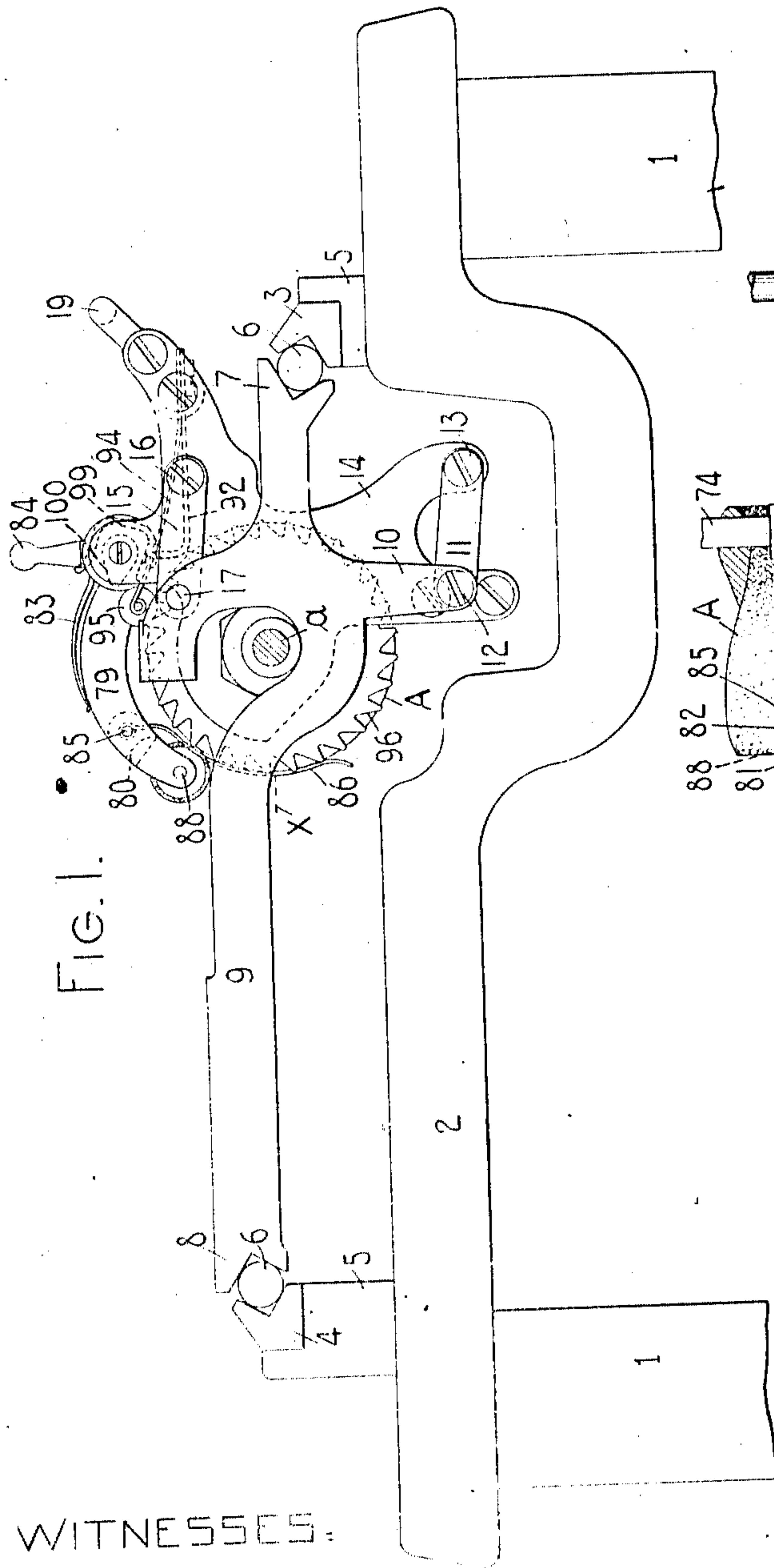


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4 SHEETS—SHEET 1.



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E. M. Wells.

