

April 9, 1929.

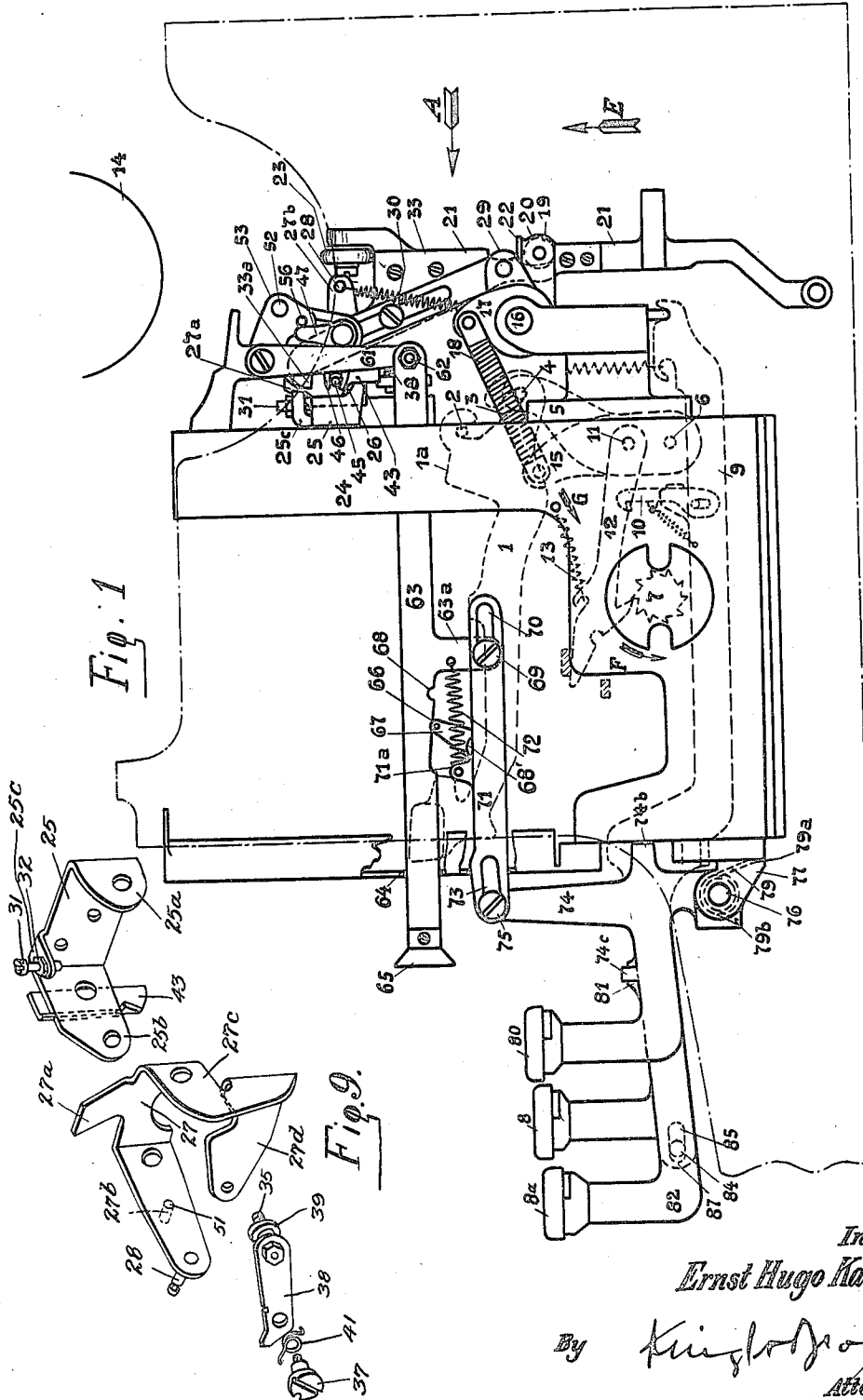
E. H. KAEMMEL

1,708,066

MEANS OF SHIFTING THE PLATEN OR THE LIKE IN TYPEWRITERS

Filed May 13, 1925

5 Sheets-Sheet 1



Inventor

Ernst Hugo Kaemmel

By *Kingsbury*

Attorneys

April 9, 1929.

