

July 14, 1936.

J. Q. SHERMAN
MULTISECTIONAL PLATEN

2,047,233

Filed July 29, 1932

2 Sheets-Sheet 1

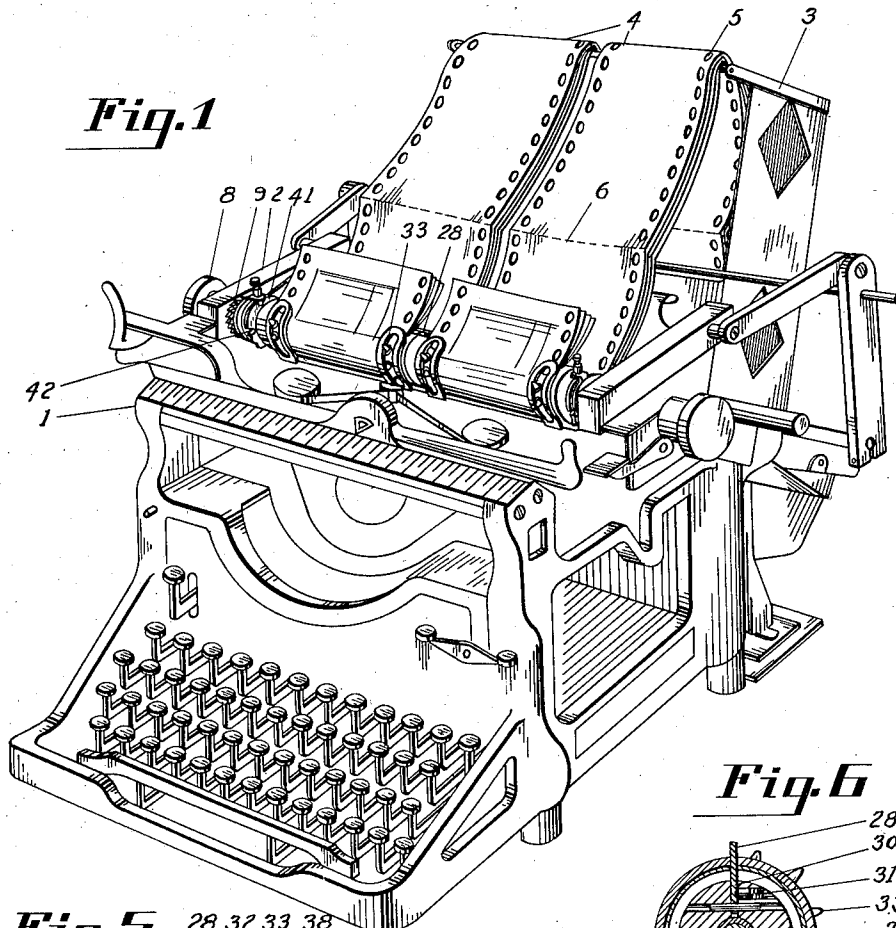


Fig. 1

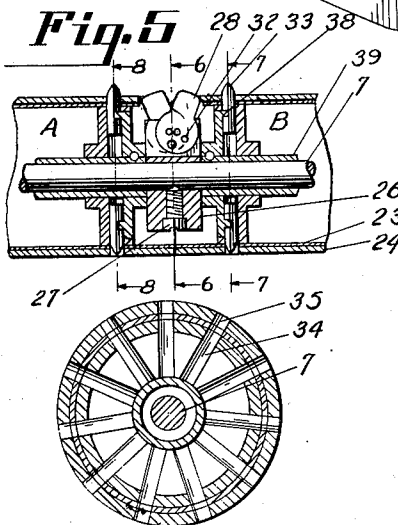


Fig. 8

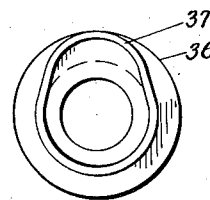
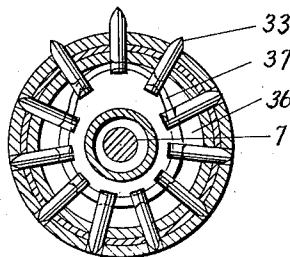
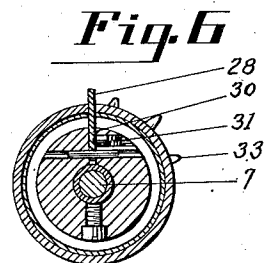


