

945,951.

H. W. HIGHAM.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 3, 1905.

Patented Jan. 11, 1910.

4 SHEETS—SHEET 1.

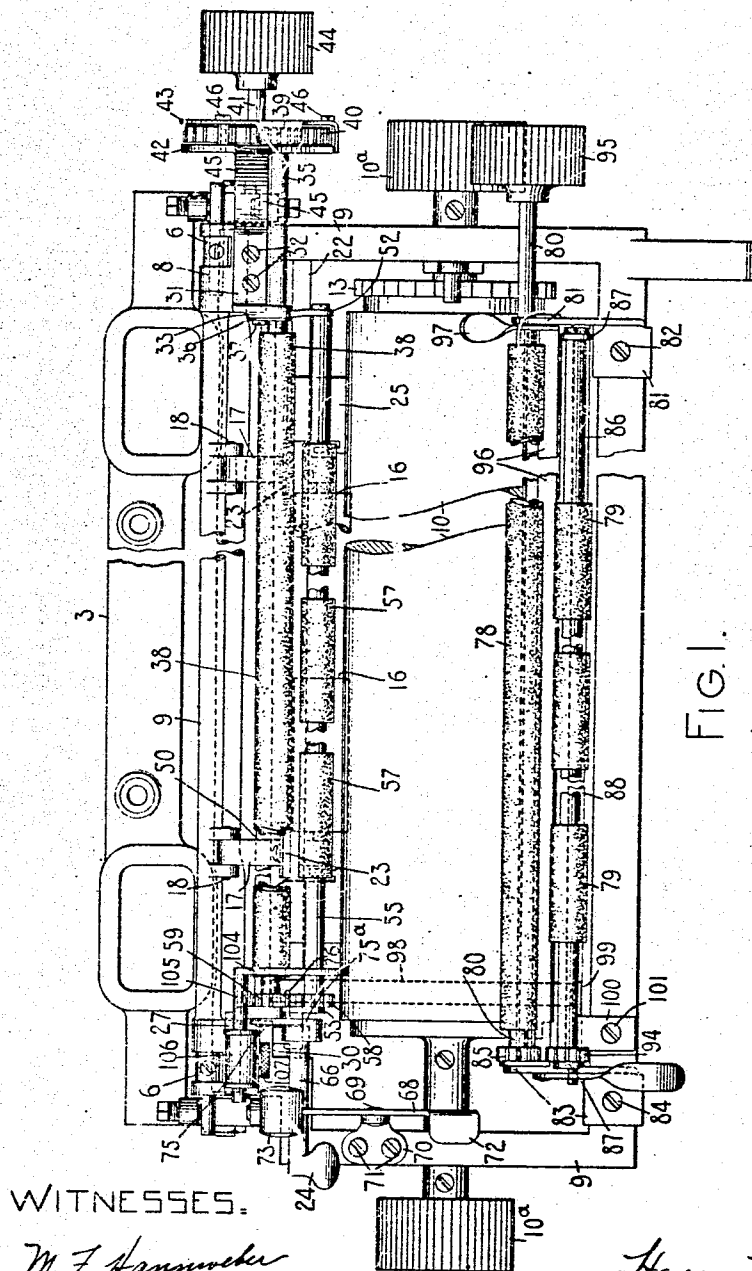


FIG. 1.

WITNESSES.