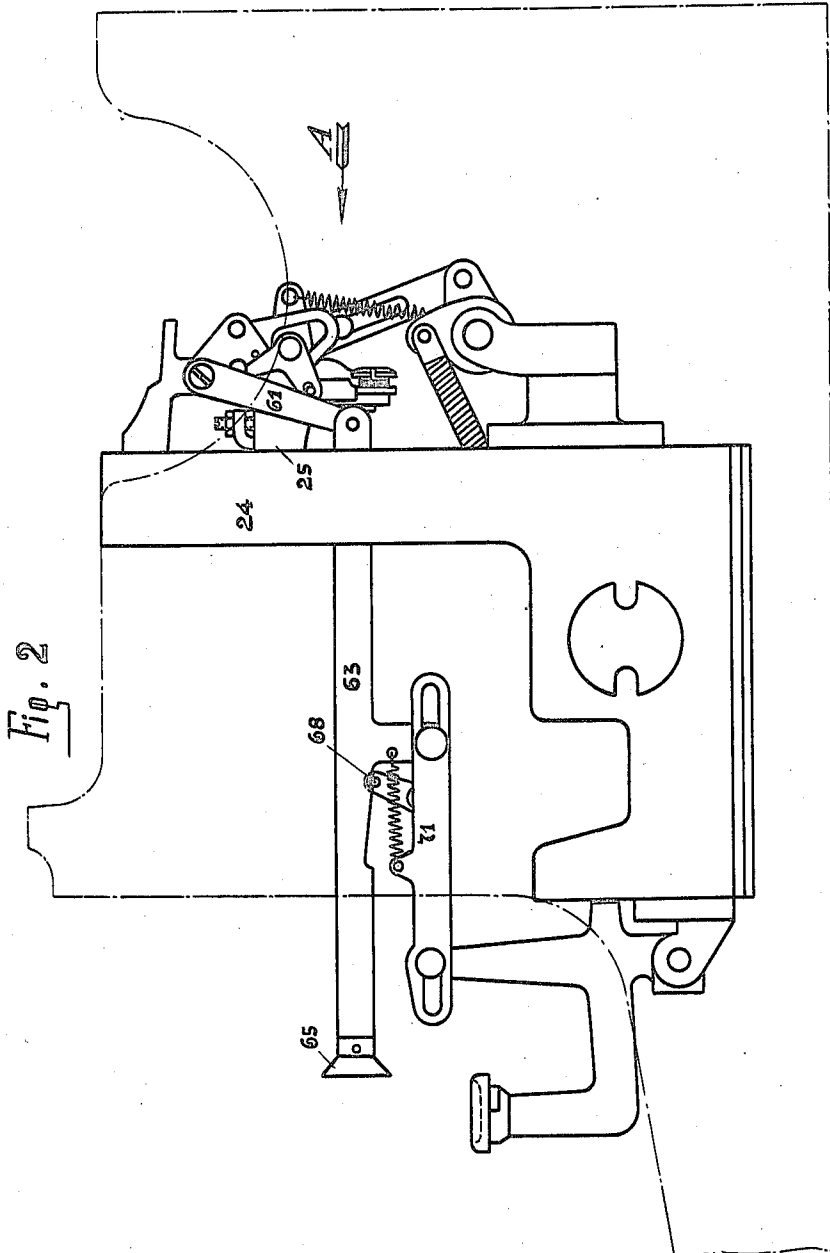
E. H. KAEMMEL

1,708,066

MEANS OF SHIFTING THE PLATEN OR THE LIKE IN TYPEWRITERS

Filed May 13, 1925

5 Sheets-Sheet 2



Inventor
Ernst Hugo Kaemmel

By *King & Co.*
Attorneys

April 9, 1929.

