Nov. 9, 1937. R. G. THOMPSON 2,098,319

TYPEWRITING MACHINE

Filed May 25, 1934 3 Sheets-Sheet 1

FIG.1.

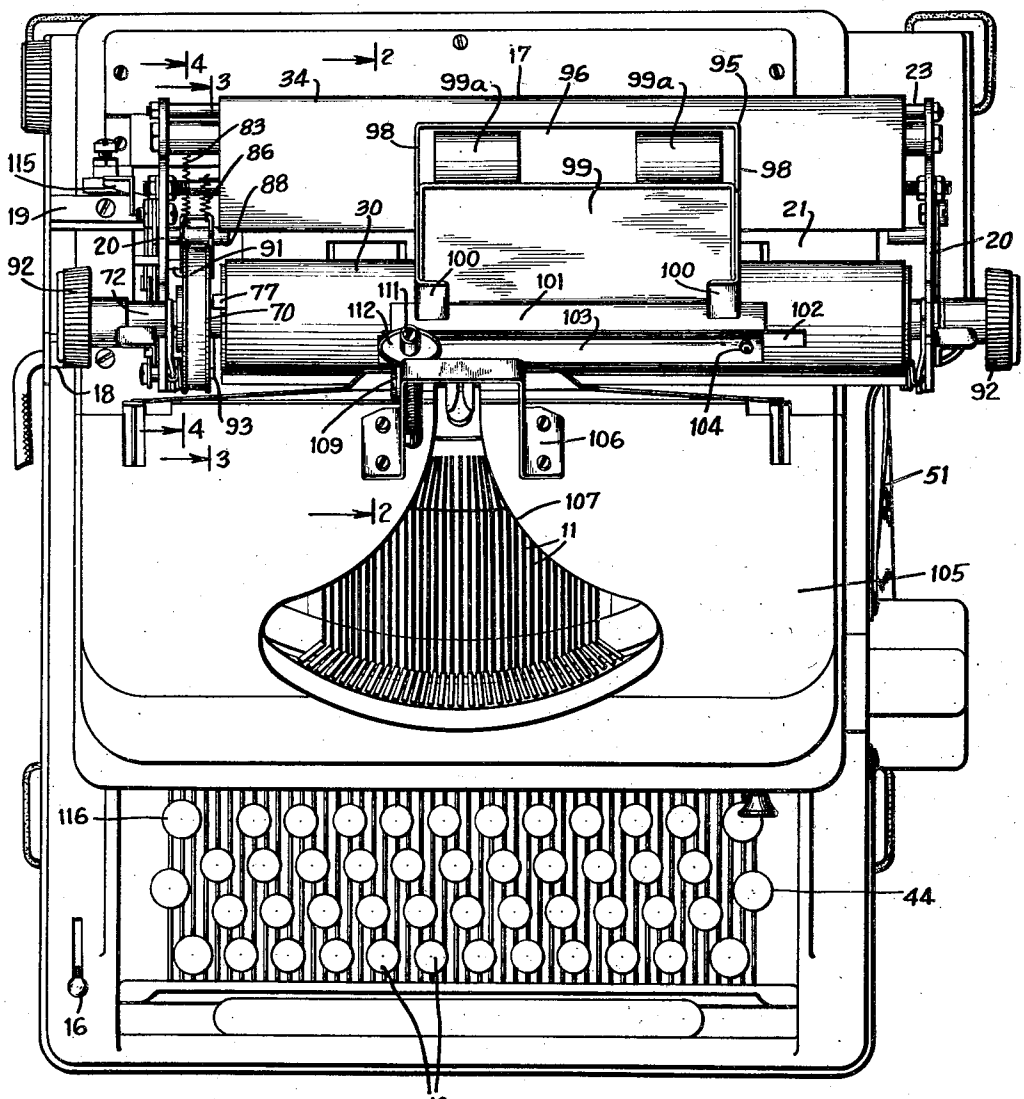
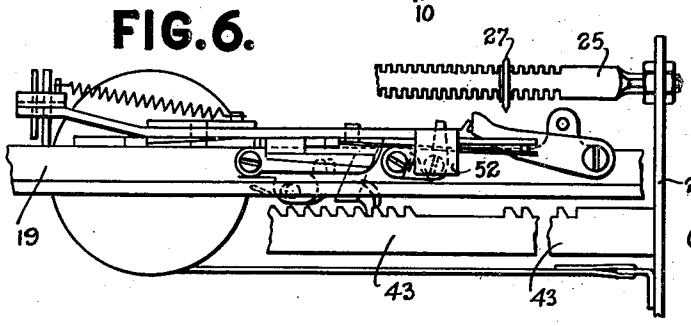


FIG.6.



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TYPEWRITING MACHINE

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FIG.2.

