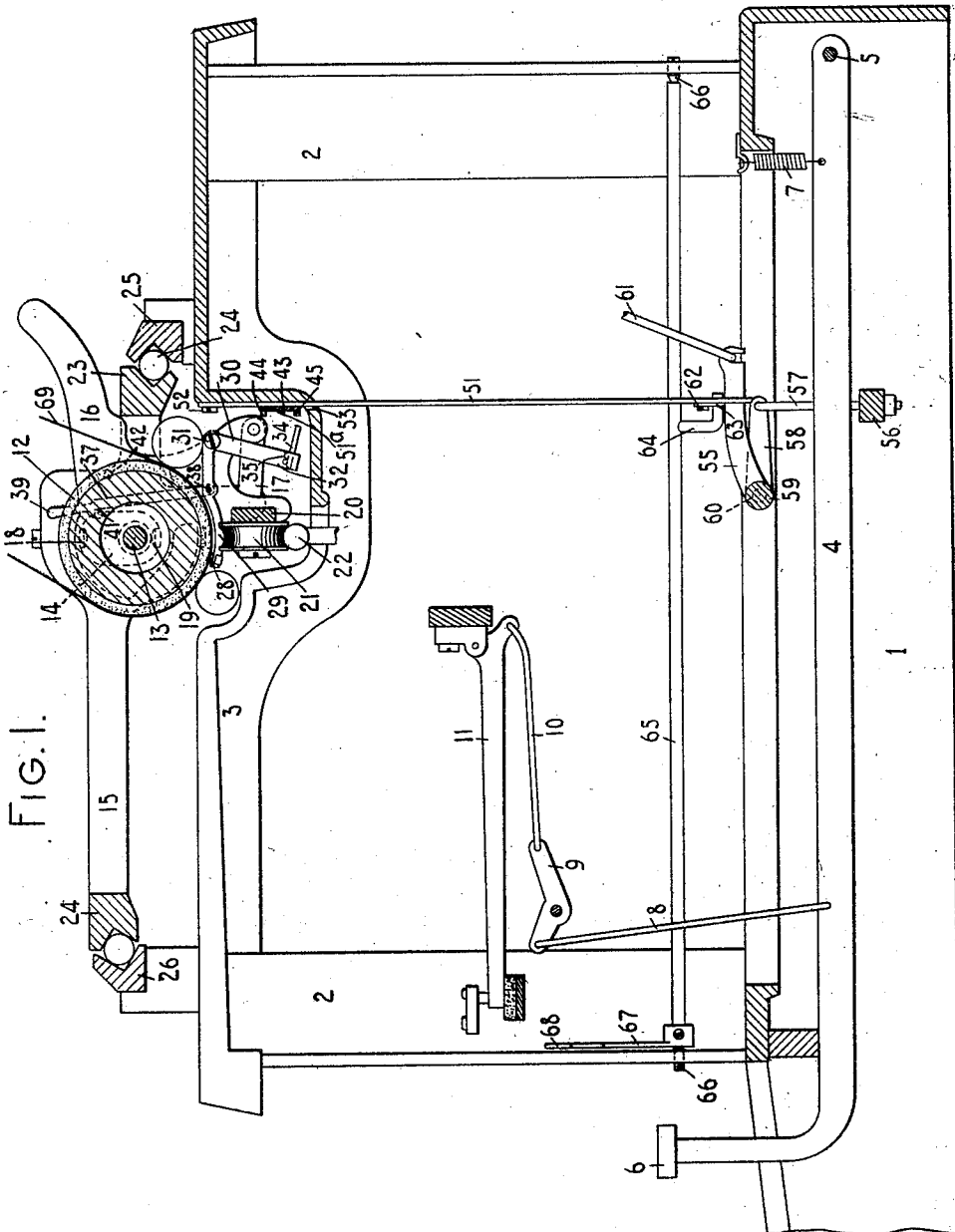


W. J. BARRON.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 25, 1911.

1,059,924.

Patented Apr. 22, 1913.

3 SHEETS—SHEET 1.



WITNESSES:

M. F. Lannweiler
Wm. E. Smith

INVENTOR.

