

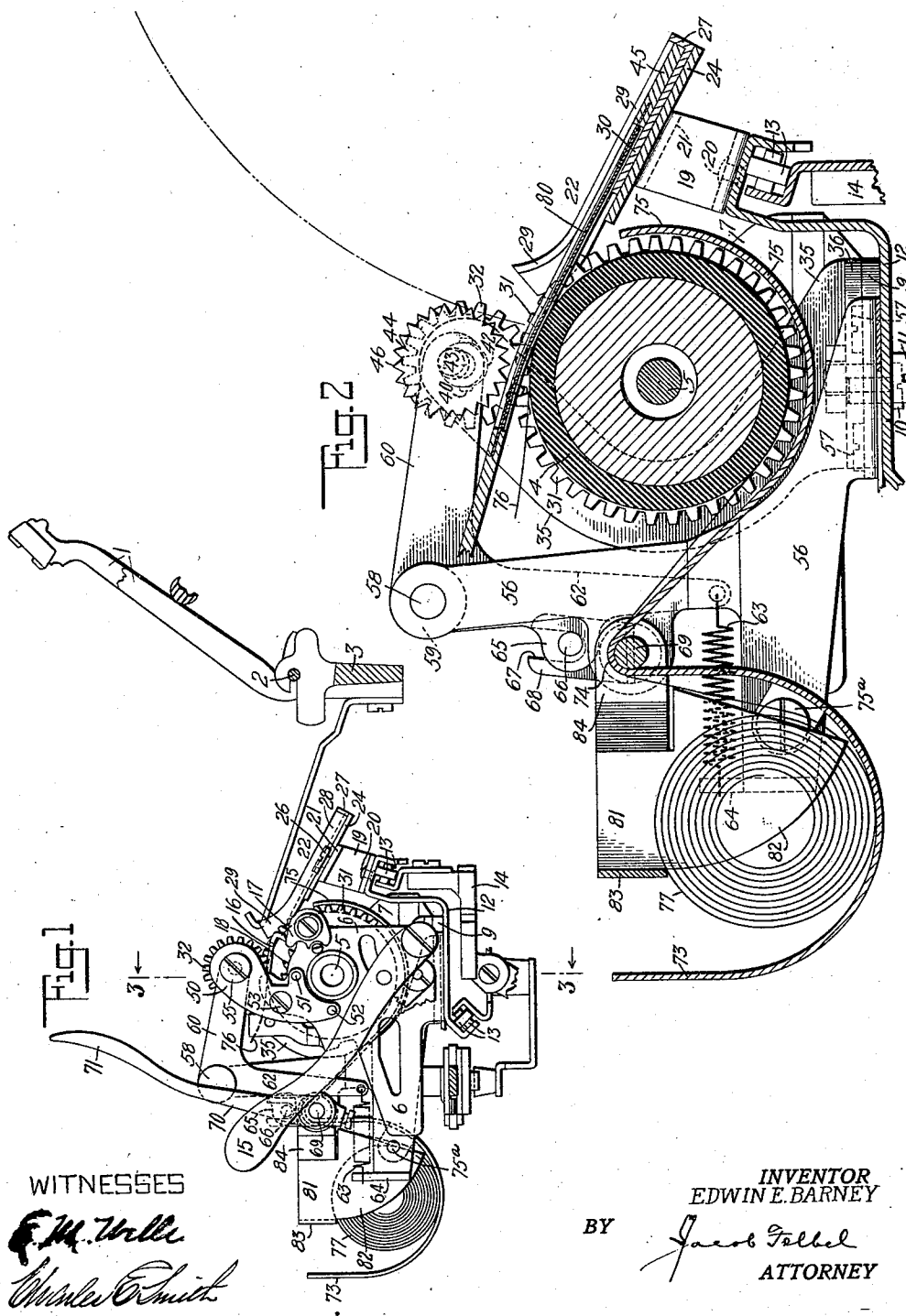
Oct. 8, 1929.

E. E. BARNEY
TYPEWRITING MACHINE

1,730,445

Filed Sept. 3, 1926

3 Sheets-Sheet 1



WITNESSES

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Oct. 8, 1929.

