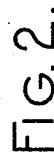


996,809.

2 SHEETS—SHEET 1.



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TYPE WRITING MACHINE.
APPLICATION FILED MAY 26, 1910.

996,809.

Patented July 4, 1911.

2 SHEETS—SHEET 2.

FIG. 4.

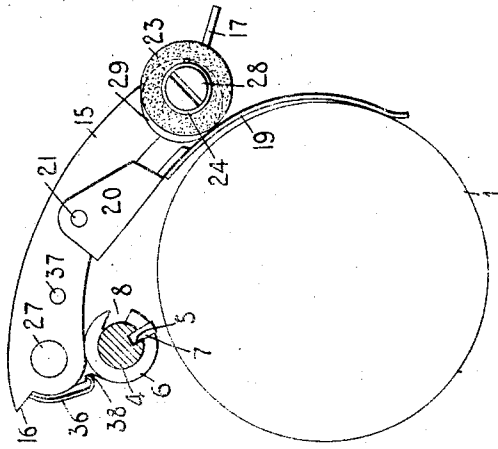


FIG. 3.

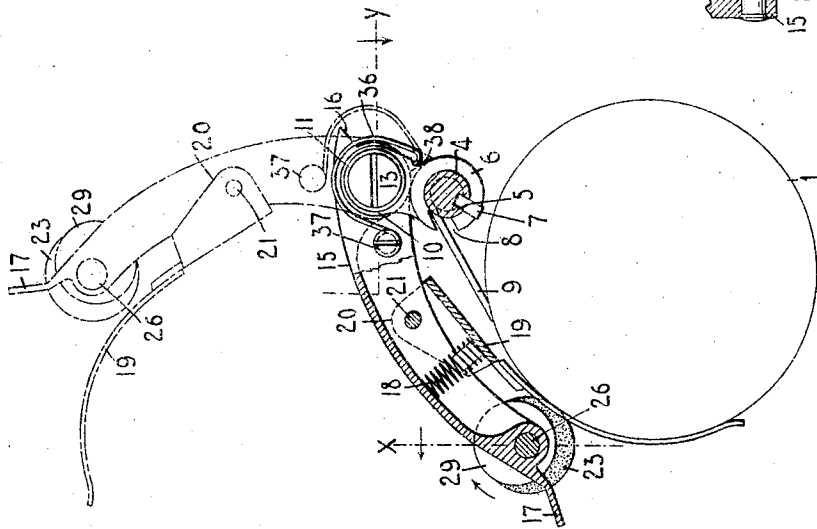


FIG. 6.

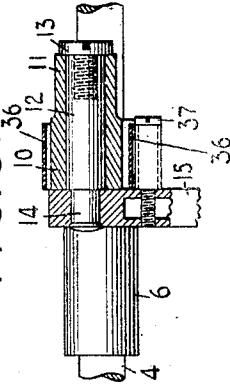
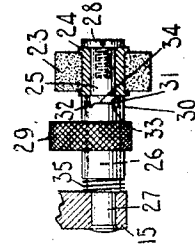


FIG. 5.



WITNESSES:

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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.

996,809.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed May 26, 1910. Serial No. 563,571.

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 more especially to that class of paper guiding, feeding and controlling contrivances or devices which are commonly termed "paper fingers."

The 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.

In the accompanying drawings, Figure 1 is a front elevation of the platen and platen carrier of a Monarch typewriting machine embodying my invention, two forms of the invention being shown in said figure. Fig. 2 is an enlarged fragmentary front elevation and partly in vertical section, of the left-hand paper finger in Fig. 1. Fig. 3 is a side view partly in section of the right-hand paper finger of Fig. 1, together with the mounting of said paper finger, the platen being diagrammatically illustrated. Fig. 4 is a side view of the paper finger shown in Fig. 3 but looked at from the opposite end of the platen. Fig. 5 is a vertical sectional view taken on a plane represented by the dotted line *x* in Fig. 3 and looking in the direction of the arrow at said line. Fig. 6 is a top view partly in horizontal section, the section being taken on a plane represented by the dotted line *y* in Fig. 3 and looking in the direction of the arrow at said line.

