

W. F. HELMOND.
TYPE WRITING MACHINE.
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1,058,672.

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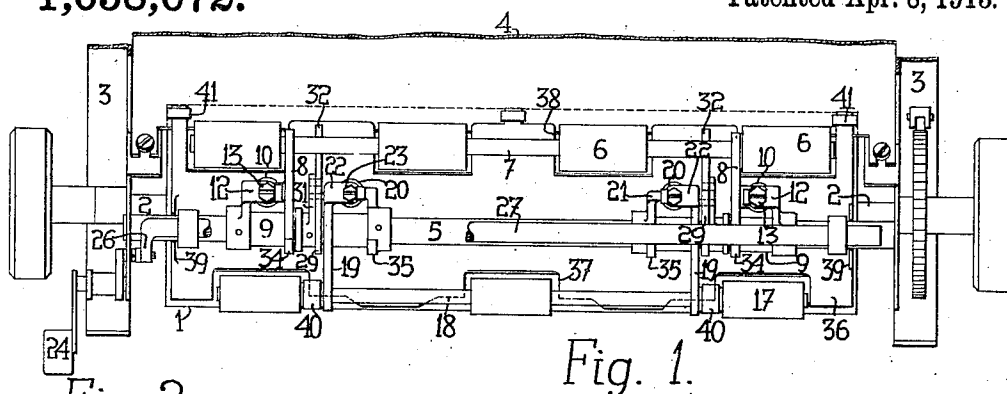
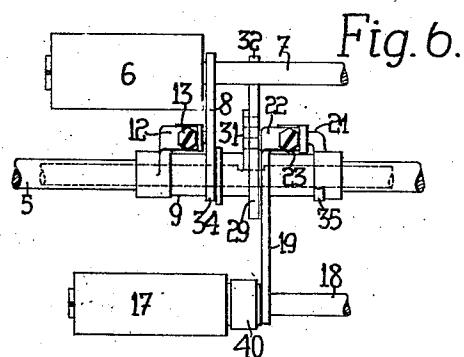
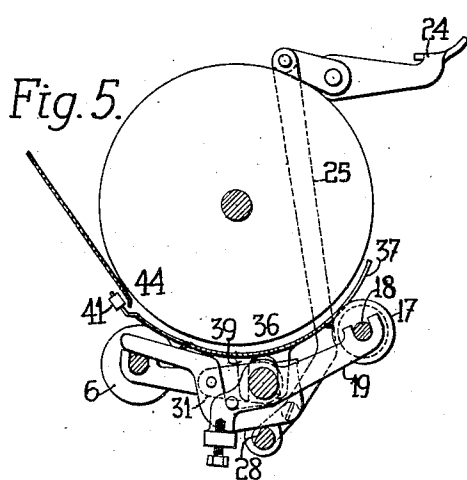
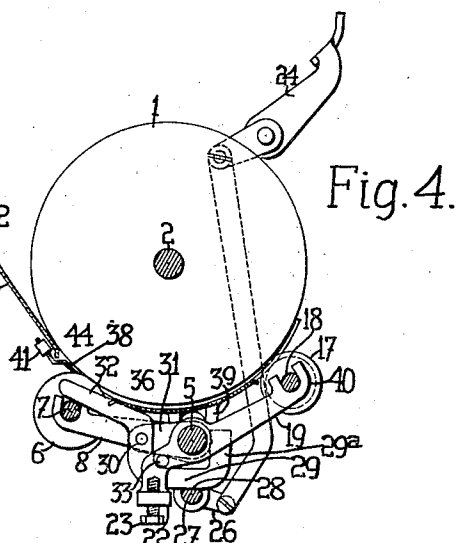
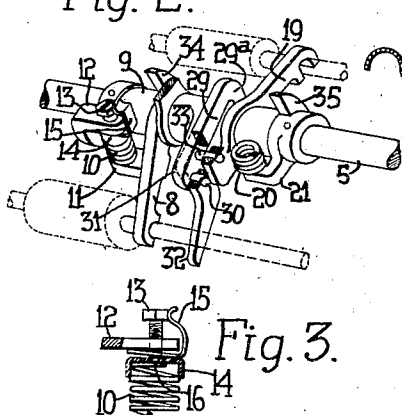


Fig. 2.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

1,058,672.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM F. HELMOND, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the devices which feed paper around the cylindrical platens of typewriting machines.

