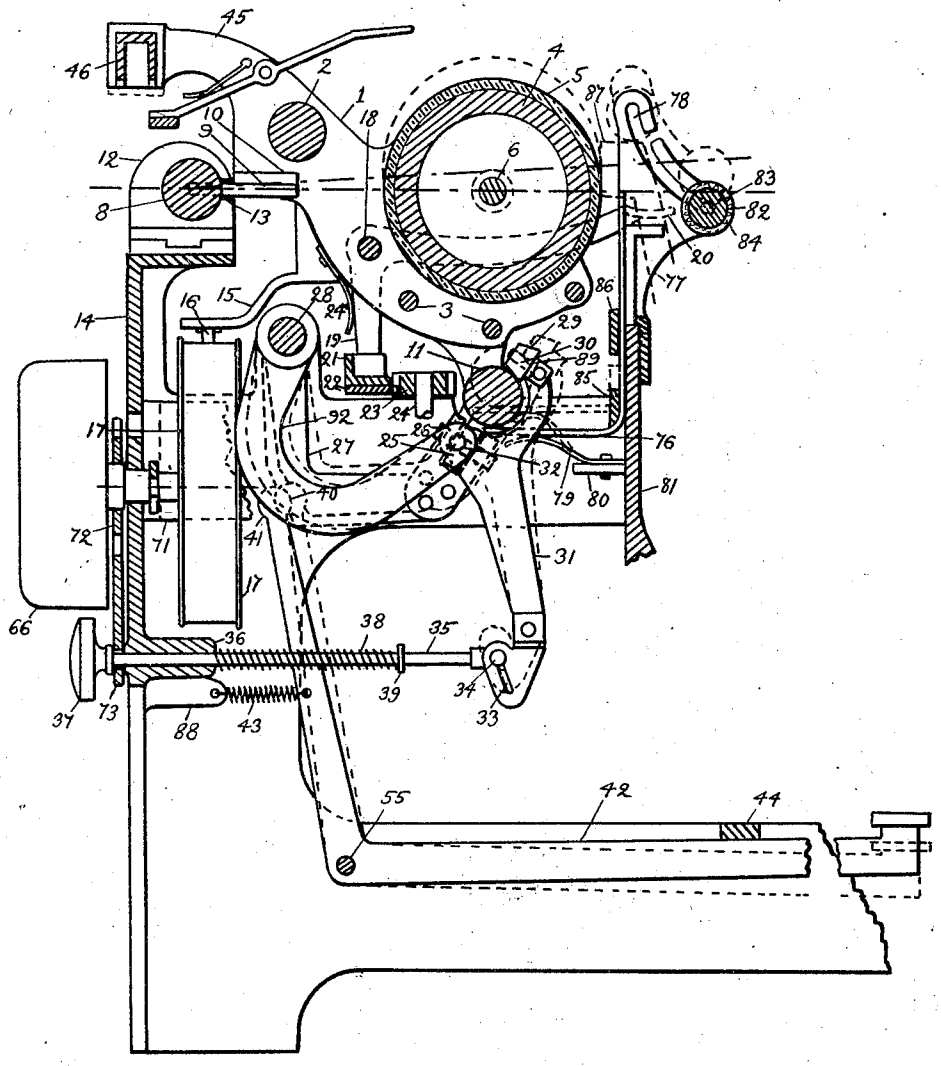
Aug. 3, 1926. 1,594,768

G. K. BLOCK

TYPEWRITING MACHINE

Filed Feb. 23, 1926 5 Sheets-Sheet 1

Fig. 1



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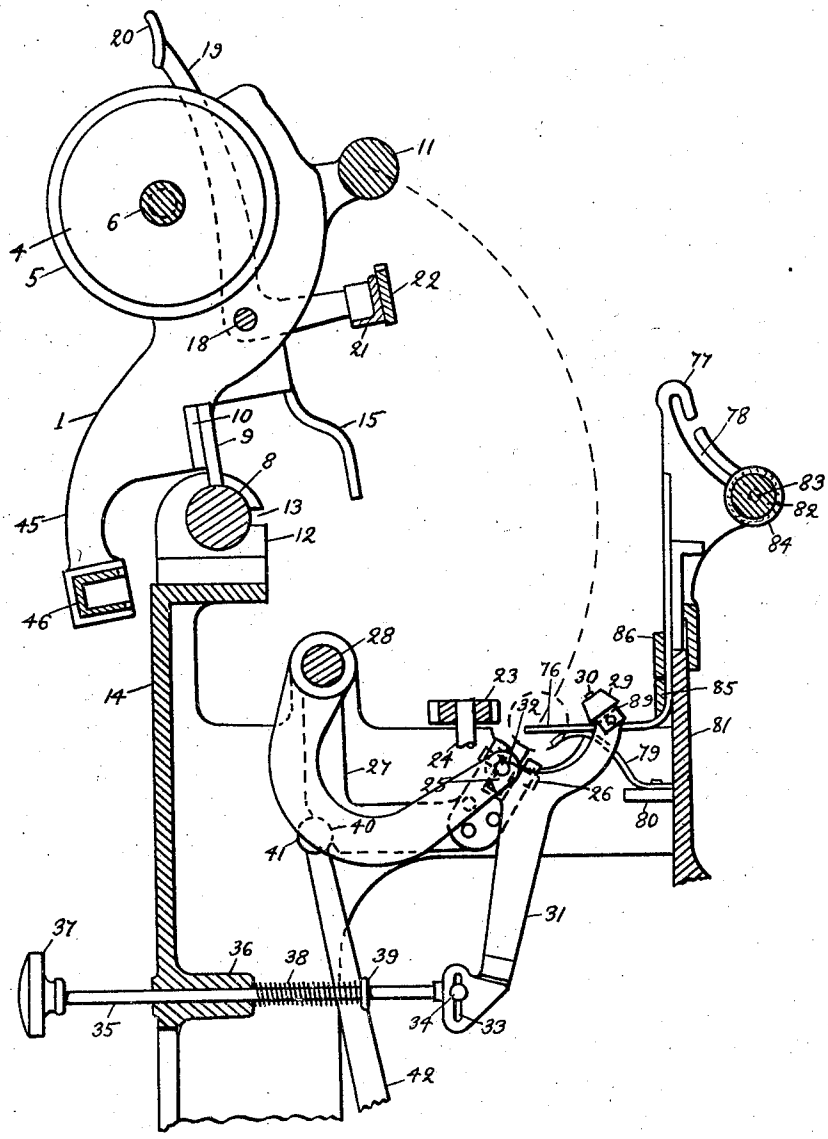
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Fig. 2



