

1,023,535.

Patented Apr. 16, 1912.

2 SHEETS-SHEET 1.

FIG. 1.

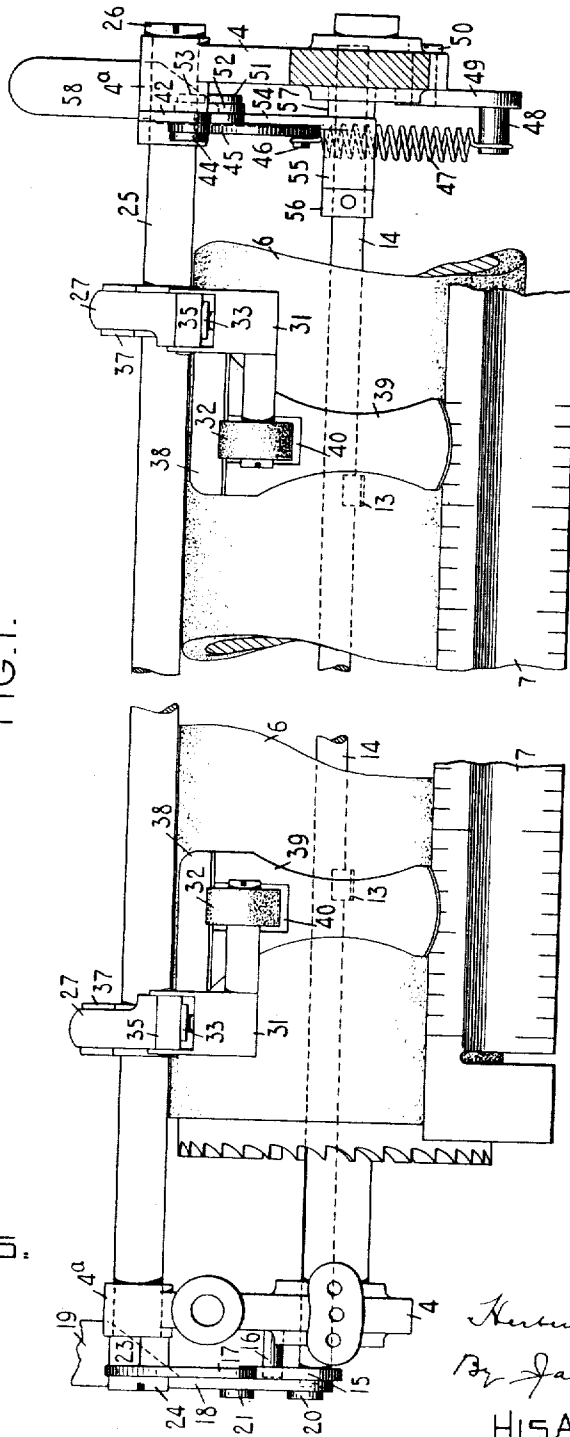
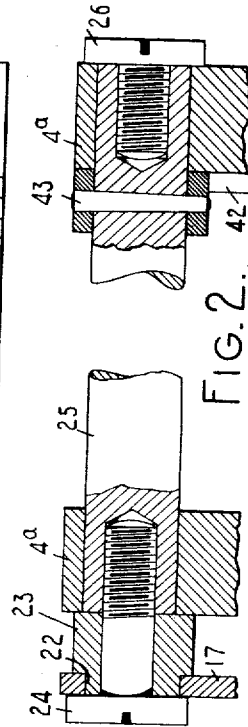


FIG. 2.



WITNESSES.

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H. H. STEELE.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 31, 1911.

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2 SHEETS-SHEET 2.

