

C. J. BOND.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 11, 1909.

992,844.

Patented May 23, 1911.

2 SHEETS—SHEET 1.

FIG. 4.

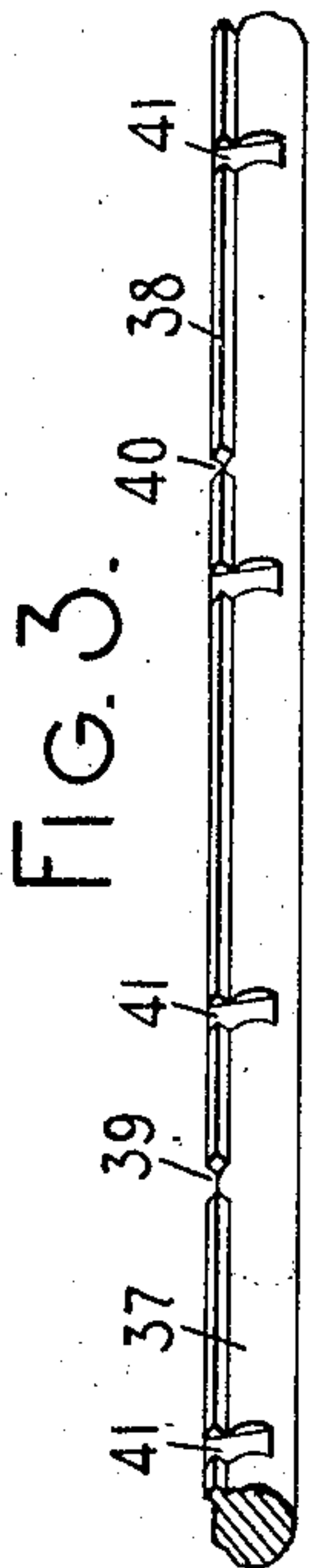


FIG. 5.

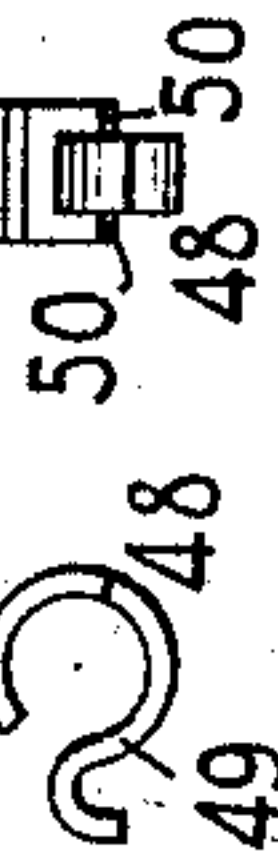


FIG. 1.