M. F. Hammer

E. M. Wells.

INVENTOR

Harry W. Higham

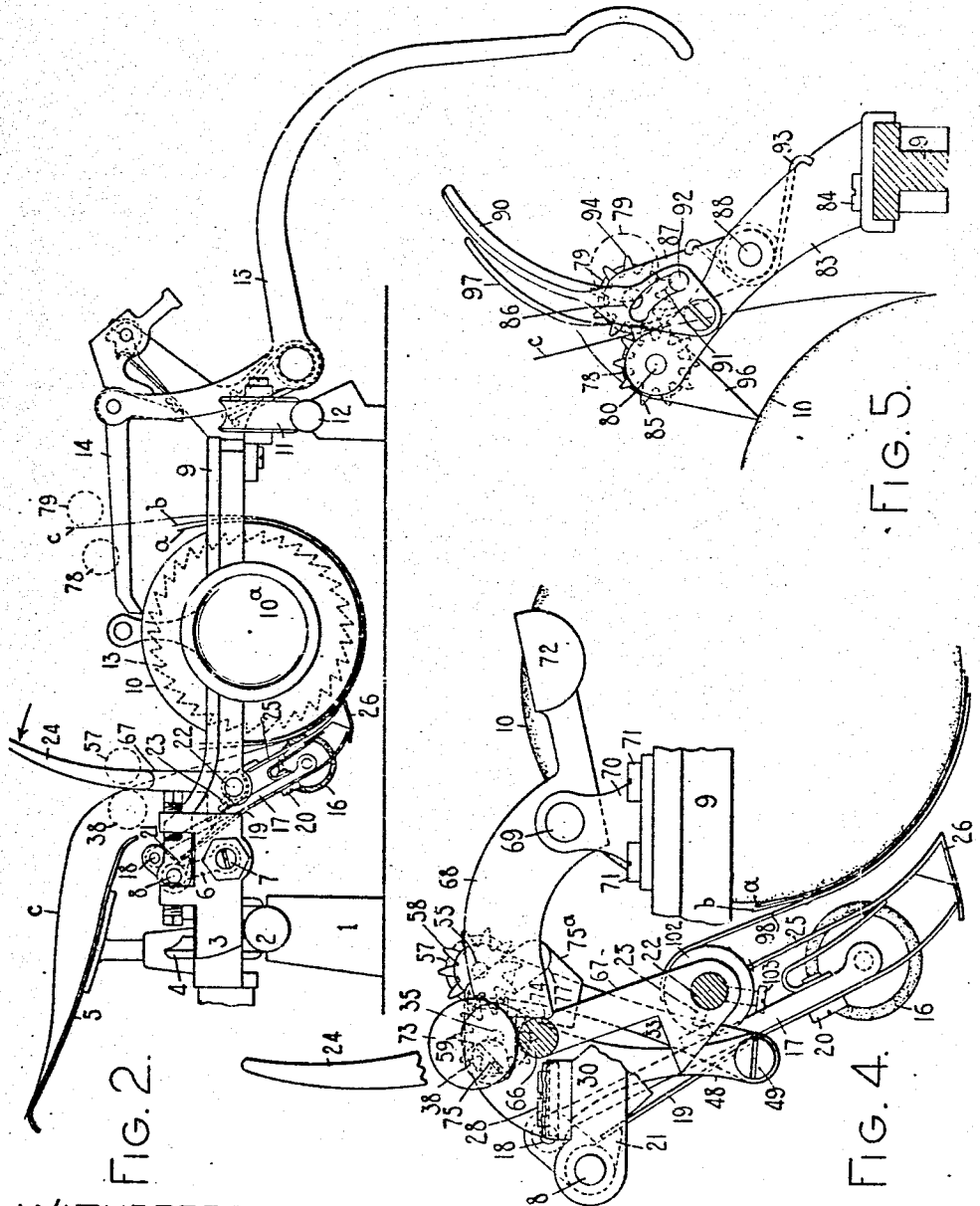
By Jacob Fabel

HIS ATTORNEY

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4 SHEETS-SHEET 2.



WITNESSES.

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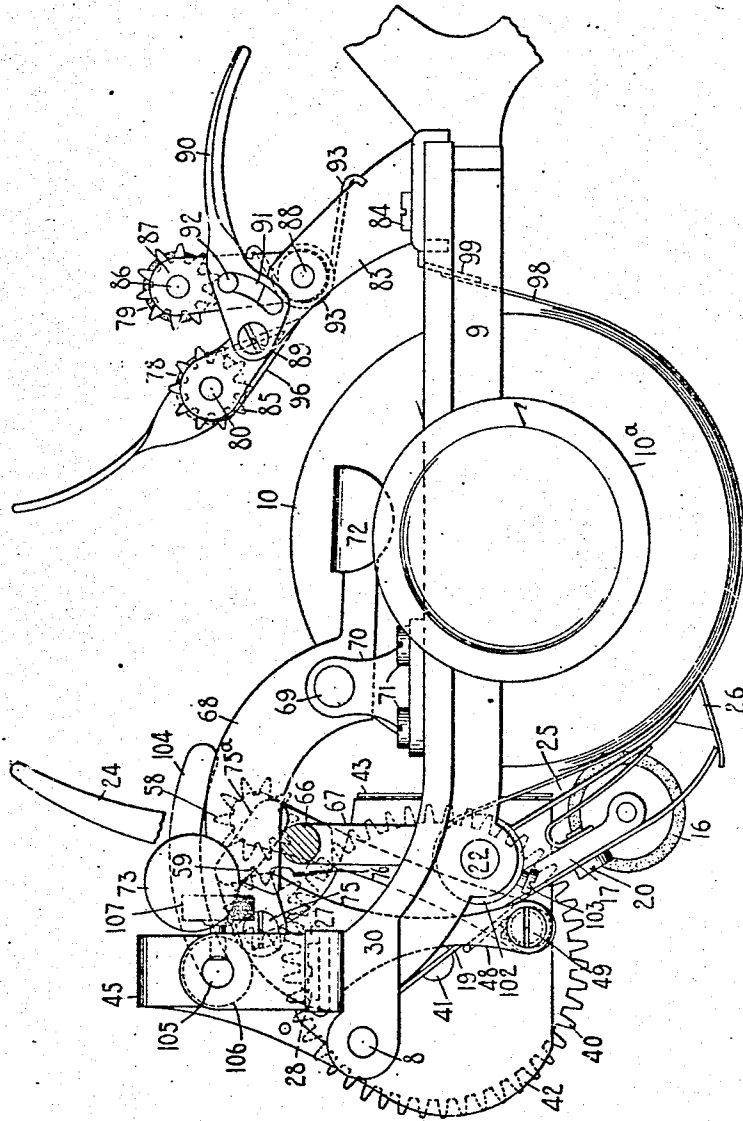
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4 SHEETS—SHEET 3.

FIG. 3.



WITNESSES:

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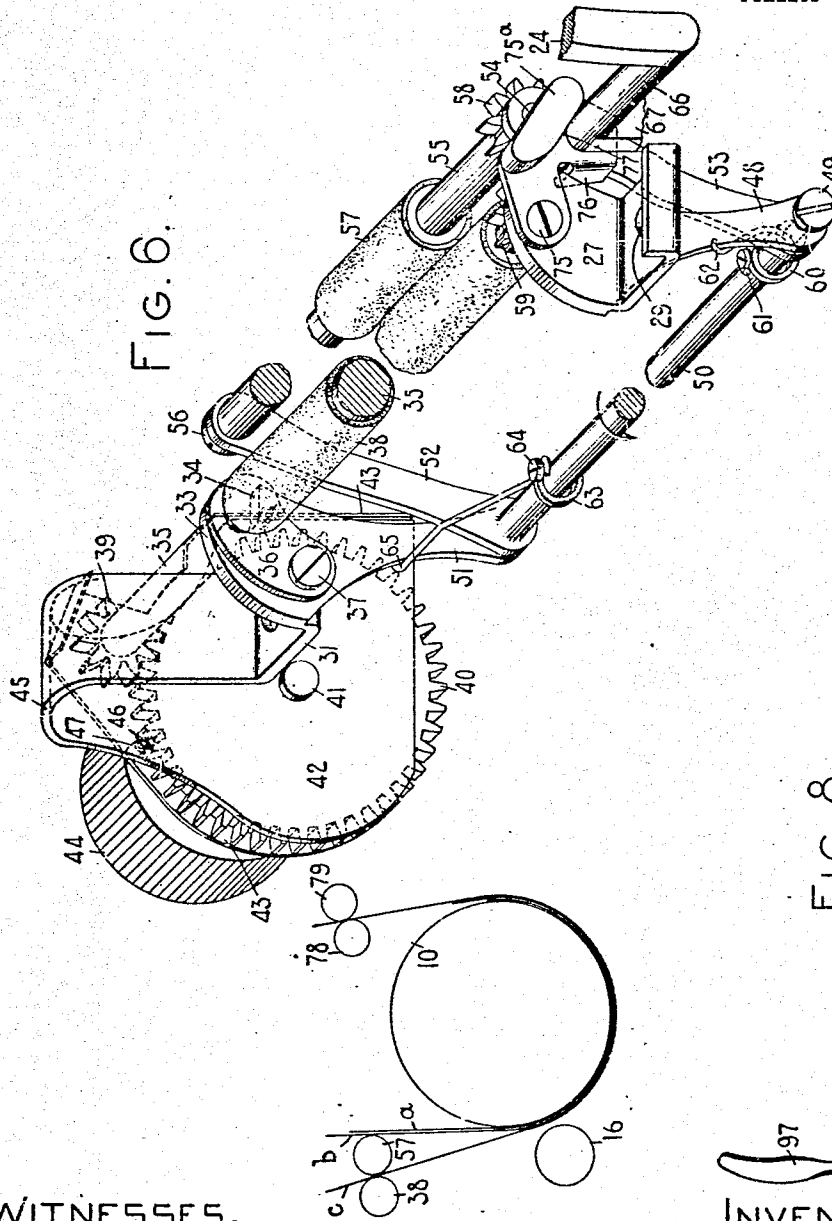


FIG. 6.

FIG. 8.

WITNESSES.

M. F. Hannweber

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FIG. 7.

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UNITED STATES PATENT OFFICE.

HARRY WILLIAM HIGHAM, OF SANDERSTEAD, ENGLAND, ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

945,951.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed October 3, 1905. Serial No. 281,159.

To all whom it may concern:

Be it known that I, HARRY WILLIAM HIGHAM, subject of the King of Great Britain, and resident of Glen Lyn, Sanderstead Hill, Sanderstead, Surrey, England, have invented certain new and useful improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to improvements in typewriting machines and has for its object to provide means for feeding or controlling two or more sheets of paper independently of each other, and is particularly adapted for billing work. For example, assuming that invoices are being written and it is desired that either the totals of such invoices or all or certain items of said invoices be transferred to a supplementary sheet of paper, which may, for the sake of clearness of description, be referred to as "day book" or "condensed record sheet", it is necessary, in order that the matter written upon the invoice sheets may be readily transferred to the condensed record sheet, that said invoices be independent of, and capable of adjustment independently of said condensed record sheet or vice versa.

In order to effect the above results I provide the machine with secondary paper feeding mechanism which is preferably thrown into action simultaneously with the release of the primary paper feeding mechanism, the term "primary feeding mechanism" being employed to designate the usual feed mechanism arranged to act in conjunction with the platen.

To the above and other ends which will hereinafter appear, my invention consists in the features of construction, arrangements of parts and combinations of devices to be hereinafter described and particularly pointed out in the appended claims.

I will now proceed to describe the invention in connection with the accompanying drawings, wherein the same reference characters refer to corresponding parts in the various views and wherein—

Figure 1 is a top plan view of one form of typewriting machine carriage with features of construction embodying my invention shown applied thereto, parts being broken away and other parts being omitted. Fig. 2 is an end elevation of the same, certain features of my construction being illustrated diagrammatically. Fig. 3 is an en-

larged detail end view of the platen and platen frame with my secondary feed mechanism shown mounted thereon. Fig. 4 is an enlarged detail end elevation of certain of the parts shown in Fig. 3 in altered relations. Fig. 5 is an enlarged detail end view showing other features of the construction. Fig. 6 is an enlarged detail perspective view of portions of the secondary feed mechanism. Fig. 7 is a diagrammatic end elevation showing certain features of the primary and secondary feed mechanism and the manner in which they cooperate with the different work sheets. Fig. 8 is a perspective rear view of one of the elements of the secondary paper feed mechanism to be hereinafter more fully described.

I have shown my invention applied to a No. 6 Remington machine, though it should be understood that the invention may be applied to various kinds of typewriting machines.