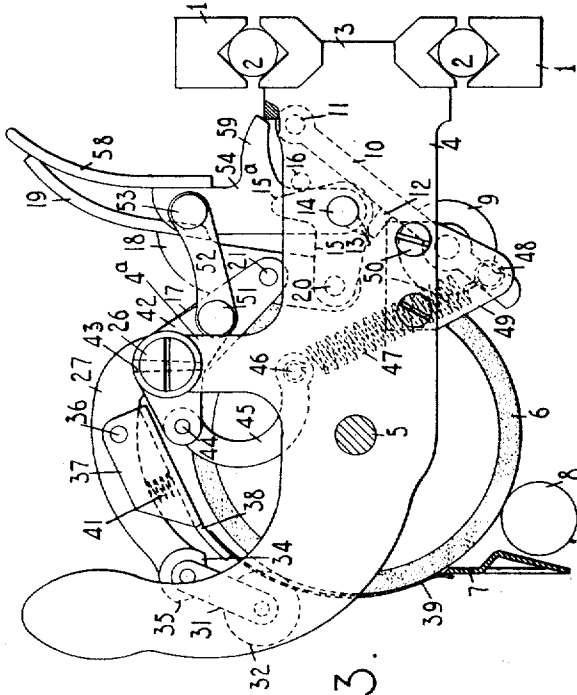
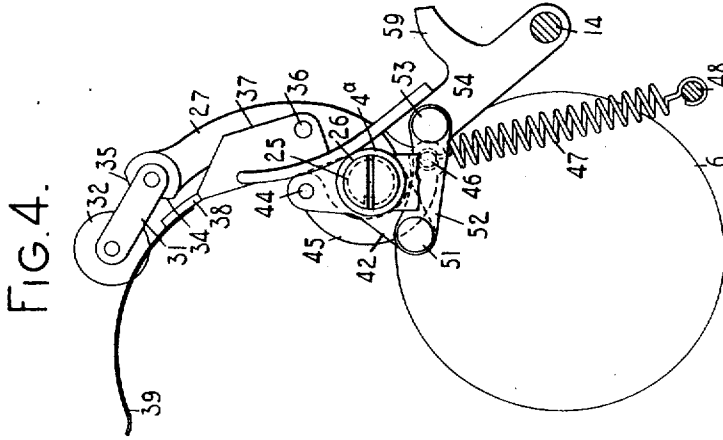
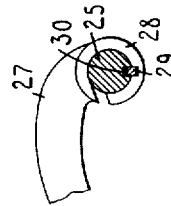


FIG. 5.



WITNESSES.

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FIG. 3.

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UNITED STATES PATENT OFFICE.

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

TYPE-WRITING MACHINE.

1,023,535.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed March 31, 1911. Serial No. 618,180.

To all whom it may concern:

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

My invention relates to paper feeding mechanism for typewriting machines and its object is to provide improved mechanism of the character specified.

My invention is shown as applied to a Monarch typewriting machine and the specific object of said invention is to provide means for simultaneously releasing or rendering inoperative the paper fingers of said machine, although, of course, the nature of the invention is such that its principles may be adapted to styles of writing machines other than the Monarch typewriter.

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.

In the accompanying drawings, Figure 1 is a fragmentary front elevation partly in section of the platen and platen carrier of a Monarch typewriting machine embodying my invention. Fig. 2 is a fragmentary front view partly in section showing the paper finger rod or stop and the manner of supporting the same. Fig. 3 is a side elevation partly in section of the platen and platen carrier aforesaid. Fig. 4 is a side view corresponding with Fig. 3 but omitting some parts and showing the paper fingers thrown up out of operation. Fig. 5 is a fragmentary side sectional view showing the mounting of one of the paper finger contrivances.

The platen carrier or carriage coöperates with fixed guide rails 1 and anti-friction balls 2 as shown in Fig. 3, said carrier or carriage comprising a slide bar 3 grooved to coöperate with the balls 2 and also comprising end bars 4 which provide bearings for the axle 5 of a rotary platen 6. Coöperative with the platen at its forward and under side is a platen scale 7 and a secondary feed roller 8, the mounting of which is omitted from the drawing. A main feed roller 9 is shown coöperating with the platen at its rear lower side, said feed roller being supported on arms 10 pivoted at 11 to the platen carrier, each arm 10 being provided

with a lug or projection 12 which is adapted to be engaged by a lug 13 on a rock shaft 14 bearing at its ends in the end bars 4 and extending outside the left-hand end bar where it is provided with a crank arm 15 having a nose 15^a which coöperates with a stud 16 to determine the normal position of the rock shaft. The rock shaft is adapted to be turned to cause the lugs 13 to coöperate with the projections 12 to release the feed roller 9, the turning devices for the rock shaft comprising toggle elements or arms 17 and 18, the arm 18 being provided with a key or finger piece 19. The toggle arm 18 is pivotally connected at 20 with the crank arm 15 and at 21 with the toggle arm 17. This arm 17 is pivotally supported on the reduced eccentric portion 22 of a sleeve 23, said sleeve being mounted on a headed screw 24 which engages in a tapped hole in the end of a rod or rock shaft 25 (Fig. 2). The rod or rock shaft 25 replaces the usual paper finger rod of the machine and unlike the usual rod 25 is adapted to rotate in its bearings in the upper ends of the extensions 4^a of the end bars 4. The sleeve 23 prevents endwise movement of the rock shaft 25 in one direction while a headed screw 26, which engages a tapped hole in the right-hand end of the rod 25, coöperates with the right-hand extension or bearing 4^a to prevent endwise movement of the shaft in the other direction. The screw 24 binds the sleeve 23 to the rock shaft 25 but does not prevent turning movements of said rock shaft; and the arm 17 while confined between the head of the screw 24 and the shouldered portion of the sleeve 23, may, nevertheless, turn relatively to the eccentric reduced portion 22. By loosening the screw 24 the sleeve may be turned to vary the normal relationship between the eccentric 22 and the arm 17, thereby varying the normal relationship between the toggle elements 17 and 18. It will be understood that when the key or finger piece 19 is pulled forward to straighten the toggle and release and lock off the feed roller 9, the arm 17 may turn on its eccentric bearing 22 without affecting the rod 25; and further it will be understood that the releasing of the feed roller 9 operates in the usual manner to automatically effect the release of the feed roller 8 and preferably also of the platen scale 7.

