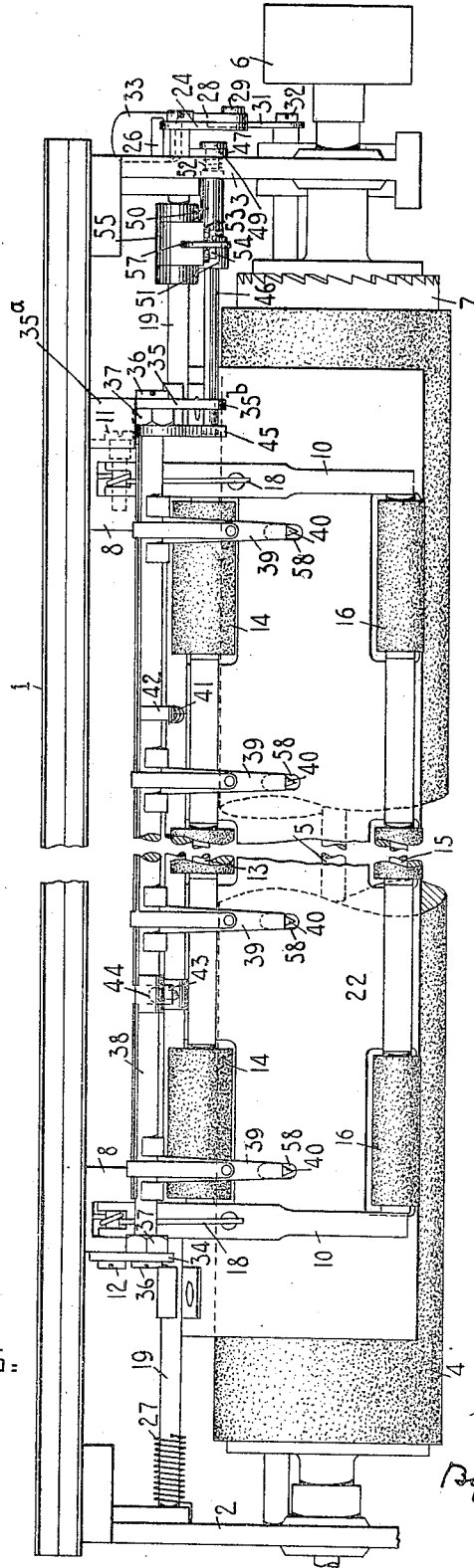


957,178.

E. E. BARNEY.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 16, 1910.

Patented May 10, 1910.
3 SHEETS—SHEET 1.

FIG. 1.



