Jan. 16, 1934. C. GABRIELSON 1,943,428

TYPEWRITING MACHINE

Filed April 22, 1931 4 Sheets-Sheet 1

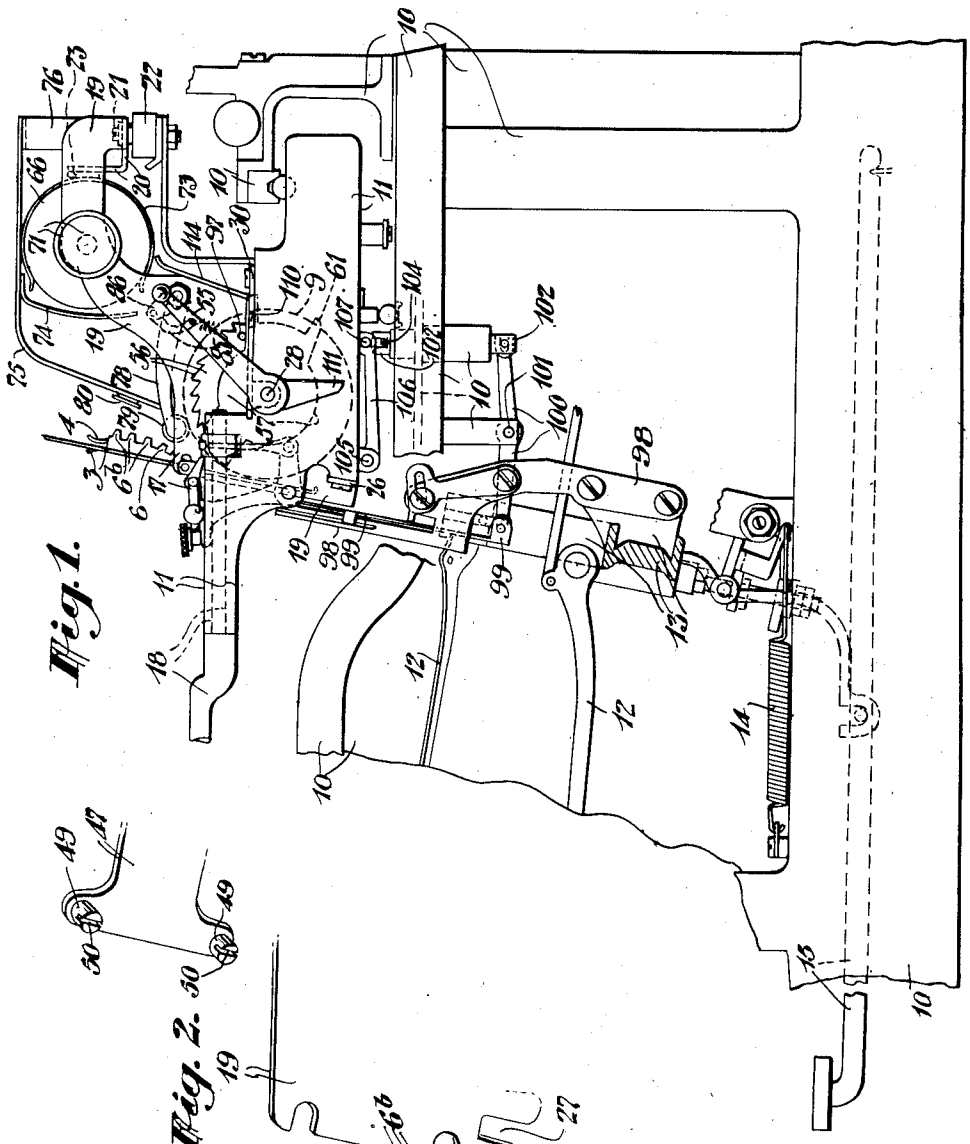

Fig. 1.

Fig. 2.

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TYPEWRITING MACHINE

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Fig. 3.

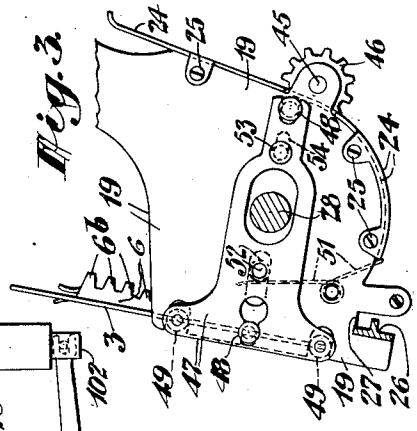

Fig. 4.

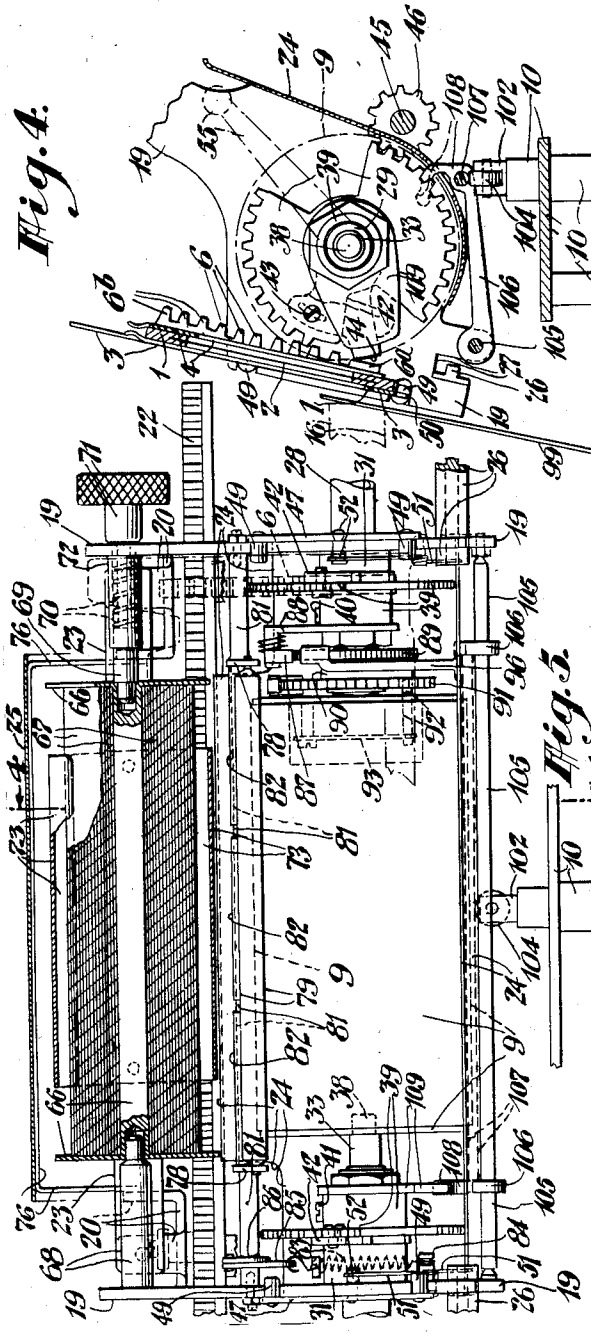

Fig. 5.