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TYPEWRITING MACHINE

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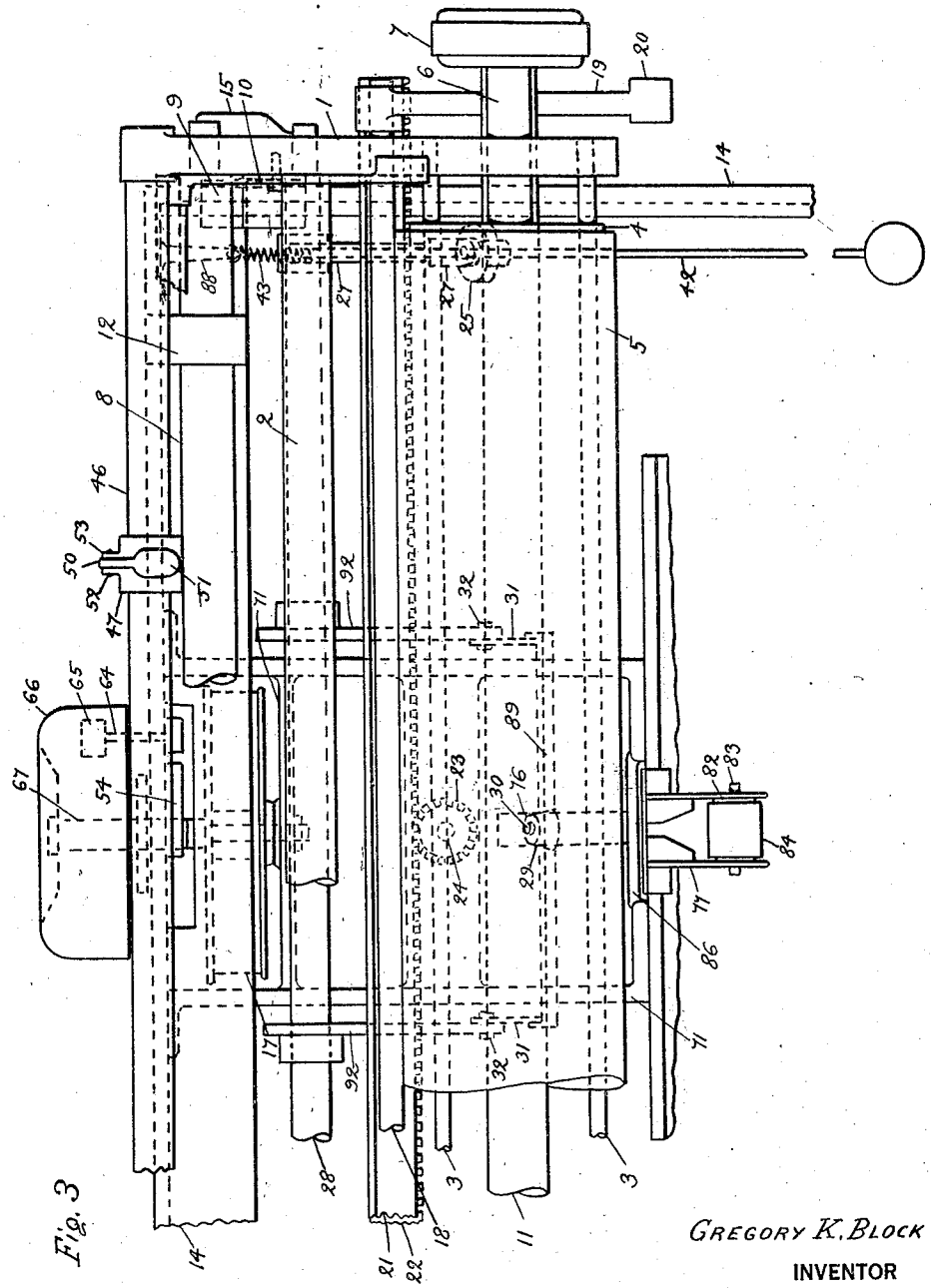