Fig. 9

Fig. 7

INVENTOR

INVENTOR
BY *John D. Herman*
Walker & Syrig
ATTORNEY

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J. Q. SHERMAN

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2 Sheets-Sheet 2

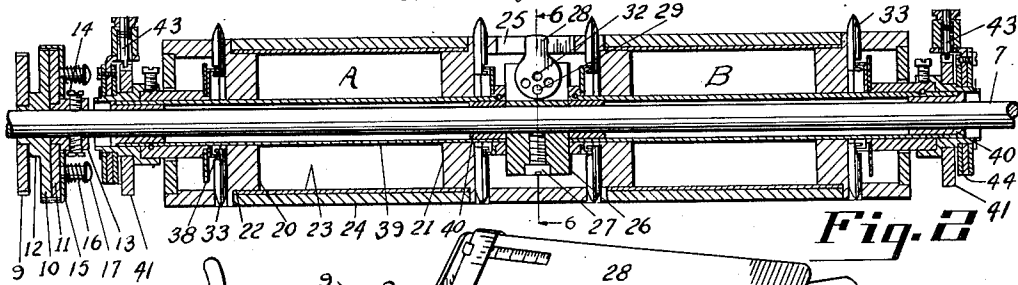


Fig. 2

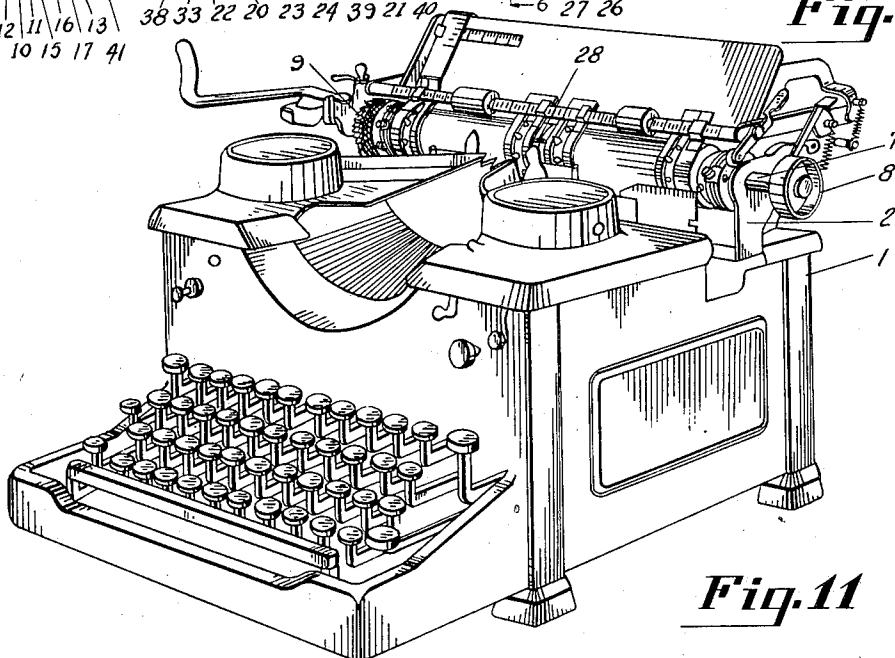


Fig. 11

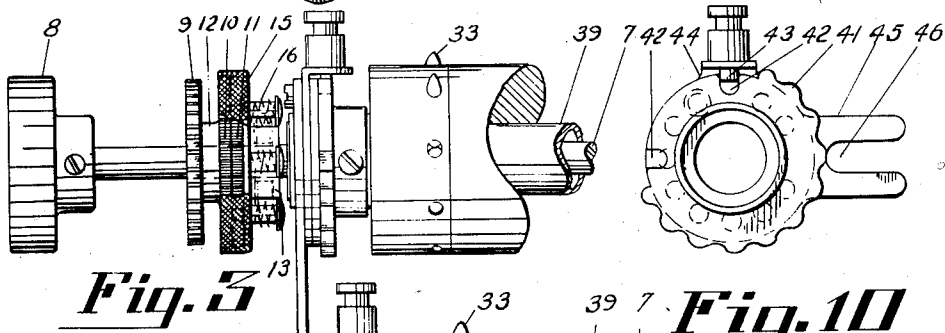


Fig. 3

Fig. 10

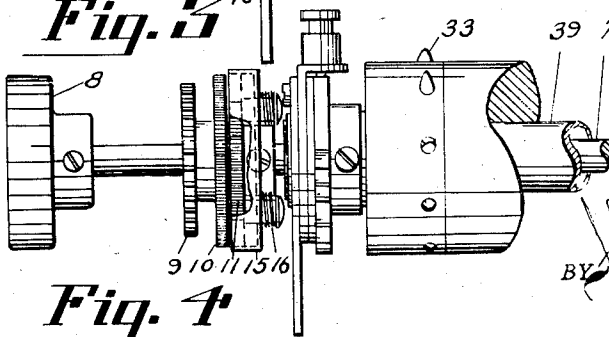


Fig. 4

INVENTOR
BY *J. Q. Sherman*
Walker, *Edging*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,047,233

MULTISECTIONAL PLATEN

John Q. Sherman, Dayton, Ohio

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20 Claims. (Cl. 197—133)

This invention relates to typewriting machines and more particularly to a multi-sectional platen therefor, the respective portions of which are arranged and connected for either alternate or simultaneous operation.

For certain classes of records, it is desirable to employ different printed forms or record sheets of different colors which ordinarily necessitate frequent removal and replacement of such forms when used in the usual writing machine. Likewise frequent interchange of "charge account", "goods returned", "paid out", "incoming shipment" and "outgoing shipment" record sheets in the ordinary typewriter causes great inconvenience and loss of time due to necessity for repeatedly removing and replacing different record forms.

The present invention is designed to overcome this difficulty by providing a platen roll which may be incorporated in any usual or conventional type of writing machine which will adapt the machine to simultaneously hold side by side two or more varieties of forms or stationery, either of which may be advanced and written upon independently of the other in the normal operation of the writing machine, and if required for feeding wide stationery or if for special reasons the different stationery forms are to be simultaneously advanced through the writing machine, the respective sections of the platen may be interlocked to operate in unison as a single platen roll of usual construction.

While automatically retractable feeding pins, carried by the respective platen roll sections for uniformly feeding standard marginally punched stationery, have been illustrated in the drawings, such automatic feeding pins and their means of operation per se form no part of the present invention, but are shown and described in copending application Serial No. 542,855, now Patent No. 2,000,649 dated May 7, 1935.

The object of the invention is to improve the construction as well as the means and mode of operation of writing machines whereby they will not only be cheap in construction, but will be more efficient in operation, applicable to a wider range of usefulness, and unlikely to get out of order.