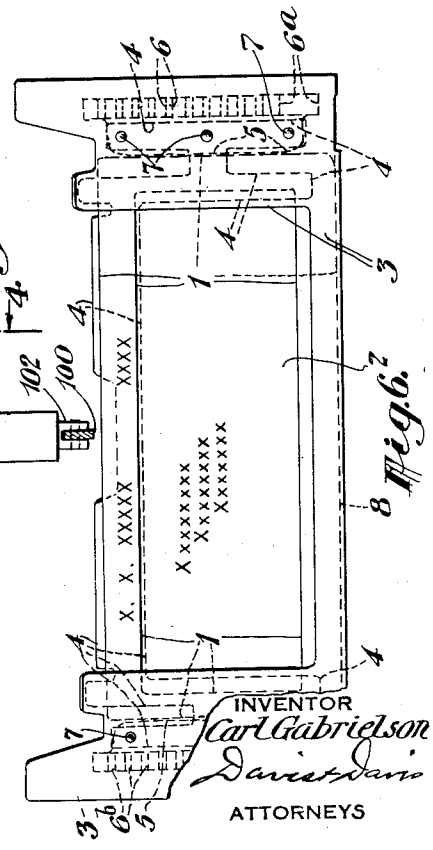

Fig. 6.

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TYPEWRITING MACHINE

Filed April 22, 1931 4 Sheets-Sheet 3

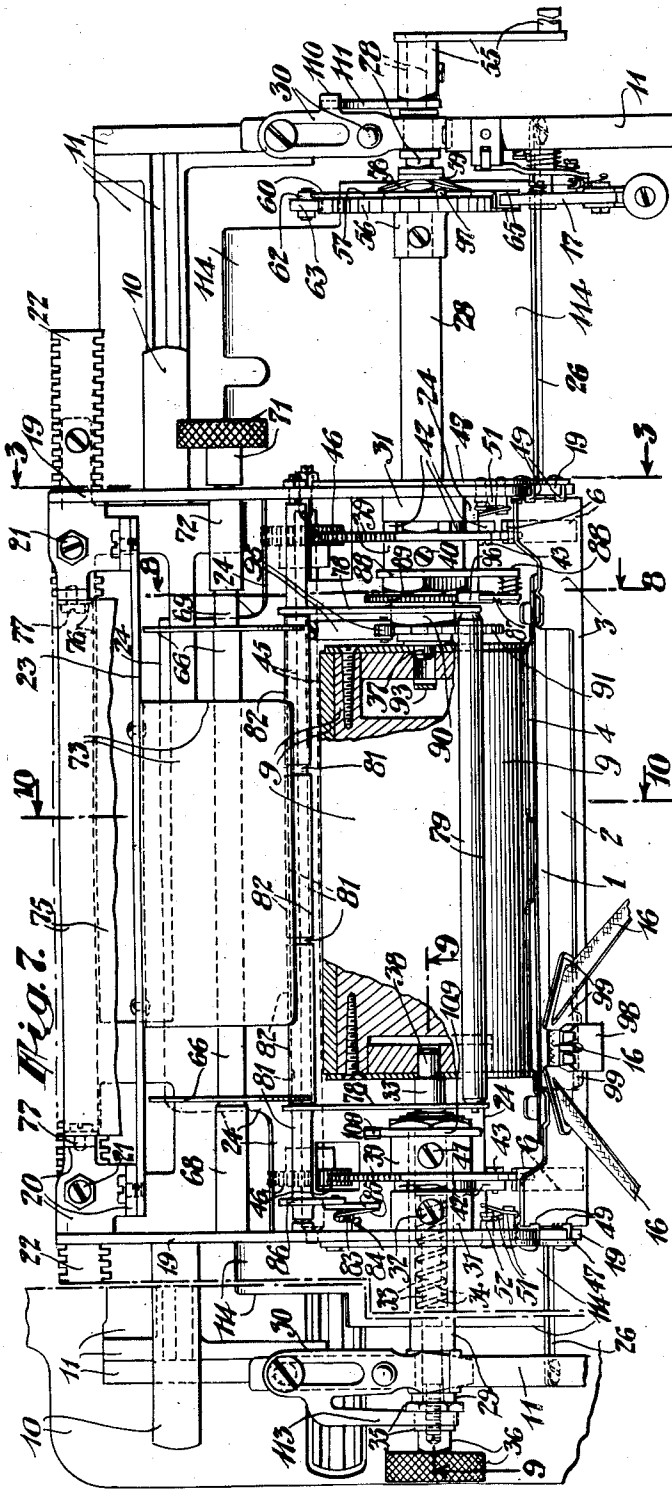

Fig. 7.

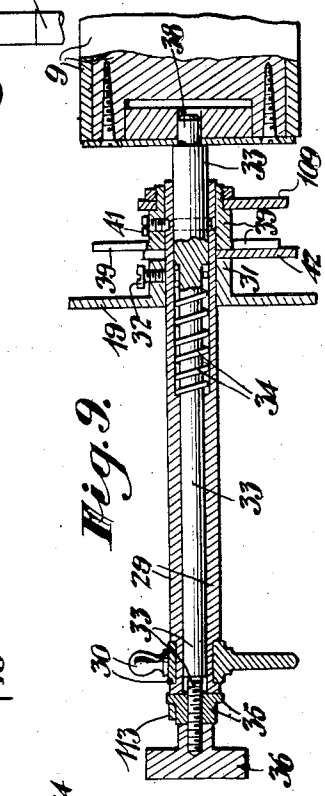

Fig. 9.