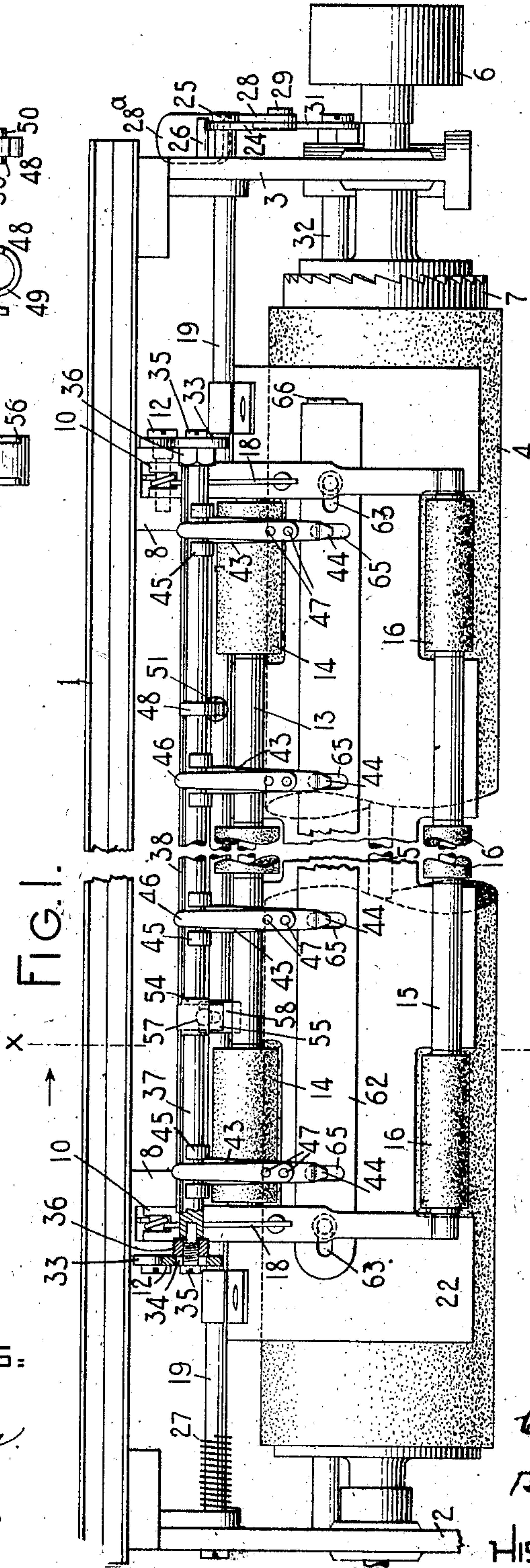


FIG. 7.



FIG. 8.

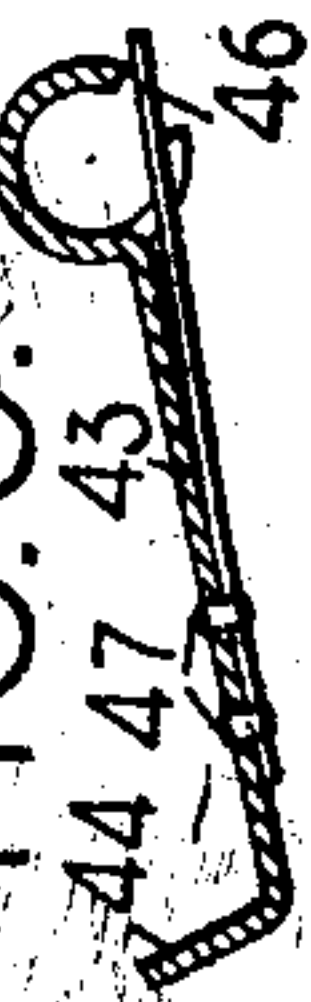
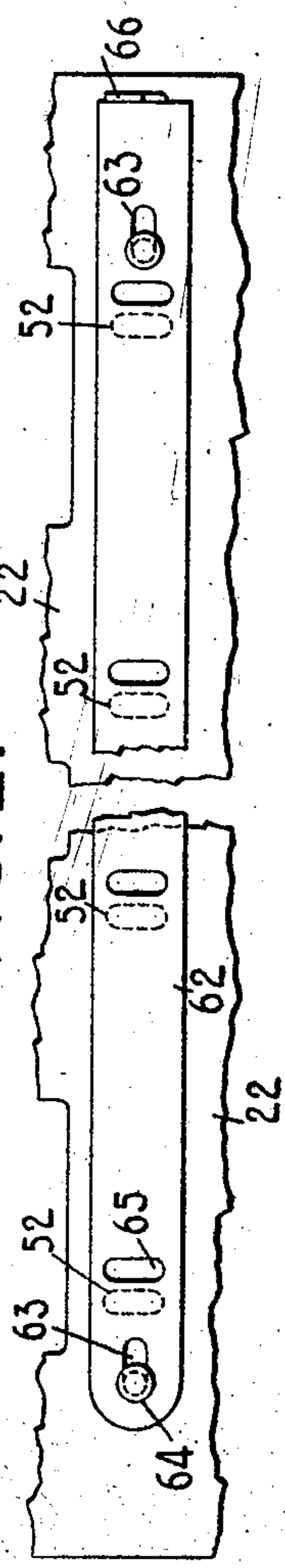


FIG. 2.



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By Jacob F. Felt
HIS ATTORNEY

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2 SHEETS—SHEET 2.

FIG. 9.