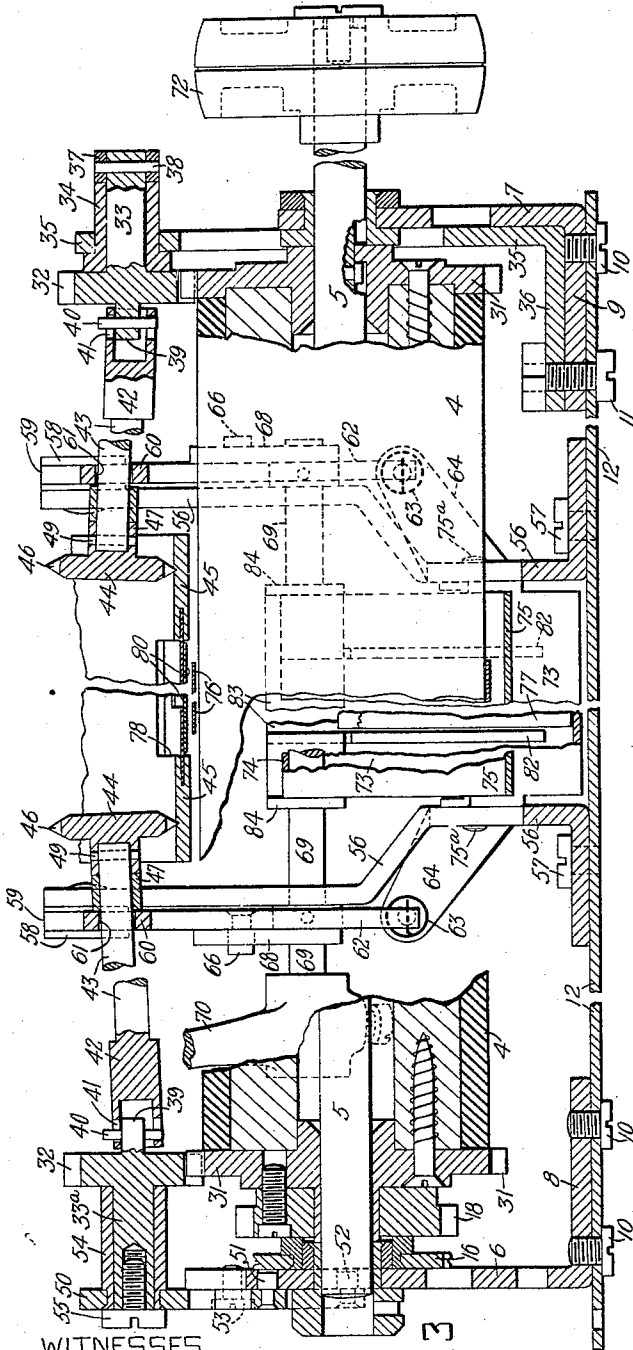
E. E. BARNEY

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TYPEWRITING MACHINE

Filed Sept. 3, 1926

3 Sheets-Sheet 2

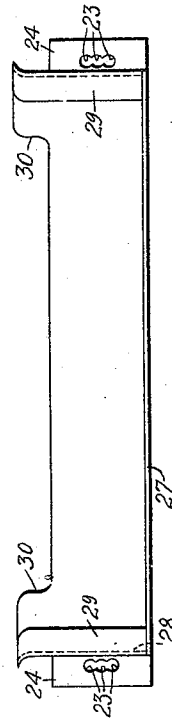


WITNESSES

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Fig. 3

Fig. 4



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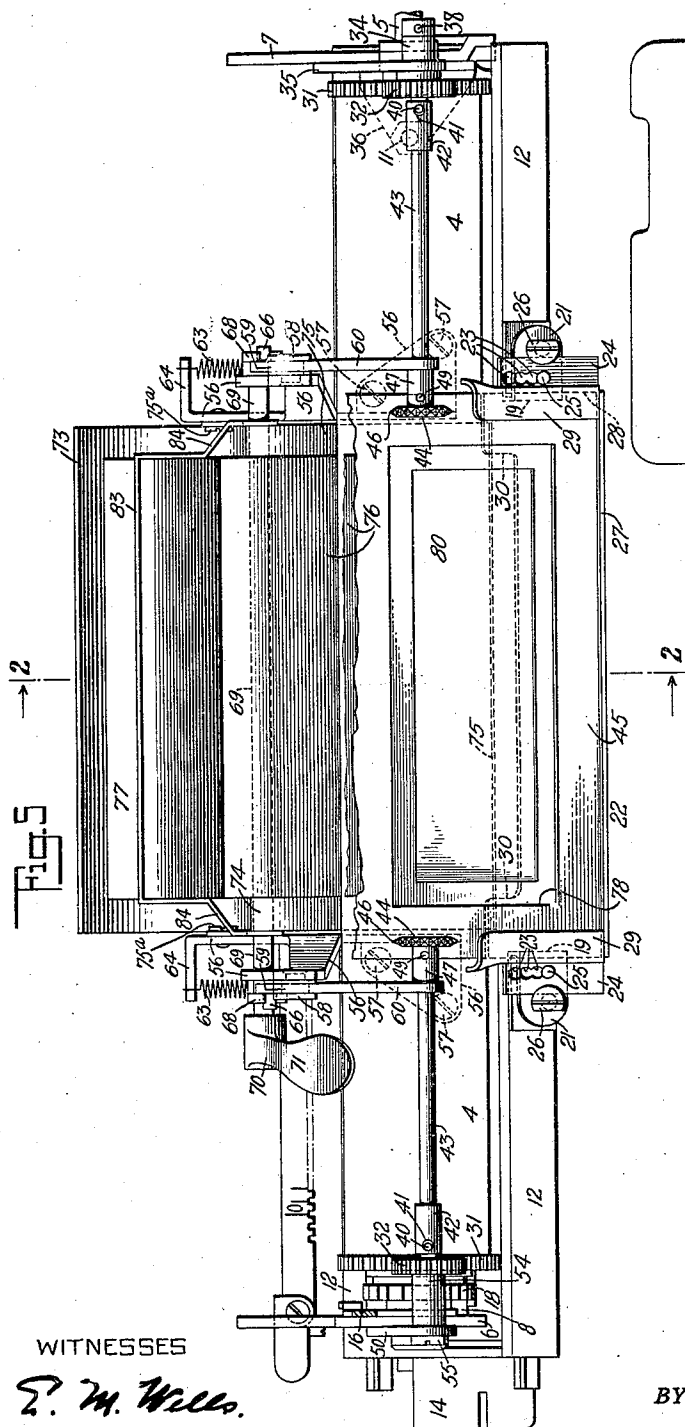
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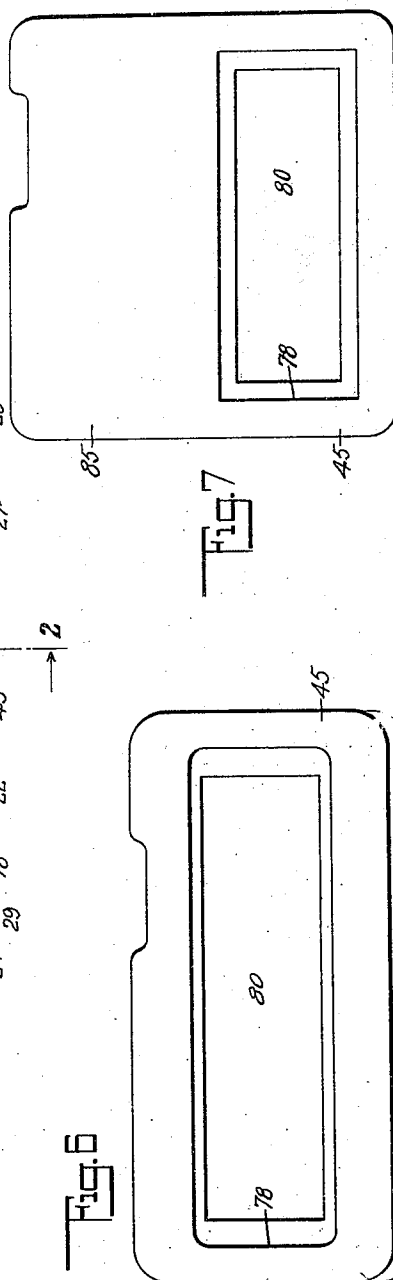
3 Sheets-Sheet 3



WITNESSES

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UNITED STATES PATENT OFFICE

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WRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK

TYPEWRITING MACHINE

Application filed September 3, 1928. Serial No. 133,436.

My invention relates to typewriting machines and more particularly to mechanism for feeding and guiding stencil cards and the like.

5 The main object of my invention, generally stated, is to provide comparatively simple, compact and inexpensive mechanism of the character specified, which nevertheless is highly efficient in use.

10 A further object of my invention is to provide means such as are referred to above that may readily be incorporated in existing typewriting machines without modifying, or materially modifying, the existing structural
15 features of such machines.

To the above and other ends which will hereinafter appear, my invention consists in the features of construction, arrangements of parts and combinations of devices set
20 forth in the following description and particularly pointed out in the accompanying claims.

