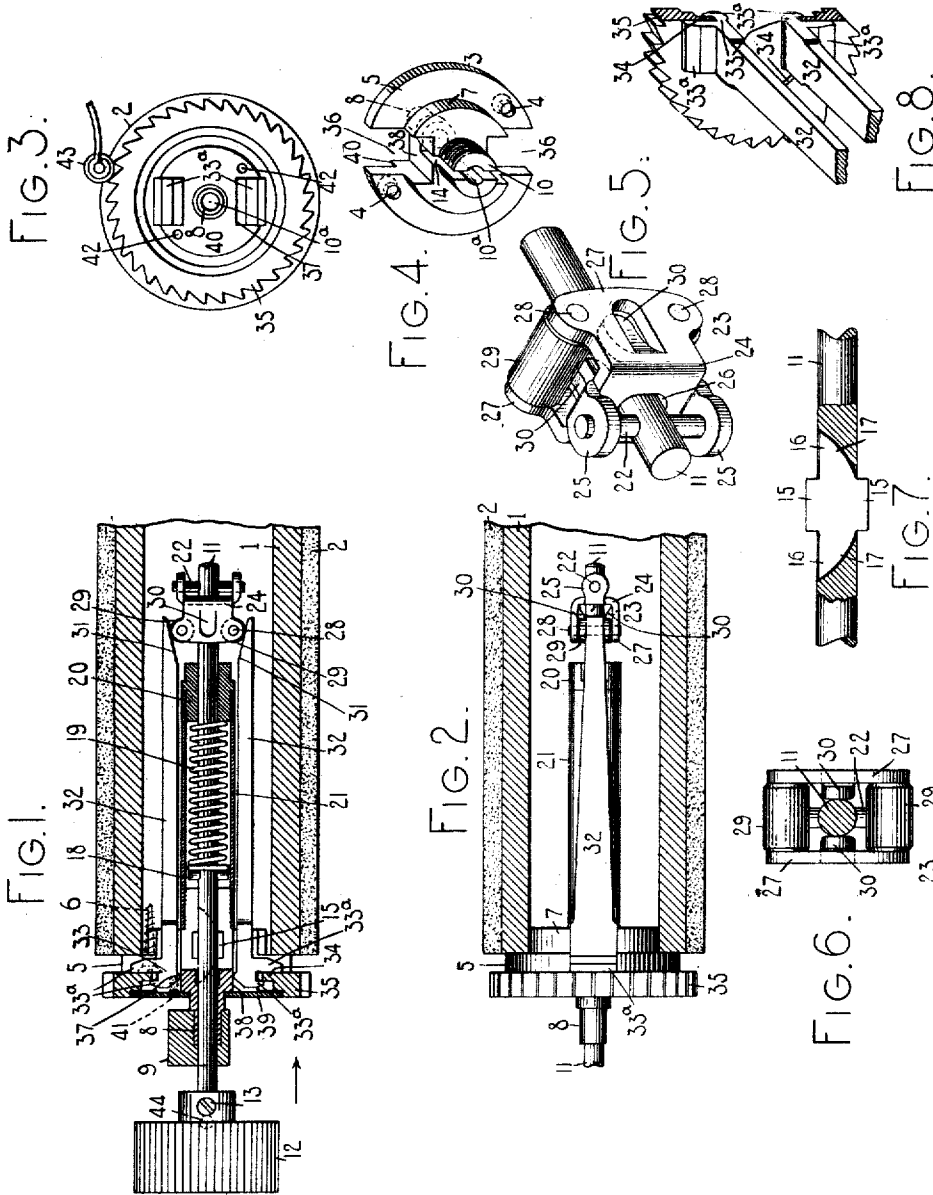


945,358.

O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 10, 1908.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.



WITNESSES.

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945,358.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 2.

FIG. 10.

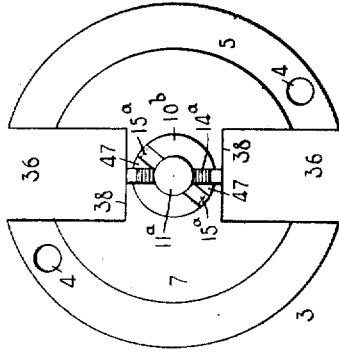


FIG. 11.

