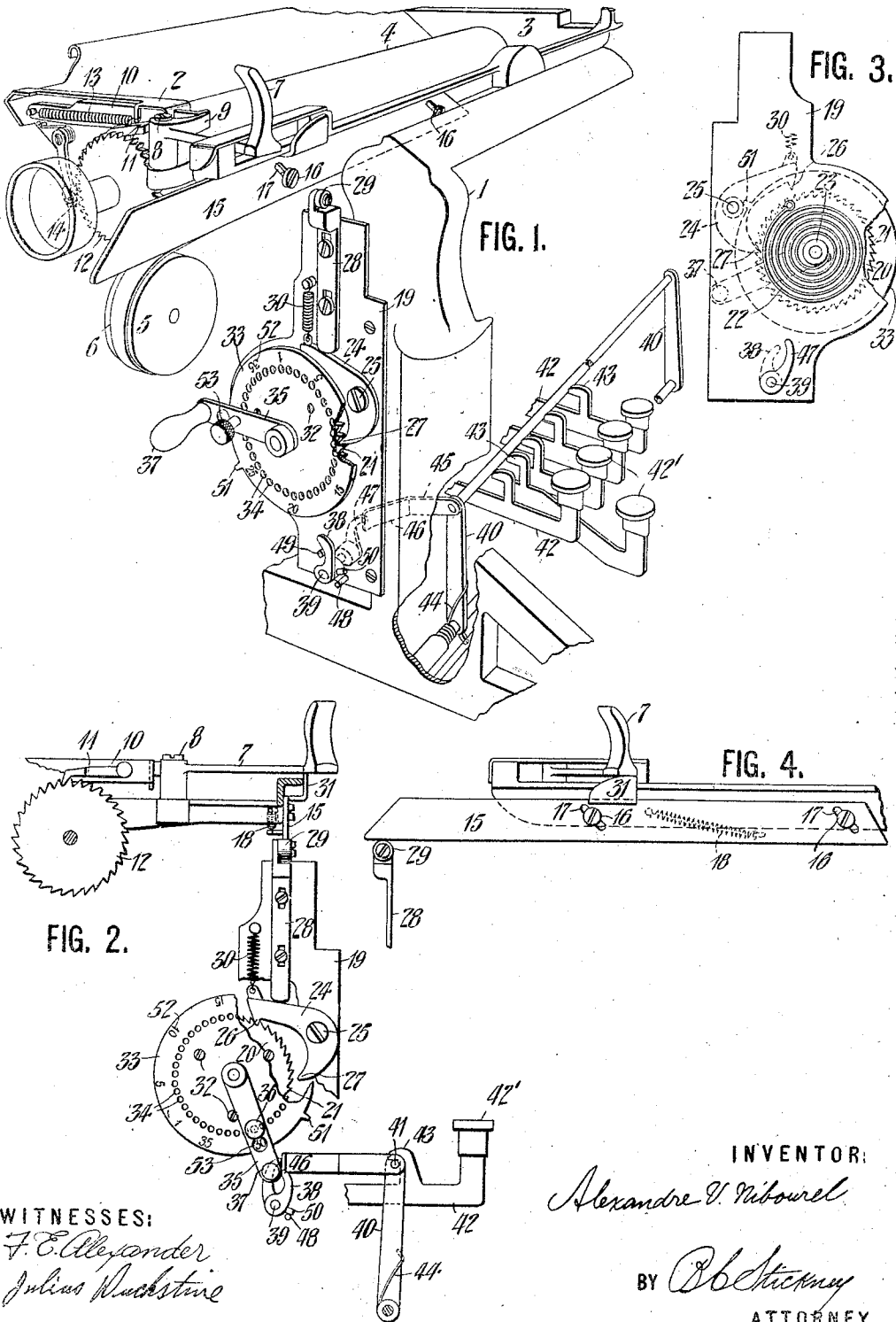


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TYPE WRITING MACHINE.
APPLICATION FILED JUNE 24, 1913.

