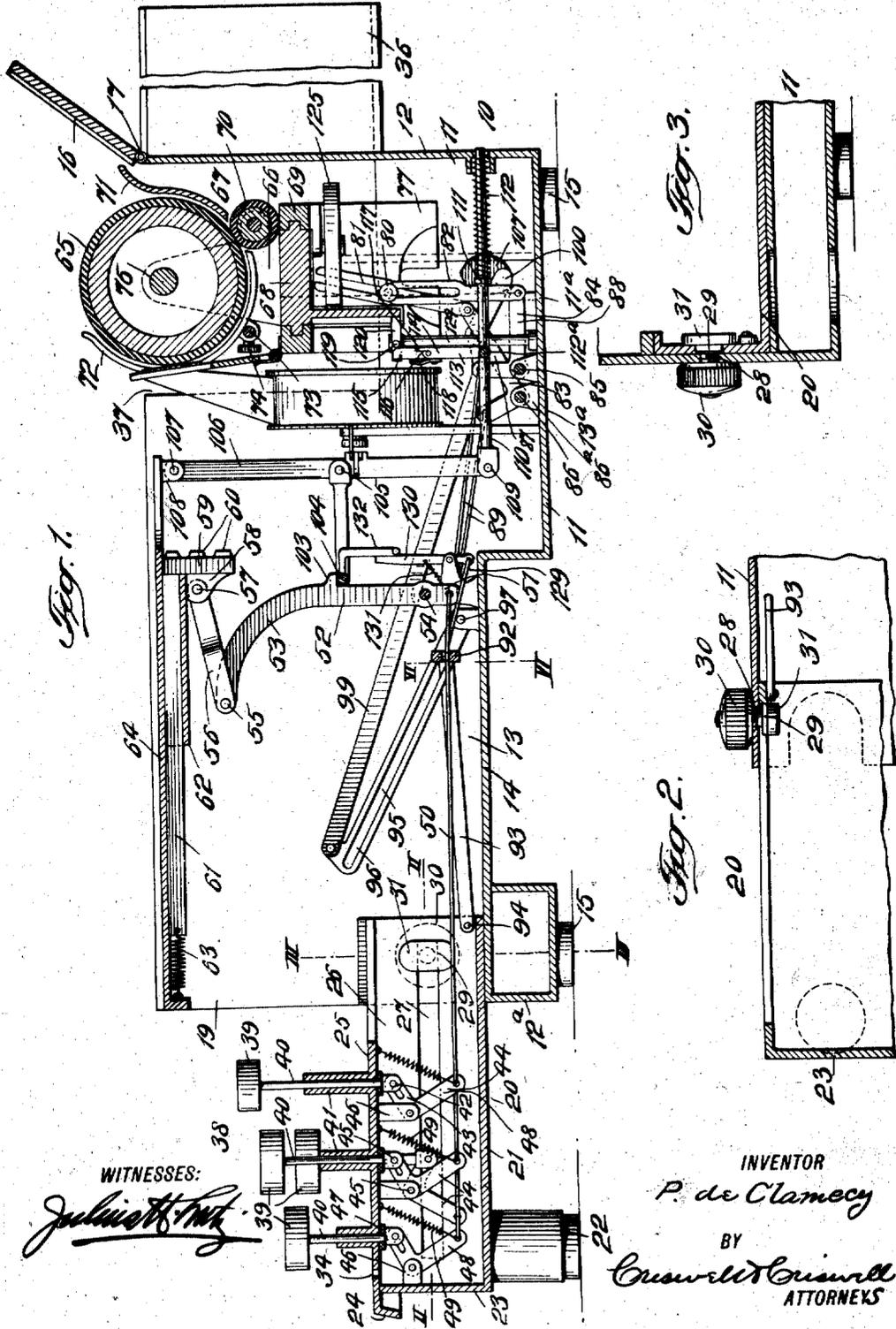


P. DE CLAMECY.
 TYPE WRITING MACHINE.
 APPLICATION FILED MAR. 6, 1916.

Patented Sept. 17, 1918.
 3 SHEETS—SHEET 1.

