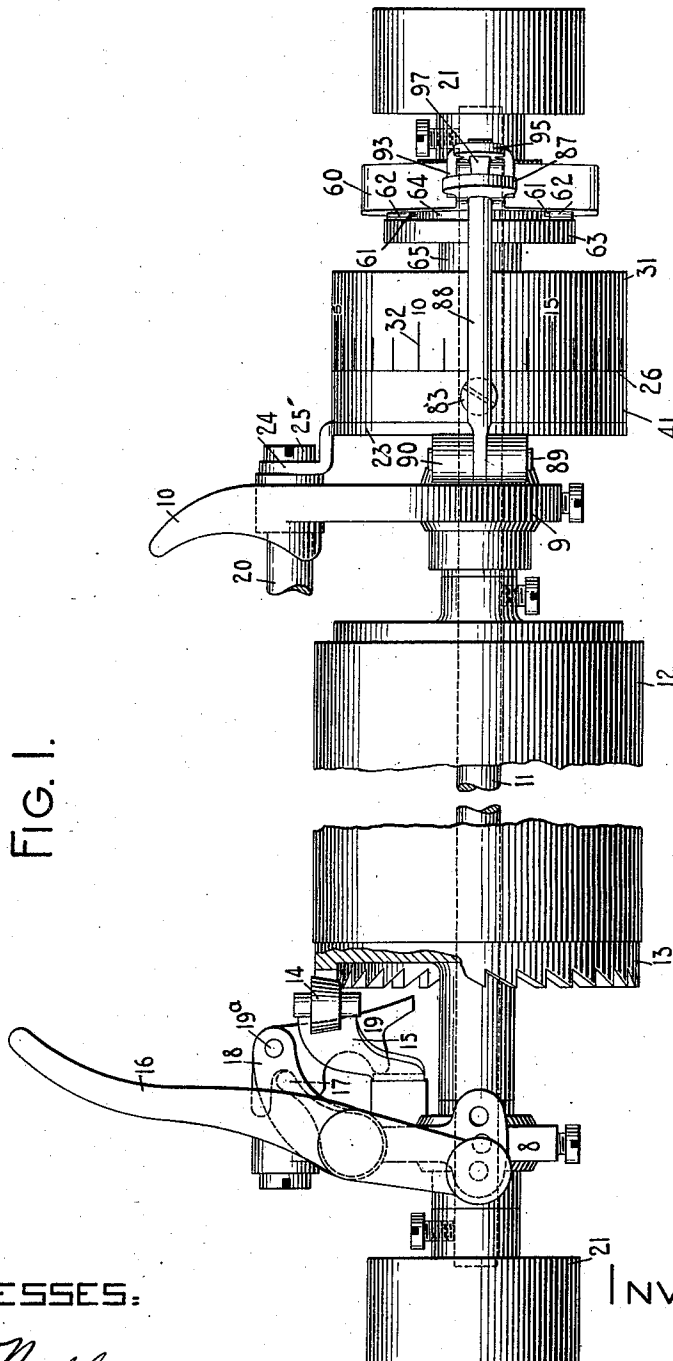


1,014,783.

H. H. STEELE.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 28, 1909.

Patented Jan. 16, 1912.

4 SHEETS—SHEET 1.



WITNESSES:

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Charles Smith

INVENTOR:

Herbert H. Steele
By Jacob Felber
HIS ATTORNEY

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Patented Jan. 16, 1912.

4 SHEETS—SHEET 2.

FIG. 2.

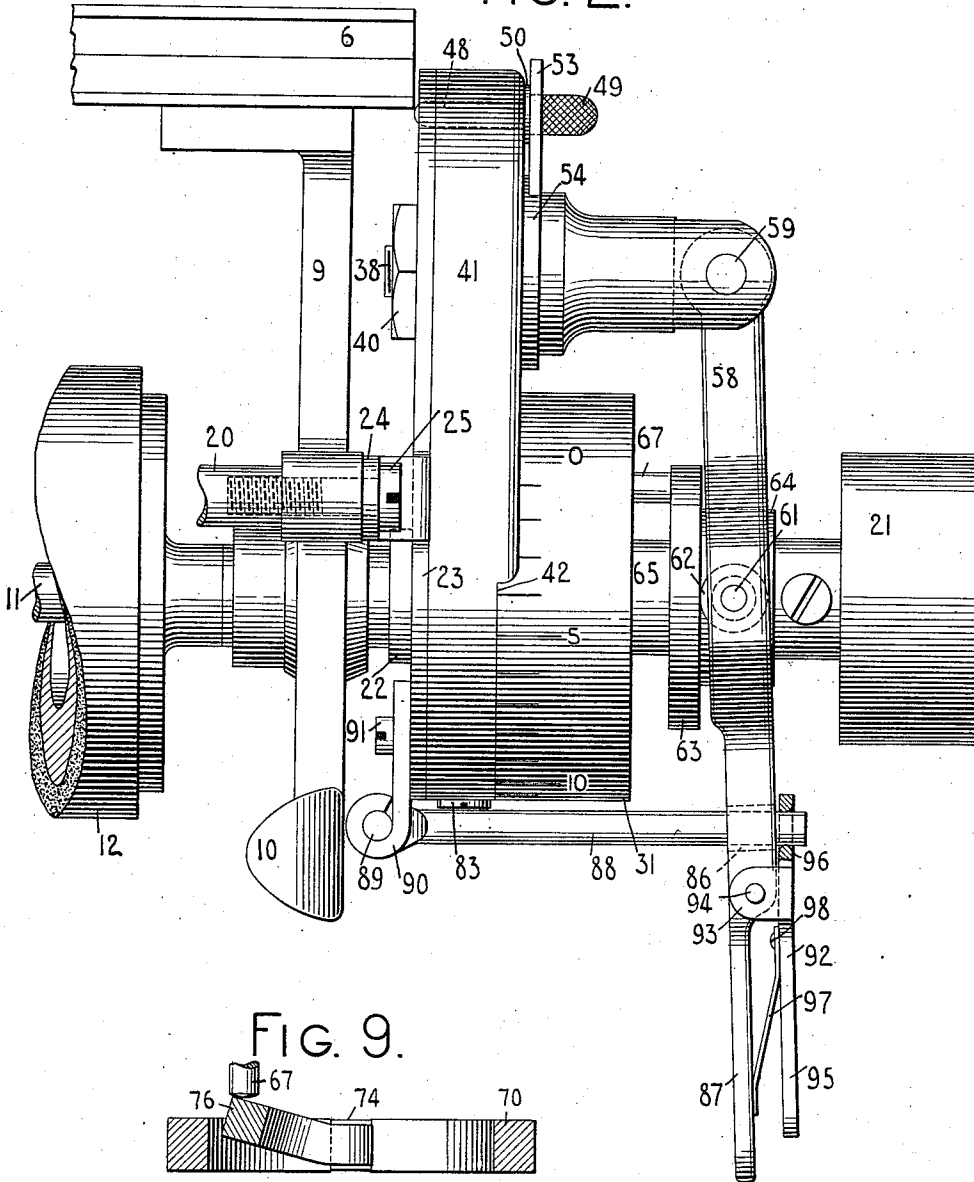
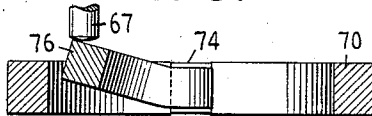