1,170,988.

Patented Feb. 8, 1916.



UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

1,170,988.

Specification of Letters Patent.

Patented Feb. 8, 1916.

Application filed June 24, 1913. Serial No. 775,466.

To all whom it may concern:

Be it known that I, ALEXANDRE VALERE NIBOUREL, a citizen of France, residing in the city of Paris, Department of Seine, France, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to means for indicating to the operator of a typewriting machine when a predetermined number of lines have been written on the page, so that the writing will not accidentally be carried below a desired margin limit at the bottom of the page.

A feature of the invention is the provision of a simple and practical mechanism which will operate to lock the type keys after a given number of lines has been written, and thereby positively prevent further writing until the device is reset.

The invention is herein shown as applied to an Underwood typewriting machine. On the platen frame is a depressible bar having a cam in the path of the line-space lever, so that when the lever is operated the bar is depressed, to operate an escapement pawl co-operating with a ratchet wheel. The latter carries an adjustable arm which, after a predetermined number of operations of the line-space lever, swings a universal locking bar into locking engagement with the key levers. Said arm is adjustable to correspond with the number of lines to be written on the work-sheet.

Other objects and advantages of the invention will appear hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of a typewriting machine with my invention applied thereto. Fig. 2 is a sectional end elevation view of the same. Fig. 3 is a detail view showing the escapement wheel and spring motor for operating same. Fig. 4 is a detail view of the cam-actuated bar.

Mounted on the frame 1 of the machine is a carriage comprising a platen frame having ends 2 and 3 in which is journaled a rotary platen 4. The carriage is driven by a spring barrel 5 connected through a band 6 to the carriage. The line-space mechanism comprises a lever 7 pivoted at 8 to the platen frame, and having an arm 9 to operate a slide bar 10 on which is pivoted a dog 11 co-

operating with a line-space wheel 12 secured to the platen axle. The slide 10 and lever 7 are returned by a spring 13. The spring pressed detent 14 bears against the line-space wheel to hold the platen in operated position.

Extending along the front of the platen frame is a bar 15 supported and guided by shouldered screws 16 extending through diagonal slots 17 in the bar and threaded into the platen frame. The bar 15 is adapted to have a diagonal movement relatively to the platen frame in a vertical plane, and is normally held in its elevated position with the screws 16 at the bottom of the slots 17 by means of a spring 18. The diagonal disposition of the slots 17 permits a comparatively long spring 18 to be employed, as the latter may extend in an approximately horizontal direction, and also prevents tilting of the bar about either screw 16 as a fulcrum, so that the bar always remains horizontal.

Secured to the machine frame 1 is a vertical plate 19 in which is journaled an escapement wheel 20 having rack teeth 21 formed on its periphery. A coil spring 22 having its ends connected respectively to the hub 23 of the escapement wheel and the plate 19, forms a spring motor for rotating the escapement wheel in a counter-clockwise direction, as seen in Fig. 2. An escapement pawl or detent 24 pivoted at 25 to the plate 19, is formed with teeth 26, 27, which coöperate with the teeth 21. A vertically-slidable rod 28 rests on the detent 24 and at its upper end carries an anti-friction roller 29 in the path of the bar 15. The detent 24 is normally held with its tooth 27 in engagement with the escapement wheel by means of a spring 30. When the line-space lever 7 is operated it engages a cam 31 on the bar 15 and moves the bar and the rod 28 downward, and swings the detent 24 to the position shown in Fig. 2, with the tooth 26 engaging the wheel. When the line-space lever is released the bar 15 is lifted by the spring 18 and the spring 30 returns the escapement detent and rod 28. The escapement wheel 20 is thus advanced one step in a counter-clockwise direction.