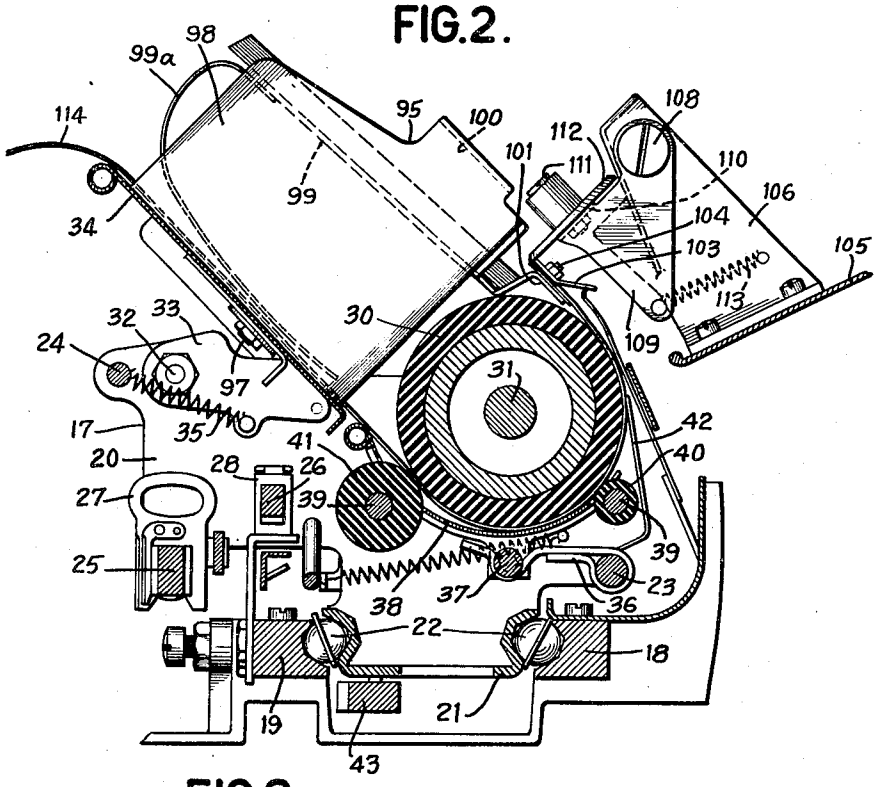


FIG.3.

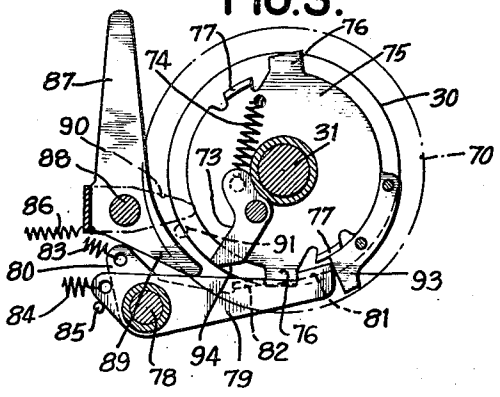
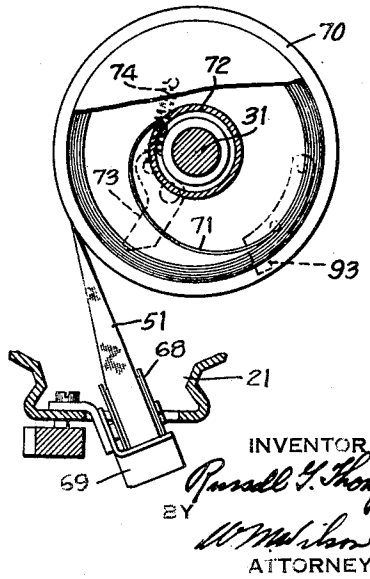


FIG.4.