In the accompanying drawings which illustrate one embodiment of my invention,
25 and in which corresponding reference numerals designate like parts in the various views:—

Fig. 1 is a fragmentary end view with parts broken away and omitted of a typewriting machine embodying my invention.

Fig. 2 is an enlarged, detail, fore and aft, vertical sectional view of the same taken on the line 2—2 of Fig. 5 and looking in the direction of the arrows at said line.

35 Fig. 3 is an enlarged, detail, vertical, transverse sectional view of the machine taken on the line 3—3 of Fig. 1 and looking in the direction of the arrows at said line.

Fig. 4 is a detail face view of one of the
40 card holders and guides shown detached.

Fig. 5 is a detail top plan view of the machine with parts omitted.

45 Figs. 6 and 7 are face views on different scales of two of the many different styles of stencil cards that may be used in the machine.

I have shown my invention embodied, in the present instance, in a Remington portable machine in which the devices of the present invention may be readily incorporated
50 without materially changing existing

structural features thereof, except to omit some feature and add the devices of the present invention. It should be understood, however, that the invention is not restricted to embodiment in said machines.

The Remington portable machine includes type bars 1 pivoted at 2 in a type bar segment 3 to strike against the platen 4 near the top thereof and slightly forward of a vertical transverse plane extending through the axis
60 of the platen. The platen is supported in the usual manner on a removable spindle 5 mounted to turn in bearings in the end plates 6 and 7 of the carriage. Said end plates 6 and 7, as usual, are formed with foot pieces
65 8 and 9 respectively, secured by screws 10 and screw bolt and nut 11 to the base or bed plate 12 of the carriage. The carriage is mounted in the ordinary manner on anti-friction rollers 13 by which the carriage is
70 supported to travel from side to side of the machine on a case shift frame 14.

The usual line spacing mechanism, including a line spacing handle 15, line spacing
75 pawl 16, regulating device 17, and line spacing wheel 18, is employed to intermittently feed the platen forward line by line.

In accordance with my present invention the usual feed rollers, paper table, etc. are omitted. Sheet metal supporting brackets
80 19 are fastened at 20 to the bed plate 12 of the carriage. Each of these brackets is provided with an inclined supporting member 21 on which a card guide and holder, designated
85 as a whole by the reference numeral 22, is detachably and adjustably secured by suitable means that will enable the card guide as a whole to be adjusted to different positions relatively to the printing line and retained
90 in such adjusted positions. Such means also allows of the ready substitution of one card guide for another, when desired. In the present instance the means in question
95 comprises two series of corresponding openings 23 in opposite side portions 24 of the guide which rest upon the supporting members 21 of the supporting brackets. Each member 21 carries an upwardly projecting pin 25 fixed thereto and adapted to fit with-
100 in any one of companion openings 23 and hold

the card guide in any one of several adjusted positions depending on the openings 23 in which the pins 25 are received. Headed lock screws 26 engage tapped openings in the members 21 of the supporting brackets. One side of the head of each of these screws is cut away so that when such cut-away portions are brought next to the side members 24 of the card guide the latter may be lifted off the pins 25 and readjusted to the desired position thereon. The screws 26 are then turned to bring their heads to overlapping position, as shown, and to bear down on the members 24, thus securely holding the card guide on its supporting brackets.

The purpose in adjusting the card holder in the manner described is to position it where a stencil card contained therein will be accurately positioned to receive the first line of writing. In some instances the name and address will occupy two lines on the stencil card. In other instances they may occupy three lines and it sometimes occurs that they will be made to occupy four or five lines. With the adjustable means described the card holder may be properly adjusted forward and back in an inclined plane and set in any one of, say, four different positions with reference to the printing line, so as to position the card to receive the first line of writing of a two, three or more line name and address.

It also will be understood that a slightly modified form of card guide and holder, shown detached in Fig. 4, is interchangeable with the card guide shown in the machine in Fig. 5. The guide shown in Fig. 4 is substantially the same as that illustrated in other of the views except that the holes 23 therein are located at lower points on the guide. There is a large variety of stencil cards on the market, some of which have deeper, lower cross bars on the frame than others, as indicated by a comparison of the full and dotted lines in Fig. 6. Therefore, a card of one style may require a slightly different registration or adjustment than another. By providing interchangeable guides a suitable guide for any character of stencil card may be readily employed.

Each detachable and adjustable card guide 22 comprises a bottom wall 27 which coacts with the lower edge of a stencil card to support it in the guide. Each guide also has end walls 28 which coacts with the side edges of a stencil card and front and rear walls 29 and 30 respectively which overlap the side edge portions of the card. A card is thus guided in a substantially flat condition in its line spacing movements and a high degree of visibility is provided while "cutting" the stencil.