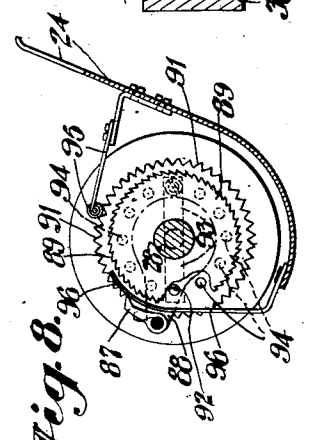

Fig. 8.

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TYPEWRITING MACHINE

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Fig. 10.

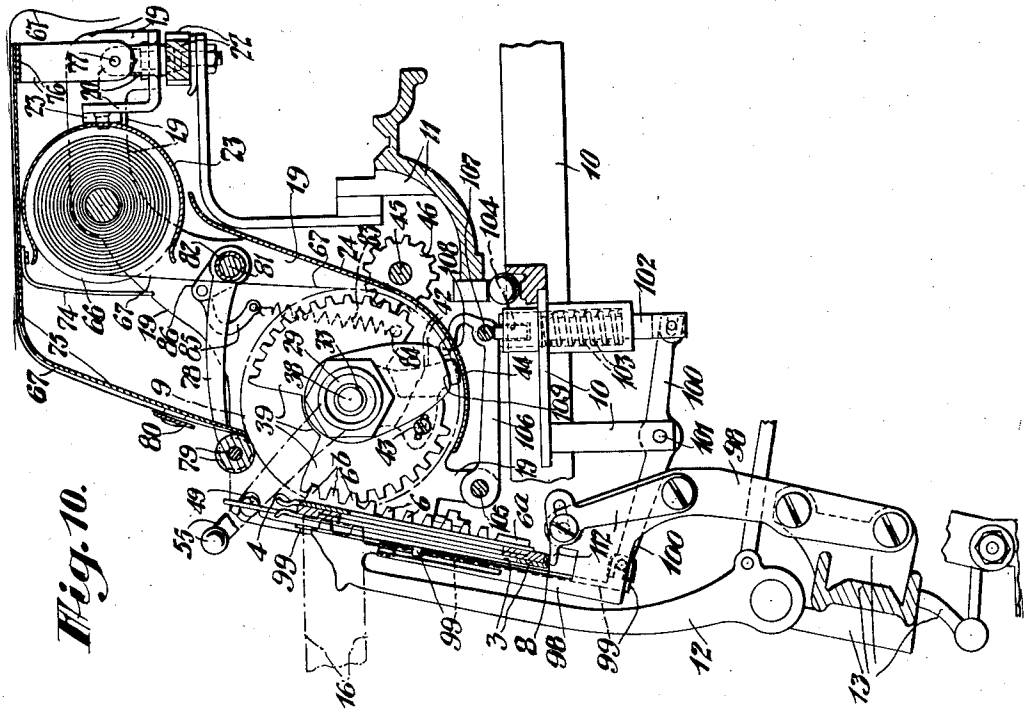


Fig. 13.

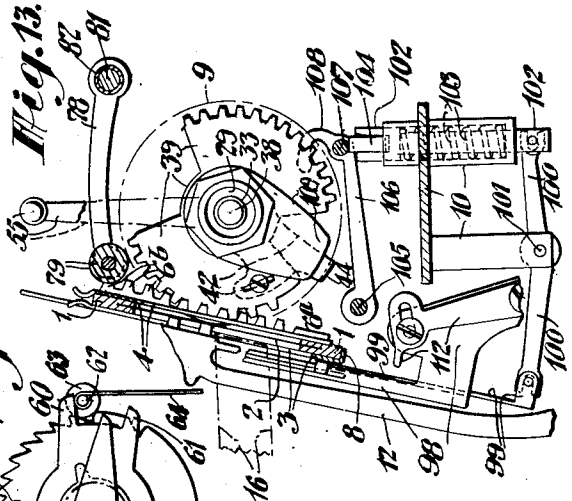


Fig. 11.

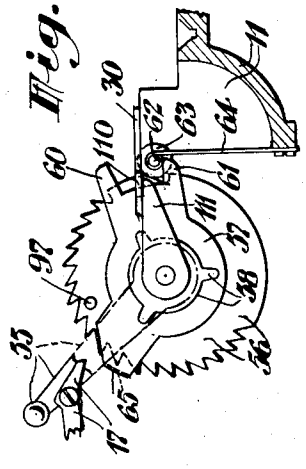
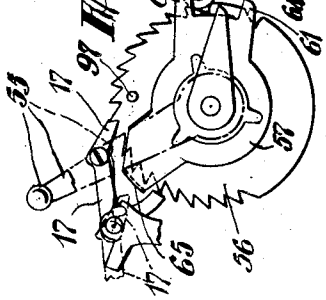


Fig. 12.



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Patented Jan. 16, 1934 1,943,428

UNITED STATES PATENT OFFICE

1,943,428

TYPEWRITING MACHINE

Carl Gabrielson, Syracuse, N. Y., assignor to L C Smith & Corona Typewriters Inc., Syracuse, N. Y., a corporation of New York

Application April 22, 1931. Serial No. 531,993

17 Claims. (Cl. 197—135)

This invention relates to improvements in typewriting machines and more particularly to typewriting machines for typing stencil cards.

In typing stencil cards it is frequently desirable to print through an inked ribbon upon the upper transverse portion of the cardboard frame part of the card and to type on the window or stencil sheet part of the card without an interposed inked ribbon. An object of the invention is to provide a machine to facilitate such typing of stencil cards.

These stencil cards also commonly have the window or stencil portion thereof inset from the planes of the front and rear faces of their cardboard frames, and their cardboard frames are quite stiff. The invention includes provisions for typing such a card while flat, or without bending the same, and for automatically causing the card to be efficiently backed by the platen along the line of typing both while typing on the frame part of the card and on the stencil sheet part of the card.

It is a common practice to ink the characters typed on the stencil sheet part of the card by means of a carbon or other inked sheet or web interposed between the card and platen, and the present invention includes provisions for inking these characters while at the same time preventing smutting of the back of the card during insertion and removal, preventing printing on the back of the card during typing on the cardboard frame part thereof, and so feeding the carbon sheet or web as to avoid waste thereof while at the same time affording an automatic feed of the carbon web to efficiently and uniformly ink the characters typed on the stencil sheet portion of the card.