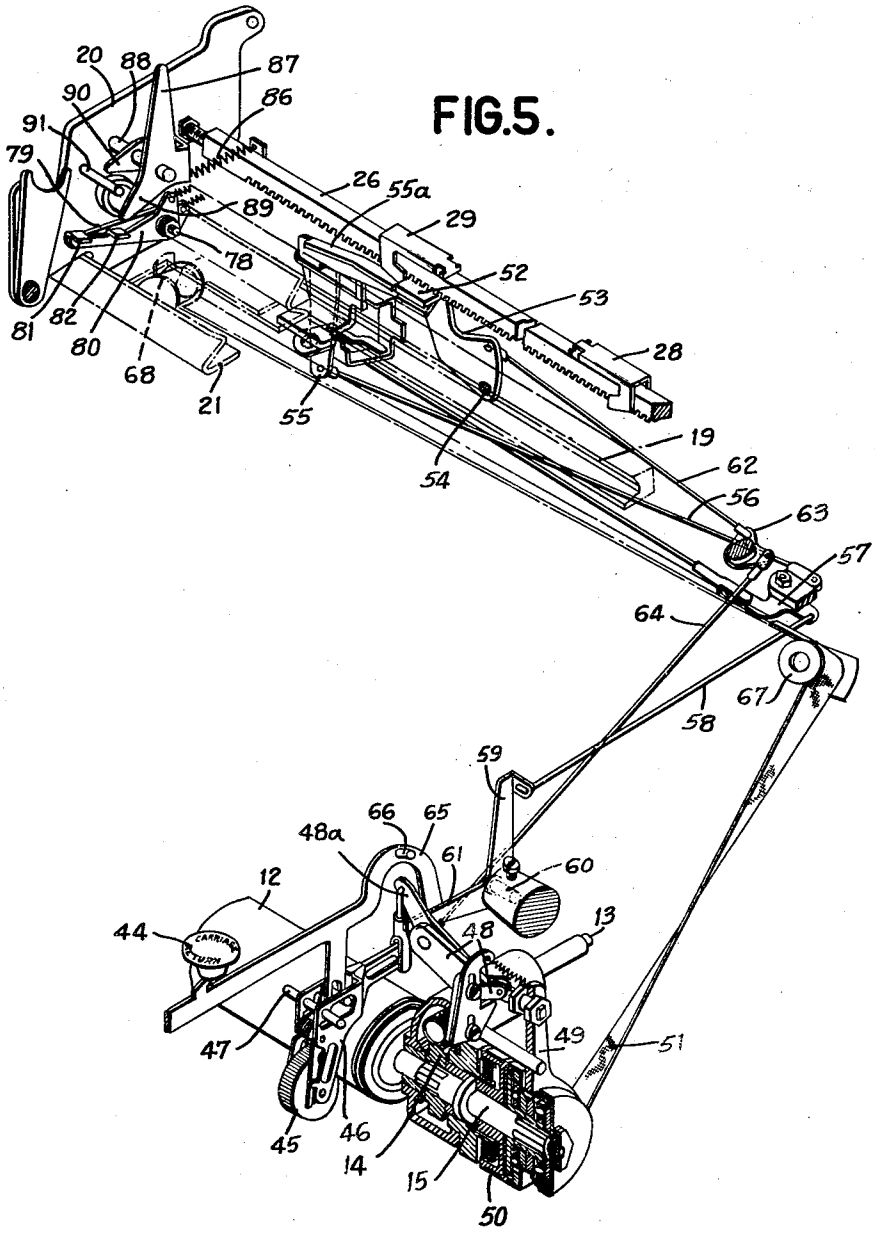
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TYPEWRITING MACHINE

Filed May 25, 1934 3 Sheets-Sheet 3

FIG.5.



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UNITED STATES PATENT OFFICE

2,098,319

TYPEWRITING MACHINE

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Application May 25, 1934, Serial No. 727,382

11 Claims. (Cl. 197—127)

This invention relates to typewriting machines in general.

A broad object is to provide a novel paper feeding device for typewriting machines.

Another broad object is to provide a novel paper severing device for typewriting machines.

An object is to provide paper feeding and severing mechanism whose operation is automatically initiated at the end of a line of writing.

A further object is to provide paper feeding and/or severing mechanism which is operated by power.

Another object is to provide paper feeding and/or severing mechanism automatically operated by the carriage return mechanism of a typewriting machine.

A further object is to provide paper feeding and/or severing mechanism whose operation is fully automatic and requires no attention by the operator of the machine other than to insert the end of a fresh strip of paper when that previously in the machine becomes exhausted.

A specific object is to provide paper feeding and/or severing mechanism which is extremely simple in construction and hence may be manufactured at low cost.

Another specific object is to provide paper feeding and/or severing mechanism which can be installed on existing typewriting machines without materially altering such machines or interfering with their usual functions.

A specific object is to provide paper severing mechanism which can be moved to a non-effective position to enable the machine to be used in the ordinary way, that is, for writing on single, manually inserted sheets.

Various other objects, advantages and features of the invention, will be pointed out in the following description and claims, or will be apparent from a study of the description, claims, and drawings.

In the drawings:

Fig. 1 is a top plan view of a typewriting machine showing the present invention attached to such machine.

Fig. 2 is an enlarged vertical section on the line 2—2 in Fig. 1.

Fig. 3 is an enlarged vertical section on line 3—3 in Fig. 1.

Fig. 4 is an enlarged vertical section on line 4—4 in Fig. 1.

Fig. 5 is a perspective view of the carriage return mechanism and parts of the platen rotating mechanism.

Fig. 6 is a plan view of the escapement mechanism.

