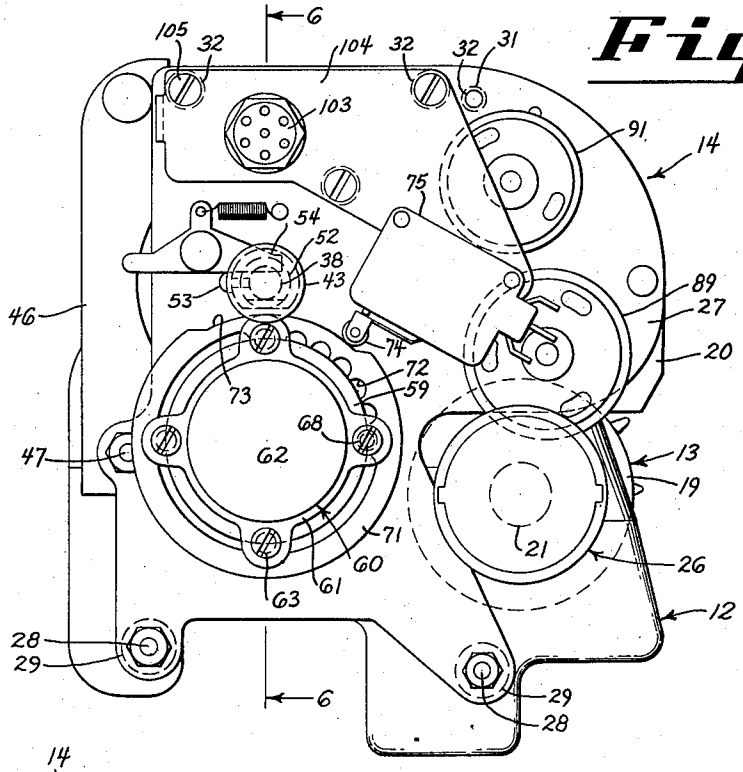
Jan. 5, 1960 P. G. STIMSON 2,919,783

STRIP FEEDING DEVICE

Filed July 16, 1956 4 Sheets-Sheet 1

Fig. 2



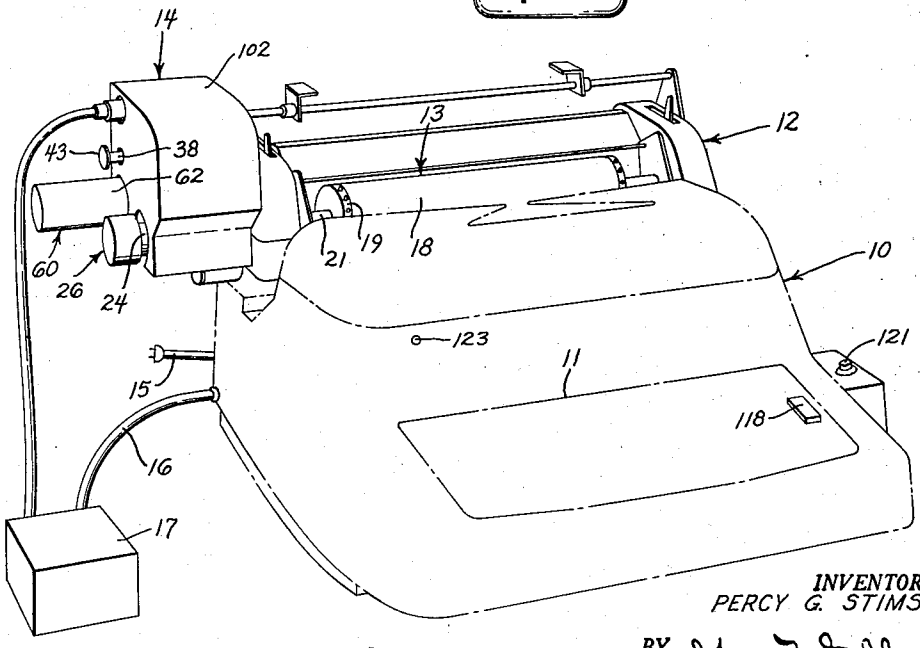


Fig. 1

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STRIP FEEDING DEVICE

