

992,912.

G. A. SEIB.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 29, 1910.

Patented May 23, 1911.

3 SHEETS-SHEET 1.

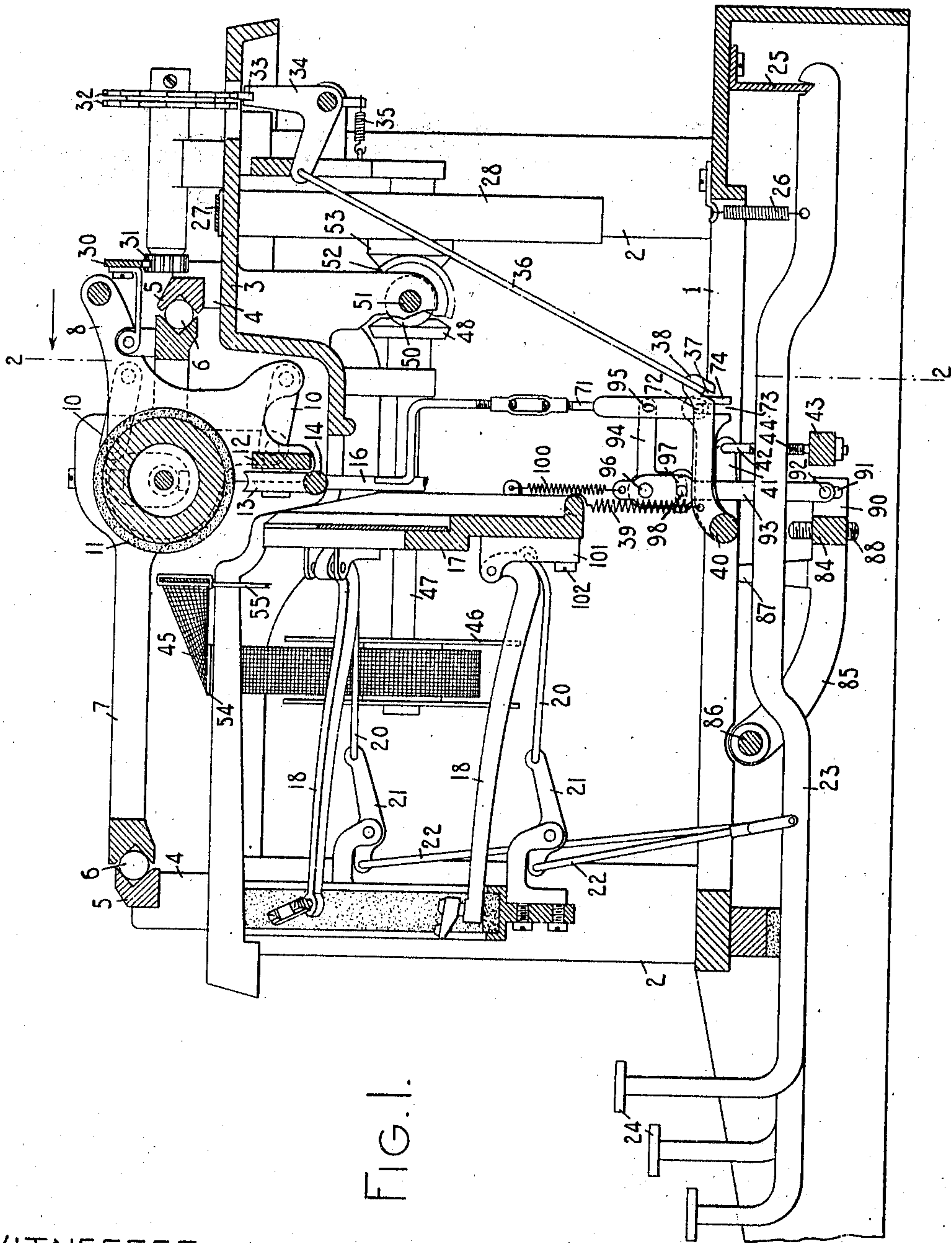


FIG. 1.

