July 19, 1927. 1,636,129

G. G. GOING

TYPEWRITING MACHINE

Filed Jan. 14. 1925

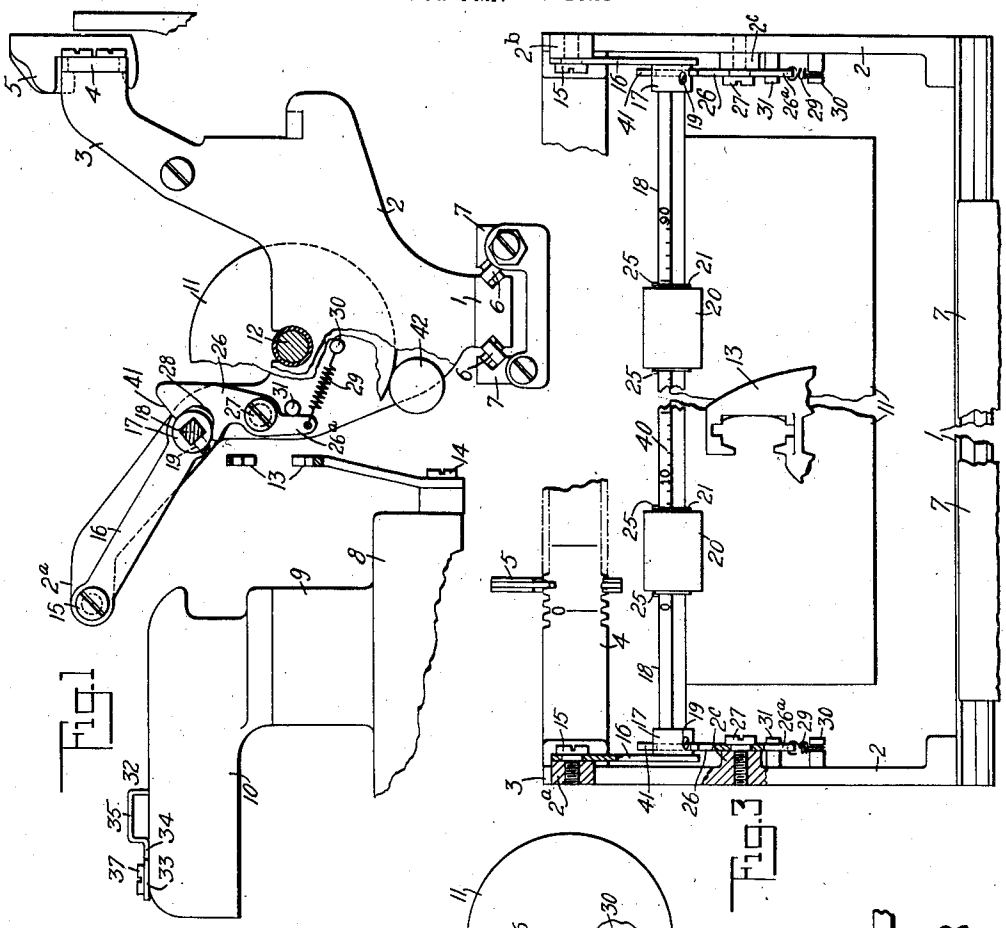


Fig. 1

Fig. 3

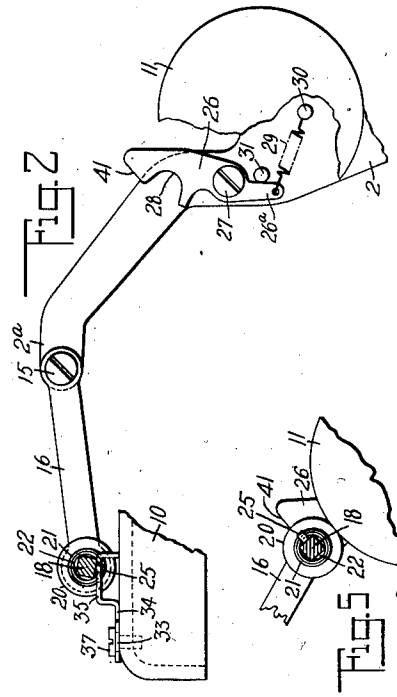


Fig. 2

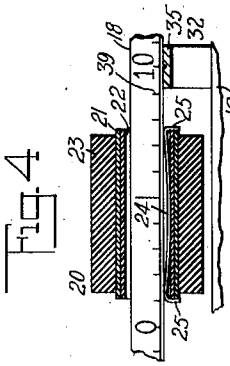


Fig. 4

Fig. 5

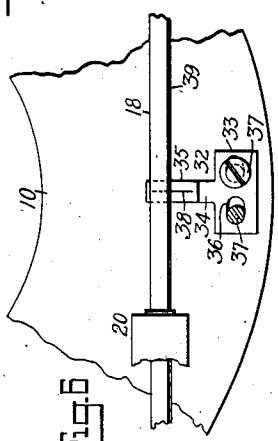


Fig. 6

WITNESSES

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UNITED STATES PATENT OFFICE.

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TYPEWRITING MACHINE.

Application filed January 14, 1925. Serial No. 2,422.

My invention relates to paper feeding and controlling mechanism for typewriting machines, and its chief object is to provide a new and improved paper bail for such machines.

To the above and other ends which will hereinafter appear, 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 which illustrate the preferred form of my invention as applied to a No. 6 noiseless typewriting machine,

Figure 1 is a fragmentary end view partly in section showing the carriage of said machine with my invention applied thereto.

Figure 2 is a view corresponding to Fig. 1 but omitting some of the parts shown therein and illustrating the bail in its forward or abnormal position.

Figure 3 is a fragmentary front elevation of the carriage with my invention applied thereto, parts being shown in section.

Figure 4 is an enlarged longitudinal sectional view of one of the bail pressure-rolls and its mounting.

Figure 5 is a fragmentary view illustrating one of the pressure rolls of the bail in contact with the platen.

Figure 6 is a fragmentary plan view illustrating the bail bar resting on its stationary support.

As appears from Figs. 1 and 2 of the drawing, the traveling platen carriage of the machine comprises a cross bar 1 grooved at its front and rear faces and having end bars 2 secured to its ends, said end bars being formed with rearward extensions 3 which are connected or tied together by a cross bar 4 that is preferably toothed at its top and bottom edges and serves as a column stop bar, one of the column stops 5 being shown mounted on said bar 4. The grooved carriage bar 1 co-operates through antifriction rollers 6 with an oppositely grooved trough or track member 7 secured to the frame of the machine. Said frame includes a top plate 8 having short upstanding portions 9 on which is screwed or otherwise secured a guide member 10 for the type bars, which are not herein shown. The