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M. W. Pool

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Edwin E. Barney

By Jacob F. Bell

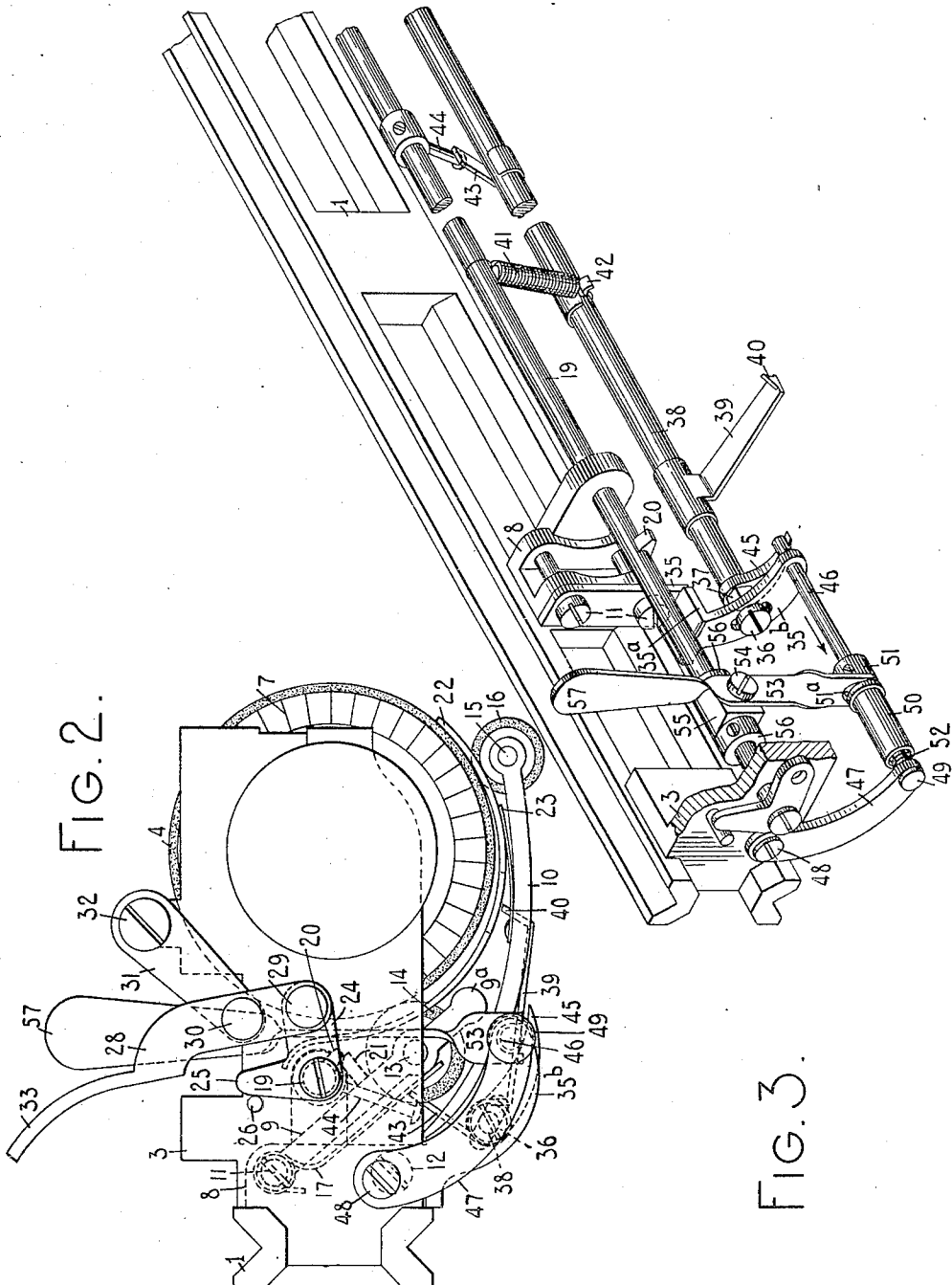
HIS ATTORNEY

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3 SHEETS—SHEET 2.