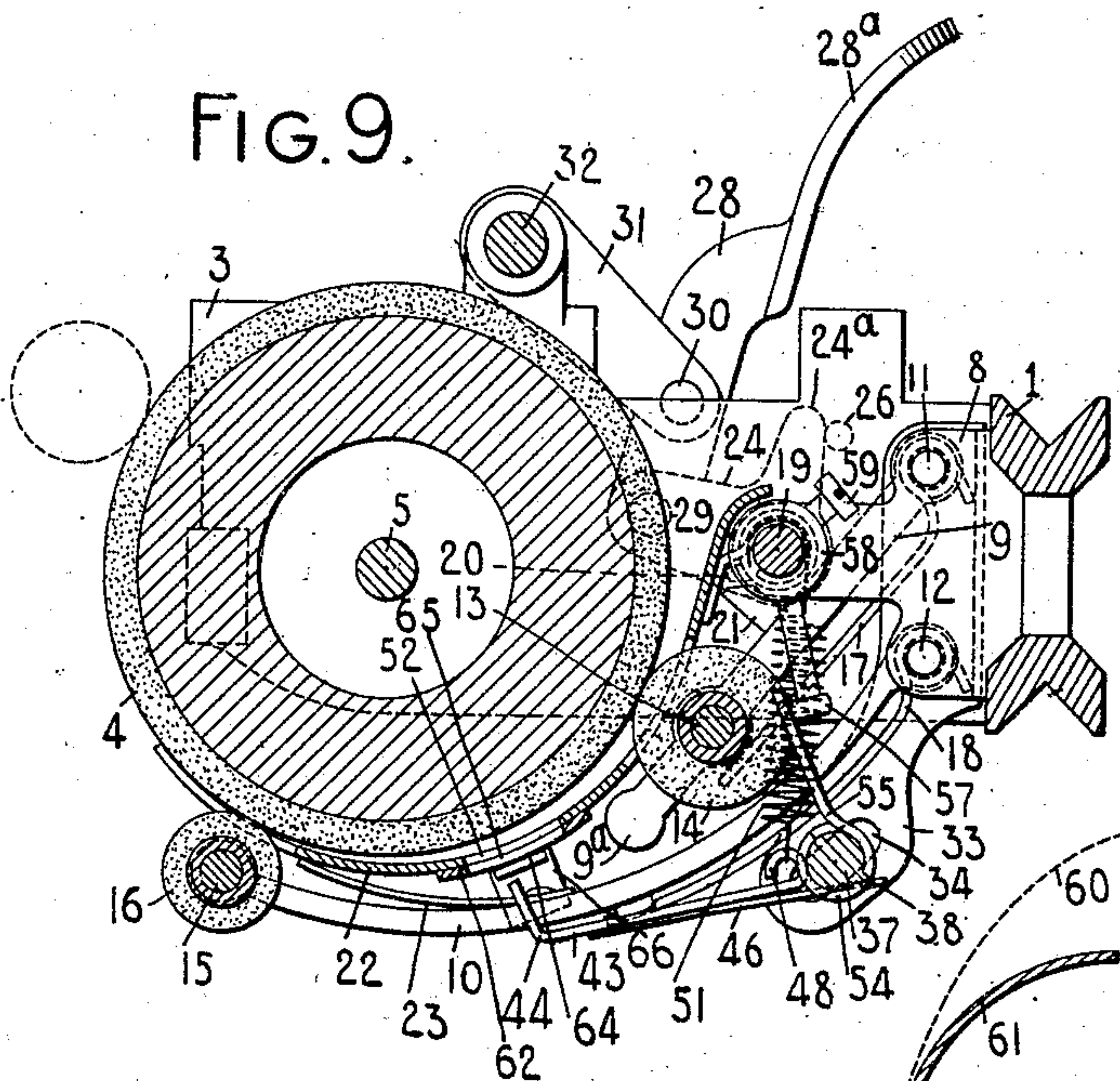
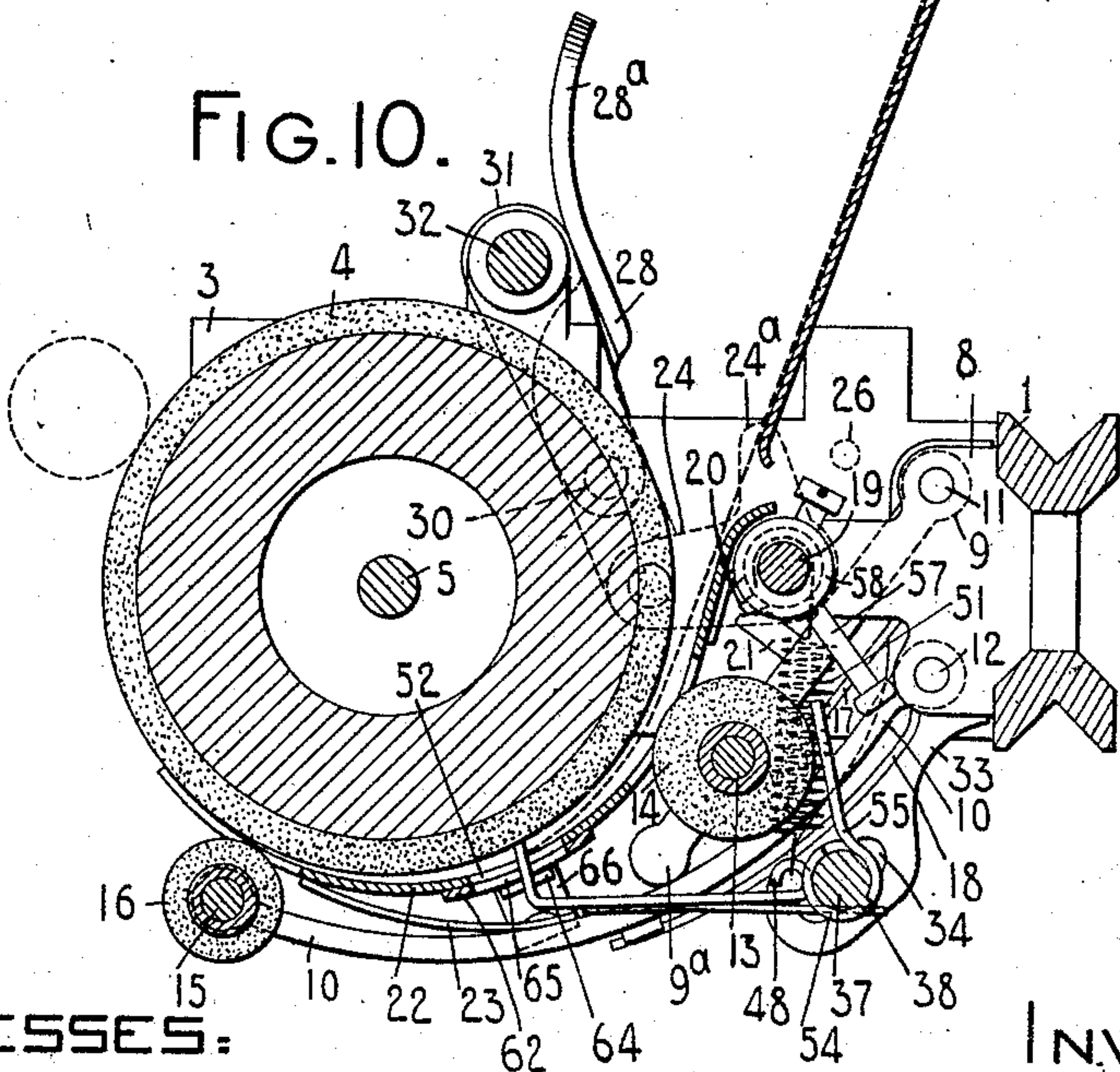