E. H. KAEMMEL

1,708,066

MEANS OF SHIFTING THE PLATEN OR THE LIKE IN TYPEWRITERS

Filed May 13, 1925

5 Sheets-Sheet 3

Fig. 3

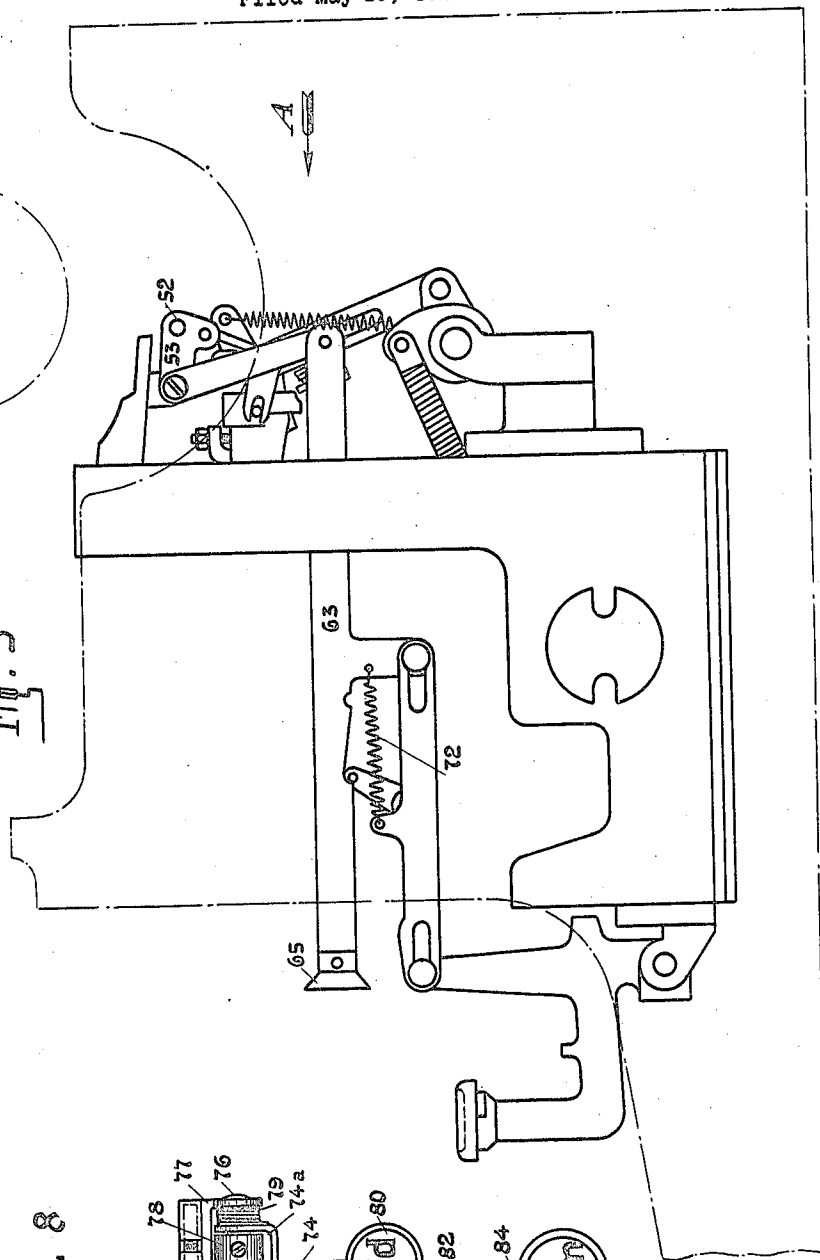
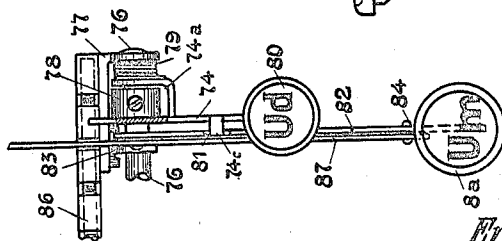


Fig. 8



Inventor

Ernst Hugo Kaemmel

By

King & Co.

Attorneys

April 9, 1929.