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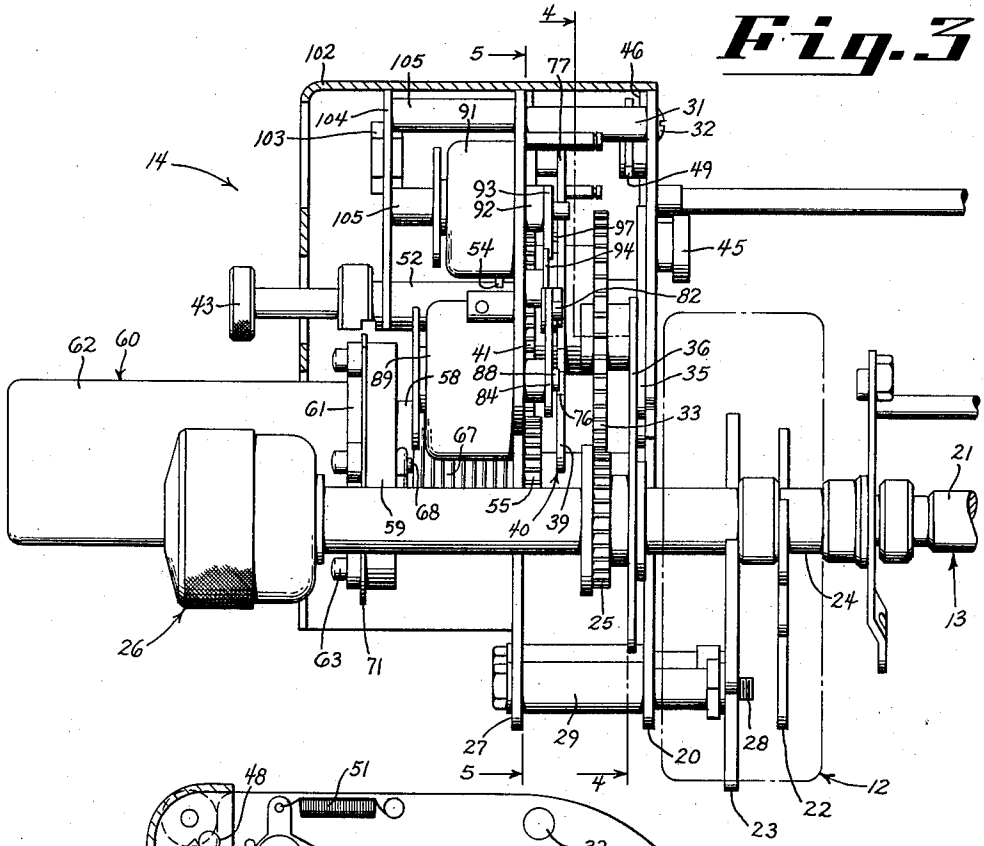
Fig. 3



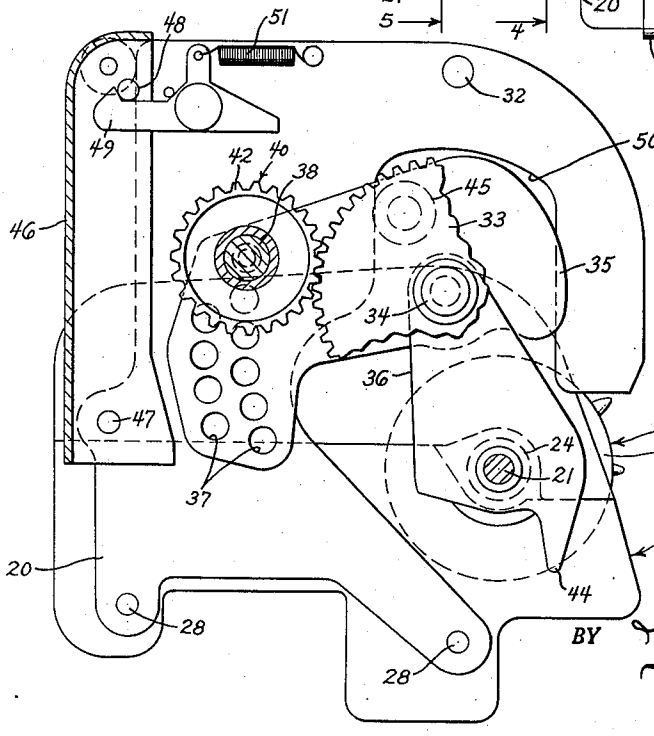


Fig. 4

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STRIP FEEDING DEVICE

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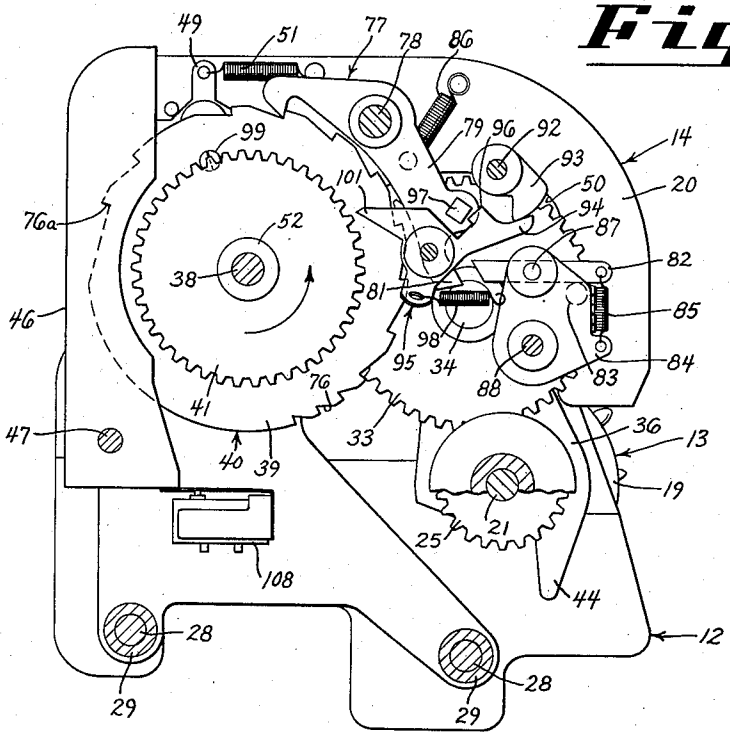
Fig. 5