Fig. 1 of the drawings shows the present invention attached to a power driven typewriter now well-known in the art as the "Electromatic". The various mechanisms of this machine have been described in a large number of patents of which No. 1,602,757 describing the power typebar operation, No. 1,681,267 the motor driving connections, and No. 1,753,450 the automatic carriage return mechanism will provide sufficient information regarding the general details of construction of the machine to enable those skilled in the art to understand the present invention. Only a very few details of the above mechanisms and a very general description of their operation will be given herein as the cited patents are sufficiently detailed to understand the general operation of the machine.

The usual keyboard is provided having character keys 10 (Fig. 1) corresponding to which are pivoted typebars 11. The latter are operated, as in Patent No. 1,602,757, by means of cams (not shown) which coact with a power roller 12 (Fig. 5) to move the typebars to the printing point. The power roller 12 is rotated continuously by a motor (not shown) which is connected to a shaft 13. Suitable worm gearing 14 connects shaft 13 with a short shaft 15 to which power roller 12 is removably connected so as to be driven by the motor. When a switch lever 16 (Fig. 1) is moved toward the rear of the machine, the motor is started and drives shaft 15 and roller 12 continuously as in Patent No. 1,681,267. Shaft 15 also drives the carriage return mechanism.

The carriage 17 is mounted for movement transversely of the machine on a front rail 18 and a rear rail 19 which rails are grooved as usual to guide anti-friction rollers and are secured to the main frame of the machine. The carriage comprises side plates 20 integrally joined by a channel-shaped member 21 (Fig. 2) which is grooved to receive suitable rollers or balls 22 which mount the carriage on rails 18, 19. Rotatably mounted in the frames 20 is a cross rod 23 which supports the platen pressure rolls as will be explained hereinafter. A tie rod 24, a tabular stop bar 25, and a marginal stop bar 26 secured to frames 20 rigidly join frames 20 so that a sturdy carriage results. The bar 25 has notches cut therein at letter space intervals in which notches the usual tabulator stops 27 may be inserted as desired. Marginal stops 28, 29 are slidably mounted on the bar 26 (Figs. 2 and 5) which has notches cut at letter space intervals to provide means for locking suit-

able marginal stops 28, 29 in any desired positions as usual in typewriting machines. The specific details of the bar 26 and stops 28, 29 are of no importance herein, as they are not, by themselves, part of the present invention but may take any suitable form. The stop 28 is the right-hand marginal stop while stop 29 is the left-hand marginal stop.

The platen 30 is of usual construction and is mounted on a shaft 31 supported by suitable bearings in frames 20. Pivoted as at 32 (Fig. 2) to each side frame 20 is an arm 33 to which is secured the usual paper table 34. A spring 35 secured to one of the arms 33 and to the adjacent side frame 20 normally holds the paper table 34 in the position of Figs. 1 and 2 but it may be raised and swung backwardly until arms 33 strike rod 24. Spring 35 will swing past the pivot 32 when the paper table is so raised and have the effect of holding arms 33 against rod 24.

Cross rod 23 is loosely mounted in side frames 20 and at its mid-point carries an arm 36 formed from sheet metal and bent to form a stirrup on which rests a rod 37 mounted in ears forming part of a sheet metal paper guide 38. The latter carries two cross rods 39 on which are loosely mounted front platen pressure rolls 40 and rear pressure rolls 41, the pressure rolls projecting through suitable rectangular openings in the paper guide 38 into contact with platen 30. A spring acting upon an arm (neither of which is shown in the drawings) secured to rod 23 tends to rock rod 23 and arm 36 in a clockwise direction thus applying pressure to the center of rod 37. Thus the rolls 40, 41 are pressed evenly against the platen. The usual combined line gauge and paper guide 42 is loosely mounted on rod 23 and is spring pressed against the platen and guides the work sheet to the printing line.

Mounted on the underside of the member 21 is an escapement rack 43 which co-operates with any desired form of escapement for advancing the carriage a letter space after each type bar has made its impression at the printing line or when the usual space bar is operated. This escapement mechanism is not involved herein except in a minor respect to be explained hereinafter, hence no detailed description of the escapement mechanism will be necessary.