FIG. 10.



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UNITED STATES PATENT OFFICE.

CHARLES J. BOND, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPE-
WRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

992,844.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed March 11, 1909. Serial No. 482,678.

To all whom it may concern:

Be it known that I, CHARLES J. BOND, 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 paper feeding mechanism for typewriting machines and more especially to what are commonly termed leading edge stop devices for such machines.

The main object of my invention, generally stated, is to provide improved devices of the class specified.

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

The invention is shown as applied to a Monarch typewriting machine but may be adapted to other styles of writing machines.

In the accompanying drawings, Figure 1 is a fragmentary bottom plan view of the platen carrier and platen of a Monarch typewriter having my invention applied thereto. Fig. 2 is a fragmentary bottom plan view of the paper apron or deflector of the machine and of an element applied to said paper apron and adapted to lock the leading edge stops out of operation. Fig. 3 is a fragmentary perspective view of a rock shaft on which the leading edge stops are mounted. Figs. 4, 5 and 6 are detail views. Fig. 7 is a bottom plan view of one of the leading edge stop members. Fig. 8 is a longitudinal sectional view of the stop member shown in Fig. 7, the spring clip not being sectioned. Fig. 9 is a vertical sectional view taken on a plane represented by the dotted line $x-x$ in Fig. 1 and looking in the direction of the arrows at said line, Fig. 9, however, showing the platen carrier turned over in its normal position. Fig. 10 is a view corresponding with Fig. 9 but showing certain of the parts in different relations from those in which they appear in said Fig. 9, the paper table also being shown in Fig. 10.

