

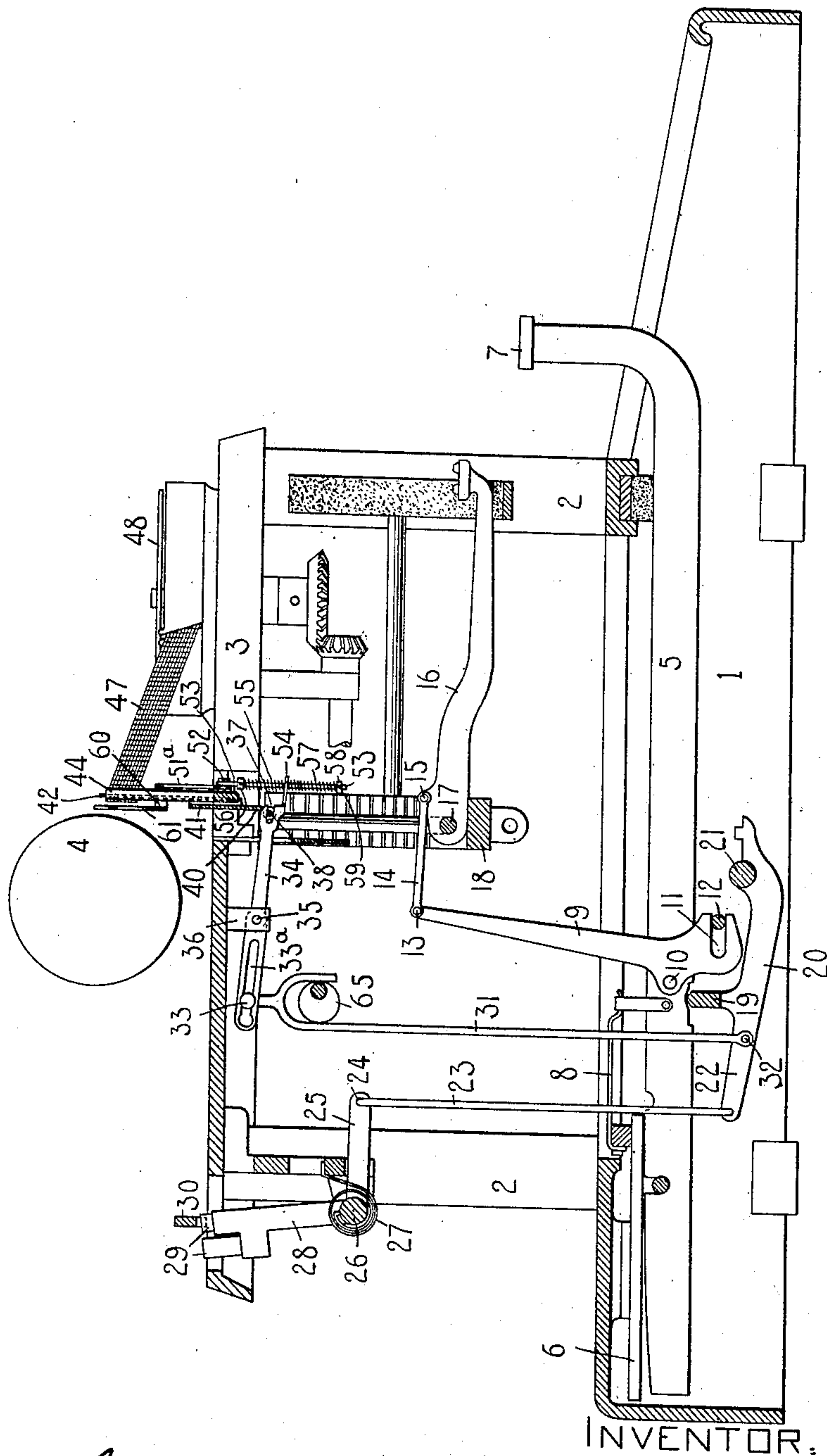
No. 855,207.

PATENTED MAY 28, 1907.

C. H. SHEPARD.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 12, 1905.

3 SHEETS—SHEET 1.

FIG. 1.



WITNESSES.

