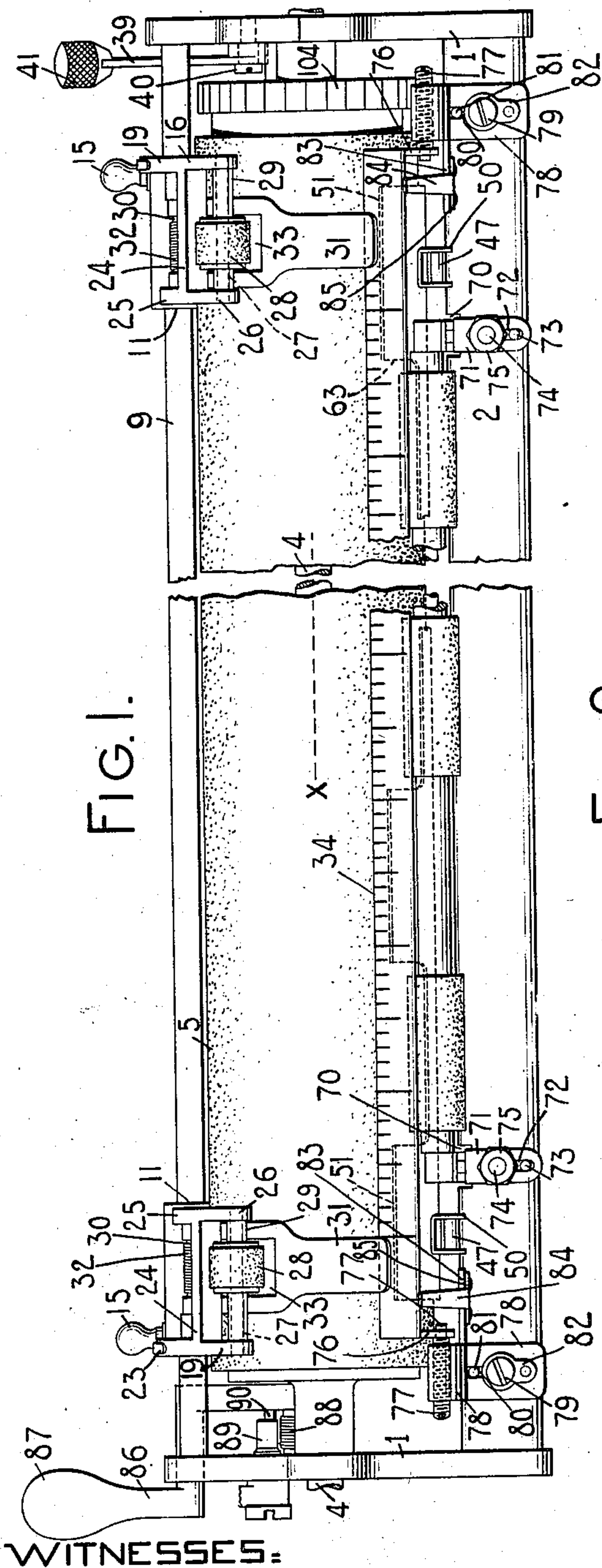


O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 2, 1907.

Patented Jan. 11, 1910.

4 SHEETS—SHEET 1.

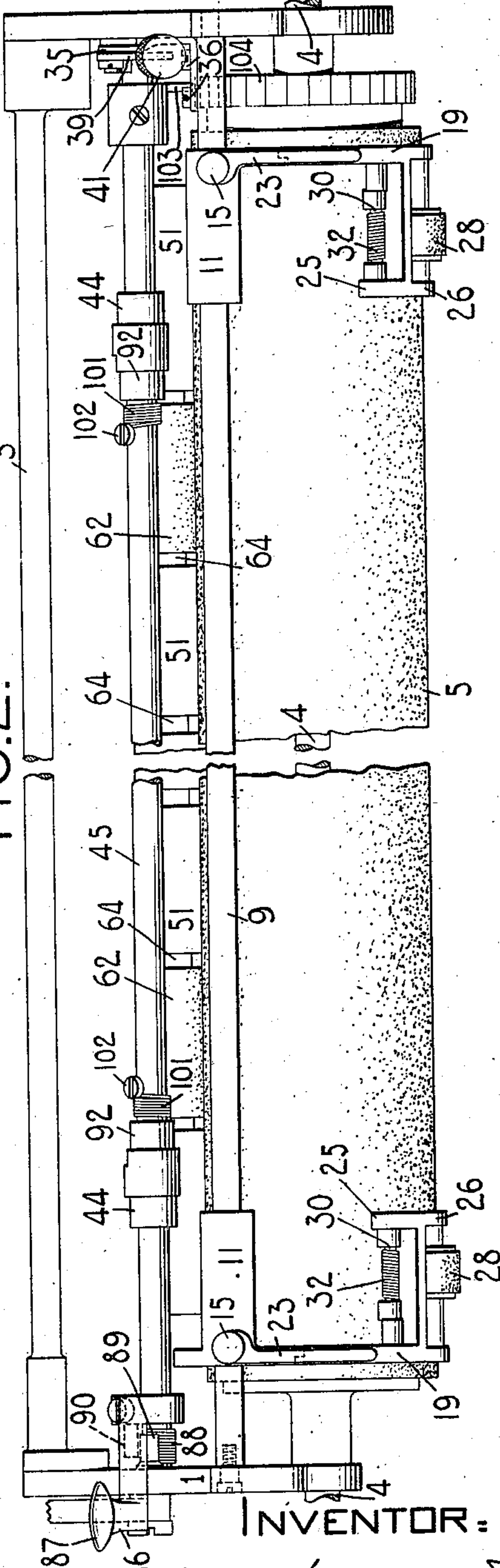
945,893.



