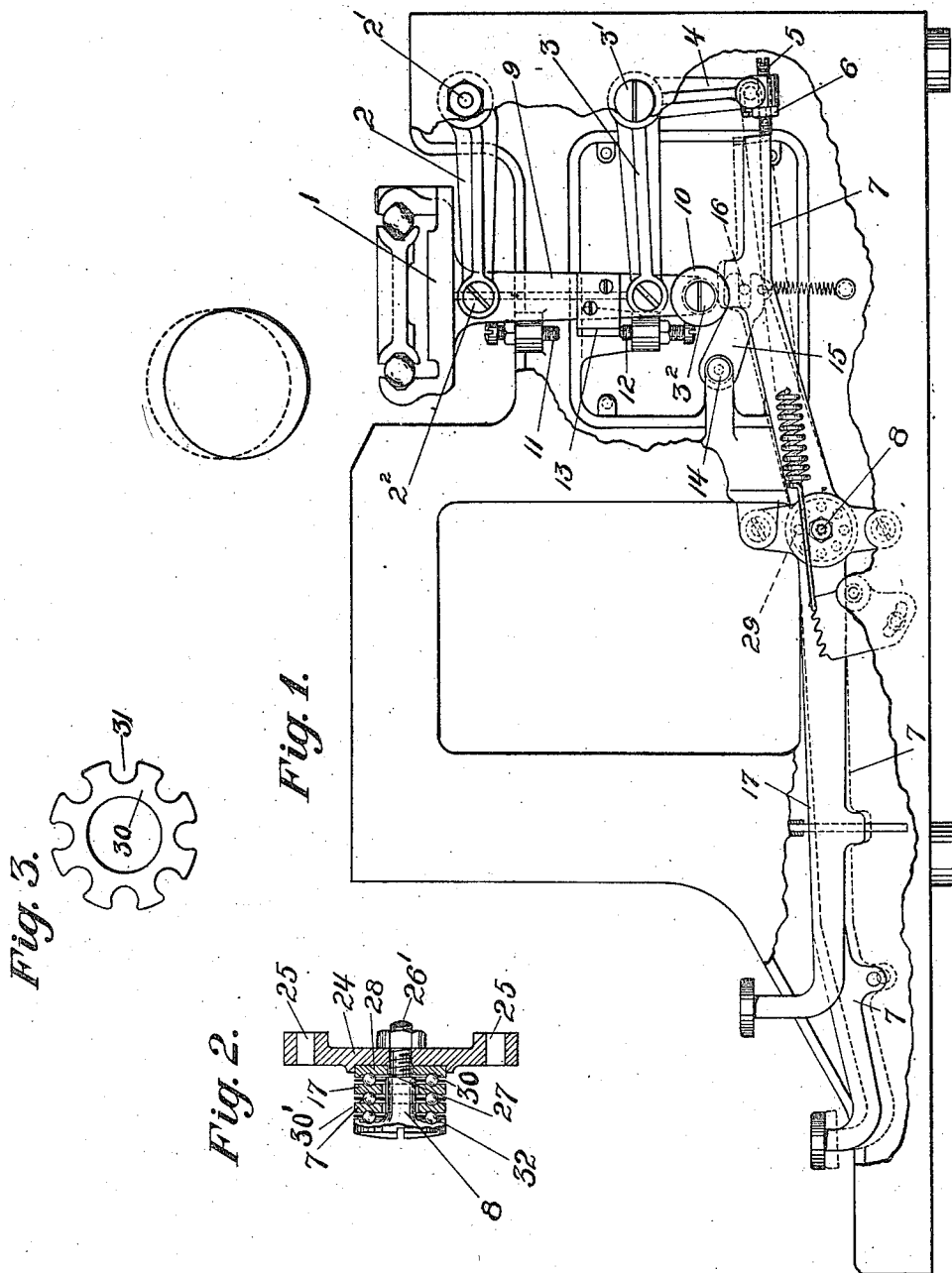


987,907.

L. C. MYERS.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 20, 1909.

Patented Mar. 28, 1911.

3 SHEETS—SHEET 1.



WITNESSES:
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Patented Mar. 28, 1911.

3 SHEETS—SHEET 2.

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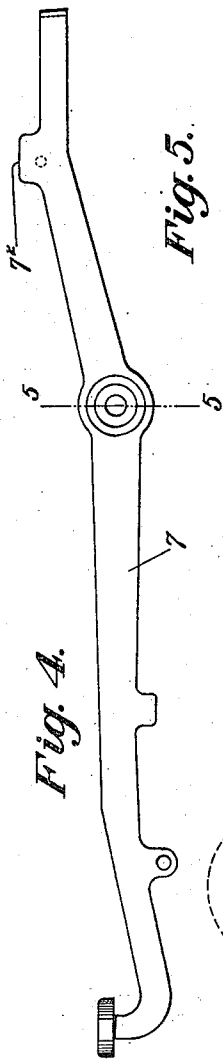


Fig. 5.