The carriage is returned after each line has been written by mechanism similar in principle and in most details to that described in Patent No. 1,753,450. It is controlled by a carriage return key 44 (Figs. 1 and 4) which, when depressed, causes a single lobed spiral cam 45 (Fig. 5) to rotate slightly until it is gripped by the roller 12. After this occurs the roller 12 rotates said cam to cause a bell crank assembly 46 to be rocked clockwise on a pivot rod 47 (Fig. 5) thereby straightening toggle 48. This causes clutch operating arm 49 to squeeze together friction clutch elements connecting the carriage return tape drum 50 to shaft 15. Rotation of drum 50 causes the carriage return tape 51 to be wound on the drum thereby drawing the carriage 17 to the right (Fig. 1) until stopped by engagement of left-hand marginal stop 29 with a lug 52 in a stop lever 53 pivoted at 54 to the rear rail 19, thus arresting the carriage in position to begin a new line of writing. Shortly before this occurs, a downwardly projecting part of the marginal stop 29 rides onto a cam surface 55a on one arm of a lever 55 also pivoted on rail 19 and causes said arm to be depressed. As a result a rod 56, attached to the other arm of lever 55 and to one arm of a bell crank 57, is drawn to the left thus rocking said bell crank 57 in a direction to draw rearwardly a rod 58, pivoted to the other arm of bell crank 57 and to one arm of a bell crank 59 pivoted at 60 to the frame of the machine.

The bell crank 59 will be rocked clockwise (Fig. 5) causing one arm 61 thereof, which extends under an arm 48a forming part of toggle 48, to bend the toggle and thereby effect disengagement of the friction clutch elements. Thus the tape 51 ceases to pull the carriage to the right an instant before the left-hand marginal stop 29 strikes lug 52.

When a line is being written in the usual fashion the carriage moves to the left. Eventually the right-hand marginal stop will strike lug 52 and rock stop lever 53 a slight amount in a counterclockwise direction (Fig. 5). This causes a rod 62, pivoted to stop lever 53 and to one arm of a bell crank 63, to be drawn to the left, rocking bell crank 63 counterclockwise and drawing rearwardly a link 64 pivoted to the other arm of bell crank 63 and to an arm 65 forming part of the carriage return key 44 which is pivoted at 66. It is plain that the carriage return key will be automatically depressed to initiate operation of the carriage return mechanism at the end of each line of writing.

In the present invention the tape 51 is connected to a drum which is rotated to feed the platen a predetermined amount prior to automatically severing the length of paper thus fed by the rotation of the platen.

The mechanism so far described, save for the drum mentioned in the last sentence and parts associated therewith, is substantially the same as the "Electromatic" typewriter now on the market and extensively used.

The tape 51 passes over a guide pulley 67 mounted on the main framework of the machine, over a pulley 68 (Figs. 4 and 5) mounted in a bracket 69 secured to member 21, and is secured to a drum 70 loosely mounted on shaft 31 adjacent the left end of platen 30 (Fig. 1). A spiral spring 71, mounted in the interior of drum 70 and secured to the latter and one of the bearing sleeves 72 supporting shaft 31, normally tends to rotate drum 70 in such direction as to wind the tape 51 on said drum (clockwise Figs. 3 and 4).

Pivotally mounted on the right side of drum 70 adjacent the end of platen 30, is a driving pawl 73 having the shape shown in Fig. 3. A spring 74 connected to the tail of pawl 73 and a pin carried by drum 70 normally holds the tail of pawl 73 against the hub of drum 70. Secured to the left-hand end of platen 30 adjacent drum 70 is a disc 75 having diametrically opposite, radially extending lugs 76 out of the path of pawl 73, and diametrically opposite, axially extending lugs 77 in the path of movement of pawl 73. The flat ends of lugs 76 are inclined slightly to form a cam surface while one axially extending edge of each lug 77 is bevelled slightly as shown in Fig. 3.

Pivoted on a stud 78 carried by the left-hand frame 20 (Figs. 3 and 5) is a pair of stop pawls 79, 80 having bent over lugs 81, 82 in the path of movement of lugs 76 and pawl 73. The lug 81 is at the right of the lower lug 76 (Fig. 3) while the lug 82 is at the left of said lug 76. The pawl 80 extends to the right underneath lug 81 (Fig. 5) and is held in this position by a light spring 83 while a spring 84 somewhat stronger than spring 83, holds pawl 79 in the position shown in Fig. 3.

A pin 85 carried by left-hand frame 20 may

be provided to prevent pawl 79 from getting into the path of lugs 77. Ordinarily, however, the balance between springs 83, 84 and a spring 86 attached to a release lever 87 pivoted on a stud 88 carried by left-hand frame 20, will be sufficient to keep the pawls 79, 80 in the normal position of Fig. 3. The lever 87 is formed like a short bail and has an arm 89 which is pressed downwardly on pawl 79 by spring 86 and also has a stop arm 90 overlying a stop pin 91 carried by frame 20.

Normally the lugs 81, 82 of pawls 79, 80 prevent rotation of the platen manually by means of the usual knobs 92 secured to shaft 31. When lever 87 is grasped and pulled forward (to the right in Fig. 3), both pawls 79, 80 are depressed far enough to clear the lug 76 engaged by said lugs 81, 82 before the arm 90 strikes pin 91. The platen will then be free to turn in a counterclockwise direction.