In the drawings, 1 designates a cylindrical platen supported on an axle 2 having bearings in the end bars 3 of a platen frame or carrier. A rod or bar 4 extends longitudinally of the platen above the same and is supported at its ends on the end bars 3. Said bar is formed at its under side with a longitudinally extending groove 5.

The rod 4 provides a support for one or more paper controlling contrivances or paper fingers. Two of such contrivances are shown in Fig. 1, arranged to cooperate with

the opposite side margins of work sheets. These two contrivances differ somewhat in details of construction, the right-hand contrivance, now to be described, being the preferred form of my invention. Said contrivance comprises a block, sleeve or hub 6 which is mounted on the rod 4 and is slidable therealong. A tongue or feather 7 is secured within the bore of the slidable member or sleeve 6 and engages the groove 5, thus preventing rotary movement of the sleeve on the rod 4. The sleeve 6 is provided with a longitudinally extending slot 8 through which the usual erasing plate or shelf plate 9 projects from the rod 4, the construction being such that said erasing shelf does not prevent slidable movements of the sleeve along the rod. Integral with and rising from the sleeve 6 at its outer or right-hand end is a lug 10 having a lateral extension 11. The lug and its extension are bored out to receive a pivot pin 12, the construction of which is best shown in Fig. 6. A headed screw 13 secured in the right-hand end of the pin 12 prevents accidental displacement thereof in one direction. The inner or left-hand end of the pin 12 is reduced as indicated at 14 and carries an arm or support 15 which curves forward and downward over the top of the platen 1. The end of the reduced portion 14 is spread or upset so as to clamp the arm 15 against the shoulder formed on the pin 12 between the body portion thereof and the reduced end 14. The pin 12 and arm 15 are thus fixed together, the pin providing a pivot for the arm whereby it may be turned on the bearing 10, 11 and about the longitudinal axis of the pin 12 as a pivotal center.

The rear end of the arm 15 terminates behind the pin 12 in a lug or tail 16. The forward end of the arm terminates in a finger piece 17. The under face of the arm 15 is slotted and provides a housing for a coiled spring 18, said spring cooperating with a guide finger 19 having ears 20 embracing the arm 15 and pivoted at 21 thereto. The spring 18 tends to swing the guide finger 19 away from the arm 15. The guide finger 19 as shown in Fig. 1 is off-set laterally inward and the off-set portion is formed with a rectangular opening or slot 22. Through this opening is adapted to project a pressure roll 23 so that as the paper is fed upward between the platen and the guide finger 19, 110

the pressure roll may act on the paper in co-operation with the platen. The mounting of the pressure roll 23 is best shown in Fig. 5 which is a rear view. Said roll is preferably of rubber or the like and is carried by a flanged hub 24 which bears on the left-hand reduced end portion 25 of a pin 26. The opposite end of the pin 26 is reduced as indicated at 27 and secured fixedly to the lower end portion of the arm or support 15. A headed screw 28 is secured in the end of the reduced portion 25 and prevents displacement of the roll 23 while permitting the same to turn freely on its axis.