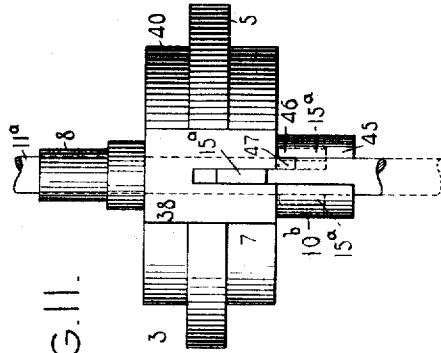


FIG. 9.

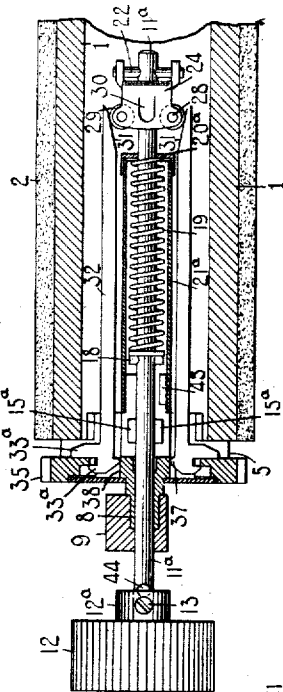
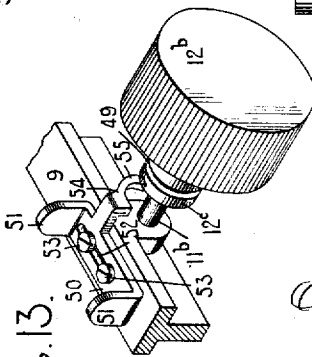
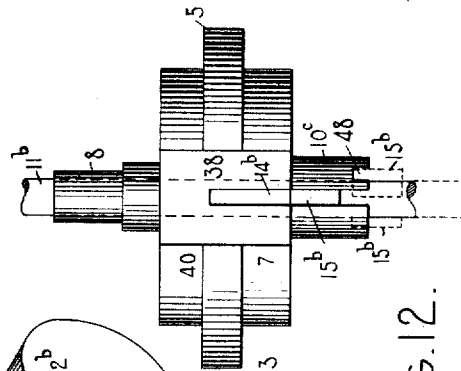


FIG. 12.



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UNITED STATES PATENT OFFICE.

OSCAR WOODWARD, OF NEW YORK, N. Y., ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

945,358.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed April 10, 1906. Serial No. 310,907.

To all whom it may concern:

Be it known that I, OSCAR WOODWARD, citizen of the United States, and resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification:

10 My invention relates to means for effecting a connection and disconnection between the line spacing wheel and platen of a type-writing machine, so that the platen may be turned when desired any extent independ-
15 ently of the line spacing wheel, being thereby adapted for fractional line spacing.

The present invention has some of the same general objects in view and is in the nature of an improvement on the structures disclosed in my prior patents Nos. 784,368 and 784,369, dated March 7th, 1905.

To these and other ends which will hereinafter appear, my invention consists in the features of construction, combinations of
25 devices and arrangements of parts 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, central, longitudinal, sectional view taken through the platen and showing some of the features of one form of my invention applied thereto. Fig. 2 is a
35 like view of the same taken at right angles to the position of the parts shown in Fig. 1. Fig. 3 is an end view of the same looking in the direction of the arrow in Fig. 1 and showing the cover plate removed. Fig. 4 is
40 a detail perspective view of the platen head at the left-hand end of the platen. Fig. 5 is an enlarged detail perspective view of the so-called actuator and the spindle which carries it. Fig. 6 is an enlarged end view of the
45 same. Fig. 7 is an enlarged detail sectional view taken through the spindle and showing the manner of seating the feather or key therein. Fig. 8 is a fragmentary perspective view of the clutch members and line
50 spacing wheel. Fig. 9 is a view corresponding to Fig. 1 of another form of device embodying certain features of my invention.