WITNESSES:

M. F. Hammer
Charles E. Smith

FIG. 2.



INVENTOR:

Oscar Woodward
By Jacob Filbel
HIS ATTORNEY

945,893.

O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 2, 1907.

Patented Jan. 11, 1910.
4 SHEETS—SHEET 2.

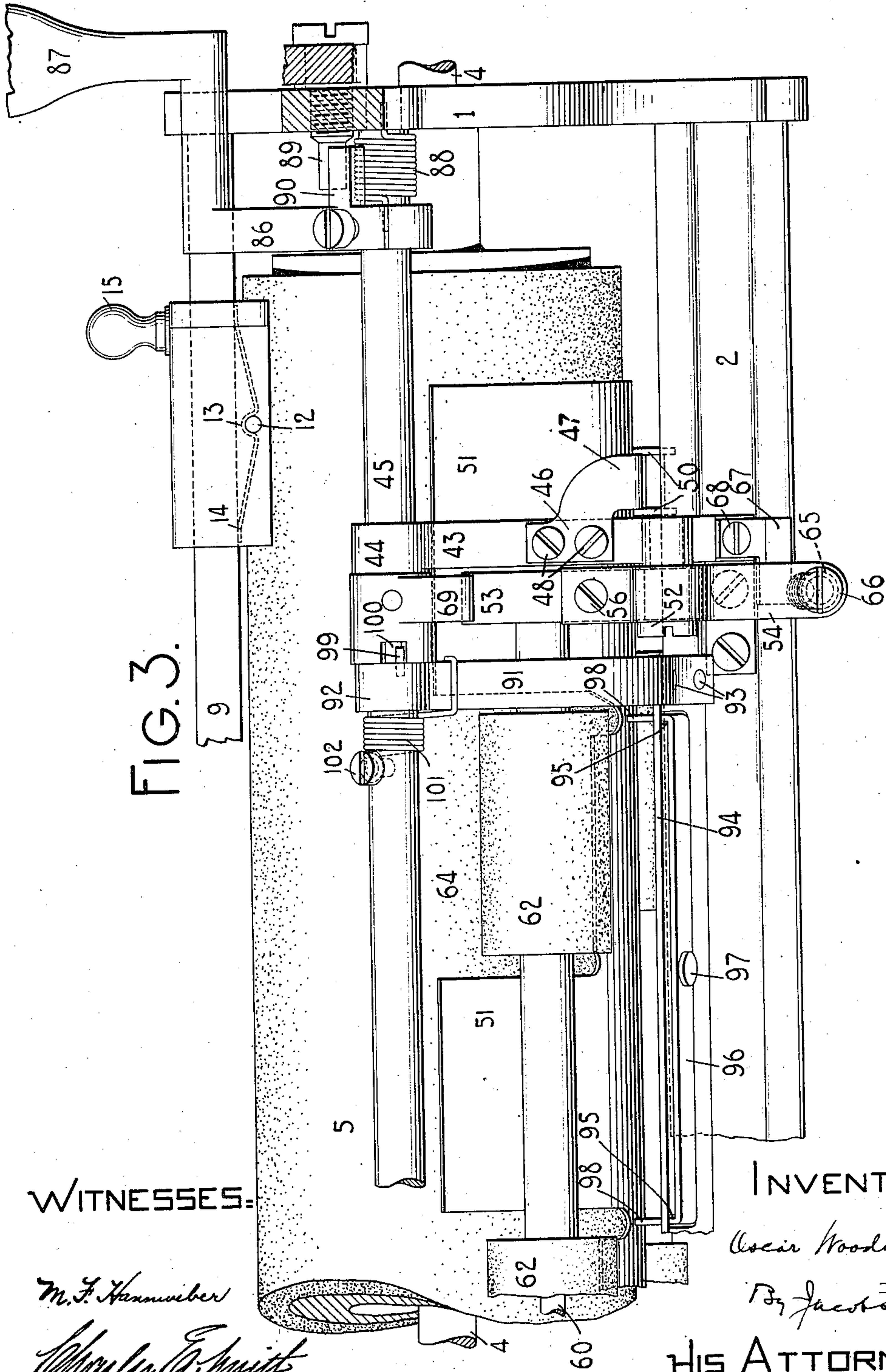


FIG. 3.