Secured to the side of drum 70 is a stop 93 which is out of the path of lugs 76, 77 but is adapted to strike lug 81. Normally the tension of spring 71 forces stop 93 against lug 81 as in Fig. 3 and this prevents rotation of drum 70 in response to spring 71. When pawls 79, 80 are manually depressed by lever 87 as described above to permit manual rotation of the platen, the stop pin 91 prevents the pawl 79 from moving downwardly far enough to clear the stop 93.

The operation of the foregoing mechanism will now be described. When operation of the carriage return mechanism is initiated, the pull exerted by the tape 51 will, before any movement of the carriage takes place, cause drum 70 to rotate in a counterclockwise direction (Figs. 3 and 4) approximately two-thirds of a revolution. When stop 93 on drum 70 has moved away from lug 81 approximately one-sixteenth of a revolution, a bevel or cam surface 94 in pawl 73 first strikes lug 82 and rocks pawl 80 downwardly, then strikes lug 81 and cams it downwardly far enough to disengage said lug from lug 76 thus freeing the platen for subsequent rotation. Pawl 73 next engages the lower lug 77 and by such engagement commences to drive the platen 30 in a counterclockwise direction which movement will continue until the platen 30 has completed exactly one half-revolution. During the first part of this movement, pawl 73 will clear lug 82 permitting spring 84 to restore pawl 79 to the position of Fig. 3 with lug 81 in the path of movement of the upper lug 76 in said figure. Near the end of the above movement of platen 30, the cam surface in the upper lug 76 will engage lug 82 and depress said lug permitting the lug 76 to pass lug 82 and engage lug 81 and when this occurs further rotation of the platen is positively prevented. At this point the carriage begins to move and will be restored to position to begin a new line as previously described. When the carriage is fully returned the carriage return clutch is disengaged by the action of the left-hand marginal stop and drum 50 ceases to pull the tape and is free to rotate on shaft 15. Spring 71 then becomes effective to rotate drum 70 in a clockwise direction back to the position of Fig. 3 where stop 93 again engages lug 81 and prevents further movement of drum 70 in response to spring 71. During the foregoing movement of drum 71 pawl 73 will slip idly over the lug 77 and resume the position of Fig. 3.

It is quite plain that a work sheet inserted between platen 30 and pressure rolls 40, 41 will be fed forward a distance equal to half the circumference of the platen 30 each time the carriage return mechanism is operated, regardless of whether such operation is manually initiated by key 44 or automatically initiated by marginal stop 28.

In addition to rotating the platen to feed a work sheet the carriage return mechanism operates cutting mechanism for severing a strip into predetermined lengths, the severing taking place after a line of writing has been made on the strip. This mechanism is shown in Figs. 1 and 2.

Secured to the paper table 34 is a box-like structure generally designated 95 in the drawings. It is composed of a one-piece U-shaped frame comprising a back 96 bolted to paper table 34 by bolts 97 and two side pieces 98 bent at right angles to the back 96, and a cross frame piece 99, spaced from the back 96, and secured to sides 98 as by brazing, spot welding, or in any other desired way. Secured to the back of cross frame 99 are curved paper guides 99a which may be of spring steel and extend downwardly and rearwardly (Fig. 2) to a point in the rear of platen 30. The parts of sides 98 which overhang platen 30 have formed therein lugs 100 which extend at right angles to sides 98. Frame piece 99 has a flange or apron 101 formed therein which extends to right and left of the box-like structure. Secured to the front of the apron 101 is a knife blade 102 and a paper deflector 103 spaced from each other a distance slightly greater than the maximum thickness of paper which can be used in the machine, bolts like 104, at each end of the knife 102 and paper deflector 103, securing them to apron 101.

Secured to the cover 105, which forms part of the cabinet enclosing the machine and, as usual, is removable to permit cleaning of the machine, is a bracket 106. The latter is arranged to straddle the usual opening 107 in cover 105 through which opening the type bars move in printing upon the work sheet and overhangs the platen at the printing point as shown in Figs. 1 and 2. Pivoted on a stud 108 carried by the left side of bracket 106 is a member 109 having a lug 110 bent at right angles thereto the plane of which lug is substantially perpendicular to the plane of knife 102 and parallel with the cutting edge of such knife. Journaled on a stud 111 on the lug 110 is a disk 112 having a beveled edge forming a knife and coacting with knife 102. Conveniently the disk 112 may be termed a slitting knife or cutter. A spring 113 connected to pins on member 109 and bracket 106, respectively, tends to rock such member counterclockwise so as to cause the side of slitting knife 112 to bear firmly but not too heavily on the cutting edge of knife 102.