For the purpose of holding the pressure roll 23 out of operation at pleasure without affecting the operation of the guide finger 19, I provide devices comprising a disk 29 having a knurled periphery and secured eccentrically to a rotary and slidable sleeve or hub 30 which bears on the pin 26 and is arranged between the arm 15 and the hub 24. This disk or eccentric device 29 is adapted to cooperate with the face of the guide 19 at one side of the slot 22. In order to set and maintain the eccentric device 29 in either operative or inoperative position, detent devices are provided comprising a small pin 31 projecting radially from the pin 26 and cooperating with depressions 32 and 33 formed at the opposite ends of a notch 34 cut in one end of the sleeve 30. A spring 35 coiled around the pin 26 cooperates with the opposite end of the sleeve 30, being confined between said sleeve and the arm 15. Said spring presses the sleeve 30 toward the right and maintains one or another of the depressions 32 and 33 in engagement with the detent pin 31. When the depression 33 engages with the pin 31 as shown in Fig. 5, the eccentric device 29 is maintained in inoperative position, as shown in Fig. 3. In this position the narrow radius of the eccentric is opposite the surface of the cooperating part 19 and the eccentric does not touch said part. Consequently the pressure roll 23 is not raised but protrudes down through the opening 22 and cooperates with the platen or the paper thereon. When, however, the eccentric device is turned rearward or in the direction of the arrow in Fig. 3, the depression 33 is disengaged from the pin 31 and the eccentric 29 and sleeve 30 may be turned until the depression 32 engages with said pin, at which time the eccentric device will be in the position shown in Fig. 4. From this figure it will be noted that the periphery of the eccentric is in contact with the upper face of the guide finger 19 and the eccentric is of such radius at the point of contact that it operates to hold the pressure roll 23 up out of contact with the platen and in inoperative position.

The paper finger contrivance may be swung upward entirely out of use by lifting

against the finger piece 17, swinging the parts to the position shown by dotted lines in Fig. 3. The upward and rearward swing of the arm 15 and the parts supported thereon is limited by the contact of the tail 16 with the rear of the sleeve 6. In order to hold the arm 15 either down in operative or up in inoperative position, I provide a spring contrivance comprising a bow or leaf spring 36 which is curved so as to hug or partly embrace the lug 10 and has its forward end secured to a pin 37 projecting laterally from the arm 15. The rear end of the spring 36 is hooked into a transverse groove or slot 38 cut in the rear side of the lug 10. The inherent tension of the spring 36 is such that its ends tend constantly to approach nearer each other.

By reference to Fig. 3 it will be noted that when the paper finger is in operative position an imaginary line joining the ends of the spring 36 will be below the pivotal center about which the arm 15 turns. In other words, the tendency of the spring 36 is to swing the arm downward and maintain the pressure rolls 23 and guide finger 19 in co-operation with the platen. It will be understood that the spring 36 being stronger than the coiled spring 18 will compress the latter sufficiently to enable the pressure roll 23 to cooperate properly with the platen and to maintain the guide finger 19 under proper pressure. When the paper finger is swung upward out of operation to the dotted line position of Fig. 3, the spring 36 will be expanded or spread and an imaginary line joining its ends will cross the dead center position to the opposite side of the pivotal center of the arm 15 so that the pressure of the spring 36 will be changed and it will tend to hold the tail 16 against the lug 10. It will be observed that the spring 36 is double acting; that is to say, at one time it tends to turn the paper finger devices in one direction and at another time to turn them in the opposite direction.

It will be apparent that when it is desired to adjust the eccentric device 29 it is preferable to raise the paper finger temporarily out of operation as by so doing the spring 18 will move the guide finger 19 away from the eccentric 29, thus enabling the eccentric to be turned freely to its operative position without contacting with the arm 19. The parts 29 and 19 will engage only after the restoration of the paper feeding devices to normal position and the compression of the spring 18 by the spring 36.

In Fig. 2 and at the left-hand of Fig. 1 I have shown a paper finger contrivance differing in some respects from that hereinbefore described. In the modified construction the sleeve 6, pivoted arm 15, spring pressed guide finger 19, leaf spring 36 and associate parts are or may be substantially the same as

the corresponding parts of the preferred form above described. In place, however, of the eccentric contrivance for raising the pressure roll out of operation, I provide a pressure roll 39 carried by a flanged hub 40 which is slidably mounted on a lateral pin 41 fixed to the lower end of the arm 15. A coiled spring 42 surrounds the pin 41 to the left of the pressure roll 39 and surrounds also an extension 40^a of the hub 40, said spring bearing against the left-hand flange of said hub and maintaining said hub in contact with the head of a limiting screw 43. The parts are so associated that at this time the pressure roll 39 is opposite the opening 22 in the guide finger 19 and may cooperate with the platen therethrough. To the left of the opening 22 the upper surface of the guide finger is knurled or roughened as indicated at 44. When the guide finger and supporting arm are swung apart, the pressure roll 39 may readily be slid leftward on the pin 41, compressing the spring 42 and bringing said pressure roll over the roughened surface 44 so that when the paper finger device is returned to operative position against the platen the roll 39 will engage with the roughened surface 44 and will be held there-against.

