

963,971.

Patented July 12, 1910.

2 SHEETS—SHEET 1.

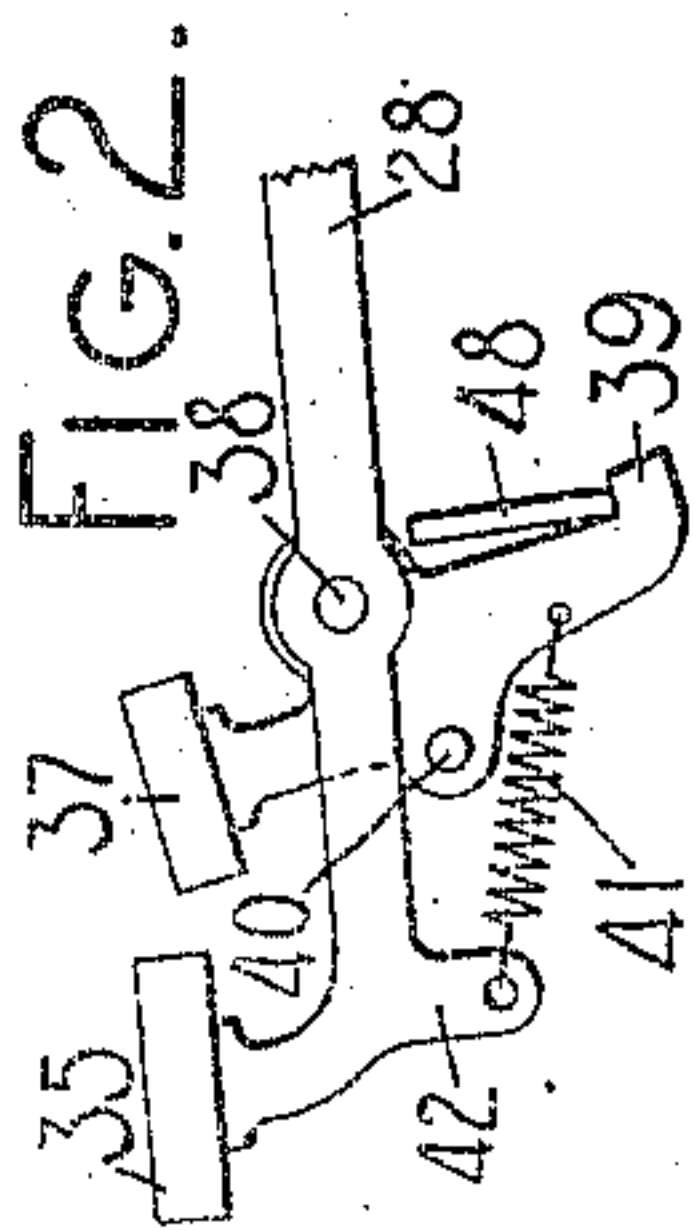
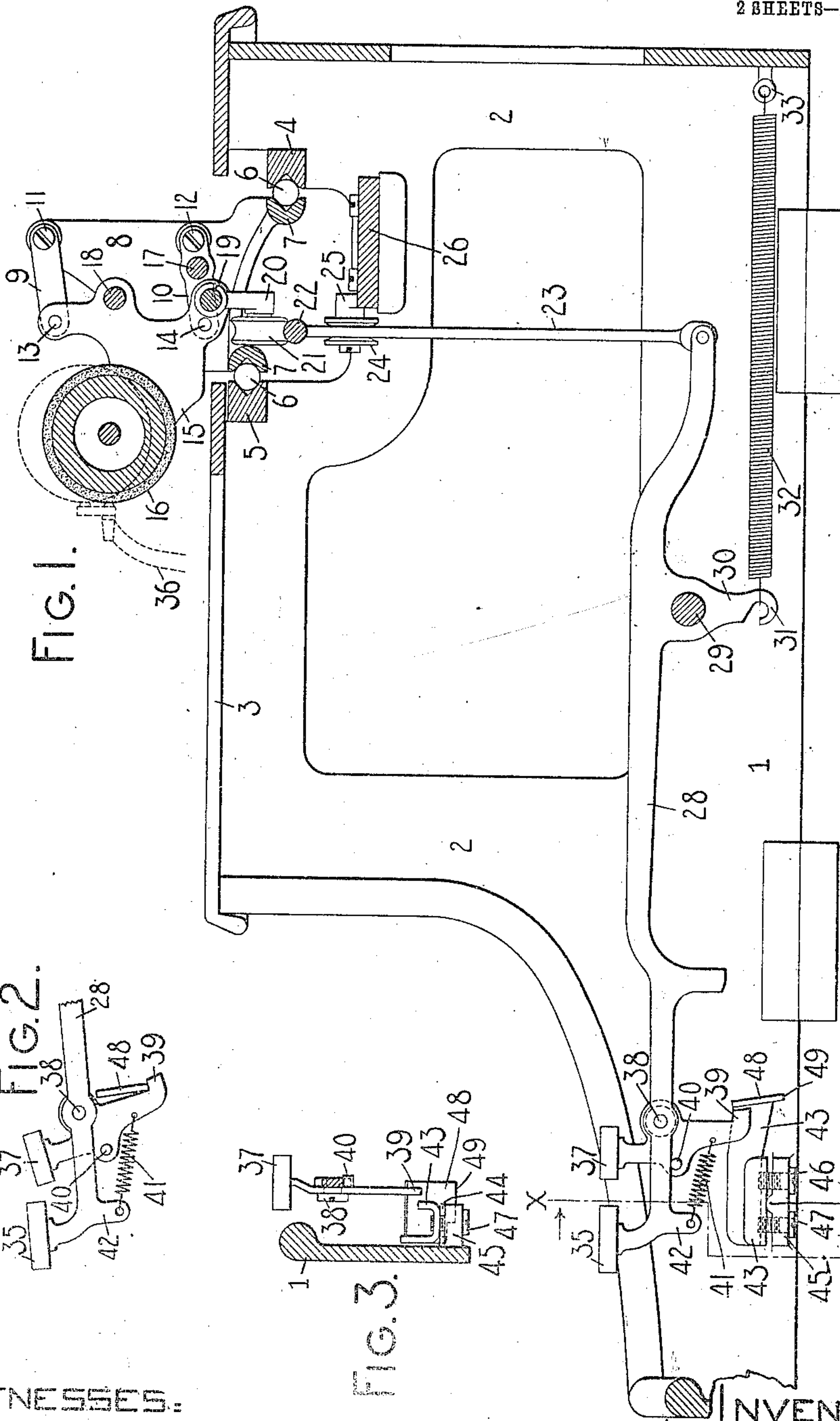


