

943,141.

T. J. COO.
TYPE WRITING MACHINE.
APPLICATION FILED NOV. 28, 1906.

Patented Dec. 14, 1909.
2 SHEETS—SHEET 1.

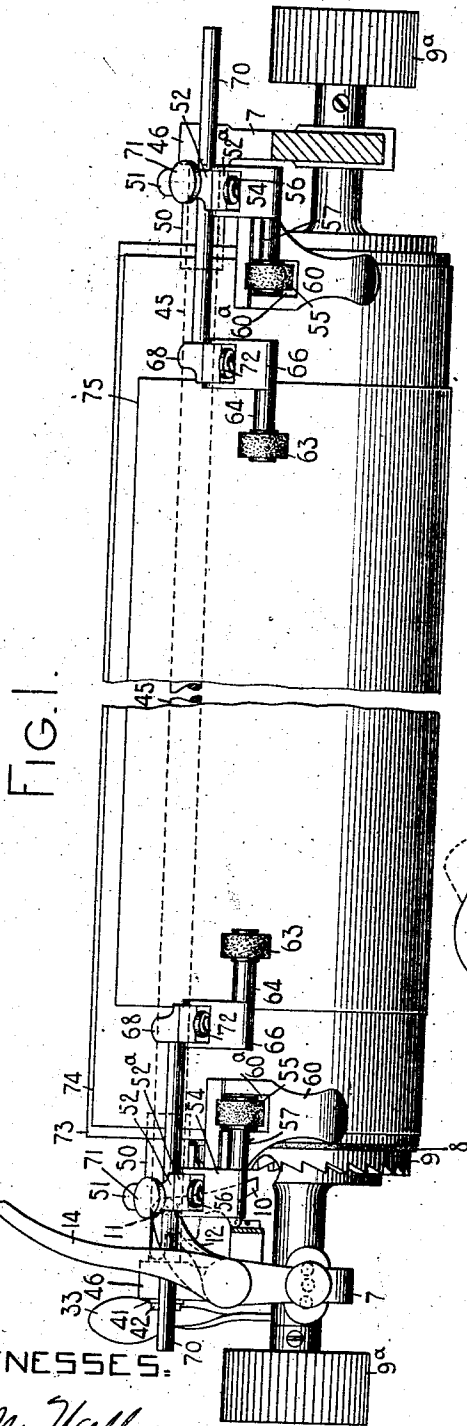


FIG. 1.

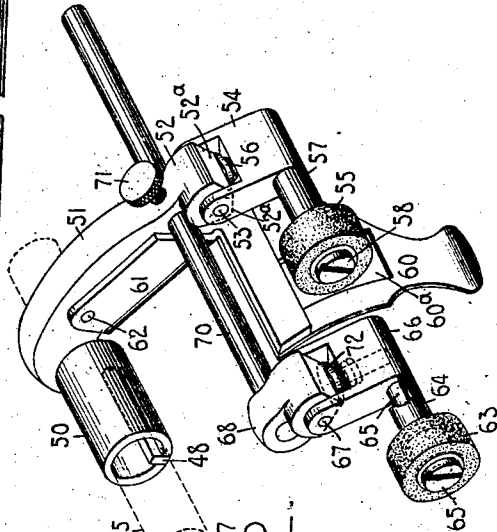


FIG. 2.

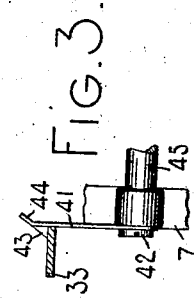


FIG. 3.