Referring first to Figs. 1, 9 and 10, the platen carrier or carriage is shown as comprising a back bar 1 and side or end bars 2 and 3, said back bar being grooved at its

top and bottom to cooperate with the usual ball bearings (not shown). The usual platen 4 is mounted on an axle 5 which bears in the end bars and is provided at its ends with finger wheels 6, one of which is shown. A line spacing ratchet wheel 7, operatively connected with the platen, is adapted to cooperate with other line spacing devices (not shown) to turn the platen in line spacing direction. Lugs 8 project forward from the back bar 1 and are slotted to receive pairs of arms 9 and 10 which are pivotally mounted on shouldered screws 11 and 12, said screws being supported on said lugs. The arms 9 carry a feed roll rod 13 on which are mounted the sections 14 of the main feed roller. The arms 10 carry a rod 15 on which are mounted the sections 16 of the secondary feed roller. Normally the main and secondary feed rollers are respectively maintained in contact with the platen or the paper thereon by springs 17 and 18. A rock shaft 19, bearing in the ends of the platen carrier, is provided with lugs 20 which engage with the beveled ends of pins 21 on the arms 9, when the rock shaft 19 is turned forward, and overcome the springs 17 and 18, swinging the arms 9 and 10 downward and releasing the main and secondary feed rollers. The release of the secondary feed roller is accomplished by projections 9^a on the arms 9, said projections engaging with the arms 10 to swing said arms 10 downward. A paper apron or deflector 22 is pivotally supported on the rock shaft 19 and its forward end portion is normally pressed against the platen by springs 23. The sections of the main and secondary feed rollers protrude through openings in said paper apron to contact with the platen or the paper thereon. The springs 23 are secured to the arms 10 and when the rock shaft 19 is turned forward to release the feed rollers the downward movement of the arms 10 causes the pressure of the springs 23 on the paper apron to relax. The parts thus far described are common to the Monarch machine.

The release rock shaft 19 may be turned or operated by any desired means. The means shown in the drawing were invented by Edwin E. Barney and are shown in his application filed November 23rd, 1907, Serial No. 403,531. Said means comprise a crank arm 24 secured to the end of the rock shaft

19 outside the platen end bar 3 by a screw 25. Normally a nose 24^a on said crank arm is maintained against a stop pin 26 on the end bar 3 by a spring 27 coiled around the opposite end of the rock shaft 19 and having one end secured thereto and the other end secured to the end bar 2. The normal positions of the rock shaft, feed rolls and paper apron are shown in Fig. 9. A releasing lever 28 is pivotally connected at 29 to the crank arm 24 and at 30 to a pivoted guide arm 31 which bears on the usual paper finger rod 32. The free end of the release lever 28 terminates in a finger piece 28^a which is turned or twisted at right angles to the body of the lever and which is adapted to contact with the rear or upper edge of the arm 31 to limit the forward movement of the finger piece 28^a. The members 28 and 31 are toggle elements which normally are angularly disposed; but when the finger piece 28^a is pulled forward the toggle elements are straightened as shown in Fig. 10 so that the crank arm 24 and rock shaft 19 which have been turned forward by the finger piece will be maintained in the abnormal positions shown in Fig. 10, thus locking the main and supplementary feed rolls in released positions.

The leading edge stop devices to which my invention particularly relates comprise supporting arms 33 which are secured by the screws 11 and 12 to the outer side faces of the lugs 8 and extend downward below said lugs, inclining forward somewhat also. The lower end portions of the arms 33 are formed with inclined slots 34 which receive screw pivots 35, said screw pivots being clamped in fixed relation to the arms 33 by nuts 36. By loosening the nuts 36 the screw pivots may be adjusted both up or down and fore and aft of the machine, and after being brought to the desired positions may be fixed thereat by tightening the nuts 36. The inner or pivot ends of the screw pivots 35 support a rock shaft 37 which extends from one arm 33 to the other below the arms 10 and is adapted to be rocked on the screw pivots as presently to be described.