Referring more particularly to Figs. 1 and 2, 1 indicates lugs which project upwardly from the top plate and support a traverse or guide rod 2. A carriage truck 3 is provided with rollers 4 that bear upon the rod 2 and guide the truck in its movement from side to side of the machine. A paper table 5 is supported in place on the truck and links 6 are pivoted to the truck at 7 and are likewise pivotally connected at 8 to a platen frame 9 that supports a cylindrical platen 10 having finger wheels 10^a. The front bar of the platen frame carries a grooved roller 11 which bears upon a shift rail 12, said shift rail supporting the forward end of the platen frame and being operative by a known form of mechanism to effect a transverse movement of the platen by shifting the platen frame on its links 6, to change position for upper and lower case writing. One end of the platen is provided with a line spacing ratchet wheel 13 with which a line spacing pawl 14 cooperates, the latter being actuated in the usual manner by a hand lever 15. Paper feed rollers 16 are supported by arms or hangers 17 pivoted at 18 to the platen frame. Leaf springs 19 are each secured by a screw 20 to a depending hanger arm 17, the upper free end of each spring cooperating with a lug or abutment 21 on the platen frame in order to force the feed rollers toward the platen. A rock shaft 22 is mounted in bearings in the platen frame and extends

throughout the length thereof. This rock shaft is provided with projecting wings or fingers 23 that cooperate with the depending hanger arms 17, so as to move them laterally against the tension of their springs 19 when the rock shaft is turned in the direction of the arrow in Fig. 2 by a movement of a finger piece or release lever 24 fixed at the left end of said rock shaft 22. The usual paper apron 25 and scale plate 26 are employed together with other paper feeding devices of the usual construction.

So much of the machine as has been thus far described, constitutes portions of the well-known No. 6 Remington machine.

In addition to the ordinary paper feeding devices, including the feed rollers 16, that cooperate with the platen 10 to feed the paper, and which may be termed the primary paper feeding devices, I employ secondary paper feeding devices which are preferably in the nature of attachments that may be secured to existing forms of type-writing machines, such, for instance, as the No. 6 Remington machine, without modifying the structural features of said machine. These attachments include a bracket 27 that may be secured in place near one end of the platen frame by a headed screw 28 (Fig. 3), the stem of which passes through an opening 29 in the bracket (Fig. 6) and is threaded into the left hand rear corner portion 30 of the platen frame. Another bracket 31 is secured in a like manner to the platen frame near the opposite end thereof by screws 32. As seen in Fig. 6, the bracket 31 has an upwardly extending arm 33 that is notched at 34 to form a bearing for a shaft 35, the opposite end of the shaft being supported in a bearing in the bracket 27. A plate 36 is secured to the arm 33 by a screw 37 and is formed with an aperture to receive the shaft 35 to prevent it from being displaced from the notched bearing in the arm 33. That portion of the shaft 35 that is contained between the brackets 27 and 31 is provided with a sheath of rubber or like material, as indicated at 38, so as to form a paper feed roller. The right-hand end of the shaft 35 has a pinion 39 secured thereto and this pinion meshes with a gear 40 secured to a spindle 41 that is mounted in parallel bearing plates 42 and 43. The outwardly extending end of the spindle 41 has a finger wheel 44 secured thereto so that the gear 40 may be rotated by the finger wheel and motion transmitted to the paper feed roller 38 through the pinion 39. The bearing plate 42 is preferably formed as a part of the bracket 31, the two being connected by a U-shaped connecting member 45 and the other bearing plate 43 is connected to the plate 42 by screws 46 and intermediate spacing sleeves 47. The bracket 27 has a depending arm 48 which is

tapped at its lower end to receive a screw pivot 49 that supports one end of a rock shaft 50. The opposite end of this rock shaft is pivotally supported in an arm 51 extending down from the bracket 31 and preferably formed on said bracket. The rock shaft 50 has upwardly extending crank arms 52, 53, which are rigidly connected to or formed integrally with the rock shaft. The upper end of the arm 53 is apertured to form a bearing for the reduced end 54 of a rotary shaft 55. The opposite end of this shaft is pivotally supported on the arm 52 by a headed bearing screw 56. The shaft 55 has a series of rubber or like sheaths or paper feed rollers 57 secured thereto. The left end of the shaft 55 has a pinion 58 fixedly secured to it and this pinion is adapted to mesh with a pinion 59 fixed on the shaft 35. A coiled spring 60 has one of its ends secured at the left hand end of the shaft 50 by a screw 61, the opposite end of the spring being hooked around the depending arm 48 at 62. Another coiled spring 63 is likewise secured at one end to the right hand end of the rock shaft by a screw 64, the opposite end of said spring being hooked around the depending arm 51, as indicated at 65. The tension of the springs 60 and 63 tends to turn the rock shaft in the direction of the arrow in Fig. 6, thus tending to force the feed rollers 57 into contact with the feed roller 38 and to bring the pinions 58 and 59 into mesh. When these pinions are in mesh and the feed rollers are brought into cooperation in the manner stated, a turning of the finger wheel 44 will cause the shafts 35 and 55 to be rotated in opposite directions to turn the feed rollers. It will be seen that the feed rollers 38 and 57 do not cooperate with the platen but cooperate with each other to effect a feed movement of the paper or work sheet in the direction of its line feed independently of the platen, as will hereinafter more clearly appear. These secondary paper feeding rollers 38 and 57 are located at that side of the platen where the paper is introduced as is clearly indicated in Fig. 2, and the axes of these rollers are parallel with the axis of the platen.