WITNESSES:

M. F. Hammer
Charles E. Smith

INVENTOR:

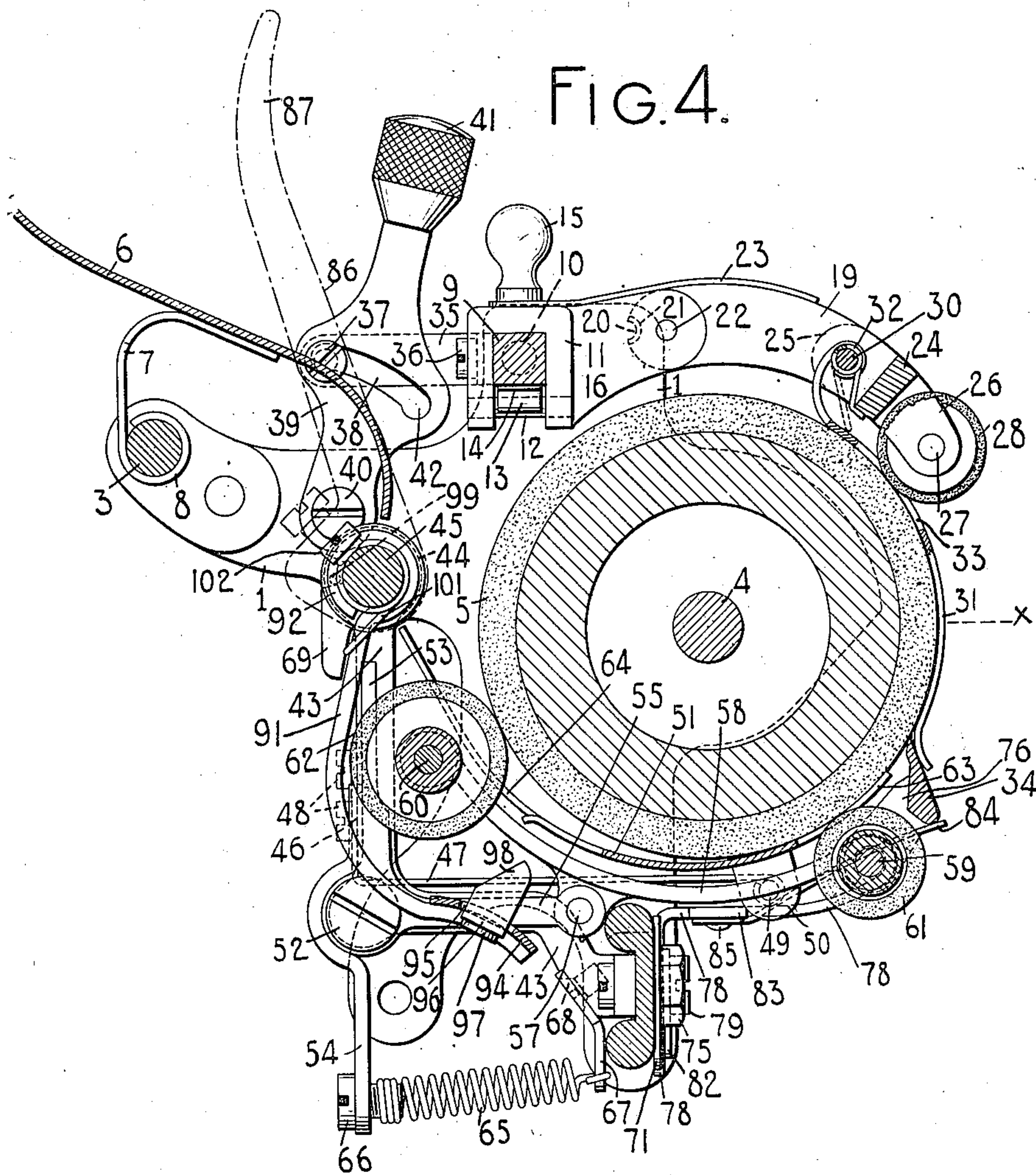
Oscar Woodward
By Jacob Felbel

HIS ATTORNEY

945,893.

O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 2, 1907.

Patented Jan. 11, 1910.
4 SHEETS—SHEET 3.



WITNESSES:

Wm. F. Hannweber
Wm. E. Smith

INVENTOR:

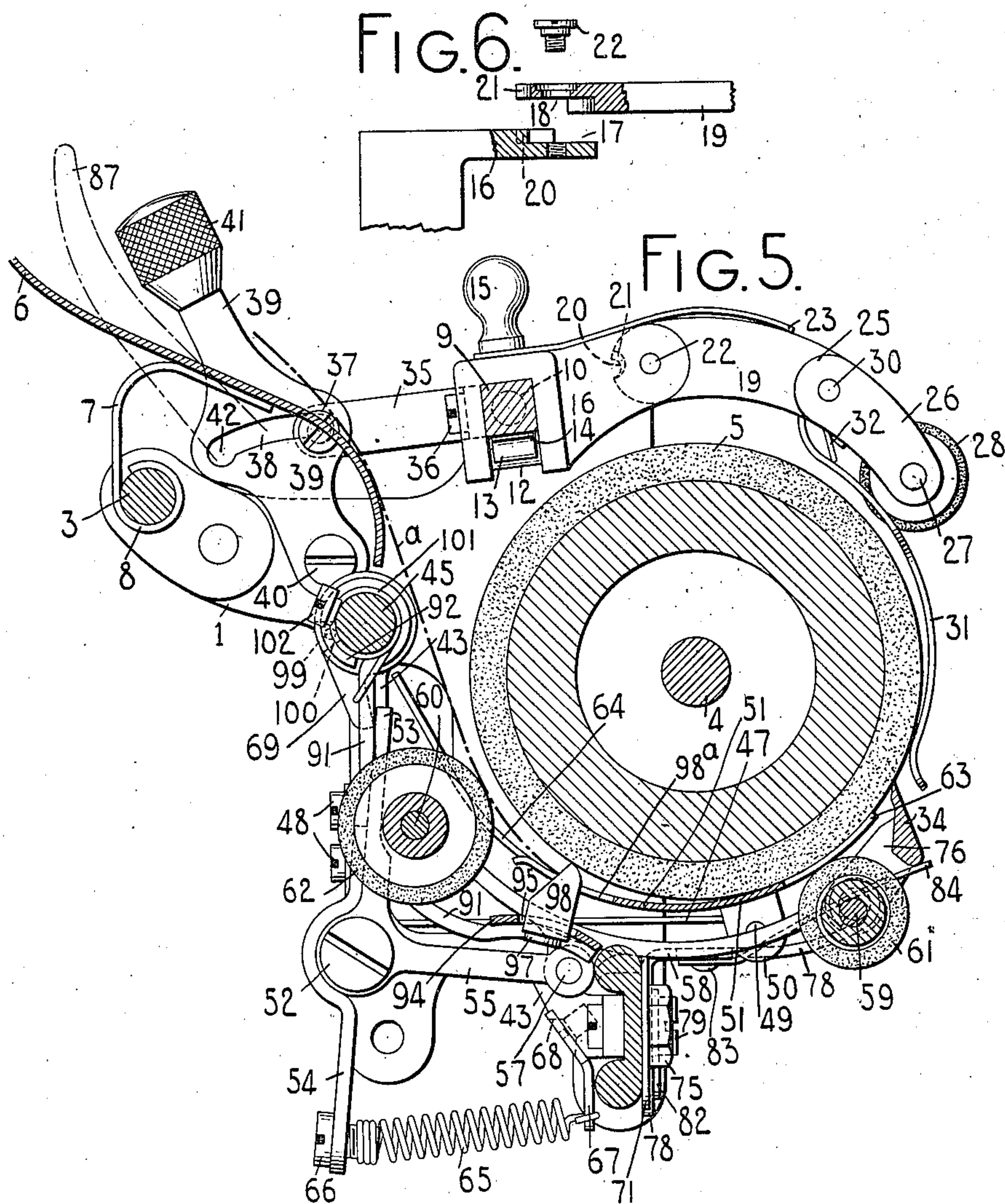
Oscar Woodward
By Jacob Falbel
HIS ATTORNEY

O. WOODWARD.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 2, 1907.

945,893.

Patented Jan. 11, 1910.

4 SHEETS—SHEET 4.



WITNESSES:

M. F. Hannweber
Wm. E. Smith

INVENTOR:

Oscar Woodward
By Jacob Felbel
HIS ATTORNEY

UNITED STATES PATENT OFFICE.

OSCAR WOODWARD, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

945,893.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed December 2, 1907. Serial No. 404,814.

To all whom it may concern:

Be it known that I, OSCAR WOODWARD, a citizen of the United States, and resident of Montclair, in the county of Essex and State of New Jersey, 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 paper feeding and controlling devices and the object of said invention is to provide improved and efficient means of the character specified.

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

In the accompanying drawings wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a front elevation of the platen and platen frame equipped with the devices of my invention. Fig. 2 is a top plan view of the same. Fig. 3 is an enlarged detail rear elevation showing one end portion of the platen and its associated parts. Fig. 4 is an enlarged transverse sectional view of the construction. Fig. 5 is a view corresponding to Fig. 4 except that the parts are shown differently disposed. Fig. 6 is a detail detached view partly in section showing the joint between the feed roll hanger and its support.

I have shown my invention embodied in a front-strike typewriting machine in which the types strike against the front face of the platen on a dotted line *x*, though it should be understood that from certain aspects of the invention the devices may be embodied in various styles of typewriting machines.

The platen frame comprises end plates 1 connected by a cross bar 2 and a connecting rod 3. The end plates are provided with bearing openings for a shaft 4 on which a rotative platen 5 is mounted. A paper table 6 is supported on bracket arms 7 turned at their lower ends as indicated at 8 around the cross rod 3. A supporting rod or bar 9 has cylindrical bearings 10 at the ends thereof which are received in bearing openings in the end plates 1, the rod being supported above the platen near the rear side thereof and in a position where the paper may be directed by the margin feed rollers and

paper fingers (to be hereinafter described) over the bar after the paper leaves the printing line. The supporting rod is angular in cross section and has supports 11 mounted thereon. These supports are apertured to conform to the cross section of the supporting rod on three sides as shown in Figs. 4 and 5 and a pin 12 extends across the opening between the side walls thereof in order to prevent the removal of the supports from the supporting rod. This pin 12 co-acts with a looped or recessed portion 13 (Fig. 3) of a flat spring which bears at its free ends 14 against the bottom face or side of the supporting rod in order to form a frictional means for retaining the support in the position to which it may be adjusted along the supporting rod. There are two of these supports provided, one for use near each end of the platen but as they are the same in construction the description of one applies for both and but one will be described. The support is provided with a finger piece 15 by which it may be adjusted along the supporting rod and a forwardly extending arm 16 projects from the support. This arm is recessed at one side thereof as indicated at 17 in Fig. 6 for coöperation with the corresponding recessed portion 18 of a hanger 19. The arm 16 at the recessed portion thereof is provided with a projection 20 which is received in a recess 21 in the hanger 19 (see Figs. 4, 5 and 6). A shouldered screw pivot 22 connects the hanger to the supporting arm 16 and the construction is such as to afford a limited pivotal movement of the hanger 19 on the supporting arm 16. A leaf spring 23 is secured at one end to the support by the finger piece 15, the opposite or free end of the spring bearing against the upper edge of the hanger 19 and forcing the free end thereof toward the platen. The forwardly extending end of the hanger is formed with an inwardly extending off-set projection 24 formed at its inner ends with a rearwardly extending portion 25 and a forwardly extending portion 26. A pivot 27 extends between the hanger 19 and the forwardly extending projection 26 and constitutes a bearing for a margin feed roller 28 maintained against axial movement on its pivot by spacing sleeves 29. The rearwardly extending projection 25 with the arm of the hanger 19 forms a support for a pivot 30 for a sheet