The operation of the mechanisms described herein will now be explained briefly.

A strip 114 (Fig. 2) of record paper of suitable width to pass between sides 98 is inserted between guides 99a and back 96 and pushed down to a position to be gripped between rollers 40, 41 and platen 30. To facilitate this operation the usual release lever 115 (Fig. 1) may be drawn forwardly, rocking rod 23 and arm 36 counterclockwise thus permitting the strip 114 to be pushed around the platen until the leading edge engages deflector 103 and is guided into the space between said deflector and knife 102. The leading edge (which may have been previously squared as by means of shears) is positioned coincident with the cutting edge of slitting knife 102. After the strip has been so positioned its

longer edges should be parallel with the sides 98 but not quite touching them in order to avoid binding in feeding operations. Lever 115 is then released to permit the feed rolls 40, 41 to press to strip 114 against platen 30.

The marginal stops 28, 29 are positioned to limit travel of the carriage from the starting position of Fig. 1, to a position where knife 112 overlies the right-hand end of slitting knife 102 which is extended to the right of right-side 98 a somewhat greater distance than the left-hand end of said knife from the left-side 98. Thus movement of the carriage is confined to a distance slightly greater than the maximum width of strip 114 that can be inserted between the sides 98.

The operator, by manipulating the proper keys 10, next writes a line on the strip 114. As the carriage moves from right to left (Fig. 1) in response to the usual escapement mechanism, knives 102, 112 will move relative to each other until when the last character is imprinted knife 112 will have moved a distance relative to knife 102 which will depend on the number of characters printed plus the number of letter spaces separating the words or characters printed on the strip. It will be assumed that a line has been written extending from the position of Fig. 1 to within a few letter spaces distance of the right-hand edge of strip 114 so that knife 112 bears on the edge of knife 102 opposite the last character written.

It is now necessary to move the carriage a short distance farther to the left in order to carry knife 112 out of the path of strip 114 before feeding the strip which occurs prior to cutting off a length and beginning a new line. This could be done by operating the space bar enough times to cause knife 112 to move far enough to bear upon the extension of knife 102 but, to save time and ensure a quick positive action of the lever 53 which initiates the return of the carriage, it is preferred to omit a number of teeth from escapement rack 43, as shown in Fig. 6, so as to cause the carriage to jump a distance sufficient to remove knife 112 from the path of the strip 114.

This movement causes the lever 53 to initiate operation of the carriage return mechanism. The pull of tape 51 first causes the platen 30 to be rotated as described, thereby feeding the strip 114 a distance equal to half the circumference of platen 30, and then causes carriage 17 to be drawn to the right until arrested by the left-hand marginal stop. During the return movement of carriage 17 the knives 102, 112 will co-operate to cut off that part of the strip 114 which was previously fed above the apron 101 and the severed portion will drop into the shallow pocket formed between sides 98, frame 99, apron 101, and lugs 100. This pocket, as shown in Fig. 2 is large enough to accumulate several dozen of the checks or tickets cut by knives 102, 112.

These checks or tickets can be used for a variety of purposes such as coupons, store orders, index cards, requisitions, receipts, and so on. In the illustrative embodiment of the invention, the checks are cut to approximately the same size as standard 3" x 5" index cards. Obviously the size will depend on the proportions of the parts. Owing to the simplicity of the mechanism and its automatic operation the checks can be written very rapidly as all the operator is required to do is to operate the keys 10 to write a line.

It may be found undesirable in some cases to omit the teeth from rack 43 as described, as where it may be sometimes desired to write lines on full width sheets or where the line of writing does not always extend the full width of the strip 114. The same results can be obtained by operating the usual tabulating key 116 (Fig. 1). This will cause the carriage to move rapidly to the left until the stop 28 strikes lever 53.

It has been found by experience that in spite of the simplicity of the mechanism the feeding and cutting mechanisms operate very accurately and feed and cut the strip 114 into lengths which are so uniformly cut that little or no difference in length is observable.

When it is not desired to use the cutting mechanism but to write single lines on bills, invoices, orders or similar single sheets, the paper table can be raised and the sheets inserted by hand in the usual fashion between platen 30 and rolls 40, 41. This is possible because paper guide 38 is extended upwardly and to the left (Fig. 2) sufficiently to provide a throat or passage to guide the inserted sheet between said platen and rolls. The cover 105 can be removed whenever it is desired to clean the machine or make minor adjustments or repairs without disturbing the working relation of the parts.

The invention can easily be applied to machines manufactured prior to the present invention as all that is necessary is to drill the necessary holes for bracket 106, bolts 97, and the pins 78, 88 or the assemblies on which these parts are to be mounted can be very quickly replaced by assemblies including the necessary parts. The simplicity of construction enables the invention to be manufactured very cheaply and installed with little labor and expense.

