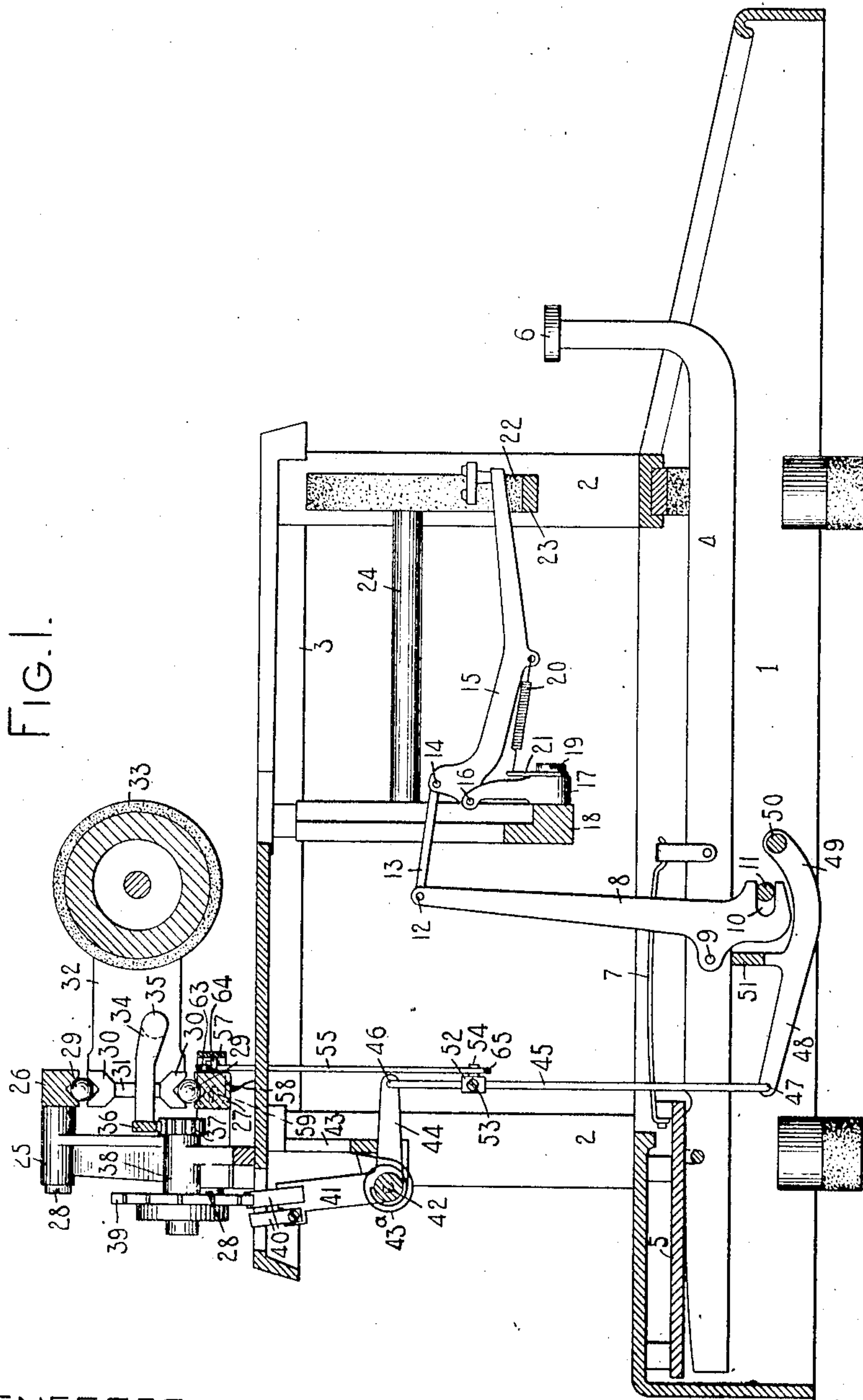


C. E. SMITH.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 14, 1908.

906,746.

Patented Dec. 15, 1908.

4 SHEETS—SHEET 1.



WITNESSES:

E. M. Wells.

J. B. Reeves.

INVENTOR:

Charles E. Smith

Roy Jacob Felsch

HIS ATTORNEY

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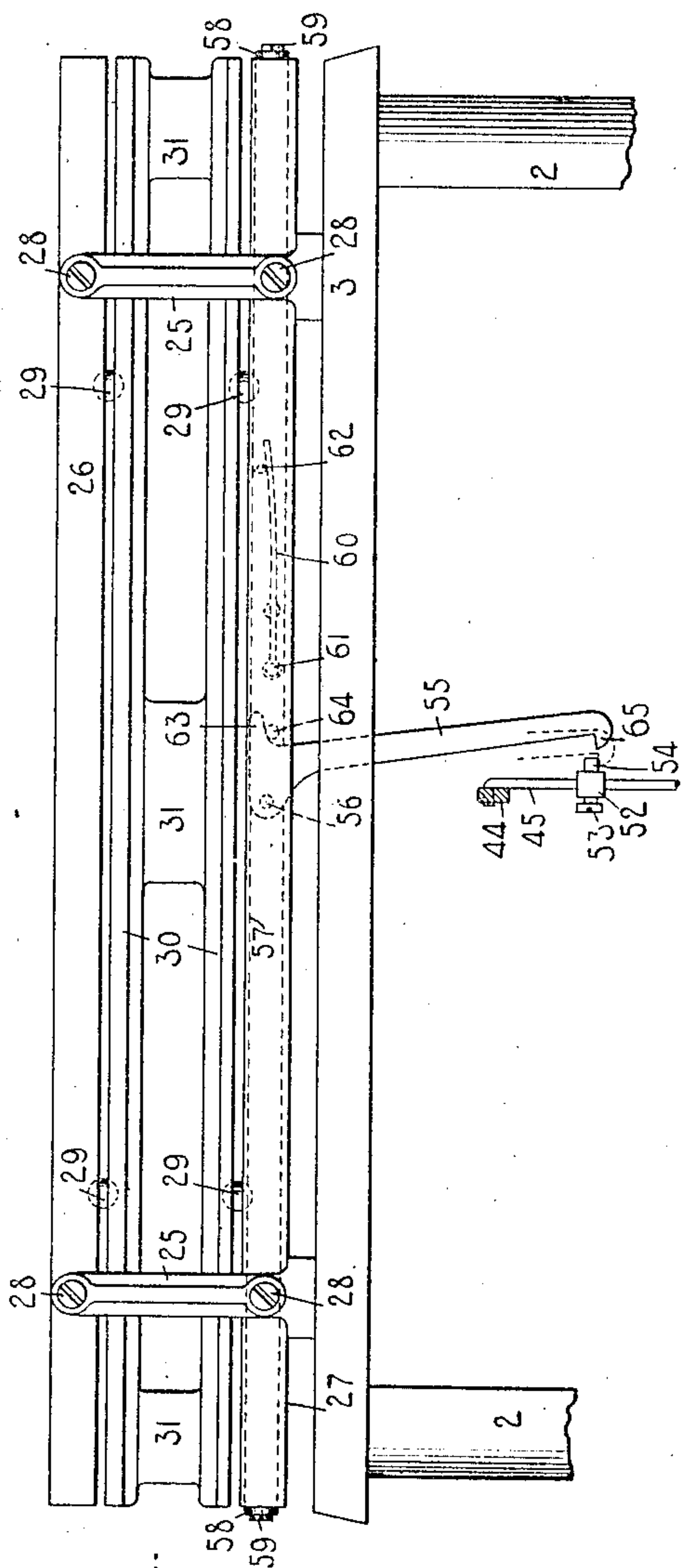


FIG. 2.

