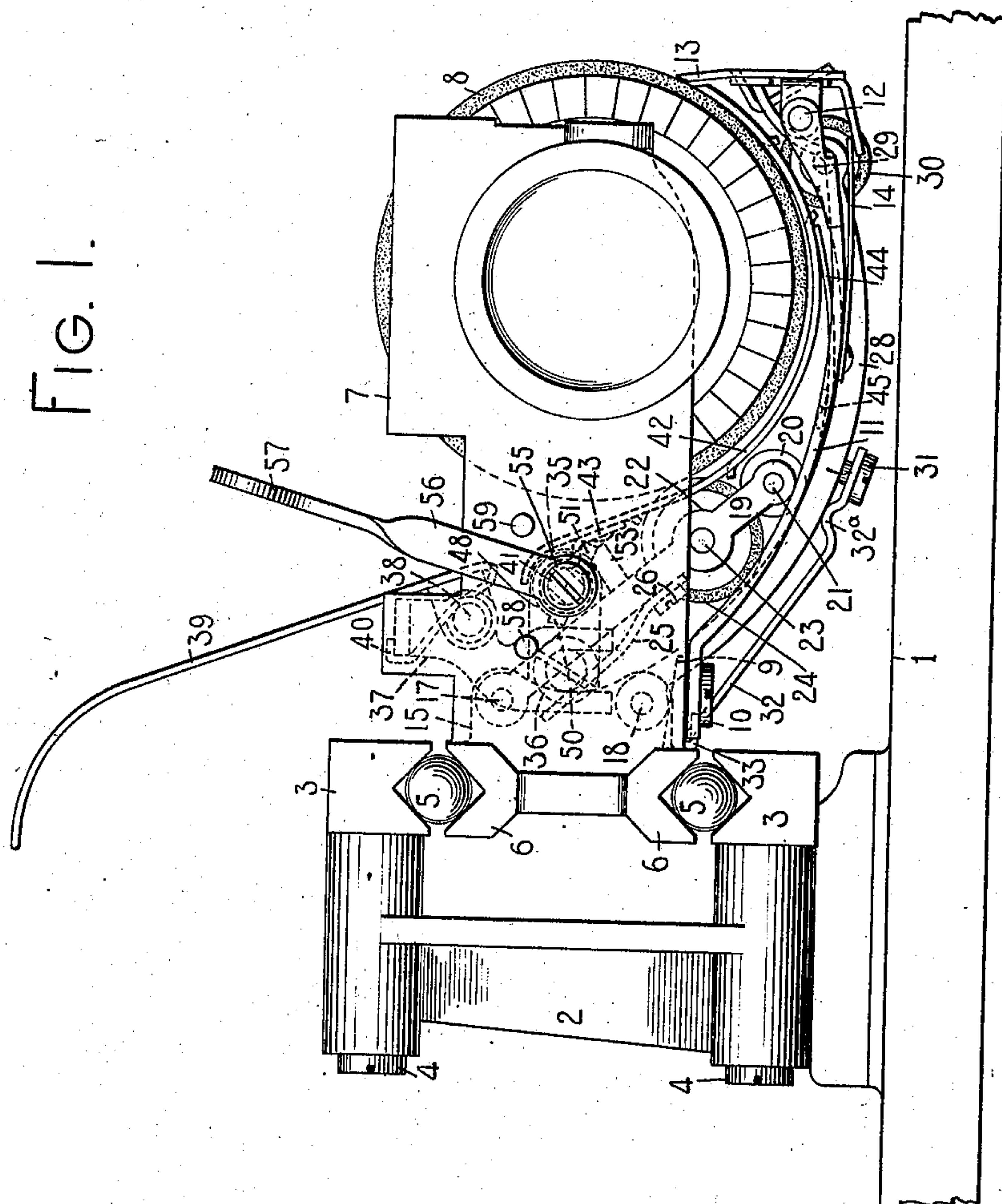


905,013.

H. H. STEELE.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 17, 1906.

Patented Nov. 24, 1908.