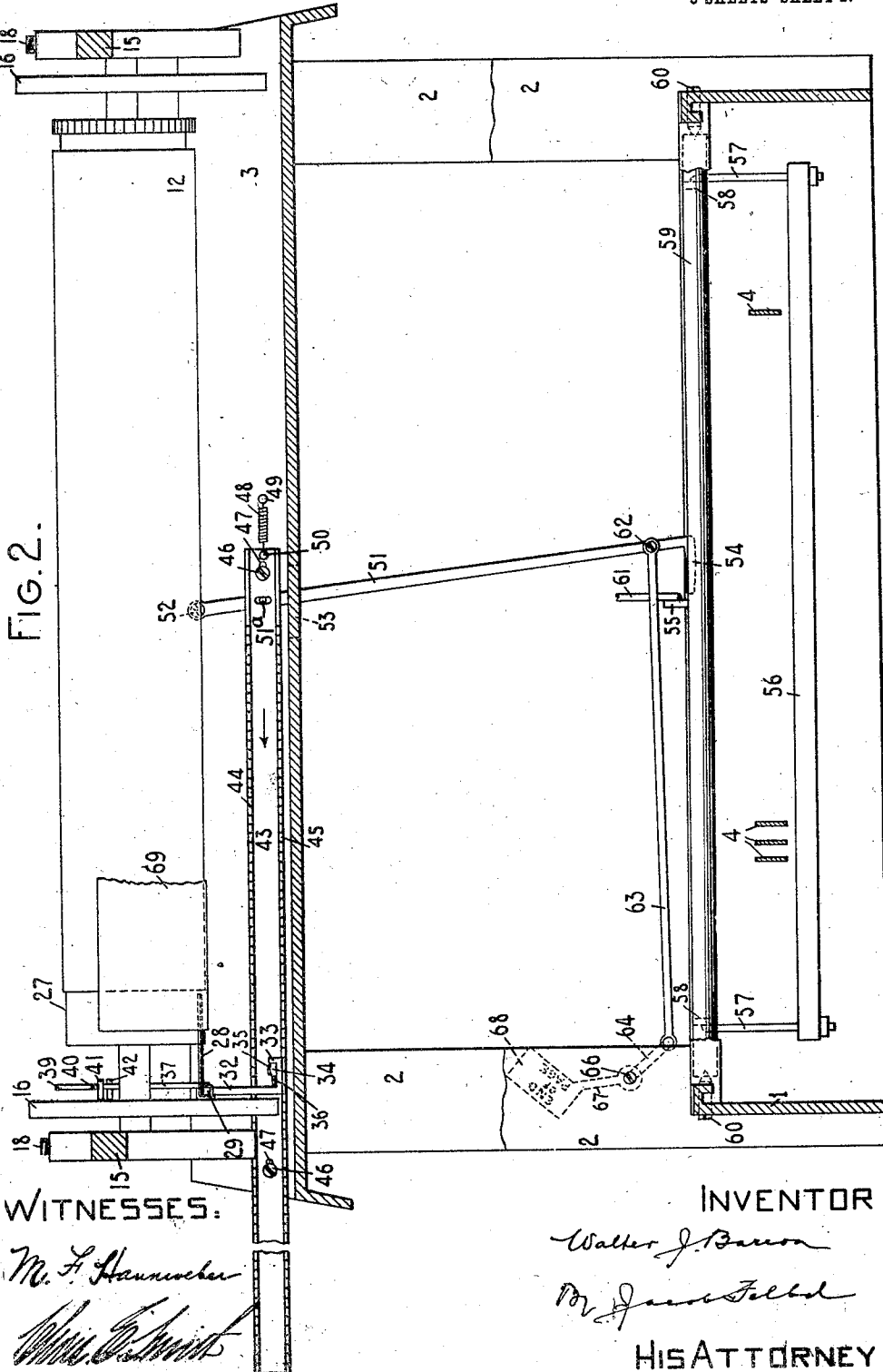
Walter J. Barron
Mr. Jacobsthal

HIS ATTORNEY

Patented Apr. 22, 1913.

3 SHEETS—SHEET 2.

1,059,924.



1,059,924.

FIG. 4.

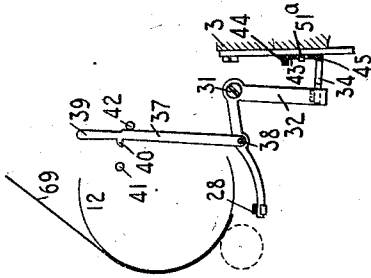


FIG. 5.

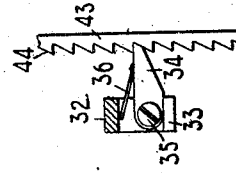
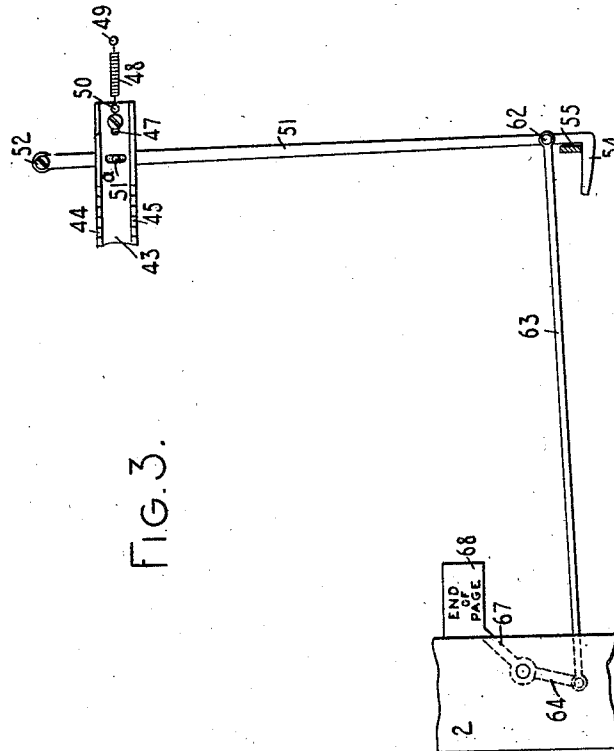


FIG. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WALTER J. BARRON, OF NEW YORK, N. Y., ASSIGNOR, BY MESSE ASSIGNMENT, TO
REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF
NEW YORK.

