

No. 734,727.

PATENTED JULY 28, 1903.

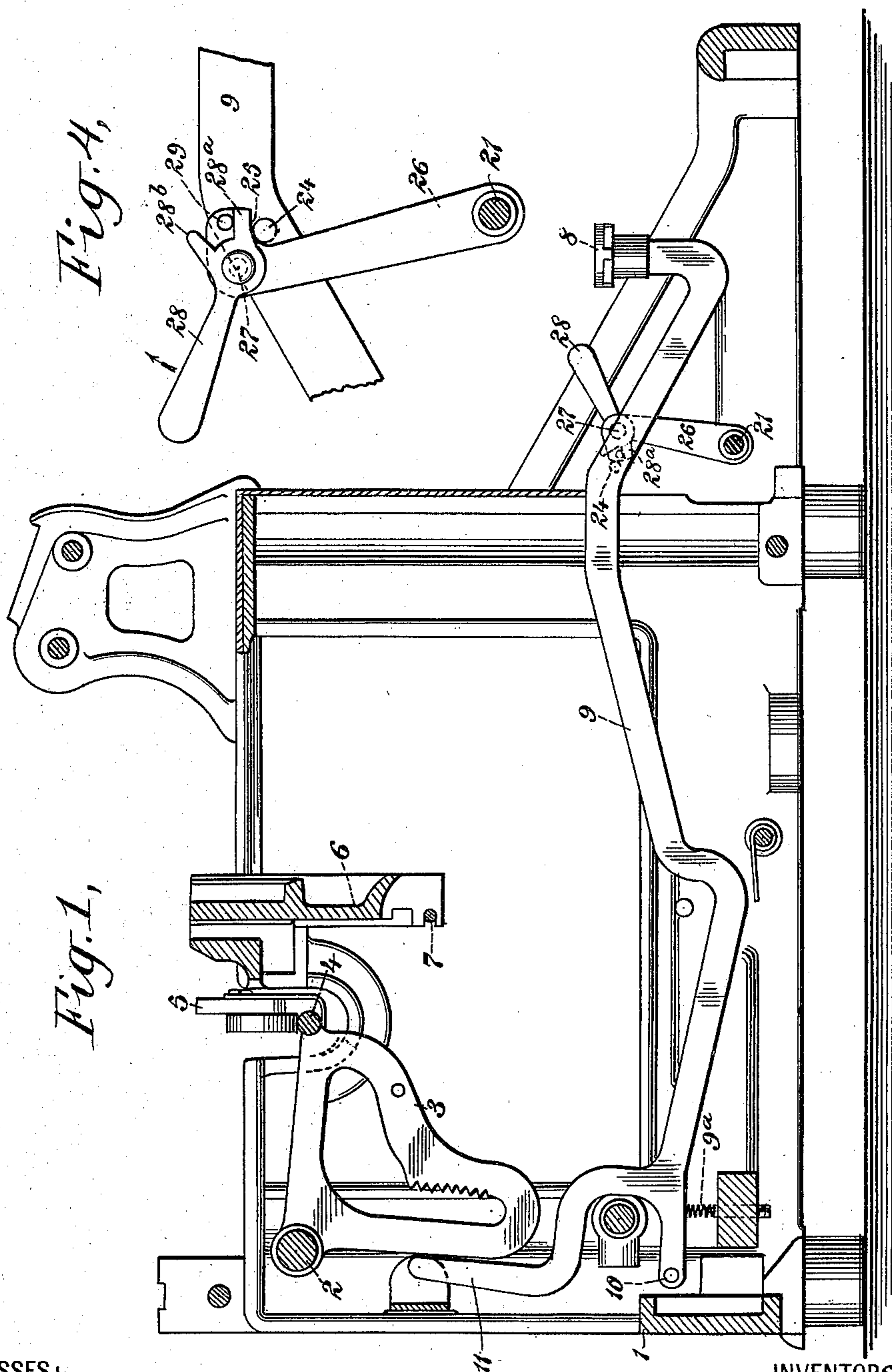
E. J. MANNING & O. C. KAVLE.