WITNESSES:

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By Jacob F. Felsch
HIS ATTORNEY

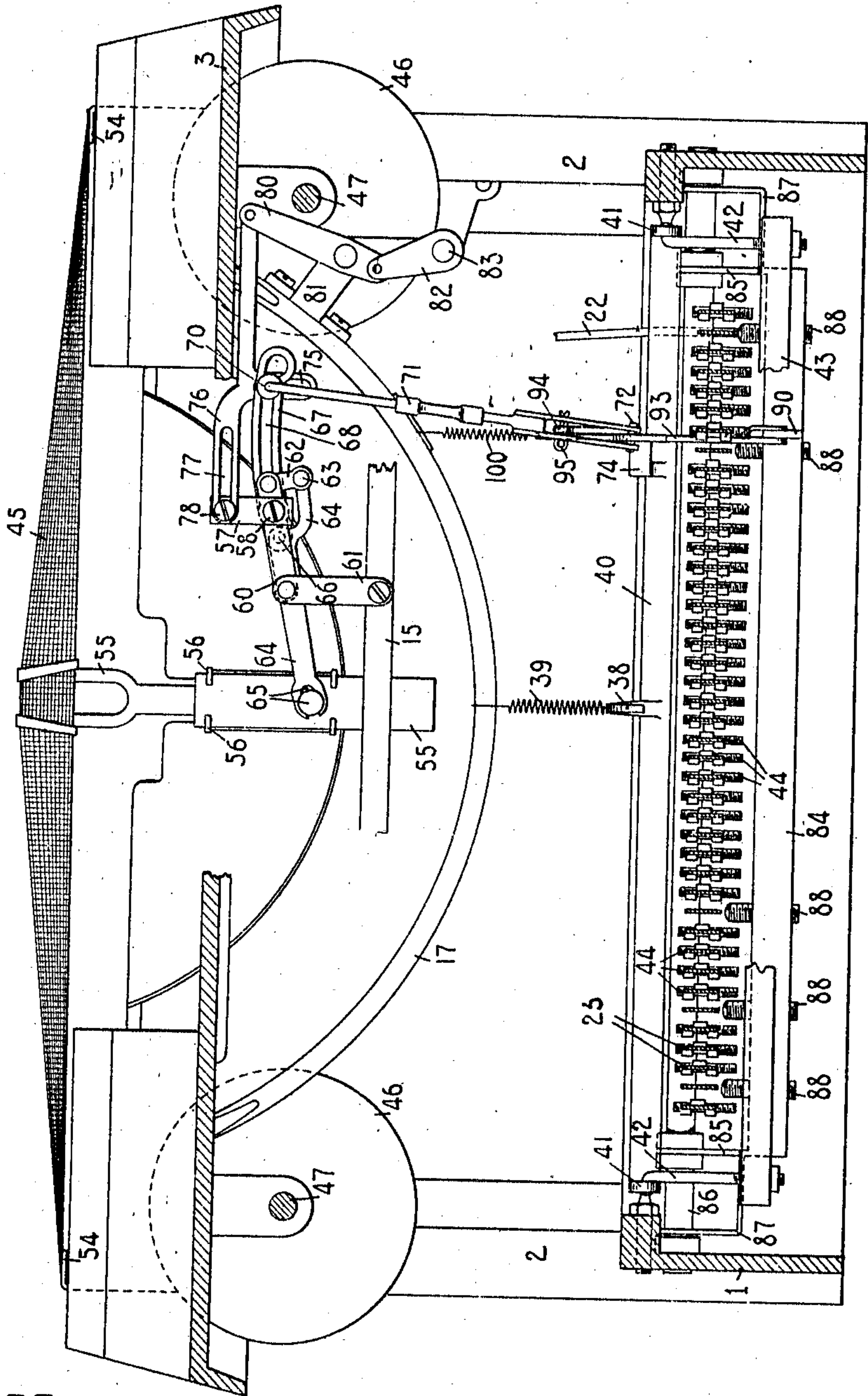
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3 SHEETS—SHEET 2.

FIG. 2.



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3 SHEETS-SHEET 3.