3 SHEETS—SHEET 1.



WITNESSES:

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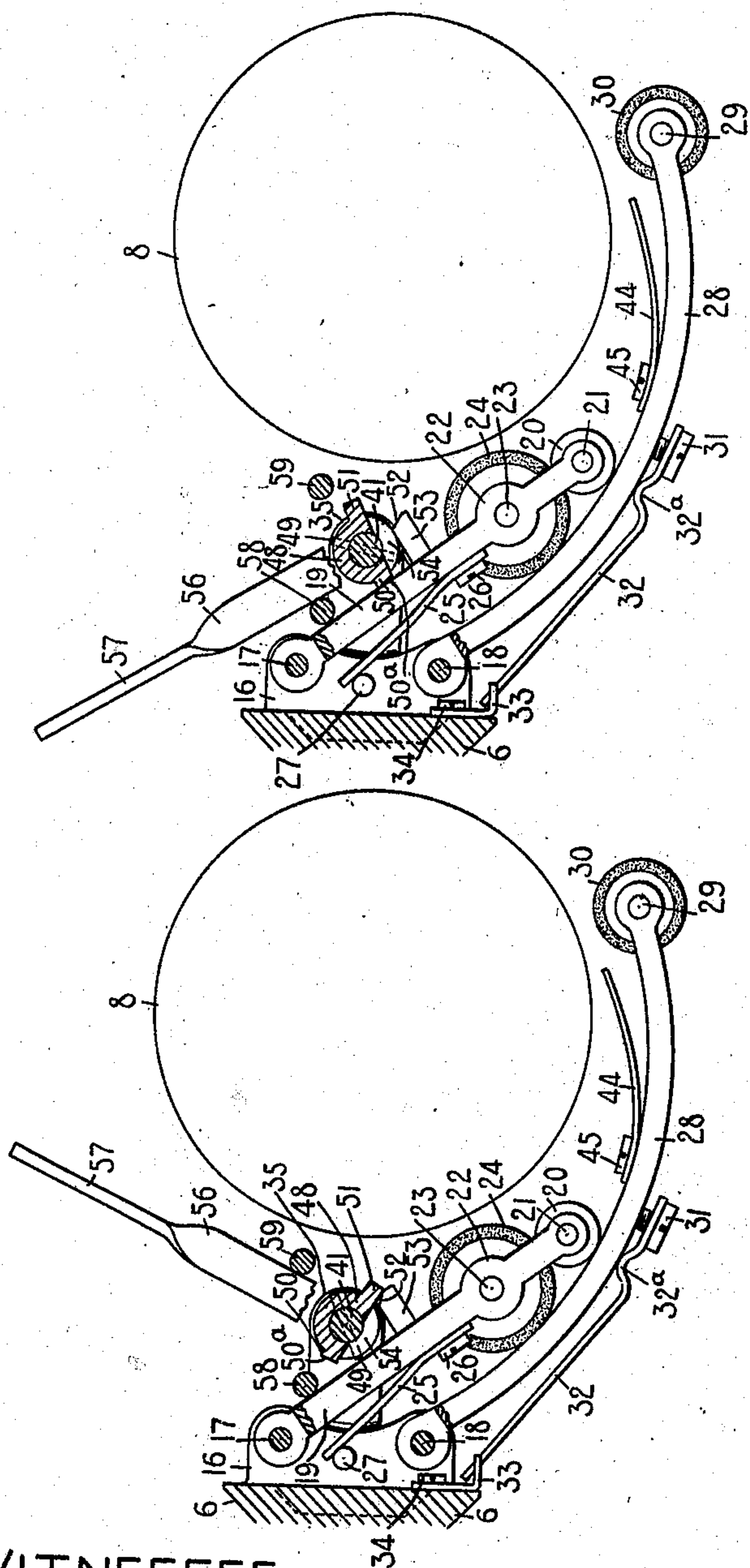


FIG. 3.

FIG. 2.

