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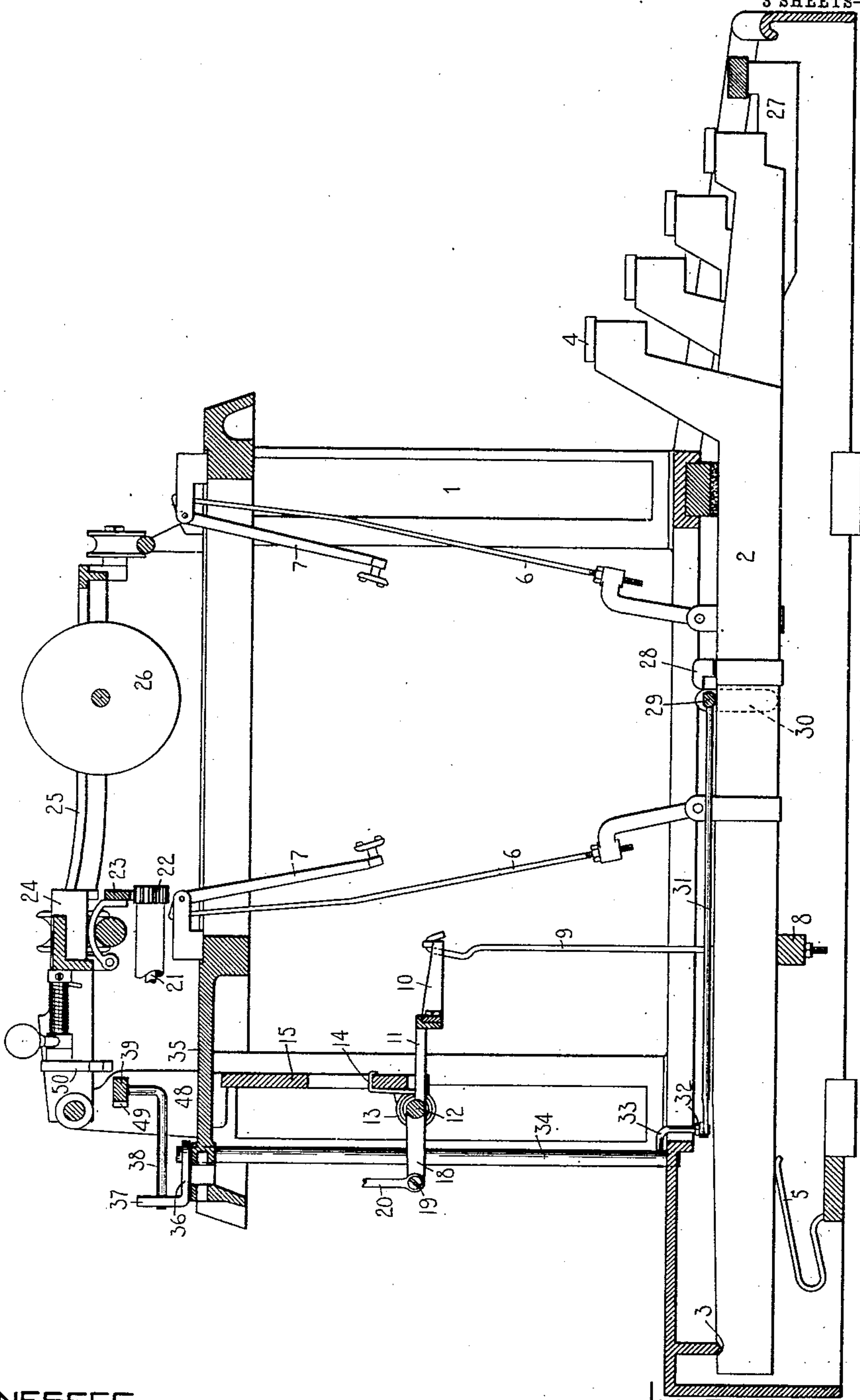
PATENTED JAN. 26, 1904.