Fig. 3

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TYPEWRITING MACHINE

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Fig. 4

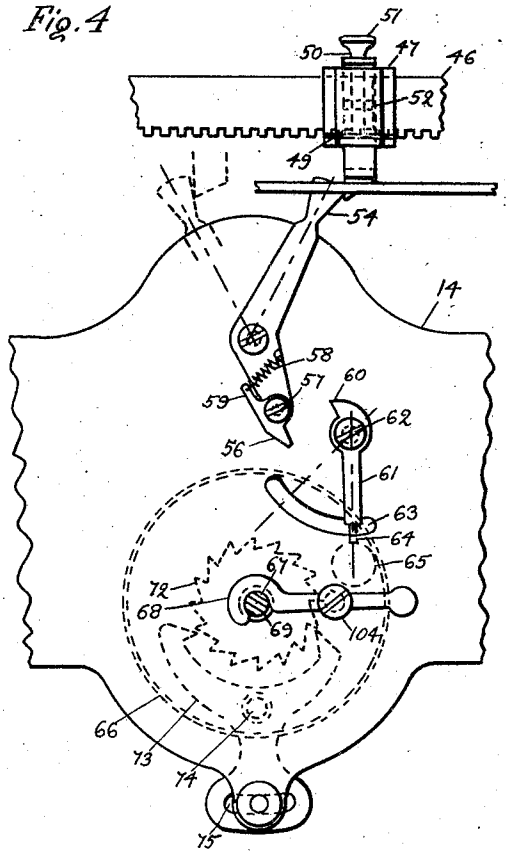


Fig. 5

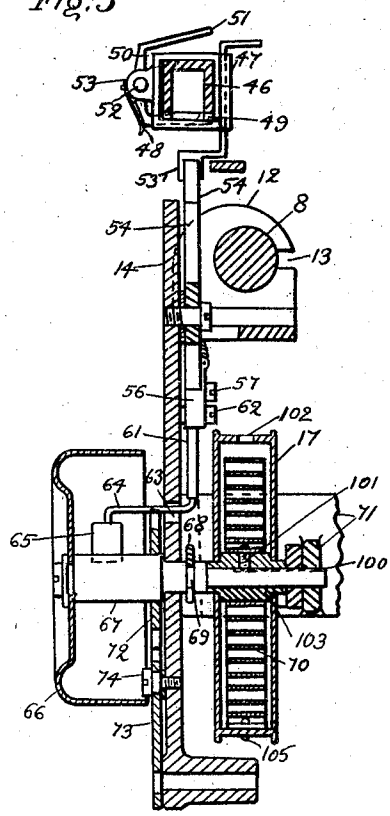
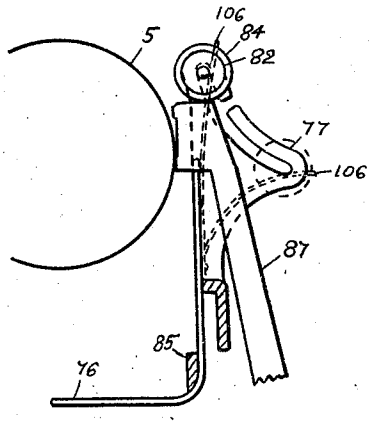