TYPE-WRITING MACHINE.

1,059,924.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed March 25, 1911. Serial No. 613,854.

To all whom it may concern:

Be it known that I, WALTER J. BARRON, citizen of the United States, and resident of the borough of Brooklyn, city of New York, in the county of Kings 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 means for indicating to the operator when the bottom end of a work sheet has been reached, or when a predetermined point on the work sheet has been reached.

The main object of my invention, generally stated, is to provide comparatively simple and highly efficient means of the character specified.

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 set forth in the following specification and particularly pointed out in the appended claims.

In the accompanying drawings wherein like reference characters indicate corresponding parts in the different views, Figure 1 is a fragmentary, vertical, fore and aft sectional view of one form of typewriting machine embodying my invention; only so much of the machine being shown as is necessary to illustrate my invention in its embodiment therein. Fig. 2 is a vertical, transverse, sectional view of the same. Fig. 3 is a fragmentary front view with parts in section, the view showing a portion of the indicating devices. Fig. 4 is a diagrammatic side elevation showing a portion of the indicating devices. Fig. 5 is a detailed, fragmentary plan view with parts in section of certain of these devices.

I have illustrated my invention in the present instance embodied in a No. 10 Remington machine, although it will be understood that the invention may be embodied in various styles of typewriting machines.

The present invention is in the nature of an improvement upon the construction disclosed in my Patent No. 757,431, dated April 19, 1904, and has certain of the same general objects in view as the construction disclosed in the said patent.

The frame of the machine comprises a base 1, corner posts 2 and a top plate 3.

Key levers 4 are fulcrumed at 5 and are provided with the usual finger keys 6 and restoring spring 7. Each key lever is connected by a pull link 8 with a sub-lever 9, which in turn is connected through a link 10 with a type bar 11. The type bars are segmentally arranged and are adapted to strike upwardly and rearwardly against the front face of a platen 12. The platen is mounted on a shaft 13 which extends through openings 14 in end bars 15 of the carriage. The said shaft is received in the usual manner in bearings in the platen frame 16 pivoted on parallel links 17, for vertical case shifting movement between steps 18 and 19. The platen frame is provided with a cross bar 20 which carries a grooved roller 21 and this roller bears on a key controlled shift rail 22 to effect case shifting movements of the platen frame and platen. The end bars 15 of the carriage are united by a rear cross bar or guide rail 23 and a front cross bar or guide rail 24. These guide rails are oppositely grooved to receive anti-friction balls or rollers 24 which are likewise received in the oppositely grooved fixed guide rails 25 and 26 secured to the top plate of the machine.

The parts thus far described are, or may be, of the usual construction and further detailed description thereof is deemed unnecessary.

I will now describe the indicating devices of my invention.

The left-hand end of the platen is provided with a circumferential groove, recess or cut-out 27 adapted to receive a finger 28. This finger extends longitudinally of the platen and is connected at its outer end to the forward end of a substantially horizontally disposed arm 29 of an angular lever, indicated as a whole by the reference numeral 30. From an inspection of Fig. 1 it will be observed that the arm 29 of the lever extends beneath the platen and that the finger 28 is situated at a point where it is adapted to coöperate with the work sheet before the bottom end thereof reaches the printing line and until after it has passed a transverse vertical plane extending through the axis of the platen. This angular lever is pivoted by a shouldered screw 31 to the platen frame, so that the lever is adapted to be shifted with the platen frame during case shifting movements of the latter. A depending arm 32 of the angular lever is bent

into a substantially U-shape at the lower end thereof (see Fig. 2) so as to provide a stop member 33 (see Figs. 2 and 5). A pawl 34 is pivoted by a shouldered pivot screw 35 to the lower end of the depending arm of the angular lever and a spring 36 is fixedly connected at one end to the pawl and bears at its free end against the body portion of the lever arm 32 to force the pawl against the stop 33. A controlling member or link 37 is pivoted at 38 to the horizontally disposed arm 29 of the angular lever and extends upwardly therefrom. The upper end of this controlling member is provided with a finger piece 39 to facilitate actuating it. An off-set hook or projection 40 extends laterally from the link 37 and is adapted to cooperate with a pin 41 which extends inwardly from the left-hand end plate of the ten frame 16. A like pin 42 is arranged at the opposite side of the link 37 to limit its movement away from the pin 41. The purpose of this controlling member or link 37 will hereinafter more clearly appear.