E. H. KAEMMEL

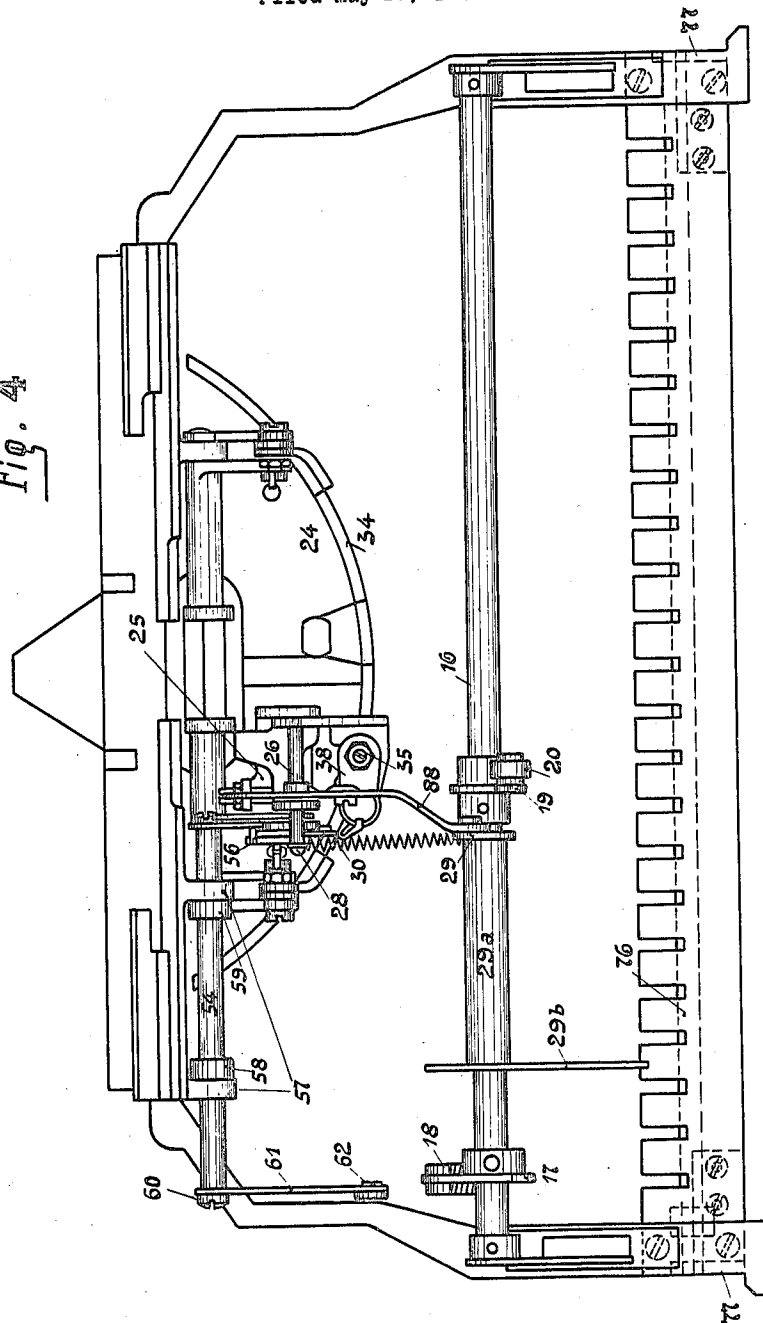
1,708,066

MEANS OF SHIFTING THE PLATEN OR THE LIKE IN TYPEWRITERS

Filed May 13, 1925

5 Sheets-Sheet 4

Fig. 4



Inventor

Ernst Hugo Kaemmel

By *Kriegelberg*
Attorneys

April 9, 1929.

E. H. KAEMMEL

1,708,066

MEANS OF SHIFTING THE PLATEN OR THE LIKE IN TYPEWRITERS

Filed May 13, 1925

5 Sheets-Sheet 5

Fig. 6

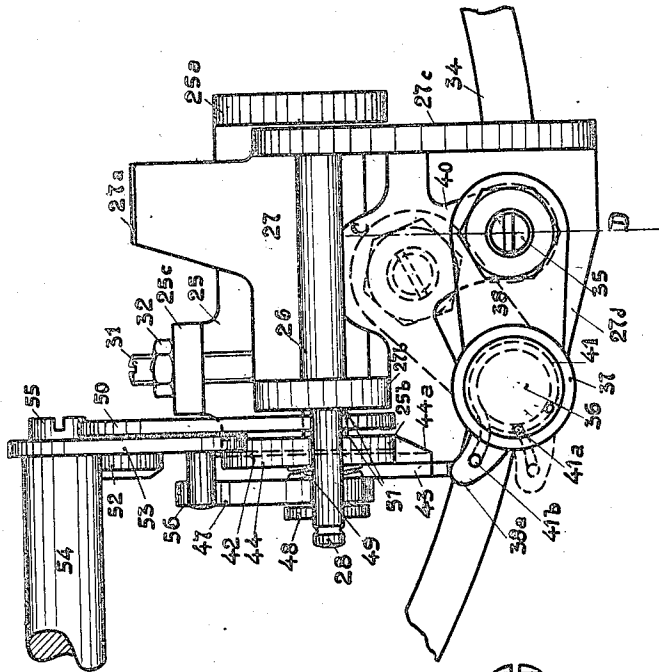


Fig. 7

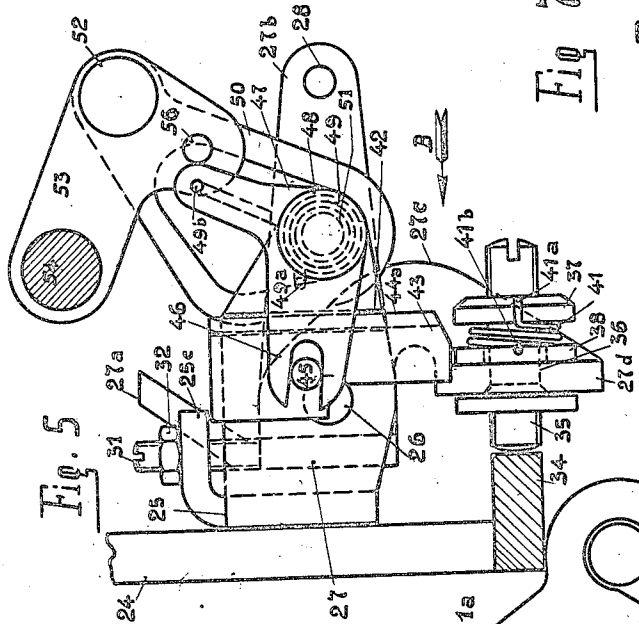
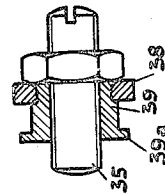


Fig. 5

Inventor
Ernst Hugo Kaemmel
By *Kriegelberg*
Attorneys

Patented Apr. 9, 1929.

1,708,066

UNITED STATES PATENT OFFICE.

ERNST HUGO KAEMMEL, OF ZELLA, GERMANY, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO MERCEDES BÜRO-MASCHINEN-WERKE AKTIENGESSELLSCHAFT, OF THÜRINGEN,
GERMANY, A JOINT STOCK COMPANY OF GERMANY.

MEANS OF SHIFTING THE PLATEN OR THE LIKE IN TYPEWRITERS.

Application filed May 13, 1925, Serial No. 30,131, and in Germany May 14, 1924.

This invention refers to means for shifting the platen or the like in type-writers operated by motive power and it is particularly intended to facilitate the operation and to increase the exactness of movement of machines of this kind, and to improve the means for combined manual and power-controlled operation of such machines.