Fig. 9



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TYPEWRITING MACHINE

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Fig. 6

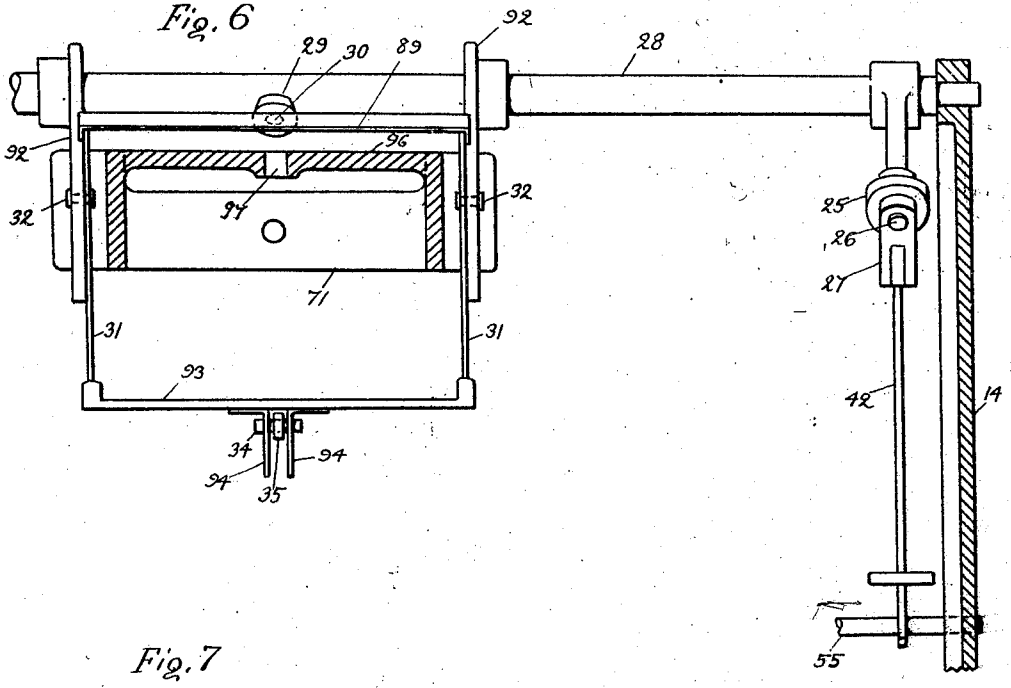


Fig. 7

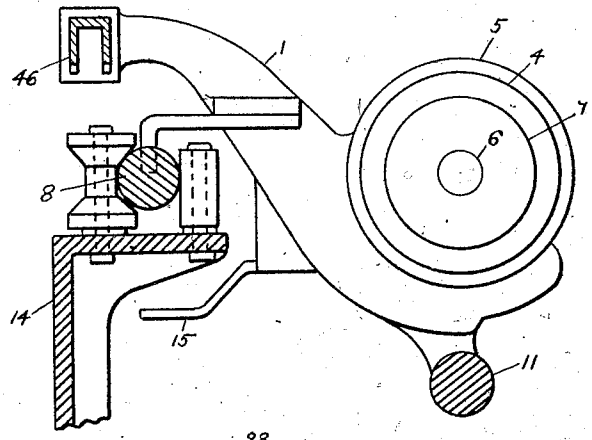
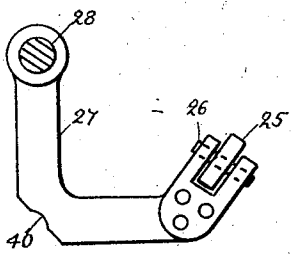


Fig. 8



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Patented Aug. 3, 1926. 1,594,768

UNITED STATES PATENT OFFICE.

GREGORY K. BLOCK, OF NEW YORK, N. Y.

TYPEWRITING MACHINE.

Application filed February 23, 1926. Serial No. 90,035.

My invention relates to typewriting machines and has a particular reference to carriage mechanisms.

The object of my invention is to provide a simple carriage for a typewriting machine with new and improved auxiliary attachments, which could be easily removed from the machine to be replaced with another one of different length.

Another object of my invention is to provide a carriage which could be easily turned over on its hinges to provide an easy access to the inside mechanism of the machine.

With my carriage mechanism the typewriting machine can be easily adapted for writing from right to left as is customary with the oriental languages.

My invention is more fully described in the accompanying specification and drawings, in which:—

Fig. 1 is a partial sectional elevation of the machine showing my carriage and its supporting mechanism, Fig. 2 is a similar view with the carriage in a raised position, Fig. 3 is a plan view, Fig. 4 is a view from the inside of the machine showing bell ringing mechanism, Fig. 5 is a sectional elevation of same, Fig. 6 is a front view of the carriage lifting mechanism, Fig. 7 is a modified view of the upper carriage support, Fig. 8 is a detailed view of the carriage lifting lever, and Fig. 9 is a view showing my inking mechanism in operation.

My typewriting machine consists of carriage end brackets 1 connected together with rods 2 and 3 which are used also to support the paper. A paper drum 4 is covered with rubber 5 and is journaled with its shaft extensions 6 in the brackets 1 and is provided with knobs 7 on the ends.