The invention also includes provision for automatically conditioning the machine to type upper case characters when the card is positioned for typing on the upper marginal part thereof, i. e. during typing on the upper transverse portion of its cardboard frame part, this being desirable as the data thus typed is intended for quick identification of the card.

The invention also includes provision of means for accomplishing the foregoing ends which may be readily embodied in existing machines, the provision of an improved card-holding frame, and the provision of a short platen for backing the card which may be readily removed when worn and a new platen inserted without deranging the card-handling means.

Other features and advantages will hereinafter appear.

A preferred embodiment of the invention is illustrated, the improvements being incorporated in an L C Smith typewriter, and only so much of the typewriter being shown as is necessary for a full understanding of the invention.

In the drawings:

Fig. 1 is a fragmentary side view of the machine conditioned for the insertion of a stencil card;

Fig. 2 is a detail view showing one end of the card-holding frame and adjacent parts of the supporting and guiding means for the frame in detached relation;

Fig. 3 is a fragmentary sectional view on the line 3—3 of Fig. 7, with the card-holding frame fully elevated as in Fig. 1.

Fig. 4 is a fragmentary sectional view on the line 4—4 of Fig. 5 with the card holding frame fully elevated;

Fig. 5 is a fragmentary front elevation of the machine, conditioned as in Figs. 1, 3 and 4, but with the card-holding frame indicated only in part and by broken lines at the right of the view;

Fig. 6 is a front view of the card-holding frame with a stencil card held therein, this view being on the same scale as Fig. 5;

Fig. 7 is a fragmentary plan view of the machine with certain parts broken away and the card-holding frame in fully lowered position;

Fig. 8 is a fragmentary sectional view on the line 8—8 of Fig. 7;

Fig. 9 is a fragmentary sectional view on the line 9—9 of Fig. 7;

Fig. 10 is a fragmentary sectional view on the line 10—10 of Fig. 7, the platen being indicated only by a broken line to avoid obscuring of certain operating parts;

Figs. 11 and 12 are detail views showing, respectively the line spacing mechanism conditioned as in Fig. 1 and as at the end of the first operating stroke of the line space pawl; and

Fig. 13 is a view similar to Fig. 10 showing a type bar acting on the stencil sheet part of the card in an intermediate position of the card frame between its fully elevated and fully lowered positions, the particular position shown being that occupied by the card holding frame during typing of the second of the three lines indicated on the window portion of the card in Fig. 6.

The oblong stencil card has the usual relatively thick cardboard marginal or frame part 1 with the usual thin stencil paper or window part 2 held therein in a plane disposed substantially medially of the planes of the front and rear faces of the frame.

The card-holding frame comprises two sheet metal members 3 and 4 of substantially U-shape arranged face to face in inverted relation with the side parts of the front member extending upwardly in front of the side parts of the rear member which extend downwardly, said side parts being spaced a distance corresponding with the card frame thickness by inwardly extending anchor flanges 5 of two vertically extending metal racks 6 of the teeth of which face rearwardly. The racks are located behind the side parts of the front member 3 at the outer side edges of the side parts of member 4, and rivets 7 extend through the anchor flanges and side parts of members 3 and 4 to hold the frame parts and racks in assembled relation. The central opening through the card-holding frame is oblong and corresponds substantially in size and shape with the window portion 2 of the card to be held in the frame, the transverse portion of frame member 3 having a rearwardly extending flange 8 along its lower edge forming a seat for the lower edge of a card fully-inserted in the frame. The transverse part of member 4 covers the rear face of the upper transverse part of the cardboard frame of a card so inserted in the card-holding frame to prevent offset printing on the back of said part of the card frame as hereinafter explained.

A platen roller 9 is provided for backing a stencil card being typed, the length of said platen roller being preferably less than the length of the window of the stencil card and also than the distance between the inner edges of the side parts of rear member 4 of the card-holding frame, as shown in Fig. 7 and indicated by a comparison of Figs. 5 and 6.

The machine has a main frame 10 on the upper rear part of which the platen carriage 11 is supported on suitable ball bearings in the usual way to travel transversely of the machine, the letter feed of the carriage being controlled by the usual escapement not shown. In the L C Smith machine shown the type bars 12 are mounted in a type segment 13 to strike on the upper front portion of the platen, the segment being inclined slightly upward and rearward and held up by a spring 14 in position to normally print lower case characters and shiftable downwardly in the plane of the type bar pivots by a shift key lever 15 to print upper case characters, the latter characters being those nearest the free ends of the type bars. The type bars are actuated from the keyboard by the usual connections not shown. The machine is also provided with an inked ribbon 16 and also with the usual ribbon feed means not shown. The usual line spacing pawl 17 and operating means therefor, including the oscillatable line space handle 18 (a fragment only of which is shown) for moving the pawl rearwardly on its spacing stroke, are mounted on the carriage in the usual manner as shown in Figs. 1 and 7.

In the present machine, in lieu of the usual long platen and associated paper feed devices, special means are provided for handling and backing stencil cards and a carbon web, which means will now be described. Spaced inwardly equal distances from the adjacent ends of the carriage are two sheet metal frame plates 19 lying in vertical fore-and-aft planes and having anchor portions 20 secured by fastenings 21 to the tabulator stop bar 22 which is rigidly mounted on the carriage in the usual manner. These plates are connected by a tie bar 23 secured to their anchor portions and by a paper apron 24 extending from one plate to the other and having lugs on its side edges fastened to the plates by screws 25. Preferably also, said plates are supported by the inner ends of two members 26 extending inward from opposite ends of the carriage and engaged at their inner ends in notches 27 in said plates.

A shaft 28 extends through the usual open-top platen shaft bearing in the right hand end of the carriage and a sleeve 29 extends through the corresponding open-top bearing in the left hand end of the carriage, the open tops of these bearings being closed by the usual slides 30. The frame plates 19 are provided with bushings 31. Shaft 28 extends through the bushing of the right hand frame plate, while sleeve 29 extends through the bushing of the left hand plate, and said sleeve and shaft are held against endwise movement. Shaft 28 is free to oscillate about its axis, the extent of rotary movement of the shaft being limited by means hereinafter described, and sleeve 29 is locked against rotary movement by a set screw 32 threaded through the bushing 31 of left hand frame plate 19. A shaft 33 extends through sleeve 29 and is normally pressed inward by a coiled spring 34 to a limit determined by a stop nut 35 threaded on said shaft and is adapted to be pulled outward by a knob 36 on the outer end of the shaft.