C. H. SHEPARD.
TYPE WRITING MACHINE.
APPLICATION FILED NOV. 26, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



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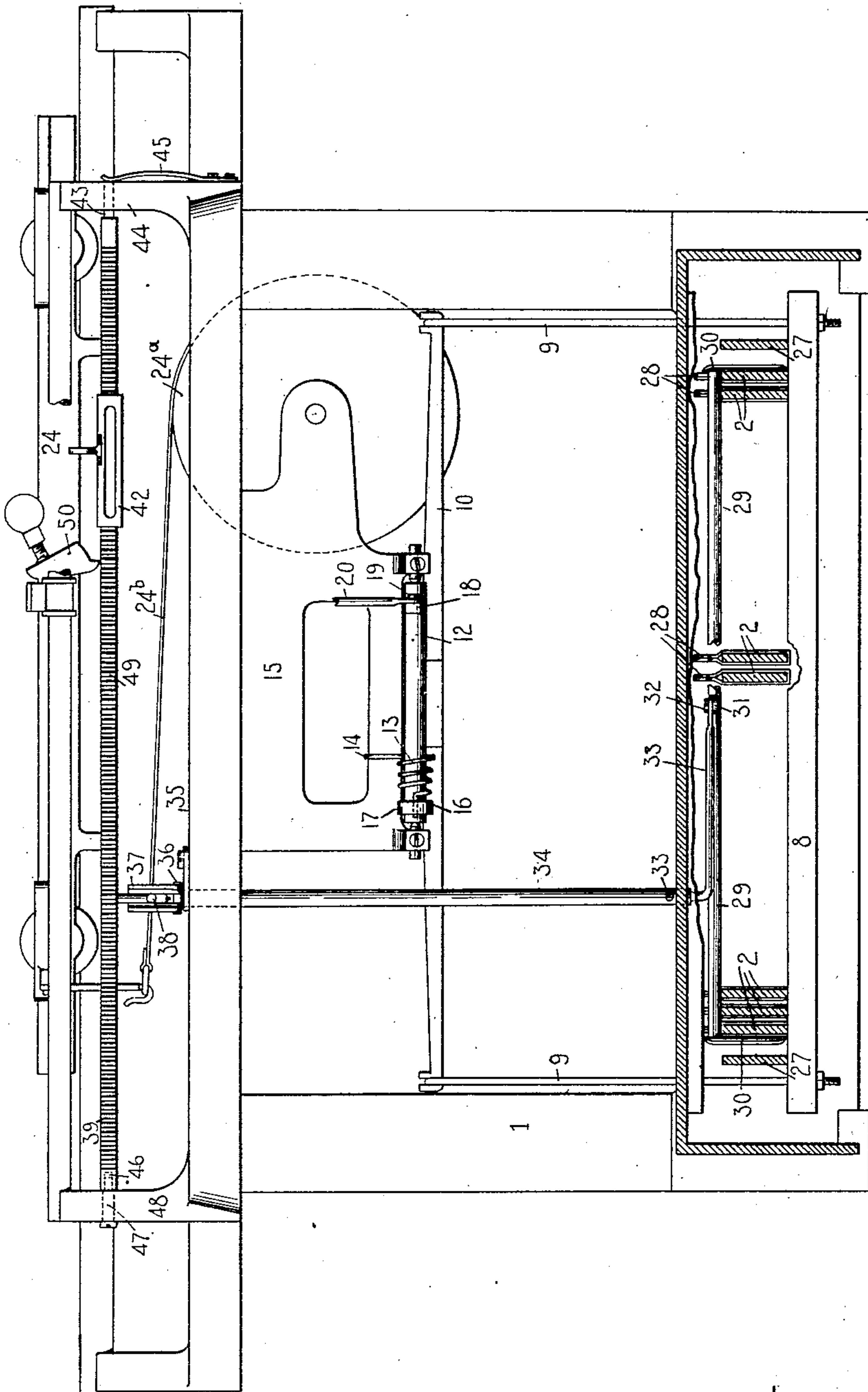
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3 SHEETS—SHEET 2.

FIG. 2.



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3 SHEETS—SHEET 3.

FIG. 4.