The brackets 1 are attached to a guiding rod 8 by means of plates 9 supported by lugs 10 on the brackets. These brackets are also connected with lower guiding rods 11.

The rod 8 is slidably supported in brackets 12 with slots 13 for the plates 9. These brackets are attached to the main frame 14.

The right bracket 1 is provided with a lug 15 for the tape 16 connected with a spiral spring 70 inside of a housing 17.

A rod 18 is journaled in the brackets 1 and is provided with bell cranks 19 at the ends with handles 20. The lower ends of the bell cranks support an angle 21 with a rack 22. This rack is engaged by a pinion 23 on a shaft 24 which is connected with a ratchet mechanism (not shown). This ratchet mechanism may be of any suitable construction adapted to permit the carriage to move a certain distance for each letter typed. A spring 24 attached to the bracket 1 keeps the rack pressed against the pinion 23.

The lower guiding rod 11 rests on rollers 25 rotating on pins 26 which are supported in the forks or clevises on the ends of levers 27 which are attached to a rod 28 journaled in the member 14. The levers 27 are provided with recesses 40 (see also Fig. 8) for the rounded end of a shift bar 42 journaled on a rod 55. A spring 43 tends to keep the bar 42 in a raised position resting against a cross bar 44 attached to the frame 14. The other end of the spring 43 is attached to a boss 88 on the rear wall of the machine frame.

The rod 11 of the carriage is held in place by an upper roller 29 on a pin 30 which is fastened at an angle to a cross bar 89 (Fig. 6) the ends of which are attached to side members 31 pivoted by pivots 32 to arms 92 attached to the rod 28. The lower ends of the side members 31 support a lower bar 93 with fulcrum plates 94 for a cross pin 34 of a rod 35. The plates 94 are provided with elongated slots 33 for the pin 34. The rod 35 is slidably fitted in a boss 36 in the frame 14 and is provided with a thumb head 37. A spring 38 pressing against a collar 39 tends to push the rod to the right (Fig. 1).