Secured to the escapement wheel 20 by means of screws 32 is a disk or dial 33 provided with an annular series of seats or

openings 34 equally spaced and preferably equal in number to, or the same angular distance apart as, the teeth 21 on the escapement wheel. An arm 35 pivoted concentrically with the dial and rotatable independently thereof carries a set pin 36 adapted to enter any one of the openings 34 and thereby lock the arm to the disk in any desired position of adjustment. A handle 37 on the arm 35 has its path of movement intercepted by an arm 38 on a rock shaft 39 on the machine frame. Thus said handle 37 with said arm 35 comprises an actuator to engage the arm 38, to rock the shaft 39 with the continued movement of wheel 20, thereby causing the arm 47 to actuate the universal locking bar 41. A locking device for the type keys comprises a swinging frame having upright arms 40 connected by a horizontal bar 41 extending over the key levers 42 and adapted to be swung beneath locking lugs 43 formed on the key levers, the rod 41 thus forming a universal locking bar for the type keys 42'. The locking bar is normally held in releasing position by a spring 44. An arm 45, extending rearwardly from the locking frame, has an offset 46 in the path of an arm 47 on the rock shaft 39. The forward and rearward rotation of the rock shaft 39 are limited by stationary stop pins 48 and 49 respectively in the path of a pin 50 and the arm 38. The disk 33 has a stop 51 which determines the initial position of the indicating device by engaging the pivot pin 25.

In operation, the arm 35 is adjusted on the dial to a position corresponding to the number of lines it is desired shall be written on a work-sheet. This adjustment is facilitated by a scale or series of numbers 52. An opening 53 in the arm 35 permits the scale markings or numbers to be seen through said arm and thus accurately indicates the position of adjustment. Thus the arm 35 with its opening 53 exposing the numbers of the scale numerals, forms an indicator, when set by the pin 36, to show the number of lines that can be written upon the page before the key levers will become locked. By means of said indicator the operator can always ascertain the number of lines remaining unwritten within the predetermined number of lines for which the mechanism is set, by noting the number of openings 34 between the indicator 35 and the point upon disk 33 adjacent the rock arm 38, that number representing the number of line-spacing operations still to be performed before the key levers will be engaged by the lock. For example, in Fig. 2 the scale number 30 appears through the opening 53, the arm being set to provide for thirty lines being written before the type keys are locked. When or before a work-sheet is inserted in the machine the handle

37 is rotated, carrying with it the dial, to the starting position indicated in Fig. 3, with the stop 51 in contact with the pivot pin 25. Each time the line-space lever 7 is operated to rotate the platen and advance the work-sheet, the bar 15 is depressed and operates through the rod 28 and escapement mechanism to advance the disk 33 one step in a counter-clockwise direction. The disk is thus moved step by step during the printing of a sheet, and when the line-space lever has been operated for the last line (the thirtieth with the mechanism adjusted as shown) the arm or actuator 35 is brought into contact with the arm 38, and an additional operation of the line-space lever will, through the train of connections shown, rotate the rock shaft 39 and move the locking bar 41 forward beneath the stops 43, and thereby lock the type keys so that further writing is prevented until the indicator has been reset. The operator is thus prevented from accidentally writing beyond the predetermined bottom margin.

In a broad comprehension of this invention, it will be seen to comprise the provision, upon the frame of a typewriting machine, of a machine element under the control of the line-spacing lever, to be acted upon through the medium of an intermediary train between the line-spacing lever and such machine element. In the present example of this invention, the machine element in question is shown as a rock shaft 39 with arms 38, 47 to communicate motion to a key-locking mechanism; and the intermediary mechanism includes that part on the machine frame which consists of the spring-pressed actuator, here broadly termed a movable or revoluble device, its controlling mechanism, and spring-returned operating rod or bar 28, said bar receiving its intermittent impulses from the intermediary train part or bar 15 upon the carriage.

Although the present invention is shown as adapted to an Underwood typewriting machine, it will be understood that the principles of my invention are applicable to various other types of machines.