In type-writing machines and the like operated by motive power the shifting of the platen from small letters to capitals is usually effected by raising the platen into the highest position corresponding to the capitals by means of a driving member operated by a key, and adapted for operative engagement with the shifting bar or the like. In order to retain the platen in this position the said shifting bar or the like has usually been provided with a latch, lug or the like, adapted to become engaged with or over an oscillating switching or guiding member, the said last mentioned member upon the striking of the desired key being oscillated by the universal frame of the machine after the printing of the corresponding type, which results in the release of the latch or lug of the shifting bar, and the dropping back of the platen into its deepest position which corresponds to the small letters. This arrangement, as employed in the previous art, is, however, consuming much time in the more continuous writing of capitals, inasmuch as for each capital the striking of the shifting member and of the type bar becomes necessary. This inconvenience according to another suggestion, it has been endeavored to overcome by the arrangement of another shifting key which with the simultaneous disengagement of the motive power had direct operative connection with the shifting bar or the like, and could be locked in the shifting position. While with this arrangement the striking of two keys was avoided, there was, however, the difficulty that in view of the difficulties of exact adjustment of the cooperating shifting and locking means respectively operated by motive power and manually two shifting positions for the capitals were obtained which caused the printed types of the writing to be out of alignment with each other. Then there was the inconvenience that upon changing from a series of capitals to small letters the manually operated lock for the shifting means

had to be disengaged, and the power operated guiding or switching member referred to had to be oscillated, in order to move the platen into its deepest position. These and other inconveniences are overcome by the subject of the invention to be described by providing means of combining the results heretofore accomplished by respectively power driven and manually operated means into a locking member merely influenced by motive power. Other important objects and advantages will appear as the specification proceeds and from an inspection of the drawings.

The invention, though it may find expression in many embodiments, will be further described in detail with reference to the accompanying drawings, showing by way of exemplification only a form of construction of the invention, as embodied in a Mercedes-type-writing machine with motor-operated type bars; but it should be understood that the invention may, of course, also be applied to and combined with any other existing power-driven type-writer and similar machines.

In the drawings:—Figure 1 is a side view of the device, as applied to the typing frame, in the inoperative position. The position of the typing frame with relation to the supporting frame of the machine is shown in the drawing by the outlined parts shown in dotted lines. Figure 2 is a side view of the device according to Figure 1 in the shifting position in which capitals are continuously produced on the printing platen. Figure 3 is a side view of the device in accordance with Figures 1 and 2 in a position preparatory to the shifting back into the position of rest. Figure 4 is a back-side view according to Figures 1 to 3, as seen in the direction of the arrow A. Figure 5 shows on an enlarged scale a fractional elevational view of the parts most important for the understanding of the invention, as represented in Figure 1, and in the position shortly before the striking of the shifting lug of the type lever against the shifting yoke. Figure 6 is a back view according to Figure 5, seen in the direction of the arrow B. Figure 7 is a sectional view of the setting screw with collar on the line C—D of Figure 6. Figure 8 is a plan view of the combined shifting keys and Figure 9 is a

perspective view of several parts on a large scale, the parts being shown in the order in which they are mounted on the machine.

The type bars 1 are rotatably disposed
5 around a common type bar shaft 2. Within the slot 3 of the same the studs or pins 4 of the intermediate levers 5 are adapted to slide which are pivotally mounted on the shaft 6. The cam shaft 7 is continuously
10 rotated in the direction of the arrow F by a cord-pulley or the like, not shown in the drawings. By the depression of a key 8 the connecting lever or spring-operated hook 10, secured to the key lever 9 in the well
15 known manner, causes the pulling of lever 12, which is pivoted at the point 11, and which in the inoperative position is retained by the spring 13 in the position shown in
20 Figure 1 of the drawing, against the cam shaft 7 which latter causes the striking of the type bar 1 against the platen 14. The shifting of said printing platen from small letters to capitals is likewise effected by the cam shaft or driving shaft 7, inasmuch as by
25 the depression of a separate shifting key 8^a a similar operating mechanism is actuated as is the case with the type bar 1 and which effects the swinging of the lever 15 in the direction of the arrow G. The lever 15 is
30 connected by means of a tensional spring 18 to the lever 17 which is mounted upon the shaft 16 rotatably mounted on the cradle or type-frame. Upon the said shaft 16 there is also rigidly secured the lever 19, provided
35 with a roller 20 (Figures 1 and 4) which is adapted to engage below a stop 22 secured to the well-known shifting pusher or bar 21. The swinging movement of the lever 15 is shared by the tensional spring 18, the levers
40 17 and 19 and the roller 20 secured to the lever 19, in the direction of the arrow E which indicates the movement of the roller 20. By this means and by the stop 22 the shifting pusher or bar 21 is raised which in
45 its turn by means of its roller 23 raises the printing platen 14.