The means by which a card is effectively fed at each intermittent actuation of the platen will now be described.

Referring more particularly to Fig. 3 it will be seen that two main toothed driving gears 31 are secured to the platen 4 at the ends thereof. The right hand gear 31 meshes with a pinion 32 provided with a supporting shaft 33. This shaft turns in a bearing sleeve 34 fixed in an arm of a bracket 35. The foot piece 36 of this bracket is secured to the base 12 of the carriage by the screw bolt and nut 11. A collar 37 is detachably connected by a pin 38 to the outer end of the shaft 33, thus holding the latter against displacement from its bearing sleeve. Projecting inwardly from the pinion 32 at the center thereof is a pin or shaft-section 39 in which is fixed a laterally projecting connecting pin 40. The opposite ends of this pin are received in enlarged openings 41 of a cylindrical coupling member 42 secured on the outer end of a driving shaft 43 which is arranged above the platen. As will readily be understood from an inspection of Fig. 3, this means for connecting the driving pinion 32 to the driving shaft 43 provides, in effect, a universal joint between the two that connects them to turn together, but enables the inner end of the driving shaft to receive a limited swinging motion in any direction. However, by other means to be described the swinging motion of the shaft is confined to one which is towards and away from the platen, as will presently appear. The inner end of the driving shaft 43 carries a feed wheel 44 which coacts with a side portion of the frame 45 of a stencil card. I prefer to make the feed wheel of metal with pointed teeth 46 which engage in the surface of the frame of the stencil card. A hub 47 on the feed wheel is connected by a pin 49 with the driving shaft 43 to positively drive the feed wheel from the platen through the train of gearing described.

The driving gear 31 at the opposite end of the platen is positively connected in a like manner with a second, substantially axially aligned, feed wheel which coacts with the opposite side edge portion of the stencil card. The same reference numerals will be employed to designate the parts of the two sets of feed devices where they are the same. However, the parts controlled by the left hand driving gear 31 are mounted in a slightly different manner from the feed devices previously described, and where the structure differs such differences will be pointed out. A shaft auxiliary bracket arm 50 is secured by suitable means to the left hand end plate 6 of the carriage and extends up beyond the upper edge of said end plate. In the present instance I employ two positioning pins 51 and 52 and a screw 53 to hold the bracket arm in place. An inwardly projecting bearing sleeve 54 is riveted to said bracket arm 50 and provides a bearing for the supporting shaft 33^a of the left hand driving pinion 32. The outer end of this shaft is tapped to re-

ceive the stem of a headed screw 55. The head of this screw overlaps the outer end of the bearing sleeve 54 and prevents axial displacement of the shaft 33^a. Otherwise the driving connections are the same as those previously described.

In order to control the movement of the feed wheels 44 away from the platen, or to releasing ineffective position, and also in order to apply an effective individual spring pressure on each of the feed wheels 44, I have provided the following construction:

Two supporting brackets 56 are secured by screws 57 to the bed plate 12 of the carriage. Each bracket 56 has a headed pivot pin 58 on which is pivoted a bell crank lever 59. The forwardly extending arm 60 of each of these levers is apertured to provide a bearing opening 61 in which the inner end of the companion driving shaft 43 is received with a loose fit. Each lever 59 therefore constitutes a pivoted support for the inner end of the companion shaft 43 and guides and controls it for swinging movement up and down towards and from the platen.

The downwardly extending arm 62 of each lever 59 has its lower end connected to one end of a contractile spring 63, the opposite end of which is connected to an arm 64 projecting from the associated bracket 56. Each lever arm 62 has an ear 65 which carries a laterally projecting pin 66. Each pin is received in a slot 67 in an upright crank arm 68 secured to a rock shaft 69. This shaft is supported in bearing openings in the brackets 56, and at its left hand end extends beyond the companion bracket where it is provided with an upstanding crank arm 70 that terminates in a finger piece 71 by which the shaft may be turned.