WITNESSES:

E. M. Wells
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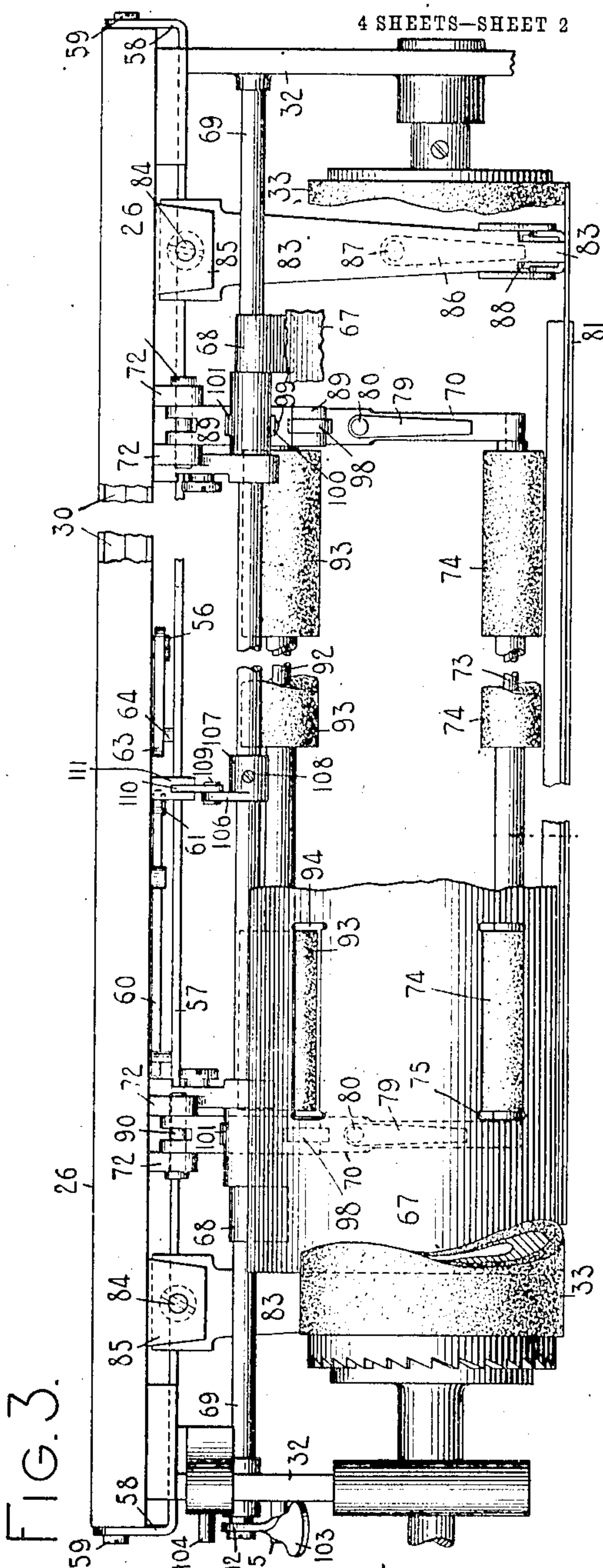


FIG. 3.

4 SHEETS—SHEET 2

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4 SHEETS—SHEET 3

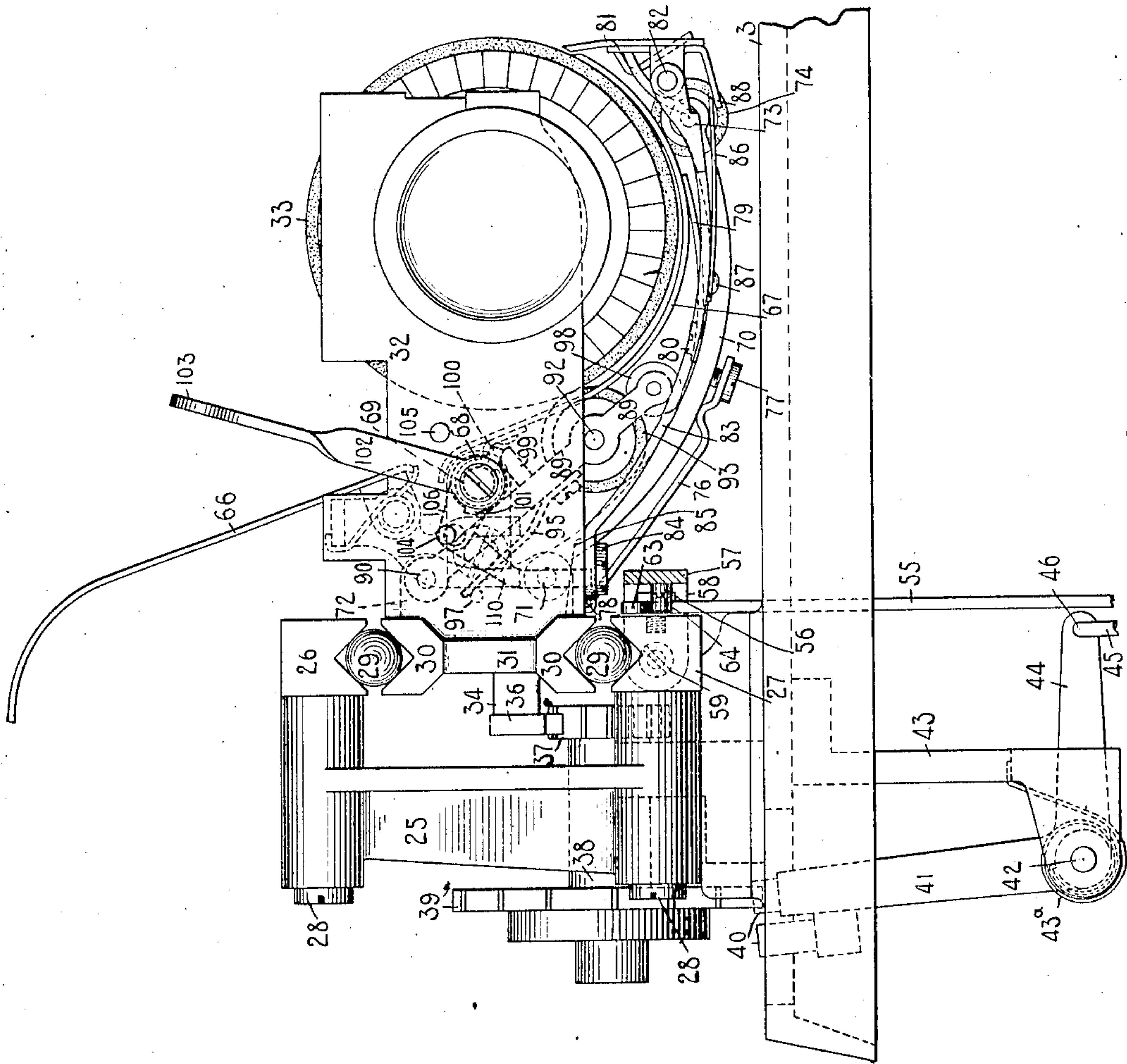


FIG. 4.