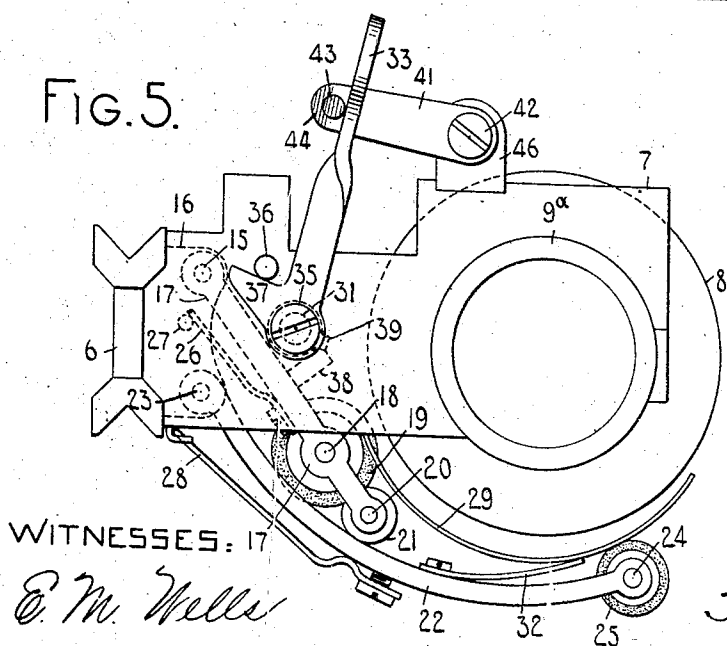
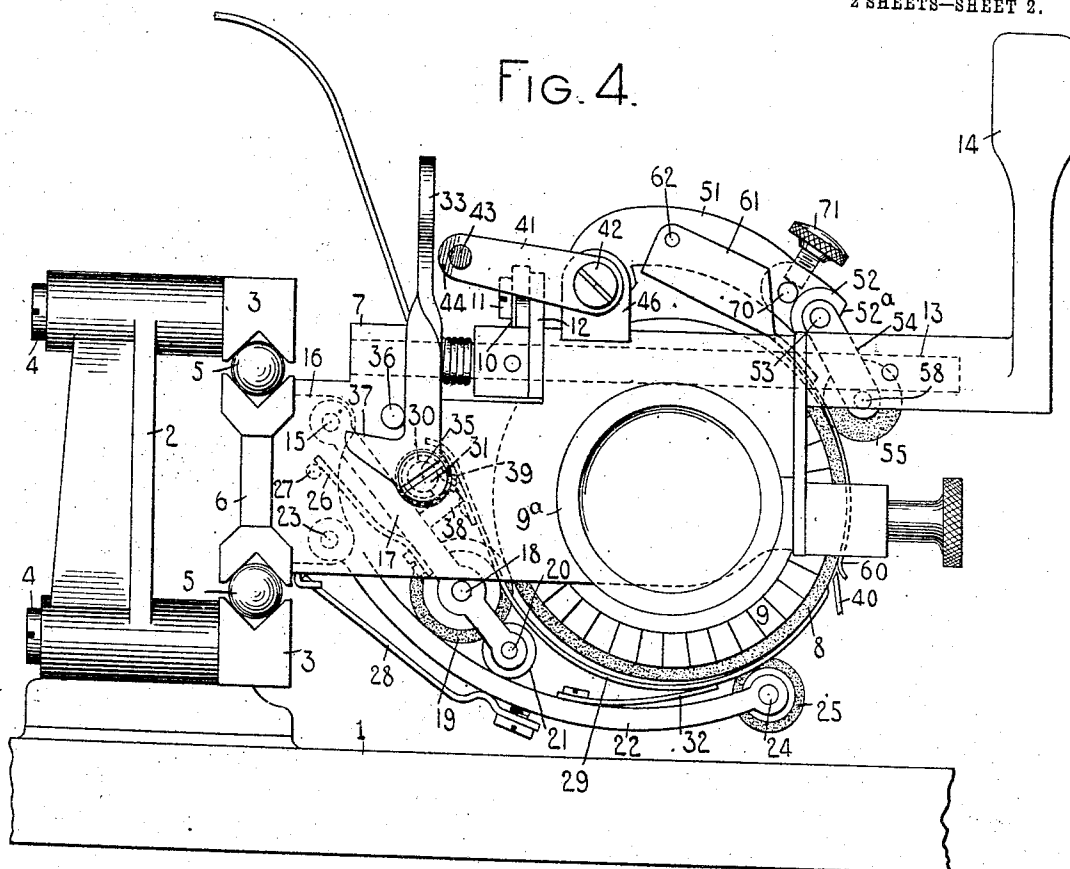
WITNESSES.
E. M. Wells.
R. H. Strother.