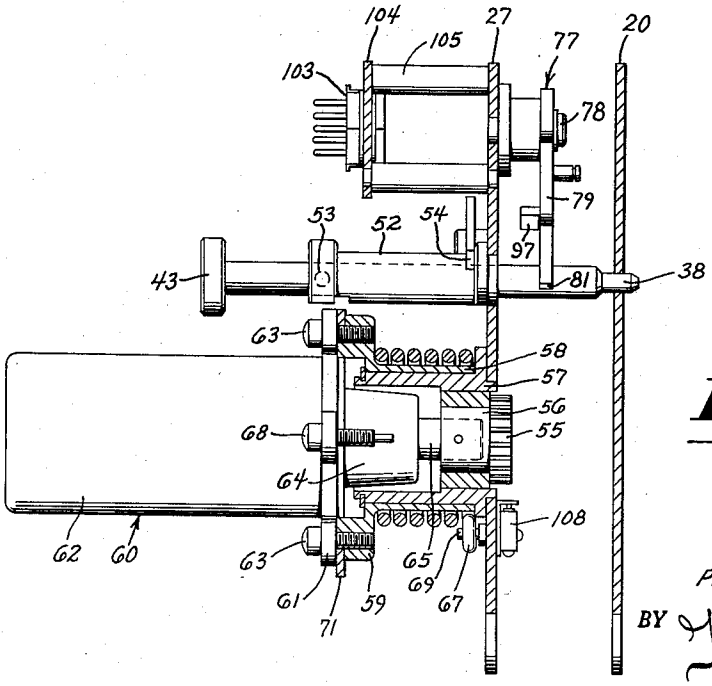


Fig. 6

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STRIP FEEDING DEVICE

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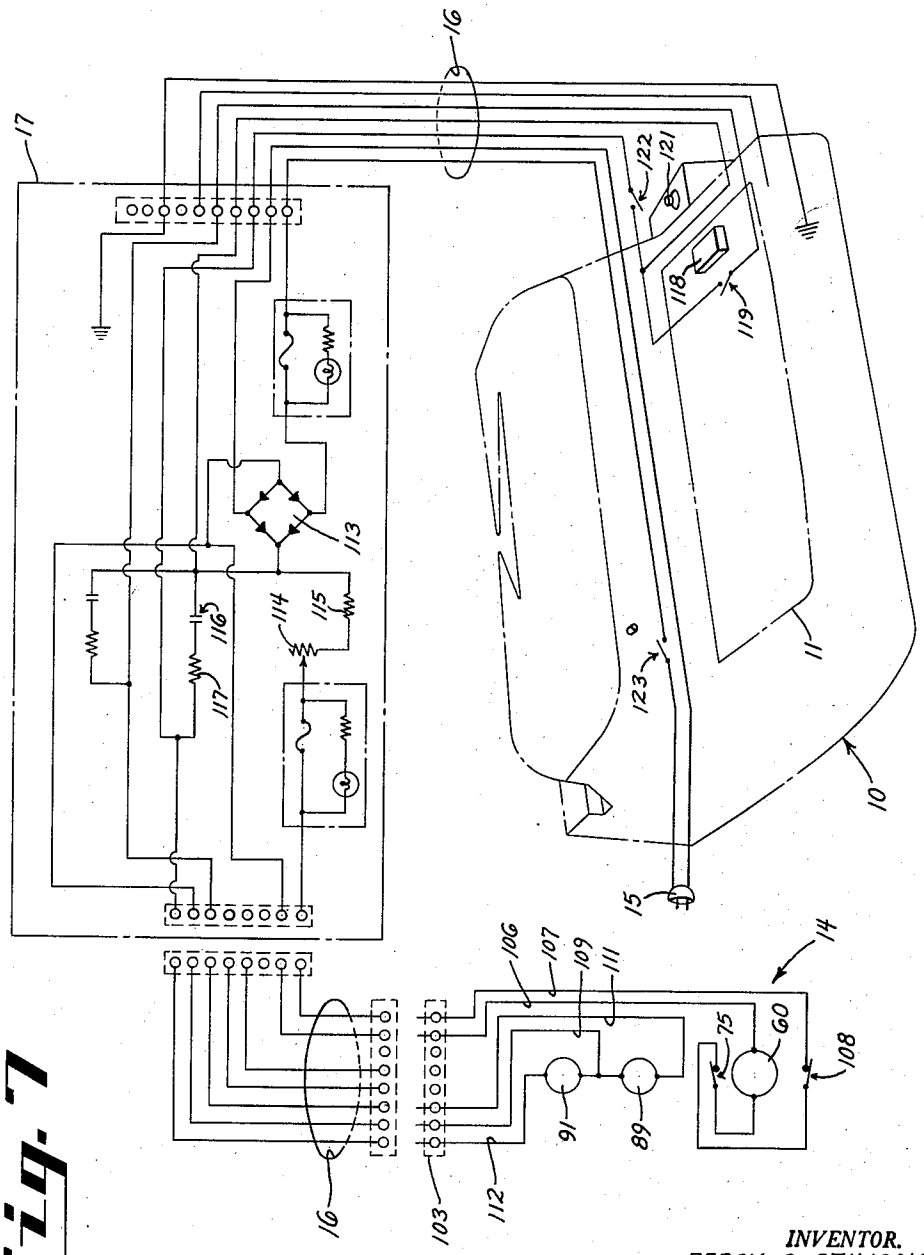

Fig. 7

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United States Patent Office 2,919,783 Patented Jan. 5, 1960

2,919,783

STRIP FEEDING DEVICE

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Application July 16, 1956, Serial No. 598,159

17 Claims. (Cl. 197—133)

This invention relates to strip feeding apparatus, and particularly to line finding mechanism in a typewriting or like machine having a rotary platen in a shiftable carriage.