WITNESSES:

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4 SHEETS—SHEET 4.

FIG. 5.

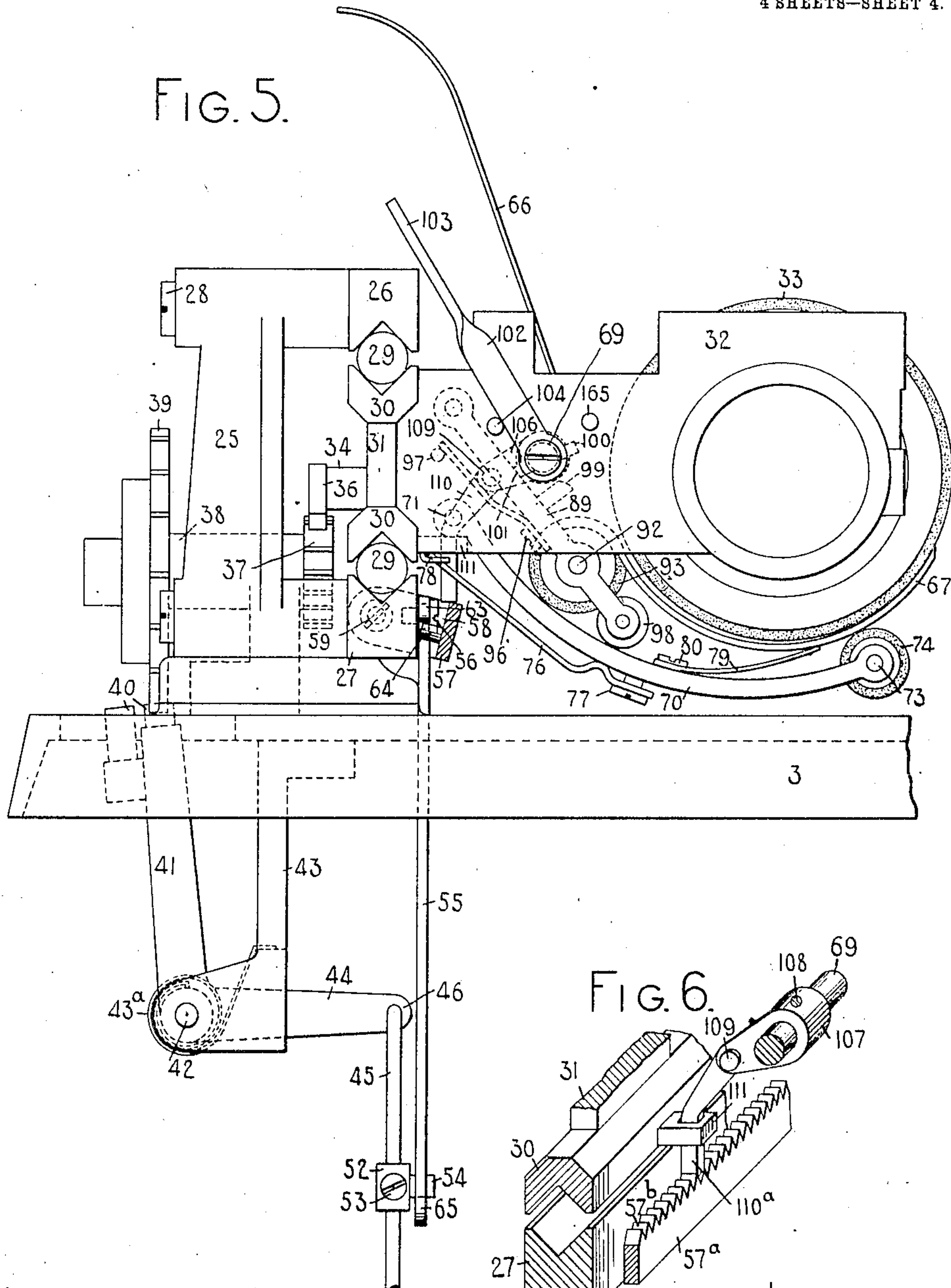
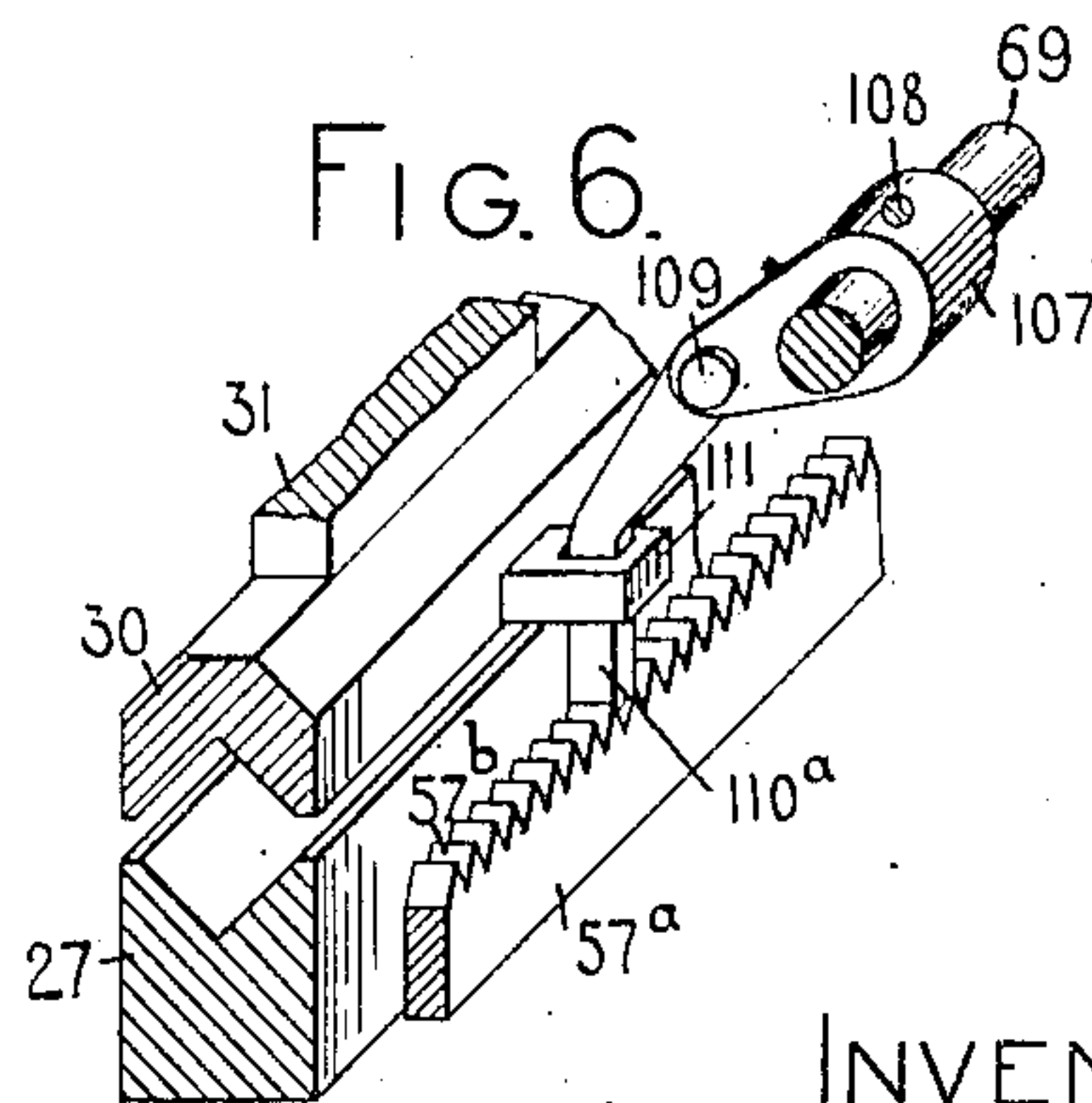