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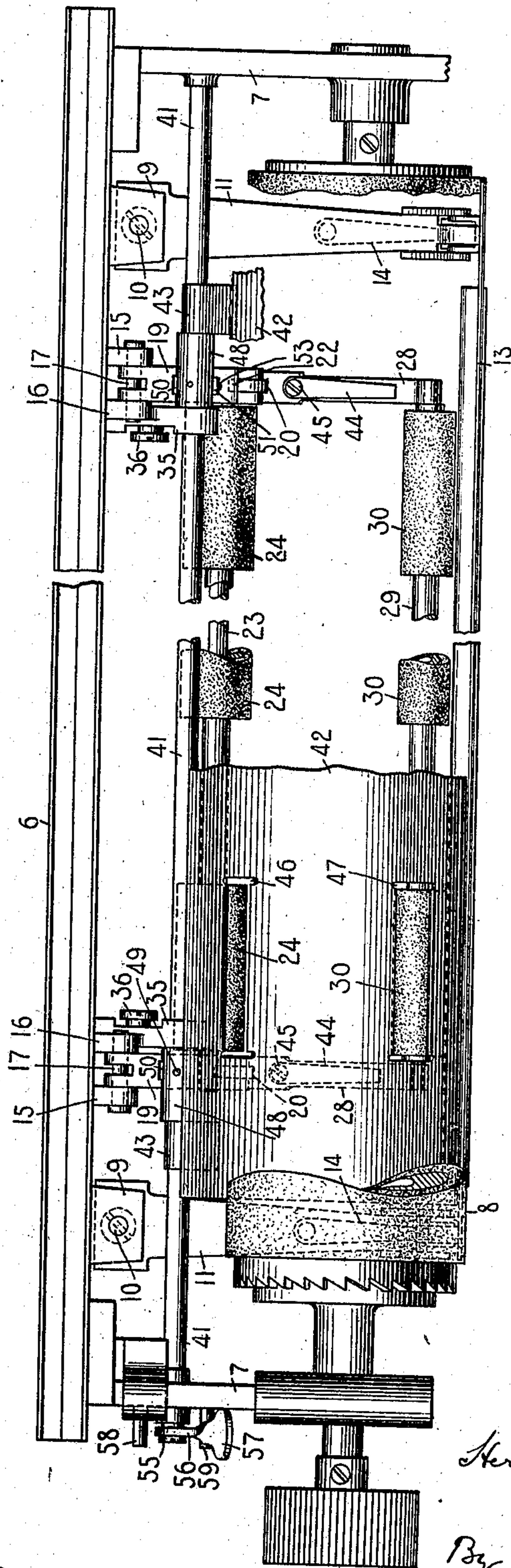
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3 SHEETS—SHEET 3.

FIG. 4.



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UNITED STATES PATENT OFFICE.

HERBERT H. STEELE, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

No. 905,013.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed February 17, 1906. Serial No. 301,620.

To all whom it may concern:

Be it known that I, HERBERT H. STEELE, a citizen of the United States, and resident of Syracuse, 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 the paper feeding mechanism of typewriting machines and has for its main object to provide improved releasing means for paper feeding mechanism, whereby the latter may be, at will, either moved out of position for coöperating with the platen and may be held so released by the pressure of the operator on the releasing mechanism or may be moved out of coöperative position with the platen and maintained locked in inoperative position.

Other objects will subsequently appear.

To the above ends the invention resides in the features of construction, combinations of devices and arrangements of parts hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an enlarged side elevation of the upper part of a typewriting machine showing my invention embodied therein. Fig. 2 is a diagrammatic side view on the same scale as Fig. 1 and showing some of the parts in different relations from those in which they appear in said Fig. 1. Fig. 3 is a view similar to Fig. 2 but showing some of the parts in different relations from those in which they appear in said Fig. 2. Fig. 4 is a fragmentary top plan view of the platen, platen frame, and associate devices, some parts being omitted and others broken away for the sake of clearness.

I have shown my invention as applied to a machine generally resembling in construction the Monarch front-strike typewriter but it is to be understood that the nature of the invention is such that it may be readily adapted to other forms of writing machines.