Charles E. Smith

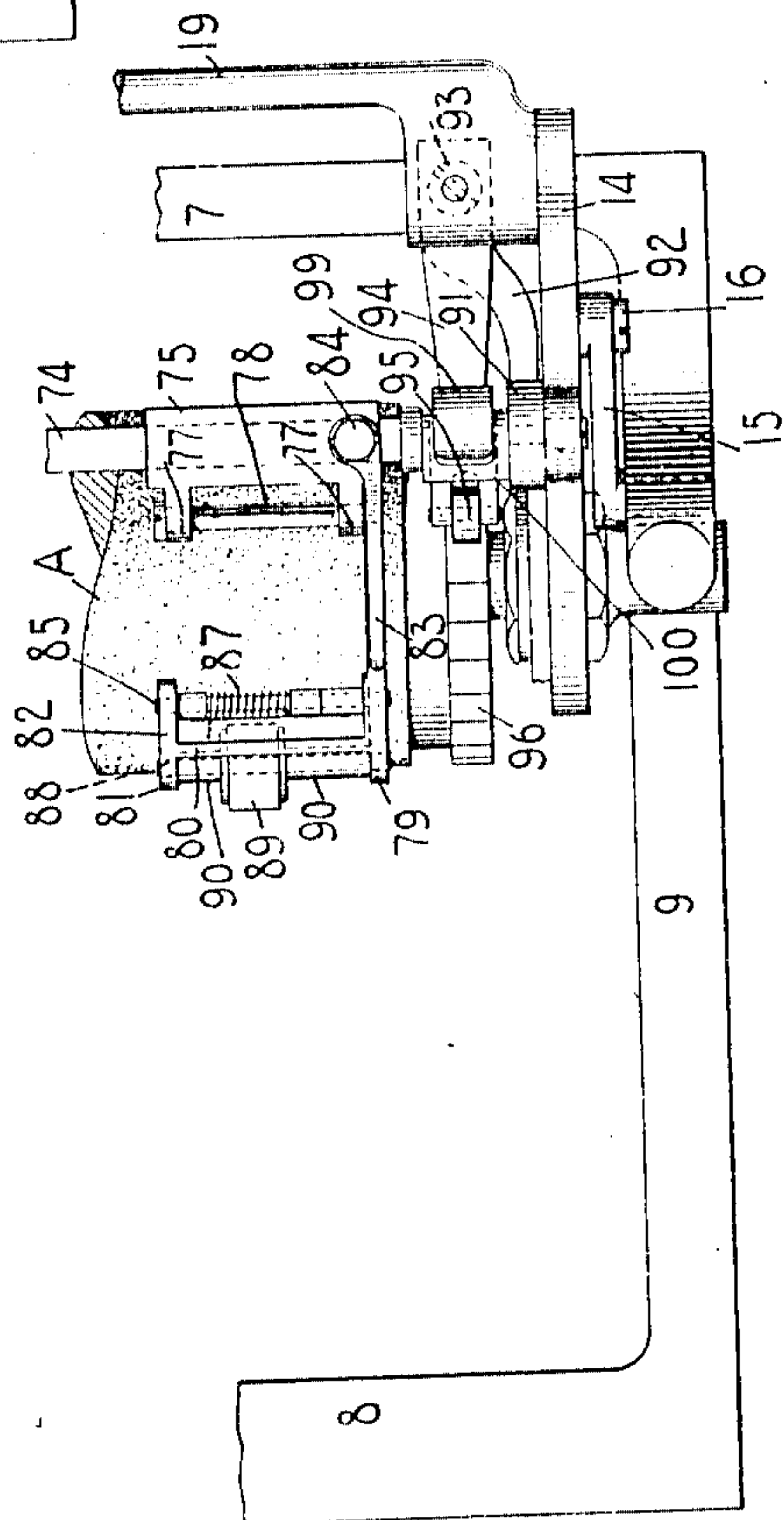


FIG. 2.

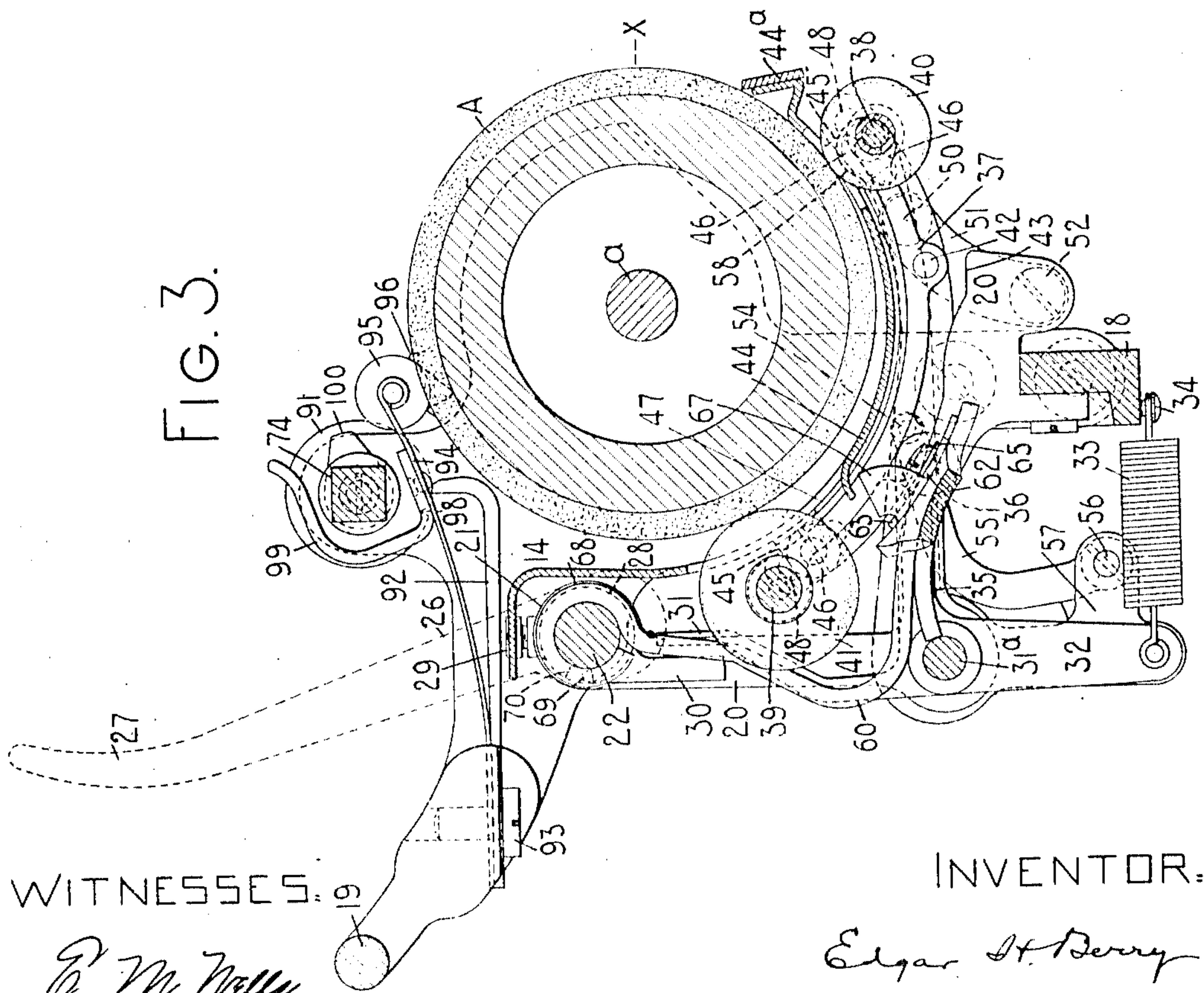