It will be observed that in some respects the embodiments of my invention herein shown resemble the paper finger contrivances of the Monarch typewriter. However, the Monarch paper fingers are not as a whole swingable out of operation transversely of the platen, whereas by providing a spring pressed joint between the slidable support or member movable lengthwise of the platen and the arm carrying the paper controlling devices, I am enabled to throw said arm back and up at pleasure, the leaf or bow spring holding it up and maintaining the guide finger and pressure roll out of operation. Furthermore, I provide for positively holding the pressure roll locked or set out of operation by making use of the guide finger as a stop to this end. In one construction an eccentric or cam engages with the guide finger to lock out the pressure roll, while in another construction the pressure roll itself engages with the guide finger for this purpose.

By hinging the arm 15 to a sleeve or support which can slide but cannot turn on the rod 4, I am enabled to retain the erasing plate 9 and at the same time to provide a paper finger construction that can be swung up out of the way when desired, as shown in broken lines in Fig. 3.

Various changes may be made without departing from the 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 platen carrier, a block

or hub slidable on said platen carrier, an arm pivotally connected with said block or hub, a double acting spring connected to said block or hub and to said arm and operative at different times to impel said arm in opposite directions, a guide finger pivotally connected to said arm, and a second spring between said guide finger and said arm.

2. In a typewriting machine, the combination of a platen, a platen carrier, a block or hub adjustable thereon, an arm pivoted to said block to swing transversely of said platen, a spring connected to said block and to said arm, means for limiting the movement of said arm toward the platen, a paper controlling device mounted on said arm, and a second spring between said device and said arm, said arm being movable backward away from the upper face of the platen to a position in which the paper controlling device carried by said arm is inoperative.

3. In a typewriting machine, the combination of a platen, a platen carrier provided with a supporting rod or bar, a sleeve or hub slidable along said rod, means for preventing rotation of said sleeve on said rod, an arm pivotally connected with said sleeve, a spring connected to said sleeve and to said arm, means for limiting the movement of said arm toward the platen, a guide finger pivotally connected to said arm, and a second spring between said guide finger and said arm, said arm being constructed to swing away from the platen to render said guide finger inoperative.

4. In a typewriting machine, the combination of a platen, a platen carrier, a supporting rod or bar thereon, a sleeve or hub slidable along said rod, means for preventing rotation of said sleeve on said rod, an arm pivotally connected with said sleeve and adapted to swing transversely of the platen, a spring connected to said sleeve and to said arm, means for limiting the pivotal movement of said arm in both directions of its swing, said spring being operative to maintain said arm at the limit of its movement in both directions, a guide finger pivotally connected to said arm, and a second spring between said guide finger and said arm.

5. In a typewriting machine, the combination of a platen, a platen carrier, a rod thereon, a sleeve or hub slidable on said rod, an arm pivoted to said sleeve and swingable transversely of said platen, a paper controlling device carried by said arm, and a bow spring embracing said sleeve and having its ends connected respectively to said sleeve and to said arm, said spring operating in different positions of said arm to swing the same in opposite directions on its pivot.

6. In a typewriting machine, the combination of a platen, a platen carrier, a rod thereon, a sleeve or hub slidable on said rod,

an arm pivoted to said sleeve and swingable transversely of said platen, a spring-pressed guide finger carried by said arm, a pressure roll carried by said arm, and a spring connected with said arm and with said sleeve, said spring pressing said arm toward the platen when said finger and said pressure roll are in operative position and being adapted to hold said finger and said roll in inoperative position when said arm is swung away from said platen.