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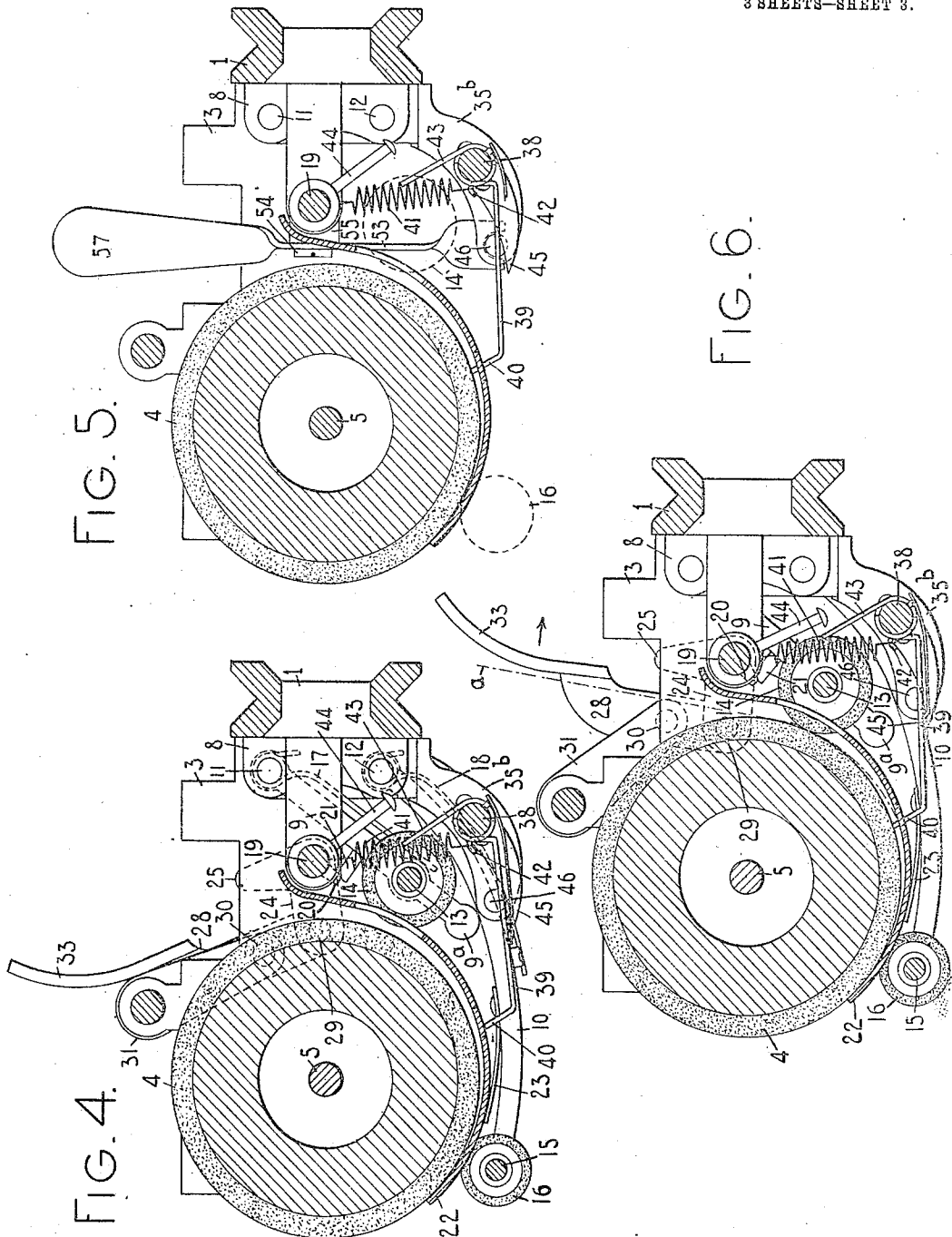
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

EDWIN E. BARNEY, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPE-
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TYPE-WRITING MACHINE.

957,178.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed February 16, 1910. Serial No. 544,254.

To all whom it may concern:

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

My present invention relates to paper feeding mechanism for typewriting machines, and particularly to leading edge stop devices of such machines.

The main object of my invention is to provide improved devices of the class specified.

To the above and other ends my invention consists in the features of construction, combinations of devices and arrangements of parts hereinafter described and particularly pointed out in the claims.

My present invention is an improvement on the construction shown in my Patent No. 935,575, granted September 28, 1909, and the specific object of the present improvements is to simplify the prior patented construction and to enable the stop devices to be operated more readily and conveniently. In the present construction, as in my prior patented construction, the leading edge stops are pivotally mounted and are constantly spring pressed toward the platen but are normally held away therefrom in a predetermined position by a stronger spring which is controlled by the release key of the machine.

When the release key is operated separately and alone, the leading edge stops move only a short distance toward the platen from normal position, said stops being then arrested by an obstruction which can only be removed to permit further movement of the stops to the platen by the actuation of a hand device separate from the release key and operative independently thereof. In the patented construction this separate device is a push button which is behind and below the platen and which operates to move endwise the rock shaft carrying the leading edge stops, the leading edge stops themselves participating in the endwise movement of the rock shaft. In the present instance I have replaced the push button by a hand lever which is provided with a finger piece arranged in proximity to the regular release key so that the release key and the special finger piece may be readily and conveniently actuated at a

single operation by the left-hand of the operator whenever it is desired to bring the leading edge stops into action. Moreover, the actuation of the special finger piece, instead of moving endwise the rock shaft and the end stops thereon, merely moves an obstruction out of the way of said rock shaft so that the prior slidable mounting of the rock shaft may be dispensed with.

My invention will be more particularly described in connection with the accompanying drawings wherein,

Figure 1 is a fragmentary bottom plan view of the platen carrier and platen of a Monarch typewriting machine embodying my invention. Fig. 2 is an end view of said platen carrier and platen showing the parts in normal position. Fig. 3 is a fragmentary perspective view showing parts of my improvements and their mounting on the platen carrier. Figs. 4, 5 and 6 are vertical sectional views transverse of the platen carrier and platen, the paper feed releasing mechanism and my improvements appearing in different relations in the different views.