metal paper finger 31 which extends forwardly and downwardly beneath the margin feed roller and receives an independent spring pressure against the platen by a coiled spring 32 connected at one end to the off-set 24 and bearing at its opposite end against the paper finger as shown in Fig. 4. The paper finger is apertured at 33 to receive the margin feed roller and enable it to bear against the platen or the paper thereon. The lower end of the paper finger extends in front of and overlaps a platen scale 34.

The right-hand end of the supporting rod 9 has a rearwardly extending crank arm 35 (see Figs. 4 and 5) secured thereto by screws 36. The rear end of this crank arm carries a shouldered screw or pin 37 which projects laterally therefrom and is received in a cam slot 38 in a device 39 pivoted on a shouldered screw 40 to the right-hand end plate 1 of the platen frame. The pivoted device 39 is provided at its upper end with a finger piece 41 by which the device may be turned on its pivot. Each end of the cam slot 38 is formed with a slight depression 42 for cooperation with the pin or screw 37 when the device 39 is moved to the limit of its movement either forwardly or rearwardly as shown in Figs. 4 and 5. The disposition of the cam slot and the parts is such that when the device 39 is in the forward position shown in Fig. 4 the supporting rod 9 is turned on its longitudinal axis so as to move the supports 11 to the position shown in said figure and the margin feed rollers 28 are maintained against the platen or the paper thereon; the springs 23 at this time exerting a pressure against the hangers to maintain the margin feed rollers by spring pressure against the platen. An independent spring pressure is at this time applied by the springs 32 to the paper fingers to maintain them in contact with the platen or the paper thereon. By reason of the fact that the pin or screw 37 is seated in the rearmost depression 42 when the parts are disposed as shown in Fig. 4, the supporting rod 9 and the supports 11 will be locked or maintained against rotative movement. When the finger piece 41 is moved to the rearmost position shown in Fig. 5 the supporting rod will be turned on its longitudinal axis to carry both of the hangers and the margin feed rollers carried thereby together with the upper ends of the paper fingers away from or out of cooperative relation with the platen, the limited independent movement of the hangers relatively to the supporting arm 16 being effective to cause the hangers to move with the supports after a slight independent movement between the parts is taken up. This movement of the parts relieves or releases the pressure of the margin feed rollers and paper fingers on the face

of the platen or the paper thereon. The parts are locked or maintained in the released position shown in Fig. 5 by the engagement of the pin 37 in the forward depression 42 of the cam slot.

Angular brackets 43 are secured to or form part of the cross bar 2, each bracket extending rearwardly from the cross bar and then upwardly to form a bearing 44 for a release or rock shaft 45 mounted at its ends in bearing openings in the end plates 1 of the platen frame. One of these brackets is located near each end of the platen and an off-set portion 46 (see Fig. 3) of a spring arm 47 is secured to each bracket by screws 48. Each arm 47 extends forwardly beneath the platen and is curved at its forward end around a pin 49 (Fig. 4) projecting between ears 50 secured to the bottom of a paper apron 51. The spring arms 47 thus constitute a resilient support for the paper apron near each end thereof, the arms tending to force the forward end portion of the paper apron into contact with the platen as shown in Fig. 4. Pivoted to the corner of each of the angular brackets 43 by a shouldered screw pivot 52 is a three-arm lever comprising an upwardly extending arm 53, a downwardly extending arm 54 and a forwardly extending hanger arm 55. These arms may be formed of a single piece, or the arm 54 of each three-arm or angular lever may be formed of a separate piece secured to the arm 53 by a screw 56. The forward end of each arm 55 is pivoted at 57 to a rigid arm or one piece feed roll carrier or yoke piece 58. These yoke pieces extend transversely of the platen and fore and aft of the machine and are formed at their forward and rear ends with bearings for shafts 59 and 60 respectively of the forward and rear feed rollers 61 and 62 respectively. The parallel shafts 59 and 60 are situated one near the front of the platen and the other for the main paper feed rollers 62 near the rear side of the platen where the paper is introduced into the machine. The paper apron is apertured at 63 to permit the feed rollers 61 to extend therethrough and bear against the platen or the paper thereon. In a like manner the rear portion of the paper apron is apertured at 64 to enable the rear set of feed rollers 62 to extend therethrough and into contact with the platen.

It will be seen that the pivots 57 which unite the hanger arms 55 with the yoke pieces 58 are located about centrally between the two sets of feed rollers or about centrally in the lengths of the yoke pieces and that spring pressure applied indirectly to the hanger arms 55 is about equally distributed on both sets of feed rollers. Pressure is applied to the angular levers 53-54-55 by springs 65, each connected at one end to the lower arm 54 of the associated lever by a

screw 66 and at the opposite end to a bracket 67 attached to the associated angular bracket 43 by a screw 68. The tension of the springs 65 is thus exerted through the angular three-arm levers to apply their pressure to the forward and rear sets of feed rollers. The upwardly extending arms 53 of the angular levers extend into the paths of projections or crank arms 69 on the release shaft 45, so that a forward movement of the projections 69 simultaneously turns both of the angular levers on their pivots 52, thereby moving them against the pressure of their springs 65 and moving both sets of feed rollers out of contact with the platen.