INVENTOR.
Thomas J. Coe
By Jacob K. Hill
HIS ATTORNEY

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2 SHEETS—SHEET 2.



WITNESSES: 17

E. M. Wells

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UNITED STATES PATENT OFFICE.

THOMAS J. COO, OF TORONTO, ONTARIO, CANADA. ASSIGNOR TO THE MONARCH TYPE-WRITER COMPANY, OF SYRACUSE, NEW YORK. A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

943,141.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed November 28, 1906. Serial No. 345,511.

To all whom it may concern:

Be it known that I, THOMAS J. COO, citizen of the Dominion of Canada, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and especially to means for controlling the paper in such machines.

My invention has for its principal object to facilitate the controlling of the sheets of paper used in doing what is known as condensed record work.

To this and other ends the invention consists in the features of construction and combinations and arrangements of parts, all of which will be fully set forth herein and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of the carriage of a typewriting machine having my invention embodied therein. Fig. 2 is an enlarged perspective view of a paper controlling device forming part of my construction. Fig. 3 is a fragmentary top view of a catch for the feed roll release lever. Fig. 4 is an enlarged end view of the upper rear part of the typewriting machine with the devices of my invention applied thereto. Fig. 5 is a similar view showing some of the parts shown in Fig. 4, but showing the feed rolls in their cast-off position.

In most of the figures of the drawings parts have been shown in section or broken away or have been omitted as has been found convenient.

My invention may be readily adapted to various styles of typewriting machines, but I have here shown it as applied to a Monarch typewriter. This machine comprises a top plate 1 from which rise brackets or standards 2 to which grooved track-ways 3 are secured by screws 4. Anti-friction balls 5 cooperate with said grooved track-ways and with oppositely grooved ways in a rear or slide bar 6 forming part of the carriage or platen carrier of the machine. Said carriage also comprises horizontal end bars or brackets 7 projecting forwardly from the ends of said slide bar and in which is journaled a cylindrical platen 8. Said platen carries at its left-hand end a line space

ratchet wheel 9 which is operated by a pawl 10 pivoted at 11 on an arm 12 operatively connected to a rock shaft 13 which carries a line space handle or lever 14. The line space wheel 9 is controlled by the usual detent mechanism (not shown). The line spacing mechanism is of the well known construction employed in the Monarch machine, or, as far as my invention is concerned, said mechanism may be of any suitable description. The platen is also provided with the usual finger wheels 9^a.

Pivoted at 15 in lugs 16 projecting forwardly from the rear bar 6, are downwardly and forwardly extending arms 17 in which is mounted a shaft 18 carrying the main feed rollers 19. Pivoted at 20 in the lower end portions of the arms 17 are small wheels 21 which are adapted to contact with arms 22 pivoted at 23 in the lugs 16, said arms 22 at their forward ends carrying a feed roll shaft 24 on which are mounted one or more forward feed rollers 25. Springs 26, secured to the hanger arms 17, cooperate with fixed abutments 27 to press the feed roller 19 toward the platen, and springs 28, secured to the hanger arms 22, press the feed rollers 25 toward the platen. The feed rollers protrude through suitable openings in a paper apron 29 which extends from side to side of the machine beneath and at the rear of the platen, and which at its rear edge is provided with parts 30 bent loosely around a shaft 31 which is journaled in the end bars 7 of the carriage, the construction being such that the paper apron is free to swing up and down about said shaft. Said paper apron is normally held close to the platen as shown in Fig. 4 by flat springs 32 secured to the upper sides of the arms 22.