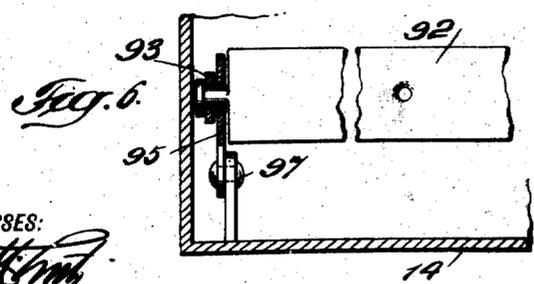
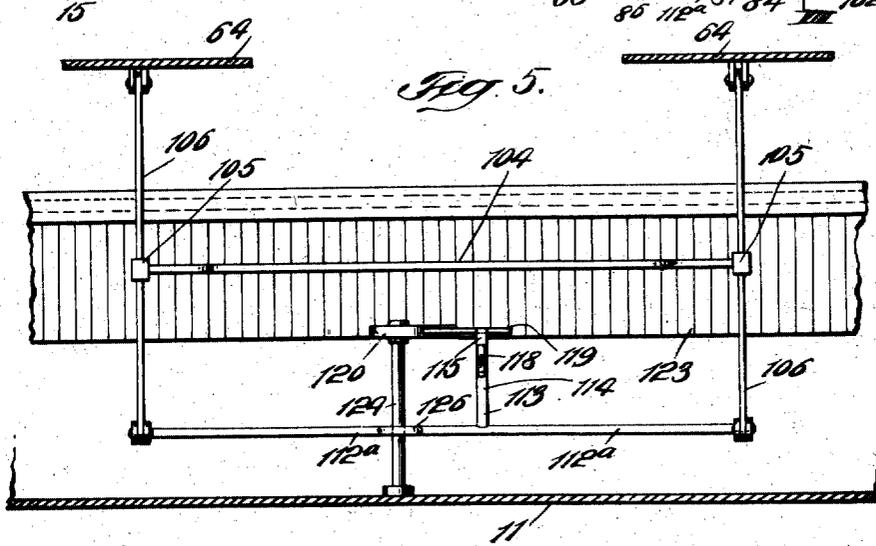
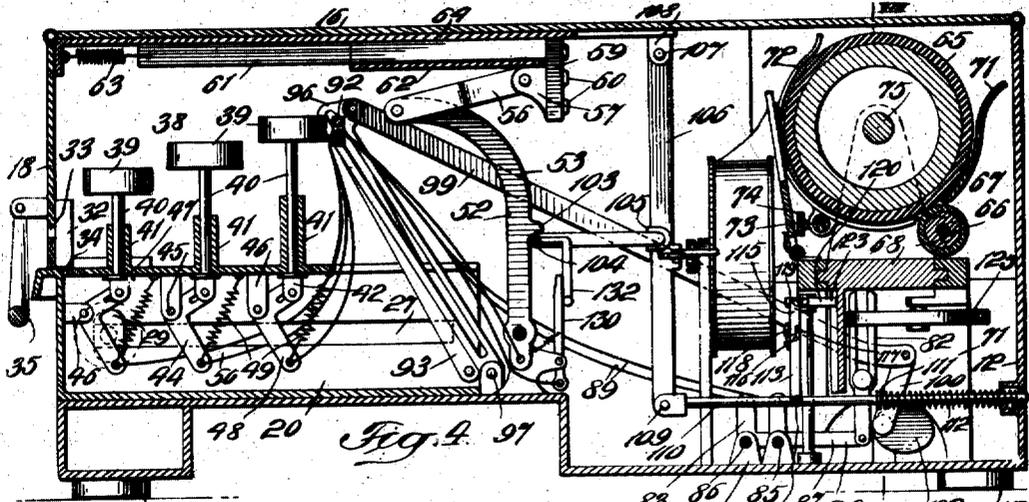
1,278,874.



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 3 SHEETS—SHEET 2.

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WITNESSES:
[Signature]

INVENTOR
 P. de Clamecy
 BY
[Signature]
 ATTORNEYS

UNITED STATES PATENT OFFICE.

PHILIPPE DE CLAMECY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO CORONA TYPE-WRITER COMPANY, INC., A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

1,278,874.

Specification of Letters Patent. Patented Sept. 17, 1918.

Application filed March 6, 1916. Serial No. 82,403.

To all whom it may concern:

Be it known that I, PHILIPPE DE CLAMECY, a citizen of the United States, and a resident of Boston, county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description.

This invention relates more particularly to the escapement mechanism of a front strike or other visible typewriting machine which may be made compact when not in use to adapt the same for transportation and other purposes.

One of the principal objects of the invention is to provide a small compact portable typewriter in which the keyboard is mounted upon a frame part or member which is slidably held to the main frame part or member of the machine and is movable from a normal operative or extended position to an abnormal and more compact one when not in use, and at the same time so construct the frame or support that it may form an inclosing and protecting case for the escapement mechanism and the keyboard when in a compact position, and which may be opened to adapt the typewriter keys and other parts to be readily accessible for operation in the usual way.

Another object of the invention is to provide a typewriter which is very compact when not in use and which is so constructed that it may be readily transported as a part of a person's luggage, or for other purposes.