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Wm. E. Smith

INVENTOR.
Charles H. Shepard
By *Jacob F. Felt*
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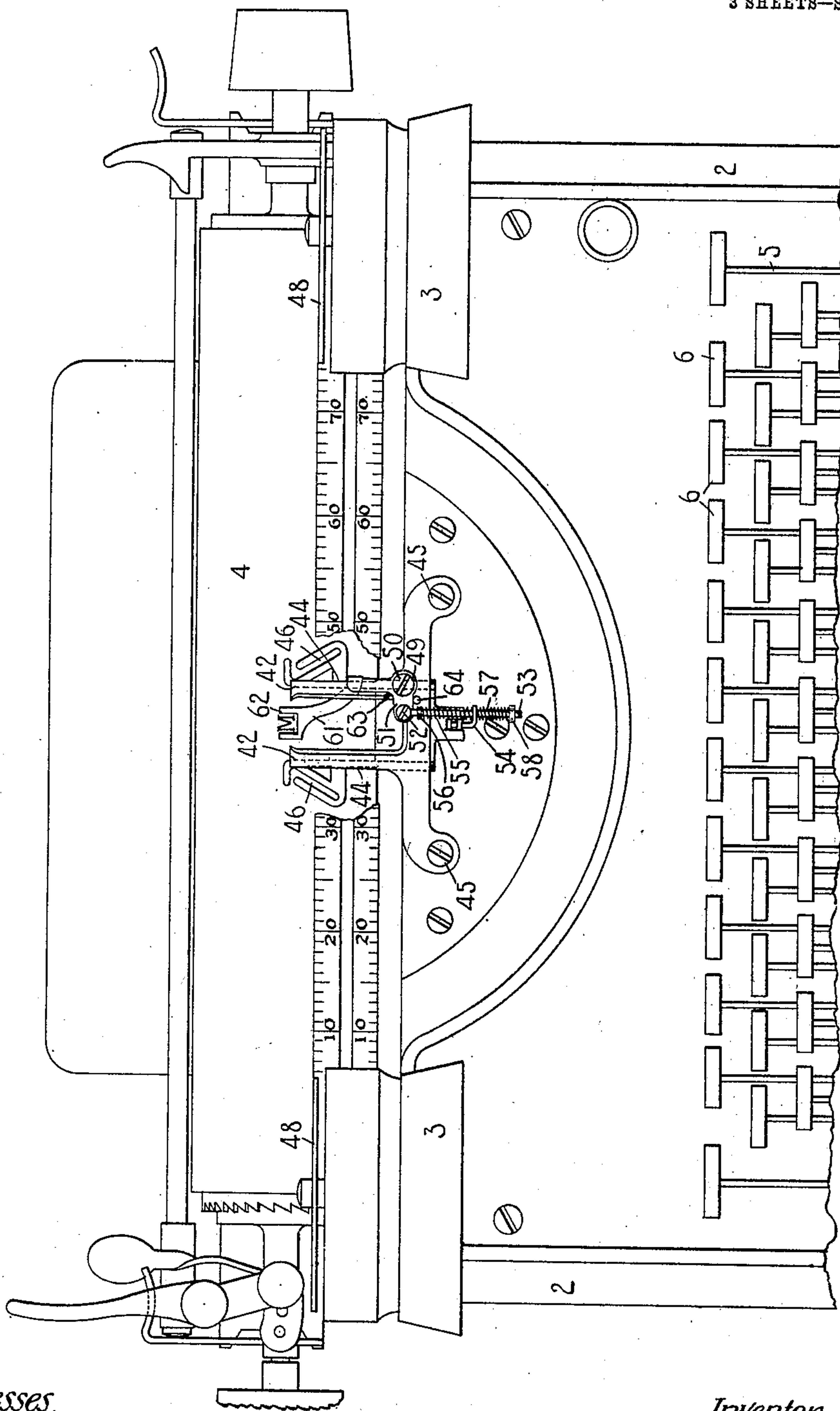
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3 SHEETS—SHEET 2.

FIG. 2.



Witnesses.

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3 SHEETS—SHEET 3.

FIG. 4.