Various modifications in the details of construction and arrangement of parts might also be made without departing from the spirit and scope of my invention.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination of an escapement wheel, an operating motor therefor, an escapement device to permit a step-by-step movement of the wheel, line-space mechanism controlling said escapement device, and indicating means carried by the wheel.

2. In a typewriting machine, the combination of an escapement wheel, a spring to rotate the wheel, an escapement pawl con-

trolling the rotation of the wheel, a line-space lever, operating connections between said lever and the escapement pawl, type keys, and locking means therefor actuated by said wheel.

3. In a typewriting machine, the combination of an escapement wheel, cooperating pawl, a line-space lever, a cam device operated thereby to actuate the pawl, and an indicator carried by the escapement wheel.

4. In a typewriting machine, the combination of a platen frame, a rotary platen, a bar extending longitudinally of said frame and movable up and down relatively to the frame, a line-space lever, means operated thereby to depress the bar, an escapement wheel, a cooperating pawl, means operated by the depression of said bar to actuate said pawl, and a page-end indicator carried by said wheel.

5. In a typewriting machine, the combination of a platen frame, a rotary platen, a bar extending longitudinally of said frame and movable up and down relatively to the frame, a line-space lever, means operated thereby to depress the bar, an escapement wheel, a cooperating pawl, means operated by the depression of said bar to actuate said pawl, type keys, a universal bar to lock said keys, and operating connections between said wheel and said universal bar.

6. In a typewriting machine, the combination of a rotatable member, a line-space lever, means operated thereby to impart a step-by-step rotation to the said member, an arm angularly adjustable on said member, type keys, a locking device therefor, and means operated by said arm to actuate said locking device after a predetermined number of operations of the line space lever determined by the position to which said arm is adjusted.

7. In a typewriting machine having a carriage and a revoluble platen, the combination of a rotary member mounted on the machine frame, a line-space lever, means operated thereby to effect a step-by-step rotation of said member, type keys, a universal locking bar, a rock shaft mounted on the machine frame, arms carried by said rock shaft, one of said arms being in the path of a projection on said rotary member, and means forming an operating connection between the other of said arms and the said locking bar.

8. In a typewriting machine, the combination of a rotary disk provided with an annular series of seats or openings, an arm pivoted concentrically with said disk and rotatable relatively thereto, a pin carried by said arm to engage any one of said openings and thereby hold the arm in adjusted position, line-space mechanism, means operated thereby to cause a step-by-step rota-

tion of said disk and arm, type keys, and locking means therefor actuated by said arm.

9. In a typewriting machine, the combination of a rotary disk, a stop device to limit the rotation of the disk in one direction, an actuator carried by said disk and adjustable to different positions thereon, a line-space lever, means operated thereby to cause a step-by-step rotation of the disk, type keys, a locking bar therefor, and means operated by said actuator to move said bar to locking position after the disk has been rotated a number of steps determined by the adjustment of said actuator.

10. In a typewriting machine, the combination of a carriage, a bar thereon extending longitudinally thereof, a line-space lever to operate said bar, and key lock actuating mechanism comprising a motion-transmitting device mounted on the machine frame in position to be operated by said bar while the carriage is at any point in its travel.

11. In a typewriting machine, the combination of a carriage, a bar extending longitudinally of the carriage and movable up and down thereon, a rod on the machine frame beneath the said bar and in operative relation thereto throughout the travel of the carriage, a line-space lever operable to depress the bar and operate said rod, and a key lock actuating device controlled by said rod.

12. In a typewriting machine having a platen, carriage, line-spacing mechanism and type keys, the combination of a lock for said keys, and lock actuating mechanism in operative relation to the line-spacing mechanism independently of the platen and operable with each operation of said line-spacing mechanism to actuate said lock after a predetermined number of operations of said line-spacing mechanism, the platen being rotatable while the said actuating mechanism remains inactive.