One of the principal objects of the invention is to improve and simplify the releasable mechanism which controls the pressure of the rolls against the platen.

The rolls are mounted upon forward and rear shafts, which extend along the platen and are carried upon arms, the latter extending forwardly and rearwardly from the tie-rod which usually extends beneath the platen to connect the ends of the platen frame. There are also provided releasing levers; a key-controlled rock-shaft having cams to operate said releasing levers, and the latter working upon fixed pivots and having means to engage all of said roll-carrying arms, to move them simultaneously away from the platen in opposition to the tension of springs which normally press the rolls against the platen. The springs are improved in structure and manner of adjustment: and the adjustable devices are readily accessible, and the whole mechanism is placed very compactly upon the platen frame, and is inexpensive to manufacture.

Another feature of the invention consists of an improvement in the paper deflector or apron which curves around the under side of the platen; this being simplified in structure and manner of mounting; and being constructed to adapt itself readily to the platen or the various thicknesses and sizes of sheets thereon. This paper deflector is normally supported near its front edge by means of the front pressure roll shaft.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 shows the platen frame of the Underwood type of writing machine, and the pressure roll mechanism in inverted position. Fig. 2 is a perspective inverted fragmentary view with parts broken away, to show the devices near one end of the platen for con-

trolling the pressure rolls. Fig. 3 is a detail of one of the pressure roll springs and means for adjusting the same. Fig. 4 is a cross section through the platen axle and roll shafts, showing the parts in normal positions. Fig. 5 is a view similar to Fig. 4, but showing the rolls cast off from the platen. Fig. 6 is an inverted plan of the rolls and roll controlling devices near one end of the platen.

A cylindrical platen 1 is mounted by means of an axle 2 in the ends 3 of a platen frame, which also comprises a rear paper shelf 4, which connects said ends, and a tie rod 5, which also rigidly connects said ends 3.

The rear pressure or feed rolls 6 are mounted at intervals on a shaft 7, extending along the platen, and mounted in arms 8, the latter having hubs 9, whereby they are pivoted upon the tie rod or fixed shaft 5. Coiled springs 10 are compressed between lugs 11 on the arms 8, and brackets 12; the latter fixed upon the tie rod 5. The tension of each spring is regulated by a screw 13, threaded through the bracket 12 and pressing a collar, cup or washer 14 down upon the spring. The screw may be retained by a spring finger 15 held between the collar 14 and the bracket 12. As seen in Fig. 3, one end of the spring may be seated in the cup, and the screw may have a point to fit in a depression 16, to hold the cup against displacement.

The forward rolls 17 are mounted in a manner somewhat similar to the rear rolls; said rolls 17 being carried upon a shaft 18, the latter mounted in arms 19 extending forwardly from the tie rod 5, upon which they are hinged. Compression springs 20 work between bracket arms 21 fixed upon the tie rod 5, and lugs 22 formed upon the arms 19; screws 23 being threaded through said lugs 22 and having the same construction and operation as screws 13.

All of the springs and their regulating devices may be placed on one side of the tie rod 5, preferably back of said rod, where they are convenient of access and out of the way of other portions of the typewriting machine.

A releasing key 24 is connected by a link 25 and arm 26 to a rock shaft 27, the latter extending from end to end of the platen frame beneath the tie rod 5, and having