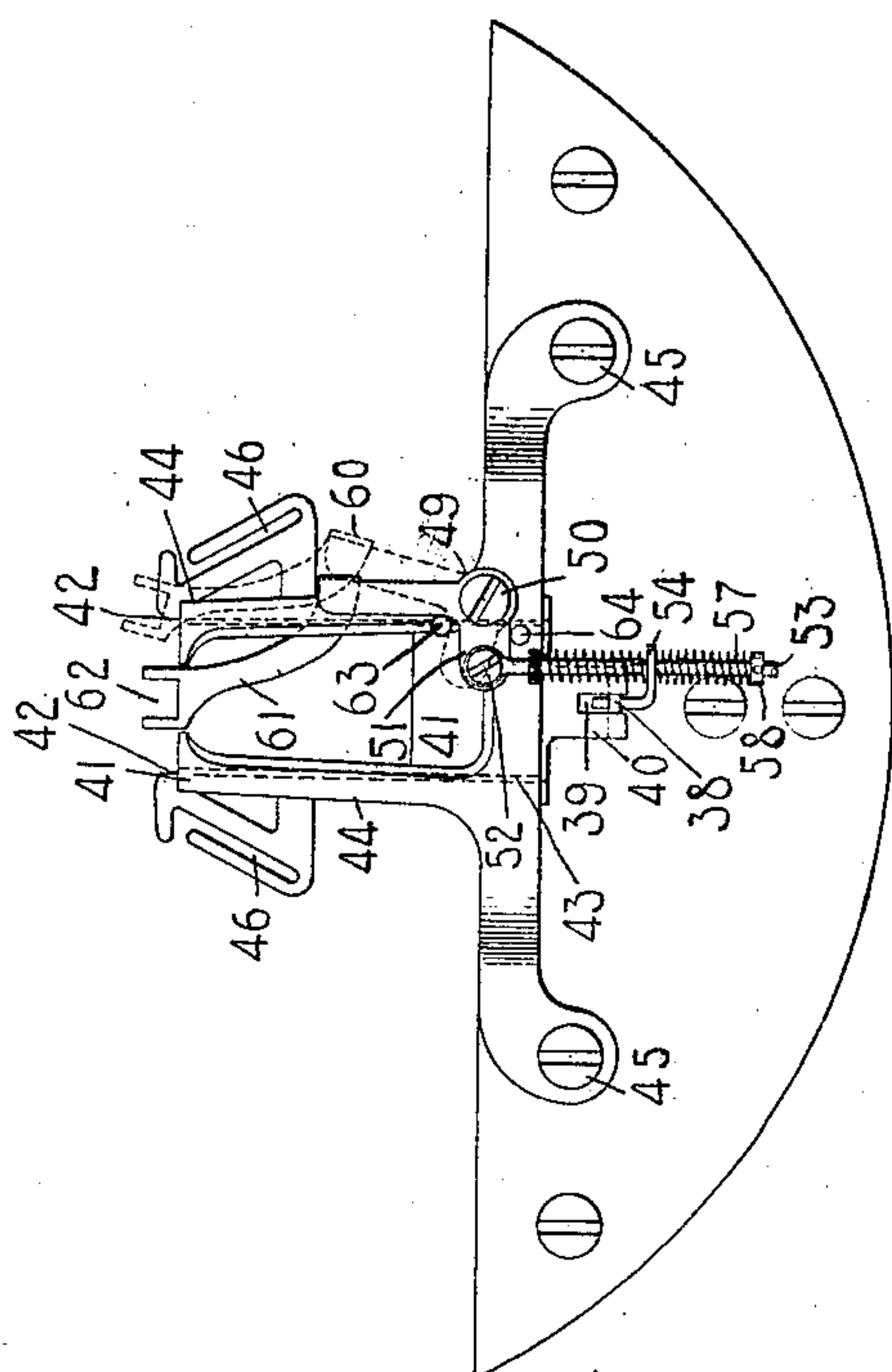


FIG. 3.