In the No. 6 Remington machine, the release lever 24 for throwing off the feed roller 16, is formed with a horizontally disposed portion 66 that connects the finger engaging portion with an upright portion 67 which is fixedly connected to the rock shaft 22. I have provided a catch or lock 68 for cooperating with the release lever at the horizontally disposed portion 66 thereof, and this catch comprises a lever pivoted at 69 to a bracket 70 that is secured in place by screws 71 to the left-hand end of the platen frame. The forward end of this lever-like catch or lock is provided with a finger piece

72 and the rear end with a weight 73 that tends to maintain the forward end of the lever elevated and the rear end depressed, as indicated in Fig. 4. A shoulder 74 is formed at the rear end portion of the lever 68 for cooperation with the horizontally disposed portion 66 of the feed roll release lever, as indicated in Fig. 4. When the feed roll release lever is moved rearwardly to the position shown in Fig. 4, so as to turn the rock shaft 22, thereby forcing the feed rollers 16 away from the platen, the shoulder 74 will drop forward of the horizontal portion 66 of the release lever and the weight 73 will rest on top of said portion 66. The catch or lock 68 is thus brought into locking engagement with the release lever so as to prevent the latter from resuming its normal position under tension of the springs 19, and so as to lock the usual and ordinary paper feed roller 16 away from the platen. In order to release the lever 24, it is merely necessary to depress the finger piece 72 which elevates the rear end of the catch or lever 68, thus lifting the shoulder 74 from engagement with the member 66 of the release lever 24. The springs 19 will thereupon force the feed roller 16 into contact with the platen, or the paper thereon, and will turn the rock shaft 22 and the release lever 24 back to the normal position shown in Fig. 2.

Pivoted at 75 to the bracket 27 which supports the left hand end of the feed roller 38 is an actuating device 75^a, clearly shown in Fig. 6. This actuating device comprises a projection or arm 76 that is bent laterally from the body portion of the device and extends into the path of an arm 53 which serves as a support for the feed rollers 57. A laterally extending cam 77 projects from the actuating device into the path of the portion 66 of the release lever 24. When the release lever is moved rearwardly from the position indicated in Figs. 3 and 6 to that shown in Fig. 4, it will be moved away from the cam 77 of the actuating device, and the pressure of the springs 60 and 63 will be effective to move the feed rollers 57 into contact with the feed roller 38. When, however, the release lever 24 is released from its catch 68 and allowed to resume its normal position indicated in Figs. 1, 3 and 6, the inner end of the portion 66 of the release lever will engage the under part of the cam 77 and force the actuating device 75^a around its pivot 75, thereby causing the projection or arm 76 thereof to engage the feed roll supporting arm 53 and force it together with the feed rollers 57 forward, the feed rollers 57 being moved away from or out of contact with the feed roller 38. It will be understood that in order to accomplish this result the springs 60 and 63 must be weaker than the springs 19 which are effective to

restore the feed rollers 16 and the lever 24 to the normal position. This is necessary in order that the springs 19 may overcome the resistance offered by the springs 60 and 63 to the separation of the feed rollers 38 and 57.

From the foregoing description it will be seen that I have provided supplementary or secondary feed rollers 38 and 57 that may be rotated by the finger wheel 44 independently of the platen and that these feed rollers are automatically thrown into operation or cooperative relation to feed the paper when the primary feed rollers 16 are thrown out of operation or out of cooperation with the platen by a rearward movement of the release lever 24; and when the release lever 24 is moved forwardly to permit a movement of the primary feed rollers 16 into cooperation with the platen, the secondary feed rollers 38 and 57 are automatically separated or thrown out of cooperative relation.

At the forward or discharging side of the platen another set of secondary paper feed rollers 78 and 79 is provided, as best appears in Figs. 1, 2 and 5. The feed roller 78 may be a single roller fixed on a shaft 80, the right hand end of which is received in a bearing in a bracket 81 secured by a screw 82 to the front cross bar of the platen frame 9. The left hand end of the shaft 80 is received in a bearing in a bracket 83 secured by a screw 84 to the front cross bar at the other end of the platen frame. One end of the shaft 80 has a pinion 85 fixedly secured thereto. The feed rollers 79 are fixed to a shaft 86, rotatably supported at its ends in bearings formed in arms 87, which are rigidly connected to a rock shaft 88 mounted in bearings in the brackets 81 and 83. Pivoted at 89 to the bracket 83 is a finger lever or controlling device 90 that has a cam groove 91 therein. A laterally projecting pin 92 is carried by the associated arm 87 and extends into the cam groove 91 in the controlling device 90 in order to control the swinging movement of the arms 87, and the feed rolls 79 carried thereby, toward and away from the feed roller 78. A coiled spring 93 surrounds the rock shaft 88 at each end thereof and engages at one end with the associated arm 87 and at the other end with the supporting bracket (81 or 83). The tension of these springs is exerted to force the feed rollers 79 into contact with the feed roller 78 and to maintain pressure between said rollers. When, however, it is desired to separate the rollers it is merely necessary to depress the controlling device or finger piece 90 which results in the arms 87 being forced forwardly around the pivotal center thereof to the position indicated in Fig. 3, thus disengaging the rollers 78 and 79 and maintaining them spaced apart. A pinion 94 is fixedly secured to the rock shaft 86 and is

adapted to mesh with the pinion 85 when the feed rollers 78 and 79 are brought into cooperative relation. The shaft 80 at the right hand end thereof is extended beyond the arm of the bracket 81 and is provided with a finger wheel 95 by means of which the feed roller 78 may be rotated and motion transmitted to the pinions 85 and 94 to rotate the feed rollers 79 in an opposite direction. From this it will be seen that I have provided at the forward or delivery side of the platen, auxiliary secondary paper feeding devices which are adapted to cooperate with the paper to feed it independently of the platen by an actuation of the finger wheel 95.