A further object of the invention is to provide a multi-sectional platen for writing machines, the respective portions of which will be directly controlled by the normal operation of the writing machine for either alternate or simultaneous operation.

A further object of the invention is to provide

as an article of manufacture, a multi-sectional platen roll which may be readily interchanged for the ordinary platen roll of conventional and popular styles of typewriters and other writing machines, whereby such writing machines may be adapted for billing purposes and for writing special records of different character with minimum effort and loss of time.

A further object of the invention is to provide suitable operating means for transmitting spacing motion to the respective sections of the platen roll by actuation of a spacing mechanism common to the different roll sections.

A further object of the invention is to provide a suitable coupling or interlocking connection between the platen roll sections for unison operation thereof.

With the above primary and other incidental objects in view, as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation, or their equivalents, as hereinafter described and set forth in the claims.

Referring to the drawings, wherein is shown the preferred, but obviously not the only form of embodiment of the invention, Fig. 1 is a perspective view of a conventional form of typewriter to which the platen roll, forming the subject matter hereof, has been applied. Fig. 2 is a longitudinal sectional view of the assembled platen roll. Figs. 3 and 4 are enlarged side elevations of the left hand end of the platen roll, as illustrated in Fig. 2, showing the line spacing ratchet wheel and variable coupling thereof, also the pin shifter device, and one set of feeding pins, the line variable connection being shown in connected and disconnected relation in the respective states. Fig. 5 is a detail longitudinal sectional view of the selective coupling or driving device engaging one of the platen roll sections with the driving shaft independently of the other, whereas in Fig. 2, two sections have been shown simultaneously connected. Fig. 6 is a transverse sectional view through such selective device, on lines 6—6 of Figs. 2 and 5. Fig. 7 is a detail sectional view, on lines 7—7 of Fig. 5, viewed toward the left, while Fig. 8 is a detail sectional view on the same lines 7—7, viewed toward the right. Fig. 9 is a detail view of the control cam for the retractable feeding pins. Fig. 10 is a detail side elevation of the pin shifter device. Fig. 11 is a perspective view of another style of conventional typewriter to which the invention has been applied.