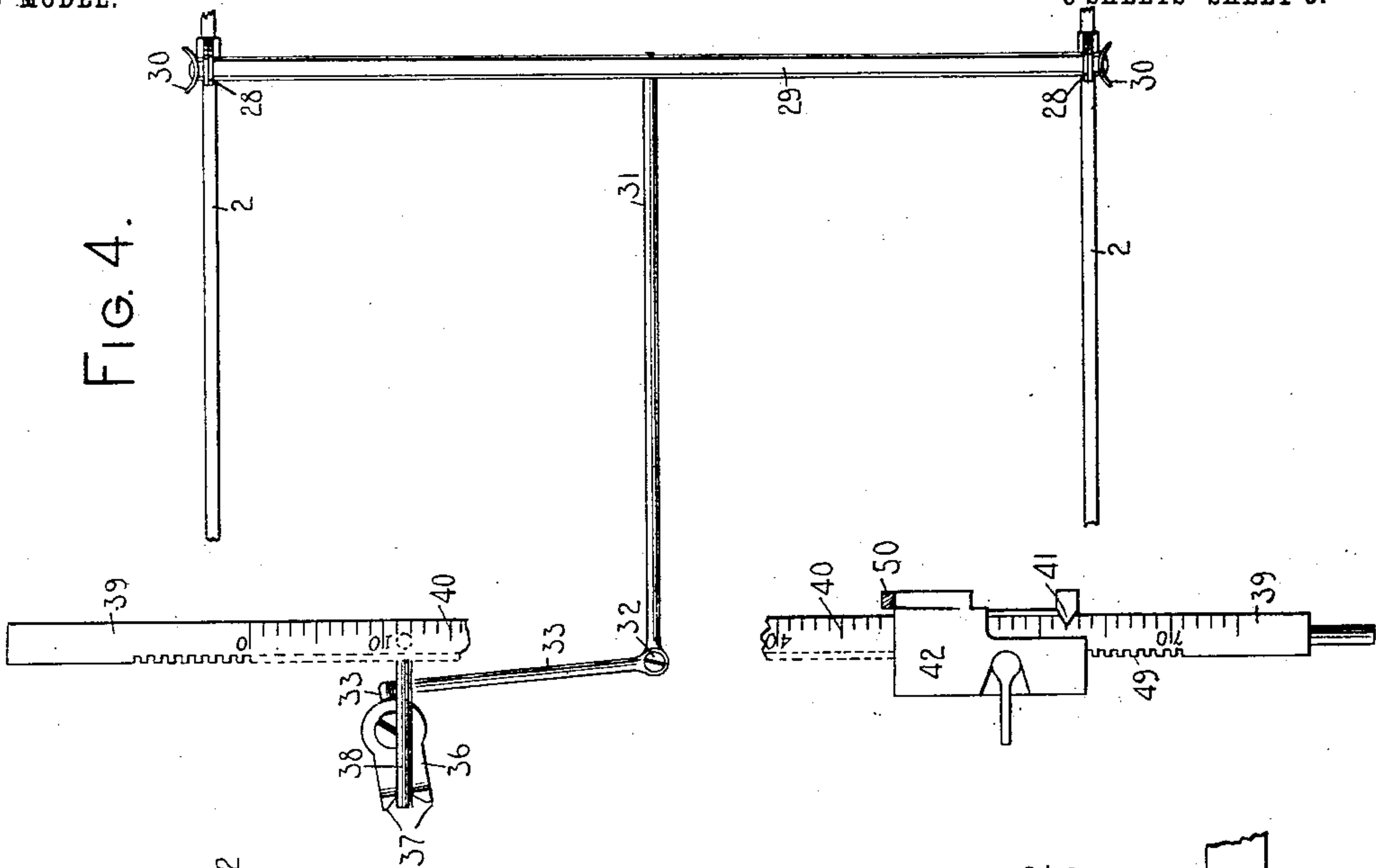
