

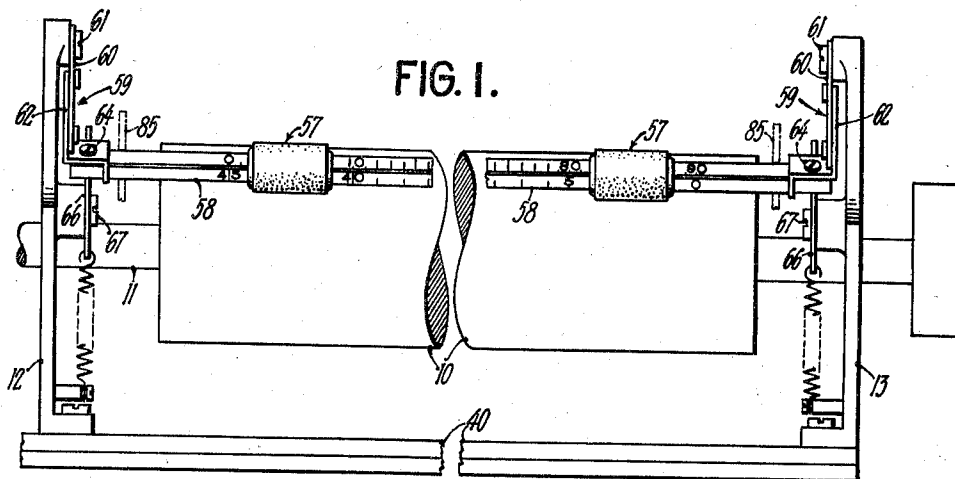
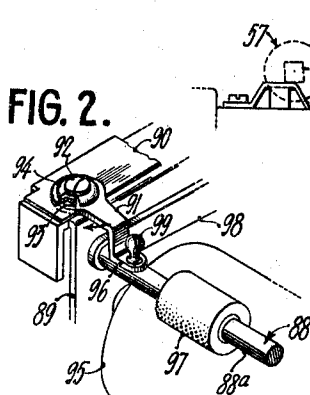
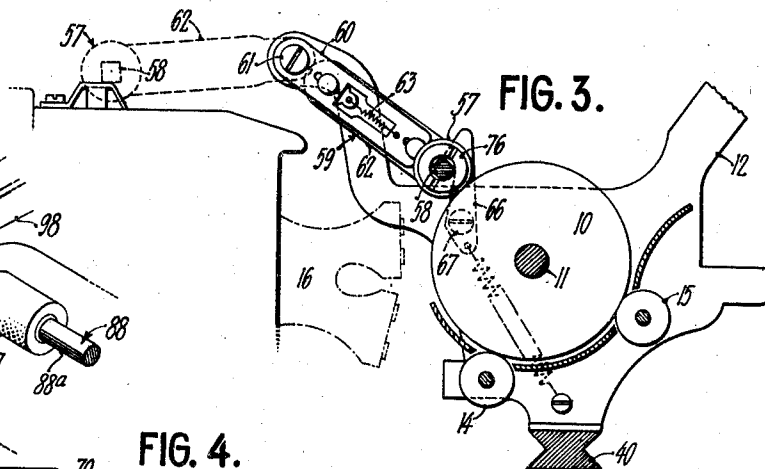
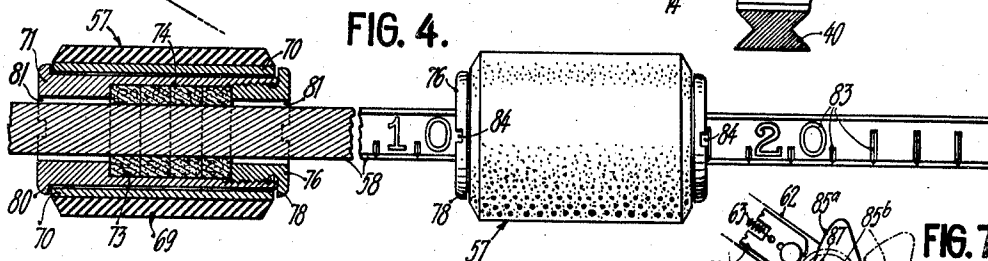
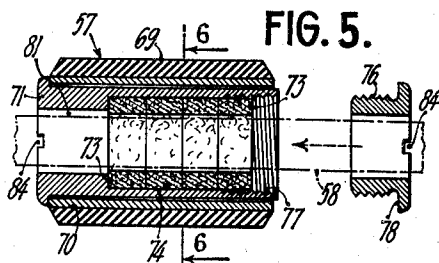
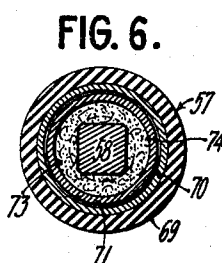
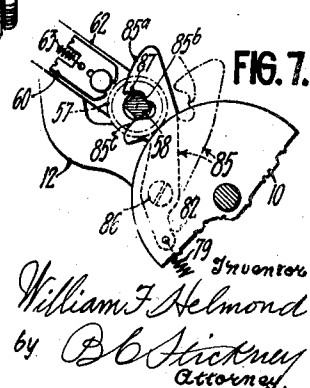
June 27, 1939.