Shafts 28 and 33 have respectively reduced inner cylindrical bearing end portions 37 and 38 on which the short platen roller 9 is supported centrally between frame plates 19. Bearing portions 37 and 38 have a loose or non-binding fit in axial bearing passages in the ends of the platen roller 9, and shaft 33 is adjusted endwise by nut 35 so that the shoulders at the outer ends of these reduced bearing portions of the shafts will not bind against the ends of the roller and frictionally lock the platen to the shafts. The parts are so proportioned that shaft 33 may be pulled out far enough to permit uncoupling the platen from both its bearings so that the platen may be removed from between the plates and a different platen inserted when desired.

At the inner ends of bushings 31 of the plates 19 there are mounted two companion mutilated gears or duplex gear segments 39 one of which has its hub locked to shaft 28 by a screw 40 and the other of which has its hub rotatable on sleeve 29 and held against axial movement thereon by screw 41 projecting into a circumferential channel in the sleeve. Confined between the inner end of each bushing 31 and the adjacent face of each gear 39 are companion cam plates 42 preferably having forks embracing in one case sleeve 29 and in the other case shaft 28 (as shown in Figs. 7 and 9) and locked to the adjacent sectors 39 in the same rotatively adjusted relation thereto by clamping screws 43. Screw 43 for each cam extends through a slot in the adjacent sector and is threaded into the cam. Each cam has a nose portion 44 and these cam noses project radially beyond the crest circle of the teeth of the mutilated gears or double segments 39. Gears 39 are connected to oscillate in unison by a horizontal shaft 45 extending behind the platen and rotatably supported in bearings carried by plates 19, there being two pinions 46 fixed on shaft 45 and meshing with gears 39. It will of course be understood that gears 39 may be complete gear wheels but they are preferably cut away at two points as

shown to reduce weight and save expense in manufacture.

A pair of slides 47, Fig. 3, in the form of sheet metal plates are held flatwise against the outer faces of frame plates 19 to reciprocate perpendicularly to the plane of the type bar segment 13. These slides are each supported and guided by a pair of fore-and-aft spaced screws 48 tapped in the adjacent frame plate 19 and extending through longitudinal guide slots in the slide and also by a pair of superposed card-holding frame guide studs 49 fixedly held to the slide adjacent the forward end of the slide and extending inwardly through guide slots in the adjacent frame plate 19. The slides are provided with clearance slots for shaft 28 and sleeve 29 respectively as indicated in the case of the right hand slide in Fig. 3. Studs 49 have transverse guide slots 50 across their inner ends lying in the same plane, which plane is parallel with the plane of the type bar segment and the type bar pivots in the segment, and the side edges of member 3 of the card-holding frame have a snug sliding fit in said stud slots while the rack members 6 of the card-holding frame mesh with the gears 39.

The slides 47 are constantly urged rearward by springs 51 parts of which press rearwardly against studs 52 extending inward from the slides through clearance slots in the frame plates 19, thus yieldably holding the racks and gears in mesh and permitting bodily movement of the card-holding frame perpendicular to the plane of the segment in addition to its up and down movement parallel to said plane. The extent of rearward movement of the slides and card-holding frame is limited by the engaged teeth of the gears and racks and the extent of forward movement is limited by engagement of stop screws 53 held to the slides with the forward ends of slots 54 in frame plates 19. Stop screws 53 arrest forward movement of the card-holding frame before the racks 6 are fully demeshed from the gears 39 to prevent accidental derangement of the parts.

Gears 39 oscillate in unison with shaft 28 on the outer end of which is fixed an operating hand crank 55. Also fixed on shaft 28, Figs. 11 and 12, is a line-space ratchet wheel 56 with which line-space pawl 17 is coactive to rotate shaft 28 in line-spacing direction. An automatic line-space regulator or varying device 57 loose on shaft 28 is frictionally held to the outer face of the line space ratchet wheel by a spring washer 58 mounted on the shaft and interposed between regulator 57 and a suitable abutment 59 on the shaft. The washer frictionally locks the regulator to oscillate in unison with the ratchet wheel between limits determined by the engagement of one or the other of two spaced fingers 60 and 61 thereon with a suitable fixed stop extending between the fingers, which stop in the construction shown is the bearing 62 of the ratchet wheel detent roller 63 at the upper end of a stiff spring detent roller supporting arm 64 fixedly held at its lower end to the platen carriage. The regulator has an arcuate flange 65 overhanging the teeth of the ratchet wheel 56 and adapted to act as a shield at one limit of oscillation of the regulator to prevent engagement of the line-space pawl in tooth spaces of said wheel as hereinafter explained during part of the working stroke of the pawl.

A spool 66 has a roll of carbon paper 67 thereon and this spool is journalled on the reduced inner ends of two shafts 68 and 69 supported on the frame plates 19. These shafts support the spool between plates 19 and above and to the rear of the platen 9, shaft 68 being fixed and shaft 69 extending through a sleeve 72 fixed on one of the plates 19 and being normally pressed inward by a spring 70 and adapted to be pulled out far enough for insertion and removal of carbon spools by means of a knob 71 on its outer end. The paper wound on the spool may be partly enclosed by a sheet metal guard 73 of arcuate cross-section riveted to bar 23 with its open side at the front and by a pendent tongue 74 at the front of the spool held to a cover plate 75. Cover plate 75 is fixed at its rear end to a yoke 76 pivoted at 77 to anchor portions 20 of plates 19, and said cover plate extends forward over the spool and has its front portion bent downward to normally rest on top of the platen 9. By swinging up the cover plate either the carbon roll or platen roll may be removed when disconnected from their bearings.