FIG. 6.



WITNESSES:

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INVENTOR

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By Jacob F. Fabel

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UNITED STATES PATENT OFFICE.

CHARLES E. SMITH, OF NEW YORK, N. Y., ASSIGNOR TO UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 908,748.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed June 14, 1906. Serial No. 321,717.

To all whom it may concern:

Be it known that I, CHARLES E. SMITH, citizen of the United States, and resident of the borough of Brooklyn, city of New York, in the county of New York 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 typewriting machines and more particularly to means for notifying the operator when the paper feeding devices or feed rollers are in the released or inoperative position.

In machines having means for locking the feed rollers in the released or inoperative position, operators, after locking the feed rollers in the released position in order to adjust the paper, frequently forget to restore the feed rollers to normal or operative position before proceeding with the writing. In consequence the paper will not be fed at all or will be fed unevenly and the sheet will be spoiled before the operator realizes he has forgotten to unlock the feed rollers. So frequently has this occurred that in some cases it has been deemed advisable to dispense with the use of means for locking off the feed rollers, notwithstanding the fact that the provision of such means is highly desirable in order that the operator may have both hands free to adjust the paper.

One object of my invention is to overcome the difficulties pointed out above and to provide simple and efficient means for notifying the operator when the feed rollers are locked off.

A further object of my invention is to provide means for locking the machine or a portion thereof out of operation when the paper feeding devices or feed rollers are locked in the released or inoperative position.

A still further object of my invention is to provide automatically acting locking means to prevent actuation of the printing instrumentalities when the paper feed devices or rollers are locked in the released or inoperative position; so that the operator will be compelled to restore the feed devices or rollers to the operative position before any writing can be done, the printing instrumentalities being automatically released by the act of restoring the feed devices or rollers to the normal or operative position.

Another object of my invention is to provide means of the character specified which

may be readily applied to existing forms of typewriting machines without changing the structure of said machine.

Still another object of my invention is to provide an operative connection between the feed rollers or paper feeding devices and a line-lock mechanism so that the line-lock mechanism may be under control of the paper feeding devices.

To the above and other ends which will hereinafter appear my invention consists in the features of construction, arrangements of parts and combinations of devices to be hereinafter described and particularly pointed out in the appended claims.

In the drawings, wherein like reference characters indicate corresponding parts in the different views, Figure 1 is a general, vertical, front to rear, sectional view of part of a Monarch typewriting machine, and showing certain features of my invention applied thereto. Fig. 2 is a rear elevation of the upper portion of the machine shown in Fig. 1, certain parts being omitted. Fig. 3 is a fragmentary plan view of a portion of the machine with parts broken away to better illustrate other features of construction. Fig. 4 is an enlarged end elevation of the upper portion of the machine, the parts being shown in normal position. Fig. 5 is a like view with parts omitted and showing the feed rollers locked in the inoperative position and the machine locked out of operation. Fig. 6 is a detail fragmentary perspective view of a modified form of construction embodying my invention.

I have shown my invention in connection with a Monarch machine to which the invention may be applied without modifying the structure of said machine when equipped with the feed roller locking mechanism disclosed in the application of Herbert H. Steele, Serial No. 301,620, filed February 17th, 1906, though it should be understood that the invention may be applied to other styles of typewriting machines, and may be used in connection with different means for locking the feed rollers in the released position, and to this and other ends various changes may be made without departing from my invention.

The frame of the machine comprises a base 1, corner posts 2 and a top plate 3. Key levers 4 are fulcrumed against a fulcrum plate 5 and each key lever is provided with a

finger key 6 and a restoring spring 7. An upright sub-lever 8 is pivoted at 9 to each key lever and is slotted at the lower end portion thereof, as at 10, for cooperation with a fixed fulcrum rod 11 that extends beneath the key levers and is secured at its ends in the base 1 of the machine. The upper end of each sub-lever is pivoted at 12 to a forwardly extending link 13, which in turn is pivoted at 14 to a type bar 15. Each type bar is pivoted at 16 to a hanger 17 secured to a type bar segment 18 by a screw 19. Each type bar is restored to normal position by a spring 20 connected at one end to the type bar and at its opposite end to a plate 21. The forward ends of the segmentally arranged upwardly and rearwardly striking type bars are supported by a pad 22 which is carried by a segmental support 23 secured to the type bar segment by rods 24. The type bar segment 18 may be shifted by the usual means (not shown) in order to provide for upper and lower case writing. Extending upwardly from the top plate are brackets 25 to which fixed guide rails 26 and 27 are secured by screws 28. The guide rails 26 and 27 are grooved on the inner faces thereof for cooperation with antifriction balls 29 which are likewise received in oppositely disposed grooved rails 30 connected by webs 31 to form a carriage bar which, with the forwardly extending end plates 32, constitute a platen frame or carriage which supports a revoluble platen 33. The carriage is thus supported by the antifriction balls 29 and is adapted to travel from side to side of the machine in the usual manner.