It will be seen from an inspection of Fig. 2 that the width of each slot 67 is greater than the diameter of the pin 66 received therein, to provide a slight lost motion. It follows therefore that each spring 63 exerts its force individually on the companion feed wheel 44 to force it towards the platen and against the stencil card with which it engages. When, however, the finger piece 71 is pulled forward both crank arms will be turned in a like direction and both bell crank levers 59 will be rocked to elevate the inner ends of the driving shafts 43 and the feed wheels 44 carried thereby. This enables the operator to introduce a stencil card beneath the feed wheels and insert it in position in the card guide or holder 22, as shown in Fig. 5. When the finger piece 71 is released each spring 63 will force its companion feed wheel down on the card slightly above the printing line, as shown in Fig. 2. This will cause the card to be pressed against the platen and to be slightly bent near the printing line, as shown, so as to hug the platen snugly at this point and thus provide for a clearer "cutting" of the

stencil cards by the types. The operator then proceeds to return the carriage and line space the platen in the usual manner with the aid of the line spacing handle 15. The turning of the platen causes the positively driven feed wheels 44 to be turned to feed the card, which is held between said wheels and the platen, one line space. Each successive feeding of the card a line space distance is effected in a like manner. When a stencil card is finished it may be fed out from under the feed wheels and removed by turning the platen forward with the usual finger wheel 72. Or, if desired, the feed wheels may be released as previously described and the completed stencil withdrawn and a new one introduced, as pointed out.

In order to facilitate reading the stencils I prefer to employ carbon paper or the like back of each card as it is being written or "cut" in the machine. By placing the effective face of the carbon next to the stencil some of the carbon product will be introduced into the outline of each character as it is produced on the stencil card, thereby enabling the operator to readily read the inscription on each stencil as it is cut.

In the present instance I have provided a simple means for using a carbon strip, as indicated above.

A sheet metal carbon roll support or container 73, which is substantially U-shaped in cross section, is supported in the rear of the platen and in alignment with the card guide. The forward upper end of this support 73 is bent at 74 to provide a seat or bearing portion that straddles the rock shaft 69. The metal is extended forward and down from this point and connects with a substantially U-shaped paper deflector 75 that extends around beneath the platen to the front thereof. The deflector 75 and support 73 may thus be formed from a single piece of sheet metal which has ears that enable it to be secured to the brackets 56 by screws 75^a. A strip of comparatively heavy carbon paper 76 may be coiled into a loose roll 77 that rests in the container 73. The free end of the strip is passed over the joint 74 where the roll support and deflector are joined, thence between the deflector and platen and up past the printing line beneath the stencil card with the effective face of the carbon strip next to the stencil card. Preferably, the width of the carbon strip corresponds substantially to the length of the opening 78 in the frame 45 of a stencil card. This is in order that the carbon strip may cover the length of the relatively thin stencil paper 80 but will not be brought beneath the frame 45 of the stencil card and be pressed thereby against the platen. The reason for this is that I wish to avoid automatically feeding the carbon strip with the stencil cards, as they are successively line spaced, and which would result in unnecessarily us-

ing an undue amount of carbon strip. It will suffice to occasionally pull the free end of the carbon strip rearwardly a short distance after the carbon has been exhausted in a given line.

5 The free used end of the carbon strip may be cut or torn off from time to time.

In order to retain the carbon coil or roll against axial displacement from the support 73, I have provided a retaining device, designated as a whole by the reference numeral 81. This device can be made of sheet metal and comprises side wings 82 and a cross bar 83 and has forwardly extending arms 84 apertured to provide bearing openings by which the retaining device is pivotally supported on the rock shaft 69. The device is retained in its effective, Fig. 2, position by gravity, where the wings 82 embrace the ends of the carbon roll 77 and hold it against axial displacement. When the retaining device is turned up on its pivotal support out of the container 73, the carbon roll is free to be removed or a new one introduced. It will be seen that when the retaining device is in effective position the cross bar 83 bears down against the loose coil or carbon roll 77 and prevents it from uncoiling beyond the cross bar.

In Figs. 6 and 7 I have shown two common forms of a large variety of stencil cards that may be readily employed in my machine. It will be understood that there is no more difficulty in using the card shown in Fig. 7 than there is in using the card shown in Fig. 6, since the deep top 85 of the frame shown in Fig. 7 extends up to the rear of the platen free from interference by any of the parts carried by the carriage. Moreover, the unobstructed space up to the rear of and between the feed wheels 44 facilitates the ready removal of completed stencil cards and the introduction of new ones.

By the present construction the feed wheels are arranged above the platen and beyond the upper ends of the guide walls of the card holder and out of the range of adjustment of the latter. Moreover, the feed wheels and card guide are each supported on the carriage independently of the other, so that the feed wheels do not interfere with the independent detachment, replacement and adjustment of the card holder, nor does the card holder interfere with, nor is it affected by, the throwing off or releasing of the feed wheels or the independent spring pressure exerted by each feed wheel against the card.