The pawl 34 is adapted to cooperate with a rack or ratchet bar 43, which extends longitudinally in the direction of the travel of the carriage, when the parts are in the positions indicated in Fig. 4. This rack or ratchet bar is provided with two series of teeth 44 and 45, respectively. The two series of teeth are spaced apart a distance which corresponds to the vertical movement of the pawl 34 with the platen frame, as the latter is shifted in its case shifting movements of the platen frame. The rack 43, as will be observed upon reference to Fig. 2, is mounted on the top plate of the machine by headed screws 46; the stems of which extend through slots 47 in the rack and engage in tapped openings in the top plate. By this construction a limited longitudinal movement of the rack on the top plate may be effected, the direction of this movement being in the general direction of the travel of the carriage. A contractile spring 48 is connected at one end to a pin 49 projecting from the top plate and at its opposite end to a pin 50 projecting forwardly from the rack bar. The pull of this spring is exerted to normally maintain the rack bar to the limit of its movement toward the right as indicated in Fig. 2.

A depending locking lever 51 is pivoted to the top plate by a shouldered pivot screw 52 so that the locking lever may swing on its pivot in the general direction of the movement of the rack bar 43. This lever extends downwardly through an opening 53 of the top plate and carries a pin 51^a which is received in a slot in the rack 43 to connect the two to move together. The lever 51 is provided at its lower end with a hook-like engaging or locking member 54 which is situated above the key levers and is adapted to

engage beneath an arm 55 which constitutes a part of the train of connections between the universal bar and the escapement mechanism. Thus a universal bar 56 extends beneath the key levers and is connected at its ends to upwardly extending links 57 which in turn are pivoted at their upper ends to rearwardly extending crank arms 58 on a rock shaft 59. This rock shaft is pivoted at its ends on pivot screws 60 received in tapped openings in the base of the machine. The arm 55, hereinbefore referred to, is in the nature of a crank arm located centrally of the rock shaft 59 and projecting rearwardly therefrom. This crank arm is connected at its rear end to an upwardly extending link 61 which controls the usual dog rocker and the escapement mechanism. It will be understood, therefore, that when the locking projection 54 is moved to a position where it extends beneath the crank arm 55, a depression of the crank arm is prevented so that the universal bar will be locked against downward movement. This in turn locks the key levers against depression, or against a full depression, so that the printing instrumentalities and the escapement mechanism are rendered inoperative and the machine is thus thrown out of operation, as is usually the case in line lock mechanism.

The locking of the machine out of operation, in the manner described, constitutes one means for indicating to the operator that the bottom edge of the sheet has been reached, as will hereinafter more clearly appear. In addition to this I prefer to provide a second means for indicating to the operator that the end of the sheet has been reached. Thus the locking lever 51 has pivoted thereto at 62 a substantially horizontally disposed link 63 connected at its opposite end to a crank arm 64. This crank arm projects from a rock shaft 65 which extends fore and aft of the machine, at one side thereof, and is supported at its ends on pivot screws 66 received in tapped openings in the left-hand corner posts 2 of the machine. The forward end of this rock shaft has mounted thereon a visual indicator which, in the present instance, is in the nature of a crank arm 67 carrying an indicating plate or device 68 inscribed with the words "End of Page," or some such warning inscription. In the normal positions of the parts this indicator 68 is maintained out of view of the operator behind the forward left-hand corner post 2 of the machine, as indicated in dotted lines in Fig. 2. When, however, the end of a page is reached, the parts are automatically actuated to effect a movement of the indicator 68 from the position shown in Fig. 2 to that indicated in Fig. 3 where said indicator is exposed to the view of the operator, and the operator is thus warned that the end of the page has been reached.

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The pawl 34 is adapted to cooperate with a rack or ratchet bar 43, which extends longitudinally in the direction of the travel of the carriage, when the parts are in the positions indicated in Fig. 4. This rack or ratchet bar is provided with two series of teeth 44 and 45, respectively. The two series of teeth are spaced apart a distance which corresponds to the vertical movement of the pawl 34 with the platen frame, as the latter is shifted in its case shifting movements of the platen frame. The rack 43, as will be observed upon reference to Fig. 2, is mounted on the top plate of the machine by headed screws 46; the stems of which extend through slots 47 in the rack and engage in tapped openings in the top plate. By this construction a limited longitudinal movement of the rack on the top plate may be effected, the direction of this movement being in the general direction of the travel of the carriage. A contractile spring 48 is connected at one end to a pin 49 projecting from the top plate and at its opposite end to a pin 50 projecting forwardly from the rack bar. The pull of this spring is exerted to normally maintain the rack bar to the limit of its movement toward the right as indicated in Fig. 2.

A depending locking lever 51 is pivoted to the top plate by a shouldered pivot screw 52 so that the locking lever may swing on its pivot in the general direction of the movement of the rack bar 43. This lever extends downwardly through an opening 53 of the top plate and carries a pin 51^a which is received in a slot in the rack 43 to connect the two to move together. The lever 51 is provided at its lower end with a hook-like engaging or locking member 54 which is situated above the key levers and is adapted to

engage beneath an arm 55 which constitutes a part of the train of connections between the universal bar and the escapement mechanism. Thus a universal bar 56 extends beneath the key levers and is connected at its ends to upwardly extending links 57 which in turn are pivoted at their upper ends to rearwardly extending crank arms 58 on a rock shaft 59. This rock shaft is pivoted at its ends on pivot screws 60 received in tapped openings in the base of the machine. The arm 55, hereinbefore referred to, is in the nature of a crank arm located centrally of the rock shaft 59 and projecting rearwardly therefrom. This crank arm is connected at its rear end to an upwardly extending link 61 which controls the usual dog rocker and the escapement mechanism. It will be understood, therefore, that when the locking projection 54 is moved to a position where it extends beneath the crank arm 55, a depression of the crank arm is prevented so that the universal bar will be locked against downward movement. This in turn locks the key levers against depression, or against a full depression, so that the printing instrumentalities and the escapement mechanism are rendered inoperative and the machine is thus thrown out of operation, as is usually the case in line lock mechanism.