13. In a typewriting machine having a platen, carriage, line-spacing mechanism and type keys, the combination of a universal bar to engage said keys, and mechanism advancing with each operation of said line-spacing mechanism, to move said bar into engagement with said keys, to lock them, after a predetermined number of operations of said line spacing mechanism, said advancing mechanism being inactive when the platen is rotated independently of the line-spacing mechanism.

14. In a typewriting machine having a platen, carriage, line-spacing mechanism and type keys, the combination of a universal bar to engage said keys, a spring holding said bar normally disengaged, and mechanism having a fixed position on the machine frame during the travel of the carriage, said mechanism advancing with each

operation of said line-spacing mechanism, to move said bar into engagement with said keys after a predetermined number of operations of said line-spacing mechanism, to lock said keys, said advancing mechanism being inactive when the platen is rotated independently of the line-spacing mechanism.

15. In a typewriting machine having a carriage, line-spacing mechanism, type keys, and a lock for said keys, the combination of a lock-actuating train, said train mounted partly on the carriage, and partly on the machine frame, the train part on the frame being operable in any position of the carriage with each operation of said line-spacing mechanism, said train causing said lock to engage said type keys after a predetermined number of operations of said line-spacing mechanism.

16. In a typewriting machine having a carriage, a line-spacing lever, type keys, and a lock for said keys, the combination of a lock-actuating train mounted partly on the carriage and partly on the machine frame, the part on the carriage comprising a bar depressible with every operation of the line-spacing lever, the parts on the machine frame being operable by said bar in any position of the carriage, and adjustable means included in said train part on the frame to operate said lock after a predetermined number of operations of said line-spacing lever.

17. In a typewriting machine having a carriage, a line-spacing lever, type keys, and a lock therefor, the combination of a lock-actuating train, said train mounted partly on the carriage and partly on the machine frame, the train part upon the carriage comprising a bar depressible with every operation of said line-spacing lever, and the train parts upon the frame including an actuator to operate said lock after a predetermined number of movements of said line-spacing lever.

18. In a typewriting machine having a carriage, a line-spacing lever, and type keys, the combination of a lock for said keys, and a lock-actuating train, said train mounted partly on the carriage, and partly on the machine frame, the train part upon the carriage comprising a bar depressible with every operation of said line-spacing lever, the train parts upon the frame including a disk with line-space graduations, and an actuator, and means adjusting said actuator relatively to said line-space graduations on said disk, said actuator operating said lock after a predetermined number of movements of said line-spacing lever.

19. In a typewriting machine having a carriage, line-spacing mechanism, type-keys, and a lock for said keys, the combination of a lock-actuating train comprising recip-

rocating parts on the carriage and parts on the machine frame capable of progressive movement with every operation of the line-spacing mechanism, and means for adjusting said mechanism to enable it to actuate said lock after a predetermined number of operations of said line-spacing mechanism.

20. In a typewriting machine having a carriage, line-spacing mechanism, type keys, and a lock for said keys, the combination of a lock-actuating train mounted in part upon the carriage and in part upon the machine frame, the part upon the carriage receiving reciprocating impulses with every operation of the line-spacing mechanism, and the parts upon the frame translating those reciprocating impulses into progressive impulses during a predetermined number thereof, and an actuator included in said train to render said lock effective after said predetermined number of impulses, when a desired number of lines have been written.

21. In a typewriting machine having a platen, carriage, line-spacing mechanism and type-keys, the combination of a lock for said keys, and means mounted on the machine frame and acted upon in every operation of the line-spacing mechanism to automatically operate said lock, causing it to engage said keys after the writing of any predetermined number of lines upon a work-sheet, said means being inactive while the platen is rotated independently of the line-spacing mechanism.