SHIFT KEY MECHANISM FOR TYPE WRITERS.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

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*John A. Kehlbeck.*

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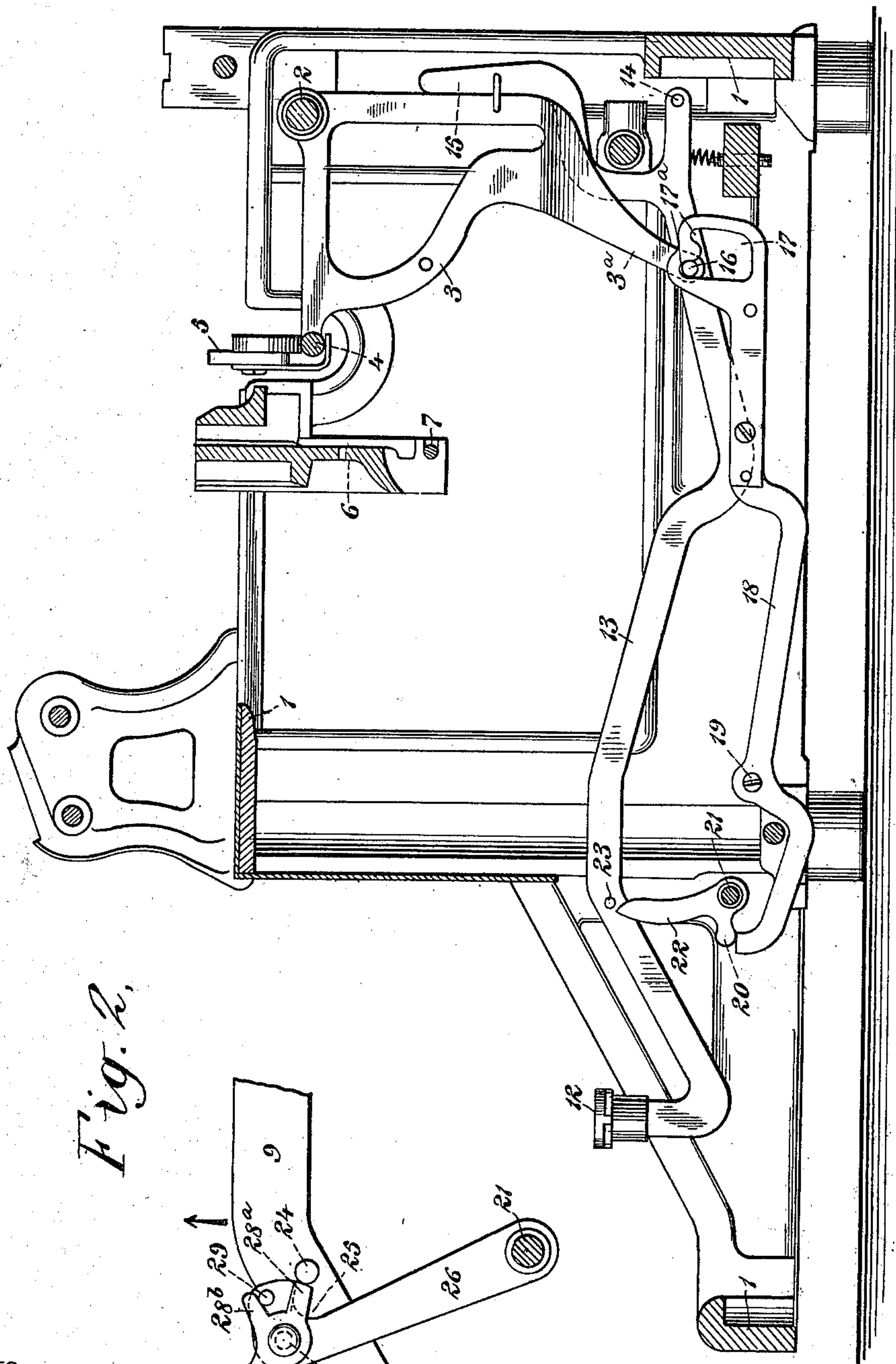


Fig. 2.