The rod or shaft 25 slidably supports one or more paper finger contrivances, two of

such contrivances being shown in the present instance, of the sort with which the Monarch typewriting machine is commonly provided. Each paper finger contrivance comprises a supporting arm 27 which curves forward over the platen and terminates at the rear in an enlargement or hub 28 (Fig. 5), said hub carrying a key 29 which engages in a longitudinal groove 30 in the shaft 25.

The construction is such that the contrivance may be slid along the shaft 25 to any desired position lengthwise of the platen but said contrivance is prevented from turning on the shaft by the key 29. Further it will be apparent that if the shaft be turned the arm 27 must turn with it.

Pivotally connected to the forward end of each arm 27 is a roll carrier 31 on which is mounted a pressure roll 32, the same being off-set inwardly from the carrier 31. A spring plunger 33 on the roll carrier coöperates with the end portion of the arm 27, which end portion is shaped to provide two angularly disposed faces 34 and 35. When the plunger is engaged with the face 34 it maintains the roll 32 in spring pressed engagement with the platen or the paper thereon. When the roll carrier is pulled forward to release the roll 32 the plunger engages with the flat face 35 and maintains the roll in released position as long as desired. Pivoted at 36 to the sides of each arm 27 is a trough-like supporting member 37 which underlies the arm 27 and at its forward end is off-set inward therefrom as indicated at 38. Secured to the off-set portion 38 is a guiding finger proper 39 which extends downward over the front face of the platen transversely of the printing line and is curved to conform to the platen surface. The finger 39 is provided with an opening or slot 40 through which the pressure roll 32 may protrude to contact with the platen or the paper thereon. A coiled spring 41 arranged between the bottom of the trough-like member 37 and the under side of the arm or support 27, causes the guiding finger 39 to press lightly against the platen. The paper is guided and fed by the fingers 39 and pressure rolls 32 between the two supporting arms 27 and over the top of the rock shaft 25.

In order simultaneously to release the paper finger contrivances or throw them out of operation I provide hand operated means for turning or rotating the shaft 25 rearward in its bearings, said means comprising a bell crank or double crank arm 42 which is pinned as indicated at 43 or otherwise secured to the shaft 25 near its right-hand end. The forward arm of the bell crank 42 is in effect a crank which is pivotally connected at 44 with a curved link 45 which normally curves downward, forward and rearward as shown in Fig. 3. The lower end

of the link is pivotally connected at 46 to a draw spring 47, the lower end whereof is secured to a stud 48 projecting inward from a bracket or support 49 screwed at 50 to the right-hand end plate 4. Normally the draw spring operates through the link 45 and bell crank 42 to maintain a forward turning pressure on the shaft 25, which transmits the pressure to the arms 27 of the paper finger contrivances and through them to the pressure rolls and the paper fingers proper carried by said contrivances. The rear arm or crank arm of the bell crank 42 is pivotally connected at 51 to a rearwardly extending link 52, the opposite end of said link being pivoted at 53 to an upright arm 54, the lower end of which is provided with a hub 55 (Fig. 1) which loosely surrounds and bears on the rock shaft 14. A collar 56 pinned to the shaft 14 coöperates with a boss 57 on the right-hand end bar 4 to prevent endwise displacement of the arm 54 in either direction along the shaft 14. The upper end portion of the arm 54 is bent or twisted laterally at right angles to provide a curved finger piece or key 58. Extending rearwardly from the arm 54 below the finger piece is a nose or stop 59 which coöperates normally with the upper edge of the platen carrier to limit rearward movement of the arm 54. Normally the arm 54 is maintained in the Fig. 3 position by the spring 47 acting through the link 45, bell crank 42 and link 52.