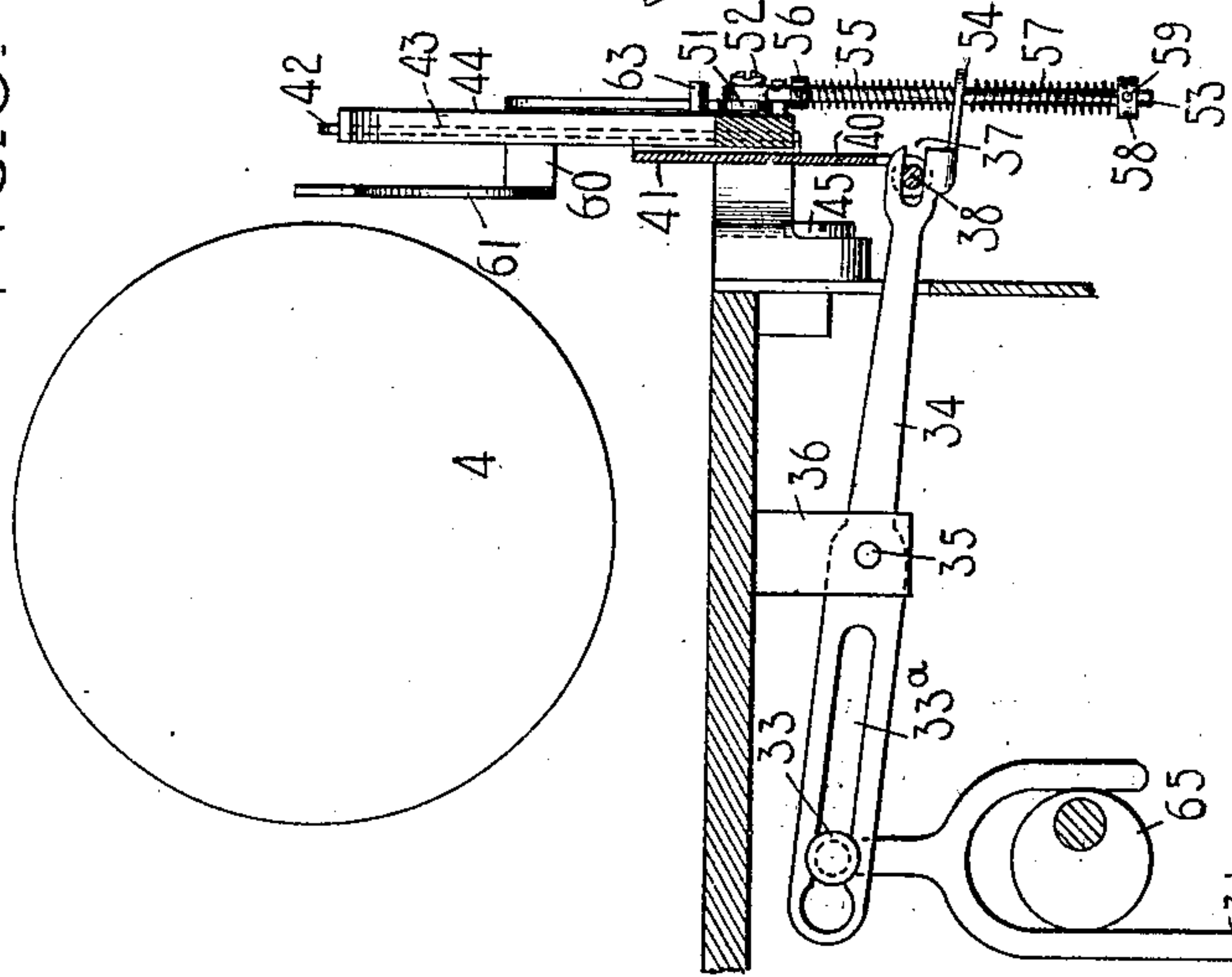


FIG. 5.