Fig. 10 is an enlarged detail end view of the platen head and releasing spindle of the construction shown in Fig. 9, the view looking
55 toward the left in Fig. 9. Fig. 11 is a side elevation of the same. Fig. 12 is a view corresponding to Fig. 11 of still another form of locking means which differs slightly from the construction shown in Figs. 10 and
60 11. Fig. 13 is a perspective view showing still another form of locking device and one which, in practice, I prefer to employ.

The platen consists of the usual wooden core 1 with a rubber sheath 2. A platen
65 head 3 is provided with openings 4 in the flange 5 thereof. Wood screws 6 pass through the openings 4 in the flange of the platen head and into the wooden core to secure the platen head to the platen. An in-
70 wardly extending bearing portion 7 is formed on the platen head and is adapted to be received within the bore of the central core of the platen in order to properly support the platen head. An outwardly extend-
75 ing nipple 8 projects from the platen head and has a bearing in the platen frame 9. Projecting inwardly from the platen head is a threaded nipple 10, the purpose of which will hereinafter appear. A central cylin-
80 drical opening 10^a extends through the nipple 8, the platen head 3 and nipple 10, and a spindle or actuating part 11 projects through said opening and receives a bearing therein. The outer end of this spindle carries a finger wheel 12 which is connected
85 to the spindle by a set screw 13 and by means of which the releasing spindle is actuated. A transverse key-way, kerf or slot 14 is formed in the platen head and in the nipple 10
90 for the reception of a feather or key 15 which has laterally extending wings 16 each provided with a cam on one side, as shown at 17. This key or feather is driven into an opening or slot in the spindle 11 and is se-
95 cured therein by a drive-fit, whereas those portions of the feather which project outwardly beyond the spindle are received in the key-way or slot 14 in the platen head so as to permit a longitudinal movement of
100 the spindle, but to prevent it from turning relatively to the platen head. A pin 18 extends crosswise through the spindle and constitutes an abutment against which one end

of a coiled expansion spring 19 bears. The other end of this spring bears against a detachable end piece or screw plug 20 which is received within one end of a tubular extension 21 on the nipple 10. This tubular extension 21 is internally threaded at both ends, one end cooperating with the threads on the nipple 10 and the threads at the other end cooperating with the threads on the plug 20. It will be seen that by this construction an adjustment of the tension of the spring 19 is obtainable, though ordinarily the plug may be screwed to the position shown in Fig. 1 and remain fixed in this position, no variation in the position of the plug being ordinarily required. The plug 20 has a central bearing opening and the spindle 11 projects through said opening and has a bearing therein. The inner end of the spindle carries a transverse pin 22 which extends from the spindle on opposite sides thereof and constitutes a bearing for a member 23 hereinafter called an actuating device. This actuating device is clearly shown in Figs. 5 and 6 and comprises a sheet metal frame 24 that has bearing lugs 25 struck up therefrom. These bearing lugs extend on opposite sides of the spindle 11 and are perforated for the reception of the pin 22 which constitutes a guide for the frame and causes the actuating device to move with the spindle in its movement longitudinally of the platen, but affords a movement of the actuating device at right angles to the axis of the spindle on the guide pin 22, for purposes which will hereinafter appear.

The sheet metal frame 24 has an opening 26 therein large enough for the free passage of the spindle through the frame and is formed with bearings 27 that extend on opposite sides of the spindle and constitute bearings for the pivots 28 of anti-friction rollers 29, said rollers being located on opposite sides of the spindle. Inwardly projecting tongues or fingers 30 are punched or cut from the sheet metal frame and extend toward and into contact with the spindle on opposite sides thereof, as shown in Figs. 5 and 6. These fingers prevent any lateral movement of the actuating device on the spindle in one direction but afford a movement of the actuating device at right angles to the spindle in another direction, or longitudinally of the guide pin 22. The anti-friction rollers 29 of the actuating device cooperate with inclined or cam faces 31 on the long lever arms 32 of the engaging or gripping devices. These gripping devices may have outwardly extending bifurcated or substantially U-shaped portions 33. An inwardly extending circumferential flange 34 on a line spacing wheel 35 is embraced within the bifurcations and lies between the gripping or clamping jaws 33^a formed by said

bifurcations. The gripping devices are received and seated within openings or channels 36 in the platen head, so that they are connected to turn with the platen head and each gripping device has a portion 37 that is adapted to bear against the bottom wall 38 of the associated opening 36 in the platen head. The line spacing wheel 35 is adapted to turn or rotate on the platen head and is secured from outward displacement by a cover plate 39 (Fig. 1) which is secured to an outwardly extending boss or portion 40 of the platen head by screws 41 received in threaded openings 42 in the portion 40, thus rigidly uniting the cover plate to the platen head.