The shaft 31 forms part of a feed roll release device which is operated by an arm or handle 33 which is mounted on the left-hand end of the shaft 31 where it is secured in place by a screw 35 threaded into the end of the shaft. The arm or handle 33 has a rocking motion which is limited by a stop pin 36 which projects from the left-hand end bar 7 just behind said arm in position to arrest said arm in its normal position. The feed rolls are released by drawing said handle toward the front of the machine in which direction its motion is limited by an arm 37 on the handle engaging the stop pin

36. Each of the hanger arms 17 has projecting from its upper forward side a pin 38, the end of which is beveled off for cooperation with a crank pin or arm 39 projecting toward the front of the machine from the rock shaft 31. The construction is such that when the handle 33 is drawn toward the front of the machine, the arms 39, acting on the pins or lugs 38, press the arms 17 away from the platen against the tension of the springs 26. At the same time the rollers 21 depress the arms 22 against the tension of the springs 28 and thus move the forward feed roll 25 away from the platen. The springs 32 moving with the arms 22 no longer hold the paper apron 29 against the platen and said paper apron accordingly drops by its own weight to the position shown in Fig. 5. The machine is also equipped with a scale plate 40 (Fig. 4) which is spring-pressed toward the platen in the usual manner. The parts thus far described are similar to the parts heretofore used in the Monarch typewriter.

For the purposes of my invention it is desirable that when the handle 33 is drawn forward, it be retained in that position so as to leave both hands of the operator free to manipulate the paper as, for instance, to insert a bill sheet into the machine. To this end I have provided a detent for said handle, said detent comprising a spring plate 41 secured to the carriage by the usual screw 42 which is ordinarily employed to connect one end of a frame rod to the platen frame as will hereinafter more clearly appear. The spring plate 41 carries at its rear end a beveled pin 43 which is adapted to snap in behind the arm 33 as shown in Figs. 3 and 5. The rear end of the spring 41 is bent off at an angle as shown at 44 in order to increase the length of the beveled surface by means of which the arm 33 presses the spring 41 toward the right when said arm is drawn toward the front of the machine. When it is desired to release the handle 33, the spring 41 may be pressed toward the right by the finger of the operator, whereupon the springs 26 and 28 will restore the feed rolls and paper apron to operative position. In assembling the machine the handle 33 is drawn forward to its releasing position, shown in Fig. 5, and the spring catch 41 is adjusted by turning it up or down about the screw 42 as a pivot until the pin 43 is in position to hold the handle 33 in said releasing position, after which the screw 42 is tightened to retain the catch in its adjusted position.

My invention comprises paper fingers or paper controlling devices cooperating with the front face of the platen to control a comparatively wide record sheet and carbon sheet and separate controlling devices cooperating with the front face of the platen to control a comparatively narrow bill sheet.