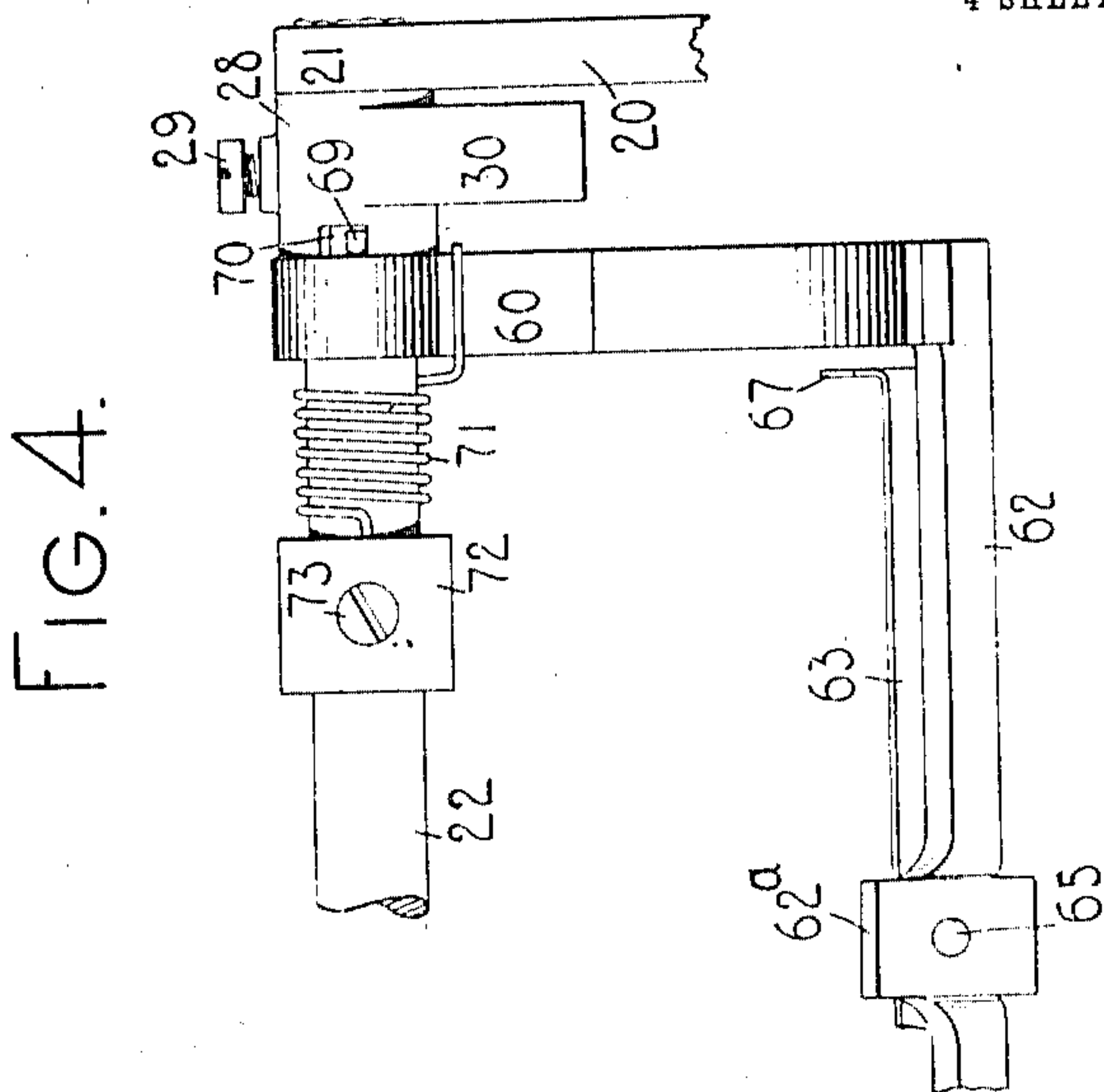
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963,269.