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The operation of the device is as follows: A work sheet 69 is introduced into the machine with the left-hand edge portion thereof extending around and inclosing the cut-out or recess 27 at the lower portion of the platen to support a finger 28 in the elevated position, as shown in Figs. 1 and 2; the finger being contained in the space 27 between the platen and the work sheet.

When the work sheet is fed forwardly to a position where the bottom edge thereof passes the finger 28, as shown in Fig. 4, there will be nothing to support the finger and the parts controlled thereby, and the finger will drop by the weight of the parts from the position shown in Fig. 1 to that indicated in Fig. 4. The effect of this movement is to turn the angular lever 30 on its pivot 31 to the position shown in Fig. 4, thus bringing the pawl 34 into engagement with the rack 43. The step-by-step feed of the carriage under the control of the escapement mechanism, and under the power applied thereto by the usual spring drum, not shown, is effective to carry the pawl 34 along with the carriage. The pawl 34, at this time, being engaged with the rack is effective to move the latter with the carriage in the direction of the arrow in Fig. 2, thus stretching the spring 48. The longitudinal motion of the rack is transmitted to the locking lever 51 to swing it from the position shown in Fig. 2 to that indicated in Fig. 3. The effect of this movement of the locking lever is to move the locking device 54 under the crank arm 55, thereby locking the key levers against actuation to prevent printing operations and to prevent a further feed of the carriage. At the same time that the locking lever is moved to the position shown in Fig. 3, motion is transmitted from said lever, through the link 63, to the indicating device 68 to move said indicating device from the hidden position behind the corner post, as represented in Fig. 2, to the exposed position shown in Fig. 3. The second indicator 68 thus warns the operator that the machine is locked against further actuation and notifies the operator that the locking has been effected because the end of the sheet has been reached. The operator should then lift the link 37 by means of the finger piece 39, and effect an engagement between the hook-like projection 40 and the pin 41, thus moving the angular lever 30 to the releasing position and locking it in such position as shown in Fig. 1. This movement of the finger piece 39 and the parts controlled thereby to the Fig. 1 position is effective to maintain the finger 28 in the recess 27 until a new sheet is introduced into the machine. Then the finger piece may be moved rearwardly, disengaging the projection 40 from the pin 41 and thereby enabling the parts to be automatically actuated when the end of the

newly introduced sheet passes the finger 28, as hereinbefore explained.

If the platen should be in the lower case position when the sheet controlled member 28—30—34 is released, then the pawl 34 will be moved into engagement with the lower series of teeth 45 of the rack 43. If, on the other hand, the platen is in the upper case position and the sheet controlled device is released, then the pawl 34 will be engaged with the upper series of ratchet teeth 44 on the rack bar. In either instance the pawl will engage the rack bar to move it during the travel of the carriage to bring about an automatic locking of the machine out of operation and a display of the visual indicator, as shown in Fig. 3. The construction is such that when the pawl 34 is engaged with the rack 43 the stop 33 will prevent such pawl from turning on its pivot during the movement of the carriage from right to left, thereby compelling the rack to move with the carriage. However, a movement of the carriage from left to right at this time would merely result in the pawl snapping over the engaged ratchet teeth on the rack bar without affecting said bar. When the pawl 34 is disengaged from the rack, as hereinbefore described, the spring 48 is effective to move the rack to the right or back to normal position, thus effecting a corresponding movement of the lever 51 to withdraw the locking member 54 from beneath the crank arm 55, thereby releasing the machine. This same movement of the locking lever is effective to turn the rock shaft 65 and effect a movement of the visual indicator from the position shown in Fig. 3 to that indicated in Fig. 1, where it is no longer exposed to the view of the operator.

From the foregoing description it will be understood that the finger 28, lever 30, pawl 34, and rack 43 constitute means controlled by the work sheet in the machine for rendering the locking means, including the parts 51—54—55, operative at any point in the travel of the carriage and that after the locking means are rendered operative the travel of the carriage effects a locking operation of the parts. In other words, the arrangement of the rack 43 longitudinally of the carriage in the manner described enables the pawl 34, which is held out of engagement by the work sheet, to be brought into cooperation with the rack at any point in the travel of the carriage, so that when said pawl and rack are brought into cooperation a movement of the carriage is effective to lock the machine out of operation and to display the visual indicator, and this locking of the machine and display of the indicator may be accomplished at any point in the travel of the carriage.

The devices of my invention are capable of automatically locking the machine out of

operation and displaying the visual indicator when any predetermined point of a work sheet is reached as well as when the bottom edge of the work sheet is reached.