Other objects of the invention are to provide a typewriter in which the support may be variously constructed whether as a case in which all the mechanism is mounted in order that a separate carrying case may be dispensed with, or wherein the frame may be constructed simply as a mounting for the different mechanisms so that the typewriter may be placed in a separate and independent case, if desired; to provide a simple and effective mechanism to control the feed of the carriage; to provide a writing machine wherein the platen carriage and part of the escapement mechanism may be given different shift movements for different type carried by the different type-bars without separating the escapement parts; and to provide means whereby an abnormal movement of the platen carriage to an inoperative

position may be automatically effected when the keyboard is moved from its normal operative position to a compact position, and during such abnormal movement of the platen carriage have the parts of the escapement mechanism maintained in operative relation.

A further object of the invention is to provide means whereby the inclosing case of the mechanism may be locked and the parts so constructed that the escapement mechanism is entirely protected and inaccessible when not in use.

A still further object of the invention is to provide a typewriter wherein the platen carriage and the keyboard may have a relative movement from a normal operative position to a more compact one or vice versa, and during such movements have the connection between the keys and the means controlling the escapement mechanism maintained without any disconnection or disorganization.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this application, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a longitudinal section, partly in elevation, of one form of machine embodying the invention, showing the escapement mechanism in position for operation when one of the keys is depressed.

Fig. 2 is a fragmentary sectional plan taken on the line II—II of Fig. 1, showing a part of the means for guiding the keyboard frame part and for holding the same in different positions.

Fig. 3 is a fragmentary vertical section taken on the line III—III of Fig. 1, of the same parts as shown on Fig. 2.

Fig. 4 is a longitudinal section similar to that shown in Fig. 1, except that the keyboard and other parts have been moved to a more compact position.

Fig. 5 is a fragmentary front elevation showing a part of the escapement mechanism and the means for operating the same.

Fig. 6 is an enlarged vertical section taken on the line VI—VI of Fig. 1.

Fig. 7 is a sectional plan, partly in eleva-

tion, showing the escapement mechanism and other parts of the machine; and

Fig. 8 is a vertical section, partly in elevation, of one side of the machine, said section being taken on the line VIII—VIII of Fig. 4.

While the invention is shown as applied to a particular kind of typewriter in which the keyboard is mounted and connected to the type-bars in a particular way and the different mechanisms are shown of a particular construction, it will be understood that many of these parts may be changed, and that some of the parts may be dispensed with or others substituted therefor without changing the nature or character of the invention.

The inclosing case 10 or other frame or support for the different parts of the typewriter may be variously constructed. As shown, the case or frame 10 comprises a main substantially box-like frame part 11, having a base 11^a, a rear wall 12, a partially open front wall 12^a, and side walls 13. The base 11^a may be continuous or may have two offset parts 13^a and 14, as shown in the drawings, said offset parts being provided with the usual supporting rubber feet 15, if desired. A top or cover member 16, is hinged at 17 to the upper part of the rear wall 12, and at the end opposite the hinge 17 of said cover member or top 16 is a front plate or member 18. This member 18 is hinged at the forward edge of the top 16, and is adapted to inclose the open front or space 19 of the main part, member or section 11. At the front portion of the main frame part is a keyboard member or frame part 20. This frame part 20 is slidably held to move horizontally within the main member 11 from a normal operative and extended position, as shown in Fig. 1, to an abnormal compact one, as shown in Fig. 4. The frame part or member 20 may have a substantially box-like form of considerable less height and length than the main frame part 11, and said frame part 20 has a base 21 on which may be supporting feet 22, a front wall 23 having an extended portion, as 24, by which the frame part 21 may be moved inwardly and outwardly and a top portion or plate 25. The base 21 of the frame part 20 is adapted to slide forwardly and rearwardly on the offset base part 14 and has its side walls 26 provided with slots 27. These slots 27 are each adapted to be engaged by the shank 28 of a pin or bolt 29, and engaging the threaded end of the shank 29 of each bolt is a thumb nut 30. The shank of the bolt 28 has a square portion to fit the slot 27 and forms a bearing portion and guide for the sides of the frame part 20 during its horizontal sliding movement. Each bolt has an enlarged head 31 so that by tightening the thumb nuts 30 at each side