4 SHEETS—SHEET 2.



WITNESSES:

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963,269.

E. H. BERRY.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 21, 1908.

Patented July 5, 1910.
4 SHEETS—SHEET 3.

FIG. 6.

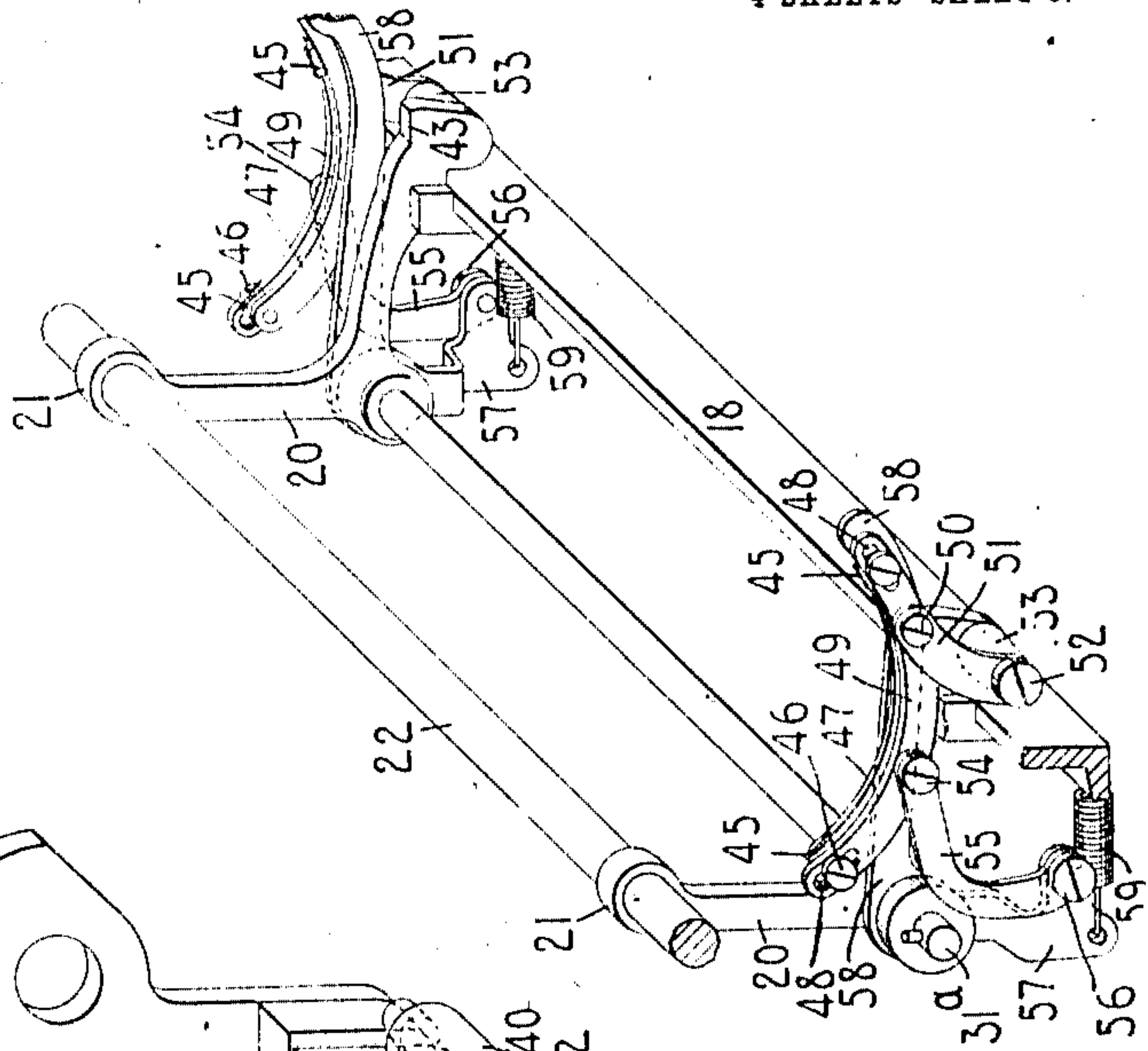
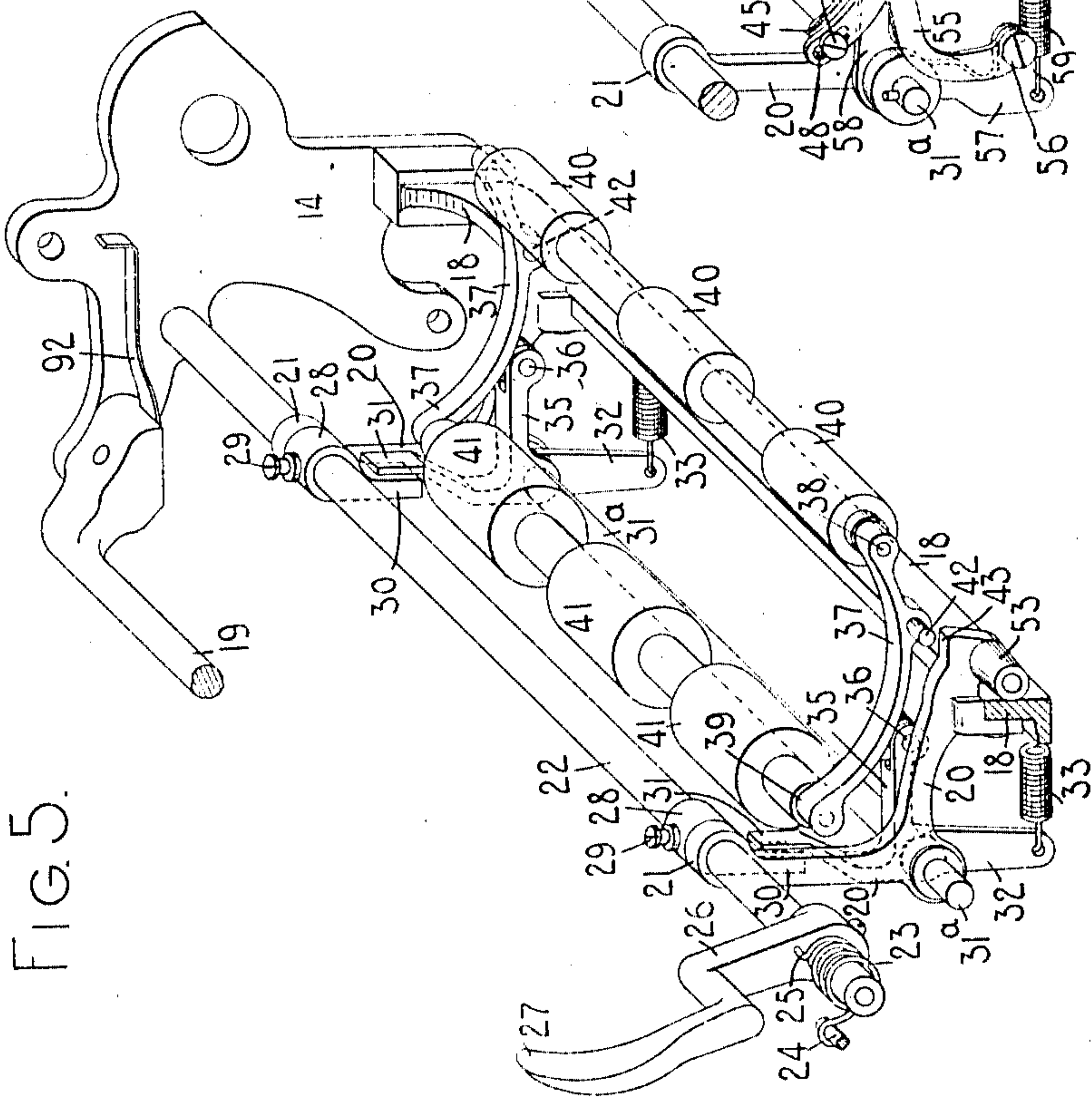