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

Referring to the accompanying drawings, wherein the preferred form of the invention has been illustrated, 1 is a conventional form of typewriter of which 2 is the reciprocatory platen carriage, and 3 is a traveling carrier for the stationery supply, which, however, forms no part per se of the present invention. The present invention pertains primarily to the platen roll, about which are fed multiple strips 4 of record material from the supply carrier 3. The strips 4—4 preferably, though not necessarily, comprise manifolding assemblies of alternating record and transfer material which, in the present instance, has been shown marginally punched at 5, for engagement of feeding pins, as hereinafter described, which maintain uniform alignment and registry of the superposed manifolding strips. These strips are also transversely scored or perforated as at 6 to enable the inscribed portions thereof to be easily detached from the supply strips.

The respective record assemblies 4—4 may comprise stationery of different colors or differently printed forms for use in recording outgoing and incoming shipments respectively, cash or charge sales, received on account, and paid out transactions, etc. While the platen roll is herein illustrated and described as comprising but two independently operable sections adapted for two different sets or assemblies of record material, it is to be understood that the invention is not to be limited to two sections only, but may be extended to include a greater number of such sections.

Referring to the drawings, and more particularly to Fig. 2 thereof, 7 indicates the revoluble drive shaft which is journaled in the reciprocatory platen carriage 2 of the writing machine, and carries at its extremities the usual knobs 8 for manual rotation and adjustment of the platen roller. Mounted upon the shaft 7, adjacent to the left hand end thereof as shown in Figs. 1 and 2, is the usual line spacing ratchet wheel 9, which is adjustably connected to the drive shaft 7 by a line spacing adjusting mechanism by which the spacing ratchet 9 may be synchronized with the writing line or position upon the platen and vice versa. In the present instance, this adjusting mechanism comprises two peripherally knurled discs 10 and 11 arranged side by side. The disc 10 is fixedly connected to and rotates in unison with the ratchet wheel 9 which is otherwise loose upon the drive shaft. In the present construction the variable disc 10 is shown provided with a hub 12 on which the ratchet wheel 9 is pressed. The second disc 11 is likewise provided with a hub 13 fixedly secured to the drive shaft 7 by the set screws 14. Surrounding the knurled variable discs 10 and 11 is a collar 15 interiorly knurled or serrated for interlocking engagement with the peripheries of the discs 10 and 11. This collar 15 is axially movable relative to the discs 10 and 11 against the tension of springs 16 carried upon studs 17 projecting from the disc 11. Normally the interiorly serrated or knurled collar 15 has interlocking engagement with the peripheries of both of the discs 10 and 11, as is shown in Figs. 2 and 3. However, by retracting the clutch collar 15 against the tension of the spring 16, as is shown in Fig. 4, the clutch collar is disengaged from the peripherally knurled or serrated variable disc 10, thereby releasing the drive shaft 7 and its actuated parts from the actuating ratchet wheel 9 of the line spacing

mechanism. By relatively rotating the shaft 7 and platen roll parts carried thereby through partial rotation in one direction or the other, the desired writing position can be suitably synchronized with the line spacing mechanism and ratchet wheel.