FIG. 3.

WITNESSES:

J. B. Neve
Wm. E. Smith

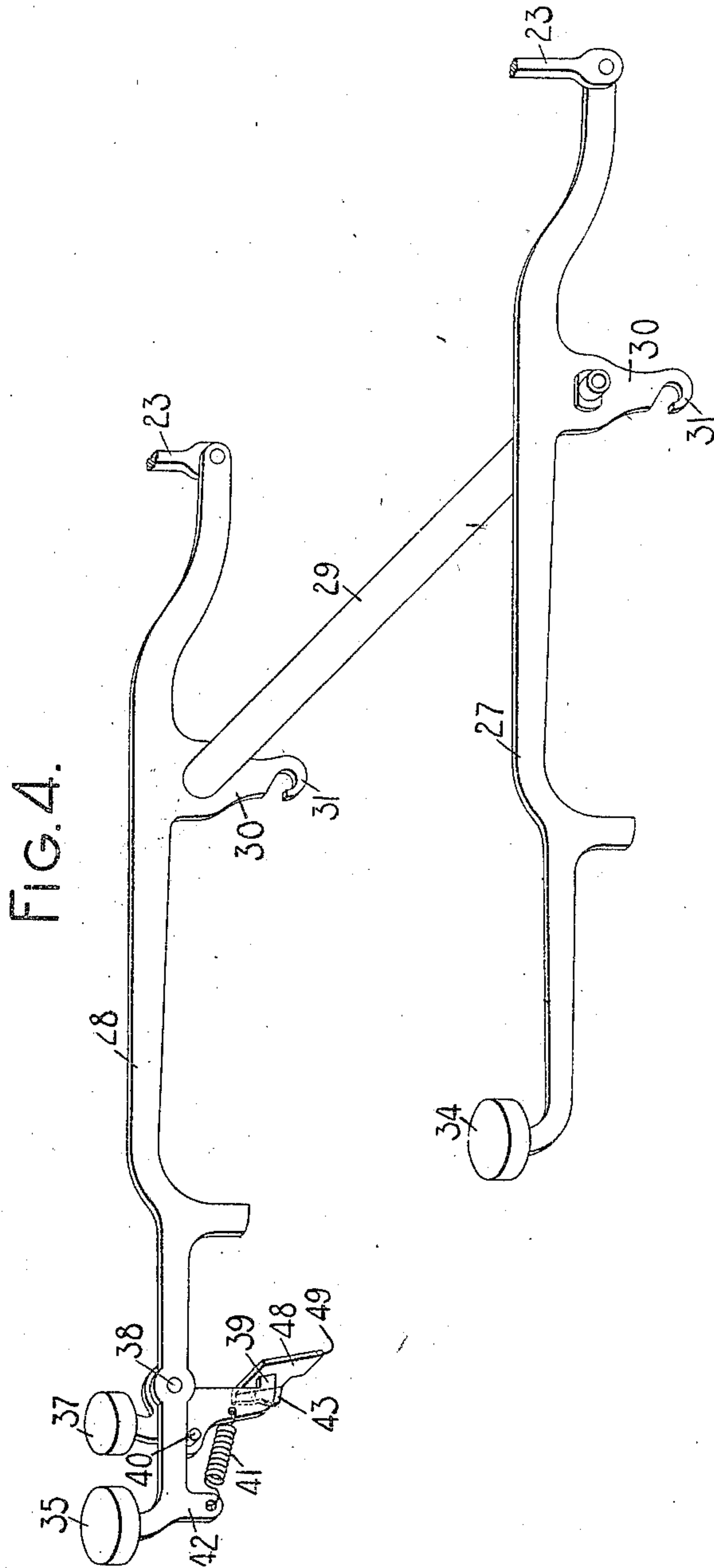
INVENTOR:

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

OSCAR WOODWARD, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO YOST WRITING MACHINE COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

963,971.

Specification of Letters Patent. Patented July 12, 1910.

Application filed March 23, 1908. Serial No. 422,710.

To all whom it may concern:

Be it known that I, OSCAR WOODWARD, 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 case shift mechanism.

The object of said invention is to provide simple and efficient devices for effecting a relative shift between the type bars and platen and for locking the parts in shifted position.

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

In the drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical front to rear sectional view of one form of typewriting machine embodying my invention, sufficient parts of a typewriting machine being shown to illustrate my invention in its application thereto. Fig. 2 is a fragmentary side view showing the case shift keys and means for locking the parts in shifted position. Fig. 3 is a fragmentary detail sectional view taken on the line $x-x$ of Fig. 1 and looking in the direction of the arrows at said line. Fig. 4 is a detail perspective view showing the shift keys and the devices with which they are associated.

The frame of the machine comprises a base 1, corner posts 2 and a tope plate 3. Fixed guide rails 4 and 5 are grooved upon opposite faces thereof for coöperation with anti-friction balls 6 which likewise coöperate with oppositely grooved rails 7 of a carriage truck 8. Parallel links 9 and 10 are pivoted to the truck at 11 and 12 respectively and are likewise pivoted at 13 and 14 respectively to a platen frame 15 in which a cylindrical platen 16 is journaled. A cross bar 17 connects the lower set of parallel links 10, whereas cross bars 18 and 19 unite the side plates of the platen frame. The lowermost cross bar 19 of the platen frame carries a depending bracket arm 20 which in turn carries a grooved roller 21 co-

operative with a shift rail 22. This shift rail is supported upon downwardly extending links 23 guided by grooved rollers 24 pivotally supported on brackets 25 secured to a cross bar 26 attached to the frame of the machine. The lower ends of the depending links 23 are connected to rearwardly extending arms of shift key levers 27 and 28. These shift key levers are rigidly connected to an intermediate rock shaft 29 pivotally supported at its ends on suitable bearing screws in the base of the machine.

Each of the shift key levers 27 and 28 has a depending arm 30 provided with a hook 31 for engagement with one end of a contractile counter-balancing spring 32 which tends to overcome the weight of the platen and the platen frame in order that these parts may be more easily shifted to the upper case position. The opposite end of each of the springs 32 is secured to the base of the machine as at 33. The shift lever 27 is situated at the right-hand side of the keyboard of the machine and carries a rigidly connected shift key 34. The shift lever 28, on the other hand, is situated at the left-hand side of the keyboard and is provided with a rigidly connected shift key 35. These shift keys 34 and 35 may be termed temporary shift keys, the purpose of which is to effect a relative shift between the platen and the type bars, one of the latter being represented at 36 in Fig. 1 and when pressure is released on either of the temporary shift keys 34 and 35 the platen will be restored by the weight thereof and of the platen frame to the lowermost or lower case position shown in full lines in Fig. 1.

In order that the platen may be locked in its uppermost or uppercase position indicated in dotted lines in Fig. 1, I have provided a shift lock key 37 pivoted to the shift lever 28 as indicated at 38. It will be observed that the pivot 38 is off-set to one side or rearwardly of the key 37 so that a downward pressure exerted on the key 37 tends to turn the key on its pivot 38 as well as to depress the associated shift lever 28. The key 37 has a hook-like engaging portion 39 which extends below the shift lever. A stop pin 40 projects laterally from the shift key 37 and abuts the lower edge of the shift lever when the shift key is in the normal position relatively to the shift lever 28 as

shown in Fig. 1. A contractile spring 41 is connected at one end to the depending portion of the locking shift key 37 and is connected at its opposite end to a depending arm 42 on the shift lever. This spring tends to maintain the stop 40 against the shift lever 28 and tends to maintain the key 37 in normal position relatively to the lever 28.