22. In a typewriting machine having a platen, carriage, line-spacing mechanism and type keys, the combination of a lock for said keys, and lock-actuating means to operate said lock after the writing of any desired number of lines upon a work-sheet, the line-spacing mechanism, in every operation thereof, acting upon said lock-actuating means to advance the latter progressively to its operative position, the operative relation of the lock-actuating means to the line-spacing mechanism being independent of the platen to permit the platen to be rotated without affecting the lock-actuating means.

23. In a typewriting machine having a platen, carriage, line-spacing mechanism and type keys, the combination of a lock for said keys, lock-actuating means, and means for adjusting said lock-actuating means to limit the number of lines of writing permitted before the lock becomes effective, the line-spacing mechanism, in every operation thereof, acting upon said lock-actuating means to advance the latter progressively from its adjusted position to its operative position, the platen being free from said lock-actuating means to permit rotation of the platen without affecting the lock-actuating means.

24. In a typewriting machine having a platen, carriage, line-spacing mechanism and type-keys, the combination of a spring-pressed actuator upon the machine frame
 5 movable to engage said lock with said keys, and means, also upon the machine frame, operated by the line spacing mechanism, with every operation thereof, to control the movements of said actuator and withhold
 10 the operation of the latter upon the lock until after a predetermined number of line-spacing operations have been performed, the platen being free from said controlling means to permit rotation of the platen with-
 15 out affecting said controlling means.

25. In a typewriting machine having a carriage, a platen thereon, line-spacing mechanism, and type keys, the combination of a lock for said keys, a spring-pressed actuator upon the machine frame, movable
 20 to engage said lock with said keys, means for adjusting said actuator to render it operative within a space of movement thereof representing a given number of lines of writing, and means, also on the machine
 25 frame, operated by the line-spacing mechanism, with every operation thereof, to control the movements of said actuator and withhold the operation of the latter upon
 30 the lock until after a predetermined number of line-spacing operations have been performed.

26. In a typewriting machine having a carriage, a platen thereon, line-spacing
 35 mechanism to rotate the platen, and type keys, the combination of a universal bar arranged to swing into engagement with said keys, to lock them, an actuator adjustable to move through variable spaces each repre-
 40 senting a number of line-spacing distances, to operate said bar, and means upon the machine frame operated by said line-spacing mechanism, in every operation thereof, to advance said actuator concomitantly
 45 therewith, whereby the platen is rotated through the predetermined number of line spaces for which the actuator is adjusted before said actuator operates said bar.

27. In a typewriting machine having a
 50 carriage, line-spacing mechanism, and a machine element under the control of said mechanism, the combination of an intermediary train mounted in part on the carriage and in part on the machine frame; the
 55 train part on the carriage receiving reciprocating impulses with every operation of the line-spacing mechanism, and train parts on the frame translating those reciprocating impulses into progressive impulses, said
 60 train coöperating with said machine element after a predetermined number of operations of said line-spacing mechanism.

28. In a typewriting machine having a carriage, a line-spacing lever, and a machine
 65 element under the control of said le-

ver, the combination of an intermediary train mounted partly upon the carriage and partly upon the machine frame, the train part on the carriage comprising a bar re-
 ciprocally depressible with every operation
 70 of the line-spacing lever, and train parts on the frame translating those reciprocal impulses into progressive impulses, said train coöperating with said machine element after a predetermined number of operations
 75 of said line-spacing lever.

29. In a typewriting machine having a carriage, a line-spacing lever, and a machine element under the control of said lever, the combination of an intermediary train mount-
 80 ed partly upon the carriage and partly upon the machine frame, the train part on the carriage comprising a bar reciprocally depressible with every operation of the line-spacing lever, and train parts on the frame
 85 translating those reciprocal impulses into progressive impulses and including an actuator to engage said machine element after a predetermined number of operations of said line-spacing lever.