The platen roller comprises two independently operable sections of similar construction and operation, designated as sections A and B. Each of these platen sections comprises spaced heads 20 and 21 rabbeted at 22 to receive concentric metallic and rubber or composition cylinders 23 and 24. The platen sections A and B are concentrically arranged end to end and abut one upon the other medially of the platen roll. The abutting ends of the sections A and B are longitudinally slotted at 25. Carried upon the drive shaft 7 and fixedly secured thereto intermediate the heads 21 of the respective platen roll sections A and B, is a collar 26 secured to the drive shaft 7 by a set screw 27. This collar 26 carries a driving finger 28 pivoted at 29 within a slot 30 in such collar 26. The driving finger 28 extends radially within the slot 25 of one or the other of the sections A or B, and serves to operatively connect such section of the platen roll with the drive shaft 7 for unison rotation. The alternate positions of the driving finger 28 are shown clearly in Fig. 5. By adjusting the respective platen roll sections A and B rotatively to present their slots 25 in registering relation, the driving finger 28 may be adjusted to an intermediate position, as is shown in Fig. 2, in which it overlies the junction between said sections in simultaneous engagement with both the sections A and B, thereby serving to operatively connect both of such sections with the drive shaft 7 for unison rotation with each other, as well as with the shaft 7. A small spring pressed detent 31, within the collar 26, is engageable in one or another of a series of depressions 32 in the pivoted driving finger 28 to yieldingly hold the finger in its respective positions of adjustment.

The respective sections A and B of the platen roll may be employed in conjunction with the usual friction feed roller to advance the record strip assemblies 4—4 either independently by turning the driving finger 28 to one side or the other, or simultaneously by adjusting such driving finger 28 to its intermediate position. Likewise in such intermediate position the platen roll may be employed with stationery of greater width than either of the sections A or B, even to a width equal to the combined section. In such case the interconnection of the sections A and B for unison rotation causes them to operate as a single continuous platen roll.

Although the platen roll may be employed with frictional feeding mechanism, it is preferably provided with radially disposed feeding pins 33 which are automatically retracted and extended as the platen roll sections rotate. These feeding pins 33 are automatically projected beyond the periphery of the platen roll into engagement with the marginally punched feeding holes 5 of the record strip assemblies 4, as the pins approach the writing position. After passing therebeyond, the pins are automatically retracted within the periphery of the platen roll so that only a few pins are extended therebeyond at the same time and the pins are automatically disengaged from the advancing record strips. Means is provided by which the position at which the pins are projected may be changed circumferentially of the platen roll whereby the pins are rendered inoperative by be-

ing projected beyond their range of operative engagement with the marginally punched strips when ordinary friction feeding means is to be employed. Such retractable feeding pins, and the control mechanism therefor, per se, form no part of the present invention, but are set forth and claimed in a copending application. Such mechanism, however, will be briefly described in order that a thorough understanding of the present invention may be had.

Each of the heads 20 and 21 is radially grooved on its outer face as is indicated at 34 in Fig. 8 to provide guide ways for the reciprocatory feeding pins 33 which are slidably mounted therein. These grooves 34 register with holes 35 in the cylinders 23—24, through which the tapered ends of the feeding pins 33 are projected. Located in parallel spaced relation with the cylinder heads 20 and 21, are cams 36 having eccentrically disposed lateral flanges 37 which engage in lateral notches 38 in the reciprocatory feeding pins. The cams 36 are normally held stationary, although it is revolvably adjustable to different positions for the purpose of changing the position of projection of the pins from operative to inoperative relation with the record strips. Inasmuch as the cams 36, associated with the respective cylinder heads 20 and 21, must be so rotatively adjusted in unison, they are carried upon a supporting sleeve 39 journaled by means of bushings 40 upon the main drive shaft 7. The heads 20 and 21 are mounted to rotate freely upon this sleeve 39 under influence of their driving connections through the finger 28 and collar 26 with the main drive shaft 7. As the platen cylinder sections rotate about such sleeve 39 and the concentric drive shaft 7, the pins 33, being carried therewith, follow the eccentric path of the cam flange 37 being thereby progressively projected and retracted.

Secured to the sleeve 39 and to the control cams 36, is a pin shifter disc 41 which may be manually rotated to change the relative position of the cams. The shifter disc 41 is notched at 42 for engagement therewith of a detent plunger 43 carried upon a disc like head 44 which is in turn connected to an arm 45 bifurcated at 46 for engagement with a suitably located rod or frame bar of the typewriter structure whereby said arm is held stationary while the disc like head loosely surrounds the cams and sleeve assembly to support the detent 43. By disengaging the detent 43 from the shifter head 41 and rotating the latter through a partial rotation, the cams 36, connected therewith, will be correspondingly rotated and the operative position of the feeding pins 33 will be correspondingly changed. The detent 43 being engaged in the second of the notches 42 of the head 41, will hold the parts in such adjusted position.