FIG. 5.



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963,269.

Patented July 5, 1910.

4 SHEETS--SHEET 4.

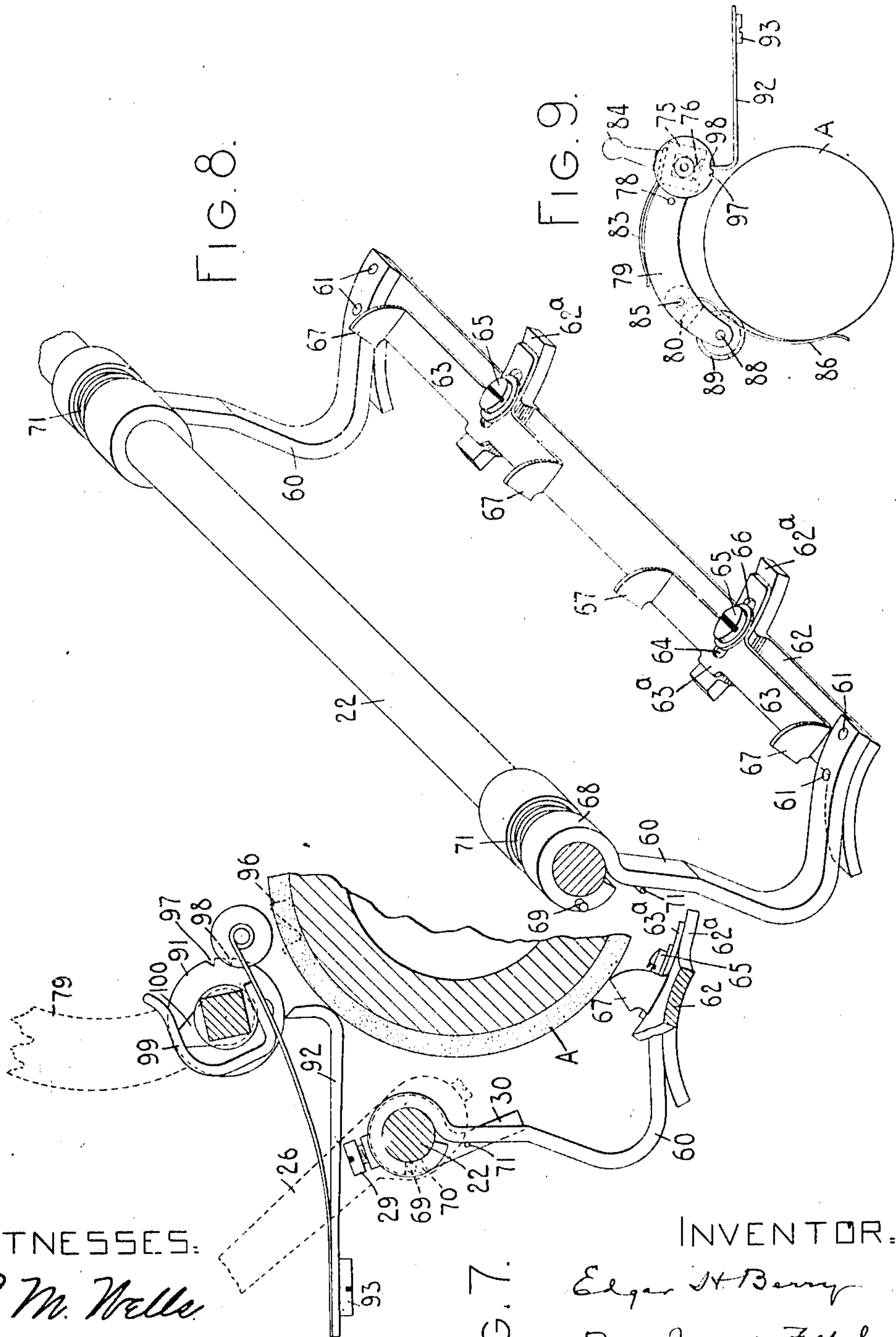


FIG. 8.

FIG. 9.

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FIG. 7.

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UNITED STATES PATENT OFFICE.

EDGAR H. BERRY, OF NEW YORK, N. Y., ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

963,269.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed February 21, 1908. Serial No. 417,183.

To all whom it may concern:

Be it known that I, EDGAR H. BERRY, citizen of the United States, and resident of the borough of Brooklyn, city of New York, in the county of Kings 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 paper feeding and controlling devices, and the main object of said invention is to provide improved devices of the character specified.

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

In the accompanying drawings wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a side elevation showing the upper portion of a typewriting machine with some of the devices of my invention embodied therein. Fig. 2 is a fragmentary plan view showing a portion of the same. Fig. 3 is an enlarged detail vertical sectional view extending transversely through the carriage. Fig. 4 is a fragmentary detail rear elevation showing the leading edge stops and the manner of mounting the same. Fig. 5 is a fragmentary detail perspective view of the platen frame and some of the parts carried thereby. Fig. 6 is a detail fragmentary perspective view showing a portion of the platen frame and the means for supporting the paper apron. Fig. 7 is an enlarged fragmentary detail vertical sectional view taken transversely through the platen and showing the leading edge stops, the detent for the platen and some of the associated parts. Fig. 8 is an enlarged fragmentary perspective view of the leading edge stops and the means for supporting said stops. Fig. 9 is an end elevation showing the margin feed rollers and their support, the platen being shown diagrammatically in this view.

I have shown the devices of my invention applied to a front-strike typewriting machine in which the types strike against the front face of the platen on the line α though it should be understood that from certain aspects of my invention the devices may be

embodied in various styles of typewriting machines.

The frame of the machine comprises corner posts 1 and a top plate 2. Fixed guide rails 3 and 4 are supported on posts 5 which extend upwardly from the top plate. The rails 3 and 4 are grooved for cooperation with anti-friction balls or rollers 6 which are also received in grooved rails 7 and 8 forming the rear and front cross bars respectively of the carriage or truck, said bars being united by end bars 9. The end bars 9 have depending arms 10 to which the forward ends of the links 11 are pivoted at 12, the rear ends of said links being pivoted at 13 to the end plates 14 of the platen frame. Corresponding parallel links 15 are pivoted to the platen frame at 16 and to the carriage at 17. Upon reference to Fig. 5 it will be seen that the end plates 14 of the platen frame are connected by cross bars 18 and 19 and that a platen A is supported on a platen shaft which is journaled in bearing openings in the end plates of the platen frame. Angular brackets 20 are secured to or formed as a part of the cross bar 18 and are provided with bearings 21 for a rock or release shaft 22 which is likewise pivotally supported at its ends on the end plates 14 of the platen frame. A coiled spring 23 surrounds the rock shaft 22 near one end thereof and is secured at one end to a pin 24 which extends from the left-hand end plate 14, the other end of the spring being secured at 25 to a crank arm 26 provided at its upper end with a finger piece 27.

Hubs 28 surround the rock shaft 22 and are adjustably connected thereto by set screws 29. Each of these hubs has a depending crank arm 30 which cooperates with the upper arm 31 of a three-arm lever pivoted on a rod 31^a supported by the angular brackets 20. The depending arms 32 of said levers are connected to contractile springs 33 which are secured at their forward ends to pins 34 projecting downwardly from the cross bar 18. The third arm 35 of each of the angular levers is pivoted at 36 to a carrier or yoke piece 37 intermediate the ends of said yoke piece. The yoke pieces extend transversely of the platen and beneath the same and are provided at their ends with bearings to receive parallel shafts 38 and 39. The shaft 38 supports a forward set of feed rollers 40 whereas the shaft 39

supports a rear set of main feed rollers 41, the forward set of feed rollers being situated near the forward side of the platen and beneath the platen scale, whereas the main feed rollers are located at the rear side of the platen where the paper is introduced into the machine. Each of the yoke pieces 37 carries a projecting pin or stop 42 which coöperates with an associated abutment or stop 43 formed as a part of an angular bracket 20.

From the foregoing description it will be understood that the pressure of the springs 33 is exerted on the angular levers 31—32—33 to force the feed rollers into contact with the platen or the paper thereon. When the finger piece 27 is moved rearwardly the rock shaft 22 is turned to move the depending crank arms 30 forwardly, thus rocking the angular levers on their pivots against the tension of the springs 33, thus causing the feed rollers to be moved away from the platen. When the pins 42 which are located forwardly of the pivots 36 are brought into contact with their coöperating stops 43, a further movement of the forward set of feed rollers away from the platen is prevented, although a continued movement of the rear set of feed rollers may take place to enable the main feed rollers to be moved at a considerable distance from the platen to prevent them from obstructing the paper in its movement around the platen while the forward set of feed rollers are maintained but a slight distance from the platen.