From an inspection of Figs. 1, 4 and 5 it will be seen that the upper edge of the cross bar 2 of the platen frame is provided near each end thereof with a cut-out or depression 70. An adjustable plate 71 is secured to the front face of a cross bar 2 at each cut-out therein. Each plate is slotted vertically at 72 for the reception of a guide pin 73 which projects from the front face of the cross bar. The slot also receives a screw 74 which extends through the cross bar and coöperates with a nut 75 at the forward end thereof, the nut bearing against the plate to secure it in the position to which it may be adjusted on the cross bar. The upper edge of each plate constitutes a contact against which the associated yoke piece 58 is adapted to bear when the feed rollers are released as shown in Fig. 5. In this figure it will be seen that the yoke pieces bear against the adjustable contact plates forward of the pivotal connections 57 between the yoke pieces and their hanger arms 55 so that as the parts are moved to the positions shown in Fig. 5 the yoke pieces with both sets of feed rollers will move away from the platen until the yoke pieces bear against the contact plates or stops 71 when further movement of the forward set of feed rollers away from the platen is arrested though the rear set of feed rollers may continue its movement; the yoke pieces turning on the pivots 57 during a further movement of the parts.

The platen scale 34 hereinbefore referred to is provided at its ends with downwardly extending arms 76 pivoted at their lower ends on pivot screws 77 carried in bearings on brackets 78 secured by screws 79 to the front cross bar 2. Each of the screws 79 is received in an upright slot 80 in the foot piece of the bracket as is a guide pin 81 which projects from the front face of the cross bar. A washer 82 is interposed between the head of the screw and the foot piece of the bracket in order to clamp the bracket in its adjusted position. By these means the brackets 78 may be lowered or elevated at will to adjust the bearings to effect an up and down adjustment of the platen scale. The pivot bearing screws 77

may be adjusted axially to effect a longitudinal adjustment of the platen scale. Each of the brackets 78 carries an inwardly projecting arm 83 to which one end of a leaf spring 84 is secured by rivets 85, the free end of each leaf spring bearing against the bottom edge of the platen scale to force it toward the platen as shown in Figs. 1, 4 and 5. From this it will be seen that the platen scale is supported on the platen frame independently of the paper apron and that spring pressure is applied to the platen scale independently of that applied to the paper apron and that the feed rollers 61 and 62 may be moved into and out of co-operative relation with the platen without affecting the slight spring pressure maintained on the paper apron and platen scale. The rock shaft 45 is provided at one end with a crank arm 86 which terminates in a finger piece 87 and by means of which control of the rock shaft is afforded. A coiled spring 88 surrounds the rock shaft near one end thereof as shown in Fig. 3, one end of the spring being connected to the crank arm and the other end to the left-hand end plate 1 of the platen frame in order to restore the rock shaft 45 to normal position. A screw stop 89 projects from the inner face of the associated end plate of the platen frame and coöperates with an outwardly extending arm or stop 90 formed on the crank arm in order to limit the movement of the crank arm and the rock shaft back to normal position.

From an inspection of Fig. 3 it will be seen that hanger arms 91 are provided with bearings 92 which loosely surround the rock shaft 45, one of these arms being provided near each of the projections 69. The hanger arms 91 extend downwardly and forwardly and they are riveted at 93 to a cross bar 94 apertured in the present instance at four points in the length thereof as indicated at 95. Spring members 96 are riveted centrally in the length thereof at 97 to the cross bar and each of these members is formed of resilient metal and is substantially U-shaped, the upwardly extending ends 98 thereof projecting through the cut-outs or apertures 95 in the cross bar and projecting toward the platen and constituting stops for coöperation with the leading edge of the paper. It will be seen that these stops are situated beneath the main paper feed roller 62 and pass through openings 98^a in the paper apron (Fig. 3) and when in coöperative relation with the platen as shown in Fig. 5 are adapted to co-act with the leading edge of the paper *a* to arrest and square it when the feed rollers are thrown off. The bearings 92 for the hangers 91 of the leading edge stops are each provided with an outwardly extending pin 99 (Fig. 3) which projects into a slot or aperture 100 in the hub

of the associated crank arm 69 fixed on the rock shaft 45. A coiled spring 101 surrounds the rock shaft 45 near each of the hangers 91 and is connected at one end to the associated hanger 91 and at its opposite end to a screw 102 on the rock shaft. The pressure of the springs 101 is exerted to normally maintain a fixed relation between the hangers 91 and the rock shaft 45 and so that the pins 99 will bear against one wall of the slot 100 in which it is received as indicated in Fig. 3 but will, nevertheless, afford a movement of the rock shaft independently of the hanger arms 91 when the leading edge stops 98 are thrown into contact with the platen. By this construction the first portion of the movement of the finger piece 87, from the position shown in Fig. 4 to that indicated in Fig. 5, is to move the leading edge stops into contact with the platen and this is effected prior to the engagement of the crank arms 69 with the lever arms 53, or in other words, the leading edge stops are moved into engagement with the platen before the feed rollers start to move away from the platen.