In the drawings, 1 indicates the top plate of the machine, 2, brackets, (only one of which is shown) fixed on the top plate, said brackets having oppositely grooved track ways 3 secured to them by screws 4. Anti-friction balls 5 coöperate with the grooved track ways and with oppositely grooved ways in a slide bar 6. Projecting forwardly from the ends of said slide bar are horizontal

end or side bars 7, said side bars being rigid with the rear or slide bar 6 and comprising with the latter a platen frame, carrier or carriage. A cylindrical platen 8 is pivotally mounted in the side bars 7 and is adapted to be line spaced by any suitable construction of line spacing mechanism.

Lugs 9 (Fig. 4) project forwardly from the bottom of the slide bar 6 and secured to these lugs by screws 10 are arms 11 which extend forwardly under the platen and have pivoted to their front ends at 12 a platen scale plate 13, the upper edge of said platen scale plate being pressed constantly towards the platen by springs 14 secured on the arms. The scale plate is preferably provided with a suitable platen scale. Pairs of lugs 15 and 16 project forwardly from the slide bar 6 one pair at each side of the bar. Secured in each pair of lugs are short pivot rods 17 and 18 one above the other. Journaled on each of the upper rods 17 is a hanger arm 19, said hanger arms extending downwardly and forwardly from their pivots 17 and having journaled in them at their lower ends rollers 20, the pivots of said rollers being indicated by the numeral 21. Above the pivots 21 each hanger arm 19 is enlarged as indicated at 22, the enlarged portions 22 being perforated to provide journals for the ends of a shaft 23 which carries one or more feed rollers 24. Flat springs 25 are secured by screws 26 to the backs of the hanger arms 19, said flat springs extending upwardly and rearwardly from said screws and coöperating with pins 27 fixed between the lugs 15 and 16. The springs 25 tend constantly to press the hanger arms 19 upwardly about their pivots 17 and to maintain the feed rollers 24 in coöperative engagement with the platen 8. Journaled on the pivot rods 18 are hanger arms 28, said hanger arms extending downwardly and forwardly beneath the platen and having journaled in their free ends a feed roll shaft 29 on which is mounted one or more feed rollers 30 which are parallel with the feed roller or rollers 24. Secured by screws 31 to the under side of the hanger arms 28 are flat springs 32, said springs extending upwardly and rearwardly and coöperating at their free ends with brackets 33 secured by screws 34 to the slide bar 6. The flat springs 32 have bends or projections 32^a which bear against the hanger arms 28 and the springs tend constantly to

press the feed rollers 30 upward into cooperative engagement with the platen 8. The tension of each spring 32 may be regulated by screwing in or out its associate screw 31.

5 The feed rollers 30 may, for convenience, be designated as the secondary feed rollers and the rollers 24 may be designated as the main feed rollers. The inner lug 16 of each of the pairs of lugs 15 and 16 has a forwardly

10 extending portion or ear 35. Said ears 35 are provided with oppositely disposed headed screws 36 which cooperate with a bracket or support 37 which pivotally supports at 38 a paper table 39, said paper table extending

15 upwardly and rearwardly from its pivots and being normally spring pressed towards the rear by a coiled spring 40. Forwardly of the screws 36 the lugs 35 are perforated to provide journals for a feed roll release shaft

20 41, said shaft extending longitudinally of the platen at its rear and the ends of said shaft being journaled in the side bars 7 of the platen frame. A paper apron 42 extends from side to side of the machine be-

25 neath and at the rear of the platen, said paper apron being provided with end portions 43 which are coiled or hooked around the shaft 41, thereby pivotally connecting the paper apron with said shaft. Flat

30 springs 44 are secured by screws 45 to the upper faces of the secondary hanger arms 28, the free ends of said springs 44 contacting with the under surface of the paper apron and tending to maintain the latter in coop-

35 erative relation with the platen. The paper apron is provided with openings 46 and 47 through which the main feed rollers 24 and the secondary feed rollers 30 respectively

40 protrude to cooperate with the platen. The parts hereinbefore referred to are not claimed *per se* herein.