Line finding mechanism has especial utility in the imprinting of successive business forms in a continuous strip of such forms, which strip is fed or advanced about a rotary platen for imprinting upon successive or certain selected lines or forms. Thus line finders have been known which, under operator control, advance the platen in a step by step manner for imprinting upon successive lines of a form and which further operate to skip feed the strip in one continuous motion from the last inscribed line of one form to the first writing line of the next succeeding form.

The object of the invention is to simplify the construction as well as the means and mode of operation of strip feeding devices, whereby such devices may not only be economically manufactured, but will be more efficient and satisfactory in use, adaptable to a wide variety of applications, and be unlikely to get out of repair.

A further object of this invention is to provide greater flexibility in the number of lines per inch which may be presented for independent imprinting, and in particular to increase the number of lines per inch which a conventional typewriter may imprint, it being contemplated in this invention to adapt a typewriting machine for the more facile preparation of lists from which addressograph and like printing plates may more easily be prepared.

Another object of the invention is to enable unexpectedly close and accurate control of the movements of the platen, it being proposed to remove the conventional line spacing ratchet and detent from the typewriter so that all alignment of the strip is directly controlled by a program disc in the line finding mechanism.

A further object of the invention is to adapt the principle of line finding to a typewriting or like machine having a shiftable carriage and to provide for relatively remote control of the line finding mechanism, as from the keyboard of the typewriter.

Still another object of the invention is to present electrically powered and controlled line finding mechanism as described, which mechanism is mounted on and moves with the typewriter carriage.

Still another object of the invention is to control the movements of and positioning of a rotary platen solely from a program disc which performs a line finding function and the further function of aligning the platen in a selected position, the need for conventional ratchet and detent mechanisms for a rotary platen in a typewriting and like machine being thus obviated.

A still further object of the invention is to introduce into a line finding mechanism a stall type motor and a torsion spring, the latter tending to absorb shock, to provide for instantaneous advance of the program disc when released, and to inhibit backlash in the gear train to the platen.

A further object of the invention is to provide a strip feeding device possessing the advantageous structural features, the inherent meritorious characteristics and the mode of operation herein mentioned.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawing wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

Fig. 1 is a view in perspective, partly diagrammatic, of a known kind of electric typewriting machine incorporating strip feeding control apparatus in accordance with the illustrated form of the invention;

Fig. 2 is a view in side elevation, with the cover removed, of a line finding unit mounted on the carriage of a typewriter, all in accordance with the illustrated form of the invention;

Fig. 3 is a view in front elevation of the unit of Fig. 2, some parts of the typewriter being included to show the relationship of the unit thereto;

Fig. 4 is a view in cross section, taken substantially along the line 4—4 of Fig. 3;

Fig. 5 is a view in cross section, taken substantially along the line 5—5 of Fig. 3;

Fig. 6 is a fragmentary view in longitudinal section, taken substantially along the line 6—6 of Fig. 2; and

Fig. 7 is a view in perspective of a typewriting machine, shown in diagrammatic form, indicating thereon the control elements for the instant line finding mechanism, and there being further shown in Fig. 7 a wiring diagram of the line finding mechanism and its controls.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawings, a typewriting or like machine equipped in accordance with the illustrated form of the invention comprises a typewriting machine **10** having a keyboard **11**, a shiftable carriage **12** containing or mounting a relatively rotatable platen assembly **13**, and, mounted on one end of the carriage **12**, a line finding mechanism **14**. Various operations of the typewriter are adapted to be performed with electrical power which is brought into the machine through a plug-in conductor **15**. Also communicating with the source of electrical power, and through the same conductor **15** in order that the electrical power may be supplied to and cut off from all parts of the machine simultaneously, is a cable conductor **16**. The latter leads to the line finding mechanism or unit **14** for electrical operation thereof, and there is interposed in such conductor a connection box **17**, containing a rectifier, and which may be considered a supply unit or source for direct current power for actuation of the line finding unit **14**.

The rotary platen assembly **13** includes a platen roll **18**, and, in the illustrated instance, pin wheels **19** for the feeding of marginally perforated strip material. The roller **18** is secured to a platen shaft **21** (Fig. 3) supported in end frames of the carriage **12**, comprising at each end of the carriage a pair of frame elements **22** and **23**. On its leftward projecting end, the shaft **21** has a spacer sleeve **24** mounted thereon, as well as a gear **25** in rotary driving relation to the shaft. Except when the shaft **21** may be manually adjusted to a rotary position, through a variable mechanism **26**, all control over the movements and positioning of the shaft **21** and platen roller **18** thereon are a function of and depend upon the rotary movements and positioning of the gear **25**. In the usual typewriter construction, the rotary movements of the gear **25** are effected through a pawl and

ratchet mechanism while alignment of the platen shaft in its successive rotary positions is accomplished through a suitable detenting means. In the present instance, as before mentioned, the rotary adjustment of the platen, and alignment thereof, is effected solely through the line finding unit 14.

Supporting elements of the unit 14 include principally parallel spaced apart frame elements 20 and 27, this subassembly of frame elements being secured to the carriage frame 23 by studs 28 and held in spaced relation to one another by sleeves 29 and 31 mounted respectively upon the studs 28 and upon other studs 32 extending between the frame elements.