FIG. 9.



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4 SHEETS-SHEET 3.

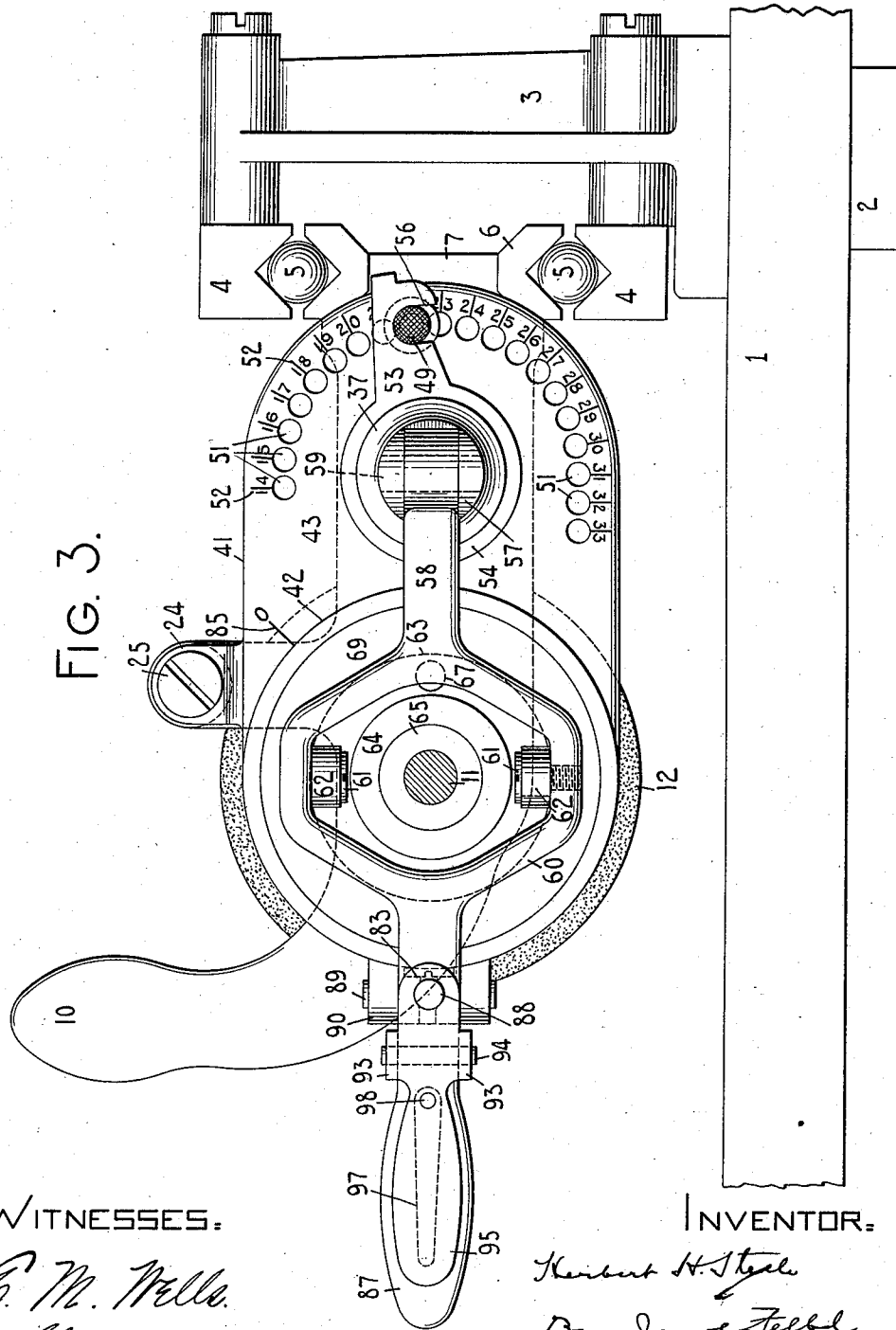


FIG. 3.

WITNESSES:

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By Jacob Felbel

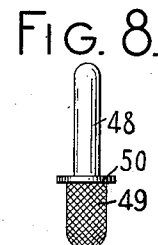
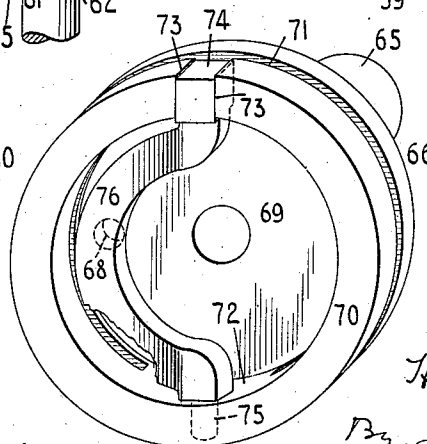
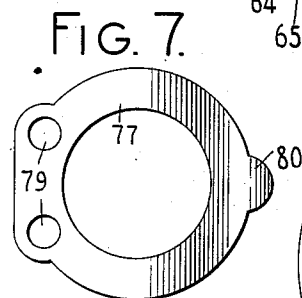
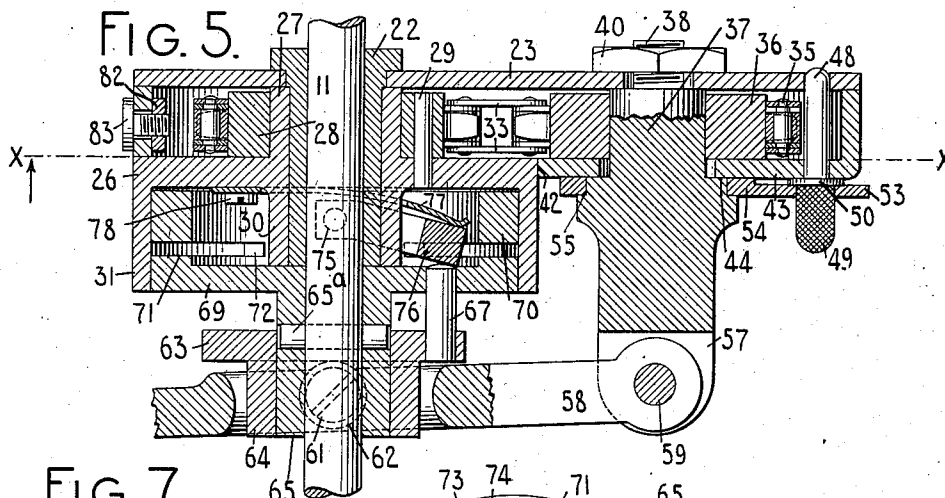
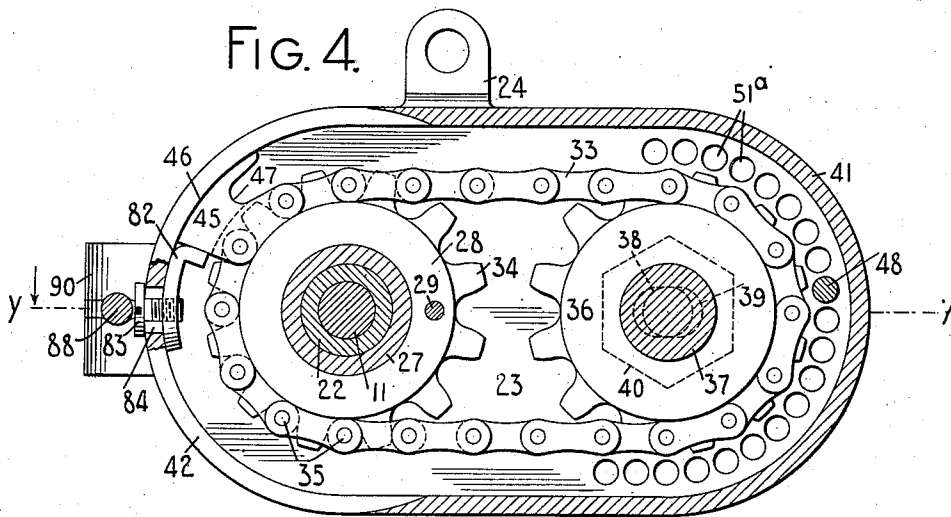
HIS ATTORNEY

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TYPE WRITING MACHINE.
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Patented Jan. 16, 1912.

4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

HERBERT H. STEELE, OF MARCELLUS, NEW YORK, ASSIGNOR TO THE MONARCH TYPE-WRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

1,014,783.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed December 28, 1909. Serial No. 535,276.

To all whom it may concern:

Be it known that I, HERBERT H. STEELE, a citizen of the United States, and resident of Marcellus, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to billing mechanisms for use in condensed record and other billing work, or for any work which requires means for arresting the platen at a predetermined point in the rotation thereof.

One object of my invention is to provide efficient mechanism of the character specified.

A further object of my invention is to provide means whereby a flexible stop-carrier is prevented from being deflected or distorted when the stop devices are brought into coöperation.

Another object of my invention is to house parts of the billing mechanism without however rendering certain of the parts any the less accessible for the purpose of adjustment.

A still further object of my invention is to provide an efficient friction clutch which may be actuated to operatively connect certain of the stop devices with the platen irrespective of the relative adjustment that may be effected between the line spacing wheel and platen.

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 to be hereinafter described and particularly pointed out in the appended claims.

In the accompanying drawings wherein like reference characters designate corresponding parts in the various views, Figure 1 is a fragmentary front view showing a carriage of the Monarch machine embodying my invention, the rear cross or guide bar being omitted in this view. Fig. 2 is an enlarged detail plan view of the right-hand end of the carriage showing the billing devices of my invention mounted thereon. Fig. 3 is an end elevation of the same with

the right-hand finger wheel sectioned away, the carriage being shown mounted in place on the machine. Fig. 4 is an enlarged detail sectional view showing some of the billing devices, the section being taken on the line $x-x$ of Fig. 5 and as seen from the direction of the arrow at said line. Fig. 5 is a sectional view of the same taken on the line $y-y$ of Fig. 4 and as seen from the direction of the arrow at said line. Fig. 6 is a detail perspective view showing a portion of the clutch mechanism. Fig. 7 is a detail face view of the spring for the clutch. Fig. 8 is a detail side view of the adjustable stop. Fig. 9 is a detail transverse sectional view taken through the clutch.

While I have shown my invention embodied in a Monarch machine, it should be understood that the invention may be employed in various other styles of typewriting machines.

The present invention has some of the same general objects in view as the constructions disclosed in my application Serial No. 520,684 filed October 2nd, 1909, and in the patent to Jacob Felbel 902,572 dated November 3, 1908.

Heretofore it has been customary to employ clutch mechanism to effect a connection and disconnection between the line spacing wheel and the platen, in order to afford a movement of the platen independently of the line spacing wheel for fractional spacing. Such fractional line spacing mechanism is shown for example in the patent to C. J. Bond, No. 890,120 dated June 9, 1908. Where this or any like mechanism is employed to afford a relative adjustment between the line spacing wheel and platen and a positive clutch of the ordinary character consisting of a toothed wheel corresponding to the number of teeth and spaces of the line spacing wheel and a single detent or tooth adapted to be clutched with and unclutched from said toothed wheel, as for example in the clutch shown in the patent to Felbel referred to above, is employed for the billing devices, difficulties are sometimes encountered in effecting an engagement between the clutch of the biller when in the use of the fractional spacer the

platen is rotated through any distance other than a full line space or an exact multiple thereof. This difficulty is presented by reason of the fact that at such times the members of the ordinary positive billing clutch will not properly engage when it is desired to connect the movable billing stop with the platen while the latter is in its fractionally spaced position. By the use of an efficient frictional clutch such as that disclosed herein, the billing stops may be rendered operative at any point in the relative rotation between the platen and line spacing wheel to arrest the platen and yet there is little liability of the parts overthrowing or of an improper relative displacement of the parts being effected through the failure of the billing clutch members to hold.