The tension of the spring 19 is exerted to hold the spindle to the left in Fig. 1, thereby moving the actuating device in the same direction, pressing apart the inner ends of the lever arms 32 and effecting a clamping engagement of the jaws 33^a against the flange of the line spacing wheel, and firmly locking the platen and line spacing wheel to rotate together. If the operator should desire to effect a fractional line spacing movement of the platen, or to move the platen independently of the line spacing wheel, it is merely necessary to press the finger wheel 12 to the right, thus moving the spindle in a like direction against the tension of the spring 19, thereby forcing the actuating device to the right to relieve pressure on the inner ends of the lever arms 32. When the pressure of the spring 19 is thus relieved upon the lever arms 32, the finger wheel 12 may be utilized to rotate the platen to the desired extent, the line spacing wheel at this time remaining fixed, it being held in place by the usual spring detent 43.

The advantages attained by the construction as a whole thus far described are similar to those more fully pointed out in my prior patents hereinbefore referred to.

The present invention so far as the features thus far described are concerned is directed more particularly to specific improvements in the construction which facilitate the manufacture of the device and assemblage of the parts.

It will be understood that the platen may be mounted to turn in its platen frame in the usual manner and that any ordinary line spacing mechanism may be employed to cooperate with the line spacing wheel in the usual manner.

The constructions shown in Figs. 9 to 13 are in many respects similar to that shown in the preceding figures and corresponding reference numerals will be employed to designate the parts which are the same in the different constructions.

In the construction shown in Fig. 9 the inner end of the tubular extension 21^a is

exteriorly threaded instead of being interiorly threaded as in the other construction and the detachable perforated end piece 20^a in the construction shown in Fig. 9 is in the nature of a cap or cover plate that is interiorly threaded to cooperate with the exterior threads on the inner end of the tubular extension.

It will be understood from an inspection of Figs. 1 and 9 that two cut-outs or recesses 44 may be formed in the spindle 11 for cooperation with the set screw 13, so that the finger wheel may be connected to the spindle as shown in Fig. 1 or may be moved along and secured farther out on the spindle, as shown in Fig. 9. In the first mentioned adjustment of the finger wheel the boss 12^a thereon will be nearer to the platen frame 9 in the normal position of the parts and the finger wheel will be arrested by contact with the platen frame when it is moved to the right sooner than it would be if the finger wheel were adjusted as shown in Fig. 9, and consequently a shorter longitudinal movement will be transmitted to the spindle in one case than in the other for purposes which will hereinafter appear.

It is desirable to provide means for locking the releasing device in the released position in order that both hands of the operator may be free to manipulate the machine when desired. To this end I have provided, in the construction shown in Figs. 9 to 13, means whereby the spindle 11^a or 11^b may be locked in the innermost or releasing position. Thus, from an examination of Figs. 9, 10 and 11, it will be seen that two of the side walls of the slot or key way 14^a in the nipple 10^b which projects inwardly from the left-hand platen head, are cut away laterally at 45. Radial locking depressions or notches 46 are formed in the nipple at the terminations of the cut away portions 45, said notches being oppositely disposed as indicated in Fig. 10, thus forming inwardly extending projecting lugs 47, between the side walls of the key-way slot 14^a and the locking notches 46, which lugs are substantially triangular in cross-section as shown in Fig. 10.

