

No. 758,804.

PATENTED MAY 3, 1904.

J. ALEXANDER.
TYPE WRITER PLATEN SHIFT.
APPLICATION FILED DEC. 29, 1902.

NO MODEL.

Fig. 1.

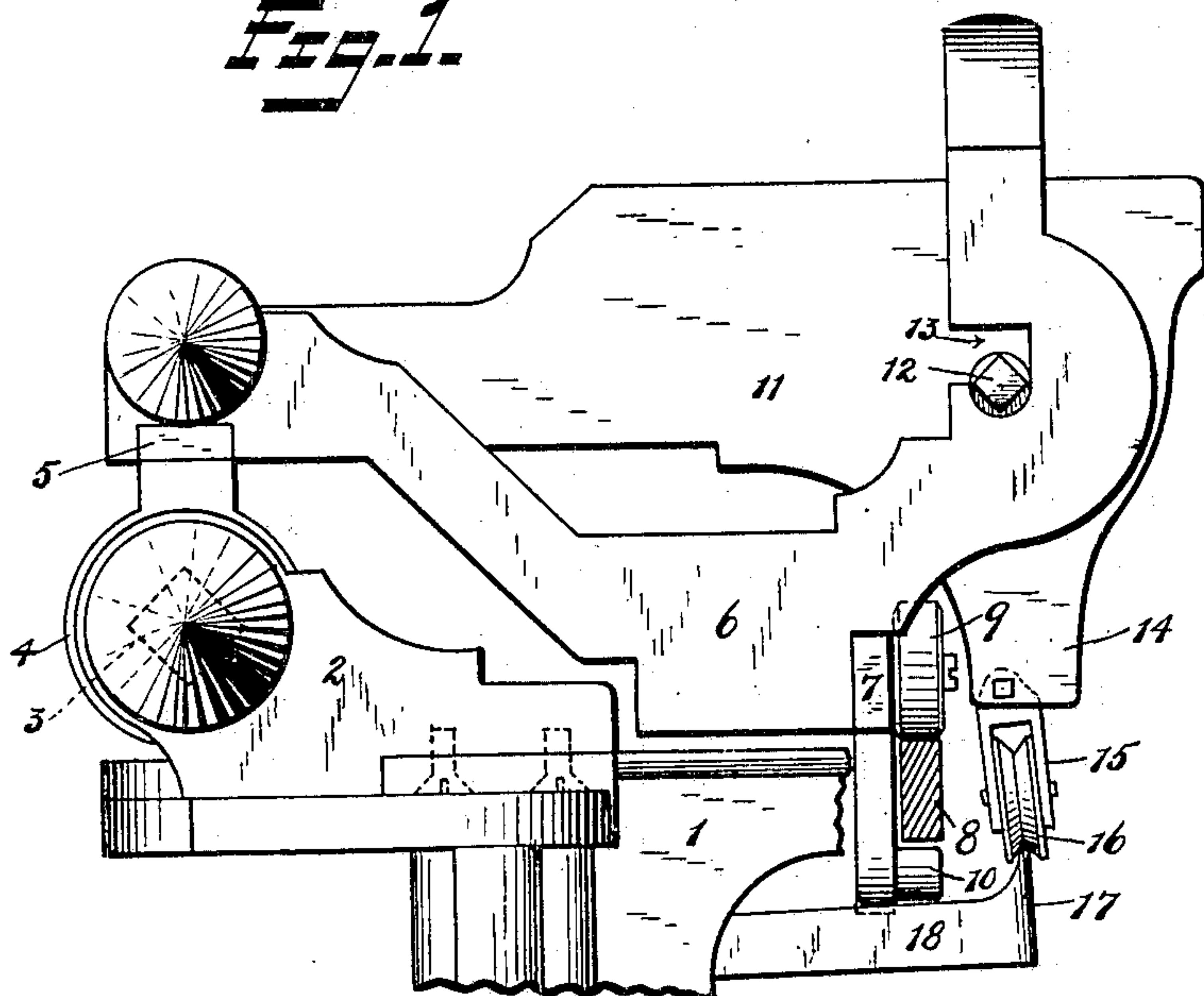
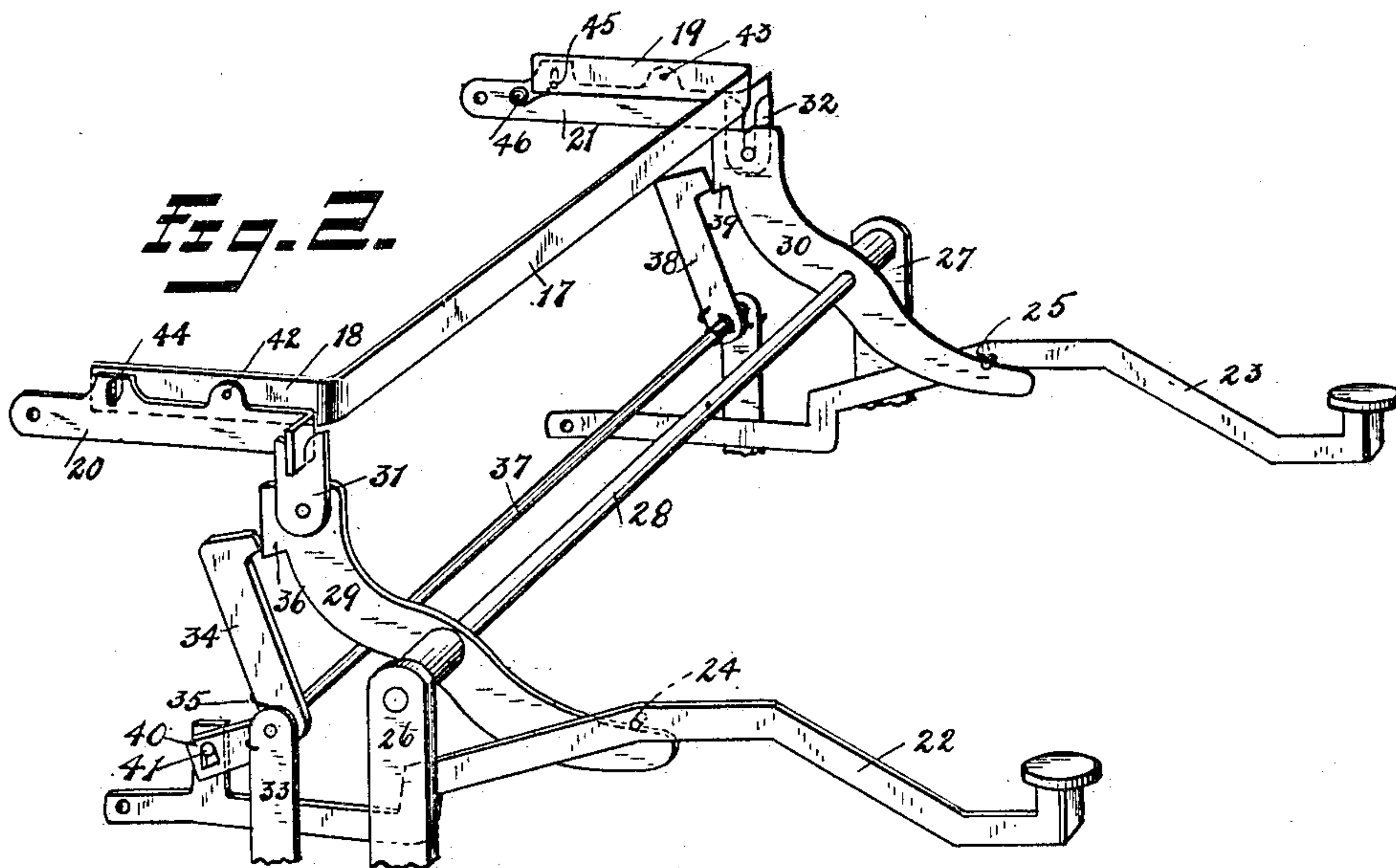


Fig. 2.



WITNESSES:

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TYPE-WRITER PLATEN SHIFT.

SPECIFICATION forming part of Letters Patent No. 758,804, dated May 3, 1904.