The carriage has rearwardly extending arms 34 pivoted thereto at 35, said arms carrying a feed rack 36 at the rear ends thereof. The feed rack 36 cooperates with a feed pinion 37 secured to the forward end of a shaft mounted in a bearing 38 secured to the top plate of the machine. The rear end of the shaft is operatively connected in the usual manner to an escapement wheel 39 with which feed dogs 40 cooperate. The feed dogs are mounted on an upwardly extending arm 41 of a dog rocker which is pivoted at 42 to a depending bracket 43 secured to the top plate of the machine. A restoring spring 43^a is connected at one end to the bracket and at the other end to the dog rocker and returns the dog rocker and the parts connected thereto to the normal position. A forwardly extending arm 44 projects from the dog rocker and a link 45 has its upper end connected at 46 to said arm, the lower end of said link being pivotally connected at 47 to a rearwardly extending arm 48 of a universal bar frame 49 pivoted at 50 in the base of the machine and carrying a universal bar 51 that extends beneath the various key levers 4. The link 45 carries a sleeve 52 adjustably secured thereto

by a set screw 53 and projecting laterally from this sleeve is a lock member or pin 54. A locking lever 55 is pivoted at 56 to the lower fixed carriage rail 27 and is adapted to move transversely of the machine, as indicated in Fig. 2. This locking lever is pivoted between the fixed carriage rail 27 and a swinging line lock actuating bar or bail 57 which has rearwardly extending arms or ears 58 at the ends thereof. Screw pivots 59 pass through openings in the arms 58 and take into threaded holes in the ends of the fixed guide rail 27 to pivotally connect the swinging bar to the rail. A spring 60 is secured by a screw 61 to the carriage rail 27 and extends at its free end beneath a pin 62 secured to the bar 57, so as to normally maintain the bar in the elevated position shown in Figs. 1, 2 and 4. The left-hand side of the locking lever 55, as viewed from the front of the machine, is provided with an arm 63 that extends to the left over a pin 64 which projects rearwardly from the bar 57. The lower end of the locking lever 55 is provided with a hook-like member 65 which is adapted to pass beneath the locking member or pin 54 when the bar 57 is depressed, as indicated in dotted lines in Fig. 2. When the locking lever is in this dotted line position the two members 54 and 65 co-act to prevent a downward movement of the link 45, thereby locking the universal bar 51 in elevated position, thus preventing a depression of any of the character keys and preventing an operation of the printing instrumentalities and also locking the escapement mechanism against actuation. That is to say, the universal bar is locked against actuation so that the key levers and type bars cannot be actuated and the dog rocker is prevented from being vibrated and the escapement mechanism cannot therefore be actuated.

The locking mechanism thus far described constitutes portions of the line-lock mechanism of the Monarch machine which are fully disclosed in the patent to Jacob Felbel and Carl Gabrielson, dated May 13th, 1902, No. 699,796. The means for actuating the bail or bar 57 when the end of a line is reached have not been shown as a consideration of such means is unnecessary for an understanding of the present invention, but it should be understood that the means in question may cooperate with the bar 57 in the usual manner without interfering with the operation of the bar in a manner to be hereinafter described.

Upon reference to Figs. 4 and 5 it will be seen that the usual paper table 66 is employed to direct the paper to a paper apron 67 supported by ears 68 on a rock shaft 69 which is received in bearings in the end plates 32 of the carriage. Forwardly extending curved arms 70 are pivoted at 71 to bracket arms or lugs 72 formed on the carriage bar,

and carried by the forward ends of these arms is a shaft 73 which supports a forward set of feed rollers 74 that are adapted to project through cut-outs or openings 75 in the paper apron and to contact with the platen. A spring 76 is secured by a screw 77 to each arm 70 and bears at its rear free end against a portion of the carriage bar, as indicated at 78 in Fig. 4, in order that the spring may exert an upward pressure on the arms to maintain a forward set of feed rollers under pressure against the platen. Each arm 70 has a leaf spring 79 secured thereto by a screw 80, the forward free end of each spring bearing against the paper apron and tending to force it into contact with the platen. A platen scale or plate 81 (Figs. 3 and 4) is pivoted at 82 to forwardly extending arms 83 secured by screws 84 to forwardly extending lugs 85 on the carriage bar. Leaf springs 86 have their ends secured at 87 to the arms 83 and bear at their forward free ends against rearwardly extending fingers 88 connected to the platen scale 81. Arms 89 are pivoted above the arms 70 at 90 to the forwardly extending lugs 72 and said arms support a rod or shaft 92 at the lower end portions thereof. This rod 92 supports the main feed rollers 93 which are adapted to project through openings or cut-outs 94 in the paper apron and contact with the platen. Each arm 89 has a leaf spring 95 secured thereto by a screw 96, the upper free end of each spring bearing against a pin 97 so that pressure is exerted by said springs to force the main feed rollers 93 towards and into contact with the platen. The lower end of each arm 89 carries an anti-friction roller 98 which bears against the associated arm 70, so that a movement of the main feed rollers 93 away from the platen causes a corresponding movement of the forward set of feed rollers 74. Each of the arms 89 is provided with an upwardly extending lug 99 with which a projection 100 on the rock shaft 69 is adapted to cooperate during the movement of the rock shaft in one direction to force the feed rollers 93 and 74 away from the platen and to relieve the pressure of the springs 79 on the paper apron. An oppositely disposed projection 101 is carried by the rock shaft 69 opposite each feed roll hanger arm 89. These projections have flat engaging ends for cooperating with the arms 89 so that when the rock shaft is turned from normal position to the position indicated in Fig. 5 the feed rollers 93 and 74 will be moved away from the platen to the inoperative position, as indicated in Fig. 5, pressure of the springs 79 on the paper apron will be relieved, and the flat ends of the lugs 101 will be brought to a position where the flat upper sides of the feed roll hanger arms 89 will be pressed against them in the dead center position, or in the direction of the axis of the rock shaft. The pres-

sure thus exerted by the springs 76 and 95 through the arms 89 exerts a locking force which maintains the rock shaft in the position to which it has been turned. An actuating arm 102 is secured to the left-hand end of the rock shaft 69 and the outer end of said arm is provided with a finger piece 103, with which to manipulate the rock shaft. The normal position of the finger piece 103 is indicated in Fig. 4, two stop pins 104 and 105 being provided to limit the swinging movement of the arm 102 and the movement of the parts controlled thereby.

From an inspection of Fig. 4 it will be seen that a forward movement of the finger piece 103, until the arm is brought into contact with the forward stop pin 105, is effective to move the feed rollers away from the platen and against the tension of the springs 76 and 95. When pressure on the finger piece 103 is released, however, the said springs will force the feed rollers against the platen, the rock shaft being restored to the normal position shown in Fig. 4. A rearward movement of the finger piece 103 from the position shown in Fig. 4, and until the arm 102 is brought into engagement with the rear stop pin 104, will result in the rock shaft being turned to the position shown in Fig. 5 which is effective to move the feed rollers to the releasing or inoperative position and to lock them in such position in the manner hereinbefore described. The paper feed devices or mechanism thus far described are the same as those disclosed in the application of Herbert H. Steele hereinbefore referred to.