In the operation of the device shown in Figs. 9, 10 and 11 the spindle will be moved inwardly by the finger wheel 12 until the boss 12^a thereon contacts with the platen frame 9, thereby releasing the clutching devices in the manner hereinbefore described and when the finger wheel and spindle have received the limit of inward movement the finger wheel may then be given a partial turn, thus turning the feather 15^a thereon into the laterally cut away portions 45 to a position where it may be received in the locking notches 46. A release of inward pressure on the finger wheel 12 at this time

will cause the feather 15^a to be seated in the locking notches 46 through the pressure of the spring 19 as shown in Fig. 10 and as indicated in dotted lines in Fig. 11. When the feather is thus seated in the locking notches the spindle 11^a is locked in its pushed in position and the spindle and finger wheel are locked to the platen head and platen, and the clutching or connecting devices are maintained released from engagement with the line spacing wheel. The finger wheel 12 may, at this time, be employed to turn the platen independently of the line spacing wheel.

The construction shown in Fig. 12 is similar to that embodied in Figs. 9, 10 and 11, except that the locking recesses 48 are contained in the outer end of the nipple 10^c instead of being arranged in the manner shown in the other figures; and in the construction shown in Fig. 12 the parts are so arranged that a full, inward movement of the spindle 11^b will move the feather 15^b entirely out of the key-way slot 14^b and beyond the inner end of the nipple. A slight turning movement of the spindle, when in this position, will cause the feather 15^b to be brought opposite the locking openings 48 and when the feather is in register with said openings the spring 19 will force the feather into locking engagement in the openings, as shown in dotted lines in Fig. 12, thus locking the spindle and finger wheel to the platen head while the clutch actuating device is maintained in the released position and the platen is free to turn independently of the line spacing wheel.

I have provided a still further form of the locking feature of the invention, which is illustrated in Fig. 13 and which, in practice, I prefer to employ. When employing this locking device the cooperating parts are preferably constructed in the manner shown in Fig. 1 of the drawings, for instance, and the finger wheel 12^b is provided with a boss or collar 12^c which has a circumferential groove 49 therein. The platen frame or carriage 9 supports a locking latch 50 which is in the nature of a U-shaped piece, the upright members 51 of which constitute finger pieces for sliding the locking member along the side bar of the platen frame on which it is mounted. The base of the locking piece is slotted at 52 for the reception of stems of headed screws 53. The threaded stems of the screws pass through the slot 52 and take into threaded openings in the platen frame and limit the movement of said locking member. Projecting outwardly and downwardly from the base of the locking member is a bracket-like arm 54 which terminates in a curved finger 55 which is adapted to be seated within the circumferential groove 49 in the boss 12^c on the finger wheel when the

finger wheel has been moved inwardly to the limit of its movement and the boss has been brought into contact with the platen frame. When the locking member 50 has been moved to seat the locking finger 55 within the circumferential groove, the spindle will be locked in its innermost position, thus maintaining the actuating device out of contact with or freeing the pressure thereof on the long lever arms 32 of the engaging or connecting gripping devices, so that the platen is adapted to be turned independently of the line spacing wheel. The feather 15, however, in this construction is seated at all times within the key-way 14 so as to prevent the spindle from turning relatively to the platen head, and the finger wheel 12^b may be employed to turn the platen, the locking device 50 not interfering with the turning movement of the finger wheel, although it prevents the finger wheel and spindle from moving outwardly in the direction of the length of the spindle until the locking member 50 is again moved back to the normal or releasing position shown in Fig. 13.

It will be understood that the inner side wall of the groove 49 constitutes a circumferential shoulder against which the lock bears to prevent an outward movement of the spindle and that in the construction shown in Fig. 13 it is only this circumferential shoulder which is essential for cooperation with the locking member.

The recesses or notches 44 hereinbefore referred to enable the finger wheel to be adjusted in either one of two positions as heretofore pointed out. When the finger wheel has been adjusted as indicated in Fig. 1, for instance, it will limit the inward movement of the spindle and in a construction such as that shown, for instance, in Fig. 9, will prevent the locking means from being rendered effective or operative. That is to say, if the finger wheel be moved inwardly on the spindle and the set screw 13 is seated in the innermost recess 44, then the spindle will be prevented from moving inwardly far enough to bring the feather 15^a (Fig. 9) to a position where it may be turned laterally and engage in the locking recesses or openings 46. If, however, the finger wheel be secured in its outermost position then the locking means are rendered operative when the spindle is pushed in.