These several paper fingers are mounted on the supporting or frame rod 45, hereinbefore referred to, which connects the two end bars 7 of the carriage, passing about the platen. Said frame rod is mounted at its ends in brackets 46, rising from the end bars 7 and said frame rod is secured in place by headed screws threaded into the end of the rod, the screw 42, as shown in the present instance, being one of these securing screws. The rod 45 has a longitudinal groove 47 therein, in which groove lies an internal spline 48 of a sleeve-like hub 50 of an arm 51 of the support for the paper fingers for one end of the platen. The construction is such that the support may be adjusted lengthwise of the platen from end to end thereof by sliding it along the rod 45, but it cannot turn about said rod. One of these supports and the paper controlling devices mounted thereon is shown in Fig. 2 and the other support is similar to it except that the parts are reversed for cooperation with the other end of the platen and the same reference letters are applied to these devices at both ends of the platen. The forward end of each arm 51 is formed into a head 52 to which are pivoted at 53 the two arms of a bifurcated, block-like arm 54 on which is mounted a small roller 55. The head 52 is formed with two faces 52^a at an angle with each other for cooperation with a spring-pressed plunger 56 seated in the arm 54 and pressed toward the head 52. The construction is such that when the arm 54 is turned downward the plunger 56, cooperating with the lower one of the two faces 52^a of the head 52, presses the roller 55 against the paper, but if the arm 54 be raised by the operator until the plunger 56 passes the angle between the two faces 52^a of the head 52, said plunger serves to retain the arm in an elevated position in which the roller 55 is held away from the platen. The roller 55 has an elongated hub 57 that is journaled on a headed screw 58 that is threaded into one side of the arm 54. Each paper finger for the wide sheet of paper comprises a plate-like guiding portion 60 mounted on an arm 61 pivoted at 62 to the associated supporting arm 51, and each guiding portion 60 is apertured at 60^a to permit the associated roller to bear against the paper as it passes under the guide.

For cooperation with the narrow sheet of paper or bill sheet there is an auxiliary paper controlling device comprising a roller 63, the elongated hub 64 of which is journaled on a headed screw 65 threaded into one side of an arm 66 which is or may be substantially like the arm 54 above described. Said arm 66 is bifurcated and pivoted at 67 to a head 68 that is mounted on the inner end of a rod 70 that extends longitudinally of the platen and passes freely through an opening in the supporting arm 130

51 so that said rod may be adjusted lengthwise of the platen by sliding it through said supporting arm. The rod 70 is retained in its adjusted position by a set screw 71 threaded into the arm 51 and at its inner end engaging said rod 70. The arm 66 is provided with a spring-pressed plunger 72 which coöperates with the angled faces of the head 68 in the same manner as the plunger 56 with the head 52, the construction being such that the arm 66 may be swung up or down about its pivot 67 bringing it out of or into operative position, and said arm will be retained in either of said positions by said spring plunger. The sleeve 50 and supporting arm 51 are slidable longitudinally of the frame rod 45, whereby both paper fingers may be adjusted together lengthwise of the platen. It will be understood that the two paper controlling devices may thus be adjusted together and that the auxiliary paper controlling device is also independently adjustable lengthwise of the platen by sliding the rod 70 in the supporting arm 51 and also that either of the paper fingers may be elevated out of operative position independently of the other. It will also be understood that the same manipulation of the parts is possible at both ends of the platen.

My invention is designed with especial reference to doing condensed record work. In doing this work bills are written on the typewriting machine on comparatively small sheets of paper which are hereinafter called bill sheets and a condensed record of everything written by the typewriting machine on these bill sheets is made by carbon paper on larger sheets of paper which are herein called record sheets. The matter written on any one bill sheet may consist of only a few lines and it is the purpose of the present invention to facilitate the duplicating of this matter on the record sheet, a short and uniform space being left between successive records.

In Fig. 1 the paper is shown in place in the machine ready for use, 73 designating the comparatively wide record sheet, 74 a sheet of carbon paper also comparatively wide, and 75 the bill sheet which is comparatively narrow and which is usually comparatively short. In said Fig. 1 the several sheets of paper are shown about in the position they occupy at the beginning of a new bill sheet and a new record sheet, the bill sheet 75 shown in the machine being the first of several to be duplicated on the record sheet 73 by means of the carbon sheet 74. The several sheets of paper are placed in the machine in about the position shown in said Fig. 1; that is to say, the record sheet is placed appropriately for writing the first line thereof and the bill sheet is adjusted in the machine so that the first writing line