of the machine the extensible and slidable frame part 20 may be held either in its extended normal position or in its compact abnormal position. The front plate 18 of the inclosing case is adapted to rest against the upper surface of the top 25 of the frame part 20 when in a compact condition, and mounted upon the part 18 is a lock 32, as for example a lock such as is employed on desks and, which is accessible by a key through an opening or keyhole 33, whereby the tumblers of the lock may be disengaged from or made to engage a slot 34 or other holding means in the top 25 of the frame part 20 to lock said frame part against access except by means of the key. The front part 18 may be also provided with a handle, as 35, for carrying purposes, and at the rear portion the case may have end pieces, as 36, to adapt the platen carriage, as will be presently described, to have free movement transversely of the machine when in use. The side or end pieces or members 36 are hinged to the rear wall 12 and are adapted to inclose the cutaway portions 37 of the side walls of the main frame part 11. The side pieces 36 have beaded or rabbeted edges and the top member 16 may also be provided with a rabbeted or beaded edge so as to lock the end pieces or members 36 in a closed position when in the position shown in Fig. 4. On the frame part 20 is mounted the keyboard 38. The keyboard may be of the usual standard or universal kind wherein a plurality of banks or groups of keys are arranged, each operating individual type, such banks being in three or more sets, according to the number of printing characters, and whether or not a single case or double case shift is employed. The keys 39 are each arranged upon a vertically movable stem or rod 40. Each stem 40 is guided in a bushing or tubular part 41 extending upwardly from the top 25 of the keyboard frame part 20, and at the lower end of each stem 40 is a yoke or head 42 to which is pivotally connected the arm 43 of a bell-crank lever 44. The bell-crank lever 44 is pivoted at 45 to a lug or bracket 46 extending inwardly from the frame part 20, said part 46 extending inwardly from the top 25 for two banks or rows of key-operated levers and from the front plate 23 of the frame part 20 for the third row of key-operated levers. The key-operated levers 44 have a pin-and-slot connection with the stems 40 and under each head 42 is a rubber or other strip 47 to take the shock due to the return movement of the rods 40. The arms 48 of the key-operated bell-crank levers are connected to springs 49, there being a spring for each lever and each spring being connected at one end to a part of the frame part 20 and at its other end to one of said levers. A link or connection 50 extends from each key-operated lever

and has one end held to the short arm 51 of a lever 52. The link or connection 50 may be of wire, as piano wire, or of any other desired form, and is adapted when a key is depressed to force the upper arm 53 of one of the levers 52 inwardly. The levers 52 are all mounted on a common pivot rod 54 which is curved according to the arrangement of the levers 53 and the parts actuated thereby.

The arm 53 of each lever 52 is pivoted at 55 to a link 56, said link 56 being pivoted at 57 to a lug 58 of a type block or head 59. Each type block has a plurality of characters or type 60 thereon, in this case three characters or type because there is double case shift, one of said characters representing the lower case type, another character the upper case type, and the third character or type, figures, punctuation marks, etc., this arrangement being varied according to the construction of the machine. The type heads or blocks 59 are held to bars 61. Each bar 61 is guided to slide in a bearing 62 and is normally forced in one direction by a spring 63, one end of which is held to the forward end of said bar and the other end to a part of the main casing or frame. The bars 61 are held in slots and over the bars is a finishing and a retaining plate 64. The bars 61 are arranged in a curved path so that as they are propelled or forced inwardly they will move toward the printing point to impress a character upon the work held upon the platen 65. The bars 61 are thus substantially radially arranged with respect to the printing point so that all the type of all the bars as each one is forced inwardly through the movement of the levers 52, links 56 and bars 61 on the depression of the keys 39 will strike at the same point on the work sheet. This arrangement of the type-bars is not broadly new. Instead of the type-bars having a horizontal sliding movement they may have an upward and rearward movement as is common in most standard visible writing machines.

The banks or groups of keys 39 and the bell-crank levers 44 all move bodily with the frame part 20 toward or away from the type-bars and the platen carriage 65 and during such movement said banks of keys and levers maintain a fixed relation with respect to each other, thus adapting the keyboard as a unit to be moved into the main frame member to make the machine compact or to be moved to an extended operative position at the will of the operator.

The platen 65 is rotatably mounted upon end pieces or brackets 66 of a carriage 67. The platen carriage 67 has a base 68 which is constructed to move transversely of the machine and may be guided in grooves in a carriage bed 69. The carriage bed 69 is held to move vertically at its ends for case shift as will be presently described. The platen carriage may have the usual parts mounted

thereon which cooperate with the platen, such as line-spacing, ribbon vibrating mechanism and other features usually employed in connection with typewriting machines. Some of the parts which are common to the ordinary typewriter are not shown and some features are shown in part and others simply suggested. There may be one or more feed-rolls, only one being shown, as roll 70, and adapted to guide the paper or work-sheet 75 about the platen is a paper apron 71. Paper fingers 72 are held upon a transversely extending rod 73 which may be graduated or not, as desired, and these paper fingers are adapted to be held in various positions by means of thumb-screws 74 so that different widths of paper may be properly guided about the platen 65. The platen may be of usual construction and has its shaft 75 projecting beyond the end bracket 66, and on each end of said shaft may be a knob 76 by which the platen may be manually rotated there being any suitable line-spacing mechanism for the platen.