The carbon paper is led down from the supply spool between the side arms 78 of a feed roll frame and under the platen, then up in front of the platen past the printing line, after which it is passed under a carbon-paper feed roll 79 journalled in the side arms 78 just in front of the forward edge of the cover plate. Preferably a tearing-off knife 80 is held on the cover plate and the carbon paper is led between this knife and the plate and feeds over the plate which forms a table or apron supporting the leading used portion of the carbon paper until it is torn off. Side arms 78 are fixed on a rock shaft 81 which is journalled in plates 19 and preferably has rotatable sleeves 82 thereon contacting the carbon paper, the uninked side of which paper is next the platen where the carbon paper is led around the platen. The feed roll is held to the platen by a coiled spring 83 secured at its lower end to the left hand plate 19 at 84 and attached at its upper end to the lower end of a bowed link 85 the upper end of which is pivotally connected to an upwardly and forwardly extending arm 86 fixed on shaft 81, the arrangement being such that the feed roll frame will be held up by the spring when raised to vertical position to facilitate renewal of platen 9 and initial threading of the carbon paper through the machine.

The shaft 28 has a one-way driving connection with the platen roller 9 adapted to drive the platen with the shaft only when the shaft is rotated in line spacing direction and means are provided whereby the platen is only so driven during part of the line-spacing rotation of the shaft. A spring-pressed platen driving pawl 87 is pivoted on the outer end of a rock arm 88 fixed on shaft 28 and this pawl is normally urged by its spring into the teeth of a fine-toothed platen-driving ratchet wheel 89 having a hub 90 loose on shaft 28. A toothed detent wheel 91 is fixed on the inner end of hub 90 and positively clutched to the adjacent end of the platen by a sliding pin 92 pressed out through a bore in the platen by a spring 93 and engaged in one of an annular series of sockets 94 in the adjacent face of the detent wheel. A spring detent 95 held to the apron 24 engages in tooth spaces of wheel 91 to prevent reverse rotation of the platen and the wheels 89 and 91. A fixed guard or regulator 96 held to apron 24 holds pawl 87 out of engagement with wheel 87 during part of the throw of arm 88.

The usual type bar guide 98 is fixed as usual at its lower end to the type segment to move down and up with the segment during case

changing. The usual ribbon guide 99 for ribbon 16 is provided and is slidably guided on the type bar guide as usual to move up and down to cover and uncover the printing point on the platen. In Fig. 13 the upper portions of the type bar guide and ribbon guide are broken away. The usual ribbon guide vibrating means is omitted, however, and the lower end of the ribbon guide is pivotally connected with the forward end of a lever 100 pivoted midway its ends on a fixed part of the main frame 10 at 101. The rear end of lever 100 is pivotally connected with the lower end of vertical plunger 102 guided in the main frame and normally pressed upward by a coiled spring 103 engaged under a head of the plunger in which is journalled a bearing roller 104. A rock shaft 105 journalled in plates 19 has a pair of rearwardly extending side arms 106 connected at their rear ends by a rod 107, which engages over roller 104 at all points in the platen carriage travel.

Arms 106 engage under apron 24 to limit upward movement of the plunger and arrest descent of the ribbon guide at a point where the ribbon uncovers the printing point of the platen. The left hand side arm 106 has an upstanding finger or extension 108 at its rear passing through a clearance aperture in apron 24 and located in the path of travel of the nose of a cam 109 fixed on the hub of the left hand gear 39. This cam is adapted to depress side arms 106 and connecting rod 107 and thereby force plunger 102 downward far enough to raise guide 99 until the ribbon 16 covers the printing point.

When crank handle 55 is rocked rearward, regulator 57 moves with ratchet wheel 56 until finger 60 strikes stop 62, after which the wheel continues turning until further rearward movement of the handle is prevented by engagement of a stop pin 97 on wheel 56 with one edge of the regulator, as shown in Fig. 1.

In this position of handle 55, as shown in Figs. 1, 3, 4 and 5, the card-holding frame is in its highest and most forward position with its racks 6 partially demeshed from gears 39, the slides 47 being held at the forward limit of their movement by the engagement of noses 44 of adjustable cams 42 with the flat or non-toothed terminal portions 6^a of the racks. In this position the card-holding frame is parallel to but slightly forward of a plane which is tangent to the platen at the printing point and parallel to the plane of the segment and the plane of the type bar pivots, so that a previously typed stencil card may be pulled up out of the frame or a card to be typed may be pushed down into the frame without danger of contact of the card (and especially its cardboard frame part) with the forwardly facing inked side of the carbon web 67. The side edges of anchor flanges 5 of racks 6 are spaced to coact with the side edges of a stencil card to prevent lateral shift of the card in the frame 3—4, and flange 8 supports the card and positions it vertically relatively to the frame 3—4. The lower line of the opening through the card-holding frame and the lower edge of the stencil card window are just below the printing line of the platen in the full raised position of frame 3—4.

A card having been inserted downward in the holding frame, it is positioned for beginning of typing by pulling handle 55 forwardly as far as possible, this forward handle movement being limited by the engagement under a stop finger 110, on the right hand slide 30, of a stop finger 111 fixed on the handle hub. This movement of the handle positions the parts as shown in Figs. 7, 8, 9 10, and 11, with the card-holding frame so lowered that the transverse bar-like portion of the rear part 4 of the frame covering the printing line of the platen and tangent to the platen at the printing line, so that this bar-like part of the frame is backed up or contacted by the platen along the printing line and shields the upper cardboard margin of the card from contact with the carbon web.

In this fully lowered position of the frame 3—4 the upper marginal portion of the stencil card is in front of the printing line of the platen for typing thereon of a line of characters, and slides 47 are pushed forward substantially to the forward limit of their travel by the full meshing engagement of each gear 39 with the upper ones of a short series of rearwardly advanced teeth 6^b at the upper end of the associated rack 6. Also, cam 109 is rocked rearward so that its end or nose has pushed and held down finger 108 and plunger 102, thereby elevating and holding up the ribbon guide with inked ribbon 16 covering the printing point. The automatic line space regulator 57 has been carried to the opposite limit of its movement so that line-space pawl 17 may (upon actuation of handle 18) move immediately into the tooth space at the rear edge of shield flange 65 without first riding over the shield flange. The platen driving pawl has been carried forward until it rests on shield 96 three tooth spaces from the free or rear edge of shield 96. The throw of pawl 17 (as shown in Figs. 11 and 12) is such as to rotate shaft 28 and ratchet 56 a distance of three single line spaces or three tooth spaces of ratchet 56 and detent wheel 96. The lowering of the card-holding frame has also caused flange 8 thereof to engage an adjustable abutment member 112 mounted on the type-bar guide 98 and depress the shiftable type-bar segment 13 to upper case printing position and hold it there.