thereof is at the line of writing in the machine, although in practice the bill sheet is generally given a "lead" over the record and carbon sheets in order to bring the first line reproduced on the record sheet near the top thereof. The sheets of paper may be brought to this position all together, or the record sheet and carbon sheet may be suitably positioned in the machine and the bill sheet be inserted afterward and independently adjusted. Each of the paper controlling devices comprising the plate 60 and roller 55, is then adjusted for suitable coöperation with the record sheet and carbon sheet and so that it will not coöperate with the bill sheet. The set screws 71 are loosened and the paper controlling devices comprising the rollers 63 for the bill sheet, are then adjusted longitudinally of the platen for proper coöperation with said bill sheet. The parts being adjusted and the paper being in proper position the bill is written, the platen being turned for the necessary line spacing and all three of the sheets of paper being fed together until the bill is completed. The platen is then rotated a distance suitable for the spacing between two of the records on the record sheet or for providing a suitable space between the last written line of one bill reproduced on the record sheet and the first line of the next bill to be reproduced on said sheet. This is usually done by operating the line spacing lever 14 twice. The handle 33 is then drawn toward the front of the machine until it is caught by the spring catch 41 and retained in that position with the feed rolls 19 and 25 and paper apron 29 held away from the platen. The two rollers 63 are then moved upward to their inoperative positions, thus entirely freeing the bill sheet 75 from the paper controlling devices, but leaving the record and carbon sheets still held by the paper fingers 55, 60, it being understood that the light pressure which may be exerted by the paper scale 40 is insufficient to have any appreciable effect on the bill sheet. The top of the bill sheet may now be grasped by the fingers and withdrawn from the machine without disturbing the record and carbon sheets which are held in position against the platen by the paper fingers 66 and rollers 55. A new bill sheet is then inserted in the machine from the back of the platen, its forward edge being guided by the paper apron 29. This sheet is pushed forward until its leading edge appears above the scale plate when said leading edge may be grasped by the fingers and the bill sheet be adjusted to bring the first writing line thereof to the printing point, the record sheet and carbon sheet being still retained in the position in which they were left before the first bill sheet was removed from the machine. When the new bill sheet is properly adjusted the rollers 63 are

snapped down against it and the spring catch 41 is released, permitting the feed rollers 19 and 25 and the paper apron to return to operative position. The new bill

is then written on the new bill sheet and duplicated in its proper place on the record sheet, after which the line-spacing handle 14 is again operated to space between records and the second bill sheet is removed from the machine and replaced by a third in the same manner as above described. This process is continued until the record sheet is filled when said record sheet is removed from the machine and is either replaced with a new record sheet or is turned over to be written on its opposite side as desired.

It will be observed that the rollers 63 which cooperate with the bill sheet are mounted on the inner ends of the rods 70 so that said rods do not project over the part of the paper that has been written on. There is thus nothing about my attachments to obstruct the vision of the operator, it being understood that the rollers 63 cooperate with the bill sheet at or near the side margins thereof and preferably beyond the printing field.

From the foregoing description it will be seen that the axes of the rollers 55 and 63 are coincident and parallel to the axis of the platen; that said rollers are situated in different planes which extend transversely of the platen, so that the rollers 63 may cooperate with sheets of one width, whereas the rollers 55 and the paper fingers 60 may cooperate with a sheet or sheets of a different width and not with the sheet controlled by the rollers 63 and that the rollers 55 and 63 cooperate with the paper after it passes the printing line and are located in front of the platen and above the printing line. It will also be seen that my invention may be applied to the Monarch machine without changing the structural features of that machine.

Various changes may be made in the details of construction and arrangement without departing from my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination of a platen, two paper controlling devices for cooperation with different sheets of paper above the writing line and at the same end of the platen, one of said devices being arranged to act on one sheet and the other of said devices to act on another sheet while said sheets are being fed at the same time through the machine, and a common support for said paper controlling devices adjustable lengthwise of the platen.

2. In a typewriting machine, the combination of a platen, two paper controlling devices for cooperation with different sheets of paper at the same end of the platen, one of

said devices being arranged to act on one sheet and the other of said devices to act on another sheet while said sheets are being fed at the same time through the machine, a common support for said paper controlling devices adjustable lengthwise of the platen, and means whereby one of said paper controlling devices may be moved away from the platen independently of the other.