FIG. 3

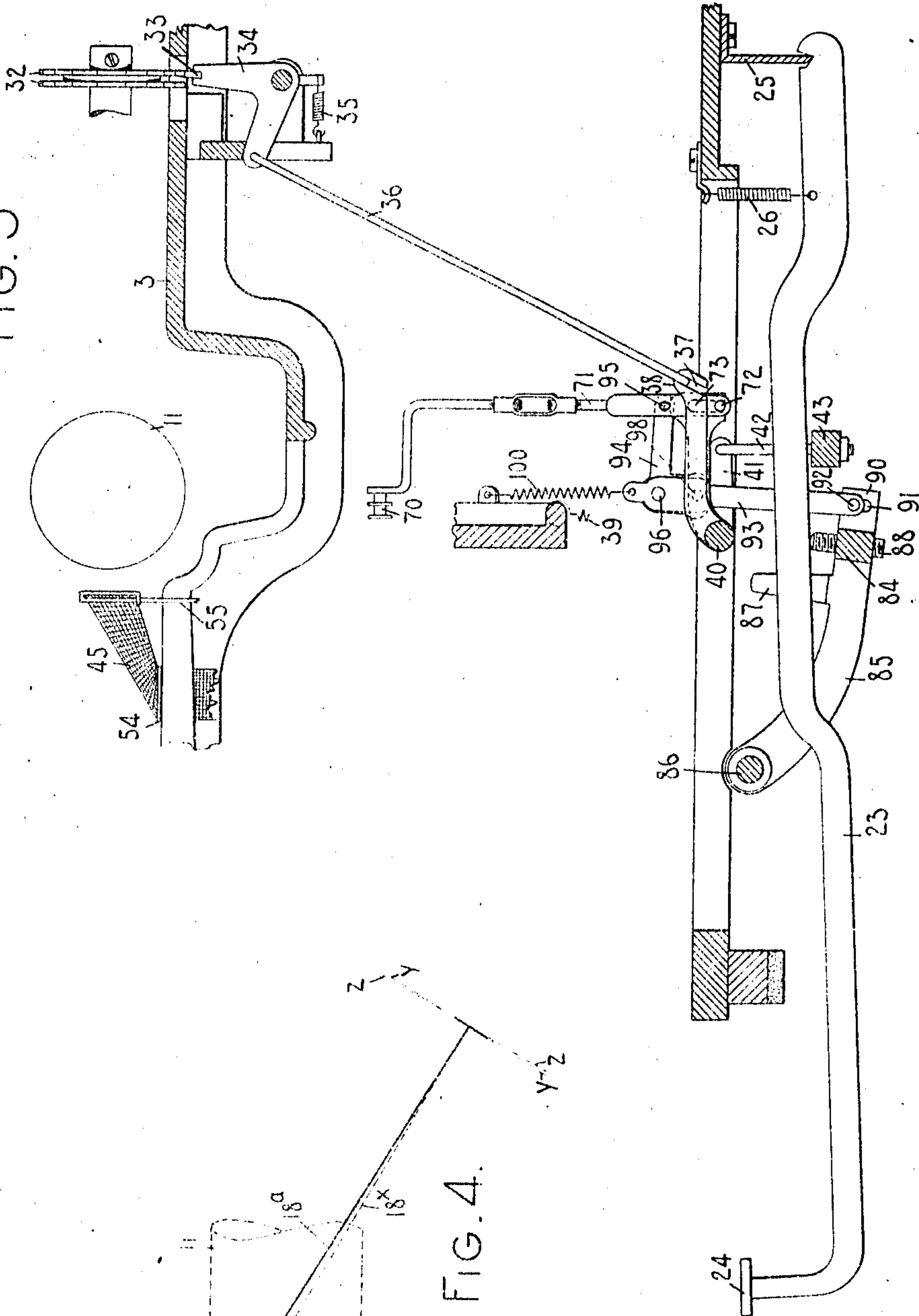