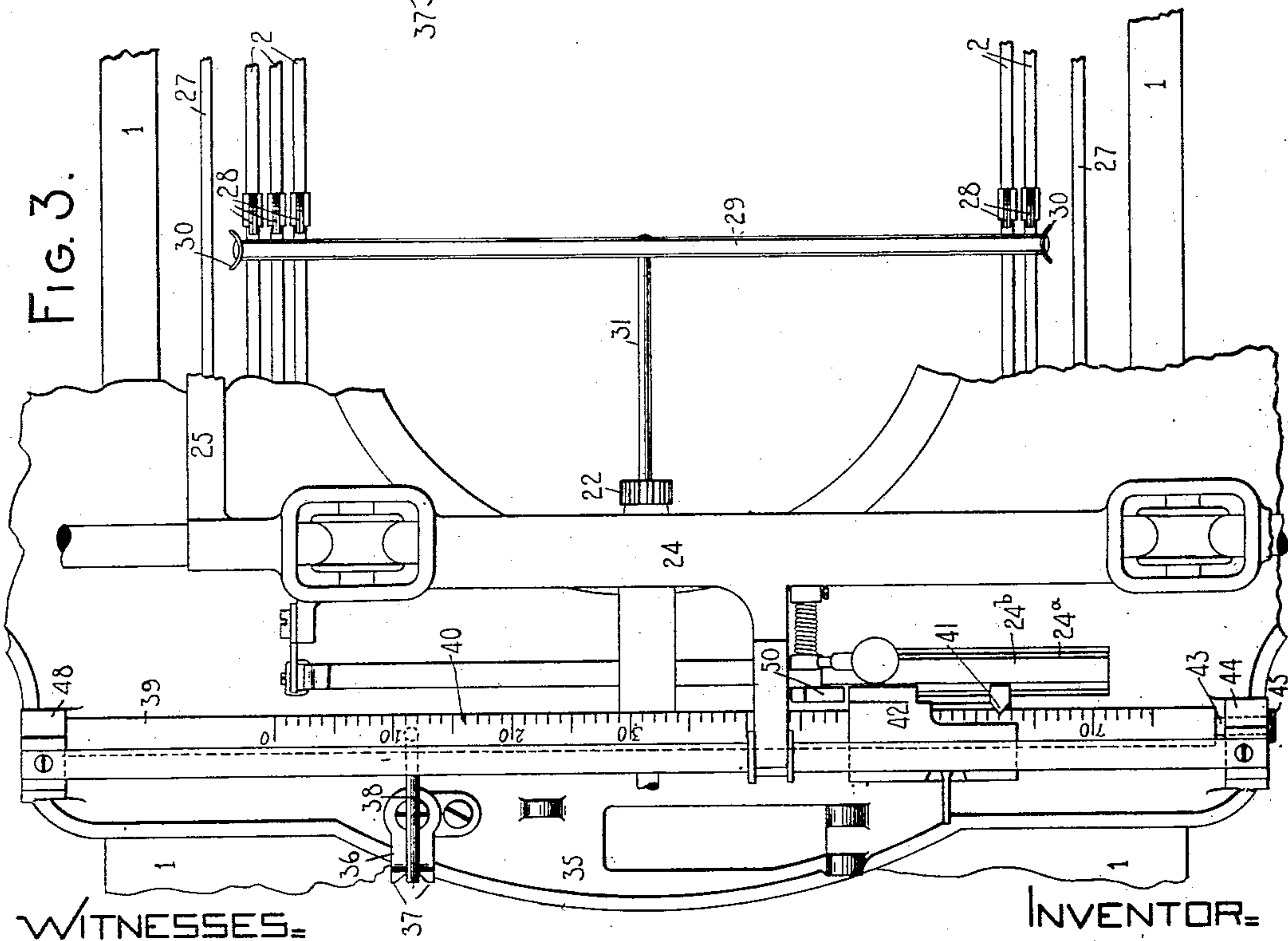