It will be understood, moreover, that all of the parts which coact with a card to guide and feed it are carried by a carriage which is mounted for case shifting movement. If desired, therefore, upper and lower case characters may be cut on the stencil cards without interference from the card guiding and feeding devices.

65 Various changes may be made in the con-

struction, and some features thereof may be employed without others, without departing from my invention as it is defined in the accompanying claims.

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

1. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, type bars which strike the platen at the upper front quarter thereof, a card guide carried by the carriage and cooperative with a card to guide it substantially in a flat condition upwardly and rearwardly in an inclined plane, two substantially aligned driving shafts which terminate at their inner ends at or near the associate side edges of a card in said guide, a toothed feed wheel carried at the inner end of each of said shafts and cooperative with a side edge of a card in said guide, toothed driving gears between each shaft and the platen, and a universal joint between each shaft and a member of the associate driving gears therefor.

2. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, a card guide carried by the carriage and cooperative with a card to guide it substantially in a flat condition in an upwardly and rearwardly extending inclined plane, two substantially aligned driving shafts above the platen and which terminate at their inner ends at or near the associate side edges of a card in said guide, a toothed feed wheel carried at the inner end of each of said shafts and cooperative with a side edge of a card in said guide, toothed driving gears between each shaft and the platen, a universal joint between each shaft and a member of the associate driving gears therefor, and hand controlled means operable at will for simultaneously shifting the inner ends of said shafts away from the platen and around said universal joints, thereby releasing the toothed feed wheels from the card.

3. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, two substantially aligned driving shafts which terminate at their inner ends at or near the associate side edges of a card to be fed, a feed wheel carried at the inner end of each of said shafts and cooperative with a side edge of a card to be fed thereby, toothed driving gears between the platen and each of said shafts, a universal joint between each shaft and a member of the associate driving gears, two separate supports mounted to receive a limited extent of movement one independently of the other and each supporting the inner end of one of said shafts, separate springs one for each of said supports and the force of each of which is separately exerted to hold the companion feed wheel against the

card to feed it, and hand controlled means for simultaneously shifting both of said supports to turn the shafts around said universal joints and release the feed wheels from the card.

5 4. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, two substantially aligned driving shafts which terminate at their inner ends at or near the
10 the associate side edges of a card to be fed, a feed wheel carried at the inner end of each of said shafts and cooperative with a side
15 edge of a card to be fed thereby, a toothed driving gear at each end of the platen, pinions carried by the carriage to turn on fixed axes and each cooperative with
20 one of said gears, a universal joint between each of said pinions and one of said shafts to enable the inner end of each of said
25 shafts to swing towards and from the platen, two separate independently spring actuated levers each supporting the inner end of one of said shafts, a finger piece, and connections
therefrom to said levers to simultaneously
move them against the force of their springs
and turn the inner ends of said shafts around
their universal joints to release the feed
wheels.

30 5. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, two substantially aligned driving shafts which terminate at their inner ends at or
35 near the associate side edges of a card to be fed, a feed wheel carried at the inner end of each of said shafts and cooperative with a side edge of a card to be fed thereby, a
40 toothed driving gear at each end of the platen, pinions carried by the carriage to turn on fixed axes and each cooperative with one of said gears, a universal joint between
each of said pinions and one of said
45 shafts to enable the inner end of each of said shafts to swing towards and from the platen, two separate independently spring actuated bell crank levers each
having in one arm thereof a bearing in which
50 the inner end portion of one of said shafts is loosely received, a rock shaft, a finger piece for turning said rock shaft, and two crank arms on said rock shaft each having an operative
connection with one of said bell crank
55 levers to shift it against the force of its spring and thus simultaneously turn the inner ends of said aligned driving shafts around their universal joints to release the feed wheels.

6. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, two substantially aligned driving shafts arranged above the platen and to the rear of the printing line, said shafts terminating
65 at their inner ends at or near the associate

side edges of the card to be fed, a toothed feed wheel carried at the inner end of each of said shafts and cooperative with a side edge of a card to be fed thereby, a toothed driving gear at each end of the platen,
70 pinions carried by the carriage to turn on fixed axes and each cooperative with one of said gears; a universal joint between each of said pinions and the outer end of one of said shafts to enable the inner end of each
75 shaft to be shifted towards and from the platen, two springs each exerting its force against the associated driving shaft independently of the other spring, and hand controlled means coacting with said driving
80 shafts to simultaneously turn the inner ends thereof around their universal joints and thus release said feed wheels.