As is shown in Fig. 2, the pin control mechanism including the sleeves 39, cams 36, the shifter head 41, and detent 43, pertaining to each of the sections A and B, are entirely independent. That is to say, each of these platen roll sections has its own pin operating mechanism, operable independently of that pertaining to the other section.

Although a plurality of rotary platens have been disclosed in the preferred modification, a plurality of stationary platens may be used within the purview of this invention. Likewise, a plurality of pin feeding devices have been disclosed. Instead of a plurality of pin feeding devices, one pin feeding device may be used with

one or more friction feeding devices, or any other suitable feeding devices. Obviously, some of the pin feeding devices may be provided with pins having rectilinear movement and others with pins that do not have a rectilinear movement.

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 the preferred form 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 writing machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of rotary platens, a rotary shaft upon which the platens are mounted, a pin wheel feeding device, said pin wheel feeding device including a tubular sleeve mounted upon said shaft, said sleeve being provided with a plurality of loop-like cams engaging the feeding pins to control the path thereof, said cams being grouped in pairs, one group for each platen, said groups being adjustably mounted so as to shift the pin feeding devices associated with a platen from operative to inoperative position and vice versa.

2. In a writing machine for use with continuous length strips of manifold record material having marginal feeding holes, a plurality of feeding devices, each of which includes a rectilinear pin wheel feeding device having operative and inoperative positions, means for actuating said pin wheel feeding device from one position to the other, a common shaft for supporting said feeding device, and an adjustable driving connection between said shaft and said feeding device to selectively connect one or more of said feeding devices to said shaft in driving connection therewith either when the pin wheel feed is in operative or in inoperative position.

3. In a typewriting machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of aligned platen sections, independent pin wheel feeding devices associated with each of said platen sections adapted to engage said feeding holes to feed continuous forms circumferentially about the respective platen sections, each of said pin wheel feeding devices having an operative and an inoperative position.

4. In a writing machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of aligned platen sections about which the record material advances circumferentially, independent pin wheel feeding mechanisms associated with each of said platen sections for advancing record material having marginal feeding holes, one of said pin wheel feeding mechanisms having operative and inoperative positions, and means for selectively driving said one platen section when the

feeding mechanism is in either operative or inoperative position.

5. In a writing machine for use with continuous strips of manifold record material having marginal feeding holes, a platen including a plurality of independently operable sections concentrically disposed end to end, pin wheel feeding devices for feeding the record material circumferentially about the platen, each of said pin wheel feeding devices including loop-like cams mounted upon a tubular sleeve, said cams controlling the path of the feeding pins, a revoluble main shaft therefor upon which the respective sections are loosely mounted for independent relative rotation of the shaft and upon which the sleeves are mounted, actuating means for the shaft, and a driver member carried by the shaft and engageable alternately with different sections of the platen for rotating the engaged section thereof in unison with the shaft.

6. In a writing machine for use with continuous strips of manifold record material having marginal feeding holes, a platen roll, a plurality of circumferentially arranged rectilinear pin feeding devices including a pair of cams adjustably mounted, said cams controlling the path of the feeding pins, each of said feeding devices being adapted to supply to the platen record material having marginal feeding holes, driving mechanism, and means for independently connecting each of the feeding devices to the driving mechanism.

7. In a writing machine for use with continuous strips of manifold record material having marginal feeding holes, a platen, a series of circumferentially arranged rectilinearly movable pin feeding devices axially spaced with respect to said platen, said pin feeding devices supplying record material circumferentially around the platen, the pins of which engage the feeding holes, a driving mechanism, and means for selectively connecting the pin feeding devices to the driving mechanism.

8. In a typewriting machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of aligned rotary platen sections, a plurality of pin wheel feeding mechanisms arranged in groups, one group for each of said platen sections for advancing the record material thereto, the pins of each pin wheel feeding mechanism having a relative movement with respect to its platen section, and driving mechanism for actuating selected groups of said pin feeding mechanism.