7. In a typewriting machine, the combination of a platen, a platen carrier, a rod on said platen carrier and extending lengthwise of the platen above the same, a sleeve slidable on said rod and provided with a lateral bearing, an arm having a lateral pin engaging in said bearing, said arm curving downward and forward over the platen, a bow spring embracing said bearing and connected to said arm, a guide finger pivoted to said arm and off-set inwardly therefrom, a second spring between said guide finger and said arm, and a pressure roll on said arm.

8. In a typewriting machine, a paper controlling contrivance comprising a guide finger and also a pressure roll, said guide finger and said pressure roll being independently movable, said roll being movable to abnormal or inoperative position and said guide finger serving at will as a stop to prevent the return of said roll to operative position.

9. In a typewriting machine, a paper controlling contrivance comprising a guide finger and also a pressure roll normally occupying an opening in said guide finger but adapted to be moved to an inoperative position, the face of said guide finger at one side of said pressure roll serving at will as a stop to prevent the return of said roll to operative position.

10. In a typewriting machine, a paper finger contrivance comprising a supporting arm, a spring-pressed guide finger thereon provided with a slot, a pressure roll supported on said arm independently of said guide finger and adapted to cooperate with the platen, and a device cooperative with said guide finger to positively hold said pressure roll in inoperative position.

11. In a typewriting machine, a paper finger contrivance comprising a supporting arm, a spring-pressed guide finger thereon provided with a slot, a pressure roll supported on said arm independently of said guide finger and adapted to cooperate with the platen, and a device cooperative with said guide finger to positively hold said pressure roll in inoperative position, said device comprising an eccentric co-axial with said pressure roll.

12. In a typewriting machine, a paper finger contrivance comprising a supporting

arm, a spring pressed guide finger thereon provided with a slot, a pin extending laterally from said arm, a pressure roll rotatable on said pin and registering with said slot, and an eccentric device rotatable on said pin and cooperative with said guide finger to hold said pressure roll out of operation.

13. In a typewriting machine, a paper finger contrivance comprising a supporting arm, a spring pressed guide finger thereon provided with a slot, a pin extending laterally from said arm, a pressure roll rotatable on said pin and registering with said slot, an eccentric device rotatable on said pin and cooperative with said guide finger to hold said pressure roll out of operation, and detent devices for holding said eccentric device in one or another of a plurality of predetermined positions.

14. In a typewriting machine, a paper finger contrivance comprising a supporting arm, a spring pressed guide finger thereon provided with a slot, a pin extending laterally from said arm, a pressure roll rotatable on said pin and registering with said slot, an eccentric device rotatable on said pin and cooperative with said guide finger to hold said pressure roll out of operation, and detent devices for holding said eccentric device in one or another of a plurality of predetermined positions, said detent devices comprising a pin projecting radially from said first named pin and cooperating with depressions in said eccentric device.

15. In a typewriting machine, a paper finger contrivance comprising a guide finger, a pressure roll, and an eccentric cooperating with said guide finger to hold said pressure roll positively out of operation when desired.

16. In a typewriting machine, the combination of a platen, a platen frame comprising a rod lying above and parallel with said platen, an erasing plate carried by said rod, a sleeve or hub mounted on said rod with freedom to be slid along the rod but restrained from turning on the rod, an arm hinged to said sleeve and normally extending forward over the platen but capable of being turned up to inoperative position, and a paper guide hinged to said arm and spring-pressed toward the platen.

17. In a typewriting machine, the combination of a platen, a platen frame provided with a rod arranged above the platen and extending longitudinally thereof, an erasing plate mounted on said rod, a member slidable on said rod but restrained from turning thereon, an arm pivoted to said sleeve above said erasing plate and normally extending forward over said erasing plate, and a paper controlling device supported on said rod and normally maintained in spring pressed cooperation with the front side of

said platen, said device being movable independently of said arm and said arm being movable upward on its pivot and transversely of said erasing plate, said device being rendered inoperative by the upward movement of said arm.

Signed at Syracuse, in the county of

Onondaga, and State of New York, this 24th day of May, A. D. 1910.

HERBERT H. STEELE.

Witnesses:

ANNA T. LYNCH,
BESSIE G. KELLEY.