The adjustment of the finger wheel on the spindle in the manner described may also be employed in a construction such as that shown in Fig. 12. In one position of adjustment of the finger wheel the feather 15^b may be moved out of the key-way beyond the end of the nipple 10^c and turned until it is brought into register with the locking opening 48 and is seated therein. In the other adjustment of the finger wheel the spindle

will be prevented from moving far enough to carry the feather 15^b out of the key-way 14^b.

It should be understood that various of the features separately shown may be combined and employed in a single construction.

The means for locking the spindle or actuating device in the released position constitutes an important feature of the present invention.

Instead of a feather, such as the feather 15^b working in a key-way in the manner shown and described, the nipple 8 may extend through the bearing in the platen frame and beyond the side bar in which the bearing for the nipple is formed. This nipple may be provided with a key-way for cooperation with a feather on the spindle and a cooperating locking notch or opening such as 48 may be provided in the end of the nipple 8 for cooperation with the feather. This will enable the operator to see whether the feather is seated in the locking opening or is in the key-way, or in other words to see whether or not the spindle is locked in the releasing position.

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

1. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, a part for actuating said connecting devices, and a sliding hand actuated locking member carried directly by the carriage and adapted to engage said part for actuating the connecting devices, for locking said actuating part against movement in one direction.

2. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, a spindle adapted to move longitudinally and to turn with the platen, means whereby said spindle is operable to actuate the connecting devices and to turn the platen independently of the line spacing wheel when said connecting devices are released, and a locking device operable to lock the spindle against longitudinal movement and to thus lock the connecting devices in the released position.

3. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, spring pressed connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, the spring for the spring pressed connecting devices operating to normally

maintain the line spacing wheel and platen connected, a spindle adapted to move longitudinally and to turn with the platen, whereby said spindle is operable to move the connecting devices against the spring pressure thereof and to turn the platen independently of the line spacing wheel when said connecting devices are released, and a sliding hand actuated locking device carried by the carriage and operable to lock the spindle against longitudinal movement, and against the pressure of said spring but to afford a turning movement thereof.

4. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, a spindle controlling said connecting devices, said spindle being adapted to move longitudinally and to turn with the platen, a finger wheel having a circumferential groove therein, and a locking device adapted to be seated in said groove to prevent a longitudinal movement of the spindle but to afford a turning of the finger wheel, spindle and platen.

5. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, spring pressed connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, the spring for the spring pressed connecting devices operating to normally maintain the line spacing wheel and platen connected, a spindle controlling said connecting devices, said spindle being adapted to move longitudinally and to turn with the platen, a finger wheel having a circumferential groove therein, and a locking device adapted to be seated in said groove to hold the spindle against the tension of said spring and against longitudinal movement but to afford a turning of the finger wheel, spindle and platen.

6. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, a longitudinally movable spindle for controlling said connecting devices, locking means for said spindle, a finger wheel, and means for connecting said finger wheel to the spindle at different points along the spindle, so that the finger wheel may be brought into contact with the carriage and afford different extents of longitudinal movement of the spindle as determined by the adjustment of the finger wheel thereon.

7. In a typewriting machine, the combination of a platen, a line spacing ratchet

wheel, a flange on said wheel clamping jaws that are adapted to bear on opposite sides or faces of said flange, means to release said jaws from clamping engagement, and locking means for locking the parts in the released position.

8. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel having an inwardly directed flange, a plurality of levers that extend longitudinally of the platen, clamping jaws carried by each of said levers and adapted to engage the flange on opposite sides or faces thereof, a spring pressed actuating device that co-operates with said levers to automatically effect an engagement between the clamping jaws and said flange, hand actuated means for effecting a disengagement of said jaws from the flange and for turning the platen, and locking means for locking said hand actuated means in the releasing position.

9. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel, a plurality of levers that extend longitudinally of the platen and each of which is provided with means adapted to engage the line spacing wheel or to be disengaged therefrom, a longitudinally movable spindle that is connected to rotate with the platen, an actuating device carried by said spindle and movable independently thereof in directions transverse thereto and adapted to bear or press on said levers, a spring exerting its tension on the spindle and effective to normally maintain the engaging devices locked to the line spacing wheel, a finger wheel connected to said spindle and effective to turn the platen and to move the spindle longitudinally against the tension of its spring in order to release the engaging devices from the line spacing wheel, and locking means for locking the spindle in its releasing position.

10. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel having an inwardly directed annular flange, oppositely disposed U-shaped clamps which coöperate with said flange, an integral lever arm connected to each of said clamps, an actuating device interposed between the free ends of said lever arms, a spindle to which said actuating device is connected, a finger piece connected to said spindle, and means for locking the spindle in its releasing position.

11. In a typewriting machine, the combination of a platen, a platen head, a ratchet wheel having a flange, levers each having gripping jaws at one end and a cam at the other, and a spindle carrying an actuating device that is adapted to move laterally with relation to said spindle and to engage the cams on said levers and cause the jaws to bite and hold the flange, means for affording

a longitudinal movement of the spindle to effect a release of the clamping jaws on the flange, and locking means for holding the spindle in its releasing position.

12. In a typewriting machine, the combination of a line spacing wheel, a platen adapted to rotate with or independently of said line spacing wheel, a spindle which is movable longitudinally of the platen and is connected to turn the same, a frame that is carried by said spindle and is freely movable in a direction at substantially right angles thereto, rollers carried by said frame, arms between which said frame is adapted to move and against which said rollers bear, grippers controlled by said arms, and locking means for locking the spindle at the limit of its longitudinal movement in one direction and for locking the grippers released.

13. In a typewriting machine, the combination of a line spacing wheel, a platen adapted to rotate with or independently of said line spacing wheel, a spindle, a spring for moving said spindle in one direction, a guide pin that projects from said spindle at substantially right angles thereto, an actuator mounted to move transversely of said spindle on said guide pin, arms between which said actuator extends, clamping devices actuated by said arms, and locking means for locking the spindle against the tension of said spring.

14. In a typewriting machine, the combination of a line spacing ratchet wheel provided with a flange, a platen carrying within its hollow core means for normally locking it to the ratchet wheel and comprising a platen head secured to the platen, grippers loosely seated in sockets or channels in the platen head and having jaws which are adapted to engage the flange of the line spacing ratchet wheel, an actuating device operating on the inner ends of said levers, a spindle carrying the actuating device and provided with a spring to hold the actuating device in the operative position between the grippers, said actuating device comprising a frame carrying anti-friction rollers that bear on the grippers and which frame is adapted to move independently and transversely of said spindle, means for releasing the actuating device and unlocking the jaws, and locking means for locking the releasing means in the released position.

15. In a typewriting machine, the combination of a line spacing wheel, a platen adapted to rotate with or independently of said line spacing wheel, grippers for connecting the line spacing wheel and platen, a spindle, an actuator that is moved by the spindle and moves independently thereof at right angles to the spindle and cooperates with the grippers, and locking means for

locking the spindle and maintaining the actuator out of effective engagement with the grippers.

16. In a typewriting machine, the combination of a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a spindle, a finger wheel for turning the platen at one end of said spindle, a nipple through which said spindle moves, an extension piece connected by a threaded connection to said nipple, and a spring which bears at one end against the extension piece and at the other end against an abutment on the spindle.

17. In a typewriting machine, the combination of a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a spindle, a finger wheel for turning the platen at one end of said spindle, a threaded nipple through which said spindle moves, a tubular extension that surrounds the spindle and has a thread at one end that cooperates with the threaded nipple, an end piece secured to the other end of said tubular extension, and a coiled spring surrounding the spindle and contained within the tubular extension, said spring bearing at one end against an abutment on the spindle and at the other end against the end piece.

18. In a typewriting machine, the combination of a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a spindle, a finger wheel for turning the platen at one end of said spindle, a threaded nipple through which said spindle moves, a tubular extension that surrounds the spindle and has a thread at one end that cooperates with the threaded nipple, a threaded end piece screwed to the other end of said tubular extension, said end piece having a bearing opening therein through which the spindle projects and is adapted to slide, and a spring operatively connected to said tubular extension and to said spindle.