9. In a writing machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of platens about which the manifold material advances circumferentially, independent pin wheel feeding mechanisms associated with each of said platens adapted to engage said feeding holes to feed the forms circumferentially thereabout, the pins of each wheel feeding mechanism having a relative movement with respect to its platen, and a driving mechanism for actuating one or more of said pin wheel mechanisms at a time, the feeding mechanism to be selected depending upon the width and type of forms used.

10. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, including a plurality of aligned platen sections, independent pin wheel feeding mechanisms associated with each of said platen sections, the pins of which engage the holes of the manifold material to feed the same circumferentially thereabout, one of said

pin wheel feeding mechanisms having an operative and an inoperative position, when in inoperative position the record material without marginal feeding holes may be advanced about the corresponding platen section.

11. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, a plurality of aligned platen sections, driving means for each of the sections having an operative and an inoperative connection therewith and independent feeding mechanisms associated with each of the sections, at least one of said feeding mechanisms having feeding pins having rectilinear movement with respect to its section to engage marginal holes in the manifold record material and another movement to advance the material to its section.

12. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, a plurality of aligned platen sections, a pin wheel feeding mechanism associated with one of said sections, said pin wheel feeding mechanism having an operative position when adapted to engage marginal holes in the manifold record material and an inoperative position when manifold record material without marginal holes may be fed circumferentially about said section.

13. In a typewriting machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of aligned rotary platen sections, a pin wheel feeding mechanism associated with each of said sections for advancing manifold record material having marginal holes therein, the pin feeding mechanism having a relative movement with respect to its section, said feeding mechanism and the section associated therewith being adapted to operate separately from the other sections to feed manifold record material of a predetermined width.

14. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, a plurality of aligned platen sections, a pin wheel feeding mechanism for circumferentially advancing manifold record material having marginal holes around one platen, the pins of said feeding mechanism having a relative movement with respect to its section, a feeding mechanism associated with another section, said feeding mechanism being adapted to feed manifold record material without the marginal holes, and a driving mechanism for selectively actuating either of said feeding mechanisms and the section associated therewith.

15. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, a plurality of platens, a pin wheel feeding mechanism associated with one of said platens for feeding manifold record material having marginal holes therein, the pins of the pin wheel mechanism having a relative movement with respect to its platen, strip feeding mechanism associated with another platen, said strip feeding mechanism advancing manifold record material circumferentially around the platens past the writing position, and driving means for actuating said feeding mechanisms in unison.

16. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, a plurality of aligned platen sections, a pin wheel feeding mechanism associated with one of said sections, the pins of said pin wheel feeding mechanism

anism having rectilinear movement for advancing into the record material and a curvilinear movement for feeding the record material circumferentially past the writing position, feeding mechanism associated with another of said sections for advancing manifold material thereto, and selective mechanism for actuating each of said mechanisms and its section in unison.

17. In a writing machine for use with continuous strips of manifold record material having marginal feeding holes, a plurality of platens, multiple pin wheel feeding mechanisms arranged in groups and adapted to feed writing material circumferentially around said platens past writing positions; the pins of said pin wheel feeding mechanism having a relative movement with respect to said platens, means for selectively driving one or more of said groups of feeding mechanisms, and a clutch for selectively connecting said feeding mechanism with the driving means.

18. In a writing machine for use with continuous strips of manifold record material either with or without marginal feeding holes, a plurality of aligned platen sections, a feeding and aligning device associated with one of said sections, said feeding and aligning device including feeding pins having a relative movement with re-

spect to its section, a feeding mechanism associated with another section, each of said feeding mechanisms being adapted to advance the manifold record material circumferentially around its sections past the writing position.

19. In a writing machine for use with continuous strips of manifold record material either with or without feeding holes, a plurality of aligned platen sections, aligning and feeding mechanism associated with each of said sections for circumferentially feeding manifold record material having feeding holes therein past the printing point, said aligning and feeding mechanism having an operative and inoperative position.

20. In a writing machine for use with continuous strips of manifold record material either with or without feeding holes, a plurality of platens, an aligning and feeding mechanism associated with said platens for circumferentially feeding the manifold record material having feeding holes past the writing position, said aligning and feeding mechanism having an operative and an inoperative position, and driving means for actuating one or more of said platens irrespective of the position of the feeding mechanism.

JOHN Q. SHERMAN.