In order to secure the platen 14 in its elevated position the following instrumentalities are provided. To the rear wall 24
50 of the cradle a supporting member 25 is secured (Figures 1, 4, 5, 6 and 9) in the supporting arms 25^a and 25^b of which a shaft 26 is mounted. On this shaft 26 an oscillating member 27 having the shape of a
55 two-armed lever is secured provided with an upwardly extending pawl 27^a. In the longer arm 27^b of this oscillating member a pin 28 is riveted or otherwise secured. Between this pin 28 and a lever 29 rotatably
60 mounted upon the shaft 16, and to be referred to hereinafter a tensional spring 30 is arranged. By this spring 30 the arm 27^b of the oscillating member is ordinarily pulled downwards, so that the upper edge
65 of the web portion of the member 27 is

forced against the setting screw 31 which is threaded into the bent extension 25^c of the support 25, and which is secured in its adjusted position by a lock-nut 32. To the
shifting pusher 21 a pawl 33 (Fig. 1) is
70 secured which in its upper portion is extended into a catching lug or hook 33^a which latter upon the rising of the shifting pusher 21 slides past the catching pawl 27^a which
75 by means of the spring 30 acts as a yielding disposed guide, the hook 33^a thereupon placing itself upon the pawl 27^a, and thereby retaining the carriage in its uppermost position corresponding to the capitals. Upon
80 the striking of a type bar a capital is there- fore printed.

This position must, however, be again abandoned, in order to write small letters, which action is preferably produced by extending the lever arm 27^c of the oscillating
85 member 27 as far as in front of the shifting yoke 34 (Figures 4, 5, and 6) and by providing the arm 27^c with a set screw 35 for adjustment, so that in the writing of the capital and towards the end of the stroke of
90 the type bar the shoulder 1^a of the type bar is adapted to move the shifting yoke 34 and consequently the lever arm 27^c in the direction opposite to the arrow B (Figure 5), by which means the catching pawl 27^a is
95 oscillated on the shaft 26 counter clockwise and disengages the pawl 33^a, so that the platen roller 14 drops down into the deepest position by gravity, which position corresponds to the small letters.
100

In order to permit the permanent retention of the platen roller 14 in its uppermost position means are provided for the purpose of rocking the set screw 35 away from the operation of the keys and out of the path of the
105 universal yoke 34. For this purpose the arm 27^c of the lever 27 is provided with a projection 27^d in parallel relation to the web portion of the lever 27. To this projection 27^d a stud 36 with head 37 is riveted
110 (Figures 5 and 6) on which a two-armed lever 38 is rockably mounted in the right-hand arm of which a threaded collar 39 (Figure 7) is secured adapted for the reception of the set screw 35 with lock-nut. The
115 lower terminal position of the lever is shown in full lines in the drawing, and the upper position in dotted lines. In the lower position of the lever the collar 39 becomes engaged with a recess 40 of the projection 27^d,
120 and prevents the axial movement of the set screw on the lever 38, inasmuch as the flange 39^a of the collar 39 bears upon one side of the projection 27^d and the lever 38 upon its other side. The stud 36 is surrounded by a
125 torsional spring 41 one end of which is secured in a slot of the head 37 of the stud at 41^a while the other end enters a hole of the left-hand lever arm 38^a of the lever 38, the spring tending to hold the lever 38 with
130

the set screw 35 retained in the lower position shown in Figure 6 in full lines.

On the outer surface of the left-hand arm 25^b of the small supporting bracket 25 a vertical groove 42 (Figures 5 and 6) is provided in which the angular flap portion 44 of the slide 43 (Fig. 5) is adapted to slide. To the slide a stud 45 is secured which is disposed in the path of movement of the forked shaped arm 46 of an elbow lever 47 which is pivotally secured upon a stud 48 fixedly secured to the arm 25^b. Upon this stud 48 and between the arm 25^b and the lever 47 a torsional spring 49 is arranged one end of which is secured at 49^a in a hole in the arm 25^b, while the other end 49^b of the spring is engaged in a hole of the upwardly directed arm of the elbow lever 47, the spring tending to hold the slide 43 in its upper position, which position is limited by the lug 44^a provided upon the angularly turned flap portion 44 of the slide 43 which engages the lower side of the arm 25^b. Between the arms 25^b and 27^b a lever 50 is adapted to slide which is provided with a curved shaped aperture which latter portion is adapted to influence a pin 51 (Figure 6) riveted or otherwise secured in the arm 27^b. The lever 50 is pivoted by a stud 52 to a lever 53 which lever is rigidly secured to the shaft 54 by means of a screw 55. To the lever 53 a stud 56 is secured which is disposed within the path of movement of the upwardly directed arm of the elbow lever 47. The shaft 54 (Fig. 4) is rotatably journaled in the b rings 57, and is secured against displacement in the axial direction by the setting rings 58 and 59. To the other end of the shaft a lever 61 (Figures 4 and 1) is unrotatably secured by means of a screw 60. To the lower end of said lever 61 a push bar 63 leading to the front side of the machine is pivotally secured by a screw 62, the bar being guided in a hole of the front plate 64 corresponding to the size of the bar. For the operation of the push bar 63 a press button 65 is secured to the outer end thereof. In order to lock the said push bar in the desired positions a lever 67 provided with a pin 66 and rockably secured on a shaft 68' on the cradle frame is moved upwards towards the push bar 63 under the action of a torsional spring. The pin 66 under the action of its spring becomes engaged with the recess 68, as soon as this recess is opposite the said pin. The push bar 63 is provided with a projecting extension 63^a with a set screw 69 which is adapted to slide in slot 70 of push bar 71. Between the projection 63^a and the eye 71^a provided on the push bar a tensional spring 72 is arranged. At its forward end the push bar 71 is provided with a slot 73 in which the screw 75 secured to the shift-lock lever 74 is adapted to slide with its screw shaft. The lever 74 is pivotally