In order that the paper may, when desired, be directed or diverted from the platen to the feed rollers 78 and 79, I have provided (in addition to the usual and ordinary paper feeding devices at the front of the platen which are omitted from the drawings for the sake of clearness) what I term a deflecting device 96. As here shown (see especially Fig. 8) the device 96 is in the form of a bar that extends throughout or substantially throughout the length of the platen and is V-shaped in cross section. This device is pivotally mounted on the shaft 80 and is confined against longitudinal displacement by the arms of the brackets 81 and 83. The left hand end portion of the bar is extended upwardly to form a finger piece 97 by means of which the deflecting piece or bar may be moved into and out of contact with the platen, or from a position such as that indicated in Fig. 3 to that indicated in Fig. 5 or vice versa. This bar may be weighted so as to hang down by gravity to a substantially vertical position where it will be maintained out of contact with the platen in the normal position thereof in order that the paper may be fed beneath it with the platen; though I prefer to provide the pivotal bearings with sufficient frictional contact to enable the deflecting device to be maintained in the inoperative position shown in Fig. 3 when it is not in use or to be maintained in the operative position shown in Fig. 5 when desired. In the inoperative position of the deflecting device, it does not constitute an obstruction to the free upward and rearward passage of the paper with the platen as the latter is rotated. Should the operator desire to feed one or more sheets of paper between the feed rollers 78 and 79, this may be readily accomplished by moving the deflecting device to a position substantially such as is shown in Fig. 5 where it will cooperate with the leading edge of the paper to deflect it away from the platen as it is fed upwardly and to direct it between the feed rollers 78 and 79.

In addition to the devices thus far described I may employ one or more band

brakes (one being shown in the present instance). One end of the brake band 98 is secured to a finger 99 that projects from a bracket 100 secured to the front cross bar of the platen frame near the left end by a screw 101. This band 98 extends from front to rear of the platen and partly around and under it and is connected at its rear end to a collar 102 secured to the rock shaft 22 by a set screw 103. By the employment of a set screw for securing the collar to the shaft, an adjustment of the band 98 is provided in order that the amount of pressure exerted by said band may be varied. The band brake just described is adapted to cooperate with the paper or certain sheets thereof to clamp it or them against the platen near one end thereof, and is automatically applied when the feed roll release lever 24 is moved rearwardly. When the release lever is in the normal position shown in Fig. 2 and the primary feed rollers 16 are in contact with the platen or the paper thereon, the pressure on the brake band 98 is withdrawn.

A side edge paper guide 104 (Fig. 1) of the usual construction has a stem 105 which extends longitudinally of the platen through a bearing 106 carried by the platen frame. A set screw 107 cooperates with the stem 105 to secure the side edge guide in position when adjusted.

One method of operating the paper feeding devices hereinbefore described, is as follows:—The condensed record sheet *a* is placed in the machine and fed around the platen 10 in the usual manner, together with a carbon sheet *b* which is arranged outside the sheet *a*, the latter being between the platen and the carbon sheet *b*. After sheets *a* and *b* have been properly positioned, the invoice sheet *c* is passed between the feed rollers 38 and 57 while the latter are maintained spaced apart as indicated in Fig. 2. The release lever 24 is then pushed rearwardly by hand and is automatically retained in that position by the pivoted catch 69. The rearward movement of the release lever allows the springs 60 and 63 to force the rollers 57 into contact with the invoice sheet *c* and to maintain a pressure thereon between the rollers 57 and 38; and at the same time applies the band brake on the record sheet *a* and carbon sheet *b*, clamping them against the platen, it being understood that the invoice sheet *c* is maintained at all times to the right of the band brake so that it cannot cooperate therewith. The side edge guide 104 may be employed for this purpose, the guide being adjusted so that the left edge of the invoice sheet when brought into contact with the side guide 104 and fed around the platen will clear the band 98. The pressure exerted by the band brake clamps the condensed record sheet *a* and carbon sheet *b* to the platen. The finger

wheel 44 may now be turned to effect a forward feed of the invoice sheet independently of the platen and independently of the condensed record and carbon sheets. When the invoice sheet *c* has been fed forward to the desired extent so as to bring it in proper relation to the condensed record sheet the catch 68 may be released by depressing the finger piece 72. This release of the catch is effective both to restore the primary feed rollers 16 to cooperation with the platen and to force said feed rollers 16 into engagement or cooperation with the invoice, carbon and record sheets, and also at the same time to automatically release the feed rollers 38 and 59 from engagement with each other and the band brake from engagement with the platen. The operator may then proceed to write on the invoice sheet *c* and the matter written thereon will be reproduced through the carbon sheet *b* on the record sheet *a*. During the printing operation the platen is rotated in the usual manner for spacing between the lines of writing, and the invoice, carbon and record sheets will be turned with the platen. After the invoice has been written and the platen is given the usual spacing movement to regulate the amount of space between different items on the condensed record sheet, the release lever 24 is pushed back again, releasing the primary feed rollers 16 and applying the band brake, and the invoice sheet may then be fed or pulled forward and out of the machine independently of the platen and the carbon and condensed record sheets.

The auxiliary secondary paper feed devices at the delivery side or front of the platen are adapted particularly for use when invoices of short length are employed or when the position of an invoice sheet is such that it is out of control of the secondary feed devices at the rear of the platen and it is necessary to effect a further feed of the invoice. In other words, if the invoice sheet is so short that it cannot be controlled or fed forward a sufficient distance to be completely written by the feed rollers 38 and 57, then the feed rollers 78 and 79 may be brought into operation and the invoice sheet can, by these feed rollers, be fed as far as desired and entirely out of the machine if necessary. Thus the two sets of feed rollers control invoice sheets of various sizes under all conditions. In order to feed the invoice sheet between the feed rollers 78 and 79, it is merely necessary to move the deflector 96 to the position shown in Fig. 5, after which a forward feed of the invoice sheet will bring the leading edge thereof between the separated feed rollers 78 and 79. The controlling device 90 may then be moved to the position shown in Fig. 5 so as to enable the springs 93 to bring said feed rollers into engagement and to press the paper or invoice sheet

c between them. By thereafter turning the finger wheel 95 a forward feed of the invoice sheet to the desired extent may be effected.