W. F. HELMOND

2,163,944

TYPEWRITING MACHINE

Original Filed Aug. 15, 1935



UNITED STATES PATENT OFFICE

2,163,944

TYPEWRITING MACHINE

William F. Helmond, West Hartford, Conn., assignor to Underwood Elliott Fisher Company, New York, N. Y., a corporation of Delaware

Original application August 15, 1935, Serial No. 36,272. Divided and this application October 29, 1936, Serial No. 108,130

3 Claims. (Cl. 197—138)

This invention relates to the paper-feed or pressure rolls that are associated with the platen-roll of a typewriter.

Feed-rolls at the top of the platen are mounted upon a rod along which they are adjustable in that they are manually shiftable at will to different positions along the platen, and a feature of the invention resides in improved means for mounting the top feed-rolls upon said rod and for yieldably detenting them thereon so that they will of themselves stay in the positions to which they are adjusted.

The top feed-roll-mounting rod is movable to withdraw the top feed-rolls from the platen and to return them, and novel locking means are herein disclosed for maintaining the top feed-rolls in operative position to direct a stiff work-sheet around the platen.

The means for mounting a top feed-roll on its supporting rod or spindle include a feed-roll-journaling sleeve having provision for frictionally gripping the rod through the medium of soft, smoothly slidable material, such as cloth, soft leather or felt, for example. Felt is preferably used. The felt grip obviates marring the finish of the rod when the feed-roll is slidably adjusted along the latter. It is feasible therefore to use a black or other finish on which marks, forming a feed-roll-setting scale, will stand out with pleasing legibility. The use of the felt grip also renders the sliding of the feed-roll along the rod pleasingly smooth and quiet, and also conduces to other noise-silencing effects. The felt grip moreover yieldably but stably detents the feed-roll in its adjusted position on the rod. The felt grip is yieldable in the sense that it permits the feed roll to be shifted along the rod by ordinary manual force such as is usually applied by the typist in adjusting top feed rolls along the platen but the grip is nevertheless firm enough of itself to make the feed roll stay in the position to which it is adjusted. The felt grip may be formed by means of a lining packed between the bore of the sleeve and the top feed-roll-supporting rod and adapted to shift with the shift of the feed roll. To this end the felt packing may consist of a number of felt washers packed face to face within said bore and compressed, and thereby contracted collectively endwise of the sleeve, so that at their center holes the individual washers are forced against and thereby frictionally grip the rod. Said rod is preferably of square cross-section so that in co-operation with the felt packing forced against the flat faces of the rod, the sleeve is keyed against rotation,

it being understood that the feed-roll rotates upon the periphery of the sleeve.

This application is a division of my application Serial No. 36,272, filed August 15, 1935, now Patent No. 2,134,821, dated November 1, 1938.

Other features and advantages will herein-after appear.

In the accompanying drawing,

Figure 1 is a front view representing the platen and the top feed-roll-bail structure of an Underwood Noiseless typewriter.

Figure 2 is a perspective illustrating a locking device for holding down the top feed-roll-bail employed in the standard Underwood machine.

Figure 3 is a sectional side view of the platen and the top feed-roll structure seen in Figure 1.

Figure 4 shows on an enlarged scale the top feed-rolls and supporting rod of Figure 1, one of the feed-rolls being shown in section to show details of mounting the same upon said supporting rod.

Figure 5 is a view similar to Figure 4 showing a packing gland removed for insertion of the felt packing.

Figure 6 is a view of a section on the plane 6—6 of Figure 5.

Figure 7 is a fragmentary side view showing the application of a novel hold-down device for the top feed-roll bail of Figure 1.

The usual Underwood platen 10 is journaled by axle 11 in a platen-frame comprising ends 12 and 13, and a base 40. Front and rear feed-rolls 14 and 15, Figure 3, run upon the bottom of the platen. Type-bars 16 strike the platen 10.