mounted on the shaft 76 which in its turn is rotatably mounted on two supporting brackets 77 secured to the cradle (Figures 1, 4 and 8). In order to secure the lever 74 from axial displacement and in order to retain it in its vertical position with relation to the shaft 76 the lever 74 is provided with an angular bent supporting arm 74^a (Figure 8), and in the space provided thereby a setting ring 78 is secured to the shaft 76. The key 80 is held in its upper position, with the projection 74^b abutting against the key-lever-comb, by means of a torsional spring 79, one of the legs of which, 79^a, (Fig. 1) rests against the right-hand supporting bracket 77 and the other leg 79^b of which is engaged below the lever 74^a. The lever 74 is also provided with a lug 74^c which upon the depression of the lever bears upon a projection 81 of the shifting key lever 82 of the shift key 8^a and carries said key lever along with it. In this lever 82 a hub portion 83 (Figure 8) is formed by rolling by means of which the lever is riveted to the shaft 76. At the front portion of the lever a stud 84 is secured which is engageable with a longitudinal slot 85 of a shifting lever 87 adjacent the lever 82 and adapted to operate the well-known key locking means. The lever 87 is journaled at its rear end similar to the key lever 9 in the journaling bed portion for the key levers. The purpose of the shaft 76 is to provide means for actuating the patent shifting mechanism by a second lever (not shown), similar to lever 82, at the left end of the key board.

The mode of actuation and action of the device is substantially as follows:—With the alternating printing of small letters and of capitals all the parts assume the position illustrated in Figure 1 of the drawings, so that the set screw 35 (Figures 5 and 6) confronts the shifting yoke 34. When it is desired to print a capital, the key 8^a, preferably designated "Cap" (or Um for German types) is struck (Figs. 1 and 8). In this movement the pin 84 carries the lever 87 along with it which latter, as above referred to, will perform a rocking motion corresponding to the key lever 9, by which means the drawing hook supplementary to the lever 87 will be caused to engage the driving shaft 7. This shaft 7, therefore, rocks the lever 15 in the direction of the arrow G, and by this movement and by the parts above described raises the shifting pusher 21 and consequently the printing platen into its highest position in which the parts are secured by the pawl 33^a becoming engaged over the pawl 27^a. Upon the striking of any key desired a capital is obtained. The shoulder 1^a of the type bar struck will thereby be caused to operate the shifting yoke 34 in the well-known manner, and inasmuch as the set screw 35 is in the path of

movement of the yoke the pawl 27^a is rocked and the pawl 33^a is thereby released, by which means the printing platen is caused to drop back again into the deepest position corresponding to the succeeding small letter.

When it is desired to write capitals continuously, the shifting key 80 is operated which may be designated or marked Shift (or with German typing Ud). Thereby the tension bar 71 is moved which in its turn and by means of the spring 72 the charge and tension of which is so adjusted as to be able to compensate all kinds of resistances set up in the operation of the different mechanisms carries the bar 63 along which oscillates the lever 61 in the clockwise direction. In this movement the pin 66 of the spring actuated lever 67 enters the recess 68 of the bar 63, and locks this bar 63 in its position. The displacement of the bar 63 causes the rocking of the setting stud 35 out of the path of the universal yoke. Inasmuch as the lever 61 with the shaft 54 and the lever 53 constitute a rigid unit, the stud 56 provided on the lever 53 acts upon the elbow lever 47, 46 and rocks said lever in the counter-clockwise direction. The forked arm 46 of the elbow lever moves the slide 43 downwards by means of the pin 45, the slide operating upon the lever 38 at its extremity 38^a and thereby rocking the lever 38 into the position shown in dotted lines in Figure 6 of the drawing, and in consequence thereof the set screw 35 secured to the lever is moved out of the path of the shifting yoke. Simultaneously with these movements the lug 74^c (Fig. 8) causes the key lever 82 to be downwards depressed, whereby, as above mentioned, the pin 84 moves the lever 87, and raises the printing platen and retains it in the uppermost position by the cooperation of the pawls 27^a and 33^a. Upon the release of the key 80, said key is returned to its previous position by the instrumentality of the spring 79 and the key 8^a which is raised by the usual key-lever-spring, the several operating members assuming the positions shown in Figure 2. Inasmuch as in this position the pawl 27^a in consequence of the rocking away of the set screw 35 cannot be acted upon by the shifting yoke, the printing platen remains in its highest position, so that only capitals will be printed.