3. In a typewriting machine, the combination of a platen, two paper controlling devices for cooperation with the same end of the platen, a common support for said paper controlling devices adjustable lengthwise of the platen, and means whereby one of said paper controlling devices may be adjusted lengthwise of the platen on said support.

4. In a typewriting machine, the combination with a platen, of a paper controlling device for cooperation with a comparatively wide sheet of paper, a support for said paper controlling device adjustable lengthwise of the platen, a second paper controlling device for cooperation with a comparatively narrow sheet of paper, and a support for said second paper controlling device adjustably mounted on the first mentioned support.

5. In a typewriting machine, the combination with a platen, of two paper fingers for cooperation with the two sides of a comparatively wide sheet of paper; two paper controlling devices for cooperation with a comparatively narrow sheet of paper, and two supports one at each side of the paper, each of said supports carrying one of said paper fingers and one of said paper controlling devices and adjustable lengthwise of the platen.

6. In a typewriting machine, the combination of a platen, paper feeding devices spring-pressed toward said platen, a handle for releasing said paper feeding devices, and a spring catch comprising a plate-spring having a latching tooth, said plate-spring being mounted on the platen frame and said tooth being adapted to engage said handle to lock said paper feeding devices in inoperative position.

7. In a typewriting machine, the combination of a platen, a platen carrier, paper feeding devices spring-pressed toward said platen, a handle for moving said paper feeding devices away from said platen to inoperative position, a spring catch mounted on said platen carrier and adapted to engage said handle to lock said paper feeding devices in inoperative position, paper fingers for cooperation with a comparatively wide sheet of paper, supports for said paper fingers, auxiliary paper fingers for cooperation with a comparatively narrow sheet of paper, means whereby said auxiliary paper fingers may be moved away from the paper to inoperative position and retained in such position, and supports for said auxiliary paper

fingers comprising rods adjustably mounted on the supports for the first mentioned paper fingers.

8. In a typewriting machine, the combination of a platen, a platen carrier, a paper finger mounted on said platen carrier and adapted to cooperate with the side of a comparatively wide sheet of paper, an auxiliary paper finger for cooperation with a comparatively narrow sheet of paper, and a support for said auxiliary paper finger extending from the side of the paper toward the middle thereof, said auxiliary paper finger being mounted on said support substantially at the inner end thereof.

9. In a typewriting machine, the combination of a platen, a paper finger for cooperation with the side of a comparatively wide sheet of paper, a support for said paper finger adjustable longitudinally of the platen, a rod mounted in said support and extending longitudinally of the platen and adjustable in the direction of its length, and an auxiliary paper finger mounted on the inner end of said rod and adapted to cooperate with the side of a comparatively narrow sheet of paper.

10. In a visible typewriting machine, the combination of a platen, a platen carrier, a rod or bar parallel with the platen and above and beyond the writing line and so arranged that the paper above the writing line passes in front of said rod or bar, a pair of paper guiding devices carried by said rod or bar and arranged to cooperate with the sides of a comparatively wide sheet of paper, and a second pair of paper guiding devices carried by said rod or bar and situated nearer to the middle of the machine whereby said second pair of paper guiding devices are adapted to cooperate with a comparatively narrow sheet of paper.

11. In a visible typewriting machine, the combination of a platen, a platen carrier, a rod or bar parallel with the platen and above or beyond the writing line and so arranged that the paper above the writing line passes in front of said rod or bar, a pair of paper guiding devices carried by said rod or bar and arranged to cooperate with the sides of a comparatively wide sheet of paper, and a second pair of paper guiding devices carried by said rod or bar and situated nearer to the middle of the machine whereby said second pair of paper guiding devices are adapted to cooperate with a comparatively narrow sheet of paper, all of said paper guiding devices being adjustable lengthwise of the platen.