Top feed-rolls 57, Figure 1, are adjustable on cross-rod 58 to different positions along the platen 10. Figures 1 and 3 show said cross-rod 58 supported by side arms 59 of known construction, each side arm including a part 60 pivoted to the platen-frame end 12 or 13 at 61, and a part 62 connected to said pivoted part 60 for sliding endwise of the latter under the urging of a spring 63, which thus acts to press the top feed-rolls against the platen, the cross-rod 58 being attached at each of its end-portions, as at 64, to said spring-pressed part 62. Said arms 59 serve for swinging the top feed-rolls 57 between on and off positions indicated respectively by the full and dotted outlines, Figure 3. A spring-pressed detent 66, Figure 3, pivoted at 67 to each platen-frame end 12, 13, engages the top feed-roll bail 58, 59 for detenting the latter with the top feed-rolls in engagement with the platen.

Each top feed-roll 57 includes a jacket 69 hav-

ing a bushing 70 for rotating upon a sleeve 71 which is adjustable along the cross-rod 58. A packing of soft material, preferably felt, is made up of a number of felt washers 73 inserted face to face within a counterbore 74 of the journaling sleeve 71 and collectively compressed, by a plug or gland 76, screwed into thread 77 of said counterbore 74 after insertion of said washers 73. The gland 76 may be tightened by forcing its flange 78 against the end of the sleeve, Figure 4. Said flange 78 co-operates with sleeve flange 80 to retain the feed-roll endwise upon the journaling sleeve 71. The felt packing 73, as it is squeezed, and contracted endwise, by means of the gland 76 flows radially, and is therefore caused to embrace the cross-rod 58 with a firm grip which stably detents the sleeve 71, with its feed-roll 57, at its adjusted position upon said cross-rod 58. The division of the felt packing into a number of washers 73 simplifies the manufacture and application of said packing. By its radial flow, incident to its endwise contraction by compression, the packing may be molded to the cross-sectional form of the cross-rod 58, and the latter may therefore act in conjunction with said packing to key said journaling sleeve 71 against rotation. For this purpose the cross-rod 58 may be of square cross-section, and the packing of felt washers 73 will be molded or impacted against the flat faces of the square cross-rod as indicated in Figure 6 when the packing is compressed. As indicated at 31, Figure 4, the felt packing acts to keep the bore of the sleeve 71 and its gland 76 clear of the cross-rod 58, so that nothing of the feed-roll structure touches said cross-rod except the soft felt packing 73; it being understood that the packing shifts along with the manual shift of the feed roll structure. The felt packing 73 thus serves to prevent mar-
 40 ring of the finish of the cross-rod 58, and it becomes practicable therefore to finish the cross-rod so that feed-roll-setting scale-markings 83 will stand out pleasingly legible. For example, the cross-rod 58 may be finished in black-nickel and the scale-markings 83 finished in white. The felt packing keeps the sleeve 71 from scuffing off the finish when the feed-roll 57 is moved along the rod, and being soft does not itself mar the finish. The felt packing 73 also prevents rattling of the sleeve 71 upon the cross-rod, and it also conduces to reducing the transmission of type-impact noises from the platen 18 to the platen-frame by way of the feed-roll bail 58, 59. Although the felt packing or grip 73 stably detents or stays the feed-roll 57 in any adjusted position, it also makes the forcible movement of said feed-roll along the cross-rod 58, as by the operator's fingers, feasible and pleasingly smooth. The detenting effect of the packing yields to permit the lateral movement of the feed roll structure by the fingers. Wrench notches 84, in the ends of the sleeve 71 and gland 76, are used for turning said gland relatively to said sleeve.

Figure 7 shows a novel catch 85, provided for holding the top feed-rolls 57 stably against the platen. Said catch is particularly useful when the top feed-rolls are applied to direct a stiff card around the curve of the platen. Without the stable holding feature afforded by said catch the tendency of the stiff card to straighten would tend to push the top feed-rolls away from the platen by overcoming the feed-roll pressure-springs 63 and by swinging the bail about its pivots 61. One of the novel catches 85 is provided at each side of the bail and is pivoted upon