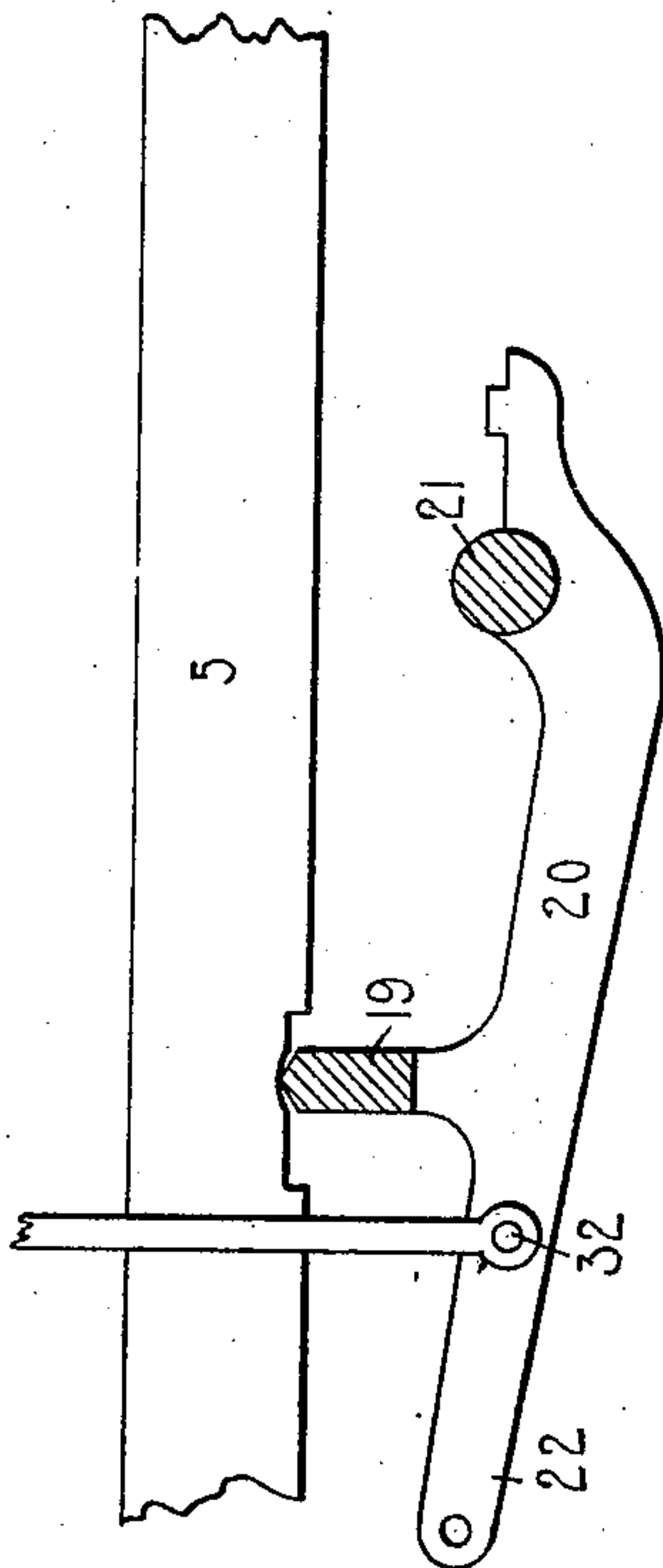
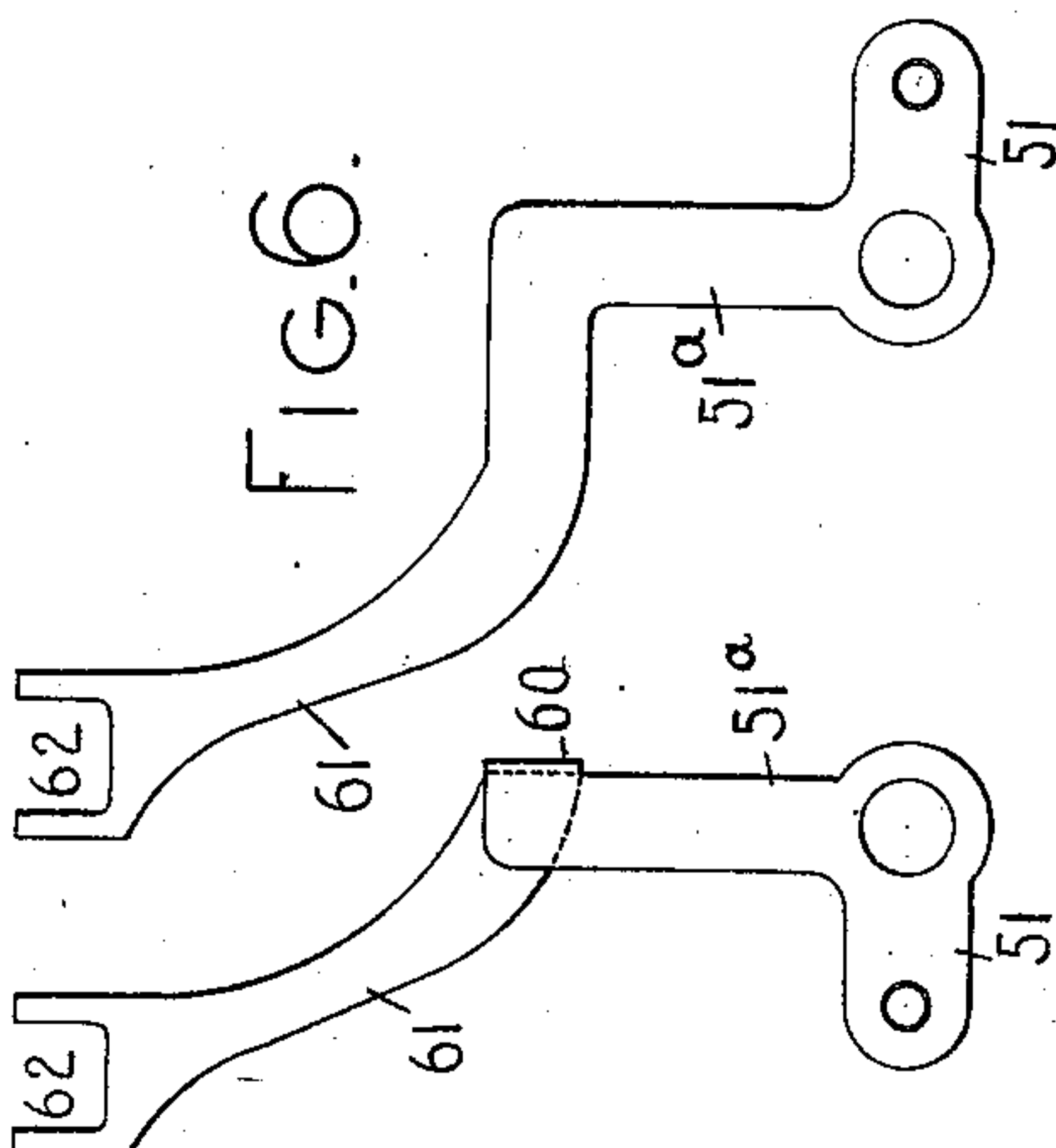