Application filed December 29, 1902. Serial No. 137,042. (No model.)

To all whom it may concern:

Be it known that I, JESSE ALEXANDER, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Type-Writer Platen Shifts, of which the following is a full, clear, and exact description.

My invention relates to improvements in type-writers, and particularly to mechanism for effecting a change in the position of the platen or paper-carrying roller for that class of machines known as the "double-case" machine in which each type-bar carries a plurality of type. This necessitates a relative movement of the bar and platen in order that one or the other of the type on the type-bar may be brought into proper printing position, as desired.

The object of this invention is to provide a simple and durable construction by means of which the platen may be shifted from one position to another for the purpose of printing a single letter or character out of the normal case position or, if desired, of printing a series of letters in such a case without the necessity of holding the shifting mechanism manually during the entire series. In particular I have endeavored in this construction to improve the relative movements of the parts so that there shall be during operation as little friction as possible. The mechanism may be said to "justify" the platen-shifting movements so that the guide-rail upon which the carriage runs in the shifted position will be at all times at the same relative angle to the guiding-roller, and yet if the carriage is moved from the machine there is no difficulty in the replacing of finding the rail and roller in their proper places.

It consists in a structure as more particularly shown in the accompanying drawings and set forth in the specification hereinafter. Two key-bars are provided, one at the left and the other at the right hand of the machine. By means of one of these the platen may be moved to the upper-case position and will return to its normal or lower-case position as soon as that key has been released.

By means of the other key the platen may be moved to the upper-case position and remain there even though the key is released. In order to return the platen then to its lower-case position, it is merely necessary to operate the first-mentioned key in the usual manner, when the platen will be released and return automatically upon such release to its original position. Owing to the relative positions of the platen and the auxiliary guide-rail, it is found when the guide-rail is lifted in order to raise the platen to the upper-case position that the parts are badly cramped by the ordinary construction, so that there is a considerably greater amount of friction. This invention endeavors to obviate all such disadvantages and provides that the shifting rail shall be approximately at the same relative angle to the guide-rail in both the upper and lower case positions.

In the drawings, Figure 1 is an end elevation of parts of a type-writer embodying my invention. Fig. 2 is a perspective view of the platen-shifting mechanism.

In Fig. 1, 1 is a fragment of the main portion of the frame of a type-writer. 2 represents a bracket which is provided at the two opposite sides of the machine for supporting the ends of the guide-rod 3. 4 is the outline of a sleeve sliding on this guide-rod. 5 is a bar attached to the sleeve, which at its two opposite ends is secured to corresponding side frames 6. These frames at the front are connected by a second bar 7. 6 is the main front guide-track upon which the carriage construction normally slides. 9 and 10 are guide-wheels carried by the bar 7, which coast with the guide-track 8. Since these parts, however, are not claimed in this present application, it is unnecessary to further illustrate or describe them herein. They are shown in detail in another application accompanying this, Serial No. 137,041. The side plates 11 are pivoted to the corresponding side frames 6 and provide bearings for the opposite ends of the platen-shaft 12. It will be seen, therefore, that when the platen is to be shifted from one position or case to the other it is merely

necessary to raise the side frames 11. In order that the distance through which the platen and shaft 12 are to be raised may be made definite, I have located the shaft 12 in such a position that when it is raised it will strike against the lower part of the recess 13 in the side frames 6. The lower front portion of the side frames are connected together by means of rod 14, carrying yoke 15. In this yoke 15 rotates freely a roller 16. Normally the carriage bears no great weight upon this roller 16, and it serves as a guide only when the platen is shifted to the upper-case position by the mechanism hereinafter described.