5 The locking of the parts, when any predetermined point of the work sheet is reached, is effected by maintaining the left-hand edge of the work sheet 69 to the left of the recess 27 in the platen, and by employing a dummy 70 sheet to cover the recess and support the finger 28 of the sheet controlled device. The dummy sheet, therefore, acts to control the finger 28, and the parts connected therewith, instead of the work sheet. By adjusting the 75 bottom edge of the dummy sheet with reference to the work sheet 69, the dummy sheet may be made to release the finger 28 when any predetermined point on the work sheet reaches the printing line. Thus, for instance, if the parts are to be locked after 80 one-half of the work sheet is fed through the machine, then the lower or bottom edge of the dummy sheet will be positioned with reference to the work sheet so as to release the finger 28 when one-half of the work sheet is fed forward. Corresponding relative adjustments between the dummy sheet and work sheet are effective to lock the machine out of operation when any predetermined 85 point on a work sheet reaches the printing line.

By lifting the finger piece 39 and engaging the projection 40 thereon with the pin 41, the sheet controlled device, the automatically actuated locking means and the visual indicator may be rendered and maintained inoperative.

Various changes may be made without departing from the spirit and scope of my invention and it should be understood that certain features of my invention may be employed without others. For instance, the visual indicator may be employed with or without the locking construction and the 45 locking construction may be employed with or without the visual indicator. I prefer, however, to embody both indicators or features in a single construction in order to avoid confusion and to warn the operator 50 that the machine is locked out of operation for the reason that the end of a page has been reached.

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

55 1. In a typewriting machine, the combination of a carriage, printing instrumentalities, means for locking said printing instrumentalities against printing operations, said locking means being actuated by the travel 60 of the carriage in the direction of its feed, and means controlled by a sheet in the machine for rendering said locking means operative at any point in the travel of the carriage.

65 2. In a typewriting machine, the combi-

nation of a carriage, printing instrumentalities, means for locking said printing instrumentalities against printing operations, said locking means being actuated by the travel of the carriage, means controlled by a sheet 70 in the machine for rendering said locking means operative at any point in the travel of the carriage, and an automatically actuated visual indicator which is exposed to the operator when the printing instrumentalities 75 are locked against operation.

3. In a typewriting machine, the combination of a carriage, a platen carried thereby, a visual indicator normally hidden from the view of the operator, and automatically 80 actuated means for actuating said visual indicator and exposing it to the view of the operator after a predetermined point on the work sheet has been reached, said automatically actuated means being operated by the 85 travel of the carriage and controlled by the work sheet.

4. In a front strike typewriting machine, the combination of a carriage, a vertically shiftable platen, printing instrumentalities, 90 means for locking said printing instrumentalities against printing operations, and means controlled by a sheet in the machine for rendering said locking means operative whether the platen be in the normal or in the 95 shifted position.

5. In a typewriting machine, the combination of a carriage; means controlled by a sheet in the machine for throwing the machine out of operation, said means comprising 10 a device held in one position by a sheet in the machine and released from such position at a predetermined point in the feed of the sheet; a visual indicator; and means for automatically moving said visual indicator 10 to expose it to the view of the operator when the machine is thrown out of operation.

6. In a typewriting machine, the combination of a carriage; printing instrumentalities; and automatically operating means for locking the printing instrumentalities out of printing operation when an end of a work sheet is reached, said means comprising a pawl carried by the carriage, a cooperative rack carried by and movable on the frame of 11 the machine, said rack extending longitudinally in the direction of the travel of the carriage and with which said pawl is adapted to cooperate at any point in the travel of the carriage, said rack being movable with the pawl and carriage in the direction of the feed of the latter, a locking device controlled by said rack, and means controlled by the work sheet for maintaining the pawl disengaged from the rack and for affording an 11 engagement between the pawl and rack when an end of the work sheet is reached.

7. In a front strike typewriting machine, the combination of a carriage, a vertically shiftable platen and platen frame, a pawl 1

carried by said platen frame, a rack carried by the frame of the machine and movable thereon and with which said pawl is adapted to engage in either "case" position of the platen, means controlled by the work sheet for holding the pawl out of engagement with the rack and for affording an engagement of the pawl with the rack when an end of the sheet is reached, a universal bar, and means controlled by said rack for locking said universal bar against actuation.

8. In a typewriting machine, the combination of a carriage, a platen and platen frame carried thereby and mounted for case shifting movement, a pawl carried by said platen frame, a rack carried by and movable on the frame of the machine in the general direction of the travel of the carriage, said rack extending longitudinally in the direction of the travel of the carriage and with which said pawl is adapted to cooperate at any point in the travel of the carriage and irrespective of the "case" position of the platen, means controlled by a work sheet for normally maintaining the pawl disengaged from the rack and for affording an engagement of the pawl with the rack when an end of the work sheet is reached, a universal bar, and means controlled by a movement of said rack in the direction of the feed of the carriage for locking the universal bar against actuation.