During the movement of the parts just described a fixed relation is maintained between the hanger arms 91 and the rock shaft. When, however, a further rearward movement is given to the finger piece 87 the angular levers 53—54—55 will be turned on their pivots to move the feed rollers out of coöperative relation with the platen and during this movement of the parts the leading edge stops will be maintained in contact with the platen and the rock shaft 45 will move independently of the hanger arms 91 by reason of the pin and slot connection 99—100 between the hanger arms and the rock shaft. When pressure is released on the finger piece 87 the feed rollers move back to engaging position or into contact with the platen or the paper thereon before the leading edge stops are withdrawn from contact with the platen so that there is no liability of the paper, which is supported by the leading edge stops, being displaced from its adjusted position. This retention of the leading edge stops in contact with the platen during the reengagement of the feed rollers is likewise due to the independent movement between the rock shaft 45 and the hangers 91 and also to the independent pressure of the springs 101 on the hangers. By reason of the spring or resiliency of the members 96, the leading edge stops will bear but lightly against the face of the platen and any undue pressure of the cross bar 94 toward the platen will deflect the members 96 against their spring pressure.

One end of the rock shaft 45 has secured thereto a detent 103, which, when the finger piece 87 is moved rearwardly, to release the feed rollers and interpose the leading edge

stops into the path of the paper, the detent will be brought into coöperation with the teeth of the line spacing ratchet wheel 104 secured to one end of the platen. This not only limits the movements of the finger piece 87 and the parts controlled thereby but throws the detent into engagement with the line spacing wheel on the platen to prevent the platen from being turned while the feed rollers are thrown off.

Various changes may be made 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 rotative platen, a supporting rod pivoted on its longitudinal axis and over which the paper is directed, a supporting arm adjustable along said supporting rod, a rigid hanger pivoted to said supporting arm, means on said supporting arm and hanger for limiting the pivotal movement of the hanger on the supporting arm, a paper feeding device carried by said hanger, and hand controlled means for turning said rod to throw the paper feeding device into and out of coöperation with the platen and for holding the rod in either of such positions.

2. In a typewriting machine, the combination of a rotative platen, a supporting rod pivoted on its longitudinal axis and over which the paper is directed, a supporting arm adjustable along said supporting rod, a hanger pivoted to said supporting arm, a paper feeding device carried by said hanger, and a pivoted controlling device operatively connected to said rod to turn it and thereby to throw and maintain the paper feeding device in or out of coöperative relation with the platen.

3. In a typewriting machine, the combination of a rotative platen, a supporting rod pivoted on its longitudinal axis and over which the paper is directed, a support adjustable along said supporting rod, a hanger pivoted to said support, a paper feeding device carried by said hanger, and a pivoted hand-actuated controlling device having a cam operatively connected to said rod to turn it and thereby throw and maintain the paper feeding device in or out of coöperative relation with the platen.

4. In a typewriting machine, the combination of a rotative platen, a supporting rod pivoted to turn on its longitudinal axis and over which the paper is directed, a support adjustable along said supporting rod and mounted to turn therewith, a spring-pressed rigid hanger pivoted to said support and having a limited pivotal movement thereon, an independently spring-pressed paper feeding device carried by said hanger, and a pivoted hand actuated controlling device having a cam operatively connected with said rod to

turn it and maintain the paper feeding device in or out of coöperative relation with the platen.

5 5. In a typewriting machine, the combination of a rotative platen, a supporting rod pivoted on its longitudinal axis and over which the paper is directed, a support adjustable along said rod and fixed to turn therewith, a spring pressed hanger pivoted
10 to said support, a margin feed roller carried by said hanger, and an independently spring-pressed paper finger pivoted to turn on said hanger.

15 6. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one near the front and one near the rear of the platen, parallel shafts on which said feed rollers are mounted, rigid arms or yoke pieces supporting said shafts,
20 spring pressed angular levers having fixed pivots, the said yoke pieces being pivoted intermediate their ends to one set of the arms of said angular levers, and hand controlled carrying means coöperative with another set
25 of the arms of said angular levers, for moving said levers against their spring pressure to release the feed rollers.

30 7. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mounted, rigid arms or yoke pieces supporting said shafts,
35 three-arm angular levers to one set of the arms of which said yoke pieces are pivoted intermediate the ends of said yoke pieces, springs connected to another set of the arms of said levers, and hand actuated means co-
40 operating with the third set of arms of said levers.

45 8. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mounted, rigid arms or yoke pieces supporting said shafts,
50 three-arm angular levers to one set of the arms of which said yoke pieces are pivoted intermediate the ends of said yoke pieces, springs connected to another set of the arms, a hand controlled rock shaft, and projec-
55 tions on said rock shaft, said projections co-operating with the third set of arms on said levers.

60 9. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mount-
65 ed, rigid arms or yoke pieces supporting said shafts, three-arm angular levers to one set of the arms of which said yoke pieces are pivoted intermediate the ends of said yoke pieces, springs connected to another set of the arms, a spring-restored hand controlled

rock-shaft, and crank arms adjustably secured to said rock shaft, said crank arms co-operating with the third set of arms on said levers.

10. In a typewriting machine, the combi- 70 nation of a rotative platen, front and rear feed rollers, a support for said feed rollers, hangers to which said support is pivoted intermediate the ends of the latter, and stops coöperative with said support to one side of 75 the pivotal connection between the support and the hangers and operative to arrest the support at one side of said pivots as the support is moved away from the platen.