type bars are adapted to be moved rearward at the type strokes to co-operate with the front face of a rotary platen 11 having axle portions 12 which bear on the end bars 2. The type bars co-operate with a center guide 13 which is secured by screws 14 to the top plate 8 and extends upward at the front side of the platen. It is to be understood that the parts heretofore described are not claimed herein since they are not per se a part of the present invention.

The left-hand and right-hand end bars are formed or provided with integral extensions numbered respectively 2^a and 2^b, these extensions projecting upward and forward, and terminating above and well in front of the platen. Their terminations or end portions receive shouldered screws 15 which serve as pivots for my new and improved paper bail. Said paper bail comprises crank arms or side arms 16 which are pivoted on the shouldered portions of the screw 15 and at their free ends are formed with inwardly projecting hub portions 17 which are perforated to receive the end portions of a cross bar 18, said cross bar being square or rectangular in cross section and fitting into the hubs 17, being secured in rigid relation with the arms 16 by set screws 19 which are threaded into the hubs 17 and abut against the bar 18. There is thus provided a rigid frame or bail member 16—18. Adjustably mounted on the bar 18 are a plurality of pressure rolls 20, two of said rolls being employed in the present instance. As best shown in Fig. 4, each roll comprises a pair of concentric sleeves 21 and 22, one fitting rotatably upon the other. Fitted on the outer sleeve 21 is a sheath or covering 23 of rubber or suitable composition. The pressure roll 20 is maintained in adjusted position along the bar 18 by a friction spring device which preferably is in the form of a flat spring 24 arranged inside the inner sleeve 22. The spring is slightly curved or bowed and its inherent tension is such that it tends to press the contiguous portions of the bar and the sleeve apart, sufficient friction being caused thereby to prevent accidental movement of the pressure roll device 20 lengthwise of the bar 18. The end portions 25 of the spring 24 project outside the sleeves and are turned or bent outwardly at right angles, being of sufficient length to extend beyond the periphery of the outer sleeve 21. The two sleeves 21 and 22 are so confined between the pro-