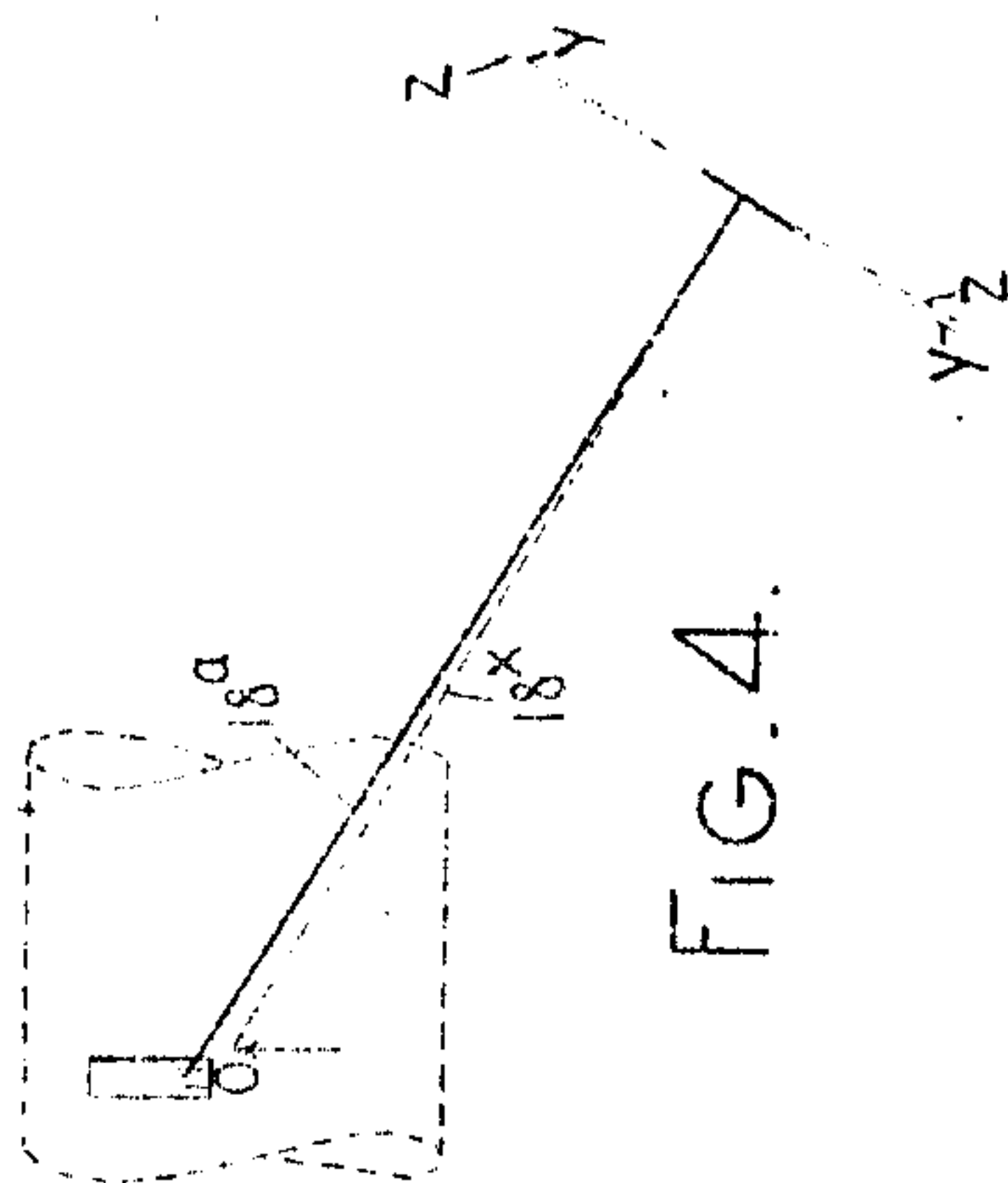