Referring to Fig. 2, 17 is the auxiliary guide-rail, by means of which the roller 16, and consequently the platen, is elevated or shifted. 18 and 19 are arms which project to the rear of this rail 17 and by means of which it is pivoted to the levers 20 and 21 at the two sides of the machine. The shifting is accomplished by means of the key-bars 22 and 23, which carry the pins 24 and 25. 26 and 27 are projections or posts which are to be made part of or secured to the frame of the type-writer for supporting and forming bearings for the shaft 28. 29 and 30 are shifting members which are carried by this shaft 28, so that they will rotate therewith. 31 and 32 are intermediate slotted plates pivoted to the members 29 and 30 and which coöperate directly with the ends of the levers 20 and 21, respectively. It will be seen that the depression of either one of the key-bars 22 or 23 will cause the levers 20 and 21 to be raised, carrying with them the platen auxiliary rail 17. By means of the pivoted plates 31 and 32 the friction resulting from the lifting by means of the members 29 and 30 is reduced to a minimum.

In order that the shifting rail may be held in the upper-case position when it is desired for the purpose of enabling the operator to write a series of upper-case characters without manually holding the carriage in that position, I provide the parts consisting of the post 33 and locking-arm 34, pivoted thereto and impelled forward by means of spring 35. The upper end of the shifting member 29 is provided with a shoulder 36, so that when the member 29 is raised the arm 34 will be pressed forward by the spring 35 and stand underneath the shoulder 36, thus holding the member 29 and the other parts in a raised or upper-case position. In order to more rigidly hold the parts in this position, I prefer also to add the shaft 37 and arm 38 to coact with shoulder 39 of member 30. The two arms 34 and 38 will therefore be operated together whenever the key-bar 23 is depressed. If, however, the key-bar 22 is depressed, the pin 41 carried thereby will move to the bottom of the slot in the extension 40, carried by the arm 34, and thus prevent it from moving forward underneath the shoulder 36. The proportions of the parts must, therefore, it will be seen, be such that upon the de-

pression of the key-bar 22 the arm 34 will be thrown backward a sufficient distance to avoid the shoulder 36. The depression of the key-bar 23, however, will move both the members 29 and 30 and permit both arms 34 and 38 to stand underneath the shouldered portions 36 and 39, so that the carriage and platen will remain in the upper-case position. Depression of the key-bar 22 at this time will cause the pin 41 to contact with the bottom of the slot in the extension 40 and retract the arms 34 and 38 to a distance sufficient to permit the members 29 and 30 to return to their normal position as soon as the key-bar 22 is released. The auxiliary or shifting rail 17 is pivoted to the levers 20 and 21. Beyond the pivots 42 and 43 pins 44 and 45, carried by the arms 18 and 19, project into slots in the levers 20 and 21. Spring 46 normally holds down the inner ends of the arms 18 and 19, and thus raises the rail 17. A similar spring to 46 may be supplied on the arm 18, but need not be shown. When a shift-key is depressed and the levers 20 and 21 are raised, the weight of the platen is taken up by the shifter-rail 17. Acting upon the spring 46 this forces the rail downward relatively to the levers 20 and 21 until the pins 44 and 46 reach the top of the slots in the levers 20 and 21. When the platen has been stopped in its upward movement by the shaft 12 striking against the top of the slot 13 in the side frame, the rail 17 is being held rigidly by the shifting mechanism. When the shift-key is released and the levers 20 and 21 move downwardly, the rail comes up again relatively, so that it is in substantially the same position relatively to the roller 16 as before. There will therefore be no cramping of the parts and consequent poor action either in the lower or upper case position.

What I claim is—

1. A platen-shifting mechanism for a type-writer including key-bars, pins carried thereby, a pair of shifting members adapted to coact therewith, pivoted plates secured to said members, pivoted arms engaging said plates adapted to be lifted by the depression of a key-bar, and a guide-rail carried by said arms.

2. A platen-shifting mechanism including key-bars and shifting members adapted to be operated thereby, pivoted arms adapted to be moved by said members, a guide-rail adapted to be operated by the said arms and so mounted that when said arms are raised said rail will be raised but tilted forward and a guide-roller mounted to roll on the rail and to tilt about an axis above the pivoted arms, the forward and downward tilting of the rail compensating for the tilting of the roller.

3. A platen-shifting mechanism for a type-writer including shifting members for lifting a platen, pivoted arms, a guide-rail pivoted to said arms and having an independent limited swinging movement.