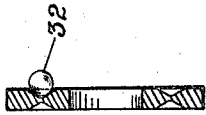
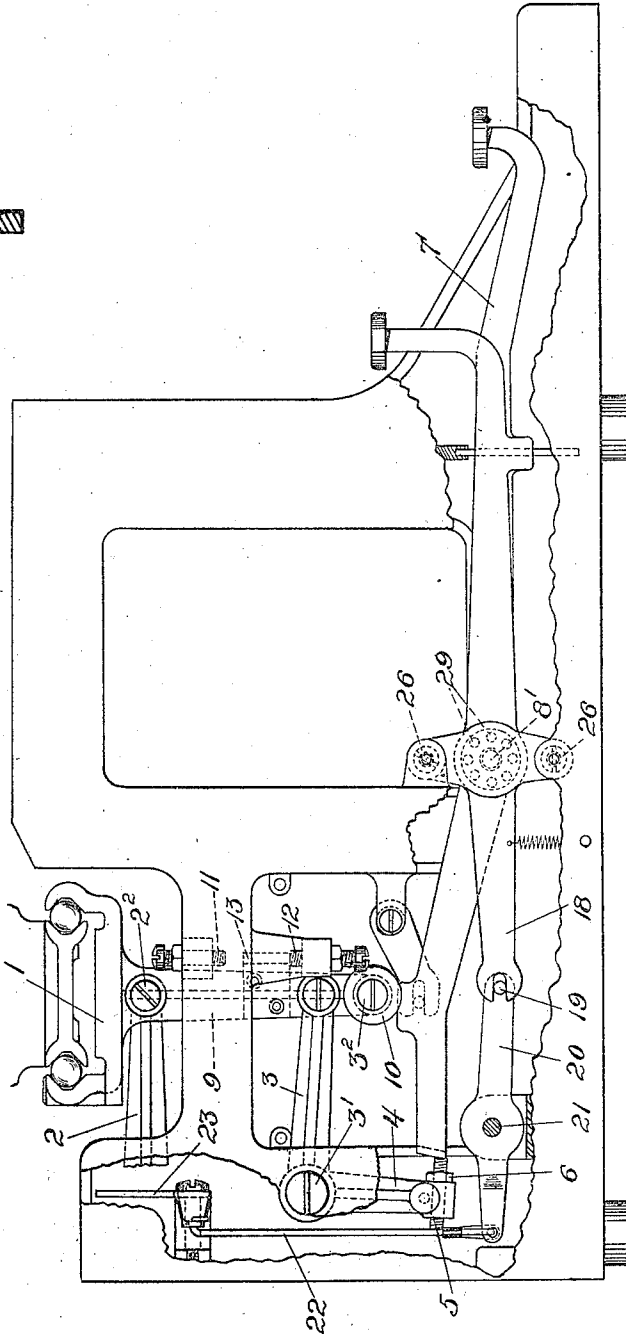


Fig. 6.