A paper apron 44 is provided with depending lugs 45 at the front and rear portions thereof (see Fig. 6) the lugs being perforated to receive screws 46 which take at their threaded ends into segmental bearing pieces 47, the stems of the screws extending freely through slots 48 in corresponding segmental pieces or links 49. The construction is such that the paper apron may receive an adjustment circumferentially of the platen on the links or segmental pieces 49 by which the paper apron is supported to effect an adjustment of the platen scale 44^a carried at the forward side of the paper apron. This adjustment is effected by loosening the screws 46. When the paper apron has been moved to the proper position relatively to the links or supporting pieces 49 the screws 46 are tightened, thus clamping the lugs 45 between the members 47 and 49 to rigidly connect the paper apron to said members. Each of the links 49 is pivotally connected at 50 to a downwardly extending link 51 pivoted at 52 to a lug 53 formed on and extending outwardly from an angular bracket 20 as shown in Fig. 5. Each of the links 49 is also pivoted at 54 to a link 55, the lower end of each of said last mentioned links being pivoted at 56 to a depending arm 57 of an angular lever pivoted on the pivot

rod 31^a, the other or forwardly extending arm 58 of each of said angular levers extending forwardly and upwardly and bearing at its free end against the bottom of the paper apron near the forward edge thereof in order to press it toward the platen. The arm 57 of each of the angular levers is connected to a contractile spring 59 secured at its forward end to the cross bar 18. The pressure of these springs 59 is therefore exerted not only to force the forward ends of the arms 58 against the paper apron but also to force the rear portion of the paper apron toward the platen through the interposed links 55.

From an inspection of Figs. 3 and 6 it will be seen that the pivots of the links 51 and 55 are in different planes and that the forward set of links 51 are shorter than the rear set of links 55. The construction is such that a differential movement of the paper apron is afforded, the rear portion of the paper apron receiving a greater extent of movement than the forward portion thereof as it is deflected away from the platen in order to prevent the paper from being choked between the platen and the paper apron.

It will be seen that a line drawn through the pivotal points of connection 50 and 52 of each link 51 is parallel, or substantially parallel, with a line drawn through the points of pivotal connection 54 and 56 of the associated link 55 so that the links 51 and 55 are in effect parallel links and I will refer to them herein as such or will refer to them as substantially parallel links.

From an inspection of Figs. 3, 4 and 8 it will be seen that the release or rock shaft 22 is provided with depending hanger arms 60 that project forwardly at the lower ends thereof where they are riveted at 61 to a cross bar 62. The cross bar is provided with substantially U-shaped metallic pieces or members 63 each having a slot 64 that extends transversely of the platen and adapted to receive the stem of a screw 65 threaded at its end into openings in the cross bar 62. The washer 66 is interposed between the head of the screw 65 and the member 63 so as to clamp the member in its adjusted position on the cross bar. The upturned ends 67 of the member 63 constitute leading edge stops for coöperation with the leading edge of the paper as it is introduced into the machine, as will hereinafter more clearly appear. The portions 62^a of the bar 62 against which the central portions 63^a of the members 63 bear are elevated above the upper face of the bar 62 so that the members 63 to either side of the bearing portion 63^a are free from contact with the bar 62 in order to afford movements of the free ends of the members 63 toward the bar against the pressure of the members 63, it being understood that these members are formed of resilient metal.

The object of this construction is to provide resiliently mounted leading edge stops which are adapted to be deflected against their spring pressure when they are brought
 5 against the platen with undue force. Two of the members 63 are shown in the present instance though it should be understood that any desired number of such members may be employed. The construction is such that
 10 an adjustment of the members 63 on the bar 62 may be effected either circumferentially of the platen or around the screw 65 as pivots in order to bring the leading edge stops into alinement or to raise or lower them
 15 relatively to the main set of feed rollers 41. Each of the hangers 60 is provided with a bearing 68 by which it is loosely mounted on the rock shaft 22 and a pin 69 projects from the end of each bearing 68 and is received in a cut-out or opening 70 in the hub
 20 28 of the associated crank arm 30 as shown in Fig. 4 in order to provide a pin and slot connection between the rock shaft and each of the hangers to afford a limited independent movement between the rock shaft 22 and
 25 the hangers 60. The pins 69 are each normally maintained in contact with one of the end walls of the slot 70 by a coiled spring 71 which surrounds the shaft 22 and is connected at one end to the associated hanger
 30 arm 60 and at the other end to a sleeve 72, the sleeve being secured to the rock shaft 22 by a set screw 73. These springs 71 normally maintain a fixed relation between the
 35 hangers 60 and the rock shaft 22. The construction is such that a rearward movement of the finger piece 27 is effective to project the so-called leading edge stops 67 through apertures on the paper apron and into contact with the platen before the main paper
 40 feed rollers 39 are moved out of contact with the platen. When, however, the leading edge stops are brought into contact with the platen a further movement of the finger
 45 piece 27 is effective to turn the rock shaft 22 independently of the hanger arms 60 and to move the main paper feed rollers 39 away from the platen. By these means the stops are interposed into the path of the paper before the main paper feed rollers are withdrawn from the platen and there is an assurance of the proper arrest of the paper by the leading edge stops. During the return movements of the parts to normal position
 55 the leading edge stops remain in contact with the platen and in the path of the paper until the main paper feed rollers are moved back to normal position and into engagement with the paper when the leading edge stops are moved to normal position. These results are produced by the limited independent movement between the rock shaft 22 and the hanger arms 60 and the independent pressure of the springs 71 applied
 65 to the hanger arms. If the force of the

springs 71 should be greater than that of the members 63 the members 63 will be deflected against their inherent spring pressure and will not be projected with undue force against the face of the platen. 70

From an inspection of Figs. 1, 2, 3, 7 and 9 it will be seen that a supporting bar 74 is supported on the end plates 14 of the platen frame for pivotal movement around the longitudinal axis of said bar. The bar 75 is supported above the platen near the rear side thereof where the paper is introduced into the machine and in such a position that the paper, as it leaves the printing line, may be directed by the paper feeding devices 80 over the bar as will hereinafter more clearly appear. The supporting bar 74 is angular in cross section and coöperates with supports 75 shaped to conform to the cross section of the bar on three sides thereof and 85 each support is provided with a leaf friction spring 76 (Fig. 9) which bears against the under face of the supporting bar and retains the support against accidental displacement from the position to which it may 90 be adjusted along the supporting bar. Two supports 75 are provided, one for use near each end of the platen, and both of said supports and the paper feeding devices carried thereby are the same so that the description 95 of one applies to the other and but one will be described. Each support carries forwardly extending ears or arms 77 which receive a pivot 78 for a forwardly extending rigid hanger 79 that has an inwardly extending off-set projection 80 with arms 81 100 and 82 extending therefrom. A leaf spring 83 is secured by a finger piece 84 to each support 75 and bears at its free end against the associate hanger 79, tending to force the 105 free end of the hanger toward the platen. A pivot 85 extends between the arm 82 and the body portion of the hanger 79 and constitutes a pivot for a paper finger 86. A coiled spring 87 surrounds the pivot 85 and 110 bears at one end against the paper finger and at the other end against the off-set 80. A pivot 88 extends between the hanger 79 and the arm 81 and carries a margin feed roller 89 and spacing sleeves 90 which surround the pivot, prevent an axial movement of the margin feed roller on its pivot. The paper as it leaves the platen scale is directed upwardly and rearwardly under the paper finger and margin feed rollers and over the supporting bar 74 so that said bar does not obstruct the operator's view of the writing. 120

While I have described in detail the paper finger and feed roller and the manner of connecting the same to the supports 75 and 125 the mounting of said supports on the bar 84, so far as my present invention is concerned, any suitable paper feeding devices may be employed. The specific construction of these paper feeding devices and the man- 130

ner of mounting the same are not of my invention but are the invention of Oscar Woodward and are disclosed in an application Serial No. 404,814, filed by him on the second day of December 1907. The finger pieces 84 which facilitate an adjustment of the carrier 75 along the supporting bar 74 likewise constitute means by which the supporting bar 74 may be turned on its longitudinal axis.