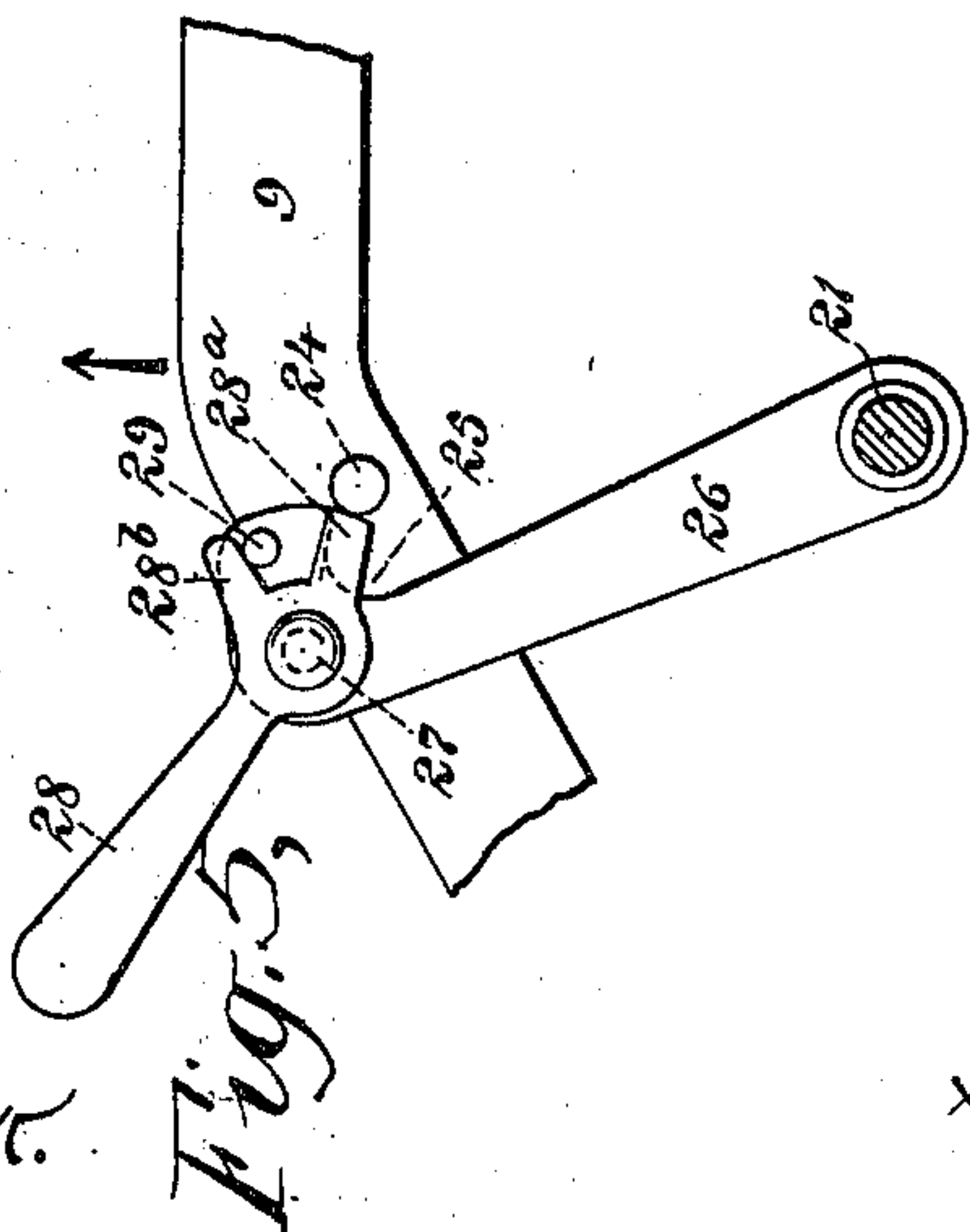


Fig. 3.