FIG. 3.



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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.

SPECIFICATION forming part of Letters Patent No. 750,712, dated January 26, 1904.

Original application filed July 18, 1902, Serial No. 116,048. Divided and this application filed November 26, 1902. Serial No. 132,896. (No model.)

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 present invention relates to line-lock mechanism for type-writing machines; and the object of said invention is to provide simple and efficient mechanism of the character specified.

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

In the accompanying drawings, wherein like reference characters designate like parts in the various views, Figure 1 is a vertical front to rear sectional view of one form of type-writing machine embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a fragmentary plan view of a portion of the same, and Fig. 4 is a diagrammatic plan view of a portion of the line-lock mechanism.

The present case is a division of my application, Serial No. 116,048, filed July 18, 1902.

I have illustrated my invention in its application to a No. 6 Remington machine, though it should be understood that the invention may be applied to different characters of type-writing machines and that to this end various changes may be made in the construction without departing from the spirit of my invention.

In the drawings, 1 indicates the frame of the machine, in which the key-levers 2 are fulcrumed at 3 and have the usual finger-keys 4 and are restored to the normal positions by springs 5. Each key-lever is connected by a link 6 to a type-bar 7 in the usual manner. Extending transversely beneath the key-levers 2 is a universal bar 8, which is connected at its ends to links 9, that in turn are connected to a transverse bar 10, secured to an arm 11,

which projects from a rock-shaft 12, that is restored to the normal position by a spring 13, connected at one end 14 to a plate-like bracket 15, that is secured to the top plate of the frame 1, and at its opposite end 16 to a collar 17, fixed to the shaft 12. The rock-shaft 12 is provided with a rearwardly-extending arm 18, connected at 19 to a link 20, which in turn is operatively connected to suitable escapement mechanism, (not shown,) the latter being operatively connected to a shaft 21, which carries a feed-pinion 22, that meshes with a feed-rack 23, carried by a carriage 24, the platen-frame 25 of which supports a platen 26. The carriage is moved in the direction of its feed by the usual spring-drum 24^a, connected to the carriage by a band 24^b. The escapement mechanism may be of the ordinary construction.

Each key-lever, except the key-levers 27 of spacing-key, is provided with a hook-like abutment 28 on the top thereof, and these hook-like abutments are arranged in alinement transversely of the machine, as shown in Fig. 3, and are adapted to cooperate with a locking-bar 29, that is supported upon the upper edges of the various key-levers and extends throughout the width thereof. Each end of this locking-bar is preferably provided with a depending guide-piece 30, which is adapted to cooperate with an outside character key-lever to guide the locking-bar in its forward and backward movements. The locking-bar is connected to a rearwardly-extending arm 31, which is pivoted at 32 to a crank-arm 33, that projects from a vertically-disposed rock-shaft 34, mounted in the frame 1 of the machine. The upper end of the rock-shaft 34 extends above the top plate 35 of the machine and is provided with a crank-arm 36, that has at the free end thereof an upturned fork 37, in which is seated an arm 38, projecting from a longitudinally-movable rack rod or bar 39. The rack-rod is provided on the upper face thereof with a scale 40, with which a pointer 41 of a sliding stop or line-lock abutment 42 cooperates. The rack-bar has a cylindrical pin 43, secured thereto at the right-hand end

in Fig. 2, which projects through a corresponding opening in the upwardly-extending support 44, and a spring 45 bears on the pin at its free end, the tendency of said spring being to normally maintain the rod toward the left in Fig. 2. At the left-hand end of the rod in Fig. 2 is contained a cylindrical aperture 46, into which a cylindrical pin 47 projects, the pin being secured to a support 48, projecting from the top plate, and by these means the rack-rod 39 may have a slight longitudinal movement imparted thereto, as well as a rocking movement, as usual in the Remington machine. The rear face of the rack-rod 39 is provided with teeth 49, in which a member of the slide 42 is adapted to engage to retain it in the adjusted position. Coöperating with the slide 42 or the abutment thereon is a trip 50, which is adapted to contact with the abutment upon the slide when the carriage moves from right to left or in the direction of its feed and to move the rack-rod 39 in the longitudinal direction. The effect of this longitudinal movement of the rack-rod is to rock the shaft 34 through the connections therewith, and thereby effect a forward movement of the locking-bar 29, which brings it into engagement with the various hook-like abutments 28 on the key-levers, thus locking them, so that an attempt to depress any finger-key will be resisted by the combined resistance of the various springs 5 of all of the locked key-levers, as well as the spring 13 of the rock-shaft 12 and the weight of the various type-bars. It will be seen, therefore, that while no positive or rigid resistance is afforded to the depression of a finger-key, when the locking-bar is in the engaged position the resistance is such that it will permit only a very slight depression of any finger-key and without exerting undue strain upon any of the parts. When the carriage is moved back toward the right, the spring 45 will force the rack-bar 39 to the normal position in Fig. 2, thus rocking the shaft 34 in its bearings, and this rocking movement of the shaft is effective to withdraw the locking-bar 29 from engagement with the abutments 28, when all of the key-levers will be released.