11. In a typewriting machine, the combi- 80 nation of a rotative platen, front and rear feed rollers, parallel shafts on which said feed rollers are mounted, rigid yoke pieces which connect said shafts, hangers to which said yoke pieces are pivoted intermediate 85 the ends of the latter, and stops which co-operate with said yoke pieces to one side of the pivotal connection between said yoke pieces and hangers.

12. In a typewriting machine, the combi- 90 nation of a rotative platen, forward and rear feed rollers, means for concurrently moving said forward feed rollers away from the platen, and means for arresting the forward feed rollers in such movement without af- 95 fecting the movement of the rear feed rollers.

13. In a typewriting machine, the combination of a rotative platen, forward and rear feed rollers, means for concurrently moving 100 said forward feed rollers away from the platen, means for arresting the forward feed rollers in such movement without affecting the movement of the rear feed rollers, and means for adjusting said arresting means. 105

14. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mount- 110 ed, rigid arms or yoke pieces supporting said shafts, spring-pressed pivoted arms to which said yoke pieces are pivoted intermediate the ends of the yoke pieces, hand controlled means for moving said arms against their 115 spring pressure to release the feed rollers, and means for arresting the movement of one set of feed rollers away from the platen without affecting such movement of the other set of feed rollers. 120

15. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mount- 125 ed, rigid arms or yoke pieces supporting said shafts, spring pressed angular levers to which said yoke pieces are pivoted intermediate the ends of the yoke pieces, hand controlled carrying means coöperative with 130

said angular levers for moving said levers against their spring pressure to release the feed rollers, and stops coöperative with said yoke pieces at one side of the pivots thereof.

5 16. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mounted, rigid arms or yoke pieces supporting said shafts, three-arm angular levers to one set of the arms of which said yoke pieces are pivoted intermediate the ends of said yoke pieces, springs connected to another set of the arms of said levers, hand actuated means coöperating with the third set of arms of said levers, and means for arresting the movement of one set of feed rollers away from the platen without affecting such movement of the other set of feed rollers.

17. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mounted, rigid arms or yoke pieces supporting said shafts, three-arm angular levers to one set of the arms of which said yoke pieces are pivoted intermediate the ends of said yoke pieces, springs connected to another set of the arms, a hand controlled rock shaft, projections on said rock shaft, said projections coöperating with the third set of arms on said levers, and adjustable stops coöperative with said yoke pieces to one side of the pivots thereof in the movements of said yoke pieces away from the platen.

18. In a typewriting machine, the combination of a rotative platen, two sets of parallel feed rollers, one set near the front and one set near the rear of the platen, parallel shafts on which said feed rollers are mounted, rigid arms or yoke pieces supporting said shafts, three-arm angular levers to one set of the arms of which said yoke pieces are pivoted intermediate the ends of said yoke pieces, springs connected to another set of the arms, a spring-restored hand controlled rock-shaft, crank arms adjustably secured to said rock shaft, said crank arms coöperating with the third set of arms on said levers, and stops which limit the movements of the forward set of feed rollers away from the platen without affecting such movements of the rear set of rollers.

19. In a typewriting machine, the combination of a platen, a rock-shaft, arms mounted on said rock-shaft to afford a limited movement of the shaft independently thereof, a cross bar connecting said arms, and leading edge stops carried by said bar, said stops comprising the upturned ends of substantially U-shaped resilient members.

20. In a typewriting machine, the combination of a rotative platen, feed rollers therefor, leading edge stops comprising inherently resilient members bent to form stop portions, and means for effecting a movement of the stops toward the platen and for effecting a movement of the feed rollers away from the platen.

21. In a typewriting machine, the combination of a rotative platen, feed rollers therefor, leading edge stops comprising resilient members bent to form stop portions, a cross bar on which said members are mounted to afford a flexion thereof on the bar, and means for effecting a movement of the stops toward the platen and for effecting a movement of the feed rollers away from the platen.

22. In a typewriting machine, the combination of a rotative platen, feed rollers therefor, leading edge stops comprising resilient members bent to form stop portions, a cross bar to which said resilient members are attached so as to afford a flexion of said members on said bar, the cross bar being apertured to receive the stop portions, and means for effecting a movement of the cross bar toward the platen and for effecting a movement of the feed rollers away from the platen.

23. In a typewriting machine, the combination of a rotative platen, feed rollers therefor, leading edge stops comprising resilient members each bent at its ends to form stop portions, a cross bar to which said members are connected intermediate of their ends to afford a flexion thereof on the bar, said bar being apertured to receive the bent ends or stop portions of said members, and means for effecting a movement of the cross bar toward the platen and for effecting a movement of the feed rollers away from the platen.

24. In a typewriting machine, the combination of a rotative platen, feed rollers therefor, leading edge stops comprising resilient members each bent at its ends to form stop portions, a cross bar to which said members are connected intermediate of their ends to afford a flexion thereof on the bar, said bar being apertured to receive the bent ends or stop portions of said members, a feed roll release shaft, spring pressed hanger arms for said cross bar, and pin and slot connections between said hanger arms and rock shaft.

Signed at the borough of Manhattan, in the county of New York, and State of New York this 29th day of November A. D. 1907.

OSCAR WOODWARD.

Witnesses:

CHARLES E. SMITH,
E. M. WELLS.