Referring now to the novel releasing devices which I prefer to employ in combination with the paper feeding mechanism

45 above described, collars 48 are fixed to the feed roll release shaft 41, one collar being disposed near either end of said shaft between a paper apron end portion 43 and one of the lugs 35. Any preferred means may

50 be employed for securing the collars 48 in place. In the drawings I have shown a pin 49 as driven through each collar and through the shaft 41, thereby fixing the relation between said shaft and said collar. Each

55 collar is provided with an ear or lug 50 extending normally rearwardly from its associate collar and slightly above and out of contact with the neighboring hanger arm 19. The rear face 50^a of each lug 50 is flat and

60 serves as a locking face in a manner hereinafter described. On each collar 48 and extending oppositely from the lug 50 is a somewhat longer ear or lug 51, the bottom of which normally contacts with the beveled

65 face 52 of a pin 53 which is fixed on the as-

sociate hanger arm 19 and extends upwardly therefrom. The under portion of each collar below the ears 50 and 51 is cut away as indicated at 54 in order not to interfere with the hanger arm 19 or the pin 53 thereon. 70

The left end of the release shaft 41 projects laterally beyond the left hand side plate 7 of the platen frame and has secured to it by a screw 55 a crank arm or feed roll release lever 56, said release lever being provided at 75 its free end with a finger piece 57. Pins 58 and 59 project laterally outward from the face of the left hand side plate 7 in position to cooperate with and limit the movement of the release lever 56. 80

The operation of the mechanism above described may be briefly explained. The normal positions of the various parts are shown in Fig. 1 in which it will be noted that the main feed rollers 24, the secondary feed 85 rollers 30 and the paper apron 42 are in operative contact with the platen. The paper or work sheet is entered in the machine over the paper table 39 and the paper apron 42, and passes between said paper apron 42 and 90 the main and secondary feed rollers, being fed through the machine in a known manner as the platen is turned by suitable line spacing or platen turning mechanism. When it is desired to momentarily release or free the 95 paper from the control of the paper feed rollers the latter may be released or moved out of operative relation with the platen by pulling the release lever 56 forwardly until it contacts with the limiting pin 59. The 100 forward movement of the release lever 56 rotates the shaft 41 forwardly and causes the lugs 51, acting through the pins 53, to press the main hanger arms 19 downwardly about their pivots 17, thereby moving the 105 main feed rollers 24 away from the platen. As the hanger arms 19 are swung downwardly, the rollers 20 at the ends of said hanger arms, engaging the secondary hanger arms 28, will force the latter arms down- 110 wardly about their pivots 18 and against the pressure of the springs 32, said hanger arms 22 in their downward swing carrying with them the secondary feed rollers 30. The downward movement of the hanger arms 28 115 releases the paper apron from the pressure of the springs 44 carried by said hanger arms 28, and allows the paper apron to drop out of operative engagement with the platen. The parts will now be in the positions shown 120 in Fig. 2, in which it will be noted that both the main and secondary feed rollers are in released positions having been brought to such positions by a single actuation of the lever 56 and being maintained inoperative 125 by the pressure exerted by the operator on said lever 56. The paper apron 42 will also separate from the platen, because of the downward movement of the spring arms 44. This leaves one hand of the operator free for 130

adjusting the paper and as soon as the desired operation is performed the release lever 56 may be freed from pressure and the parts will be restored to their normal positions under the influence of the restoring springs 32 and 25. When it is desired that both hands may be free for adjusting the paper in the machine the feed roll release lever 56 is pressed or swung rearwardly or in the opposite direction from that above described until it contacts with the limiting pin or stop 58. As the lever is swung rearwardly the lugs 50 on the release shaft 41 will be brought into contact with the main hanger arms 19 and will swing the latter downwardly causing them to move the main feed rollers 24 to releasing or inoperative position.

As before described, the rollers 20 on the main hanger arms will act on the secondary hanger arms 28 to cause the release of the secondary feed rollers 30 and other paper feeding and guiding devices. The parts are so proportioned that when the release lever 56 contacts with the limiting stop 58 the flat locking face 50^a of each lug 50 will have been turned so that it is in engagement with the upper face of the associate hanger arm 19. The parts will now be in the position shown in Fig. 3 and it will be readily understood from an inspection of said figure that the engagement of the two flat surfaces, that is, of the upper surface of each hanger arm 19 with its associate flat locking face 50^a is such that the parts will be maintained in the position shown after the hand of the operator is removed from the feed roll release lever 56. Consequently both hands of the operator are free to adjust the paper to desired position, to remove said paper, etc. After the desired operation has been performed the main and secondary feed rollers and other paper feeding and guiding devices may be unlocked by pulling forwardly on the release lever 56 and the parts will be restored to normal position under the influence of the restoring springs.