9. In a front-strike typewriting machine, the combination of a carriage, a vertically shiftable platen, printing instrumentalities, means for locking said printing instrumentalities against printing operations, means controlled by a sheet in the machine for rendering said locking means operative whether the platen be in the normal or in the shifted position, a visual indicator, and means for automatically exposing said visual indicator to the view of the operator when the printing instrumentalities are locked against printing operations.

10. In a typewriting machine, the combination of a carriage; printing instrumentalities; automatically operating means for locking the printing instrumentalities against printing operations when an end of a work sheet is reached, said means comprising a pawl, a cooperative rack, means controlled by the work sheet for maintaining said pawl and rack members disengaged and for affording an engagement between them when an end of the work sheet is reached, and a locking device controlled by said pawl and rack; a visual indicator; and automatically operating means for exposing said visual indicator to the view of the operator when the printing instrumentalities are locked against printing operations.

11. In a typewriting machine, the combination of a carriage; printing instrumentalities; automatically operating means for lock-

ing the printing instrumentalities against printing operations when an end of a work sheet is reached, said means comprising a pawl, a cooperative rack, one of said pawl and rack members being carried by the carriage and the other of said members being carried by the frame of the machine and the said members being adapted to be brought into cooperation at any point in the travel of the carriage, means controlled by the work sheet for maintaining said pawl and rack members disengaged and for affording an engagement between them when an end of the work sheet is reached, and a locking device controlled by said pawl and rack; and a visual indicator controlled by said rack.

12. In a typewriting machine, the combination of a carriage; automatically operating means for locking the machine out of operation when an end of a work sheet is reached, said means comprising a pawl carried by the carriage, a cooperative rack carried by and movable on the frame of the machine, a locking device controlled by said rack, and means controlled by the work sheet for maintaining the pawl disengaged from the rack and for affording an engagement between the pawl and rack when the end of the work sheet is reached; a visual indicator normally hidden from the view of the operator; and means controlled by said rack for moving the indicator into the view of the operator when the machine is locked out of operation.

13. In a front-strike typewriting machine, the combination of a carriage, a vertically shiftable platen and platen frame, a pawl carried by said platen frame, a rack carried by the frame of the machine and movable thereon and with which said pawl is adapted to engage in either "case" position of the platen, means controlled by the work sheet for holding the pawl out of engagement with the rack and for affording an engagement of the pawl with the rack when an end of the sheet is reached, a universal bar, means controlled by said rack for locking said universal bar against actuation, and a visual indicator controlled by said rack.

14. In a typewriting machine, the combination of a carriage, a platen and platen frame carried thereby and mounted for case shifting movement, a pawl carried by said platen frame, a rack carried by and movable on the frame of the machine, said rack extending longitudinally in the direction of the travel of the carriage and with which said pawl is adapted to cooperate at any point in the travel of the carriage and irrespective of the "case" position of the platen, means controlled by a work sheet for normally maintaining the pawl disengaged from the rack and for affording an engagement of the

- pawl with the rack when an end of the work sheet is reached, a universal bar, means controlled by said rack for locking the universal bar against actuation, a visual indicator normally hidden from the view of the operator, and means controlled by said rack for moving the visual indicator into the view of the operator when the universal bar is locked against actuation.
15. In a typewriting machine, the combination of a carriage, a pawl carried thereby, a rack carried by and movable on the frame of the machine and with which said pawl is adapted to cooperate at any point in the travel of the carriage, a locking lever controlled by said rack and having an engaging device thereon, a universal bar, a second engaging device operatively connected with the universal bar and with which the engaging device on the locking lever is adapted to co-act to lock the universal bar against actuation, means controlled by the work sheet for normally maintaining the pawl disengaged from said rack and for affording an engagement of the pawl with the rack when an end of the work sheet is reached, and a visual indicator controlled by said locking lever.
16. In a typewriting machine, the combination of a carriage, a platen carried thereby, a visual indicator normally hidden from the view of the operator, and automatically operating means controlled by the work sheet for exposing said visual indicator to the view of the operator when an end of the work sheet is reached, said automatically operating means comprising an engaging device carried by the carriage, a cooperative engaging device carried by the frame of the machine and with which said visual indicator is operatively connected, and means controlled by the work sheet for normally maintaining said engaging device disengaged and for affording an engagement between said devices when an end of the work sheet is reached.
17. In a typewriting machine, the combination of a carriage; a platen carried thereby; a visual indicator normally hidden from the view of the operator; and automatically operating means controlled by the work sheet for exposing said visual indicator to the view of the operator when an end of the work sheet is reached; said automatically operating means comprising a pawl carried by the carriage, a cooperative rack carried by and movable on the frame of the machine, said rack being operatively connected with said indicator, and means controlled by the work sheet for normally maintaining said pawl disengaged from the rack and for affording an engagement of the pawl with the rack when an end of the work sheet is reached.
18. In a typewriting machine, the combination of a carriage; a platen carried thereby; a visual indicator normally hidden from the view of the operator; and automatically operating means controlled by the work sheet for exposing said visual indicator to the view of the operator when an end of the work sheet is reached, said automatically operating means comprising a pawl carried by the carriage, a cooperative rack carried by and movable on the frame of the machine, said rack extending longitudinally in the direction of the travel of the carriage and with which rack the pawl is adapted to engage at any point in the travel of the carriage, operative connections between said rack and indicator, and means controlled by the work sheet for normally maintaining said pawl disengaged from the rack and for affording an engagement of the pawl with the rack when an end of the work sheet is reached.
19. In a typewriting machine, the combination of a carriage, printing instrumentalities, means for locking said printing instrumentalities against printing operations, means controlled by a sheet in the machine for rendering said locking means operative at any point in the travel of the carriage, and hand actuated means operable at will to render said locking means and sheet controlled means inoperative.
20. In a typewriting machine, the combination of a carriage, printing instrumentalities, means for locking said printing instrumentalities against printing operations, said locking means being actuated by the travel of the carriage, means controlled by a sheet in the machine for rendering said locking means operative at any point in the travel of the carriage, an automatically actuated visual indicator which is exposed to the operator when the printing instrumentalities are locked against operation, and hand actuated means operable at will to render and maintain said locking means, sheet controlling means and visual indicator inoperative.
21. In a typewriting machine, the combination of a carriage, a platen carried thereby, a visual indicator normally hidden from the view of the operator, automatically operating means for actuating said visual indicator and for exposing it to the view of the operator after a predetermined point on the work sheet has been reached, and hand actuated means operable at will to render said automatically operating means inoperative.
22. In a typewriting machine, the combination of a carriage, a pawl carried thereby, a rack carried by and movable on the frame of the machine and with which said pawl is adapted to cooperate at any point in the travel of the carriage, a locking lever controlled by said rack and having an engaging