Upon actuation of character keys upper case characters on type-bar 12 will print through the inked ribbon on the upper cardboard marginal portion of the stencil card. In Fig. 6 a row of such characters is indicated by repetition of the character "X".

When this line of typing is completed the card is positioned for typing the first line of an address or other matter upon the stencil paper or window portion of the card by a single operation of the line-space handle 18 which carries the pawl 17 on the working stroke from the position shown in Fig. 11 to that shown in Fig. 12. The regulator 57 moves with ratchet 56 two tooth spaces and is then arrested by finger 60 while the pawl continues to drive the ratchet a third tooth space. The regulator is thus set automatically to hold the pawl out of the ratchet thereafter for part of its working stroke and cause the pawl to rotate the ratchet but a single space at a time for each subsequent operation of the handle 18. The three space advance of shaft 28 elevates the card-holding frame a three line-space distance for typing on the window portion of the stencil card well below its upper edge; disengages cam 109 from finger 108 to allow plunger 102 to lower the ribbon guide and ribbon automatically below the printing point so that types may directly strike the stencil paper; advances the platen driving pawl to a point at which it just drops off the shield 96 into engagement with ratchet 89, thereby conditioning the platen driving means to

drive the platen on subsequent operations of the line-space handle 18 but without rotating the platen or feeding the carbon paper forward during the three-space line-space jump of the card and card-holding frame; raises the card-holding frame high enough to disengage flange 8 and abutment member 112 and permit spring 14 to restore the shiftable segment 13 to normal lower case printing position; and carries the teeth 6^b up out of mesh with gears 39 so that springs 51 were permitted to shift slides 47 to the rearward limit of their travel and draw the card-holding frame bodily rearward as it was line-spaced upward. This rearward limit of movement of the slides positions them for guiding the card-holding frame to slide up and down in a plane in which the window portion of a card in the frame is tangent to the platen at the printing line (as shown in Fig. 13), a segment of the short platen containing the printing line protruding into the frame 3—4 and the marginal frame part of the card to back up the stencil paper window and prevent strain or rupture thereof under type impacts. It will be obvious that the machine may be now operated to type the first line of writing on the window with both upper and lower case characters without striking of the type through the ribbon, and that characters so typed will be inked on the rear face of the window by the carbon web. The card-holding frame may be line-spaced upwardly a single space at a time for typing additional lines of single-spaced writing on the window portion of the card and on each such line-space advance of the card-holding frame and card the platen will also be line-spaced a single space to correspondingly advance the carbon web 67 which is preferably a cheap so-called "one time" carbon paper web. Three lines of such typing are indicated on the card window in Fig. 6, and in Fig. 13 the card is positioned for typing the middle one of these three lines.

After the typing of the address is finished the card-holding frame may be line spaced to card removing position, or be quickly elevated to the card-removing position (heretofore described) by throwing crank 55 to the rearward limit of its movement. During the latter part of this movement of the frame cams 42 engage rack portions 6^a and push the frame and slides 47 forward for the purpose heretofore described.

It will be observed that the platen is rotated in one direction only, is rotated a single line-space distance at a time, and is rotated only during spacing between lines of typing inked by the carbon paper, i. e. between lines of typing on the window portion of the card. It will also be observed that the card is always held flat in a plane parallel with the plane of the type segment and the plane of the type bar pivots and is advanced toward and from the platen during up and down movements thereof.

Shaft 33 may be releasably latched against outward pull by a finger 113 on the left hand slide 30, which finger may be retracted from in front of a base flange on nut 35, when it is desired to remove the platen, by sliding said slide 30 rearward. A pair of finishing plates 114 may be secured to the carriage 11 at the outer sides of plates 19 if desired, said plates 114 being curved similarly to apron 24 and extending forward to parts 26 of the carriage 11.

What I claim is:

1. In a stencil card typing machine, the combination of means for positioning a card for typing initially upon the upper marginal part of the card, means for line-spacing the card, and web feeding means for constantly maintaining a carbon web extended across the printing line at the reverse face of the card and feeding said web only upon actuations of said card line-spacing means following typing of an initial line on the card below the upper marginal portion of the card.

2. In a stencil card typing machine the combination with a platen, of means for positioning the upper marginal portion of a stencil card in front of the platen for typing on said card portion, manually operable means for line-spacing the card upwardly a single wide space jump to position its window in front of the platen and thereafter a series of narrower spaces of equal extent for typing successive lines on the window portion of the card, and means including the platen actuated by said line-spacing means for presenting a carbon web between the card and platen and feeding said web endwise in one direction only and only during actuations of said line-spacing means which follow said wide line-space jump of the card.

3. A stencil card typing machine having a card holding frame, a platen of less length than the width of the window portion of the frame, and means for shifting the frame edgewise across the printing line of the platen and also transversely of the path of edgewise movement of the frame into and out of a position in which a segment of the platen including the printing line is embraced within the frame.

4. In a front strike typewriting machine, the combination of a platen, key actuated types coactive with the front portion of the platen, a card holder, and means for shifting the card holder relatively to the platen, said means being coactive with the card holder to reciprocate the holder bodily edgewise up and down in front of the platen and to reciprocate said card holder bodily facewise first toward and then from the platen during both the downward and the upward edgewise movements of the card holder.

5. In a typewriting machine, the combination of a platen, types coactive with the platen, a letter feed carriage upon which the platen is mounted, a stencil card holder on the carriage, and means on the carriage for so shifting said holder relatively to the carriage as to move a stencil card held in the holder bodily edgewise across the printing line of the platen first in one direction and then in the opposite direction to two predetermined limits of such edgewise movement and to move said card bodily facewise away from the platen as the card approaches each of said two limits of its edgewise movement.

6. A stencil card typing machine comprising a platen carriage, a platen on the carriage, type carriers coactive with the platen for typing a stencil card, means on the carriage for feeding a carbon web about the platen with its inked face outward at the printing line of the platen, and means on the carriage for supporting a stencil card for edgewise shifting movements of the card in opposite directions relatively to the platen across the printing line of the platen and facewise shifting movement of the card toward and from the platen in timed relation with said edgewise movements of the card for the purposes set forth.