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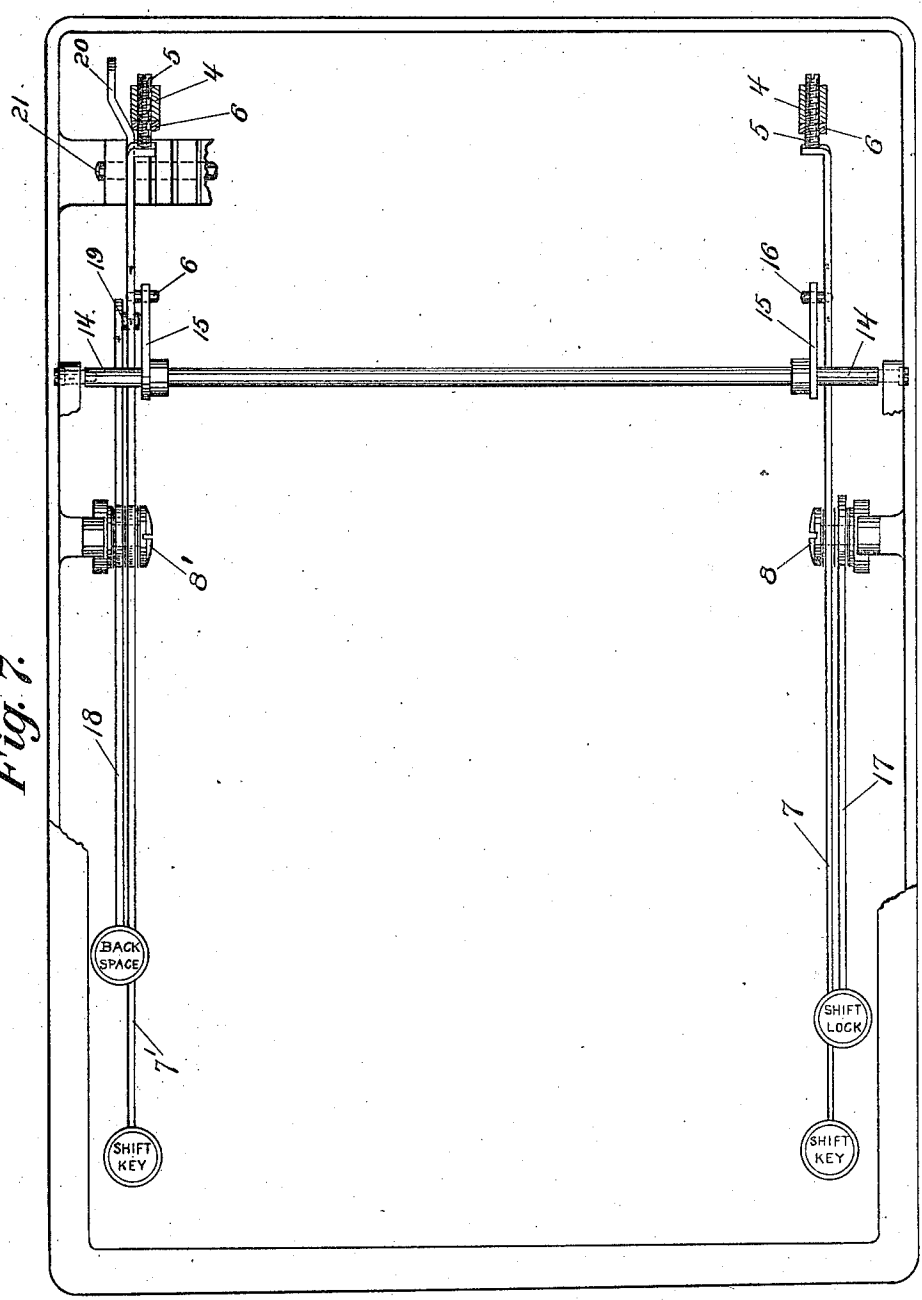
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Patented Mar. 28, 1911.
 3 SHEETS—SHEET 3.

Fig. 7.



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UNITED STATES PATENT OFFICE.

LEWIS C. MYERS, OF NEW YORK, N. Y., ASSIGNOR TO ROYAL TYPEWRITER COMPANY,
OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

987,907.

Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed October 20, 1909. Serial No. 523,562.

To all whom it may concern:

Be it known that I, LEWIS C. MYERS, a citizen of the United States of America, residing in the borough of Brooklyn, city and State of New York, have invented certain Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the mountings of certain levers of a key lever typewriting machine such as a carriage shift lever and a carriage shift lock lever both disposed at one side of the key-board and a carriage shift lever and a back stop lever disposed at the other side; and to the utilization of the carriage shift levers in locking the carriage in normal or lower case position.

In the accompanying drawings: Figure 1 is a view in elevation with the side plate partly broken away, of so much of a typewriting machine having a vertically shifting carriage as is needed to illustrate the invention. Fig. 2, a detail sectional view of the mounting of two of the key levers at one side of the machine: Fig. 3, a view showing one of the ball spacing plates employed for the pivotal mounting of such levers: Fig. 4, a detached view of one of the shift levers; Fig. 5, a cross section therethrough on line 5, 5, of Fig. 4: Fig. 6, a view similar to Fig. 1 looking at the left hand side of the machine: and Fig. 7, a top plan view showing two pairs of key levers located respectively at opposite sides of the key-board.

The machine illustrated is a front strike typewriter of the style that has been manufactured by the Royal Typewriter Company and known as the Royal "Grand."

The shift rail 1 of the carriage is carried by pairs of parallel links 2, 3, one pair being located respectively adjacent the sides of the machine and turning at their rear ends about axes 2', 3' and having their front ends pivoted at 2², and 3² to arms 9 extending downwardly from the shift rail 1 adjacent each end thereof. Each one of the parts 3 characterized as a parallel link is really an elbow lever fast on axis or rock shaft 3' turning in bearings at the sides of the machine. The horizontally disposed parts of such elbow levers form the links or arms 3; and the dependent parts 4 have in their lower ends adjustable stop screws 5, provided with lock nuts 6, adapted to engage the rear faces of the carriage shift levers 7, 7', each pivoted about an axis 8.

In the lower end of each of the arms 9 depending from the shift rail is mounted to turn freely a grooved roller 10 partly seated in the groove of which, when the parts are at rest with the carriage in its lowermost position, is the edge of the shift key lever 7, 7'. In the particular illustration of the invention this edge is formed by the projection 7² on the upper edge of the shift key lever in rear of its pivotal axis 8.