Referring to the drawings, the platen carrier which comprises a rear bar 1 and end bars 2 and 3 carries a platen 4 mounted on an axle 5 and provided at its ends with finger wheels 6. A line spacing ratchet wheel 7 is connected to the platen and coöperates with other line spacing devices (not shown). Lugs 8 project forward from the rear bar 1 and are slotted to receive pairs of arms 9 and 10 which are pivotally mounted on shouldered screws 11 and 12. A rod 13 connecting the arms 9 carries sections 14 composing the main feed roller, and a similar rod 15 on the arms 10 carries the sections 16 of the secondary feed roller. The main and secondary feed rollers are arranged at the under side of the platen, the secondary roller forward of the main roller and between it and the printing point on the front face of the platen. Normally the main and secondary feed rollers are respectively maintained in contact with the platen or the paper thereon by springs 17 and 18. A rock shaft 19 bearing in the end bars 2 and 3 has lugs 20 which are adapted to engage pins 21 on the arms 9 and thus overcome the springs 17 and 18, swinging the arms 9 and 10 downward and releasing both feed rollers. The release of the secondary feed roller is ac-

complied by extensions 9^a of the arms 9, said extensions engaging with the arms 10 to actuate the latter. A paper deflector 22 is pivotally supported on the rock shaft 19 and partially surrounds the platen, the forward end portion of said deflector being normally pressed against the platen or the paper thereon by springs 23 on the arms 10, said springs relaxing when the feed rollers are released. The sections of the feed rollers protrude toward the platen through openings in the deflector 22.

The means for turning the rock shaft 19 comprises a crank arm 24 fixed to the left end of the rock shaft and having a nose 25 which normally is maintained against a stop pin 26 as shown in Fig. 2 by a spring 27 coiled around the rock shaft. A releasing lever 28 is pivotally connected at 29 to the crank arm 24 and at 30 to a guide arm 31 which is pivoted at 32 to the end bar 3. The lever 28 has a finger piece 33 which is adapted to contact with the arm 31 to limit forward movement of the lever 28. When the finger piece 33 is pulled forward sufficiently the parts 28 and 31, which are toggle elements, are straightened as shown in Fig. 4 and will hold the rock shaft 19 in abnormal position, locking the feed rollers in released position away from the platen.

The parts thus far described are common to the Monarch machine.

Leading edge or end stops are supported from arms or brackets 34 and 35 secured against the outer side faces of the lugs 8 by the screws 11 and 12. The arm 34 extends straight downward and is curved forward at its lower end while the arm 35 extends downward and is laterally off-set outward toward the adjacent end bar 3 as indicated at 35^a, said arm 35 again extending downward and then curving forward below the offset as indicated at 35^b. By this construction the lower end portion 35^b is considerably nearer the end bar 3 than is the upper or main portion 35 as clearly appears from Figs. 1 and 3. The lower ends of the arms 34 and 35 have slots which receive shouldered pivot screws 36 which are held adjustably in place by nuts 37 and provide pivotal supports for a rock shaft 38, said rock shaft carrying one or more leading edge or stop members 39 arranged at suitable intervals along the rock shaft and secured thereto in any preferred manner as for example that shown and claimed in the application of C. J. Bond, Serial No. 482,678, filed March 11th, 1909, and which is herein illustrated. The stop members 39 comprise forwardly extending arms which incline slightly downward from the rock shaft and terminate in upwardly bent ends 40 which serve as stops proper, said ends being pointed or beveled and being adapted to operate between the two feed rollers. A coiled draw spring 41