I have not shown in the present instance any clutch mechanism by which the line spacing wheel and platen may be operatively connected to turn together or by which a fractional spacing of the platen may be effected independently of the line spacing wheel, as such mechanism is in common use and its construction is well understood.

The present invention is also in the nature of an improvement on the construction disclosed in the Felbel patent hereinbefore referred to, the present invention being directed more particularly to improving the clutch mechanism by which the stop mechanism may be rendered operative or inoperative to arrest the platen.

In the various views the same part will be found designated by the same numeral of reference.

The top plate 1 of the machine is supported by corner posts 2 and is provided with brackets 3 which support oppositely grooved carriage rails 4. The carriage rails 4 cooperate with anti-friction rollers 5 which also run in oppositely grooved rails 6, forming part of a guide bar 7, constituting the rear cross bar of the carriage. This rear cross bar supports forwardly projecting end plates 8 and 9, which with the rear cross bar, constitute the carriage. The right-hand end plate 9 is provided with a finger piece 10 by which the carriage may be restored to normal position to begin a new line of writing. A platen shaft 11 is supported in bearings in the end plates 8 and 9, and a cylindrical platen 12 may be operatively connected thereto through any suitable fractional line spacing clutch mechanism (not shown) such for example as that shown in the Bond patent hereinbefore referred to, or that shown in the Joselyn application filed Sept. 20, 1906, Serial No. 335,430. A line spacing wheel 13 may in a like manner be operatively connected to the platen, and a roller detent 14 cooperates with the teeth of the line spacing wheel to assure the proper positioning of the line spacing wheel and

platen in line spacing positions and to prevent overthrow of the platen. This roller detent is carried by a spring arm 15 secured to the left-hand end plate of the carriage. The usual line spacing devices employed in the Monarch machine are shown in the present instance for effecting line spacing movements of the platen. Said devices comprise a finger piece 16 secured to a rock shaft to which a crank arm 17 is fixed. A pivoted supporting arm 18 has a line spacing pawl 19 pivoted thereto at 19^a. The crank arm 17 cooperates with the line spacing pawl 19 to effect an actuation of the line spacing pawl to bring about a line spacing movement of the platen. The usual paper finger cross rod 20 extends over the platen and connects the two end plates 8 and 9. The platen shaft 11 is provided at its ends with finger wheels 21.

All of the parts thus far described are similar to those employed in the Monarch machine.

The right-hand end of the platen shaft, where it projects beyond the end plate 9, has a supporting sleeve 22 surrounding it. The platen shaft 11 is free to rotate in said sleeve and the sleeve itself is fixedly fitted in an opening in a bracket plate 23. The outline of the bracket plate 23 is shown in Fig. 4. An upwardly extending ear 24 formed on the bracket plate is offset inwardly as shown in Figs. 1 and 2 and is perforated for the reception of a headed screw 25 which is received in a tapped opening in one end of the cross rod 20, thus rigidly connecting the bracket plate 23 to the carriage. The sleeve 22 constitutes an additional support for the bracket plate and the parts carried thereby. From an inspection of Fig. 5 it will be seen that a wheel 26 surrounds the sleeve 22 and turns freely thereon. The wheel 26 is formed with an inwardly extending hub portion 27 on which a band wheel 28 is seated, a pin 29 passing through and connecting the band or sprocket wheel 28 with the wheel 26. The wheel 26 also has an outwardly extending hub portion 30 which terminates at the outer end of the sleeve 22 and receives a bearing on the sleeve. The periphery of the wheel 26 is extended at 31 to form an annular flange or cylindrical member, which constitutes one member or section of a friction clutch. The periphery of the wheel or clutch section 31 is provided with indices 32 as shown in Figs. 1 and 2, for purposes which will hereinafter more clearly appear. These indices correspond to line spacing positions of the platen under control of the line spacing wheel 13. The sprocket or chain wheel 28 engages an endless band, flexible carrier or chain 33 which in the present instance is in the nature of an open link sprocket chain, a tooth 34 of the sprocket wheel 28 passing into a space formed be-

tween each pair of pivots 35 which unite the open links of the sprocket chain. A corresponding sprocket or band wheel 36 is free to turn on a spindle 37 threaded at one end as at 38. The threaded portion of the spindle passes through an elongated opening 39 in the bracket plate 23 to afford an adjustment of the spindle fore and aft of the machine to take up any slack in the chain 33. The spindle is secured in its adjusted position by a nut 40 which coöperates with the threaded end of the spindle and with the bracket plate 23 to clamp the spindle in its adjusted position. The endless sprocket chain 33 passes around the driving wheel 28 and around the driven wheel 36. Elliptical walls 41 of a housing surround the sprocket chain and wheels 28 and 36. The elliptical walls 41 are formed as a part of a face or cover plate 43, the two constituting the housing for the inclosed parts of the biller. The housing is cut out as indicated at 42 in Figs. 2, 4 and 5 for the reception of the wheel 26. A shouldered portion 44 on the spindle 37 bears against the face or cover plate of the housing and clamps the housing in place against the bracket plate 23.

One of the links of the chain 33 is formed as a stop member 45, as shown in Fig. 4. This stop member has a curved contact face 46 which is adapted to coöperate with the inner face of the curved portion 41 of the housing, as shown in Fig. 4. The stop is also formed with a recessed portion 47 adapted to receive and embrace a stop 48 at the limit of movement of the stop 45 in one direction. The stop 48 seats itself in the bottom of the slotted portion 47 to assist in locking the stop 45 against twisting movement, the contact face 46 of the stop bearing at this time against the curved end or contact wall at the right-hand end of the housing, as the parts appear in Fig. 4, and the base of the stop 45 bearing firmly against the wheel 36 and all coöperating to prevent a twisting of the stop 45 and a corresponding deflection or buckling of the chain 33 which might otherwise result in an arrest of the platen at an improper line space position. The stop 48 is in the nature of a pin and is shown in detail in Fig. 8, the pin having a knurled head 49 and a flange or shoulder 50. The shank or engaging portion of the stop pin 48 is adapted to enter alined openings 51 and 51^a formed in the cover plate 43 of the housing and in the bracket plate 23, respectively. The openings 51 and 51^a correspond so that the adjustable stop pin 48 may be inserted in any alined pair of said openings. The pin or stop extends across the chamber within the housing, as shown in Fig. 4, and into the path of the traveling stop 45, connected to the sprocket chain 33. The openings 51 and 51^a are arranged in curved series, as indicated in Figs.