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE A. SEIB, OF ILION, NEW YORK, ASSIGNOR TO REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

992,912.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed April 29, 1910. Serial No. 558,445.

To all whom it may concern:

Be it known that I, GEORGE A. SEIB, citizen of the United States, and resident of Ilion, in the county of Herkimer 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 of the sort in which a ribbon vibrator is employed to cover and uncover the printing point at each printing operation.

The principal object of the invention is to provide for writing accents or other diacritical marks or other special marks above or below the letters. In most devices for this purpose heretofore it has been necessary to write the accent first and the letter afterward, which is the opposite of the natural mode of writing. By my invention the letter can be written first and the accent or other mark afterward.

To the above and other ends my invention consists in certain features of construction and combinations and arrangements of parts all of which will be fully set forth herein and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front-to-rear vertical sectional view of a typewriting machine having my invention embodied therein. Fig. 2 is a transverse vertical sectional view looking from the back. Fig. 3 is a view similar to part of Fig. 1 but showing the accent key in its depressed position. Fig. 4 is a diagrammatic view of an accent type-bar in printing position.

My invention is applicable or adaptable generally to visible writing machines and some of its features are applicable to other sorts of writing machines. The invention is here shown applied to a Remington front strike typewriter. The main frame of this machine comprises a base 1, corner posts 2 and a top plate 3. Standards 4 rising from said top plate support stationary rails 5 which through rollers 6 support and guide a carriage truck 7. Said truck has a platen frame 8 mounted thereon by means of parallel links and crank arms 10 which allow to the platen frame and to the platen 11 an up and down case shift motion. Said platen frame comprises a cross bar 12 at the middle of which is journaled a roller 13 which rides on a shift rail 14 which comprises part of a

shift frame which frame also includes another horizontal bar 15 (Fig. 2), the two bars 14 and 15 being connected by vertical posts 16. This frame is shifted up and down by mechanism which is not here shown but which is well known in the art. The machine also comprises a stationary type bar segment 17 to which type bars 18 are pivoted for such motion as to strike against the front of the platen 11. Said type bars are connected by links 20, sub-levers 21 and links 22 with printing key levers 23 which at their forward ends carry printing keys 24 and at their rear ends are pivoted on a plate 25. The key levers are provided with returning springs 26. The carriage is fed by means of a strap 27 and spring drum 28 and its motion is controlled by a feed rack 30 pivoted to the truck 7, a feed pinion 31, escapement wheels 32, dog 33 and dog rocker 34 having a returning spring 35. Said dog rocker is operated by a link 36 which at its lower end is hooked into a slot 37 formed in an arm 38 having a restoring spring 39 connected thereto and said arm projecting from a rock shaft 40 having arms 41 from which, by rods 42, is suspended a universal bar 43 that lies beneath the printing key levers. All of said key levers except the accent key levers have adjustable screws 44 which are adapted to strike against and operate the universal bar 43 but these screws are omitted from the accent key levers so that said accent key levers do not operate the universal bar nor the escapement.

With the exception of the accent key levers referred to, the mechanism thus far described is or may be of substantially the same construction as that ordinarily employed in the Remington front strike machine.

The ribbon mechanism can be constructed in various ways, but as here shown it is, with certain exceptions to be noted, the same as that ordinarily employed in the Remington machine and this mechanism is described in the patent to Yaw No. 920,410, dated May 4, 1909.

The ribbon 45 is wound on spools 46 which are driven by mechanism comprising spool shafts 47, beveled gears 48 and 50, transverse driving shaft 51 and means including bevel gears 52, 53 connecting said driving shaft with the spring drum 28. The ribbon is led up through the top plate over guides 54 and across the machine through