A rack 46 is supported on the lug 45 of the brackets 1. Sliding rectangular bushings 47 are placed on this rack and are provided with toothed plates 49 on levers 50 with handles 51 and pivoted with pivots 52 on lugs 53. Springs 48 tend to keep the toothed plate 49 in engagement with the rack 46, thereby locking the bushing in a given position.

The bushings 47 are provided with stops or lugs 53′ adapted to engage arms 54 pivoted with a screw 55 on the rear wall of the frame 14.

The lower end of the arm 54 has a pawl 56 on a pivot 57. A spring 58 tends to keep the pawl in an operating position with its tail end 59 against the lower end of the arm 54.

The pawl 56 is adapted to engage a tooth 60 on an arm 61 pivoted on a pivot 62 which

is attached to the wall of the frame 14. This arm is bent in the middle and passes through an oblong aperture 63 in the frame 14. The other end of the arm 61 has a resilient wire 64 with a hammer 65 on the end. This hammer is placed at a short distance from the inner wall of a bell 66.

This bell is mounted on a shaft 67 passing through the wall of the frame 14 and retained in its position with a hook 68 fitting in a slot 69.

The other end of the shaft 67 supports the spring drum 17 with a spring 70 and is journaled in a bracket 71 attached to the wall of the frame 14 (this bracket is not shown in Figs. 1 and 2).

A ratchet wheel 72 is attached to the shaft 67 and is held with a pawl member 73 pivoted on a pivot 74. Its outer end is provided with a slot 75 fitting over the rod 35 (this rod is not shown in Figs. 4 and 5).

The lower guiding rod 11 rests on a lug 76 of a sliding bracket 77 with circular slots 78. A spring 79 attached to a lug 80 on a type bar segment 81 (the type bars are not shown) tends to press the lug 76 against the rod 11.

An inking roller 82 slides in the slot 78 with its ends 83. This roller is made of a light material, such as aluminum or wood and is covered with an ink absorbing material such as felt or cloth 84.

Instead of the inking roller 82 an ordinary ink tape may be used with my carriage mechanism, the tape drums being supported on the sliding bracket 77. The movement of the bracket 77 is limited by a block 85 which comes in contact with a bar 86 forming a part of the segment 81 or the bracket 71.

In operation my carriage slides with its guiding rods 8 and 11 on the rollers 25, retained by roller 29, and in the brackets 12. The latter may be also provided with rollers to reduce the friction. The construction of the carriage and of the machine frame, as shown, is such, that the carriage can be moved freely in either direction and can be even completely removed, the plate 9 sliding through the slot 13. Another carriage, larger or smaller, can be then inserted without disassembling any parts of the machine, the only thing being necessary is to disconnect the end of the tape 16 from the lug 15, and to release the stops as explained later.

During process of writing the carriage is moved manually to the right thereby winding the spring 70. The carriage, however, is prevented from sliding back except by steps for each letter typed, the pinion 23, engaging the rack 22, being held by the ratchet mechanism (not shown), which may be of a standard construction or similar to one shown in my patent application Serial No. 85,716, filed Feb. 3, 1926.

In order to release the carriage from the ratchet mechanism the handle 20 of the lever 19 is depressed, thereby disconnecting the rack 22 from the pinion 23. The carriage may be then moved manually back and forth.

For typing capital letters the register shift key 42 is depressed against the tension of spring 43. The carriage turns around on the axis of the shaft 8, the parts taking new positions as indicated with dotted lines in Fig. 1. The slot 13 is sufficiently large to pass the plate 9 in this raised position. The slot 33 allows the arms 31 to be raised without changing the horizontal position of the rod 35.

In order to have access to the inside mechanism of the machine for cleaning, adjusting etc., the carriage may be turned on the axis of the shaft 8 to a raised position illustrated in Fig. 2. For this purpose the thumb head 37 is pulled out thereby turning the arm 31 on its pivot 32 to a position (Fig. 2) in which the upper roller 29 does not interfere with the turning of the carriage out of engagement with the lower roller 25. The rack 22 slides away from the teeth of the pinion 23. This pinion is made with longer teeth than on the rack in order to maintain an operating engagement when the carriage is raised for typing capital letters.