a stud 86 provided in each of the platen-frame ends 12, 13. A holding edge 87 of the catch 85 may engage over the cross-rod 58, as seen in Figure 7, and may be shaped so that the line of reaction of said cross-rod thereagainst will pass substantially through the center of the pivot-stud 86 and thereby enable said catch to positively hold said cross-rod. The pivot-stud 86 may be located so that, as indicated in Figure 7, said holding edge 87 of the catch is inclined to the direction in which the endwise movable part 62 of the bail arm 59 would yield; and thereby the top feed-rolls are prevented from yielding in such direction. Said location of the pivot-stud 86 may furthermore place said holding edge 87 of the catch 85 at an angle with the platen surface so that the catch 85 will act to prevent the bail-springs 63 from pushing the feed-rolls 57, clockwise of Figure 7, around the platen. The catches 85 may be swung around their pivot-studs 86 to the dotted-line position, Figure 7, for permitting the top feed-rolls to be swung off the platen. A spring 79 may hold each catch 85 against a stop 82, when the top feed-rolls are cast off. Upon returning the top feed-rolls to the platen, the cross-rod 58 engages a cam-edge 85^a of each catch to push the latter aside until the holding edge 87 snaps over the cross-rod. The catch is shown with a corner 85^b resting against the face of the cross-rod 58. A stop-nose 85^c of the catch arrests downward movement of the bail at return of the feed-rolls to the platen. The novel catch may be engaged over the cross-rod 58 at a point adjacent the inner face of the bail-arm part 62, as indicated by the dotted outline 85 in Figure 1.

Figure 2 shows a modified hold-down device for use with a top feed-roll bail 88, such as is employed in the standard Underwood typewriter. In said latter machine each platen-frame end 89 has a detachable mask or cover 90. A manually swingable bail-holding arm 91 may be formed as in Figure 2 to overlie the mask 90 so that a pivot-screw 92 about which said arm is turned also serves to attach the mask 90 to the platen-frame end 89. A spacer 93 seats the holding-arm 91 upon said mask, and a spring-washer 94 under the head of the pivot-screw 92 causes the holding arm 91 to be frictionally detented in its effective position, indicated in Figure 2, or in the cast-off position to which said holding arm 91 may be turned in the direction of the arrow, Figure 2, preparatory to swinging the top feed-roll bail away from the platen. A toe 96 of said holding arm 91 opposes the feed-roll rod 88^a of the bail 88 and thereby holds a top feed-roll 97 against displacement from the platen 95, as indicated in Figure 2, which represents the bail side arms 98 extending toward a pivot-axis behind the platen. One of the bail-holding arms 91 may be applied at each end of the platen-frame. The holding arm 91 may be manipulated by means of a finger-piece 99.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:
 1. In a typing machine having a platen; a supporting rod, a feed roll cooperative with said platen, a sleeve within said feed roll, the periphery of said sleeve forming a journal for said feed roll, said sleeve having a bore forming an annular recess between the rod and sleeve, said bore being reduced, at axially spaced portions, toward the diameter of the rod to form opposite end

5 shoulders for the recess, and a packing of soft material compacted in said recess to grip the rod frictionally to detent said sleeve on said rod, said packing detenting said sleeve against rotation on said rod while the feed roll rotates on said sleeve but being frictionally yieldable along the rod to permit adjustment at will of the sleeve and feed roll along the rod.

10 2. In a typing machine having a platen; a supporting rod, a feed roll cooperative with said platen, a sleeve within said feed roll, the periphery of said sleeve forming a journal for said feed roll, said sleeve having a bore larger in diameter than the rod to form an annular recess between the rod and sleeve, said bore at one end thereof stepping down in diameter toward the rod to form an end shoulder for said recess, a packing of soft material retained in said recess, and a plug inserted and retained in the other end of said bore to form an opposite end shoulder for said recess, said packing detenting said sleeve against rotation on said rod while the feed roll rotates on said sleeve but being frictionally yieldable along the rod to permit adjustment at will of the sleeve and feed roll along the rod.

3. In a typing machine having a platen; a supporting rod, a feed roll cooperative with said platen, a sleeve within said feed roll, the periphery of said sleeve forming a journal for said feed roll, said sleeve having a bore larger in diameter than the rod to form an annular recess between the rod and sleeve, said bore at one end thereof stepping down in diameter toward the rod to form an end shoulder for said recess, a packing of soft material retained in said recess, and a plug inserted and retained in the other end of said bore to form an opposite end shoulder for said recess, one end of said sleeve having a feed-roll-retaining flange and said plug having a similar feed-roll-retaining flange adjacent the opposite end of said sleeve, said packing detenting said sleeve against rotation on said rod while the feed roll rotates on said sleeve but being frictionally yieldable along the rod to permit adjustment at will of the sleeve and feed roll along the rod.

WILLIAM F. HELMOND.