4. A platen-shifting mechanism for a type-

writer including a pivoted arm, a guide-rail carried thereby for raising the platen from the lower to the upper case position, a pivoted shifting member having its axis forward of the axis of the pivoted arm, a plate pivoted to the rearward end of said shifting member and supporting the forward end of the pivoted arm, and a key-bar for operating said shifting member whereby on the depression of the key-bar the shifting member will be turned on its axis and will raise the guide-rail through the medium of the pivoted plate, the pivotal mounting of the plate compensating for the relative changes of position of the adjacent ends of the pivoted arm and pivotal shifting member and thus preventing friction.

5. A platen-shifting mechanism for typewriters including shifting members for lifting a platen, pivoted arms adapted to be lifted thereby, a guide-rail pivoted to said arms and having a limited movement about its pivots and a spring for holding said guide-rail normally in its raised position relatively to said arms.

6. A platen-shifting mechanism for a typewriter including a pair of key-bars, shifting members adapted to coact therewith, shouldered projections from said shifting members, pivoted locking-arms adapted to coact with the shouldered portions of said shifting members, an extension from one of said arms for engaging with one of said key-bars and a spring for pressing said arms toward said shifting members for the purpose specified.

7. A platen-shifting mechanism including key-bars, pivoted shifting members, locking-arms, a projection from one of said locking-arms coacting with one of said key-bars whereby on the depression of one key-bar the shifting mechanism may be operated and the locking-arms will hold the parts in their shifted position, but on the depression of the other key-bar the locking-arms will be released.

8. A type-writer-platen-shifting mechanism including pivoted arms, mechanism for operating the same, a guide-rail pivoted to said arms, stop-pins carried by said guide-rail coacting with slotted portions of said arms, and a spring for normally holding said rail in a raised position relatively to said arms.

9. A type-writer-platen-shifting mechanism including pivoted arms, mechanism for operating the same, a guide-rail pivoted to said arms, stop-pins carried by said guide-rail coacting with slotted portions of said arms whereby when said arms are raised said rail will be depressed through a limited distance relatively thereto.

10. A type-writer-platen-shifting mechanism including pivoted arms, mechanism for operating the same, a guide-rail pivoted to said arms, stop-pins carried by said guide-

rail coacting with slotted portions of said arms whereby when said arms are raised said rail will be depressed through a limited distance relatively thereto, and means for locking the said mechanisms at the raised position of the guide-rail.

11. A type-writer-platen-shifting mechanism including pivoted arms, mechanism for operating the same, a guide-rail pivoted to said arms, stop-pins carried by said guide-rail coacting with slotted portions of said arms whereby when said arms are raised said rail will be depressed through a limited distance relatively thereto, means for locking the said mechanisms at the raised position of the guide-rail, and means for releasing said locking means.

12. A platen-shifting mechanism including a pair of key-bars, shifting members coacting therewith, a locking device adapted to operate upon the depression of one key-bar and adapted to be released by the depression of the other key-bar, pivoted plates carried by said shifting members, pivoted arms adapted to be raised by the movement of said shifting members, a guide-rail pivoted to said arms whereby on the raising of said arms said rail will be depressed relatively thereto through a limited distance for the purpose specified.

13. A platen-shifting mechanism including a pair of key-bars, shifting members coacting therewith, a locking device adapted to operate upon the depression of one key-bar and adapted to be released by the depression of the other key-bar, pivoted arms adapted to be raised by the movement of said shifting members, a guide-rail pivoted to said arms whereby on the raising of said arms said rail will be depressed relatively thereto through a limited distance for the purpose specified.

14. A platen-shifting mechanism including key-bars, a carriage construction, an auxiliary guide-rail, and a guide-roller adapted to coact therewith, means for raising said parts and means for causing a relative movement between said roller and said rail whereby said roller and rail bear substantially the same angular relation to each other in the lowered as in the raised position.

15. A platen-shifting mechanism including key-bars, shifting members, pivoted guide-rail, a spring-pressed locking-arm adapted to coact with one of said shifting members, a carriage construction, a guide-roller carried thereby adapted to coact with said rail, and means for moving said rail from the lower to the upper position, and maintain it in both positions at relatively the same angle to said roller.

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Witnesses:

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