The lug 15 is disconnected from the tape 16 for raising the carriage to an inoperative position (or it may be left connected).

The bracket 77 is held in its position by the rod 11 which presses on the lug 76 against the tension of the spring 79. This spring forces the bracket 77 up when the rod 11 is raised for capital letters.

When the carriage is turned to the open or inoperative position (Fig. 2), the plate 85, attached to the lug 76, strikes the retaining bar 86 which keeps it from sliding off the segment 81.

The inking roller 84 can slide in the slot 78. It is placed in such position that the type bar strikes it before coming in contact with the drum 5, and the ink from the roller covers the type of the type bar, so that the next moment the type leaves inked impression on the paper on the drum. Under pressure from the type bar the roller moves up in the slot thereby admitting the passage underneath of the operating end of the type bar. The slot is placed in such position that the roller in the upper position is held by the upper flat portion of the type bar. This device can operate with any ordinary type bars, which have wide upper portion. Such type bar 87 is shown with dotted lines in Fig. 1, and also in Fig. 9.

The bracket 71 (Fig. 6) has an upper cross bar 96 with a bearing aperture 97 for the shaft 24 of the pinion 23. This bracket

is attached to the rear wall of the frame 14. The rocking frame, formed of arms 92 and members 31 and 93 is placed outside of the bracket 71. Their correct relative position is shown in Fig. 6.

The upper guiding rod 8 may be placed between rollers 98 and 99 (Fig. 7) in order to reduce the friction.

The inside shaft extension for the central spring 70 fits in the hub 103 which is prevented from the rotation on the shaft by means of a screw 101 the end of which slides in a keyway 100. The hook 68 which fits in the groove 69 may be turned on its pivot 104 thereby releasing the shaft which may be then pulled out with the bell, and the spring may be also removed with the housing.

One end of the spring is fastened to the wall of the housing 17 by means of a rivet or screw 105, and the other is attached to the hub 103 with a screw 101. The tape 16 may be then attached directly to the housing to the hole 102 by means of a suitable hook or screw.

The spring is wound by turning the hub 103 by turning the bell with the shaft 67. The carriage, when moved to the right, winds the spring by turning the case of housing 17. To release the spring the lever 73 is moved on its pivot, releasing one notch at a time.

The above described arrangement affords a very simple construction for assembling or taking apart the spring mechanism, also for winding it. Another important advantage lies in its central position, so that by simply reversing the spring drum and a few other auxiliary parts with the addition of new stops 47, my typewriting machine can be used for writing from right to left.

Important advantages of my carriage mechanism are that it represents a single unit sliding in its supports for spacing between the letters, can be raised or lowered for typing capital and plain letters, can be turned outwards to afford an access to the inner mechanism of the machine. The whole carriage can also be easily completely removed from the machine and replaced with another of a different length, without changing any parts of the machine or taking it apart.

My inking mechanism is also very simple in construction and is arranged to automatically adjust itself for different operating positions of the carriage, remaining also in position when the carriage is completely removed or fully raised.

I claim as my invention:—

1. In a typewriting machine, the combination with carriage brackets, a plurality of longitudinally extending members connected with said brackets and forming a carriage frame, means to slidably support said carriage frame on the frame of said machine, a lower guiding rod attached to said brackets, means to slidably support said guiding rod, a rack bar supported by said carriage, a pinion engaging said rack, and means to disconnect said rack from said pinion, said brackets with said rods being adapted to be slidably removed from their supporting means.

2. In a typewriting machine, the combination with carriage end brackets, a plurality of longitudinally extending members connected with said brackets, an upper guiding rod connected with said brackets, a lower guiding member connected with said brackets, means to slidably support said upper guiding rod on the frame of said typewriting machine, said upper rod with said brackets being also adapted to rotate on said supporting means, means to slidably support said lower guiding member, means to retain said lower guiding member in engagement with its supporting means, said brackets with said rods being slidably removable from said supporting means, means to raise and to lower said supporting and said retaining means with said lower guiding member, and means to release said retaining means.