has its lower end secured to a hook 42 extending forward from the rock shaft 38, the upper end of said draw spring being hooked around the rock shaft 19. The draw spring tends constantly to turn the shaft 38 and draw the stops 40 toward the platen, from which said stops are normally separated as shown in Fig. 2. An upwardly extending finger 43 is suitably secured to the rock shaft 38 and normally coöperates with a headed pin or finger 44 which extends downward from the rock shaft 19 and is fast thereon. The spring 27 is stronger than the spring 41 and causes the finger 44 to push the coöperating finger 43 forward, thereby maintaining the rock shaft 38 and the stops thereon in the normal or Fig. 2 position. When the finger piece 33 is pulled forward from the Fig. 2 to the Fig. 4 position it turns the shaft 19 and swings the finger 44 rearward, thus releasing the finger 43 and permitting the rock shaft 38 to be turned and the stops 40 to be moved toward the platen. At this time, however, the stops will move only a short distance, the full movement being prevented by restraining devices to which my invention is more especially directed. Said restraining devices include a stop member or finger 45 which, as best appears in Fig. 3, is secured to the left-hand end of the rock shaft 38 and curves forward and downward therefrom, being adapted to co-act with a movable stop or abutment in the form of a rod 46, said rod being slidably supported at its inner end in a hole in the part 35^b and at its outer end in a hole formed at the lower end of a curved arm 47 which is secured by a screw 48 to the outer face of the end bar 3 behind the rock shaft 19, said arm 47 curving downward and forward from said screw 48. The outer end of the slide rod 46 is headed as indicated at 49, the head limiting inward longitudinal movement of said slide rod. The rod 46 carries a tubular housing 50 having a solid head or enlargement 51 which is screwed fast to said rod. A wire spring 52 is coiled around the rod 46 within the housing 50 and co-acts with the arm 47 and the bottom of the housing 50 normally to maintain the rod 46 in the position shown in Fig. 3. In this position the head 49 is in contact with the arm 47 while the inner end of the rod 46 is in the path of the finger 45 and is adapted to interlock with said finger to arrest the same and hold the stops 40 away from the platen as shown in Fig. 4. This figure shows the parts after the operation of the release key 33 to release the feed rollers and bring the locking parts into co-action, it being understood that normally these locking parts are separated slightly although one is in the path of the other.

In order to release the finger 45 and permit the spring 41 to move the stops 40 to the

platen after said finger has been arrested by the rod 46, I provide for snapping the rod 46 off the finger, sliding said rod 46 longitudinally outward in the direction of the arrow in Fig. 3 by an upright lever 53. The upper and lower ends of said lever are twisted so that their planes are fore and aft of the machine, the lower end being forked or cut out to engage loosely in a circumferential groove 51^a in the head 51. The lever 53 is pivoted on a shouldered screw 54 which is supported on a block 55, said block being loosely mounted on the rock shaft 19 and confined between collars 56 fixed on said shaft, the construction being such that the rock shaft 19 may turn independently of the block 55. The upper arm of the lever 53 is shaped to provide a finger piece or key 57 which is operative from above the platen and is in proximity to the finger piece 33 (Fig. 2) so that both may be controlled together by the left hand of the operator. It will be apparent that when the key 57 is pressed inward toward the right, it will overcome the spring 52 and slide the rod 46 leftward in its bearings until it is withdrawn from the path of the finger 45, thus enabling the spring 41 to move the stops 40 to the platen, said stops passing through slots 58 in the paper deflector 22. After the finger 45 has passed upward beyond the lower edge of the end of the rod 46 the key 57 may be released for at this time the rod 46 will be prevented from returning to normal position by contact with the outer face of the finger 45. This will be understood from a consideration of Fig. 5 which shows the end stops and connected parts in operative position. At this stage a work sheet or bill sheet may be passed downward at the rear of the platen over the usual paper table (not shown) and the paper deflector 22 between the platen and the main feed roller 14. The advance of the sheet will be arrested by contact of its leading edge with the stops 40, which enable work sheets to be properly squared or alined and to be started forward each from the same position when the platen is turned after the feed rollers have been permitted to reengage.

The return of the feed rollers and retraction of the end stops 40 may be effected at one operation, said operation comprising two stages during the first of which the feed rollers will be brought back to operative position, the main feed roller engaging the work sheet and clamping it to the platen as shown in Fig. 6, wherein the work sheet is designated as *a*. This takes place while the end stops remain against the platen so that displacement of the work sheet is guarded against. This result is due to the fact that as the finger piece 33 is pushed rearward to unlock the feed rollers, said feed rollers will at once begin to move toward the platen and

will reengage therewith or with the paper prior to the engagement of the finger 44 with the finger 43, as clearly appears in Fig. 6. After the feed rollers have been restored the arms 9 and pins 21 will be arrested so that as rearward movement of the finger piece continues the lugs 20 will separate from the pins 21. During this movement of separation the finger 44 engages the finger 43 and turns the rock shaft 38 backward, restoring the stop members 40 to normal position and moving the finger 45 downward past the slide rod 46 so that the slide rod may snap back to normal position under the action of the spring 52. During the return of the slide rod 46 the lever 53 will return with it to normal position and it will again require an operation of the finger piece or key 57 to enable the end stops to cooperate anew with the platen.