It will be observed that I provide means operative when pressed in one direction to release the paper feed roller and maintain it locked in operative position, said means being operative when pressed in another direction to release said paper feed without maintaining it locked; that I further provide releasing means comprising a single finger piece operative at will to release the paper feed roller and maintain it locked in inoperative position or to release it without maintaining it locked; that I provide means operative to release the paper controlling, feeding and guiding devices, said devices comprising a main paper feed roller or rollers, secondary paper feed roller or rollers and a paper apron, at a single operation; and that said means are operative at

will to maintain said controlling devices locked in inoperative position or not. As has been stated, the main and secondary paper feed rollers are parallel and my novel releasing means operates to release said parallel paper feed rollers at a single operation from operative position and to maintain them locked in released or inoperative position or not to maintain them locked, as may be desired.

It will be understood that the lugs 51 on the shaft 41 and the cooperating lugs 53 on the hanger arms 19 may be omitted where other and separate means for temporarily throwing off the paper feed rollers are employed, and that my preferred releasing and locking means may be employed in a machine which has also such separate and other temporary releasing means.

Various changes may be effected 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 platen frame, a paper feed roller cooperative with said platen, and releasing means comprising a single finger piece operative at will either to release said feed roller and maintain it locked in inoperative position or to release said feed roller without maintaining it locked.

2. In a typewriting machine, the combination of a platen, a platen frame, a paper feed roller cooperative with said platen, and means operative when pressed in one direction to release said feed roller and maintain it locked in inoperative position and operative when pressed in another direction to release said feed roller without maintaining it locked.

3. In a typewriting machine, the combination of a platen, a platen frame, a paper feed roller journaled on said platen frame and cooperative with said platen, a hand actuated release lever pivoted on said platen frame and rotatable in two directions, and means operable by said lever when pressed in one direction for moving said feed roller out of operative position and maintaining it locked in inoperative position, said means being operable by said lever when the latter is pressed in the other direction to move said feed roller out of operative position without maintaining it locked.

4. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, means constantly tending to press said paper feed roller towards the platen, and means operative in one direction on said hanger arms to move the feed roller away from the platen, said means being operative in another direction on said hanger arms to move

the feed roller away from the platen and to maintain said feed roller locked away from the platen in inoperative position.

5. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, a shaft journaled on said platen frame, means constantly tending to press said feed roller towards the platen, a release key connected with said shaft, operable to rotate it in either direction, means on said shaft operable when it is turned in one direction on said hanger arms to move the feed roller away from the platen, and means on said shaft operable when it is turned in the opposite direction on said hanger arms to move the feed roller away from the platen and maintain it locked in inoperative position.

6. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, means constantly tending to press said feed roller towards the platen, a shaft journaled on said platen frame, a crank arm fixed to said shaft and provided with a finger piece operable to turn said shaft in either direction, lugs on said shaft operable when it is turned in one direction on said hanger arms to move the feed roller away from the platen and other lugs on said shaft operable when it is turned in the other direction to move said feed roller away from the platen and maintain it locked in inoperative position.

7. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, springs constantly tending to press said hanger arms towards the platen, other hanger arms pivoted to said platen frame, a paper feed roller carried by said last recited hanger arms, springs constantly tending to press said last recited hanger arms towards the platen, a shaft journaled on said platen frame, a release key connected with said shaft and operable to rotate it in either direction, lugs on said shaft operable when it is turned in one direction on said first recited hanger arm to move both feed rollers away from the platen, other lugs on said shaft operable when it is turned in the other direction on said first recited hanger arms to move the feed rollers away from the platen and maintain them locked in inoperative position.

8. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a main paper feed roller carried by said hanger arms, springs constantly operative to press said hanger arms towards the platen, other or secondary hanger arms pivoted on said platen frame, a secondary feed roller carried by said secondary hanger arms, springs op-

erative to press said secondary hanger arms towards the platen, a shaft journaled on said platen frame, a release key operative to turn said shaft in either direction, lugs on said shaft operative when it is turned in one direction on the main hanger arms to move the main feed roller away from the platen, said main hanger arms being operative on the secondary hanger arms to move the secondary feed roller away from the platen, and other lugs on said shaft operative when it is turned in the other direction to move said main and secondary feed rollers away from the platen and maintain them locked in inoperative position.

9. In a front strike writing machine, the combination of a platen, a platen frame, a main feed roller pivotally supported at the rear of said platen frame, means constantly tending to press said main feed roller towards the platen, a secondary feed roller pivotally supported on said platen frame and arranged forward of said main feed roller, means constantly tending to press said secondary feed roller towards the platen, connections between said feed rollers, a feed roller release shaft pivotally supported at the rear of the platen frame and rotatable in two directions, means on said shaft operable when it is turned in one direction to move both said feed rollers away from the platen, other means on said shaft operable when it is turned in the opposite direction to move both said feed rollers away from the platen and to maintain them locked in inoperative position.

10. In a typewriting machine, the combination of a platen, a platen frame, parallel paper feed rollers cooperative with said platen, and releasing means operative at will either to release said parallel feed rollers and maintain them locked in cooperative position at a single operation or at a single operation to release said parallel feed rollers without maintaining them locked.

11. In a typewriting machine, the combination of a platen, a platen frame, parallel paper feed rollers cooperative with said platen, and means operative when pressed in one direction to release said parallel feed rollers and maintain them locked in inoperative position at a single operation and operative at a single operation when pressed in another direction to release said parallel feed rollers without maintaining them locked.

12. In a typewriting machine, the combination of a platen, a platen frame, parallel paper feed rollers journaled on said platen frame independently of each other, a hand actuated release lever pivoted on said platen frame and rotatable in two directions, and means operable by said lever when pressed in one direction for moving said parallel feed rollers out of operative position and maintaining them locked in inoperative

position at a single operation, said means being operable by said lever when the latter is pressed in the other direction to move said parallel feed rollers out of operative position without maintaining them locked.

13. In a typewriting machine, the combination of a platen, paper controlling, feeding and guiding devices comprising a main paper feed roller, a secondary paper feed roller, a paper apron, separate springs cooperating respectively with said main feed roller, said secondary feed roller and said paper apron, and means operative at a single operation to release said paper controlling devices from operative position.

14. In a typewriting machine, the combination of a platen, a platen frame, paper controlling, feeding and guiding devices, comprising a main paper feed roller, a secondary paper feed roller and a paper apron, and means operative at will either only to release said paper controlling devices from operative position, or both to release said paper controlling devices and to lock them in released position.

15. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, means constantly tending to press said paper feed roller towards the platen, and a hand actuated shaft journaled on said platen frame and cooperating with said hanger arms to move the feed roller away from the platen and to lock the feed roller in the released position by the pressure of the hanger arms exerted against said shaft.

16. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, means constantly tending to press said paper feed roller towards the platen, and a hand actuated shaft journaled on said platen frame, lugs on said shaft, and a release key connected with said shaft and operable to rotate it to cause said lugs to cooperate with said hanger arms to move said paper feed roller away from the platen and maintain it locked in inoperative position.

17. In a typewriting machine, the combination of a platen, a platen frame, hanger arms pivoted on said platen frame, a paper feed roller carried by said hanger arms, springs constantly tending to press said hanger arms towards the platen, other hanger arms pivoted to said platen frame, a paper feed roller carried by said last recited hanger arms, springs constantly tending to press said last recited hanger arms towards the platen, a shaft journaled on said platen frame, a release key connected with said shaft, lugs on said shaft operable, when it is turned, on said first recited hanger arm to move both said feed rollers away from the platen and maintain them locked in inoperative position.

Signed at Syracuse, in the county of Onondaga, and State of New York, this 12th day of February A. D. 1906.

HERBERT H. STEELE.

Witnesses:

JOHN S. MITCHELL,
W. J. LOGAN.