FIG. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

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

TYPE-WRITING MACHINE.

No. 855,207.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed July 12, 1905. Serial No. 269,345.

To all whom it may concern:

Be it known that I, CHARLES H. SHEPARD, a citizen of the United States, and a 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 printing point indicating mechanism for typewriting machines and one object of the invention is to provide simple and efficient mechanism of the character specified which is automatically actuated at each printing operation to move the indicator from the normal or indicating position to the non-indicating position.

A further object of my invention is to provide mechanism of the character specified that can be readily applied to existing forms of typewriting machines without changing the structural features of such machines.

To the above and other ends, which will hereinafter appear, my invention consists in the features of construction, arrangement of parts and combinations of devices to be hereinafter described and claimed.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical, central, front to rear sectional view of sufficient number of parts of one form of typewriting machine to illustrate my invention and its application thereto. Fig. 2 is a fragmentary front elevation of the same. Fig. 3 is an enlarged detail vertical sectional view showing the indicator and some of the associated parts. Fig. 4 is a front elevation of the same. Fig. 5 is an enlarged detail front elevation of the indicator. Fig. 6 is a plan view of the blank from which the indicator is made.

I have shown my invention applied to a Monarch machine, though some of the parts are shown in conventional form, but it is to be understood that the invention may be applied to various other forms of typewriting machines.