As means for shifting the platen various constructions may be employed. As shown, the platen carriage is given a vertical movement for upper case printing, and in this particular machine the platen carriage has two shift movements to adapt the type heads each to have three characters thereon. The normal operative position of the platen with respect to the type on the blocks 59 is such that the printing point is directly in line with the lower type character on each type block, the normal position of the platen and carriage being obtained by mechanism presently to be described. The carriage bed 69 is held to vertically movable parts or slides 77. These slides 77 have a dovetail connection, as 78, with the enlarged parts or guides 79 located on opposite sides of the main frame part 11, so that the carriage and platen may be moved vertically and uniformly guided at both ends during such vertical movement. A pin 80 extends inwardly from each part 77 of the platen carriage and adapted to engage said pins are arms 81 and 82. The arms 81 and 82 are arranged in sets, there being an arm of each set located at opposite sides of the machine to impart uniform vertical movement to the platen carriage. The arms 81 and 82 are slotted to permit relative movement between the arms 81 and 82 and the carriage for the different shift movements of the platen carriage. The arms 81 are connected to bell-crank levers 83 and the arms 82 to bell-crank levers 84. These levers 83 and 84 are arranged in sets, the levers 84 being held to a transversely extending rod 85 and the bell-crank levers 83 to a transversely extending rod 86 whereby the bell-crank levers on opposite sides of the machine may be moved in pairs, said rods 85 and 86 having bearings in lugs 86' on the

frame base part 13^a. The arms 87 of the bell-crank levers 83 and the arms 88 of the bell-crank levers 84 are of such lengths that the same movement of said arms are adapted to impart different shift movements to the platen carriage according to the spacing between the type on the blocks or heads 59. The bell-crank levers 83 and 84 are each connected by a wire link 89 and these wire links are connected to key-operated bell-crank levers in the same way as the links 50 are connected to the bell-crank levers 48. Two shift keys 90 and 91, Fig. 7, are located on one side of the machine, and these keys when depressed will operate the bell-crank levers 83 and 84 to impart different shift movements to the platen carriage as already described.

The links 50 and 89 are guided in a transversely extending bar 92, there being an aperture in said bar for each link so that the links are properly held spaced apart. The bar 92 is held to one end of links 93 and these links at their other ends are pivotally held at 94 to the sides of the frame part 20. The ends of the bar 92 are guided in slots 95 of arms 96. These arms 96 are located on opposite sides of the machine and are pivotally held at 97 to lugs 98 extending upwardly from part 14 of the main frame part 11. The upper ends of the arms 96 are pivoted to links or connecting rods 99 and these links 99 are pivoted at their inner ends to arms 100. The arms 100 are held to studs 101, Fig. 8, and on said studs 101 are eccentrics 102 so that as the links 99 are forced inward the arms or cranks 100 will rotate the eccentrics 102. In the compact position of the parts as shown in Fig. 4, the printing point of the platen is below the plane of travel of the lower case type on the type heads or blocks. When the keyboard frame part 20 is moved outwardly to a normal operative position, the transverse bar 92 by reason of its connection with the links 93 will force the arms 95 downwardly from the position shown in Fig. 4 to that shown in Fig. 1. This downward movement of the arms 96 will force the links 99 forwardly and such forward movement of said links 99 will rotate the eccentrics and this will elevate the carriage and platen to its normal operative position wherein the printing point of the platen is in a direct line with the travel or movement of the lower type character of the type-bars. In this position the platen may be shifted for the different type characters as already described, and may be restored to its normal position on the release of the shift keys either by gravity or by spring or springs, not shown, for that purpose. During the compact movement when the keyboard frame 20 is moved inwardly within the case such movement will elevate the bar 92 by reason of the link connections 93, and

this will raise the arms 96 and force the links or arms 99 inwardly thereby rotating the eccentrics 102 which will permit an abnormal movement of the carriage and platen allowing the same to drop below the path of the type to an inoperative position. During this compact movement the wire link connections are raised by the bar 92 and are maintained in their proper relation by reason of said bar 92 and without liability of becoming entangled. A connection is thus always maintained between the key-operated levers and the type-bars as well as between the shift keys and the parts operated thereby, and during the extended and compact movement of the keyboard the normal and abnormal position of the platen and carriage is automatically effected through the action of the eccentrics 102 and the connection between said eccentrics and the keyboard frame part 20 as already described.