11 and 12 are stops mounted in lugs in the side plates of the machine to determine the upper and lower positions of the shift rail by reason of the engagement therewith of stop brackets 13 mounted respectively upon the depending arms 9. When the parts are in normal position, as shown in Fig. 1, the rear end of each shift key lever 7, 7', at each side of the machine contacts with the stop screw 5 and locks the carriage in its lower position. This locking end surface of the key lever is slightly inclined upwardly toward the front of the machine and is formed by bending over the end of the lever at right angles to its body, as seen in Fig. 7. When, however, a shift key lever located at either side of machine is depressed and rocks about its axis, the locking surface of the end of the key lever passes out of engagement with the stop screw 5 and then the edge 7² of the lever seats in the bottom of the grooved roller 10 and the carriage is shifted to upper position. Power is applied to both ends of the carriage when either shift key is operated. This is accomplished in the following manner. Turning in bearings in the side plates of the machine is a rock shaft 14 fast on which adjacent each end are rearwardly extending arms 15 provided with slots that embrace pins 16 on the inner faces of the shift key levers.

Parallel with the shift key lever 7 at the right hand side of the machine and closely adjacent thereto and turning about the same axis 8 is a shift lock key lever 17 on depression of which the carriage is shifted and automatically locked in shifted position. The shift lock devices may be of any suitable character. On the other side of the machine is the shift key lever 7' and adjacent thereto and rocking about an axis 8' is another key lever 18 which serves to actuate back feed devices that may be of any appropriate character. The back feed lever is slotted at

its rear end to engage a pin 19 on the forward end of a lever 20 pivoted intermediate its ends at 21 in a bracket on the frame of the machine and having connected at its rear end a link 22 that operates back feed devices 23 of any appropriate construction. The mountings of the levers 7 and 17 at one side of the machine and 7' and 18 at the other side of the machine are so constructed and arranged that the respective pairs of levers may be assembled in or on other pivoted mountings and then be placed in the machine. There is a plate 24 carrying the pivotal mountings or bearings of the two levers and having at opposite ends apertures 25, 25, for the reception of bolts 26, 26, by which the plate or bracket 24 may be secured to frame of the machine or to lugs thereon. Passing through an aperture in the bracket 24 intermediate its ends is a headed screw bolt 26' having a lock nut applied thereto. Between the shoulder 27 on the bolt and the side of the bracket 24 is a bearing plate 28 having on its outer face a circular ball race. The key lever 17 (or 18 as the case may be) has in its side a corresponding circular ball race and in the race way so formed are placed bearing balls 29. These bearing balls are held in fixed relative position by a toothed ball spacing plate 30 having recesses 31 in which the bearing balls lie. The opposite face of the lever 17 (or 18) is also formed with a corresponding circular ball race as also is the adjacent face of the lever 7 (or 7' as the case may be) and, in the ball race between the contiguous faces of the two levers are disposed other bearing balls 30' as shown in Fig. 2. Finally, the outer face of lever 7 (or 7' as the case may be) is formed with a ball race as is also the inner surface of the head of the screw bolt 26 and in the race way so formed are other bearing balls 32 spaced by a plate 30. The levers with their ball bearings so constructed may be assembled and therewith the bracket 24 carrying them be placed in the machine. The rock

shaft 14 and arms 15 not only effect application to each end of the carriage of the power applied for shifting it, but also when either shift key is depressed causes the other one to move out of locking engagement with the carriage. The carriage lock devices operated by the shift lock key by the operation of which the carriage is shifted and locked in shifted position may be of any appropriate character.

I claim:

1. In a typewriting machine, the combination of a carriage, means by which it is shifted comprising parallel link rocking arms, a downward projection from one of said rocking arms, a horizontally disposed shift key lever adapted to shift the carriage and whose rear end operates as a stop in connection with said downwardly extending arm to locate the carriage in lowermost position.

2. In a typewriting machine, a horizontally disposed, pivoted shift key lever, a shift carriage held and guided by horizontally disposed parallel links and adapted to be engaged by the shift key and to be elevated thereby and a stop connected with the parallel link levers and cooperating with the end of the shift key lever to lock the carriage in lowermost position.

3. In a typewriting machine the combination with platen shifting mechanism of a shift key acting when in normal position to directly lock the platen in normal position.

4. In a typewriting machine the combination with platen shifting mechanism of a shift key acting when in normal position to directly lock the platen in normal position and when depressed to unlock it.

In testimony whereof, I have hereunto subscribed my name.

LEWIS C. MYERS.

Witnesses:

E. J. SHEEHAN,
 E. B. HESS.