jections 25 that endwise relative displacement of the sleeves is prevented, although the outer sleeve may turn freely on the inner sleeve to afford relative turning movement between the pressure roll and the platen. In other words, when the platen is turned to feed the paper, the sleeves 21 with their sheaths 23 turn on the sleeves 22 which remain stationary on the bail. When the bail comprising the cross rod or bar 18 and the end portions or crank arms 16 is in normal position as illustrated in Figs. 1, 3 and 5, the pressure rolls 20 carried by said bail are in co-operative engagement or contact with the platen or the paper thereon at the front upper side of the platen above the printing line as appears from Fig. 5. In this position the crank arms 16 extend downward and rearward from their pivots 15 as clearly shown in Fig. 1.

The bail is preferably maintained in its normal or operative position by latch members or devices 26 which are pivoted on headed shouldered screws 27 that are threaded into bosses or enlargements 2c on the inner faces of the end bars 2. The latch devices 26 are vertically disposed, the portion of each latch above its pivot 27 being formed with a slot or cut-out indicated at 28 which engages and cooperates with the bail to retain it in operative position. Preferably the slots 28 co-operate with the end portions of the bar 18 and directly with the enlargements or hubs 17. Below its pivot 27 each latch is formed with a tail portion 26a to which is attached the forward end of a draw spring 29, each draw spring being anchored at the rear end to a pin 30 projecting laterally inward from the end bar 2. The spring 29 constantly presses the upper portion of the latch forward and normally maintains it in locking engagement with the bail. A stop pin 31 projecting inward from the end bar 2 co-operates with the tail portion 26a to limit the swinging movement of the latch under spring pressure.

The bail may readily be unlatched or freed from control of the spring pressed devices 26 and swung upward and forward fully to clear the surface of the platen by pulling the cross bar or either of the end arms. When swung forward, the bail may be brought to a substantially horizontal position as illustrated in Fig. 2 where the arms 16 are shown extending forward from their pivots 15 and the cross bar 18 as resting on a supporting device 32. Said device is preferably made of a single piece of sheet metal and comprises a cross portion 33 and a stem 34 which extends rearward and is bent at 35 to provide an inverted U or support proper for the cross bar 18. The portion 33 is formed with a pair of elongated holes indicated at 36 which receive headed screws 37 whereby the device 32 is adjustably secured to the part 10. The top of the U-portion 35 is scored or lined as indicated at 38 to provide an indicator or pointer. This pointer 38 co-operates with a scale indicated at 39 which is formed on that face of the bar 18 and which is substantilly vertical or facing the operator when the bail is forward in the abnormal position of Figs. 2 and 6. The opposite face of the cross bar is formed or provided with a scale indicated at 40, said scale 40 being in view of the operator only when the bail is in the normal or operative position shown in Figs. 1, 3 and 5. The scale 40 co-operates with the platen to serve as a platen scale, while the scale 39 co-operates with the pointer 38 to serve as a carriage scale. It will be observed that these scales are alternatively usable, that is, when the platen scale 40 is set for use, the carriage scale is covered from view; whereas when the carriage scale 39 is in position for co-operation with its pointer the platen scale is concealed. The scales are brought into and out of use by movement of the scale bar, or in other words by swinging movements of the bail. The member or device 32 combines the functions of a pointer or indicator and of a bail support. On returning or swinging the bail back to engage with the platen, the hub 17 will strike inclined or cam edges 41 at the tops of the latches 26, forcing said latches back against their springs 29 far enough to permit the bail rolls to return to normal, after which the latches will snap back and automatically re-latch the bail.

By my invention there is provided a simple and effective paper bail which efficiently controls and guides the paper or work sheets above the printing line on the platen, the paper below the printing line being under the control of suitable feed roller devices, indicated at 42 in Fig. 1. No paper fingers are shown herein and the bail is found in practice efficiently to perform the necessary controlling and guiding functions without the use of paper fingers, but if desired paper fingers may be employed in addition to the bail.