Disposed between the frame members 20 and 27 is an idler gear 33 meshing with the gear 25. The idler 33 rotates on an axle 34 (Fig. 4) which extends laterally from a floating link member 35 into an opening in the upper end of an arm 36 rotatably mounted near its opposite end on the shaft 21. The link 35 extends rearwardly or to the left in the unit 14 as viewed in Fig. 4, and is formed with a plurality or pattern of holes 37 selectively receiving a plunger pin 38 (Fig. 6) extending between aligned openings in the frame elements 20 and 27. Rotatably mounted on the plunger pin 38 is a program disc assembly 40 comprising the program disc proper 39, and, on either side thereof, gears 41 and 42. The latter meshes with the idler gear 33. In the substitution of one program disc assembly for another, the plunger pin 38 is withdrawn from the frame elements, and, to facilitate this operation, the pin extends out of the unit and is provided with a knob 43. A new assembly then may be substituted between the frame elements 20 and 27 and the plunger pin 38 pushed through the axial opening therein and through an opening 37 in the link 35 which is selected to position the drive gear 42 of the new disc assembly in meshing engagement with the idler 33. Thus, the idler gear 33 is constant in size but for different applications the drive gear 42 may vary in size. Accordingly, the idler can be adjusted by relocating the axis thereof through a shifting movement of the link 35, the arm 36 rocking about the shaft 21 to permit such movement. For a more facile operation of the parts, the arm 36 is provided with a finger piece 44 and the link 35 is provided with a knob 45 which is accessible from outside the unit 14 through a slot 50 (Fig. 4) in the frame element 20. The rear of the unit 14 is closed by a panel 46 pivoted to a cross rod 47 at its lower end. The upper end thereof carries a stud 48 engageable by a latch 49 pivotally mounted on the frame element 20 and urged in a clockwise direction by a spring 51, or in a direction to engage the stud 48. By manually disengaging the latch 49, the panel 46 may be rocked downward for better access to the program disc assembly 40 for the removal and installation thereof.

Further in regard to the plunger pin 38, this pin has a longitudinal sliding bearing in a sleeve 52 fastened at its one end to the frame element 27. The pin 38, within the portion enclosed by the sleeve 52, is formed with a longitudinal flat and with a transverse slot (not shown). The former is engageable by a radial screw stud 53 carried by the sleeve 52 to limit longitudinal movement of the plunger pin, or more particularly, to inhibit complete withdrawal of the plunger pin from the sleeve when the pin is retracted in the removal or replacement of a program disc assembly 40. The described transverse slot is engageable by a keeper 54 pivotally mounted on the frame element 27 and engageable with the slot through an opening in the sleeve 52, the keeper when engaged with the slot acting as a latch to hold the pin 38 in an operative position between the frame elements 27 and 20.

The gear 41 of the program disc assembly 40 meshes with a gear 55 on one end of a bushing 56 having a rotary mounting in a bearing sleeve 57 installed in an opening in the frame element 27. Rotatably mounted on the exterior of the sleeve 57 is a spool 58 terminating at its one end in a radially extending flange 59. A mating flange 61, on a shell or housing 62 of an electric motor 60, is fastened to the flange 59 by bolts 63. The electric motor 60 is a commercially available device having at one end thereof a boss 64 received in the sleeve 57 and providing a bearing for a projecting end of the motor shaft 65 which enters the bushing 56 and is secured thereto, as by pinning. When the electric motor is energized, it tends to rotate the shaft 65 and thereby the pinion 55. The latter, being in driving engagement with the gear 41, rotates the program disc assembly 40. Interposed between the flange 59 and a flange 66 on the bearing sleeve 57 is a torsion spring 67 connected at its one end to a screw stud 68 set in the motor flange 61 and connected or anchored at its opposite end to a stud 69 set in the stationary frame element 27. In the operation of the motor assembly, it will be understood that if the pinion 55 is held from rotating, the energy acting to rotate the shaft 65 in one direction will be resolved into a rotary effort applied in the opposite direction to the motor shell or housing 62. This latter impulse is absorbed by the spring 67 which thereby is tensioned and after absorbing a predetermined amount of energy will impose sufficient resistance to the torque of the shell 62 to stall the motor. Upon release of the pinion 55, the shaft 65 is free to rotate and the shell 62 is free to return to its starting position, the instantaneous speed of rotation of the shaft 65 being assisted by the release of energy from the spring 67.

As shown in Figs. 2 and 6, a ring 71 is interposed between the flanges 61 and 59. On the inner periphery of the ring 71 is a circumferential series of half round notches 72 adapted to engage the screw studs or bolts 63. On the outer edge of the ring 71 is a circumferential recess 73. Riding the surface of the peripheral edge of the disc 71 is a roller 74 on an arm of a micro switch 75. The roller 74 normally is received in the recess 73. So long as the permitted rotary motion of the shell 62 does not bring the relatively elevated part of the periphery of ring 71 into cooperative relation with the roller 74 the switch 75 will remain non-actuated, or in the position shown in Fig. 2. It will be understood that the ring 71 may be variably positioned in a rotative sense and held in a selected position of adjustment by engagement of the half round recesses 72 with the bolts 63. The switch 75 plays a part in the control of the line finding mechanism which will hereinafter more clearly appear.