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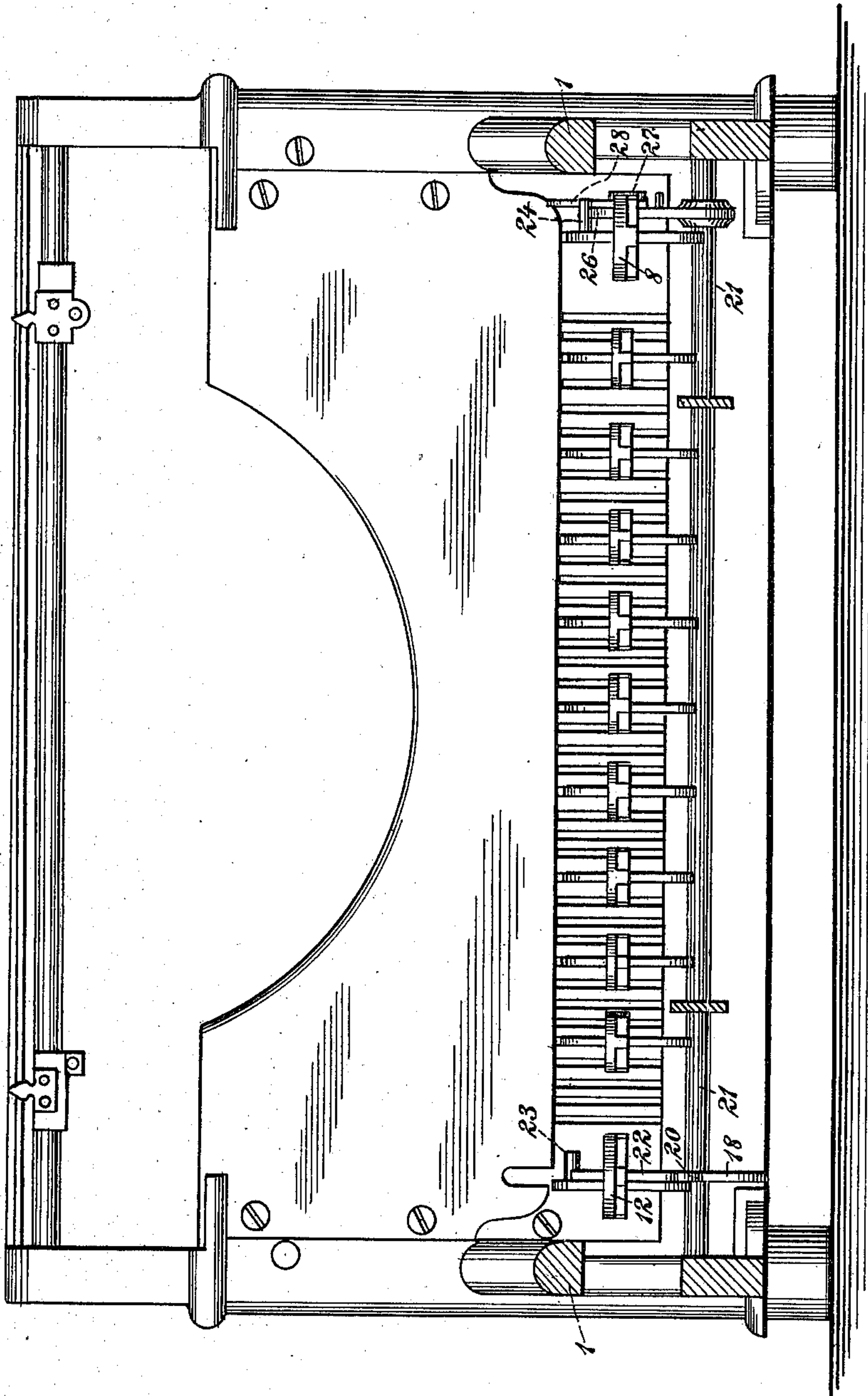
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3 SHEETS—SHEET 3.

Fig. 3.



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# UNITED STATES PATENT OFFICE.

EDWARD J. MANNING AND OSCAR C. KAVLE, OF HARTFORD, CONNECTICUT,  
ASSIGNORS, BY MESNE ASSIGNMENTS, TO UNDERWOOD TYPEWRITER  
COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## SHIFT-KEY MECHANISM FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 734,727, dated July 28, 1903.

Application filed November 13, 1902. Serial No. 131,081. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD J. MANNING and OSCAR C. KAVLE, citizens of the United States, and residents of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Shift-Key Mechanism for Type-Writers, of which the following is a specification.

Our invention relates to machines, such as type-writers, in which a platen is employed which is capable of assuming two different positions—to wit, an upper position and a lower position. In connection with such constructions there is usually employed an arrangement of shift-keys for permitting the platen to be moved into either of its positions, and quite frequently there is added a device for locking the platen in one of its positions, generally the upper position, when this is desired.

Our invention has for its object to provide an improved shift-key mechanism, and has particular reference to the device for locking the platen in its upper position or allowing it to return to its lower position, as the operator may desire.

The invention will be fully described hereinafter and the features of novelty pointed out in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a portion of a type-writer from front to rear looking toward the right. Fig. 2 is a similar sectional view taken adjacent to the right-hand end of the type-writer looking toward the left. Fig. 3 is a front view of a portion of a type-writer with parts in section; and Figs. 4 and 5 show two different positions of the mechanism, by the use of which the platen is caused to either be locked in the upper position or to automatically return to the lower position.

The type-writer proper may be of any improved construction, although we have in the drawings illustrated our invention as applied to a type-writing machine of the well-known Underwood make.