While there has been shown and described and pointed out the fundamental novel features of the invention as applied to a single modification, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. It is the intention therefore to be limited only as indicated by the scope of the following claims.

What is claimed is as follows:

1. In combination with a platen, a platen driving element comprising a rotatable tape drum, a tape wound thereon; a driving element mounted on the tape drum and effective to drive the platen when the tape drum is rotated by pulling the tape wound thereon in a direction to unwind the tape, said element being ineffective when the tape drum is reversely rotated; a spring secured to the tape drum for reversely rotating the drum to rewind the tape when pull on the latter is relaxed, a pair of holding pawls for normally preventing rotation of the platen and releasable by initial movement of said element, and stops mounted on the platen and co-operating with said holding pawls to limit rotation of the platen.

2. In combination with a rotatable platen, means for holding the platen against rotation, a platen rotating device, and means carried by said device and operative to drive the platen, said means being also operative during the initial movement of the rotating device to release the holding means.

3. In combination with a rotatable platen, means for holding the platen against rotation and a platen rotating device comprising a tape drum, a draw band secured to the drum and adapted to rotate the tape drum when a pull is exerted on said band, and a platen driving element carried

by said drum, said element co-operating with the holding means to release the latter during initial movement of the drum in response to a pull exerted on the tape.

4. In combination with a rotatable platen; means for rotating the platen including a tape drum, a tape connected to said drum to rotate the platen when a pull is exerted on the tape; a driving element adapted, when the drum is rotated, to engage the platen and rotate it; and a holding device normally effective to prevent rotation of the platen, said device being releasable by initial movement of the driving element and adapted to limit rotation of the platen by the tape drum.

5. In combination with a rotatable platen, means for holding the platen against rotation, a platen rotating device, and means carried by said device and operative to drive the platen, said means being also operative during the initial movement of the rotating device to release the holding means, and a manual device for releasing the holding means to permit rotation of the platen by hand.

6. In combination, a feed roller, means for normally holding the feed roller against rotation, means to rotate said feed roller and having an idle initial movement before rotation of the feed roller commences and means actuated by the rotating means for releasing the holding means during the initial idle movement of the rotating means.

7. In combination, a feed roller, means for locking the feed roller against operation, a tape drum operatively associated with the feed roller, a tape secured to the drum and arranged to rotate the drum when a pull is exerted on the tape, and a driving element adapted after the drum has turned a predetermined extent to couple the platen to the tape drum for rotation by said drum, said element having a part thereof engageable with the locking means to release the latter to permit subsequent rotation of the feed roller by said drum.

8. In combination, a feed roller, a driven element secured to the feed roller and having a locking lug and a driving lug, a pair of locking pawls engaging the locking lug to prevent rotation of the roller, a tape drum coaxial with the roller, a tape secured to the drum and arranged to rotate said drum when a pull is exerted on the tape, and a driving element carried by said drum and adapted to engage the driving lug to positively rotate the roller, said driving element having a cam portion adapted to cam the locking pawls out of engagement with the locking lug prior to engagement of the driving element with the driving lug.

9. In combination, a feed roller, a driven plate secured to the feed roller and having a locking lug and a driving lug, a pair of locking pawls engaging the locking lug to prevent rotation of the roller, a tape drum coaxial with the roller, a tape secured to the drum and arranged to rotate said drum when a pull is exerted on the tape; a driving element carried by said drum and adapted to engage the driving lug to positively rotate the roller, said driving element having a cam portion adapted to cam the locking pawls out of engagement with the locking lug prior to engagement of the driving element with the driving lug; means to rotate the roller manually, and a release lever for manually releasing the holding pawls to permit manual rotation of the roller.

10. In combination, a feed roller; releasable detent means for normally preventing rotation of the feed roller and adapted, when the roller is rotated, to limit the extent of rotation of the roller to a predetermined amount, means to rotate said roller; and means operated by the rotating means and adapted to momentarily release the detent means during the initial operation of the rotating means to permit rotation of the roller by the rotating means and further adapted to permit the detent means to return to effective position to limit subsequent rotation of the roller.

11. In combination, a feed roller, a tape drum coaxial with said roller, a detent for locking said roller against rotation; means connecting said tape drum and roller whereby rotation of the tape drum in one direction drives said roller and permitting reverse rotation of said drum without affecting the roller, said means being operative during the initial rotation of the tape drum to release the detent to permit rotation of said roller by said tape drum; a tape wound on said drum and arranged to rotate said drum in a direction to rotate the roller when a pull is exerted on the tape to unwind the latter from the drum, a coil spring for reversely rotating the drum to rewind the tape thereon, and a stop secured to the tape drum and cooperating with the detent to limit the reverse movement of the drum.

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