In order to retain the paper feeding devices supported on the bar 74 either in their operative or inoperative positions or in or out of cooperative relation with the platen and to vary the extent of pressure of said devices on the platen, I have provided devices which will now be described. Thus, a disk 91 is secured to the supporting bar 74 near one end thereof for cooperation with a spring detent 92 secured to the underside of an end foot piece on the cross bar 19 by a screw 93. This same screw secures one end of a spring 94 to the cross bar, the other end of said spring 94 carrying a detent roller 95 which cooperates with the teeth of a line spacing ratchet wheel 96 in the usual manner. Upon reference to Fig. 2 it will be seen that the spring detent 92 is bent laterally at the forward end portion thereof and is bent up at its end for cooperation with the disk or bearing piece 91 which is situated to the right of the line spacing wheel on the supporting bar 74. The disk has two notches 97 and 98 in the periphery thereof for cooperation with the spring detent 92. When the parts are in the normal position shown in Fig. 9 the detent 92 engages the notch 98 and holds the supporting bar 74 in the position where the springs 83 bear upon the hangers in order to effect the normal amount of pressure upon the margin feed rollers. If, however, an additional amount of pressure is desired upon the margin feed rollers either of the finger pieces 84 may be moved forwardly to effect a slight turning movement of the supporting bar 74 on its longitudinal axis to disengage the detent 92 from the notch 98 and cause it to engage in the forward notch 97. The bar under this adjustment will be held in such position that the spring 83 will be flexed to a greater extent and an additional pressure of the springs on the hangers of the margin feed rollers will be produced to press said feed rollers with greater force against the platen or the paper thereon. If the operator should desire to throw the paper feeding devices out of operation or away from the platen it is merely necessary to turn either of the finger pieces 84 rearwardly, thus turning the supporting bar 74 to a position such as that shown in Fig. 7, for instance, thereby turning the margin feed rollers and paper fingers away from the platen and out of cooperative relation therewith.

In order that one platen may be readily substituted for another when desired, I have provided the spring 94 of the roller detent with a yoke-piece 99 which is riveted to the spring and partly surrounds the bar 74 as shown in Fig. 7. The bar 74 has an eccentric or cam piece 100 which, when in the normal positions of the parts or when the paper feeding devices are in cooperative relation with the platen, is in a position such as that shown in Fig. 1 where it does not cooperate with the yoke-piece 99. When, however, the bar 74 is turned to the position shown in Fig. 7 to carry the paper fingers and margin feed rollers out of cooperation with the platen the cam or projection 100 engages the yoke-piece and lifts the roller detent 95 out of engagement with the teeth of the line spacing ratchet wheel 96 so that the platen may be readily removed without obstruction from the roller detent or the paper feeding devices carried by the supporting bar 74.

Many of the features shown herein are intended as improvements upon the construction disclosed in the application of Oscar Woodward hereinbefore referred to.

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 line spacing wheel therefor, a detent cooperative with said wheel, paper feeding devices, means for throwing said paper feeding devices into and out of operation, and means under control of said last mentioned means for throwing said detent into and out of cooperation with said line spacing wheel.

2. In a typewriting machine, the combination of a platen, paper feeding devices, a line spacing wheel, a detent therefor, and a single set of means operative to hold said paper feeding devices out of cooperative relation with the platen and to hold said detent out of cooperative relation with said line spacing wheel.

3. In a typewriting machine, the combination of a platen, paper fingers cooperative therewith and mounted for movement out of cooperative relation with the platen, a line spacing wheel, a detent therefor, and means cooperative with said detent for moving and maintaining it out of cooperative relation with said line spacing wheel, when said paper fingers are moved to inoperative position.

4. In a typewriting machine, the combination of a platen, paper fingers cooperative therewith and mounted for movement out of cooperative relation with the platen and for adjustment longitudinally of the platen, a line spacing wheel, a detent therefor, and means cooperative with said detent for

moving and maintaining it out of coöperative relation with said line spacing wheel when said paper fingers are moved to inoperative position.

5 5. In a typewriting machine, the combination of a platen, a platen frame, a supporting rod mounted to turn on its longitudinal axis, paper fingers carried by and adjustable along said supporting rod, a line spacing
10 wheel, a detent therefor, and means controlled by a turning movement of said supporting rod for moving and maintaining said detent out of coöperative relation with said line spacing wheel.

15 6. In a typewriting machine, the combination of a platen, a platen frame, a supporting rod mounted to turn on its longitudinal axis, paper fingers carried by and adjustable along said supporting rod, a line spacing
20 wheel, a detent therefor, a projection on said supporting rod coöperative with said detent, a bearing piece carried by said rod, and a spring detent coöperative with said bearing piece to hold the rod in the position to
25 which it is adjusted.

7. In a typewriting machine, the combination of a rotative platen, a paper apron arranged to receive the paper at the introductory point of the machine and direct it forwardly therefrom, and means for supporting
30 and guiding said paper apron for bodily movement relatively to the platen faster at the rear portion of said paper apron than at the forward portion in the movement of
35 the paper apron toward and away from the platen.

8. In a typewriting machine, the combination of a rotative platen, a paper apron, and substantially parallel links on which the
40 paper apron is supported and guided in its movement toward and away from the platen, said links being connected to said paper apron at different points fore and aft of the machine.

45 9. In a typewriting machine, the combination of a rotative platen, a paper apron, links on which the paper apron is supported and guided in its movement toward and away from the platen, said links being connected to said paper apron at different
50 points fore and aft of the machine, and means for effecting an adjustment of the paper apron on said links.