The base 1 of the machine has corner posts 2 extending upwardly therefrom and a top plate 3 surmounts the corner posts and supports a carriage which carries a platen 4 and is adapted to move from side to side of the

machine. Key levers 5 are fulcrumed on a fulcrum plate 6 and carry the usual finger keys 7 and restoring springs 8. Each key lever has a sub-lever 9 pivoted thereto at 10 and the lower end portion of each sub-lever is slotted at 11 for co-operation with a fixed fulcrum rod 12 which extends transversely beneath the key levers and is secured at its ends in the base 1 of the machine. The upper end of each sub-lever is pivoted at 13 to a forwardly extending link 14 pivoted at 15 to a type bar 16. The various segmentally arranged type bars are pivoted on a pivot wire 17 supported on a type bar segment 18.

Extending transversely beneath the various key levers is a universal bar 19, carried by the universal bar frame 20 pivoted in the base 1 of the machine on a pivotal center indicated at 21 and having a rearwardly extending arm 22 from which extends an upwardly directed link 23, the upper end thereof being connected at 24 to a forwardly extending arm 25 on a dog rocker, the rock shaft 26 of which is pivoted in a fixed bracket. A restoring spring 27 surrounds the rock shaft and is connected at one end thereto, whereas the opposite end of the spring is connected to a fixed portion of the machine. The upwardly extending arm 28 of the dog rocker carries the usual feed dogs 29 which co-operate with a feed rack 30 directly or operatively connected to the carriage, so as to effect a step-by-step movement of the carriage during the printing operations. A link 31 is pivoted at its lower end 32 to the arm 22 and its upper end carries a laterally projecting pin 33 received within a longitudinal slot 33^a in a ribbon vibrator actuating lever 34 pivoted at 35 to a depending stud 36 carried by the top plate of the machine. The forward end portion of the lever 34 is bifurcated at 37 for the reception of a pivot 38 that extends across an opening 39 in a depending arm 40 of a ribbon vibrator 41. The vibrator may be of any suitable construction, but in the present instance is shown provided with inwardly bent parallel edge portions 42 received in guide grooves 43 in the outer side edges of arms 44 of the fixed ribbon vibrator guide, said guide being secured in place by screws 45 that connect it to the top plate of the machine. The ribbon vibrator has guide openings 46 through which the ribbon 47 is adapted to

be fed longitudinally from one ribbon spool 48 to the other.

A printing point indicator 49 is pivoted on the fixed vibrator guide by a headed pivot screw 50 and is formed from a blank such as that shown in Fig. 6 and when bent up into form is of a shape such as that shown in Fig. 5. The indicator may be said to be in the form of a bell crank lever, one arm 51 of which extends inwardly to a point forward of and above the ribbon vibrator actuating lever 34. The free end of this arm is pivoted at 52 to a depending link 53 which extends freely through an opening in the forwardly extending and laterally bent arm 54 on the ribbon vibrator actuating lever. A coiled expansion spring 55 is located above the extension 54 and bears at its lower end against the extension and at its upper end against a collar 56 that is adjustably secured to the link by means of a set screw or otherwise. A coiled expansion spring 57 surrounds the link below the extension 54 and bears at its upper end against the extension and at its lower end against a collar 58 adjustably secured in place to the link by a set screw 59. By these means the printing point indicator is connected to the ribbon vibrator actuating lever and each movement of a lever produces a movement of the indicator. The other arm 51^a of the bell crank lever carries the indicator. A bend 60 in the indicator between the arms 51 and 61 enables the indicator arm 61 to extend around and to the rear of one of the side arms 44 of the fixed vibrator guide and to be positioned intermediate the ribbon and the platen and intermediate the platen and ribbon vibrator. The upper end of the arm 61 is forked or bifurcated to provide an indicating opening 62 which has a width that corresponds substantially to one of the widest characters to be written on the machine, as indicated in Fig. 2.

A stop pin 63 extends forwardly from one of the arms 44 and co-operates with the arm 51 on the indicator to limit the movement thereof from the normal to the non-indicating position. Another stop pin 64 extends from the ribbon vibrator guide beneath the arm 51 of the indicator and limits the throw of the indicator in its movement toward the normal position, as represented in Fig. 2. A depression of the finger key will cause the universal bar to be depressed, thereby elevating the forward end of the lever 34 to elevate the vibrator so as to interpose the ribbon in the path of the approaching type of the type bar actuated by the key depression. This movement of the ribbon vibrator actuating lever 34 likewise moves the printing point indicator, through the spring 55, to the non-indicating position shown in Fig. 4, so that the indicator is moved away from the printing point as the type approaches the printing position. When the pressure on the