It will be noted that the condensed record or sales sheet and the carbon sheet do not have to be fed forward and backward whenever a new invoice sheet is inserted in the machine as is necessary when other styles of billing devices are employed. Consequently by the use of my invention, the condensed record or sales sheet is kept clean and free from smudging; there is much less wear and tear of the carbon sheet; and there is no chance of the condensed record sheet being fed out of the machine during the manipulation of the mechanism preparatory to inserting a new invoice sheet. It will further be noted that the condensed record or sales book sheet can be changed while the invoice sheet remains undisturbed in the machine. Moreover any kind or style of invoice sheet may be employed with my invention, those having long headings of printed matter being as easily positioned as those with short headings and no calculating or figuring being required.

It is obvious that the uses of the invention are not confined to those above stated as there are many purposes other than those specified for which the invention may be advantageously employed. Furthermore, it should be understood that certain of the features may be employed without others and that various changes in construction may be made without departing from the spirit of 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, a primary paper feeding device, a secondary paper feeding device, and means for automatically throwing one of said feeding devices into operation when the other is thrown out of operation, whereby the secondary feeding device can be operated to advance one sheet independently of the others.

2. In a typewriting machine, the combination of a cylindrical platen, a primary paper feeding device that cooperates with the platen to feed a plurality of sheets, means for throwing said primary paper feeding device into and out of operation, an independently operated hand actuated secondary paper feeding device, and means for automatically throwing the secondary paper feeding device into cooperative relation when the primary paper feeding device is thrown out of operation, so that one of the sheets may be fed independently of the others.

3. In a typewriting machine, the combination of a cylindrical platen, primary paper feed rollers cooperating therewith to feed a plurality of sheets, hand actuated means for throwing said primary paper feed rollers

into and out of cooperative relation with the platen, secondary hand actuated paper feed rollers that do not cooperate with the platen but are adapted to cooperate with certain of the sheets to feed them independently of the others and independently of the platen, and means for automatically throwing the secondary feed rollers into operation when the primary feed rollers are thrown out of operation and for automatically throwing the secondary feed rollers out of operation when the primary feed rollers are thrown into operation.

4. In a typewriting machine, the combination of a platen, paper feeding devices that cooperate therewith, means for controlling the movement of said paper feeding devices into and out of cooperation with the platen, and automatically actuated means that are thrown into cooperation with the platen to clamp paper thereto when the paper feeding devices are thrown out of cooperation with the platen.

5. In a typewriting machine, the combination of a platen, paper feed rollers that cooperate therewith, a finger lever for controlling the movement of said paper feed rollers into and out of cooperation with the platen, and an automatically actuated band brake that is thrown into cooperation with the platen to clamp certain sheets thereto when the finger lever is actuated to throw the paper feed rollers out of cooperation with the platen.

6. In a typewriting machine, the combination of a platen, a primary paper feeding device, a secondary paper feeding device, means for automatically throwing one of said feeding devices into operation when the other is thrown out of operation, and automatically actuated clamping means cooperating with the platen, whereby the secondary feeding device can be operated to advance one sheet independently of the others.

7. In a typewriting machine, the combination of a cylindrical platen, hand actuated means for feeding one sheet relatively to the platen while another or other sheets are maintained fixed relatively to the platen, and automatically actuated means for clamping the relatively fixed sheets to the platen.

8. In a typewriting machine, the combination with a cylindrical platen, and the usual paper feeding device of a secondary paper feeding device that is adapted to effect a feed of certain of the sheets of paper independently of a rotative movement of the platen, and automatically actuated means for clamping certain sheets to the platen when the secondary paper feeding devices are operative.

9. In a typewriting machine, the combination of a cylindrical platen, the usual paper feeding devices, a secondary paper feeding device, the parts being constructed and ar-

ranged to feed a plurality of sheets by the rotation of the platen and to feed one or more sheets independent of the others and independently of the platen by said secondary paper feeding device, and means for clamping certain sheets to the platen when the secondary paper feeding device is operative.

10. In a typewriting machine, the combination of a cylindrical platen, a primary paper feeding device that cooperates with the platen to feed a plurality of sheets, an independently operated, hand-actuated, secondary paper feeding device that is adapted to feed one of said sheets independently of the others when the primary feed device is thrown out of operation, and clamping means cooperating with the platen to hold certain sheets relatively thereto and which are automatically thrown into operation when the primary paper feeding device is thrown out of operation.

11. In a typewriting machine, the combination of a cylindrical platen, a primary paper feeding device that cooperates with the platen to feed a plurality of sheets, means for throwing said primary paper feeding device into and out of operation, an independently operated, hand-actuated, secondary paper feeding device, means for automatically throwing the secondary paper feeding device into operation when the primary paper feeding device is thrown out of operation, so that one of the sheets may be fed independently of the others, means for clamping certain of the sheets to the platen when another or others are advanced by the secondary paper feeding device, and automatically actuated means for throwing said clamping means into operation when the secondary paper feeding device is thrown into operation.