the ribbon vibrator 55, the lower part of which is arranged to slide up and down in guides 56 mounted on the rear face of the type bar segment 17. Said segment also has mounted thereon a bracket 57 in which at 58 is pivoted a lever 60 of the first order, the longer arm of said lever being connected by a link 61 with the bar 15 of the shift frame. The shorter arm of the lever has pivoted thereto a link 62 to the lower end of which at 63 is pivoted a lever 64 of the third order and the free end of said lever is connected by a pin and slot connection 65 with the stem of the vibrator 55. The lever 53 is pivoted at 66 to the short arm of a lever 67 of the first order, which lever is pivoted on the center 58 and has a curved and approximately radial slot 68 formed therein. Said slot is engaged by a pin 70 (Fig. 3) projecting from the upper end of a link 71 which at its lower end is bifurcated and provided with a cross pin 72 which as shown in Fig. 1 normally stands in the upper end of a slot 73 formed in a crank arm 74 projecting from the rock shaft 40. The construction is such that when the universal bar 43 is operated the link 71 will be pulled down and the vibrator 55 will be thrown up to cause the ribbon to cover the printing point, and it is also such that the link 71 is capable of being operated to work the vibrator independently of the universal bar 43. The up and down shift of the platen frame is compensated for by the link 61 and lever 60 which changes the fulcrum 63 of the operating lever 64. This mechanism also comprises means for varying the height to which the ribbon is thrown in order to write from the upper or lower stripe of the ribbon. Such variation is effected by moving the pin 70 along the slot 68 and to this end said pin projects into a vertical slot 75 formed in a depending branch of a bar 76, which bar also has a horizontal guide slot 77 working over a pin or screw 78 projecting from the bracket 57. The bar 76 is moved to the right or to the left by means of a lever 80 connected with said bar and pivoted to a bracket 81 mounted on the segment 17. The lever 80 is operated by a crank arm 82 projecting from a rock shaft 83 the forward end of which carries a milled head or other handle for turning it. All of this vibrator operating and controlling mechanism is fully described in the patent to Yaw above referred to, with the exception of the pin and slot connection at the bottom of the link 71.

The accent keys do not operate the universal bar 43 and I have accordingly provided other means whereby these keys operate the ribbon vibrator independent of said universal bar 43. Said means comprises a transverse bar 84 lying beneath the series of printing key levers and mounted on arms

85 projecting from a rock shaft 86 which is pivoted in the side plates of the base 1 of the machine. One or both of these arms is formed with a projection 87 that is adapted to strike against a part of the base 1 to limit the upward motion of the bar 84. Said bar lies at such a distance beneath the key levers that none of them can touch it when the keys are operated, but beneath each of the accent key levers said bar has a screw 88 threaded therethrough and projecting high enough so that a depression of that key will depress the bar 84. The bar 84 has an arm 90 projecting therefrom and having a vertical slot 91 therein which is engaged by a pin 92 in the lower end of a link 93, which link is here shown as of right angled form, having a horizontal arm 94 which is connected by a pin 95 with the link 71. The construction is such that when the link 71 is drawn down by the operation of the universal bar 43 the link 93 moves downward with it, the pin 92 moving idly in the slot 91. When one of the accent keys is operated the universal bar 43 is not depressed but the bar 84 is depressed and operates the link 71 and the ribbon vibrator through the link 93, 94, the pin 72 moving idly in the slot 73. This angled link 93, 94 is here shown formed with means for adjustment. The vertical arm 93 and the horizontal arm 94 are made as two parts pivoted together at 96. A branch of the part 94 has a slot 97 therein through which passes a headed screw 98 which is threaded into the part 93. The construction is such that the part 94 can be turned about the pivot 96 until the relation between the pins 92 and 95 is correct and the two parts of the link can be secured in this adjusted relation by tightening the screw 98. The link 93, 94 is drawn upward by a returning spring 100, the upper end of which is connected with the segment 17. The frame of which the bar 84 is a part may also have a returning spring, though such a spring is not shown in the drawing.

It will of course be understood that there will be one or more accent keys depending upon the requirements of the particular machine concerned. In Fig. 2 the machine is shown provided with five of these keys. As far as the key lever itself is concerned any key can be made into an accent key by removing the screw 44 from the key lever and placing beneath that key lever one of the screws 88.

As hereinbefore stated it is preferable in these constructions to make provision for writing the letter first and the accent or other mark afterward. I provide for writing the letter first by modifying the accent type bar itself and its mounting in such a way that the printing point for said type bar is one letter space to the left of the ordinary printing point. This may be done in

the manner indicated diagrammatically in Fig. 4 which illustrates one of the accent type bars printing the *umlaut* over the letter "o." As said letter has just been written the platen has stepped one space to the left. In this view the printing point is indicated by the point of the arrow x and the printed letter has stepped one space to the left of said point x . The broken line 18^x indicates the printing position of an ordinary type bar and the broken line $y-y$ indicates the pivot of said type bar. The heavy line 18^a indicates the accent type bar and the broken line $z-z$ indicates the pivot of said type bar.