A crank arm 106 projects from a sleeve 107 which is secured to the rock shaft 69 by a set screw 108. The rear end of the crank arm 106 has pivoted thereto at 109 a depending link or actuating device 110 which extends through a perforation in a guiding bracket 111 secured to the lower guide rail 30 of the carriage bar, as shown in Figs. 3 and 5. The lower end of the link or actuating device 110 is immediately above the bar 57, and a downward movement of the part 110 will always swing the bail 57 irrespective of the position of the carriage. From an inspection of Figs. 4 and 5 it will be understood that a forward movement of the finger piece 103 to temporarily release the feed rollers will merely result in lifting the crank arm 106, thus lifting the link 110 without affecting the bar 57, so that the locking devices which lock the machine out of operation are not actuated during this temporary release of the paper feeding devices. Whenever the finger piece 103 is moved rearwardly to the position shown in Fig. 5 to lock the feed rollers or paper feeding devices out of operative position, the crank arm 106 will be moved downwardly, thus effecting a downward movement of the link 110 which

results in the swinging bail or bar 57 being depressed as shown in Fig. 5 and this downward movement of the bail causes the pin 64 to be carried down with it, thus freeing the locking lever 55 and enabling it to drop by gravity to the dotted line position in Fig. 2, when the engaging members 54 and 65 will be brought into coöperation to prevent an actuation of the machine. The effect of the actuation of the bar 57 in the manner just described is the same as that effected by the line lock mechanism at the end of the line. In other words, the movement of the locking lever 55 from the full to the dotted line position in Fig. 2 in the manner just described results in locking the link 45 against downward movement so that the finger keys, the printing instrumentalities, the universal bar and escapement mechanism are all locked out of operation and the operator is unable to write until the feed rollers have been restored to the normal or operative position, which results in the link 110 being elevated to the position shown in Fig. 4 and the line lock mechanism will be restored to normal position; the locking lever 55 being moved to the full line position shown in Fig. 2, thereby automatically unlocking the machine and enabling the operator to proceed with the writing.

When I refer herein to means for locking the machine out of operation I wish to be understood to mean any device or means which will prevent an operation of the machine or a part thereof in the usual manner, so as to notify the operator that the feed rollers or paper feeding devices are in the inoperative position. Thus, for instance any suitable locking or warning means may be actuated by the bail 57; or a bail 57^a (Fig. 6) corresponding to the bail 57 may be fixed to the lower fixed rail 27 and serrated or toothed on the upper edge 57^b and the link 110^a may be provided with a tooth at the lower end so that at the last part of its downward movement it will be brought into engagement with the upper serrated edge of the fixed bar 57^a and thus lock the carriage against movement when the feed rollers are locked off. Should the operator attempt at this time to actuate the machine, it will be found that the carriage is locked against movement and thus the operator is warned or notified that the feed rollers are locked in the inoperative position and should be released. In such a construction, while the printing instrumentalities are not actually locked against movement the carriage is, and a printing operation can take place at only one letter space point.

When I refer in the accompanying claims to means for "notifying" or "warning" the operator when the feed rollers or paper feeding devices are locked in the released position I mean to include any means which

may be effective for that purpose, whether they accomplish the result by locking a part or parts of the machine out of operation as herein shown and described or accomplish it by some other means. I believe that I am the first to attain this end and wish to be understood as broadly claiming means for accomplishing this purpose, and also to be understood as broadly claiming means for preventing a printing operation when the paper feeding devices are out of operation. It will be understood, therefore, that 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 paper feeding devices, and locking means controlled by said paper feeding devices and operative to lock the machine out of operation.

2. In a typewriting machine, the combination of a carriage, escapement mechanism therefor, paper feed devices, and locking means controlled by said paper feed devices and operative to lock the escapement mechanism against actuation.

3. In a typewriting machine, the combination of a carriage, escapement mechanism including a universal bar, paper feeding devices, and locking means controlled by said paper feeding devices and operative to lock the universal bar against actuation.

4. In a typewriting machine, the combination of printing instrumentalities, finger keys therefor, paper feeding devices, and locking means controlled by said paper feeding devices for preventing actuation of said finger keys.

5. In a typewriting machine, the combination of a carriage, escapement devices, a universal bar, printing instrumentalities, finger keys therefor, paper feeding devices, and locking means controlled by said paper feeding devices and operative to lock the universal bar, escapement devices and finger keys against movement.

6. In a typewriting machine, the combination of printing instrumentalities, paper feeding devices, and locking means controlled by said paper feeding devices and operative to prevent actuation of said printing instrumentalities.

7. In a typewriting machine, the combination of a carriage, paper feeding devices, and locking means controlled by said paper feeding devices and operative at any point in the travel of the carriage to lock the machine out of operation.

8. In a typewriting machine, the combination of a carriage, printing instrumentalities, paper feeding devices, and automatically actuated locking means controlled by said paper feeding devices and operative at any point in the travel of the carriage to lock

the printing instrumentalities out of operation.

9. In a typewriting machine, the combination of a paper feeding device, controlling means for throwing said paper feeding device out of operation, and locking means controlled by said controlling means and operative to lock the machine out of operation.

10. In a typewriting machine, the combination of a paper feed roller, hand actuated means for throwing said feed roller out of operative position and for locking the feed roller in such position, and means controlled by said hand actuated means for locking the machine out of operation when the feed roller is in the inoperative position.

11. In a typewriting machine, the combination of a paper feed roller, hand actuated means for throwing said feed roller out of operative position and for locking the feed roller in such position, and means controlled by said hand actuated means for locking the machine out of operation when the feed roller is in the inoperative position and for automatically freeing the machine for operation when the feed roller is restored to operative position.

12. In a typewriting machine, the combination of a platen, a feed roller cooperating therewith, hand actuated means for moving said feed roller away from the platen, means for locking the feed roller away from the platen, and means operative by said hand actuated means for locking the machine out of operation.

13. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a paper feeding device, controlling means for throwing said paper feeding device out of operation, and locking means controlled by said controlling means and operative to lock said keys against actuation.

14. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a paper feed roller, hand actuated means for throwing said feed roller out of operative position and for locking the feed roller in such position, and means controlled by said hand actuated means for locking said keys against actuation when the feed roller is in the inoperative position.

15. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a paper feed roller, hand actuated means for throwing said feed roller out of operative position and for locking the feed roller in such position, and means controlled by said hand actuated means and operative to lock said keys against actuation when the feed roller is in the inoperative position and to automatically free said keys for operation when the feed roller returns to the operative position.

16. In a typewriting machine, the combination of a carriage, a platen, printing in-

strumentalities, keys therefor, a paper feed roller, hand actuated means for throwing said feed roller out of cooperation with the platen, and means controlled by said hand actuated means and operative at any point in the travel of the carriage to render the said keys inoperative to actuate the printing instrumentalities.

17. In a typewriting machine, the combination of a carriage, a platen, printing instrumentalities, keys therefor, a paper feed roller, hand actuated means for throwing said feed roller out of cooperation with the platen and for locking the feed roller in such position, and means controlled by said hand actuated means and operative at any point in the travel of the carriage to automatically render the said keys inoperative to actuate the printing instrumentalities when the feed roller is out of cooperation with the platen and to automatically render said keys operative when the feed roller is in cooperation with the platen.