cams 28, which engage the releasing arms 29, of which there are two. It will be seen that at each end of the platen frame, the roll carrying arms 8, 19, are placed near each other, while the release arm 29, is placed between arms 8, 19, so that it may operate both of them with a minimum of strain on the mechanism. The releasing arms are pivoted at 30 upon brackets 31 fixed upon the tie rod 5. When the release key 24 is depressed from the position at Fig. 4 to that at Fig. 5, the cam 28 lifts up one end of the release lever 29 (the latter pivoted between its ends), and the arm 32 of the lever presses the roll shaft 7 downwardly away from the platen. The forward arm of said lever 29 engages a pin 33 (projecting from the lug 22 of the roll-carrying lever 19) and turns said lever 19 in a direction to drop the roll 17 from the platen. The two release levers 29 are operated simultaneously by the cams 28, dropping all the pressure rolls from the platen. At this time, the releasing levers 29 engage the cylindrical or dead portion of the releasing shaft 27, and hence the mechanism is detained mechanically in the released position at Fig. 5. Upon returning the key 24, all the parts are returned to normal positions by the springs 10, 20. One end of the releasing lever has an upward extension or beak 29^a lying close to the arm 19, which co-operates with the bracket 31 to guide the lever.

35 The roll-carrying arm 8 preferably has a guard 34 which may rest against the rock shaft 27 and prevent undue displacement of the rolls 6 whenever the platen 1 is removed from the machine. The brackets 21 may also have lugs 35 engaging the front side of the rock shaft 27, to prevent the same from springing.

Around the under side of the platen is a paper guide, deflector or apron 36, recessed near its front edge, at 37, to clear the rolls 17, and recessed at its rear edge, at 38, to clear the rolls 6. Guide forks 39 project downwardly from each end of this deflector 36, to engage the tie rod 5. Said paper shelf is, thus guided loosely up and down and permitted to fit itself to the curvature of the platen. It will be seen, at Fig. 4, that at points near its front edge, the paper deflector 36 rests upon soft rubber washers 40, placed upon the front roll shaft 18, whereby the deflector is yieldingly supported with its front edge against the platen. The rear edge of the deflector 36 is overhung by the lower edge of the paper shelf 4, and may be provided with cushions 41 to avoid noise when striking the same. The lower portion of the paper shelf is bent forwardly at 42, to form a broad paper-guiding rib 43, whereby the paper is directed to the bite of the platen and the rear

rolls 6; and at its lower edge the paper shelf may be bent down to form a narrow rib 44 above the deflector 36.

Having thus described my invention, I claim:

1. In a typewriting machine, in combination, a platen frame, a platen, a plurality of rolls arranged in series, arms supporting said series of rolls, springs tending to swing said arms upwardly toward said platen, a releasing lever engaging certain of said arms and adapted to swing the same away from the platen, means for actuating said releasing lever, and means for limiting the upward movement of said arms when said platen is removed.

2. In a typewriting machine, in combination, a platen frame and platen, a plurality of arms, feed rolls carried thereby, a releasing lever engaging certain of said arms to swing the same simultaneously, a rock shaft having cams engaging said releasing lever to actuate the same, and a lug engaging said rock shaft and preventing deflection thereof.

3. In a typewriting machine, in combination, a platen, a plurality of feed roll arms, feed rolls carried thereby, a releasing lever engaging certain of said arms and adapted to swing the same, a curved deflector plate pressed against said platen and supported by said arms, and means for guiding said deflector in a substantially radial direction with respect to the axis of said platen.

4. In a typewriting machine, the combination with a platen, forward and rear feed rolls, shafts on which the rolls are mounted, oppositely extending arms supporting the shafts, a support on which the arms are hinged to swing from and toward the platen, and springs to press the rolls toward the platen, of an operating shaft, a lug extending from one of the arms, and a releasing lever pivoted intermediate its ends and operatively engaged by said shaft, one arm of said lever engaging the lug, and the remaining arm engaging the opposite roll-carrying shaft to cast off both forward and rear rolls.

5. In a typewriting machine, the combination with a platen, forward and rear feed rolls, shafts on which the rolls are mounted, oppositely extending arms carrying the shafts and hinged to swing from and toward the platen, one of said arms having a projecting lug, and springs to press the rolls against the platen, of an operating shaft, a releasing lever pivoted intermediate its ends and operatively engaged by said shaft, a pin on the lug engaged by one arm of the lever, the opposite arm of the lever engaging the opposite roll-carrying shaft to cast off both forward and rear rolls.