An engaging member 43 is carried by a fixed portion of the machine for coöperation with the engaging portion 39 on the locking shift key 37. In the present instance this fixed engaging member comprises a bracket-like member which is fulcrumed on a rib or projection 44 on the upper face of a lug 45 which projects inwardly from the left-hand base plate 1 of the machine. Set screws 46 and 47 extend freely through openings in the lug 45 on opposite sides of the fulcrum 44. Each of these screws is received at its threaded end in a threaded opening in the engaging member 43. A plate 48 is formed as a part of the engaging member and extends into the path of the engaging portion 39 of the locking key in the movement of the latter around its pivot 38. This plate-like engaging portion 48 is preferably inclined as shown in Fig. 1. By adjusting the screws 46 and 47 the member 43 may be adjusted around the fulcrum 44 to raise or lower the lower engaging edge 49 of the member 43, thus regulating the member 43 to properly coöperate with the locking key. Should the operator desire to shift the platen to the upper case position and lock the parts in the shifted position, a downward pressure is exerted on the locking shift key 37. This is effective to depress the forward end of the shift lever 28, thereby turning the rock shaft 29 and effecting an upward movement of both of the links 23 to move the platen to uppercase position. As pressure is exerted on the finger key 37 to shift the platen, this pressure is effective as hereinbefore pointed out to turn the key 37 on its pivot 38 against the tension of the spring 41 until the engaging member 39 is brought into contact with the forward face of the inclined locking plate 49. This contact is maintained throughout the depression of the key and until the hook-like member 39 clears the lower edge 49 of the locking plate when the pressure exerted on the key will force the hook-like engaging portion beneath the engaging edge 49 on the locking member as shown in Fig. 2, thus locking the parts in the shifted position. The pressure of the platen, platen frame, etc., exerted upon the shift lever 28 overcomes the pressure of the spring 41 so that said spring is ineffective to restore the key 37 to normal position relatively to the shift lever 28. When, however, the operator desires to release the parts, it is merely necessary to exert a slight pres-

sure on the shift key 35. This is effective to overcome the excess pressure of the platen which maintains an effective engagement between the parts 39 and 48. The spring 41 will then withdraw the engaging portion 39 from the coöperating fixed engaging member 43 and the shift keys and platen will be restored to normal positions shown in Fig. 1.

For the purpose of my present invention it is immaterial what character of shifting platen is provided or what specific character of shifting mechanism is employed above or beyond the shift key levers; or whether the platen or type bars be shifted so long as a relative shift between the platen and type bars be effected, the invention residing primarily in the shift key lever 28 and the parts for controlling and locking it in its shifted position.

From the foregoing description it will be seen that I have provided simple and efficient means for effecting a relative shift between the platen and type bars and for locking the parts in their shifted positions; that temporary shift keys are provided at opposite sides of the keyboard for temporarily shifting the platen and enabling it to be restored to normal position when pressure is released upon either of the temporary shift keys; that the platen may be moved to and locked in shifted position by a pressure exerted upon the key 37; and that the parts may be readily released from the locked position by a slight pressure exerted upon the finger key 35.

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

1. In a typewriting machine, the combination of type bars, a platen; and means for effecting a relative shift between the type bars and platen, said means comprising two temporary shift levers at opposite sides of the keyboard, temporary shift keys fixed to said levers, a rock shaft to which said levers are fixed, a spring-pressed locking shift key pivoted to one of said shift levers on a pivot off-set from the locking shift key, and a locking member adjustably secured to a fixed part of the machine, said adjustable locking member having an inclined face with which a part of the locking key is coöperative throughout a depression of the locking shift key.

2. In a typewriting machine, the combination of type bars; a platen; and means for effecting a relative shift between the type bars and platen, said means comprising two temporary shift levers at opposite sides of the key-board, temporary shift keys fixed to said levers, a rock shaft to which said levers are fixed, a locking shift key pivoted to one of said shift levers on a pivot off-set from the locking shift key, a stop which limits the movement of the pivoted shift

key in one direction on the shift lever to
which it is pivoted, a spring which tends to
maintain the pivoted shift key against said
stop, and a locking member adjustably se-
5 cured to a fixed part of the machine, said
locking member having an inclined face
with which a part of the locking key is co-
operative throughout a depression of the
locking shift key, and means for affording
10 an adjustment of said locking member, said

adjusting means comprising a fulcrum and
set screws on opposite sides of said fulcrum.

Signed at the borough of Manhattan, city
of New York, in the county of New York,
and State of New York, this 21st day of 15
March A. D. 1908.

OSCAR WOODWARD.

Witnesses:

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E. M. WELLS.