The rock shaft 37 is shown detached in Fig. 3. Said rock shaft is provided with a rib or feather 38 which is cut away at two points as indicated at 39 and 40. The rock shaft 37 and rib 38 are partially cut away or notched at intervals as indicated at 41, the notches 41 receiving parts of the leading edge stop devices or members and serving to locate said members in proper positions lengthwise of the rock shaft 37. One of these stop members is shown in detail in Figs. 7 and 8. Each of said stop members comprises a curved hub or collar portion 42 which partly surrounds the rock shaft and a straight extension 43 which terminates in an angularly disposed end portion or stop

proper 44, the latter being somewhat pointed. When the stop members are in place on their support the portions 43 extend forward and slightly downward while the portions 44 extend upward and slightly forward. Each stop member insofar as it has been described is preferably formed of a single piece of sheet metal which is punched and shaped to the desired form. At either side of the extension 43 are provided fingers 45 which hug the rock shaft, and, with the hub portion proper 42, retain the associate stop member on said rock shaft. The ends of the fingers 45 are adapted to be engaged by the rib 38 when the rock shaft 37 is turned, so as to force the stops 44 into contact with the platen. A spring tongue or clip 46 is suitably secured as by rivets 47 to the under side of the extension 43, the free end of said clip engaging the associate notch 41 in the rock shaft 37 and preventing the stop member from slipping along said rock shaft. By lifting the clip out of the notch, the associate stop member may be slid along the rock shaft 37 and removed.

A hook member 48, shown detached in Figs. 5 and 6 formed preferably of a single piece of sheet metal, partly surrounds the rock shaft 37 and is provided with a curved tongue or hook proper 49 which engages in the notch 40 in the rib 38, the hook member being thereby prevented from slipping along said rock shaft. Where the tongue 49 joins the body of the hook member, shoulders 50 are formed, which shoulders are maintained in contact with one side of the rib 38 by a coiled draw spring 51 (Figs. 1, 9 and 10). Said draw spring is vertically disposed and the lower end of it is connected to the hook 49, while the upper end is hooked around the rock shaft 19. As will be understood from Figs. 9 and 10, the draw spring 51 tends constantly to turn the hook member and maintain the shoulders 48 against the rib 38. By this construction the pull of the draw spring is transmitted to the rock shaft 37 so that the rock shaft is constantly tending to turn in the direction of the arrow in Fig. 9 and to force the ends of the stops 44 into contact with the platen.

The apron or deflector 22 is formed with slots 52 which register with the stops 44 and through which said stops may move toward and away from the platen. Normally, however, the stops 44 are held away from the platen in the position shown in Fig. 9 and the spring 51 is overcome by devices which include a finger 53 shown detached in Fig. 4. The hub portion 54 of this finger surrounds the rock shaft 37 and the extended portion 55 of said finger engages the slot 39 in the rock shaft 37. Shoulders 56, formed at the junction of the extension 55 and hub portion 54, contact with one side of the rib

38, causing the rock shaft 37 to turn when the finger or member 53 is turned in one direction. The notch 39 prevents the finger 53 from sliding along the rock shaft 37.

5 The extension 55 normally projects upward and forward from the rock shaft 37 as shown in Fig. 9 and is engaged by a screw or headed pin 57 which projects downward and rearward behind the extension 55 from

10 a collar 58, which collar surrounds the rock shaft 19 and is secured thereto by a screw 59. The screw or pin 57 is screwed or driven into or otherwise secured to the collar 58. The normal position of the pin 57, it

15 will be understood, is determined by the normal position of the rock shaft 19 which in turn is positioned normally by the spring 27 which maintains the nose 24^a against the stop 26. The spring 27 is stronger than the

20 draw spring 51 so that the pin 57 forces the extension 55 forward turning the rock shaft 37 through the action of the shoulders 56 on the rib 38 and extending the draw spring until the parts reach the normal position

25 shown in Fig. 9. When, however, the feed rollers are released by pushing forward the finger piece 28^a and turning the rock shaft 19, the pin 57 is swung rearward to the position shown in Fig. 10, thereby permitting

30 the draw spring 51 to turn the rock shaft 37 until the stops 44 have been swung into contact with the surface of the platen as shown in Fig. 10. It will be noted from Fig. 10 that the stops 44 contact with the platen be-

35 fore the extension 55 has turned rearward to any great extent, so that the extension 55 will not follow the pin 57 during the entire rearward travel of said pin 57 but will be arrested some distance from said pin 57 as

40 shown in Fig. 10.

As will be noted from Fig. 10, the stops 44 when in operative position contact with the platen at the under side thereof and between the two sets of released feed rollers.