finger key is released, the forward end of the lever 34 will move downwardly, thereby carrying the ribbon vibrator downward to normal position and the same movement will, through the spring 57, restore the printing point indicator to the normal or indicating position. By employing the lost motion connection between the ribbon vibrator lever 34 and the indicator I am enabled to compensate for any change in the throw of the lever or any inaccuracy in the timing of the parts. Thus, for instance, in the Monarch machine, the lever 34 is given a differential throw automatically from the normal position during different periods in the longitudinal feed thereof by a cam 65 moving the pin 33 different distances from the fulcrum 35 of the lever 34 in order to effect an automatic transverse feed to the ribbon. This mechanism is illustrated in the patent to Jacob Felbel & Carl Gabrielson, dated June 24th, 1902, No. 703,339. It will be understood that by the use of the springs 55 and 57 for effecting a connection between the vibrator lever and the printing point indicator, or the use of what I have termed a lost motion connection between the parts, I am enabled to effectively actuate the indicator when a differential mechanism, such as that shown in the above mentioned patent, is employed without altering the printing point indicator or affecting the operation thereof. In other words, the printing point indicator will be moved a given extent to and from the indicating position and will be limited in these movements by the stops 64 and 63 and will always be in register with the printing point in the normal position of the indicator, irrespective of the extent of movement given to the vibrator actuating lever or the ribbon vibrator.

The stop 63 may be eliminated without materially altering the operation of the device as it is immaterial how far the indicator is moved away from the indicating position, but it is essential that the indicator should always be arrested at the same point in its return movement to the indicating position. Various changes in detail may be made without departing from the spirit 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 ribbon vibrator, a printing point indicator that is in the form of an angle lever and is movable independently of the vibrator, and an automatically actuated lever that actuates said vibrator and indicator.

2. In a typewriting machine, the combination of a printing point indicator, an independently movable ribbon vibrator, and a spring which constitutes an operative connection between said vibrator and indicator.

3. In a typewriting machine the combina-

tion of a ribbon vibrator, means for automatically actuating said vibrator, an indicator, and a spring between said vibrator actuating means and the indicator.

5 4. In a typewriting machine, the combination of an automatically actuated ribbon vibrator, a printing point indicator, and a lost motion connection between the vibrator and indicator.

10 5. In a typewriting machine, the combination of an automatically actuated ribbon vibrator, a printing point indicator separate from but connected to said vibrator so as to be actuated when the vibrator is moved and to afford a movement of the vibrator independently of said indicator.

15 6. In a typewriting machine, the combination of a ribbon vibrator, an automatically actuated lever for operating said vibrator at each printing operation, and a printing point indicator in the form of a bell crank or angle lever pivoted to a fixed portion of the machine, one arm of said bell crank lever constituting a pointer adapted to register with the printing point, the other arm of said lever being operatively connected to said operating lever.

20 7. In a typewriting machine, the combination of a ribbon vibrator, an automatically actuated lever for operating said vibrator at each printing operation, a printing point indicator in the form of a bell crank or angle lever pivoted to a fixed portion of the machine and one arm of which constitutes a pointer adapted to register with the printing point, and a spring between the other arm of

said angle lever and the automatically operated lever for the vibrator.

8. In a typewriting machine, the combination of a ribbon vibrator, a device for actuating said vibrator, a printing point indicator, and a spring interposed between said device for actuating the vibrator and said indicator and through which motion is transmitted from the vibrator actuating device to said indicator.

9. In a typewriting machine, the combination of a printing point indicator having an opening therein that corresponds substantially in size to a character to be written by the machine, means for normally maintaining the indicator in position where the said opening therein will register with the printing point, and means for automatically moving said indicator away from the printing point at each printing operation.

10. In a typewriting machine, the combination of a ribbon vibrator, means for automatically actuating said vibrator, means for effecting a variable throw of said vibrator, an independent printing point indicator, and means for effecting a given extent of movement to the indicator from the means for automatically actuating the vibrator.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 10th day of July, A. D. 1905.

CHARLES H. SHEPARD.

Witnesses:

E. M. WELLS,

M. F. HANNWEBER.