Referring to Fig. 5, the program disc 39 is so called by reason of an arrangement of ratchet-like teeth 76 on its periphery, which teeth are laid out in such series relationship as to define a program of rotary increments for the platen shaft 21 to which it is positively connected. The peripheral length of the notched edge of the program disc may correspond to a single length of one of the business forms comprised in the record strip. Thus, the first recording line space or writing line of a form is represented by a notch 76*a* on the disc 39 while succeeding writing lines of the form are represented and defined by successive teeth 76.

The teeth 76 are engageable by a pawl 77 which when engaged with a tooth on the program disc holds the disc positively against rotation. The pawl 77 is rotatably mounted on a stud 78 set in the frame element 27 and has a tail portion 79 on which is a tail extension 81. The latter is engageable by a rod 82 resting on a stud 83 on a plate 84, the rod 82 being further connected to the plate 84 by a spring 85. The pawl 77 is urged in a counterclockwise direction, as viewed in Fig. 5, or in a direction to engage the pawl with the teeth on the program disc, by a spring 86. According to the construction and arrangement of parts, therefore, the pawl 77 normally engages the periphery of the program disc 39. When the motor 60 is energized, the program disc assembly is urged constantly in a counterclockwise direc-

tion as viewed in Fig. 5 by virtue of the torque continuously applied through shaft 65 and pinion 55, as before described. One of the teeth 76 accordingly is seated firmly against the pawl 77 which holds the program disc from rotation. If now the plate 84 is rocked leftward or in a counterclockwise direction as viewed in Fig. 5, the rod 82 thereon will press against the tail extension 81 and thereby rock the pawl 77 in a clockwise direction, releasing it from an engaged tooth 76. The program disc assembly will immediately commence to move, under the urging of the motor 60, and through the gear 42 and idler 33 a corresponding rotary movement will be imparted to the platen shaft 21. As the plate 84 reaches a limit of rocking motion, the rod 82 passes beneath and beyond the tail extension 81, allowing the pawl 77 to return into the path of a next succeeding tooth 76. In normal operations, therefore, the program disc assembly is limited to a single increment of movement corresponding to the distance between adjacent teeth 76 on the program disc upon each actuation of the plate 84. Return motion of the plate 84 returns the rod 82 to cooperative relation with the tail extension 81, it being understood that the rod may rock in a pivotal sense to accomplish this change of position by virtue of the spring 85. The rod 82 is pivotally connected to the plate 84 at 87 and has the character of a hammer which is poised to strike the tail extension 81 of the pawl 77 upon each actuation of the plate 84.

The plate 84 is made fast to a shaft 88 which extends through the frame element 27 from a rotary solenoid 89 mounted on the outside of the frame element 27 or to the left thereof as viewed in Fig. 3. Another rotary solenoid 91 is similarly mounted on the frame element 27 and has a shaft 92 (Fig. 5) extending through the frame element into the space between the elements 20 and 27. On the inner projecting end of the shaft 92 is secured a cam-like arm 93 engageable with one arm 94 of a bell crank lever 95. Also formed in the arm 94 is a latch shoulder 96 engageable with a lug 97 on the tail portion 79 of the pawl 77. A spring 98 tends to rock the lever 95 in a clockwise direction as viewed in Fig. 5 or in a direction to permit the latch portion 96 to engage in back of the lug 97 whenever the pawl 77 may be moved in a clockwise or releasing direction. The cam-like arm 93, however, is effective normally to hold the lever 95 rocked to the position illustrated wherein the latch portion 96 is beneath the plane of movement of the lug 97 as the pawl 77 rocks to and fro from effective position with respect to the teeth on the program disc. Should the shaft 92 rock in a counterclockwise direction, the cam-like arm 93 will move out of restraining relation to the lever 95 and the lever will be permitted to rock to a position in which the latch portion 96 will engage the lug 97 upon the first following actuation of the pawl 77 to hold the pawl in a released position. The program disc assembly then is free to turn without restraint from the pawl 77 and the resulting rotary movement of the program disc and of the platen is continuous in nature as opposed to the intermittent step by step action which characterized the operation of the mechanism under the influence of successive energizations of the solenoid 89. A limit of such unrestricted turning movement of the program disc assembly is defined through the cooperation of a stud 99 on the disc 39 and an arm 101 of the lever 95, which arm extends out into parallel adjacent relation to the disc 39 to be engaged by the stud 99 once for each complete revolution of the disc. As the stud 99 engages and passes by the arm 101, a momentary rocking motion of the lever 95 results, in a clockwise direction, which is effective to release the latch portion 96 from engagement with the lug 97, if the lug is so held. Accordingly, in the illustrated instance the unrestricted turning motion of the program disc is limited to a maximum of one full revolution thereof.

The line finding unit 14 is enclosed by a cover 102 which has openings in its outer side wall in order that the variable 26, motor 60 and knob 43 may project therethrough, and in order to permit entry of the electrical conductor 16. The latter is electrically connected in the unit 14, to the solenoids 89 and 91 and to the motor 60, through a plug-in receptacle 103 mounted on a bracket 104 secured by studs 105 to the frame element.