7. A stencil card typing machine comprising type carriers having upper and lower case types, means for positioning a stencil card for initial typing action of the type carriers upon the upper

frame portion of the card and for line spacing the card for typing action of the type carriers upon the window portion of the card, case shifting means and ribbon shifting means controlled by said first-mentioned means for automatically conditioning the machine for typing with upper case characters and with types striking the card through an inked ribbon when the card is positioned for initial typing upon its upper frame portion and for automatically conditioning the machine for direct impact of the types with the card and normal coaction of lower case types with the card while the window portion of the card is positioned for typing thereon, means, including a stencil card backing rotatable platen, for presenting a card inking element to the reverse face of the card at the printing line, said last-mentioned means being operable by said first-mentioned means to feed said element across the printing line, and means for preventing feeding operation of said last-mentioned means by said first-mentioned means during movement of a stencil card to initial typing position and movement of a stencil card from initial typing position to a position in which the types are operable upon the window portion of the card.

8. In a stencil card typing machine, the combination of a rotatably mounted platen, a stencil card holder shiftably supported independently of the platen for line spacing and reverse movements across the printing line of the platen, means coactive with the platen to feed a stencil card inking element between the card holder and platen across the printing line, means for line spacing the card holder and for imparting reverse movement thereto to a predetermined initial card typing position, one-way driving means for the platen operable by line-spacing actuations of said last-mentioned means to rotate the platen for giving feed movement to said inking element, and means for automatically preventing rotation of the platen by said driving connection during the initial line-spacing movement of the card holder from said predetermined initial card typing position of the holder.

9. A front strike typewriting machine for typing stencil cards comprising a rotary card-backing platen, a stencil card holder, means connected with said holder to move the same relatively to the platen downward and upward in front of the platen transversely of the printing line of the platen to and from a predetermined maximum lowered position of the holder, means including said platen for feeding a card inking element transversely of the printing line and between the platen and card holder, a one-way platen driving connection between said card holder moving means and said platen to rotate the platen to feed said inking element during upward movements of the holder, and means for automatically interrupting said driving connection while the card holder is lowered below a predetermined level above its maximum lowered position.

10. A typewriting machine comprising a stencil card holder, a rotary card-backing platen, type bars coactive with said platen for typing a card held in said holder, a shiftable case-changing segment on which said type bars are supported for printing and retractive movements, manually operable means for shifting the card holder back and forth across the printing line of the platen between a card inserting and removing position and a position for initial typing of a card, means for automatically shifting the segment to upper case position when the card holder is moved into said initial card typing position and restoring the segment to lower case position when said holder is moved out of said position, and means, including said platen, for feeding a stencil card inking element transversely of the printing line of the platen between the card holder and platen, said last-mentioned means being operable by said manually operable means to feed said element only during movement of the card holder toward its said card inserting and removing position and only after a predetermined extent of movement of said holder from its said position for initial card typing.

11. A typewriting machine comprising a stencil card holder, means including a card backing platen for feeding a card inking element between the holder and platen transversely of the printing line of the platen, manually operable means for reciprocating the card holder relatively to the platen transversely of the printing line of the platen to and from a fixed initial card typing position, means for automatically presenting a second card inking element over the printing point with the card holder interposed between said element and the platen while the holder is in said initial card typing position and for holding said element retracted from over the printing point in all other positions of the holder, and means controlled by said manually operable means for automatically actuating the feeding means for the first mentioned inking element to feed said element only during movement of the card holder from its said initial card typing position and only after said holder has been moved a fixed distance from said initial card typing position.

12. In a stencil card typing machine, the combination of a rotary card-backing platen, a stencil card holding frame, means for shifting said frame edgewise thereof relative to the platen across the printing line of the platen, stop means for limiting the extent of edgewise movement of said frame in one direction to determine an initial card typing position of the frame, said frame shifting means including handle operated line spacing means for shifting the frame step by step from its initial card typing position, means including said platen for line spacing a card inking carbon web across the printing line of the platen between said frame and platen, said last-mentioned line-spacing means being operable by the first-mentioned line-spacing means to line space the carbon web, and means for automatically disabling the line-spacing means for the carbon web when the frame is shifted to initial card typing position and maintaining said line-spacing means in disabled condition until the frame has been given an initial line spacing step from its said initial card typing position.

13. A stencil card typing machine comprising a main frame, a letter feed carriage mounted on said main frame, a card backing platen on said carriage substantially midway the ends of the carriage, a stencil card holder adapted to receive said platen, and manually operable card holder supporting and shifting means on the carriage adpted to shift the card holder edgewise in opposite directions cross the printing line of the platen between a card inserting and removing position and a position for initial typing of a card and also adapted to shift said holder facewise toward the platen into platen receiving position when the holder is shifted edgewise out of each of said first-mentioned positions and retract the holder from platen receiving position as the hold-

er approaches each of said first-mentioned positions.

14. A front-strike typewriting machine for typing stencil cards, comprising a card holder adapted to support a stencil card in flat condition for typing and having an opening therein for exposing opposite faces of a card held therein to a card backing platen and types for typing the card, and means for shifting said holder bodily edgewise up and down across the printing line of the machine and bodily facewise fore and aft of the machine, said means being adapted to shift the holder facewise toward the rear of the machine and maintain it in a predetermined rearwardly shifted portion during an intermediate portion of its up and down edgewise shifting movements and to shift the holder facewise toward the front of the machine and hold it forwardly shifted during the end portions of its up and down movements, whereby a flat stencil card with a stencil paper portion inset in a frame portion of the card may have its inset stencil paper portion closely backed by a platen shorter than the length of the frame portion of the card while said inset portion of the card is presented opposite the printing line.

15. A front-strike typewriting machine having a letter-feed carriage, a platen on the carriage, means rectilinearly slidable on the carriage fore and aft of the machine relatively to the platen, a card holder slidably guided on said means to move up and down perpendicularly to the path of sliding movement of said means and adapted to support a stencil card in flat condition to shift therewith across the printing line of the platen with one face of the card toward the platen, and means for sliding said card holder up and down on said slidable means and sliding said slidable means first rearwardly and then forwardly of the machine during both the up and down sliding movements of the card holder.

16. A typewriting machine as claimed in claim 15 in which said rectilinearly slidable means is spring-urged rearwardly and is positively driven forwardly.

17. A typing machine as claimed in claim 15 in which the slidable guiding means for the card holder is spring urged rearwardly, and manually operable means mounted on the carriage to oscillate about the platen axis coactive with means mounted on the card holder to shift therewith for positively moving the card holder up and down and positively moving said guiding means forwardly.

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