device thereon, a universal bar, a second engaging device operatively connected with the universal bar and with which the engaging device on the locking lever is adapted to co-act to lock the universal bar against actuation, means controlled by the work sheet for normally maintaining the pawl disengaged from said rack and for affording an engagement of the pawl with the rack when an end of the work sheet is reached, a visual indicator controlled by said locking lever, and hand controlled locking means operable at will to lock said work sheet controlled means out of operation.

23. In a front-strike typewriting machine, the combination of a carriage, a platen carried thereby, printing instrumentalities which are adapted to strike against the front face of the platen, means for locking said printing instrumentalities against printing movement, and means controlled by a sheet in the machine for rendering said locking means operative at any point in the travel of the carriage, said sheet controlled means cooperating with the sheet forward of a vertical transverse plane extending through the axis of the platen.

24. In a typewriting machine, the combination of a carriage; a printing key; and means controlled by a sheet in the machine for locking the printing key against operation, said means comprising a device held in one position by a sheet in the machine and released from such position at a predetermined point in the feed of the sheet, and means adapted to be engaged by said device when released irrespective of the position of the carriage in its line of travel and to be actuated and lock the printing key by a movement of the carriage in the direction of its feed.

25. In a typewriting machine, the combination of a carriage; printing instrumentalities; and automatically operating means for locking the printing instrumentalities against printing operation when an end of a work sheet is reached, said means comprising a pawl, a rack with which said pawl is adapted to cooperate at any point in the travel of the carriage, means controlled by the work sheet for maintaining said pawl and rack members disengaged and for affording an engagement between them when an end of the work sheet is reached, and a locking device controlled by said pawl and rack to effect a locking operation by a movement of the carriage in the direction of its feed.

26. In a typewriting machine, the combination of a carriage; printing instrumentalities; and automatically operating means

for locking the printing instrumentalities against printing operation when an end of a work sheet is reached, said means comprising a pawl, a cooperative rack, one of said pawl and rack members being carried by the carriage and the other of said members being carried by the frame of the machine, said members being adapted to be brought into cooperation at any point in the travel of the carriage, means controlled by the work sheet for maintaining said pawl and rack members disengaged and for affording an engagement between them when an end of the work sheet is reached, and a locking device controlled by said pawl and rack and actuated thereby during a movement of the carriage in the direction of its feed.

27. In a typewriting machine, the combination of a carriage; and automatically operating means for locking the machine out of operation when an end of a work sheet is reached, said means comprising a pawl carried by the carriage, a rack carried by and movable on the frame of the machine and with which the pawl is adapted to cooperate at any point in the travel of the carriage, a locking device controlled by said rack and actuated thereby during the travel of the carriage in the direction of its feed, and means controlled by the work sheet for maintaining the pawl disengaged from the rack and for affording an engagement between the pawl and rack when an end of the work sheet is reached.

28. In a typewriting machine, the combination of a carriage, a pawl carried thereby, a feed rack carried by and movable on the frame of the machine and with which said pawl is adapted to cooperate at any point in the travel of the carriage, a locking lever controlled by said rack and having an engaging device thereon, a universal bar, a second engaging device operatively connected with the universal bar and with which the engaging device on the locking lever is adapted to co-act during a movement of the carriage in the direction of its feed to lock the universal bar against actuation; and means controlled by a work sheet for normally maintaining the pawl disengaged from said rack and for affording an engagement of the pawl with the rack when an end of the work sheet is reached.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 24th day of March, A. D. 1911.

WALTER J. BARRON.

Witnesses:

CHARLES E. SMITH,
E. M. WELLS.