A special construction of escapement mechanism is employed for controlling the letter-feed movement of the platen carriage. Each type-bar operating lever 52 is provided with a projecting part 103 and this projecting part overlies a universal bar 104. The universal bar is curved to conform to the arrangement of the type-bars, and said universal bar at its ends is held at 105 to rocking arms 106. These arms 106 are pivoted at 107 to lugs 108 on the top plate 64, and at their lower ends said arms are pivoted at 109 to reciprocatory rods 110. The rods 110 have their outer ends guided in a part of the rear wall 12 of the main frame part 11 or otherwise, and interposed between said wall and a collar 111 on each rod 110 is a spring 112 tending normally to force each rod 110 forwardly to move the universal bar against the levers 52. The rods 110 are connected together by a rod 112^a and mounted to move with said rod is an upright arm 113. This arm 113 is formed in two parts 114 and 115. The part 115 is pivoted at 116 to the part 114 to move therewith, there being a shoulder 117 to prevent movement of the part 115 relative to the part 114 except in one direction, a spring 118 being provided to hold the two parts of the arm 113 normally in alinement. The part 115 is adapted to engage an arm or projecting part 119 on a pivoted escapement dog or detent 120. The detent 120 has dogs 121 and 122 and is adapted to engage the teeth of a rack 123 extending downwardly from the platen carriage base 68. The detent 120 is pivotally held to a fixed rod 124 and the rack 123 is of the bar-like form and of such a width that the platen carriage may be moved relatively to the escapement dogs in a vertical direction without disengagement of the dogs and rack during the shift movement of the platen carriage. The dogs 121 and 122 are adapted to engage the teeth of

the rack and control its letter-feed movement in the usual or in any preferred way, said carriage being under the tension of the usual spring arranged in a drum 125, there being a flexible connection between said drum and a part of the carriage tending normally to force the carriage transversely of the machine as usual. The escapement dogs, there may be a limber and a fixed dog if preferred, are not actuated during the rearward movement of the universal bar, the part 115 of the arm 113 yielding during said rearward movement to pass by the arm 119, but on the return movement of the universal bar the part 115 will actuate the escapement dogs to permit the tension mechanism to force the carriage the distance of a letter-space, said part 115 again passing to the front of the arm 119. The purpose of having the escapement dogs operated during the return movement of the universal bar is to avoid the feed movement of the carriage taking place at or about the time the type is making its impression on the work about the platen. The universal bar is as herein stated held to move with the arms 106, and by having said arms located on opposite sides of the longitudinal center of the machine a uniform movement is given to the universal bar no matter which lever 52 is operated, the rod 112 which connects the rods 110 being bent substantially centrally thereof, as at 126, so as not to interfere with the vertical rod 124 on which the escapement detent 120 carrying is mounted.

The escapement dogs are adapted to be operated by a space bar 128 to letter space the carriage without operating the printing instrumentalities. The space bar 128 may be connected to operate a bell-crank lever similar to the levers 44 for operating the type-bars, and said bell-crank lever is connected by a wire link 129 or other flexible connection to a pivotally held arm 130, said wire link 129 being guided in the transversely extending bar 92 and in a manner similar to the wire links 50. The lever 130 is pivoted to a bracket on the frame base part 14, and is normally forced in one direction by a spring 131. The upper end of the arm 131 is adapted to engage a downwardly extending bar or part 132. This part 132 is held to the universal bar and when the space bar is depressed so as to move the lever 130, the part 132 will be operated and will force the universal bar rearwardly and operate the escapement dogs as already described.

The construction and operation of the invention will be readily understood from the foregoing description when taken in connection with the accompanying drawings. Assuming the parts to be in the position shown in Fig. 1, it will be apparent that

on the depression of one of the keys 39, its cooperating bell-crank lever 44 will be actuated and said bell-crank lever will force the link or connection 50 forwardly so as to operate one of the levers 53 to which the link is attached, the links 56 connected to the lever 53 and to the type-bars 61 during their rearward movement forcing the type to make an impression upon the work about the platen. On the release of the keys the type-bars and parts will be restored to their normal operative position. As each lever 53 is operated the universal bar 104 will be moved and by means of the vertical arm 113 the escapement dogs will be operated during the return movement of said arm, thus permitting the carriage to move a letter space under the tension of the drum 125. The platen carriage may be shifted for capitals and figures as already described. When the machine is to be made compact the platen carriage is moved along the carriage bed to space the knobs 73 within the side walls 13 of the main frame part, and the keyboard frame part 20 is moved inwardly as shown in Fig. 4. This inward movement of the keyboard frame part will force the transversely extending bar 92 upwardly and will cause the rods or links 99 to rotate the eccentrics 102, thus permitting the platen and carriage to lower to an inoperative position with respect to the type. The ends 86 of the casing or frame may be moved to close the open space 37 in the side walls 13, and the top or cover 16 and front plate or member 18 may be moved to the position shown in Fig. 4. In this position the front plate and cover may be held by means of the lock 82, at which time the machine is in condition for transportation, and the parts concealed and protected.