The particular type bar shown is one near the right-hand end of the type bar segment and this bar has been made longer than the ordinary type bar so as to reach beyond the ordinary printing point on the platen.

Moreover, as the mark to be written comes above the letter the pivot of this type bar has been turned through a slight angle so as to cause the type to print above the ordinary writing line. This tilting of the pivot can be very readily effected because the type bars are mounted as shown in Fig. 1 in hangers 101 which are secured to the segment by screws 102. The hanger of this particular type bar has been turned a little about said screw as a center. I prefer this turning of the type bar pivot to an additional off-setting or lengthening of the type block itself because such lengthening of the type block would put a severer torsional strain on the type bar which might result in imperfect printing. Where the accent type bar is located at some other point of the segment than at or near the right-hand end thereof the length of the type bar and the direction of its pivot will be modified accordingly, the precise nature of this modification depending upon the precise position of the type bar on the segment. In the case of a type bar near the left hand end of the segment, it might be necessary actually to shorten the type bar instead of to lengthen it and this would be especially the case if the mark had to be written under the letter instead of over it. It will be seen, that after writing the letter "o" in Fig. 4 the carriage took its ordinary step after which the *umlaut* was written over said letter. The writing of this *umlaut*, however, does not impart an additional step to the carriage so that the platen is still in position to receive the next succeeding letter.

It will of course be understood that the means above described can be utilized for writing any sort of character whatever, the writing of which is not desired to result in the stepping of the carriage. For convenience all such characters will be referred to in the claims as accents although that term is not strictly appropriate to some of them.

For example this construction could be used

for underscoring, the underscoring key being struck after each letter.

Various changes can be made in the details of construction and arrangement without departing from my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a visible typewriting machine, the combination with a carriage, a series of types and printing key levers including ordinary and special key levers for operating said types, of means operated by said ordinary key levers for affording a step-by-step feed to said carriage, a ribbon vibrator operated by said ordinary key levers, a bar lying beneath said key levers, screws or posts projecting from said bar into position to be operated by said special key levers, and means operated by said bar for operating said ribbon vibrator independently of the carriage feed mechanism.

2. In a visible typewriting machine, the combination with a carriage, a series of types, and printing key levers including ordinary and special key levers for operating said types, of a universal bar operated by said ordinary key levers, a carriage escapement operated by said universal bar, a ribbon vibrator operated by said universal bar but capable of independent operation, a special bar lying beneath said key levers and arranged to be operated by said special key levers, and means whereby said special bar can operate said vibrator independently of said universal bar.

3. In a visible typewriting machine, the combination with a carriage, a series of types, and printing key levers including ordinary and special key levers for operating said types, of a universal bar lying beneath said key levers and arranged to be operated by said ordinary levers, a carriage escapement operated by said universal bar, a ribbon vibrator, devices including a depending link connecting said vibrator to said universal bar, said link being capable of operation independently of said universal bar, a special bar arranged to be operated by said special key levers, and a connection from said special bar to said link.

4. In a visible typewriting machine, the combination with a carriage, a shiftable platen frame and platen, a series of types, a series of key levers including ordinary and special key levers for operating said types, and ribbon vibrator mechanism arranged to compensate for the shifting of said platen frame and including an operating link that is not affected by such shifting, of a universal bar arranged to be operated by said ordinary key levers, a carriage escapement operated by said universal bar, a connection from said universal bar to said link for operating the latter and allowing said link to be operated independently of said universal bar;

a special bar arranged to be operated by said special key levers, and means whereby said special bar operates said link.

- 5 In a typewriting machine, the combination of a ribbon vibrator, a universal bar, and connections from said universal bar to said vibrator, said connections including a pull link made up of two parts pivoted together and having means for securing the
10 parts in the relative adjusted positions to which they may be set by turning about

their pivotal connection, the adjustment of said parts about said pivotal connection changing the distance apart of the two ends of said link. 15

Signed at Ilion, in the county of Herkimer and State of New York this 27th day of April A. D. 1910.

GEORGE A. SEIB.

Witnesses:

RUTH CONE,
MARY GLEASON.