12. In a typewriting machine, the combination of a cylindrical platen, primary paper feed rollers cooperating therewith to feed a plurality of sheets, hand actuated means for throwing said primary paper feed rollers into and out of cooperative relation with the platen, secondary hand actuated paper feed rollers that are adapted to cooperate with certain of the sheets to feed them independently of the others and independently of the platen, one means for automatically throwing the secondary feed rollers into operation when the primary feed rollers are thrown out of operation and for automatically throwing the secondary feed rollers out of operation when the primary feed rollers are thrown into operation, means for clamping certain sheets to the platen while others are being fed independently thereof, and means for automatically throwing said clamping means into operation when the primary feed rollers are thrown out of operation.

13. In a typewriting machine, the combination of a cylindrical platen, cooperating paper feeding devices and auxiliary paper feeding means at the delivery side of the platen that are operable independently of the platen to feed paper past the printing line.

14. In a typewriting machine, the combination of a platen, cooperating paper feeding devices, auxiliary paper feeding means at the introductory side of the platen, auxiliary paper feeding means at the delivery side of the platen, and means independent of the platen for actuating said auxiliary paper feeding means to feed paper past the printing line.

15. In a typewriting machine, the combination of a cylindrical platen, paper feeding rollers cooperating therewith, and auxiliary paper feed rollers at the delivery side of the platen that are actuated independently of the platen to feed one or more sheets relatively to the platen past the printing line.

16. In a typewriting machine, the combination of a cylindrical platen, paper feeding rollers cooperating therewith, auxiliary paper feed rollers at the introductory side of the platen that are actuated independently of the platen to feed one or more sheets relatively to the platen past the printing line, and a second set of paper feed rollers at the delivery side of the platen that are actuated independently of the platen to feed one or more sheets relatively to the platen past the printing line.

17. In a typewriting machine, the combination of a platen, primary paper feed rollers that cooperate with the platen, auxiliary feed rollers that are at all times maintained out of contact with the platen but are adapted to feed paper thereon past the printing line, hand actuated means for effecting a movement of the primary feed rollers toward and away from the platen, and automatically actuated means for bringing said auxiliary feed rollers into cooperation with each other when the hand actuated means are actuated to move the primary feed rollers away from the platen.

18. In a typewriting machine, a primary paper feed device and a platen in combination with a secondary paper feed device, means for maintaining either one or other of the said feed devices in a non-operative condition and means for holding an initially inserted paper fixedly on the platen when the primary feed device is inoperative and the secondary feed device operative, substantially as described.

19. In a typewriting machine, a primary paper feed roller and a platen in combination with a pair of secondary feed rollers adjustable relatively to each other and rotatable on axes parallel to the axis of the

platen, controlling means for maintaining either one or other of the said feed devices in a non-operative condition and a band brake connected to said controlling means and adapted to hold an initially inserted paper fixedly on the platen when the primary feed device is inoperative and the secondary feed device operative, substantially as described.

20. In a typewriting machine, a primary paper feed device and a platen in combination with a secondary paper feed device, means for maintaining either one or other of the said feed devices in a non-operative condition, means for holding an initially inserted paper fixedly on the platen when the primary feed device is inoperative and the secondary feed device operative, and a supplemental secondary feed device arranged on the delivery side of the platen adapted to control the paper when the latter has left the main secondary feed device, substantially as described.

21. In a typewriting machine, a primary paper feed device and a platen in combination with a secondary paper feed device, means for maintaining either one or other of the said feed devices in a non-operative condition, means for holding an initially inserted paper fixedly on the platen when the primary feed device is inoperative and the secondary feed device operative and a supplemental secondary feed device arranged on the delivery side of the platen consisting of a pair of feed rollers relatively adjustable to each other and adapted to control the paper when the latter has left the main secondary feed device, substantially as described.

22. In a typewriting machine, a primary paper feed device and a platen in combination with a secondary paper feed device, means for maintaining either one or other of the said feed devices in a non-operative condition, means for holding an initially inserted paper fixedly on the platen when the primary feed device is inoperative and the secondary feed device operative, a supplemental secondary feed device arranged on the delivery side of the platen consisting of a pair of feed rollers relatively adjustable to each other and adapted to control the paper when the latter has left the main secondary feed device and a movable diverting device adapted to move adjacent to the periphery of the platen so as to guide the outermost paper from the platen through the supplemental secondary feed rollers, substantially as described.

23. In a typewriting machine, the combination of a platen, a secondary paper feeding device at the delivery side of the platen, and a deflecting device for deflecting paper from the platen to said secondary paper feeding device.

24. In a typewriting machine, the combination of a platen, a secondary paper feeding device that is operable independently of the platen, and a deflecting device for deflecting paper from the platen to said secondary paper feeding device.

25. In a typewriting machine, the combination of a platen, a secondary paper feeding device that is operable independently of the platen, a deflecting device for deflecting paper from the platen to said secondary paper feeding device, and hand actuated means for moving said deflecting device into and out of operative position.

26. In a typewriting machine, the combination of a platen, secondary paper feed rollers that cooperate to feed the paper independently of the platen, and a deflecting

device that diverts the paper from the platen and directs it to said secondary paper feed rollers.

27. In a typewriting machine, the combination of a platen, secondary paper feed rollers that cooperate to feed the paper independently of the platen, a deflecting device that diverts the paper from the platen and directs it to said secondary paper feed rollers, and hand actuated means for moving said deflecting device into and out of operative position.

Signed at London, England this 16th day of September A. D. 1905

HARRY WILLIAM HIGHAM.

Witnesses:

RODERICK BROOKE,

RICHARD A. HOFFMANN.