3. In a typewriting machine, the combination with carriage brackets, a plurality of longitudinally extended members connected at their ends with said brackets, an upper guiding rod and a lower guiding member connected with said brackets, means to slidably support said upper rod on the frame of said typewriting machine, said brackets with said rods being adapted to rotate around the axis of said upper rod and to slide lengthwise with said rod on said supporting means, arms adapted to support said lower guiding rod, a member supporting said arms and rotatively mounted in said machine frame, sliding member adapted to retain said lower guiding rod in engagement with said supporting means, brackets supporting said retaining member and pivotally connected with said arms, means to turn said arms supporting member with said retaining means, and means to turn said retaining means with its bracket out of engagement with said lower guiding rod.

4. In a typewriting machine, the combination with carriage brackets, a plurality of longitudinally extended members connected at their ends with said brackets, a rod connected with the rear ends of said brackets, means to support said rod on the frame of said typewriting machine, said rod being adapted to slide and to rotate on said supporting means, a second rod connected with said frame, a plurality of rollers supporting said second rod, means to retain said second rod in engagement with said rollers, means

to release said retaining means, a rack supported on said brackets, a pinion in engagement with said rack, a vertical shaft for said pinion, and a means to release said rack from said pinion.

5. In a typewriting machine, the combination with carriage brackets, a plurality of rods connecting said brackets, a rear guiding rod connecting said brackets, means to support said rod on the frame of said typewriting machine, said rod being adapted to slide and to rotate on its supporting means, a front guiding rod connected with said brackets, a plurality of arms adapted to slidably support said front guiding rod, a rod supporting said arms and rotatively mounted in the sides of said machine frame, a roller adapted to press said front guiding rod against said supporting arms, a member supporting said roller and pivotally connected with said arms, means to move said roller out of engagement with said front guiding rod, means to rotate said supporting arms thereby raising the front ends of said carriage brackets, an inking mechanism, a member on said inking mechanism adapted to engage said front guiding rod, a spring adapted to keep said member pressed against said front guiding rod, and means to limit the movement of said inking mechanism with said member, said inking mechanism being slidably supported on said machine frame.

6. In a typewriting machine, the combination with carriage brackets, a plurality of longitudinally extended members connecting said brackets, a rear guiding rod connected with said brackets, means to slidably support said guiding rod on the frame of said machine, a front guiding rod, supporting means for said front guiding rod, said front guiding rod being connected with said brackets, said brackets with said rods forming one rigid carriage frame being slidably supported on said supporting means and adapted to be unobstructedly removed from its said supporting means by sliding endwise, means to rotate said carriage frame around said rear rod, and means to release said front guiding rod from its supporting means.

7. In a typewriting machine, the combination with carriage brackets, a plurality of rods rigidly connected at their ends with said brackets, means to slidably support said rods on the frame of said typewriting machine, means to raise the front ends of said carriage brackets, a typebar segment supported on said frame, a sliding bracket supported on said segment, an ink roller slidably mounted on said sliding bracket and adapted to be operated by the typebars of said machine, and means to control the movements of said sliding bracket by said rods of said carriage.

8. In a typewriting machine, the combination with carriage brackets, a plurality of rods connecting said brackets and forming with said brackets a carriage, means to slidably and removably support said carriage on the frame of said typewriting machine, means to rotate said carriage around one of said rods, a rack attached to said carriage, a plurality of sliding members on said rack, a bell on the frame of said machine, a bell ringing member pivotally attached to said frame, lugs on said sliding members adapted to engage said bell ringing lever, means to release said sliding members from said rack, and means to disengage said lugs from said bell ringing lever.

9. In a typewriting machine, the combination with carriage brackets, a plurality of rods connecting said brackets and forming with said brackets a carriage, means to slidably and removably support said carriage on said frame, means to rotate said carriage around one of said rods, a spring adapted to pull said carriage in a direction of writing, a shaft supporting said spring, a bell attached to the outer end of said shaft, means to prevent said shaft from rotation, and means to release said preventing means.

Signed at New York in the county of New York and State of New York Feb. A. D. 1926.

GREGORY K. BLOCK.