The electrical circuit is shown in considerable detail in Fig. 7. Briefly considering such diagram, the motor 60 is connected to the receptacle 103 by leads 106 and 107. Within the motor circuit is a safety switch 108 normally closed and adapted to open when the closure panel 46 is rocked downward out of closing position (see Fig. 5). Also in the motor circuit is the previously described switch 75 operating under the control of the ring 71 attached to the motor housing. This switch too is normally closed. Opening of the switch, accomplished by a riding up of the roller 74 upon the high level of the edge of disc 71, causes opening of the switch and thereby interrupts the supply of power to the motor 60. In strip feeding increments of long range, the load on the motor 60 is relatively low. The shell 62 is accordingly enabled to turn relatively rapidly and if it is not restricted in its movement may create more tension than is desirable in the spring 67. Thus, the switch 75 is placed in series with the motor so that an over travel of the ring 71 will result in cutting off the supply of power to the motor. With the motor shut off, the spring 67 begins to reverse the motor housing and as soon as the switch actuating roller 74 drops back into the recess 73 the switch 75 recloses and the motor 60 becomes again energized. It will be understood, that the disc 71 is so selectively positioned and the parts are so constructed and arranged that the spring 67 normally will be tensioned sufficiently to stall the motor 60 at or just prior to the time that the roller 74 would ride upward out of the recess 73. The arrangement provides for a predetermined maximum tensioning, or what may be considered a constant tensioning of the spring 67.

The solenoids 89 and 91 are interposed in a common return lead 109 and individual supply leads 111 and 112 in such manner that either one may be energized independently of the other one.

The described electrical leads in the unit 14 are connected by the cable 16 to the box 17. Within the latter is a rectifier 113 and resistors 114 and 115 by which the A.C. voltage from the line 15 is transformed and supplied to the motor leads 106 and 107. Other connections within the box 17 are capacitors 116 and resistors 117 through which the solenoid leads 109—112 are connected to controls on the typewriter keyboard 11. On the latter, is a key or button 118 operable when depressed to close a normally open switch 119 and another key or button 121 operable when depressed to close a normally open switch 122. The former, as indicated in the diagram, controls solenoids 89 and when depressed closes a circuit through this solenoid in a manner to energize it and so rock shaft 88 to effect an indexing movement of the program disc assembly in the manner before described. Similarly, depression of the key or button 121 closes a circuit through the solenoid 91 and rocks the shaft 92 to render arm 93 ineffective and so pre-set the latch lever 95 to hold the pawl 77 disengaged from the program disc on its next succeeding operation. In the use of this latching control, depression of the button 121 immediately precedes depression of the button 118. The former conditions the line finding mechanism for what may be termed a skip feeding operation, having reference to the movement of the platen 13, and this skip feeding operation is actually put into effect when the button 118 is depressed. Operation of the control button 121 will be effected when it is desired to skip a portion of the record form upon which no entries are to be made in order that the strip may be advanced in a single movement to the first writing line of the next succeeding

form, thus obviating the need for repeated depressions of the button 118 which would be necessary were the button 121 not provided.

It may be noted that the supply of current to the motor 60 is continuous, as long as the on-off switch 123 of the typewriter remains closed and as long as there is no opening of the safety control switches 75 and 108. When the power is applied, therefore, the shell 62 of the motor turns to wind up the spring 67 until the spring has enough tension to overcome the output torque of the motor. When the spring tension and motor torque become equalized, the motor comes to a stalled halt and remains so, with the power on, until the key or button 118 is depressed to initiate a line spacing operation. When this occurs, the pawl 77 is lifted and then immediately returns to the surface of the program disc, the disc moving in the interval a rotary distance corresponding to the spacing between the previously held and next following tooth on the edge of the disc. These operations are continued until the last line of the form is inscribed, whereupon the program disc and platen move in a single relatively long step upon the next following actuation of the key 118 to engage the tooth 76*a* with the pawl 77. In this, the home position, the first writing line of the next succeeding form is presented for inscription. To by-pass any part of the complete program of steps defined by the disc, the controls 121 and 118 on the typewriter keyboard are depressed in succession, as before described, and the program disc will be reset to its starting or home position without passing through the successive indexing positions represented by intervening teeth 76. It will also be understood in this connection that the stud 99 on the disc 39 is located to release the lever 95 at a time proper for release of the pawl 77 to engage the tooth 76*a*.

The spacing between the teeth 76 on the disc 39 is fixed in regard to a given disc so that the number of lines per inch which can be imprinted upon a record form with such disc correspondingly is fixed. In the manner before described, however, different program disc assemblies may be substituted for one another wherein the spacing between the teeth on the disc varies. Thus, for a given task, a program disc assembly is selected for use which will produce the desired line spacing and the desired pattern of movement of the platen 13. It may be noted that since the motor 60 constantly is energized then the program disc 39 constantly is urged in a counterclockwise direction (Fig. 5) with a tooth 76 pressing against the pawl 77. Thus, as the rotary platen assumes a rotative position of adjustment in response to engagement of a tooth with the pawl, the platen is held firmly in such position during the imprinting operation by the action of the motor in holding the program disk tightly against the stop represented by the pawl 77. The shock of impact as the successive teeth 76 engage the pawl is sustained by the spring 67 in a manner to inhibit backlash in the gear train and to provide for relatively quiet, vibration free operation.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a typewriting or like machine having a rotary platen movable in rotary increments of motion through successive line spacing operations; the combination of a line finder mechanism including a rotary program disc, a stall type electric motor urging said program disc continuously to rotary movement, and selectively releasable means locking said program disc against operation by said motor selectively operable to provide for selective increments of rotary movement of said disc.