The frame of the machine is designated as 1, and upon it is fulcrumed at 2 the movable

carrier 3, to which is secured the rail or track 4, upon which the front portion 5 of the carriage is adapted to rest and to travel. This front portion carries a platen in the usual manner. Upon the segment 6 are fulcrumed the type-levers, their fulcrums being indicated at 7. There are two shift-keys, one at each side of the machine, and the right-hand shift-key 8 is secured to a lever 9, fulcrumed at 10 and provided with an arm 11 in engagement with a portion of the carrier 3. Thus when the key 8 is depressed the carrier 3 will be swung so as to raise the track 4 and that portion of the carriage upon which the platen is mounted. On the other side of the machine is located a second shift-key 12, secured to a lever 13, which is fulcrumed at 14 and carries an arm 15, arranged for engagement with the rear portion of the carrier 3. This portion of the carrier has an extension 3<sup>a</sup>, which is provided with a pin 16, and this pin is adapted to become seated in one or the other of two recesses 17<sup>a</sup>, which are located at the upper portion of an aperture 17 at the rear end of a locking-lever 18, the fulcrum of which is indicated at 19. The front end of the locking-lever 18 is adapted for engagement with a releasing-arm 20, secured upon a rock-shaft 21, which extends from one side of the machine to the other. With the releasing-arm 20 is connected another arm 22, having its rear face beveled adjacent to the top, such beveled surface being adapted to cooperate with a pin or lug 23, projected from the side of the shift-key lever 13.

Upon the shift-key lever 9 is secured a laterally-projecting pin 24, and this pin under certain conditions, as will be explained presently, is adapted to enter a recess 25 upon an arm 26, which is secured to the rock-shaft 21. The arm 26 has pivotally mounted upon it at 27 a controlling-lever 28, which in one position, as shown in Fig. 4, is clear of the recess 25, and therefore allows the pin 24 to enter such recess. When, however, the controlling-lever 28 is swung in the direction indicated by the arrow in Fig. 4 and is thus brought into the position illustrated by Fig. 5, the end 28<sup>a</sup> of said lever blocks the entrance to the recess 25 and prevents the pin



24 from entering the same. In order to limit the movement of the controlling-lever 28, a pin 29 may be projected from the arm 26, said pin working between the portions 28<sup>a</sup> and 28<sup>b</sup> of the controlling-lever.

If the controlling-lever is in the position shown in Fig. 4 and the shift-key 8 is depressed, the carrier 3 and the track 4, with the platen portion of the carriage, will be raised in the customary manner, and as soon as the downward movement of the lever 9 brings the pin 24 adjacent to the recess 25 the arm 26 will move rearward into the position shown in Fig. 4, this being due to the weight of the rear portion of the locking-lever 18, (assisted, if desired, by a spring.) It will be obvious that this will lock the key 8 in its depressed position and the platen portion of the carriage in its upper position. During this movement the pin 16 of the carrier portion 3<sup>a</sup> passes into the forward recess 17<sup>a</sup>, as shown in Fig. 2. The carrier is therefore locked at each end of the machine at the right-hand end by the engagement of the arm 26 over the pin 24 and at the left-hand end by the fitting of the pin 16 into the forward notch or recess 17<sup>a</sup> of the locking-lever 18. The key 8 can no longer be depressed; but if it is desired to release the carrier 3, so that it may return to its lower position, (shown in Fig. 1,) the left-hand shift-key 12 is pressed. This causes the pin 23 to engage the arm 22 and to swing it forward, and as this motion is communicated to the arm 26 through the medium of the rock-shaft 21 said arm is thrown forward sufficiently to release the pin 24 from the recess 25, and the shift-key lever 9 returns to its original position under the influence of its spring 9<sup>a</sup>. At the same time the releasing-arm 20 presses on the forward end of the locking-lever 18 and raises the rear end of the said lever sufficiently to release the portion 3<sup>a</sup> of the carrier, the latter then returning to its lower position by gravity. When in its lower position, the carrier by its pin 16 is in engagement with the rear portion of the locking-lever 18 at the rear recess 17<sup>a</sup>. By pressing the key 12 when the carrier 3 is in the lower position said carrier is elevated for a moment and allowed to return to the lower position as soon as the key 12 is released. The forward wall of the rear recess 17<sup>a</sup> is sloping, so that while the said recess prevents an accidental movement of the carrier still when the key 8 is depressed the pin 16 can act on the said sloping surface to raise the locking-lever 18 and allow the said pin to pass to the forward recess 17<sup>a</sup>. When it is desired to convert the right-hand shift-key into a key which shifts the platen portion of the carrier without locking it in its upper position, the controlling-lever 28 is brought into the position illustrated by Fig. 5. In this case a depression of the key 8 will not bring the pin 24 into the recess 25, for the reason that the portion 28<sup>a</sup> of the controlling-lever 28 will form an abutment for the said pin,