7. In a typewriter machine of the character described, the combination of a carriage, a cylindrical platen, a card guide and holder carried by the carriage for maintaining and guiding a card substantially in a flat condition, means by which said card
85 guide and holder may be adjusted bodily to and fixed in different predetermined positions on the carriage, and feed wheels supported on the carriage independently of said guide and cooperative with the side edge portions
90 only of a stencil card at points where the card extends upwardly beyond the walls of the guide and where the wheels will not interfere with an independent adjustment of the guide and the wheels will not be interfered with by said guide.
95

8. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen, a card guide and holder for maintaining and guiding a card substantially in a flat condition, means by which said
100 card guide and holder may be adjusted bodily to and fixed in different predetermined positions on the carriage, feed wheels supported on the carriage independently of said guide and co-operative with the side edge portions
105 only of a stencil card at points where the card extends upwardly beyond the walls of the guide and where the wheels will not interfere with an independent adjustment of the guide and the wheels will not be interfered
110 with by said guide, a separate spring for each feed wheel, positive gearing between said feed wheels and the platen, means intermediate said gearing and said feed wheels that enable independent spring pressure to be applied to each of said wheels from its associated
115 spring, and means for simultaneously releasing said feed wheels.

9. In a typewriting machine of the character described, the combination of a carriage; 125
a cylindrical platen carried thereby; interchangeable card guides each detachably and adjustably mountable on the carriage and comprising a bottom wall on which the bottom edge of a stencil card is adapted to rest, 130

end walls with which the side edges of a card coact to be guided thereby and parallel front and rear walls between which the card is guided and which overlap the side edge portions only of a card received in the guide; and feed wheels supported independently of the card guide in use and cooperative with the side edge portions only of a card at points where the card extends beyond the walls of the guide.

10 10. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, a substantially U-shaped carbon roll support, 15 and a substantially U-shaped paper deflector extending beneath the platen and joined at one of its upper ends to an upper end of said carbon roll support, the carbon paper passing from said support to the deflector over the 20 line where the two are joined and thence under control of the deflector around the platen.

11. In a typewriting machine of the character described, the combination of a carriage, 25 a cylindrical platen carried thereby, a substantially U-shaped carbon roll support on the carriage in the rear of the platen, and a movable carbon roll retaining device adapted to coact with the ends of the carbon roll 30 to hold the roll against axial displacement from said support.

12. In a typewriting machine of the character described, the combination of a carriage, a cylindrical platen carried thereby, a substantially U-shaped carbon roll support on 35 the carriage in the rear of the platen, and a carbon roll retaining device pivoted for movement into and out of said support, said retaining device when in effective position 40 in said support coacting with the ends of the loosely disposed carbon roll in the support to hold the roll against axial displacement.

13. In a typewriting machine of the character described, the combination of a carriage, 45 a cylindrical platen carried thereby, a substantially U-shaped carbon roll support on the carriage in the rear of the platen, and a carbon roll retaining device pivoted for movement into and out of said support, said 50 retaining device having a cross bar that bears on the carbon roll and end plates that coact with the ends of the carbon roll to hold it against axial displacement, the weight of said retaining device holding it in cooperative 55 relation with the carbon roll and the device being shiftable on its pivot to ineffective position.

14. In a typewriting machine of the character specified, the combination of a carriage, 60 a cylindrical platen carried thereby, a paper deflector that extends around beneath the platen and is continued to the rear thereof where it forms a supporting trough for a roll of carbon paper, a card holder and guide 65 fixed to the platen in front thereof to direct

stencil cards in an upwardly and rearwardly extending inclined plane, and feed wheels above the platen that coact with the side edges only of the stencil card to feed it rearwardly.

15. In a typewriting machine of the character described, the combination of a carriage; interchangeable, specifically different card guides, each capable of being detachably and adjustably mounted on the carriage; and feed wheels supported independently of the card guide in use and cooperative with the side edge portions only of a card at points where the card extends beyond the guide.

16. In a typewriting machine of the character described, the combination of a carriage, a card guide coacting with the bottom edge of a card to support it in place, and means for detachably and adjustably mounting said card guide in position on the carriage, said means comprising supporting pins carried by the carriage and two series of parallel openings in the card guide adapted to receive said pins, the position of adjustment of the guide being determined by the particular one of each series of openings in which the associated supporting pin is received.

Signed at borough of Manhattan, city of New York, in the county of New York and State of New York, this 2nd day of September, A. D. 1926.

EDWIN E. BARNEY.