While one form of ribbon mechanism is shown, such mechanism forms no part of the present invention but is claimed in a separate application.

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

1. In a typewriting machine, the combination of a frame, a platen carriage movable vertically from a normal operative position to a more compact inoperative position, and escapement mechanism, a part of said escapement mechanism partaking of the vertical movement of the carriage and a part thereof being held to the frame; said relatively movable parts of the escapement mechanism being maintained in cooperative relation in all positions of the platen carriage.

2. In a typewriting machine, the combination of a frame, a platen carriage movable transversely of the frame, a support for the platen carriage slidably held in the

- frame and movable downwardly with the platen carriage from a normal operative position to a more compact inoperative position within the frame, and escapement mechanism, a part of said escapement mechanism being movable downwardly with the platen carriage and a part thereof being held to the frame, said relatively movable parts of the escapement mechanism being maintained in coöperative relation in all positions of the platen carriage.
3. In a typewriting machine, the combination of a platen carriage movable from a normal operative position to a more compact inoperative position, a keyboard movable from a normal operative position to a more compact position, and escapement mechanism having an operative connection with the keyboard and platen carriage in all positions of said keyboard and carriage.
4. In a typewriting machine, the combination of a frame, a platen carriage movable vertically from a normal operative position to a more compact inoperative position, a keyboard movable horizontally from a normal operative position to a more compact position, and escapement mechanism having an operative connection with said relatively movable keyboard and platen carriage at all times.
5. In a typewriting machine, the combination of a frame, a platen carriage having a vertical sliding movement from a normal operative position to a more compact inoperative position, a keyboard having a horizontal sliding movement from a normal operative position to a more compact position, and escapement mechanism comprising relatively slidable parts maintaining an operative connection with each other and with said keyboard and platen carriage at all times.
6. In a typewriting machine, the combination of a frame, a platen carriage movable vertically from a normal operative position to a more compact inoperative position, a wide rack depending from the platen carriage, escapement dogs pivotally supported in the frame in coöperative relation with said rack, said rack being maintained in coöperative relation with the escapement dogs in all of its positions, a universal bar supported in the frame, and means actuated by the universal bar for operating the escapement dogs, said means maintaining an operative connection between the universal bar and the escapement dogs at all times.
7. In a typewriting machine, the combination of a frame, a platen carriage movable transversely of the frame, a wide rack depending from the platen carriage and movable therewith, an escapement element mounted on the frame in fixed relation thereto, means for imparting a vertical movement to the carriage and rack for printing different case characters, means for imparting an abnormal vertical movement to the carriage and rack for moving the carriage to a compact inoperative position, said escapement element and rack being maintained in coöperative relation at all times, and means for actuating the escapement element to control the letter-spacing movement of the carriage.
8. In a typewriting machine, the combination of a frame, a platen carriage, escapement mechanism, swinging arms supported in the frame, a universal bar held to said arms, reciprocatory rods connected with said arms, resilient means for normally forcing said rods and universal bar in one direction, key-operated levers, means operated by said levers for moving the universal bar and reciprocatory rods in opposition to said yieldable means, and means carried by said rods for actuating the escapement mechanism on the return movement of the universal bar.
9. In a typewriting machine, the combination of a frame, a platen carriage having a case shift movement and an abnormal movement to a compact inoperative position, and an escapement mechanism having a part held to the frame and a part partaking of the case shift and compacting movements of the carriage, said relatively movable parts of the escapement being maintained in coöperative relation with each other both in the case shift and compacting movements of the platen carriage.
10. In a typewriting machine, the combination of a support, a platen carriage, means for shifting the platen carriage and support vertically, printing instrumentalities, means whereby the platen carriage and its support may move from an operative position to a compact and inoperative position, and escapement mechanism having relative shifting parts, said parts of the escapement mechanism being maintained in operative relation in all positions of the platen carriage.
11. In a typewriting machine, the combination of a support, a carriage movable along said support, means for shifting the platen carriage different distances, printing instrumentalities, said carriage being movable from an operative position to an abnormal inoperative position, means for restoring the carriage to an operative position, and a collapsible escapement mechanism controlling the letter spacing movement of the carriage, having parts shiftable relatively to each other while maintained in coöperative relation to adapt a part of the escapement to partake of the case shift and abnormal movements of the carriage without disconnection from the other part.
12. In a typewriting machine, the combination of a frame, a platen carriage, a horizontally slidable keyboard having keys arranged in banks having a fixed relation to

each other, a support for the platen carriage held to slide vertically in the frame, connections between the keyboard and carriage support for shifting the support and carriage vertically from a normal operative position to a compact inoperative position when the keyboard is moved horizontally from its normal operative position to a more compact position, a rack movable with the carriage, relatively fixed means supported on the frame and cooperating with said rack for controlling the letter-spacing movement of the carriage, and constantly maintained operating connections between said means and the horizontally slidable keyboard.