It will be apparent that by the present construction a slight pressure or touch on the finger piece or key 57, during the operation of the release key 33, is all that is necessary in order to render the interlocking devices 45 and 46 ineffective and permit the leading edge or end stops to be brought into operation, this key 57 being in convenient juxtaposition to the key 33. It will further be apparent that the release key 33 may be operated to throw the feed rollers on and off at pleasure without affecting the paper stops 40; and that after the release key has been pulled forward and the feed rollers locked off, the stops 40 may be rendered effective by pressing the key 57 inward, thereby causing the slide rod 46 to snap off the finger 45. It will also be seen that the mounting of the stops is simplified and improved as compared with my prior patented construction.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. In a typewriting machine, the combination of a platen, a paper stop constantly spring-pressed toward the platen, restraining devices normally separated but so related as to prevent said paper stop from reaching the platen, and means for changing the relationship between said restraining devices so that movement of said paper stop to the platen may take place, said means comprising a pivoted key lever operative from above the platen, and connections between the same and certain of said restraining devices.

2. In a typewriting machine, the combination of a platen, a paper stop constantly spring-pressed toward the platen, normally disconnected locking devices for said paper stop, said devices comprising a slide rod, means for setting said devices in interlocking relationship, and means for unlocking

said devices, said means comprising a pivoted key lever loosely connected with said slide rod.

3. In a typewriting machine, the combination of a platen, a paper stop constantly spring-pressed toward the same, locking devices for said paper stop normally separated, a feed roller, key-controlled means for releasing said feed roller and setting said devices in interlocking relationship, and separate means for unlocking said devices, said separate means comprising a key lever in juxtaposition to the releasing key for the feed roller.

4. In a typewriting machine, the combination of a platen, a paper stop constantly spring-pressed toward the platen, locking devices for said paper stop normally disconnected and comprising a spring-pressed slide rod, a feed roller, means for releasing said feed roller and permitting said devices to be spring-pressed into locking engagement with each other, and separate means for snapping said devices out of locking relationship, said separate means comprising an upright key lever loosely connected to said slide rod.

5. In a typewriting machine, the combination of a platen, paper feeding devices, releasing means therefor comprising a key-controlled rock shaft, a paper stop, locking devices related for preventing movement of said paper stop to the platen normally, and means for rendering said locking devices ineffective, said last named means comprising a key-lever pivotally mounted on said rock shaft.

6. In a typewriting machine, the combination of a platen, paper feeding devices comprising a rock shaft, paper stop devices mounted on a second rock shaft, locking devices for controlling said paper stop, said locking devices comprising a finger on said second rock shaft and a spring-pressed slide rod, and means for rendering said locking

devices ineffective, said means comprising a key lever pivotally mounted on said rock shaft, said first named rock shaft being loosely connected with said slide rod.

7. In a typewriting machine, the combination of a platen, paper feeding devices, key controlled releasing devices for said paper feeding devices, paper stop mechanism comprising a rock shaft, locking devices for said paper stop mechanism comprising a finger on said rock shaft and a spring-pressed slide rod, and means for moving said slide rod to render said locking devices ineffective, said means comprising a lever having a finger piece in juxtaposition to the key for said releasing mechanism.

8. In a typewriting machine, the combination of a platen, releasable paper feeding devices, paper stop mechanism, locking devices therefor comprising a slide rod and a co-acting member, and means for moving said slide rod endwise to unlock said devices, said means comprising an upright lever having a key at its top which is movable laterally to effect said endwise movement of said slide rod.

9. In a typewriting machine, the combination of a platen, releasable paper feeding devices, paper stop mechanism, locking devices therefor comprising a finger and a co-acting slide rod, a tubular housing on said slide rod provided with a head, a spring within said housing and operative to maintain said slide rod in normal position, and a key lever engaging the head of said housing and operative to overcome said spring.

Signed at Syracuse, in the county of Onondaga and State of New York this 14th day of February A. D. 1910.

EDWIN E. BARNEY.

Witnesses:

W. W. BRAND,

HENRY H. SHIPLEY.