12. In a visible typewriting machine, the combination of a platen, a platen carrier, a rod or bar parallel with the platen and situated above or beyond the writing line so that the paper above the writing line passes in front of said rod or bar, a device mount-

ed on said rod or bar and adjustable lengthwise thereof, and two paper guiding devices carried by said adjustable device, one of said paper guiding devices being nearer the middle of the machine than the other for cooperation with a narrower sheet of paper than the other.

13. In a visible typewriting machine, the combination of a platen, a platen carrier, a rod or bar parallel with the platen and above and beyond the writing line and so arranged that the paper above the writing line passes in front of said rod or bar, a pair of paper guiding devices carried by said rod or bar and wholly off-set and projecting inwardly from and beyond the supporting means which connect said devices with the bar, said pair of guiding devices being arranged to cooperate with the sides of a comparatively wide sheet of paper, and a second pair of guiding devices carried by said rod or bar and situated nearer the middle of the platen whereby said second pair of paper guiding devices are adapted to cooperate with a comparatively narrow sheet of paper, the said second pair of paper guiding devices being wholly off-set and projecting inwardly from and beyond the supporting means which connect said devices with the bar.

14. In a visible typewriting machine, the combination of a platen, a platen carrier, a rod or bar parallel with the platen and above or beyond the writing line and so arranged that the paper above the writing line passes in front of said bar, a pair of paper guiding devices carried by said rod or bar and arranged below the same, to cooperate with the sides of a comparatively wide sheet of paper, the paper passing beneath said paper guiding devices and thence over the bar, and a second pair of paper guiding devices carried by said rod or bar and situated below the bar and nearer the middle of the platen whereby said second pair of guiding devices are adapted to cooperate with a comparatively narrow sheet of paper before it reaches said bar and to aid in directing the paper in front of and over the bar, all of said paper guiding devices being adjustable lengthwise of the platen.

15. In a visible typewriting machine, the combination of a platen, two paper controlling devices arranged at different points lengthwise of the platen for cooperation with different sheets of paper above the writing line and at the same end of the platen, a common support for said paper controlling devices adjustable lengthwise of the platen, and means for effecting a relative adjustment between said paper controlling devices.

16. In a visible typewriting machine, the combination of a platen, two paper control-

ling devices arranged at different points lengthwise of the platen for coöperation with different sheets of paper above the writing line and at the same end of the platen, and a common support for said paper controlling devices and from which the said devices are wholly off-set inwardly toward the middle of the platen.

17. In a visible typewriting machine, the combination of a platen, two paper controlling devices arranged at different points lengthwise of the platen for coöperation with different sheets of paper above the writing line and at the same end of the platen, a supporting rod or bar that extends longitudinally of the platen, and a common support for said paper controlling devices, said support being carried by and adjustable along said supporting bar and depending therefrom, the paper controlling devices being wholly off-set inwardly from said support.

18. In a visible typewriting machine, the combination of a platen, two paper controlling devices arranged at different points lengthwise of the platen for coöperation with different sheets of paper above the writing line and at the same end of the

platen, a common support for said paper controlling devices and from which the said devices are wholly off-set inwardly toward the middle of the platen, and means for effecting a relative adjustment between said paper controlling devices.

19. In a typewriting machine, the combination of a platen, two paper controlling devices for coöperation with different sheets of paper above the writing line and at the same end of the platen, one of said devices being arranged to act on one sheet and the other of said devices to act on another sheet while said sheets are being fed at the same time through the machine, paper controlling devices at the other end of the platen, and a common supporting member for adjusting simultaneously the two paper controlling devices first recited toward and from said paper controlling devices at the other end of the platen.

Signed at city of Toronto in the county of York and Province of Ontario this 19th day of November A. D. 1906.

THOMAS J. COO.

Witnesses:

E. R. CAMPBELL,
W. H. NUEVERNIE.