When it is desired to release the paper finger contrivances the key or finger piece 58 is pulled forward until arrested by the top of the right-hand extension 4^a as shown in Fig. 4. By thus operating the key 58 the arm 54 is swung forward on the shaft 14 as a center and operates through the link 52 on the bell crank 42 to turn the shaft 25 rearward. The rearward turning movement of the shaft is transmitted through the keys 29 to the supporting arms 27, said supporting arms being swung upward and rearward away from the platen face and carrying with them the pressure rolls and paper fingers proper. The released position of the paper finger contrivances is shown in Fig. 4. The parts are maintained in the released position by the draw spring 47, which is double acting as will be understood from a consideration of Figs. 3 and 4. The rearward swing of the forward arm of the bell crank swings the pivot 44 of the link 45 preferably slightly to the rear of the axis of the shaft 25, the result being that the pull of the spring 47 is transmitted to the rear side of the axis of the shaft and will operate to hold the shaft and the paper finger contrivances in the Fig. 4 position. The curvature of the link 45 permits it to swing to the Fig. 4 position without being obstructed by the shaft 25, the link partly embracing or surrounding said shaft as shown.

The paper finger contrivances may be restored to operative position by pushing the key 58 rearward from the Fig. 4 to the Fig. 3 position. As soon as the pivotal point 44 swings forward past the axial center of the shaft 25, the spring 47 will assist to restore the paper finger contrivances to the platen.

It will be observed that the paper controlling devices at the under side of the platen comprising the feed roller 9 are released by operating the key 19 at the left-hand end of the platen while the paper controlling contrivances or devices at the front upper side of the platen are releasable by an independent operation of the key 58 at the right-hand end of the platen. The two keys may be operated concurrently. After both keys have been operated all the paper feeding and controlling devices which co-operate with the platen will be released so that the entire surface of the platen is unobstructed and paper may be inserted and adjusted or removed with facility and despatch, both hands of the operator being free for such manipulation of the paper as is required. Of course, the feed roll release key and the paper finger release key may be operated separately and independently of each other when it is desirable to do so.

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 rock shaft, a paper finger on said rock shaft, means for turning said rock shaft to release said finger, said means comprising a crank arm connected to said rock shaft, a second crank arm on said rock shaft, a draw spring, and a link connecting said draw spring with said second crank arm.

2. In a typewriting machine, the combination of a platen, a rock shaft, a paper finger on said rock shaft, a bell crank fixed to said rock shaft, an operating key, a restoring spring, a link connecting said operating key with said bell crank, and a second link connecting said restoring spring with said bell crank.

3. In a typewriting machine, the combination of a platen, a rock shaft, a paper finger on said rock shaft, key operated means for turning said rock shaft to release said paper finger, a draw spring, and means connecting said draw spring with said rock shaft, said draw spring normally maintaining said paper finger in operative position but operating when the paper finger is released to hold said paper finger in released position.

4. In a typewriting machine, the combination of a platen, a rock shaft, a paper finger on said rock shaft, key operated means for turning said rock shaft to release said paper finger, a draw spring, and connections between said draw spring and said rock shaft, said connections comprising a crank arm and a curved link connecting said crank arm with said draw spring, said curved link partly embracing said rock shaft when the paper finger is in released position.

5. In a typewriting machine, the combination of a platen, a feed roller, key controlled releasing means therefor comprising a rock shaft, a rotary paper finger rod, a plurality of paper fingers slidably mounted thereon, and means for turning said rod to release said paper fingers including a key pivoted on said rock shaft.

6. In a typewriting machine, the combination of a platen, a rock shaft, a paper finger adjustable thereon, hand controlled means for turning said rock shaft to release said paper finger, a crank arm on said rock shaft, a draw spring, and a swinging link connecting said draw spring with said crank arm and operative to transmit the pull of said spring to opposite sides of said rock shaft.

7. In a front strike typewriting machine, the combination of a platen, a rock shaft arranged thereover, a paper finger connected to said rock shaft and extending forwardly and downwardly in front of the platen, a crank arm arranged on the opposite side of the center of said rock shaft from said paper finger, an upwardly extending pivoted hand-piece in the rear of said crank arm, and a connection between said pivoted hand-piece and said crank arm whereby when the hand-piece is pulled forward the paper finger is thrown upwardly and rearwardly entirely clear of the printing face of the platen.

8. In a typewriting machine, the combination of a platen, a rock shaft, a paper finger on said rock shaft, and means for turning said rock shaft to release said paper finger, said means comprising a crank arm fixed to said rock shaft, a pivoted arm having a connected finger key, a link connecting said pivoted arm with said crank arm, and a double acting spring connected to said paper finger.

Signed at Syracuse, in the county of Onondaga, and State of New York, this 28th day of March, A. D. 1911.

HERBERT H. STEELE.

Witnesses:

WILLARD C. HAY,
ELLA M. SHUTTS.