30. In a typewriting machine having a carriage, a line-spacing lever, and a machine element under the control of said lever, the combination of an intermediary train
 90 mounted partly upon the carriage and partly upon the machine frame, the train part on the carriage comprising a bar reciprocally depressible with every operation of the line-spacing lever, and train parts on the frame
 95 translating those reciprocal impulses into progressive impulses and including a device with line-spacing graduations, said device having an actuator to engage said machine element after a predetermined number of
 100 operations of said line-spacing lever.

31. In a typewriting machine having a carriage, line-spacing mechanism, and a machine element under the control of said mechanism, the combination of a spring-pressed actuator upon the machine frame
 110 movable progressively to engage said element, and means operated by the line-spacing mechanism, with every operation thereof, to limit the movements of said actuator and withhold the operation of the latter
 115 upon said machine element until after a predetermined number of line-spacing operations have been performed.

32. In a typewriting machine having a carriage and line-spacing mechanism, the
 120 combination of a movable device upon the machine frame under the control of said mechanism, a depressible bar upon the carriage reciprocally operable with every operation of the line-spacing mechanism, and
 125 means between said movable device and depressible bar to advance the former step by step with every operation of the latter to a predetermined operative position.

33. In a typewriting machine having a 130

carriage and line-spacing mechanism, the combination of a revoluble device upon the machine frame under the control of said mechanism, a depressible bar reciprocally operable with every operation of the line-spacing mechanism, a spring to rotate said device, and escapement means actuated by said depressible bar with every operation thereof, to permit a step by step rotation of said device to a predetermined operative position.

34. The combination in a typewriting machine having a paper carriage, of type keys, mechanism on the carriage for spacing or feeding a work-sheet line-by-line, and means automatically operated and controlled by said mechanism, in each movement of the latter, to lock the type keys after a predetermined number of said movements, said means mounted on the machine frame so that the carriage travels relatively thereto, said spacing mechanism being in operative relation to the said means throughout the travel of the carriage.

35. In a typewriting machine having a carriage, the combination with type keys, of mechanism for spacing or feeding a work-sheet line-by-line, and means operated automatically with each operation of said mechanism, to lock the keys after a predetermined number of said operations, said means occupying a stationary position on the machine frame so that the carriage travels relatively thereto.

36. In a typewriting machine having a carriage, the combination of key levers, a universal locking bar, a lever on the carriage for spacing or feeding a work-sheet line-by-line, and means controlled by said lever, in each operation thereof, to move the locking bar into position to lock the key levers after a predetermined number of said operations, said means occupying a fixed position on the machine frame so that the carriage travels relatively thereto, said spacing lever being in operative relation to said means throughout the travel of the carriage.

37. In a typewriting machine having a paper carriage and mechanism for spacing or feeding a work-sheet line-by-line, the combination of type keys, a device having a step-by-step movement imparted thereto with each operation of said mechanism during the printing of a work-sheet, means operated by said device to automatically lock the keys, and means for feeding the work-sheet without operating said device, thereby enabling the work-sheet to be brought to any position without locking the keys.

38. In a typewriting machine, the combination of line-space mechanism, an escapement device having a step-by-step operation and operated a step by said mechanism in each operation of said mechanism, and a universal locking bar operated by said escape-

ment device after a predetermined number of operations of the line-space mechanism.

39. In a typewriting machine, the combination with type keys, of a carriage, a rotary platen, mechanism on said carriage to rotate the platen and advance a work-sheet line by line, and an escapement device upon the machine frame, stationary during the carriage movement and actuated by said mechanism in each operation thereof to lock the type keys after a predetermined number of operations of the line-space mechanism.

40. In a typewriting machine, the combination with a carriage having a rotary platen and a line-space lever, of a rotary disk upon the machine frame and stationary during the carriage travel, means operated by the line-space lever to effect a step-by-step rotation of the disk with each operation of said lever, a universal locking bar, and means carried by the disk to effect the operation of said bar.