13. In a typewriting machine, a carriage, a slidably held keyboard movable toward the carriage to make the machine compact and movable away from the carriage when in a normal operative position, said carriage having a normal operative position and an abnormal and inoperative position, and an escapement mechanism having relative shiftable rack and dog elements whose operative relation are maintained in all positions of the carriage.

14. In a typewriting machine, a platen carriage, a slidably held bodily movable keyboard having banks of keys whose relations are fixed, printing instrumentalities, said carriage having a normal and an abnormal inoperative position, and an escapement mechanism having a part thereof movable with the platen carriage and maintaining its operative relation with another relatively fixed part of said escapement mechanism.

15. In a typewriting machine, a platen carriage, a slidable bodily movable keyboard, said platen carriage having normal operative and abnormal inoperative positions, and an escapement mechanism having an operative connection with the keyboard and the platen carriage in all of their positions.

16. In a typewriting machine, the combination of a support, a carriage movable transversely of the support, escapement mechanism for controlling the letter-movement of the carriage, reciprocatory rods, springs normally forcing the rods in one direction, means carried by the rods for actuating the escapement mechanism, rock arms to which the rods are connected, a universal bar connected to said rock arms, key-operated levers arranged in two groups, one group adapted to operate the universal bar, and collapsible connections between the groups of levers.

17. In a typewriting machine, the combination of a support, a platen carriage movable transversely of the support, escapement mechanism for controlling the letter-feed movement of the carriage, reciproca-

tory means for operating the escapement mechanism, and means including collapsible connections for operating said reciprocatory means.

18. In a front-strike typewriting machine, the combination of a main frame part, a keyboard frame part movably held to the main frame part, a platen carriage adapted to move transversely of the machine, escapement mechanism, a two part arm adapted to actuate the escapement mechanism, a universal bar operatively connected to said arm, means forming a part of the printing instrumentalities for operating the universal bar, key-operated levers, collapsible connections between the key-operated levers and the means for operating the printing instrumentalities to adapt the universal bar to be operated each time a key-operated lever is depressed, means assisting in the collapsing of said connections, and spacing means for operating the universal bar independently of the printing instrumentalities.

19. In a front-strike typewriting machine, the combination of a main frame part, a keyboard frame part slidably held to the main frame part, a platen carriage adapted to move transversely of the machine, escapement mechanism, a universal bar operatively connected to actuate the escapement mechanism, printing instrumentalities, key-operated levers, collapsible connections between the key-operated levers and the means for operating the printing instrumentalities to adapt the universal bar to be operated each time a key-operated lever is depressed, a bar having an up-and-down movement forming a guide for said connections and means including a collapsible connection for operating the universal bar independently of any movement of the printing instrumentalities.

20. In a typewriting machine, the combination of a main frame part, a keyboard frame part movably held to the main frame part, means whereby the main frame part and the keyboard frame part may form an inclosing casing, a platen carriage adapted to move transversely of the machine, an escapement mechanism, a universal bar operatively connected to move said mechanism, means including flexible connections for moving the universal bar, and a bar having an up-and-down movement and forming a guide for said connections.

21. In a typewriting machine, the combination of a frame, a platen carriage movable transversely of the frame, escapement mechanism, a universal bar, rock arms supported in the frame and carrying the universal bar, reciprocatory rods supported in the frame and connected with said rock arms, and an arm carried by said rods, said arm being adapted to yield when moved in one

direction by the universal bar and to actuate the escapement mechanism on the return movement of the universal bar.

22. In a typewriting machine, the combination of a frame, a platen carriage movable transversely of the frame, a rack held to the platen carriage to move therewith, escapement dogs supported on the frame and cooperating with the rack, an arm having a part yieldable in one direction adapted to

actuate said dogs when moved in one direction and to yield and pass said dogs without actuating the same when moved in the opposite direction, a universal bar for moving said arm, and means for actuating the universal bar.

This specification signed this 2d day of March, A. D. 1916.

PHILIPPE DE CLAMECY.