2. In a typewriting or like machine having a rotary platen movable in rotary increments of motion through successive line spacing operations; the combination of a line finder mechanism including a program disc having spaced apart notches on its periphery, a pawl normally engageable with a notch on the periphery of said disc to lock said disc against rotation, an electric motor tending when energized to rotate said disc, a torsion spring providing reactant means for said motor when said disc is locked and stalling said motor, and means for selectively lifting said pawl from an engaged notch on said disc to release said disc for a rotary increment of motion.

3. In a typewriting or like machine, a rotary platen, a line finder mechanism for controlling the movement of said platen including a rotary program disc in driving relation to said platen, a releasable means holding said program disc against rotation, selectively operable means for releasing said releasable means for selective intervals, and a stall type electric motor tending constantly to rotate said program disc and operative to effect a rotary movement of said platen to an extent dependent on the interval of release of said releasable means by said selectively operable means.

4. In a typewriting or like machine, a rotary platen, a line finder mechanism for controlling the movement of said platen including a rotary program disc, an electric motor having a rotary shaft in driving relation to said program disc and a housing supporting said shaft for relative rotary motion, means for locking said program disc against rotation by said shaft, the energizing of said motor while said disc is locked creating a torque applied to said housing in a direction opposed to the direction of rotary effort applied to said shaft, a spring tensioned by said torque and stalling said motor, and selectively operable means for releasing said locking means.

5. A typewriting or like machine according to claim 4, characterized by means for limiting the tension which may be applied to said spring to a predetermined maximum.

6. In a typewriting or like machine having a carriage and a rotary platen carried thereby, a line finder mechanism carried by said carriage including a program disc, a platen actuating gear train extending from said disc, an electric motor for rotating said disc including a housing mounted on said carriage for relative rotary motion and a shaft mounted in said housing for relative rotary motion, a gear train connecting said shaft to said disc, means for energizing said motor to rotate said shaft in one direction, the reactant force being applied in a direction tending to rotate said housing in the opposite direction, a torsion spring interconnecting said housing and the carriage and tensioned by movement of said housing in said opposite direction, and releasable means for holding said disc against rotation.

7. A typewriting or like machine according to claim 6, characterized by means for discontinuing the energizing of said motor in response to a predetermined extent of motion of said housing in said opposite direction.

8. In a typewriting or like machine having a carriage and a rotary platen carried thereby, a line finder mechanism mounted on said carriage and including a rotary program disc, gear means extending from said program disc for the positioning of said platen in accordance with the rotary movements of said program disc, electric motor means mounted on said carriage and connected to

said program disc for rotation thereof, selectively releasable pawl means for holding said disc against rotation, and energy absorbing means stalling said motor means while said program disc is held against rotation.

9. A typewriting or like machine according to claim 8, characterized by relatively remote means for releasing said pawl means.

10. In a typewriting or like machine having a keyboard, a carriage and a rotary platen supported by said carriage, a line finder mechanism on said carriage including a rotary program disc connected to and positioning said platen in accordance with its own rotary movement and further including a stall type electric motor connected to and tending continuously to rotate said program disc, a stop for said disc, and relatively remote means on said keyboard for releasing said stop.

11. A typewriting or like machine according to claim 10, characterized by a latch for holding said stop in released position, means holding said latch normally ineffective and other means on said keyboard for releasing said last named means.

12. In a typewriting or like machine having a keyboard, a carriage and a rotary platen supported by said carriage, a line finder mechanism on said carriage including a rotary program disc connected to and positioning said platen in accordance with its own position and further including electrical power means for rotating said program disc, and relatively remote means on said keyboard for controlling operation of said mechanism for selective intervals.

13. In a typewriting or like machine, a rotary platen, a line finder mechanism for controlling the movement of said platen including a rotary program disc in driving relation to said platen, releasable means holding said program disc against rotation, selectively operable means for releasing said releasable means, and a stall type motor tending constantly to rotate said program disc, said motor comprising a shaft in driving relation to said program disc, a housing and a torsion spring absorbing the torque of said housing in response to operation of the motor and stalling said motor when said disc is held against rotation.

14. In a typewriting or like machine having a shiftable carriage and a rotary platen supported thereby, a

line finder mechanism on said carriage including a rotary program disc connected to and positioning said platen in accordance with its own position and further including electrical power means for rotating said disc, a power source for operation of said power means, flexible power conductors between said source and said power means, a keyboard on said machine, means on said keyboard for controlling the movement of said program disc under the urging of said power means, said power means being continuously energized from said source.

15. In a typewriting or like machine having a rotary platen movable in rotary increments of motion through successive line spacing operations; the combination of a line finder mechanism including control means for said platen for effecting selected increments of movement thereof, lock means normally preventing operation of said control means, an electric motor normally energized and urging said control means to operate said platen and means for selectively rendering said lock means inoperative to provide a required interval of operation of said platen by said control means.

16. In a typewriting or like machine having a carriage and a rotary platen carried thereby, a line finder mechanism mounted on said carriage including program means connected to said platen for rotation thereof, means continuously energized and normally urging said program means to rotate said platen, means normally preventing operation of said program means in opposition to said urging means having independent key operating means connected thereto selectively operable to provide for operation of said program means by said urging means to produce a selected increment of rotation of said platen.

17. The structure as set forth in claim 16 and shock absorbing means connected to said urging means to prevent damage thereto in operation.

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