18. In a typewriting machine, the combination of a device for effecting movements of the paper in line feed direction, and line lock mechanism controlled by said paper feeding device.

19. In a typewriting machine, the combination of a device for feeding the paper in line feed direction, and line lock mechanism operative as such and controlled by said paper feeding device so as to be automatically actuated to lock the machine when said paper feeding device is in the inoperative position and so as to be automatically actuated to unlock the machine when said paper feeding device is in the operative position.

20. In a typewriting machine, the combination of a platen, a paper feed roller, hand actuated means for throwing said paper feed roller out of cooperation with the platen, and line lock mechanism controlled by an actuation of said hand actuated means.

21. In a typewriting machine, the combination of a carriage, a platen, a paper feed roller, hand actuated means for throwing said paper feed roller out of cooperation with the platen, and line lock mechanism controlled by an actuation of said hand actuated means and operative at any point in the travel of the carriage to automatically lock the machine out of operation when the feed roller is moved away from the platen and to automatically unlock the machine when the feed roller is in position to cooperate with the platen.

22. In a typewriting machine, the combination of a carriage, a platen, printing instrumentalities, keys therefor, a paper feed roller, hand actuated means for throwing said paper feed roller out of cooperation with the platen, means for locking the feed roller in such position, and line lock mechanism controlled by an actuation of said hand actuated

means and operative at any point in the travel of the carriage to automatically lock said keys against actuation when the feed roller is locked away from the platen and to automatically release said keys when the feed roller is freed from its locking means.

23. In a typewriting machine, the combination of a paper feeding device, hand actuated means for controlling its movement into and out of operative position, a movable bar controlled by an actuation of said hand actuated means, and locking means controlled by said bar and operative to lock the machine out of operation.

24. In a typewriting machine, the combination of a paper feeding device, means for locking said paper feeding device in the inoperative position, a swinging bar controlled by said paper feeding device, and locking means controlled by said swinging bar and operative to lock the machine out of operation when said paper feeding device is locked in the inoperative position.

25. In a typewriting machine, the combination of a paper feeding device for effecting a feed of the paper in a line space direction, means for locking said paper feeding device in the inoperative position, a swinging bar controlled by said paper feeding device, and line locking means operative as such and controlled by said swinging bar and operative to lock the machine out of operation when said paper feeding device is locked in the inoperative position.

26. In a typewriting machine, the combination of a platen, a paper feed roller for effecting a feed of the paper in a line feed direction, means for locking said paper feed roller away from the platen, a swinging bar controlled by said paper feed roller, and line locking means operative as such and controlled by said swinging bar and operative to lock the machine out of operation when said paper feed roller is locked away from the platen.

27. In a typewriting machine, the combination of a carriage, a platen, a paper feed roller cooperating with the platen, hand actuated means for moving and locking said feed roller away from the platen, a movable bar controlled by said hand actuated means at any point in the travel of the carriage, and locking means controlled by said movable bar for locking the machine out of operation when the paper feed roller is locked away from the platen.

28. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a carriage, a platen, a paper feed roller cooperating with the platen, hand actuated means for moving and locking said feed roller away from the platen, a swinging bar controlled by said hand actuated means at any point in the travel of the carriage, and locking means controlled by said swinging

bar for locking said keys against actuation when the paper feed roller is locked away from the platen.

29. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a carriage, a platen, a paper feed roller cooperating with the platen, hand actuated means for moving and locking said feed roller away from the platen, a swinging bar controlled by said hand actuated means at any point in the travel of the carriage, a locking lever controlled by said swinging bar, and a universal bar with which said keys cooperate and which is locked against actuation by said locking lever when the feed roller is locked away from the platen.

30. In a typewriting machine, the combination of a paper feeding device, controlling means operable either to move said paper feeding device to the inoperative position and to allow it to be restored to operative position when pressure is released on said controlling means or to move said paper feeding device to and lock it in the inoperative position, and locking means for automatically locking the machine out of operation when the paper feeding device is locked in the inoperative position but which remains unaffected when the paper feeding device is merely moved to the inoperative position and is permitted to return to operative position by release of the pressure on the controlling means.

31. In a typewriting machine, the combination of a platen, a paper feed roller, controlling means operable either to move said paper feed roller away from the platen and to allow it to be moved back to the platen when pressure is released on said controlling means or to move and lock said paper feed roller away from the platen, and locking means for automatically locking the machine out of operation when the paper feed roller is locked away from the platen but which remains unaffected when the paper feed roller is merely moved away from the platen and is permitted to move back thereto by release of the controlling means.

32. In a typewriting machine, the combination of a platen, a paper feed device, controlling means therefor including a finger piece operable in one direction merely to release the feed device and operable in another direction to release the feed device and lock it in the released position, and means for locking the machine out of operation when the feed device is locked in the released position.

33. In a typewriting machine, the combination of a platen, a paper feed roller, controlling means therefor including a finger piece operable in one direction merely to release the feed roller and operable in another direction to release the feed roller and lock it in the released position, and automatically

actuated means operable by a movement of said finger piece in the last mentioned direction to lock the machine out of operation.

34. In a typewriting machine, the combination of a platen, a paper feed roller, controlling means therefor including a finger piece operable in one direction to release the feed roller and operable in another direction to release the feed roller and lock it in the released position, and means operable by a movement of said finger piece in the last mentioned direction to lock the machine out of operation but which remains unaffected by a movement of said finger piece in the first mentioned direction.

35. In a typewriting machine, the combination of printing instrumentalities, finger keys therefor, a carriage, a platen, a paper feed roller, controlling means therefor including a finger piece operable in one direction to release the feed roller and operable in another direction to release the feed roller and lock it in the released position, and means operable at any point in the travel of the carriage for automatically locking said printing instrumentalities against actuation when the feed roller is locked in the released position.

36. In a typewriting machine, the combination of a platen, a cooperating feed roller, means for automatically locking the machine out of operation, and hand actuated means operable to move the feed roller away from the platen without affecting said locking means or operable to lock the feed roller away from the platen and to automatically effect an operation of said locking means.

37. In a typewriting machine, the combination of a paper feed device, a line lock actuating bar and associated line lock mechanism, and operative connections between said line lock bar and said feed device.

38. In a typewriting machine, the combination of a paper feed roller, means for releasing said feed roller, a line lock actuating bar and associated line lock mechanism, and operative connections between said line lock bar and said feed roller releasing means.

39. In a typewriting machine, the combination of a paper feed roller, a rock shaft for effecting a release of said feed roller, hand actuated means for turning said rock shaft, line lock mechanism, and intermediate connections between said rock shaft and line lock mechanism.

40. In a typewriting machine, the combination of a paper feed roller, a rock shaft for effecting a release of said feed roller, hand actuated means for turning said rock shaft, means for rendering the machine inoperative, and means operative through said rock shaft for actuating the means for rendering the machine inoperative.