45 When an invoice or other sheet, represented in Fig. 10 by the dotted line 60, is introduced into the machine over the usual paper table 61 and the paper apron 22, said sheet 60 will pass between the platen and the re-

50 leased main feed roller, and its leading edge will contact with and be arrested by the leading edge stops 44 and will thus be definitely located. The ends of the stops 44 are in a straight line which is parallel with the

55 axis of the platen so that the paper will be squared or trued by contact with said stops. Thereafter the finger piece 28^a may be pushed rearward, unlocking the toggle elements and permitting the feed rollers to

60 return to operative position, the main feed roller contacting with the invoice sheet 60 and pressing it against the platen. The parts are so located and timed that the paper or invoice sheet will be clamped against the

65 platen by the main feed roller before the pin

57 swings back into contact with the extension 55, the result being that the invoice sheet will be firmly held against the platen by the main feed roller before the leading edge stops 44 move away from the platen to

70 clear the path and permit advance or forward movement of the invoice sheet.

As is well understood, the leading edge stop devices are useful in some forms of commercial typewriting such as condensed

75 billing work. At times, however, it may be desired to dispense with the stops 44. I have, therefore, provided means, in the present instance a closure for the passage ways in the paper deflector, for locking or shut-

80 ting said stops out of operation. Said means are illustrated in Figs. 1, 2, 9 and 10 and comprise a slidable bar or plate 62 which extends lengthwise of the apron or deflector 22 and is arranged at the under side thereof.

85 Slots 63 formed near the ends of the plate 62 and extending longitudinally thereof receive headed pins or rivets 64 which slidably secure the plate 62 to the paper apron 22 and so that said plate will be frictionally held in

90 adjusted positions. The plate 62 is provided with a series of transverse slots 65 at intervals, corresponding in arrangement to the slots 52 in the apron. In the position of the

95 plate 62 shown in Figs. 1, 9 and 10, the slots 65 register with the slots 52 forming continuous transverse openings so that the stops 44 may pass through both sets of slots toward and away from the platen. The plate

100 62 is provided with a downwardly bent finger piece 66 at or near one end and when this finger piece is pulled toward the right in Fig. 1 the plate 62 will be slid rightward and will cover or close the openings or slots

105 52 in the paper apron. Thereafter when the releasing handle or finger piece 28^a is pulled forward and the stops 44 are swung upward by the draw spring 51, said stops will pass through the slots 52 but will then

110 contact with the under face of the plate 62 at one side of the slots 65 therein and so will be prevented from moving any farther toward the platen. By this contrivance the paper releasing devices may be employed

115 alone or the leading edge stops may be brought into operation concurrently with the paper releasing devices, at pleasure.

Various changes may be made without departing from my invention.

What I claim as new and desire to secure

120 by Letters Patent, is:—

1. In a typewriting machine, the combination with a platen, of stop devices comprising a rock shaft, a plurality of stops mounted directly thereon, means for transmitting rotary movement from said rock

125 shaft to said stops, means tending constantly to turn said shaft on its longitudinal axis to bring said stops against the platen, and means cooperating with said shaft to

130

maintain said stops normally away from the platen.

2. In a typewriting machine, the combination with a platen, of stop devices comprising a rock shaft, stop arms mounted directly thereon and extending therefrom toward the platen, means for transmitting a motion of rotation from said rock shaft to said stop arms, a spring connected with said rock shaft and tending constantly to turn it on its longitudinal axis to bring said stop arms against the platen, and hand-controlled means normally operating to overcome said spring and maintain said stop arms away from the platen.

3. In a typewriting machine, the combination of a platen, a rock shaft, a stop connected with said rock shaft, and means enabling the normal bodily position of said rock shaft to be varied transversely of said platen.

4. In a typewriting machine, the combination of a platen carrier, a platen thereon, pivot members mounted on said platen carrier and bodily adjustable toward and away from said platen, a rock shaft supported on said pivot members, and a stop connected with said rock shaft.

5. In a typewriting machine, the combination of a platen carrier, a platen thereon, slotted arms on said platen carrier, pivot members adjustably secured in the slots on said arms, a rock shaft supported on said pivot members, and a stop connected with said rock shaft.

6. In a typewriting machine, the combination of a platen, a rock shaft, and a stop member on said rock shaft, said stop member comprising a hub embracing said rock shaft, an extension from said hub terminating in an angularly disposed stop, and hand-controlled means for detachably securing said stop member to said rock shaft and for preventing movement of said stop member endwise of said rock shaft, said stop member being capable of a slight movement of rotation on and independent of said rock shaft.