Various changes in construction may be made without departing from the spirit of my invention, which from certain aspects contemplates, broadly, the embodiment of means for automatically employing the resistance of all of the locked key actions or the key-lever-restoring springs to prevent the depression of any key-lever when an end of a line is reached.

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

1. In a type-writing machine, the combination of means operated by the carriage-propelling power and adapted to be thrown into and out of locking engagement with the key-levers for locking the key-levers together at any predetermined point in the travel of the

carriage, so that when pressure is applied to one key-lever to depress the same said pressure is resisted by the key-levers thus locked together.

2. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, key-levers, and a line-lock bar which is controlled by the carriage and is supported by the various key-levers and is adapted to lock them together when an end of a line is reached, whereby the combined resistance of the locked key-levers resists the actuation of any one of them.

3. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, key-levers, restoring-springs therefor, and means for automatically employing the resistance of all of said restoring-springs to prevent the depression of any key-lever when an end of a line is reached.

4. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, key-levers, restoring-springs therefor, and means for automatically employing the resistance of all of said restoring-springs and the combined weight of the parts controlled by the key-levers to prevent the depression of any key-lever when an end of a line is reached.

5. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, key-levers each of which has an engaging abutment thereon, a locking-bar which is supported by said key-levers, and means controlled by the carriage for automatically moving said locking-bar into engagement with all of said abutments when an end of a line is reached, whereby the key-levers will each afford a resistance to the depression of the others.

6. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, a line-lock abutment carried thereby, key-levers each of which has an engaging abutment thereon, a locking-bar which is supported by said key-levers, a spring-returned line-lock abutment on the frame of the machine and which is adapted to coöperate with the said abutment on the carriage, means for adjusting the abutments one with relation to the other, means for operatively connecting the abutment on the frame of the machine to the locking-bar, for automatically moving said locking-bar into engagement with all of said engaging abutments when an end of a line, as determined by the relative positioning of said line-lock abutments, is reached, whereby the various key-levers will each afford a resistance to the depression of the others.

7. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, key-levers, a line-lock bar which is controlled by the carriage and is supported by the various key-levers and is adapted to lock them together when an end of a line is reached, and means for guiding said locking-bar in its

movements into and out of locking engagement.

8. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, key-levers each of which has a locking-hook on the top thereof, a locking-bar which rests on and is supported by said key-levers, and means controlled by the carriage for moving the locking-bar into and out of engagement with said locking-hooks.

9. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, a line-lock abutment carried by said carriage, a longitudinally-movable stop-bar, a line-lock abutment carried by said stop-bar, key-levers, a locking-bar supported by said key-levers, locking means carried by each of said key-levers and with which the locking-bar coöperates to lock the key-levers together when the carriage reaches an end of a line, and intermediate actuating means between the longitudinally-movable stop-bar and the locking-bar.

10. In a type-writing machine and line-lock mechanism therefor, the combination of a carriage, a line-lock abutment carried by said carriage, a longitudinally-movable spring-restored stop-bar, a line-lock abutment carried by said stop-bar, means for adjusting said line-

lock abutments with relation to each other to determine the length of a line, key-levers, a locking-bar supported by said key-levers, locking means carried by each of said key-levers and with which the locking-bar coöperates to lock the key-levers together when the carriage reaches an end of a line, and an intermediate rock-shaft between the longitudinally-movable bar and the locking-bar and operatively connected thereto.

11. In a type-writing machine, the combination of key-levers, engaging means secured thereto, a locking-bar that is adapted to move into engagement with the engaging means on the key-levers and so that the combined resistance to the depression of the various key-levers will be employed to prevent the depression of any one of them, and means for automatically moving the locking-bar to locking engagement when an end of a line is reached.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 25th day of November, A. D. 1902.

CHARLES H. SHEPARD.

Witnesses:

K. V. DONOVAN,
E. M. WELLS.