41. In a typewriting machine, the combination of printing instrumentalities, a car-

riage, a paper feed roller, a rock shaft for effecting a release of said feed roller, hand actuated means for turning said rock shaft, locking means for rendering the printing instrumentalities inoperative, and means operative through said rock shaft for actuating said last mentioned means.

42. In a typewriting machine, the combination of a paper feed roller, a rock shaft which may be turned in either direction for effecting a release of said feed roller, means for locking the rock shaft at the limit of its movement in one direction to lock the feed roller in the released position, and means for automatically locking the machine out of operation when the feed roller is locked in the released position.

43. In a typewriting machine, the combination of a feed roller, a rock shaft which may be turned in either direction for effecting a release of said feed roller, means for locking the rock shaft at the limit of its movement in one direction to lock the feed roller in the released position, means for locking the machine out of operation, and operative connections between said rock shaft and the means for automatically locking the machine out of operation.

44. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a feed roller, a rock shaft which may be turned in either direction for effecting a release of said feed roller, means for locking the rock shaft at the limit of its movement in one direction to lock the feed roller in the released position, means for preventing an actuation of said printing instrumentalities, and operative connections between said rock shaft and the means for preventing an actuation of the printing instrumentalities, whereby a movement of the rock shaft in one direction may be effected to release the feed roller without locking the printing instrumentalities and without locking the feed roller in the released position whereas a movement of the rock shaft in the opposite direction is effective to lock the feed roller in the released position and to lock the printing instrumentalities against actuation.

45. In a typewriting machine, the combination of a paper feed roller, a rock shaft which may be turned to effect a release of the feed roller, means for automatically locking said rock shaft and holding the feed roller in the released position, a movable bar, operative connections between said rock shaft and said movable bar, and means controlled by said movable bar for locking the machine out of operation.

46. In a typewriting machine, the combination of printing instrumentalities, keys therefor, a feed roller, a rock shaft which may be turned to effect a release of the feed roller, means for automatically locking said rock shaft and holding the feed roller in the

leased position, a movable bar, operative connections between said rock shaft and said movable bar, a locking lever controlled by said bar, and means controlled by said lever for locking said keys against actuation.

47. In a typewriting machine, the combination of printing instrumentalities, key levers therefor, a universal bar controlled by said key levers, escapement mechanism controlled by said universal bar, a feed roller, a rock shaft which may be turned to effect a release of the feed roller, means for automatically locking said rock shaft and holding the feed roller in the released position, a movable bar, operative connections between said rock shaft and said movable bar, a locking lever controlled by said movable bar, and means controlled by said locking lever for locking said universal bar against actuation, thereby preventing a depression of said key lever and also preventing an actuation of the printing instrumentalities and escapement mechanism.

48. In a typewriting machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, key levers therefor, a universal bar cooperating with said key levers, escapement mechanism controlled by said universal bar, a paper feed roller, a rock shaft which may be turned to effect a movement of said feed roller away from the platen, means for locking said rock shaft and holding said feed roller in the released position away from the platen, a swinging bar carried by the frame of the machine, operative connections between said rock shaft and said swinging bar and which are operative to swing said bar by a rocking of the rock shaft at any point in the travel of the carriage, and means controlled by said swinging bar for locking the universal bar against movement.

49. In a typewriting machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, key levers therefor, a universal bar cooperating with said key levers, escapement mechanism controlled by said universal bar, a paper feed roller, a rock shaft which may be turned to effect a movement of said feed roller away from the platen, means for locking said rock shaft and holding said feed roller in the released position away from the platen, a swinging bar carried by the frame of the machine, operative connections between said rock shaft and said swinging bar and which are operative to swing said bar by a rocking of the rock shaft at any point in the travel of the carriage, a locking lever controlled by said swinging bar, and means with which said locking lever is adapted to engage when the feed roller is locked in the released position to prevent a movement of the universal bar, said locking lever being automatically moved to the released position when said feed roller is released from its locked position.

50. In a typewriting machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, key levers therefor, a universal bar cooperating with said key levers, an escapement device, a link which connects said universal bar and escapement device, an engaging member on said link, a paper feed roller, releasing means for moving said feed roller to and locking it in the released position, and means controlled by said releasing means and cooperative with said engaging member for automatically locking the machine against actuation when the feed roller is locked in the released position.

51. In a typewriting machine, the combination of a carriage, a platen carried thereby, printing instrumentalities, key levers therefor, a universal bar cooperating with said key levers, an escapement device, a link which connects said universal bar and escapement device, an engaging member on said link, a paper feed roller, a rock shaft which may be turned to effect a movement of said feed roller away from the platen, means for locking said rock shaft and holding said feed roller in the released position away from the platen, a swinging bar carried by the frame of the machine, operative connections between said rock shaft and said swinging bar and which are operative to swing said bar by a rocking of the rock shaft at any point in the travel of the carriage, and a locking lever controlled by said swinging bar and co-acting with said engaging member for locking the universal bar against movement.

52. In a typewriting machine, the combination of a paper feed roller, means for moving said feed roller into and out of operative position, and means for automatically rendering the machine inoperative when said feed roller is moved out of operative position.

53. In a typewriting machine, the combination of a paper feed roller, means for moving said feed roller into and out of operative position and for locking the feed roller in the inoperative position, and means for automatically rendering the machine inoperative when said feed roller is locked in the inoperative position.

54. In a typewriting machine, the combination of a paper feed roller, hand actuated means for moving said feed roller into and out of operative position and for locking the feed roller in the inoperative position, and controlling means for automatically rendering the machine inoperative when said feed roller is locked in the inoperative position; said hand actuated means being operable to move the feed roller to the inoperative position without actuating said controlling means.

55. In a typewriting machine, the combination of paper feeding devices, means for throwing and locking said paper feeding devices out of operation, and automatically

actuated means for notifying the operator when the paper feeding devices are locked out of operation.

56. In a typewriting machine, the combination of paper feed rollers, controlling means for moving and locking said paper feed rollers out of operation, and automatically actuated means operative through said controlling means for notifying the operator that the paper feed rollers are locked in the inoperative position.

57. In a typewriting machine, the combination of a platen, paper feed rollers cooperating therewith, hand actuated means for moving said feed rollers away from the platen, means for locking the feed rollers in the released position, and automatically actuated means controlled through an actuation of said hand actuated means for notifying the operator that the feed rollers are locked in the released position.

58. In a typewriting machine, the combination with paper feeding mechanism, and

means for locking said paper feed mechanism out of operative position, of means for rendering inoperative some other essential working part of the machine while the paper feeding mechanism is locked in the inoperative position.

59. In a typewriting machine, the combination of a paper feeding device, means for rendering said paper feeding device inoperative and for locking it in this state, and automatically controlled means for rendering some other essential working part of the machine inoperative when the paper feeding device is inoperative.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 13th day of June A. D. 1906.

CHARLES E. SMITH.

Witnesses:

E. M. WELLS,
M. F. HANNWEBER.