preventing the entrance of the pin into the recess. Fig. 5 illustrates the shift-key lever 9 in its lowest position and clearly shows that there is nothing to interfere with the upward return movement of said lever as soon as it is released. It will also be seen that in this case the arm 26 is farther forward than it is when the said arm is in locking engagement with the pin 24. The arm 22 therefore also is farther forward than in the locked position illustrated by Fig. 2 and the releasing-arm 20 consequently is lower than shown in Fig. 2. This means that the rear end of the locking-lever 18 is raised, so as to allow the pin 16 to freely move in the main portion 17 of the recess or opening. The controlling-lever 28 preferably moves with sufficient friction at its pivot to prevent any accidental change of position of said lever relatively to the arm 26.

Various modifications may be made without departing from the nature of our invention.

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

1. The combination with a movable carrier, of a shift-lever arranged to operate said carrier, an arm adapted for locking engagement with said shift-lever in one position thereof, a controlling-lever mounted upon said arm to render the said arm operative or inoperative as a locking-arm, a rock-shaft upon which said arm is mounted, and a release-key arranged to swing the said rock-shaft so as to throw the locking-arm out of its operative position.

2. The combination with a movable carrier, of a shift-lever arranged to operate said carrier, a locking-arm adapted to hold such shift-lever in one of its positions, a controlling-lever movably mounted on the locking-arm to render it operative or inoperative as a locking-arm, and means for releasing the shift-lever from said locking-arm.

3. The combination with a movable carrier, of a shift-lever for operating said carrier, a device for locking said lever in one of its positions, movable mechanism capable of assuming two positions, in one of which it renders the locking device operative while in the other it renders the locking device inoperative, said mechanism being constructed to stay in either one of said positions, and a releasing device for freeing the shift-lever from said locking device.

4. In a type-writer or like machine the combination with a movable carrier, of mechanism for shifting said carrier, a device for locking said mechanism in one of its positions, movable mechanism capable of assuming two positions, in one of which it renders the locking device operative while in the other it renders it inoperative, said movable mechanism being independent of the type-keys, and a releasing device for freeing the shifting mechanism from said locking device.

5. The combination with a movable carrier,



of a shift-lever for operating said carrier, a pivoted locking-arm for holding said lever in one of its positions, a controlling-lever fulcrumed on said locking-arm and adapted in one position to allow and in another position to prevent the locking engagement of said arm with said shift-lever, and a releasing device for swinging said locking-arm on its pivot and thus freeing the shift-lever.

6. The combination with a movable carrier, of a shift-lever for operating said carrier, a locking-lever arranged to engage a portion of the carrier, a locking-arm adapted to hold the shift-lever in one of its positions, a releasing-arm operatively connected with said locking-arm and with said locking-lever, and means for actuating said releasing-arm and throwing the locking-arm and the locking-lever into a releasing position.

7. The combination with a movable carrier, of a shift-lever for operating said carrier, a locking-lever having two recesses adapted to engage a portion of the carrier according to the position of the carrier, a locking-arm adapted to hold the shift-lever in one of its positions, a releasing device operatively connected with said arm and with said locking-lever, and means for actuating said releasing device.

8. The combination with a movable carrier, of a rock-shaft extending transversely of the machine, a locking-arm mounted on said rock-shaft at one side of the machine, a releasing

device mounted on the rock-shaft at the other side of the machine, a shift-lever arranged to operate the said carrier and adapted to be held in one position by the said locking-arm, a locking-lever in operative engagement with said releasing device and also arranged to engage a portion of the carrier, and means for actuating the rock-shaft.

9. The combination with a movable carrier, of a rock-shaft extending transversely of the machine, a locking-arm mounted on said rock-shaft at one side of the machine, a releasing device mounted on said rock-shaft at the other side of the machine, a locking-lever operatively engaged by said releasing device and also in engagement with a portion of the carrier, a shift-lever for operating the carrier, said lever being arranged to be held in one position by the said locking-arm, a controlling device movably mounted on the locking-arm for temporarily rendering said locking-arm inoperative, and a release-lever arranged to act on the releasing device and through the medium of the same upon the locking-arm and the locking-lever.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

EDWARD J. MANNING.  
OSCAR C. KAVLE.

Witnesses:

E. A. EDGAR,  
WM. F. HELMOND.