55 10. In a typewriting machine, the combination of a rotative platen, a paper apron movable toward and away from the platen, means for supporting and guiding said paper apron in its movement relatively to the
60 platen, and means for effecting an adjustment of said paper apron on its supporting and guiding means.

65 11. In a typewriting machine, the combination of a platen, a paper apron, and two sets of substantially parallel links on which said paper apron is guided in its movement

toward and away from the platen, one set being situated forward of the other.

12. In a typewriting machine, the combination of a platen, a paper apron, and two sets of links on which said paper apron
70 is guided in its movement toward and away from the platen, one set being situated forward of the other and the forward set of links being shorter than the rear set.

13. In a typewriting machine, the combination of a platen, a paper apron, and two
75 sets of links on which said paper apron is pivoted and guided in its movement toward and away from the platen, one set being situated forward of the other, the plane in
80 which the pivots of the forward set of links are situated being substantially parallel to the plane in which the pivots of the rear set of links are situated.

14. In a typewriting machine, the combination of a rotative platen, a paper apron, substantially parallel links on which the
85 paper apron is supported and guided in its movement toward and away from the platen, said links being pivotally connected to said
90 paper apron at different points fore and aft of the machine, and spring means for forcing the paper apron toward the platen.

15. In a typewriting machine, the combination of a rotative platen, a paper apron,
95 links on which the paper apron is supported and guided in its movement toward and away from the platen, said links being connected to said paper apron at different
100 points fore and aft of the machine, means for effecting an adjustment of the paper apron on said links, and spring means for pressing the paper apron toward the platen.

16. In a typewriting machine, the combination of a rotative platen, a paper apron
105 movable toward and away from the platen, means for supporting and guiding said paper apron in its movement relatively to the platen, means for effecting an adjustment of said paper apron on its supporting
110 and guiding means, and spring means for forcing the paper apron toward the platen.

17. In a typewriting machine, the combination of a platen, a paper apron, two sets
115 of substantially parallel links on which said paper apron is guided in its movement toward and away from the platen, one set being situated forward of the other, and spring-pressed arms connected to said links for forcing the paper apron toward the
120 platen.

18. In a typewriting machine, the combination of a platen, a paper apron, two
125 sets of links on which said paper apron is guided in its movement toward and away from the platen, one set being situated forward of the other, the plane in which the pivots of the forward set of links are situated being substantially parallel to the
130 plane in which the pivots of the rear set of

links are situated, and spring-pressed arms connected to said links for forcing the paper apron toward the platen.

19. In a typewriting machine, the combination of a platen, a movable paper apron, a platen scale carried thereby, means for supporting and guiding said paper apron for movement toward and away from the platen, and means for adjusting said paper apron on its supporting and guiding means for adjusting the paper apron and platen scale relatively to the platen.

20. 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 and adjustable on said bar, said stops comprising the upturned ends of substantially U-shaped resilient members.

21. 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 and adjustable on said bar, said stops comprising the upturned ends of substantially U-shaped members, each of the members being connected to the bar by a screw and slot connection.

22. 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 and adjustable on said bar, said stops comprising the upturned ends of substantially U-shaped members, each of the members being connected to the bar by a screw and slot connection, a central slot in each member extending transversely of the platen for the reception of a headed screw by which the associated member is secured in its adjusted position on said bar.

23. In a typewriting machine, the combination of a supporting bar pivoted on its longitudinal axis, paper feed devices carried by said bar, and means for adjusting said bar to different set positions around its longitudinal axis while said paper feed devices still remain in contact with the platen or the paper thereon in order to vary the pressure of the paper feeding devices on the platen.

24. In a typewriting machine, the combination of a supporting bar mounted to turn on its longitudinal axis, paper feeding devices carried by and adjustable along said supporting bar, and locking means for holding said bar in different set positions to which it may be adjusted while said paper feeding devices still remain in contact with

the platen or the paper thereon in order to vary the pressure of the paper feeding devices on the platen.

25. In a typewriting machine, the combination of a supporting bar mounted to turn on its longitudinal axis, paper fingers and margin feed rollers adjustable along said supporting bar, means independent of pressure applied to said bar for pressing the paper fingers and margin feed rollers toward the platen, and means for retaining the bar in any one of a plurality of positions to which it may be turned on its longitudinal axis while the paper fingers and margin feed rollers still remain in contact with the platen or the paper thereon in order to vary the pressure of the paper fingers and margin feed rollers on the platen.

26. In a typewriting machine, the combination of a supporting bar mounted to turn on its longitudinal axis, paper feeding devices carried by and adjustable along said supporting bar, and locking means for holding said bar in different set positions to which it may be adjusted while the paper feeding devices still remain in contact with the platen or the paper thereon in order to vary the pressure of the paper feeding devices on the platen, said locking means comprising a notched bearing piece, and a spring detent that coöperates therewith.

27. In a typewriting machine, the combination of a supporting bar mounted to turn on its longitudinal axis, paper fingers and margin feed rollers adjustable along said supporting bar, means independent of pressure applied to said bar for pressing the paper fingers and margin feed rollers toward the platen, and means for retaining the bar in any one of a plurality of positions to which it may be turned on its longitudinal axis while the paper fingers and margin feed rollers still remain in contact with the platen or the paper thereon in order to vary the pressure of the paper fingers and margin feed rollers on the platen, said retaining means comprising a notched bearing piece, and a spring detent that coöperates therewith.

28. In a typewriting machine, the combination of a rotative platen, a paper apron, separate means for supporting said apron along two different lines, one in rear of the other, the rear supporting means being constructed to have a greater movement than the forward supporting means whereby the rear or feeding-in side of the paper apron is adapted to have a greater movement than the forward or delivery side of the apron.

29. In a typewriting machine, the combination of a rotative platen, a paper apron, upright swinging links pivotally connected to said apron at the forward and rear portions thereof, the forward links being shorter than the rear links whereby the rear portion

of the paper apron is adapted to have a greater movement than the forward portion.

30. In a typewriting machine, the combination of a rotative platen, a paper apron, a pair of swinging links pivotally supporting the forward portion of said apron and a pair of longer swinging links pivotally supporting the rear portion of said paper apron, whereby the rear or leading-in portion of the apron has a greater movement than the forward or emerging portion of the apron when the apron is cast off for the introduction of paper.

31. In a typewriting machine, the combi-

nation of a rotative platen, a paper apron, 15 two pairs of upright links for supporting said apron, the forward pair being shorter than the rear pair, and means for swinging said links and moving the paper apron away from the platen. 20

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 20th day of Feb. A. D. 1908.

EDGAR H. BERRY.

Witnesses:

FRANCIS E. VAN BUSKIRK,
CHARLES E. SMITH.