6. In a typewriting machine, the combination with a platen, and forward and rear spring-pressed feed rolls, oppositely extending arms supporting the feed rolls, and a rod

on which the arms are hinged, of an operating shaft, and a releasing lever pivoted intermediate its ends to a bracket on the rod and operatively engaged by said shaft, to cast off both forward and rear rolls.

7. In a typewriting machine, the combination with a platen, and forward and rear feed rolls, of roll-supporting arms hinged to swing the rolls from and toward the platen, lugs on the arms, stationary bracket arms, springs interposed between the lugs and bracket arms to press the rolls against the platen, washers in which ends of the springs are seated, and regulating screws engaging the washers to control the spring tension.

8. In a typewriting machine, the combination with a platen, and forward and rear feed rolls, of roll-supporting arms hinged to swing the rolls from and toward the platen, lugs on the arms, stationary bracket arms, springs interposed between the lugs and bracket arms to press the rolls against the platen, washers in which the springs are seated, and regulating screws engaging the washers to control the spring tension, the washers having depressions entered by the ends of the screws to prevent displacement.

9. In a typewriting machine, the combination with a platen, and forward and rear feed rolls, of roll-supporting arms hinged to swing the rolls from and toward the platen, lugs on the arms, stationary bracket arms, springs interposed between the lugs and bracket arms to press the rolls against the platen, an operating shaft and a releasing lever operatively engaged by said shaft to cast off both forward and rear feed rolls.

10. In a typewriting machine, the combination with a platen, forward and rear spring-pressed feed rolls, and oppositely extending arms supporting the feed rolls and hinged to swing from and toward the platen, of a release key, a lever pivoted intermediate its ends and operated by the release key to cast off both forward and rear rolls, and a beak on the lever guided by one of the roll-supporting arms.

11. In a typewriting machine, the combination with a platen, forward and rear series of spring-pressed feed rolls, shafts on which the feed rolls are mounted, swinging arms in which the shafts are supported, and casting off and restoring mechanism for the rolls, of a paper deflector beneath the platen, washers on one of the roll-carrying shafts engaging the deflector to hold it against the platen, and guides to control the movement of the deflector from and toward the platen as the rolls are cast off and restored.

12. In a typewriting machine, the combi-

nation with a platen, and platen frame having a centrally located tie rod, forward and rear series of feed rolls, and arms supporting the feed rolls, of a tension device including stationary supports lying on one side of and close to the tie rod, lugs on the respective roll-carrying arms, located adjacent the supports, and springs interposed between the lugs and supports to press the rolls toward the platen.

13. In a typewriting machine, the combination with a platen, forward and rear series of spring-pressed feed rolls, and rocking arms supporting the rolls, of casting off and restoring mechanism including an operating shaft, stops on certain of the arms engaging the operating shaft to arrest the throw of the arms, and stationary lugs engaging the shaft intermediate the stops to prevent its springing.

14. In a typewriting machine, the combination with a platen and a feed roll to run thereon, of a shaft or axle on which the feed roll is mounted, means for guiding the shaft and pressing it toward the platen, washers on said shaft, a movable guide or deflector curving around the under side of the platen and bearing upon said washers, whereby said deflector is supported, and means to guide the deflector in its movements relatively to the platen.

15. In a typewriting machine, the combination with a platen and a feed roll to run thereon, of a shaft or axle on which the feed roll is mounted, means for guiding the shaft and pressing it toward the platen, washers on said shaft, a movable guide or deflector curving around the under side of the platen and bearing upon said washers, whereby said deflector is supported, means to guide the deflector in its movements relatively to the platen, said guiding means including forks upon the ends of the deflector, and a fixed rod engaged by the forks.

16. The combination with a platen and a platen frame having a fixed rod, sets of arms pivoted on said rod and extending forwardly and rearwardly therefrom, and rolls carried on said arms, brackets fixed on said rod, springs between said brackets and said arms, one spring for each arm, and means for adjusting the tension of the springs independently; each spring in the form of a compression coil having at one end a cap upon which bears a tension-adjusting screw; the screw fitted to a depression in the cap to prevent displacement thereof.

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Witnesses:

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