It will be seen that the latches 26 not only hold the bail but also operate when paper is inserted to transmit the effect of the springs 29 to the bail rolls 20. This will be clearly understood from a consideration of Figs. 1 and 5, from which it will be seen that the insertion of paper between the platen 11 and the rolls 20 will tend to move the rolls upward and slightly rearward around the center 15, causing the hubs or enlargements 17 acting against the upper sides of the notches 28 to tend to swing the latches 26 rearward about their pivots 27. The tail portions 26a will be swung forward to a corresponding extent, thereby stretching the connected springs 29, and said springs reacting on the

latches will cause the upper portions thereof to press downward against the hubs 17 and the bail rolls 20. In other words, the spring latches perform two functions, that is, they hold the bail, and also transmit spring pressure to it and to the paper controlled thereby.

Various changes may be made without departing from 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 carriage, a paper bail mounted thereon, latch devices for maintaining said bail as a whole in normal position, and springs for said devices, said devices being releasable in opposition to said springs to afford movement of said bail to an abnormal inoperative position, said devices also transmitting the pressure of said springs to said paper bail to render it operative on the platen.

2. In a typewriting machine, the combination of a platen; a carriage; a paper bail comprising a rod or bar, rolls mounted on said bar, and means pivotally supporting said bar on said carriage; and a pair of spring-pressed latches pivoted on said carriage and co-operative with said rod or bar near its ends to maintain both said means and also said rolls in normal relationship with the platen, the bail being releasable from said latches so that it may be swung away from the platen to inoperative position, said latches normally being effective to transmit spring-pressure to said paper bail.

3. In a typewriting machine, the combination of a platen; a carriage comprising end bars provided with forwardly extending upwardly projecting rigid arms or extensions; a paper bail comprising crank arms pivoted directly to the end extensions of the bars of the carriage and also comprising a rod carrying pressure rolls, said rod being mounted on the crank arms and having bosses or extensions at its end portions, said crank arms extending downward and rearward from their pivots and the rolls co-operating with the platen above the printing line; and spring latching devices on the carriage engaging said bosses to maintain said crank arms in normal position, the bail being releasable so that it may be swung forward away from the platen to a substantially horizontal position.

4. In a typewriting machine, the combination of a platen, a platen carriage, a paper bail thereon, said bail comprising a rod or bar which also serves as a scale bar, and a stationary pointer co-operative with said scale bar, said pointer being adjustably mounted on the frame of the machine.

5. In a typewriting machine, the combination of a platen, a platen carriage, a paper bail thereon, said bail comprising a rod or bar which also serves as a scale bar, said scale bar serving as a platen scale when the bail is in normal position, and a stationary pointer with which said scale bar is adapted to co-operate when the bail is moved away from the platen to abnormal position.

6. In a typewriting machine, the combination of a platen, a platen carriage, a paper bail thereon, said bail comprising a rod or bar which is provided with a plurality of scales and serves as a scale bar, and a stationary pointer device co-operative with the scale bar when the bail is swung to abnormal position, said pointer device serving also to support the bail.

7. In a typewriting machine, the combination of a platen, a platen carriage, a paper bail thereon, and a stationary support on which said bail is adapted to rest when in abnormal position.

8. In a typewriting machine, the combination of a platen, a carriage, and a scale bar provided with two scales, said bar being movably mounted on said carriage, and normally co-operative with said platen, said bar being also adapted to serve as a scale bar when moved to abnormal position.

9. In a typewriting machine, the combination of a platen, a carriage, and a scale bar rectangular in cross section and mounted on the carriage, said scale bar being provided with two scales on opposite faces of the bar, one scale normally co-operating with the platen and serving as a platen scale while the second scale is concealed, the bar being movable to abnormal position where the second scale is exposed for use.

10. In a typewriting machine, the combination of a platen; a carriage; a paper bail comprising a bar, and crank arms pivoted on the carriage to which the ends of said bar are secured; a pair of slotted latches pivoted on the carriage; and springs connected to said latches and normally maintaining their slots engaged with the hub portions of said crank arms.

11. In a typewriting machine, the combination of a platen, a carriage, a paper bail mounted thereon, a pair of slotted latches also mounted on the carriage, and springs connected to said latches and normally maintaining their slots in locking engagement with said bail, said latches being adapted to release said bail and being provided with cams whereby they may be forced back by said bail so that they may automatically relatch said bail.

Signed at Middletown, in the county of Middlesex and State of Connecticut this 12th day of January, A. D. 1925.

GEORGE G. GOING.