3 and 4, the curvature of the series of openings corresponding substantially to the curved path of travel of the stop 45. From an inspection of Fig. 3 it will be observed that the openings 51 in the face plate 43 have indices 52 adjacent thereto, to facilitate adjustments of the stop 48. A pivoted latch 53 having a hub 54 which surrounds the spindle 37, is confined against displacement longitudinally of the spindle by a shoulder 55 formed on the spindle. The free end portion of the pivoted latch 53 has a recess or fork 56 which is adapted to receive the headed portion 49 of the adjustable stop outside of the flange 50 on said stop, to prevent withdrawal of the stop from the position to which it is adjusted in a coinciding pair of openings 51 and 51^a. By swinging the pivoted stop 53 out of engagement with the adjustable stop the latter is free to be withdrawn from the openings in which it is seated and to be inserted in another pair of alined openings. Moreover, it will be observed that the pivotal center of the latch 53 corresponds to the center of the arc or curve in which the openings 51 are arranged so that the latch is adapted to coöperate with the adjustable stop when it is seated in any of the openings to which it may be adjusted.

The spindle 37 is bifurcated at 57 for the reception of the rear end of a lever 58 pivoted to the spindle at 59. The lever 58 has a central yoke-like portion 60 through which the platen shaft extends. The yoke carries inwardly projecting headed shouldered screws 61 on which anti-friction rollers 62 are mounted. These rollers are adapted to bear against the flange 63 of a sleeve 64 which surrounds and is supported on and adapted to slide along a sleeve 65 forming part of a clutch section, designated as a whole by the reference numeral 66 and shown in detail in Fig. 6. The sleeve 65 is supported on the platen shaft and is fixed thereto by a pin 65^a. The sleeve 64 carries a pin 67 which projects parallel with the axis of the platen from the flange 63. This pin projects through an opening 68 in the body portion 69 of the clutch section 66 and is free to slide longitudinally in said opening but locks the member 63—64 to rotate with the clutch section 66, which in turn is fixed by the pin 65^a to turn with the platen shaft.

From an inspection of Figs. 5 and 6 it will be observed that an annular flange-like portion 70 projects from the body portion 69 of the clutch section 66, and is disconnected throughout most of its extent from the body portion by a slot 71. At the ends of the slot there is a connecting web 72 formed between the flange-like portion 70 and the body portion of the clutch. The flange 70 is also cut through or spaced apart

as indicated at 73 (Fig. 6) so as to form virtually a split ring of the member 70. The adjacent ends 73 of this split ring are flat or square to present angular contact faces between which a rectangular block-like portion 74 of an expanding device is received. This expanding device is in the nature of a lever pivoted at one end, as at 75, in the web-like portion 72 of the ring; the intermediate connecting part 76 of the pivoted device being in the nature of a yoke-like portion which is off-set from the ends 74 and 75 to virtually form a lever of the pivoted member. A restoring spring 77, shaped as shown in detail at Fig. 7, is secured to the wheel 26 by screws 78 which pass through openings 79 in the spring and engage in tapped openings in the wheel. The free end or contact portion 80 of the spring bears against the off-set part 76 of the pivoted actuating device as shown in Fig. 5 and normally maintains it in position where the side walls of the squared portion 74 are in contact with the cooperating squared contact faces 73 of the split ring. When, however, the lever 58 is moved to the left the pressure of the lever exerted through the anti-friction rollers 62 on the flange 63 is effective to move the flange and its sleeve 64 inwardly toward the platen. This movement carries the pin 67 inwardly to effect the turning movement of the pivoted actuating device on its pivot 75 and the corresponding turning movement of the squared portion 74 thereof is effective to expand the split ring 70 to force it into contact with the inner face of the companion clutch member 31 carried by the wheel 26. When the clutch members are locked together in the manner set forth above, the wheel 26 will be clutched to rotate with the platen-shaft and the wheel 26 being fixed to the sprocket wheel 28, will lock said sprocket wheel 28 to rotate with the platen shaft so that at this time a rotation of the platen will cause a corresponding rotation of the sprocket wheel 28 to move the sprocket chain and carry the traveling stop 45 from the position shown as that indicated in Fig. 4, for instance, to a position where it will engage the adjustable stop 48 carried by the housing. When the stops 45 and 48 are brought into cooperation further forward rotation of the platen is arrested until the lever 58 is moved to the right to release the clutch sections. The forward travel of the stop 45 is limited by a stop 82 secured to the housing by a headed screw 83 which passes through an elongated opening 84 in the housing and is received at its threaded end in a tapped opening in the stop 82. The elongated opening 84 affords a slight fractional adjustment of the stop 82. The stop 45 co-acts with the stop 82 during the rearward rotation of the platen to arrest the rearward rotative movement of

the platen when the clutch members 66 and 70 are engaged.

From an inspection of Fig. 3 it will be observed that an indicating mark 85 is provided on the cover plate 43 of the housing for cooperation with the index marks 32 on the wheel 26 or on the periphery of the clutch section 31 thereof. When the stop 45 is in the foremost position shown in Fig. 4, where it abuts the stop 82, the "0" on the indicating wheel will be in register with the index mark 85 on the housing. A bill sheet such as is intended to be used in the machine may then be inserted and the platen turned forwardly until the first printing line, or the date line, is brought into position to be written. During this forward movement of the platen the part 31 is rotated rearwardly and the indices thereon are successively brought into register with the index mark 85, the separate marks on the indicating part 31 corresponding to a line space movement of the platen. If the platen be rotated forwardly, say, twenty-two line spaces, in order to bring the bill into position to receive the first line of writing, then, the index mark on the wheel 31 which indicates the twenty-second line space will be brought into register with the indicating mark 85. This will indicate to the operator the opening 51 into which the adjustable stop 48 is to be inserted. The operator moves the stop pin 48 into the openings 51 opposite to which the index numeral "22" appears and seats its inner end in the alined opening 51^a. The stops are then properly set.