7. In a typewriting machine, the combination of a platen, a rock shaft, and a stop member on said rock shaft, said stop member comprising a hub partly surrounding said rock shaft, an extension from said hub terminating in an angularly disposed stop, and a spring clip secured to said extension and engaging a notch in said rock shaft.

8. In a typewriting machine, the combination of a platen, a rock shaft provided with a longitudinal rib, a stop member on said rock shaft, said stop member comprising a hub partly surrounding said rock shaft and having a portion abutting against one side of said rib, an extension from said hub terminating in an angularly disposed stop, and a spring clip secured to said ex-

tension and engaging a notch in said rock shaft, and means for turning said rock shaft and causing the rib thereon to force said stop against the platen.

9. In a typewriting machine, the combination with a platen carrier and a platen thereon, of stop devices comprising a rock shaft on said platen carrier, a plurality of detachable stop members mounted at intervals along said rock shaft, a detachable hook member on said rock shaft, and a spring connected with said hook member.

10. In a typewriting machine, the combination of a platen carrier, a platen thereon, a rock shaft on said platen carrier, a plurality of detachable stop members mounted at intervals along said rock shaft, a detachable hook member on said rock shaft, a draw spring connecting said hook member with said platen carrier, a detachable finger on said rock shaft, and means normally co-acting with said finger to overcome said draw spring and maintain said stop members out of contact with said platen.

11. In a typewriting machine, the combination of a platen carrier, a platen thereon, a rock shaft on said platen carrier, a stop member mounted directly on said rock shaft, a spring tending constantly to turn said rock shaft on its longitudinal axis in one direction, means for transmitting motion of rotation from said rock shaft to said stop member, a finger projecting from said rock shaft, a member normally engaging said finger and overcoming said spring, and hand controlling devices for moving said member away from said finger.

12. In a typewriting machine, the combination of a platen carrier, a platen thereon, a rock shaft on said platen carrier, a stop member mounted directly on said rock shaft, a spring tending constantly to turn said rock shaft on its longitudinal axis in one direction, means for transmitting motion of rotation from said rock shaft to said stop member, a finger projecting from said rock shaft, a feed roll, feed roll releasing devices including a rock shaft, and a member fixed to the last named rock shaft and normally co-acting with said finger to hold said stop member in inoperative position.

13. In a typewriting machine, the combination of a platen carrier, a platen thereon, a rock shaft on said platen carrier, a stop member mounted directly on said rock shaft, a spring tending constantly to turn said rock shaft on its longitudinal axis in one direction, means for transmitting motion of rotation from said rock shaft to said stop member, a finger projecting from said rock shaft, arms on said platen carrier, a feed roll supported on said arms and normally spring pressed into engagement with the platen or the paper thereon, means for swinging said arms away from the platen

and locking said feed roll in released position, said means comprising a rock shaft, and an extension from said rock shaft normally engaging said finger and maintaining said stop member away from the platen.

14. In a typewriting machine, the combination of a platen carrier, a platen thereon, a paper deflector provided with a slot, a stop, means for moving said stop toward and away from the platen through the slot in said paper deflector, and a closure for said slot movable at will to cover the slot.

15. In a typewriting machine, the combination of a platen carrier, a platen thereon, a paper deflector provided with a slot, a stop, means for moving said stop toward and away from the platen through the slot in said paper deflector, and a plate provided with a slot which is adapted to register with the slot in said paper deflector and which may be moved out of register at pleasure.

16. In a typewriting machine, the combination of a platen carrier, a platen thereon, a paper deflector on said platen carrier formed at intervals with slots, paper stops, means for moving said paper stops toward

and away from the platen through the slots in said paper deflector, and a hand controlled plate provided with slots which may be caused to register with the slots in said paper reflector or may be moved out of register at pleasure.

17. In a typewriting machine, the combination of a platen carrier, a platen thereon, a paper deflector on said platen carrier formed at intervals with slots, paper stops, means for moving said paper stops toward and away from the platen through the slots in said paper deflector, and a plate having a pin and slot connection with said deflector and being provided with slots corresponding with the slots in said deflector, said plate being movable at pleasure to bring its slots into or out of register with the slots in said deflector.

Signed at Syracuse, in the county of Onondaga and State of New York this 8th day of March A. D. 1909.

CHAS. J. BOND.

Witnesses:

H. H. STEELE,
GEORGE L. COLING.