19. In a typewriting machine, the combination of a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a spindle fixed against rotation rela-

tively to the platen, a finger wheel for turning the platen at one end of said spindle, a threaded nipple through which said spindle moves longitudinally of the platen, a tubular extension that surrounds the spindle and has a thread at one end that coöperates with the threaded nipple, an end piece detachably secured to the other end of said tubular extension, said end piece having a bearing opening therein through which the spindle projects and is adapted to slide, and a coiled expansion spring surrounding said spindle and contained within the tubular extension, said spring bearing at one end against an abutment on the spindle and at the other end against the end piece.

20. In a typewriting machine, the combination of a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a spindle that is adapted to be moved longitudinally of the platen, a platen head that has a centrally located inwardly projecting threaded nipple having an opening through which the spindle passes, an extension that has a threaded connection at the outer end with said nipple and which is threaded at its inner end, a threaded end piece that coöperates with the inner threaded end of the extension, said end piece having an opening in which the spindle is received and guided in its longitudinal movement, a coiled expansion spring surrounding the spindle and contained within the extension and bearing at one end against an abutment on the spindle and at the other end against said end piece, and a feather or key that is carried by the spindle and is seated and moves in a transverse slot or key way in the platen head.

21. In a typewriting machine, the combination of a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a spindle that is adapted to be moved longitudinally of the platen, an actuator that is adapted to move in one direction at substantially right angles to the axis of said spindle and which comprises a sheet metal frame with integral contact fingers struck up from said frame, which fingers coöperate with the spindle to prevent a movement in another direction at right angles to the axis of the spindle.

22. In a typewriting machine, the combination with a line spacing wheel; a platen adapted to turn with and independently of said line spacing wheel; engaging devices

for connecting the line spacing wheel and platen; and means for controlling said engaging devices, said controlling means comprising a platen head with a key-way formed therein, an actuator, a spindle that is movable longitudinally of the platen to move the actuator and has a slot therein and a feather or key which is secured in said slot in the spindle by a drive-fit and which is seated in said key-way in the platen head.

23. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, a spindle controlling said connecting devices, means whereby said spindle is adapted to move longitudinally and to turn the platen, a finger wheel fixed to said spindle and having a circumferential shoulder thereon, and a locking device movably mounted on the carriage and adapted to be seated against said shoulder to prevent a longitudinal movement of the spindle but to afford a turning of the finger wheel spindle and platen.

24. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel therefor, spring-pressed connecting devices for causing the platen and line spacing wheel to turn together or to afford a turning of the platen independently of the line spacing wheel, the spring of the spring-pressed connecting devices operating normally to maintain the line spacing wheel and platen connected, a spindle controlling said connecting devices, means whereby said spindle is adapted to move longitudinally to turn the platen, a finger wheel fixed to said spindle and having a circumferential groove therein, and a locking device movably mounted on the carriage and adapted to be seated in said groove to hold the spindle against the tension of said spring and against longitudinal movement but to afford a turning of the finger wheel spindle and platen.

25. In a typewriting machine, the combination of a platen, a line space ratchet wheel, a flange on said wheel, clamping jaws that are adapted to bear on opposite sides or faces of said flange, hand actuated means to release said jaws from clamping engagement, means whereby said hand actuated means are operative to turn the platen, and locking means for maintaining the parts in their released position.

26. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel having an inwardly directed flange, a plurality of levers that extend longitudinally of the platen, clamping jaws carried

by each of said levers and adapted to engage the flange on opposite sides or faces thereof, a spring-pressed actuating device that coöperates with said levers to automatically effect an engagement between the clamping jaws and said flange, a hand actuated device for effecting a disengagement of said jaws from the flange and for turning the platen, and locking means coöperative with said hand actuated device for locking

the hand actuated device in the releasing position.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 9th day of 15 April, A. D. 1905.

OSCAR WOODWARD.

Witnesses:

E. M. WELLS,

M. F. HANNWEBER.