In order that the billing clutch may remain locked during billing operations and enable the operator to have both hands free to adjust, insert and remove the bill heads or invoice sheets, I have provided a catch for the lever 58 for locking it in position to retain the clutch sections engaged. Thus it will be seen that an opening 86 extends transversely through the lever 58 near the finger piece 87 thereof. A pin or rod 88 is pivoted at 89 to a bracket 90 secured by a screw 91 to the bracket plate 23. The pin 88 projects freely through the opening 86 in the lever 58 and is considerably smaller in diameter than the width of the opening in order to prevent the binding of the lever on the pin in the different positions to which the lever may be moved around its pivot 59. A catch, gripper or fastening device 92, which is in the nature of a lever, is provided with ears 93 pivoted at 94 to the lever 58. The forward end of the catch or lever 92 is provided with a finger piece 95 and the rear end thereof has a perforation 96 which registers with the opening 86. The size of the perforation 96 corresponds substantially to the diameter of the pin 88 in order to provide a rather snug fit of the pin in the opening. A flat spring 97 is riveted at 98 to the

catch 92 and bears at its free end against the finger piece 87 of the lever 58. The spring 97 turns the catch upon its pivot and tends to maintain it in an angular position with reference to the longitudinal axis of the pin 88 so as to effect a binding action between the walls of the perforation 96 of the catch and the pin 88. The construction is such that the finger piece 87 may be shifted to the left to lock the clutch sections in engagement and the spring pressed catch 92 will engage the rod or pin 88 to prevent a return movement of the lever 58 to normal position, thus locking the lever in a position where it will maintain the clutch sections engaged. The lever 58 may be freed at any time by pressing the finger piece 95 of the catch toward or against the finger piece 87 of the lever 58 to release the binding action of the catch on the rod 88. While finger pressure is maintained on the catch, or the finger piece 95 thereof, the lever 58 may be moved back to the normal position shown in Fig. 1, which is effective to release the clutch sections and enable the platen to rotate independently of the billing devices.

In the operation of the machine for condensed record work, for instance, the adjustable stop 48 is set in the manner hereinbefore described and the stops being in the position shown in Fig. 4, a record sheet, an invoice sheet, and an interposed carbon sheet are all placed in the machine together, the clutch sections of the biller being at this time in engagement. A forward rotation of the platen is effected until the traveling stop 45 engages the adjustable rear stop 48 when the platen is arrested in a position where the outermost or invoice sheet will be in position to receive the first line of writing. The operator then releases the billing clutch and proceeds to fill in the invoice sheet, the written matter being duplicated on the record sheet through the interposed carbon. After the first bill has been completed the platen is given two line space movements by the line spacing devices in order to provide the proper space on the record sheet between the last line of the previously written bill and the first line of the copy of the next bill to be written. The lever 58 is then shifted to the left to effect an engagement of the clutch members and the platen is rotated rearwardly until arrested by the coöperation of the stops 45 and 82. The written invoice sheet is then removed without disturbing the carbon and record sheets and a new bill is introduced and the platen is turned forwardly until arrested by the coöperation of the stops 45 and 48 when the newly introduced invoice sheet will be in a position to receive the first line of writing. The clutch is then released and the operator proceeds to fill in the invoice sheet as before. This method

is repeated until the record sheet is filled when a new record, invoice and carbon sheet may be introduced as previously described.

In the present instance the line spacing wheel is supposed to have thirty-three teeth and it will be seen that I have provided thirty-three each of the holes 51 and 51^a so that an adjustment of the adjustable stop may be effected up to a full revolution of the platen when the adjustable stop 48 is set in the last holes indicated at "33." It should be understood, however, that the construction is such that the number of holes 51 and 51^a may be increased and more than a full revolution of the platen may then be effected before the stops arrest it. In some cases especially where a longer range of adjustment of the adjustable stop is desired, the pin 48 may be threaded at its inner end and the openings 51^a may be tapped for coöperation therewith. In this event the pivoted stop retaining device may be dispensed with.

From the foregoing description it will be seen that the traveling chain driven stop moves in a curved as well as in a rectilinear path; that at the time when the traveling stop coöperates with either of its co-acting stops the said traveling stop bears against and fits a curved portion of the housing and also bears against one of the chain wheels so that the traveling stop is at such times locked against twisting movement, and any pressure which would tend to distort, twist or deflect the chain, endless band, or flexible carrier is resisted. It will also be seen that the indicator 85 and the indicating means 32 coöperate to indicate different positions in the travel of the traveling stop from the zero or normal position, and that these different positions correspond to different line space positions of the platen, so that notwithstanding the traveling stop is hidden from view within the housing, the position of said traveling stop with reference to the coöperating fixed stops may be determined at any time by the indicating means.

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

1. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, a chain for moving certain of said stops, and a housing which surrounds said chain; the said certain of said stops driven by the chain following and bearing against an inner wall of said housing.

2. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless chain for moving certain of said stops in a curved as well as in a rectilinear path, a housing surrounding said chain and against which the chain driven stop is adapted to bear.

3. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless chain for moving

certain of said stops in a curved as well as in a rectilinear path, a housing surrounding said chain, said housing being curved to conform to the curved path of movement of the said certain of said stops driven by the chain, the latter being adapted to bear against said housing and having curved contact faces which conform to the said curved portions of the housing.

4. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, a chain for moving certain of said stops, a housing which surrounds said chain and also supports one of said arresting stops, the said certain of said stops driven by the chain bearing against said housing, and means for affording an adjustment of the stop supported on said housing.

5. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, a chain for moving certain of said stops, a housing which surrounds said chain, the said certain of said stops driven by the chain bearing against said housing, said housing having a series of stop-receiving openings therein adjacent to the path of travel of the chain driven stop or stops, and a stop adjustable to different stop positions in said stop-receiving openings.

6. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless band to which certain of said stops are attached, driving means for said band, means for operatively connecting and disconnecting at will said platen and driving means, and a housing for said band and driving means, certain of said stops being supported by and adjustable on said housing.

7. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless band for driving certain of said stops, driving means for said band, means for operatively connecting and disconnecting at will said platen and driving means, said housing having a series of stop-receiving openings therein and in which certain of said stops may be received and by which certain of the stops may be adjusted to different set positions.

8. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless band for driving certain of said stops, driving means for said band, means for operatively connecting and disconnecting at will said platen and driving means, a housing for said band and driving means, said housing having a series of stop-receiving openings therein and in which certain of said stops may be received and by which certain of the stops may be adjusted to different set positions, and releasable means for holding certain of said stops in the openings in said housing.

9. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless band for driving certain of said stops, driving means for said band, means for operatively connecting and disconnecting at will said platen and driving means, and a housing for said band and driving means, said housing having openings in opposite walls thereof and one of said stops being in the nature of a pin adapted to be received and adjusted in different of said openings and to extend across the chamber contained within said housing and into the path of a driven stop.

10. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless band for driving certain of said stops, driving means for said band, means for operatively connecting and disconnecting at will said platen and driving means, a housing for said band and driving means, said housing having openings in opposite walls thereof and one of said stops being in the nature of a pin adapted to be received and adjusted to different positions in different of said openings and to extend across the chamber contained within said housing and into the path of a driven stop, and a pivoted retaining device adapted to be turned on its pivot into engagement with the said pin-like adjustable stop in its different adjusted positions to hold it in place.

11. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless chain for moving certain of said stops in a curved as well as in a rectilinear path, a housing surrounding said chain, said housing having a curved series of openings corresponding substantially to the curved path of travel of the movable stop or stops, and certain of said stops being adjustable to different positions in said curved series of openings.

12. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, an endless chain for moving certain of said stops in a curved as well as in a rectilinear path, a housing surrounding said chain, said housing being curved to conform to the curved path of movement of the said certain of said stops driven by the chain bearing against said housing and having curved contact faces which conform to the said curved portions of the housing, said housing having a curved series of openings, the curvature of the series corresponding substantially to the curved path of travel of the driven stop or stops, and certain of said stops being adjustable in a curved path to different positions in said openings.

13. In a typewriting machine, the combination of a rotative platen, cooperative stops for arresting said platen, two wheels at least one of which is a sprocket wheel, a sprocket chain cooperative with said wheels, one of

said stops operatively connected to said chain, a housing surrounding said chain and wheels, means for operatively connecting at will the platen and one of said wheels, and means for carrying certain of said stops on said housing and for effecting an adjustment thereof on the housing.

14. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, said stops including a traveling stop and an adjustable stop, indicating means to indicate different points to which said adjustable stop may be adjusted, and separate visual indicating means for indicating different positions in the travel of said traveling stop, said different positions corresponding to different line space positions of the platen.

15. In a typewriting machine, the combination of a rotative platen, stops for arresting said platen, said stops including a traveling stop and an adjustable stop, indicating means to indicate different points to which said adjustable stop may be adjusted, a housing inclosing said traveling stop, and visual indicating means separate from said first mentioned indicating means for indicating different positions in the travel of said traveling stop, said different positions corresponding to different line space positions of the platen.

16. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, indicating means for indicating different positions of adjustment of said adjustable stop, and separate indicating means for indicating different points in the travel of said traveling stop from normal position, said different points corresponding to different line space positions of the platen.

17. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, a housing which surrounds said traveling stop, indicating means for indicating different positions of adjustment of said adjustable stop, and separate indicating means for indicating different points in the travel of said traveling stop from normal position, said different points corresponding to different line space positions of the platen.

18. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of

said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, a housing which surrounds said band wheels band and traveling stop, indicating means for indicating different positions of adjustment of said adjustable stop, and separate indicating means for indicating different points in the travel of said traveling stop from normal position, said different points corresponding to different line space positions of the platen.

19. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, indicating means for indicating different positions of adjustment of said adjustable stop, and an index and coöperative indicating wheel for indicating different points in the travel of said traveling stop from normal position, said different points corresponding to different line space positions of the platen, the index being carried by a relatively fixed part and the indicating wheel being controlled by said band driving wheel.

20. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, a housing which surrounds said band wheels band and traveling stop, indicating means on said housing for indicating different positions of adjustment of said adjustable stop, an indicator on said housing and separate movable indicating means coöperative with said indicator for indicating different points in the travel of said traveling stop from the normal position.

21. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, a housing which surrounds said band wheels band and traveling stop, indicating means on said housing for indicating different positions of adjustment of said adjustable stop, an indicator on said housing, and an indicating wheel operatively connected to be rotated by one of said band wheels, said indicating wheel having indices coöperative with said indicator

for indicating different points in the travel of said traveling stop from the normal position.

22. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, a housing which surrounds said band wheels band and traveling stop, said housing having a series of openings for the reception and adjustment of said adjustable stop, said openings being arranged in a curve, indicating means on said housing coöperative with openings for indicating different positions of adjustment of said adjustable stop, an indicator on said housing, and separate movable indicating means coöperative with said indicator for indicating different points in the travel of said traveling stop from the normal position.

23. In a typewriting machine, the combination of a rotative platen, band wheels, means for operatively connecting one of said band wheels to the platen at will, a band driven by said last mentioned band wheel, stops for arresting the platen, said stops including an adjustable stop and a traveling stop moved by said band, a housing which surrounds said band wheels band and traveling stop, said housing having a series of openings for the reception and adjustment of said adjustable stop, said openings being arranged in a curve, indicating means on said housing coöperative with openings for indicating different positions of adjustment of said adjustable stop, a separate indicator on said housing, an indicating wheel operatively connected to be rotated by one of said band wheels, said indicating wheel having indices coöperative with said indicator for indicating different points in the travel of said traveling stop from the normal position.

24. In a typewriting machine, the combination of a rotative platen, stops for arresting the platen, means operable at will for rendering said stops operative or inoperative to arrest the platen, said means comprising an annular flange, an expansible split ring contained within said flange and having squared contact ends, a pivoted device having a squared portion between the ends of said split ring and coöperative with the squared contact ends thereof, a hand actuated lever for actuating said pivoted device to expand said ring to clamp the ring and flange to turn together, and means for locking the lever in its actuated position.

25. In a typewriting machine, the combination of a rotative platen, stops for arresting the platen, an endless band or carrier for moving certain of said stops, and

means operative at will to render said stops operative or inoperative to arrest the platen, said means comprising two clutch members, one in the nature of a split ring and the other a member which receives said ring and against which the ring is adapted to bear when it is expanded to clamp the two members to move together, a hand actuated lever, and means controlled thereby for expanding said ring.

26. In a typewriting machine, the combination of a rotative platen, stops for arresting the platen, an endless band or carrier for moving certain of said stops, means operative at will to render said stops operative or inoperative to arrest the platen, said means comprising two clutch members one in the nature of a split ring and the other a member which receives said ring and against which the ring is adapted to bear when it is expanded to clamp the two members to move together, a spring-pressed pivoted member between the ends of said split ring and adapted to expand the ring, and a lever for moving said pivoted device against the pressure of its spring.