41. In a typewriting machine, the combination with a carriage having a rotary platen and a line-space mechanism, of an escapement wheel independently mounted on the machine frame, a detent operated by the line-space mechanism to effect a step-by-step rotation of the escapement wheel, the platen being rotatable independently of the escapement wheel, and means carried by the escapement wheel to indicate a predetermined number of lines to be written on a work-sheet.

42. In a typewriting machine, having a carriage, platen and line-spacing mechanism, the combination of keys, a universal bar to lock the keys, a rotary member mounted on the machine frame, means operated with each operation of said line-spacing mechanism during the printing of a work-sheet to impart a step-by-step rotation to said member, the platen being rotatable independently of said member, and operating connections between said member and the universal bar.

43. In a typewriting machine having a carriage and a revoluble platen, the combination of type keys, a universal locking bar therefor, a device to operate said bar, escapement mechanism controlling said device, said device and escapement mechanism being separately mounted upon the machine frame, line-space mechanism, and means operated thereby to actuate the escapement mechanism.

44. In a typewriting machine, the combination with a rotary platen and line-space mechanism, of an escapement wheel, an operating motor therefor, an escapement device controlled by the line-space mechanism and actuated at each operation of said mechanism to permit a step-by-step rotation of the escapement wheel, and indicating means actuated by the escapement wheel to indi-

cate the number of line-space distances through which the platen has been rotated by the line-space mechanism.

45. In a typewriting machine, the combination with a rotary platen and line-space mechanism, of an escapement wheel, an operating motor therefor, an escapement device controlled by the line-space mechanism and actuated at each operation of said mechanism to permit a step-by-step rotation of the escapement wheel, type-keys, a universal locking bar for locking said keys, and means actuated by the escapement wheel for moving the locking bar into locking position when the platen has been rotated a predetermined number of line-space distances by the line-space mechanism.

46. In a typewriting machine, the combination with a carriage and a revoluble platen thereon, of a bar on the carriage extending longitudinally thereof, and movable up and down relatively thereto, a line-space lever, means operated thereby to depress the bar at each operation of the lever, an escapement mechanism mounted on the machine frame and stationary during the travel of the carriage, means operated by each depression of said bar to actuate the escapement mechanism, and a page-end indicator operated by said escapement mechanism.

47. In a typewriting machine, the combination with a carriage and a revoluble platen thereon, of a bar on the carriage extending longitudinally thereof, and movable up and down relatively thereto, a line-space lever, means operated thereby to depress the bar at each operation of the lever, an escapement mechanism mounted on the machine frame and stationary during the travel of the carriage, means operated by each depression of said bar to actuate the escapement mechanism, type-keys, a universal locking bar therefor, and means operated by said escapement mechanism after a predetermined

number of operations of the latter by the line-space lever, to cause the locking bar to be moved to locking position.

48. In a typewriting machine, the combination of a paper carriage, line-space mechanism comprising a line-space lever operable to feed a work-sheet on the carriage, a page-end indicating device, actuating mechanism for said indicating device mounted on the machine frame, and an operating device for said actuating mechanism, said operating device mounted on the carriage and operated at each operation of the line-space lever to impart a step-by-step movement to said actuating mechanism, said operating device being free and disconnected from said actuating mechanism during the travel of the carriage.

49. In a typewriting machine, the combination with a rotary platen, of a line-space lever, line-space mechanism operated thereby to rotate the platen, a page-end indicator, an actuating device therefor, and means separate from said line-space mechanism and operated by said lever at each operation of the lever to transmit motion to said actuating device, whereby a step-by-step movement of said device is effected as the platen is rotated step by step by the line-space mechanism.

50. In a typewriting machine, the combination with a rotary platen, of a line-space lever, type-operating keys, a universal locking bar therefor, mechanism operated by the line-space lever to rotate the platen, and means operated by said lever independently of said mechanism to cause the locking bar to be moved to locking position after a predetermined number of operations of the line-space lever.

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Witnesses:

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