27. In a typewriting machine, the combination of a rotative platen, stops for arresting the platen, an endless band or carrier for moving certain of said stops, means operative at will to render said stops operative or inoperative to arrest the platen, said means comprising two clutch members one in the nature of a split ring and the other a member which receives said ring and against which the ring is adapted to bear when it is expanded to clamp the two members to move together, a spring-pressed pivoted member between the ends of said split ring and adapted to expand the ring, a lever for moving said pivoted device against the pressure of its spring, and locking means for said lever, said locking means including a hand actuated releasing device to release the locked lever.

28. In a typewriting machine, the combination of a rotative platen, stop devices for arresting the platen, and means for rendering the stop devices operative or inoperative, said means comprising clutch members, a lever for controlling said clutch members, and a hand released gripping device operable at different points in the throw of the lever for holding said lever against movement.

29. In a typewriting machine, the combination of a rotative platen, stop devices for arresting the platen, and means for rendering the stop devices operative or inoperative, said means comprising clutch members, a lever for controlling said clutch members, and a hand released pivoted frictional gripping device operable to lock the lever against movement.

30. In a typewriting machine, the combi-

nation of a rotative platen, stop devices for arresting the platen, and means for rendering the stop devices operative or inoperative, said means comprising clutch members, a lever for controlling said clutch members, a pivoted frictional gripping device carried by said lever, and a member fixed against movement with said lever and with which said frictional gripping device coöperates to hold the lever against return movement.

31. In a typewriting machine, the combination of a rotative platen, stop devices for arresting the platen, and means for rendering the stop devices operative or inoperative, said means comprising clutch members, a lever for controlling said clutch members, a perforated gripping device, and a rod which works in the perforation in said gripping device and coöperates with the gripping device to lock said lever.

32. In a typewriting machine, the combination of a rotative platen, stop devices for arresting the platen, and means for rendering the stop devices operative or inoperative, said means comprising clutch members, a lever for controlling said clutch members, a perforated gripping device pivoted on said lever, and a rod fixed against movement with the lever, said rod being received in the perforation in said gripping device.

33. In a typewriting machine, the combination of a rotative platen, stop devices for arresting the platen, and means for rendering the stop devices operative or inoperative, said means comprising clutch members, a lever for controlling said clutch members, a perforated spring-pressed gripping lever carried by and pivoted on said controlling lever, and a rod fixed against movement with said controlling lever, said rod being received in the perforation in said gripping lever, a frictional engagement being effected between said gripping lever and rod to resist the movement of the controlling lever in one direction.

34. In a typewriting machine, the combination of a platen, a platen shaft, a clutch member, an expansible clutch member connected to the platen shaft and adapted to engage therewith, an expanding device for the expansible clutch member, a hand operated lever, an intermediate device between said lever and said expanding device, a band wheel connected to said first mentioned clutch member, a companion band wheel, an endless band, a stop carried thereby, and a coöperating stop.

35. In a typewriting machine, the combination of a platen, a platen shaft, a clutch member, an expansible clutch member adapted to engage therewith, an expanding lever pivoted at one end and provided with an expanding device at its opposite end, a sliding pin adapted to coöperate with said lever,

a hand lever adapted to actuate said sliding pin, a band wheel, connected to the platen shaft through the clutch member, a companion band wheel, an endless carrier, a stop attached thereto, and a coöperating stop.

36. In a typewriting machine, the combination of a platen, a platen shaft, a clutch member, an expansible ring adapted to coöperate with said clutch member, a spring pressed expanding member pivoted at one end and provided with an expanding device at its other end, a sleeve slidable on said platen shaft and carrying an operating pin adapted to actuate said expanding lever, a hand actuated lever for sliding said sleeve and pin, a pair of band wheels, an endless band thereon carrying a stop, and a coöperating stop.

37. In a typewriting machine, the combination of a rotative platen, a housing, a band within said housing, a stop attached to said band, and a fixed stop upon said housing, both of said stops being arranged within said housing.

38. In a typewriting machine, the combination of a rotative platen, a housing, a band connected to said platen, a stop attached to said band, a relatively fixed stop, and an adjustable stop, both the latter being supported by said housing and all of the stops being arranged within the housing.

39. In a typewriting machine, the combination of a rotative platen, a housing, band wheels and a band within the housing, a stop attached to said band and formed to fit and run in contact with the interior of said housing, and a relatively fixed stop supported by said housing.

40. In a typewriting machine, the combination of a rotative platen, a housing having curved ends, band wheels and a band arranged within said housing and connected to the platen, a stop carried by said band and curved to fit the inner surface of the curved ends of said housing, and a relatively fixed stop supported by and arranged within said housing.

41. In a typewriting machine, the combination of a rotative platen, a housing having curved ends, band wheels and a band arranged within said housing and connected to the platen, a stop carried by said band and curved to fit the inner surface of the curved ends of said housing, a relatively fixed stop at one of the curved ends of said housing and an adjustable stop at the other end of the said housing, all of said stops being arranged within the housing.

42. In a typewriting machine, the combination of a rotative platen, a housing having curved ends, band wheels and a band arranged within said housing, a stop attached to said band and shaped to fit the inner surfaces of said curved ends and also

the hubs of the band wheel, and a relatively stationary stop or stops to arrest the band stop.

43. In a typewriting machine, the combination of a platen, a housing, a traveling band therein provided with a stop having a recess, and a relatively stationary stop adapted to be embraced by the walls of said recess.

44. In a typewriting machine, the combination of a rotative platen, a housing having curved ends, relatively stationary stops supported one at each end of said housing, band wheels connected to said platen, a band, and a stop carried by said band and shaped to fit the curved interior of said housing and also recessed to embrace at least one of said relatively stationary stops.

45. In a typewriting machine, the com-

bination of a rotative platen, a traveling band provided with a stop having a recess, and a relatively stationary stop adapted to be embraced by the walls of said recess.

46. In a typewriting machine, the combination of a rotative platen, band wheels, a traveling band provided with a stop having a recess and having a bearing face adapted to said band wheels, and a relatively stationary stop adapted to be embraced by the walls of said recess.

Signed at Syracuse, in the county of Onondaga and State of New York this 23rd day of December A. D. 1909.

HERBERT H. STEELE.

Witnesses:

BESSIE G. KITTELL,

M. JOSEPHINE SHARKEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."