By the depression of the button 65 the stop 35 is moved back into the path of the shifting yoke 34, while at the same time the spring actuated stud 66 becomes disengaged from the recess 68 (Figure 2), and the bar 63 causes the lever 61 to be rocked in the counterclockwise direction. This movement is followed by the draw bar 71 in view of its connection with the bar 63 by the spring 72. As a result of the rocking of the lever 61 the stud 56 becomes disengaged from the

elbow lever 46, 47 (Figures 5 and 6), and this lever is oscillated clockwise by the spring 49, and raises the slide 43 the upward movement of which is limited by the impinging of the lug 44^a against the edge of the arm 25^b, while the torsional spring 41 causes the set screw 35 which is secured to the lever 38 to be moved into the path of the shifting yoke 34.

Upon now striking a key a capital is printed, which sometimes may be desirable in case the typist has made an error. It is then only necessary to move the platen to the respective point by means of the return-key, and then to press the key of the desired letter. Upon the appearance of the capital the printing platen drops into its lowermost position.

The device makes it also possible, however, immediately after the capital last printed to move the printing platen into its lowest position. This is accomplished by moving the bar 63 backwards until it assumes the position, shown in Figure 3, thereby also causing a further tensing of the spring 72. Thereby the lever 53 (Figures 3 and 5) is oscillated further upwards and the part 50 which is secured thereto by rivet 52 is also moved upwards; the said part 50 with its lower curved surface, as appears from the position of Figure 1 to which the position of Figure 5 corresponds, being in contact with the bolt or rivet 51 secured to the arm 27^b. This upward movement is also shared by the arm 27^b, so that the pawl 27^a releases the pawl 33^a (Figure 1), and causes the platen carriage to drop down. Upon the release of the press button 65 the spring 72 causes all of the parts to re-assume the position of Figure 1 automatically. The lever 29 (Figure 4) is rigidly connected to the collar 29^a and the lever 29^b and is rotatably mounted on the shaft 16. The lever 29^b is linked to the accent-key, and to the lever 29. The lever 88 which extends to the catching hook is pivotally connected to lever 29. This part of the device is not new and forms no part of the invention, and it has, therefore, only been cursorily described for the better understanding of the invention.

It should, of course, be understood that the invention is not limited to the exact form, construction, and arrangement or combination of parts herein shown and described by way of example, the invention being susceptible of modifications and changes in various particulars without deviating from the spirit and scope of the invention, as more particularly set forth in the claims hereunto appended.

I claim:—

1. In a typewriter having a series of type bars, a platen, power operated means for raising the platen, means operated through the intermediary of said power operated

raising means for retaining the platen in raised position, means adapted to be actuated by any of the type bars for releasing the retaining means and means for temporarily rendering said releasing means ineffective.

2. In a typewriter having a series of type bars, a platen, power operated means for raising the platen, means operated through the intermediary of said power operated raising means for retaining the platen in raised position, means adapted to be actuated by any of the type bars for releasing the retaining means, means for temporarily rendering said releasing means ineffective and additional means for positively releasing the retaining means.

3. In a typewriter having a series of type bars, a platen, means for raising said platen, a motor shaft adapted to operate said series of type bars and said raising means, means operated through the intermediary of said raising means for retaining the platen in raised position, means adapted to be actuated by any of the type bars for releasing the retaining means and key actuated means for rendering said releasing means temporarily ineffective.

4. In a typewriter having a series of type bars, a platen, power operated means for raising the platen, means operated through the intermediary of said power operated raising means for retaining the platen in raised position, means adapted to be actuated by any of the type bars for releasing the retaining means and means for simultaneously actuating said raising means and rendering said releasing means ineffective.

5. In a typewriter having a series of type bars, a platen, power operated means for raising the platen, means operated through the intermediary of said power operated raising means for retaining the platen in raised position, means adapted to be actuated by any of the type bars for releasing said retaining means, means for moving said releasing means out of position to be actuated by the type bars, means for locking said last mentioned means in operative position, and means for releasing said locking means.

6. In a typewriter having a series of type bars, a platen, power operated means for raising the platen, means rockable through the intermediary of said power operated raising means for retaining the platen in raised position, a rockable universal yoke normally in engagement with the retaining means and adapted to be struck by any of the type bars to release the retaining means, and means for moving the retaining means out of engagement with said universal yoke, whereby the yoke will be prevented from releasing the retaining means.

7. In a typewriter having a series of type-

bars, a platen, means for raising the platen, rockable means for retaining the platen in raised position, a key connected to the raising means and adapted to actuate the same, a second key, a rockable yoke adapted to be rocked by any of the type-bars, a pivoted member on said retaining means movable into and out of the path of said yoke, resilient means for holding said member in the path of said yoke, means connected to said second key for operation thereby for moving said member out of yoke engaging position, and connections between said keys whereby said first mentioned key is actuated by said second key.

8. In a typewriter having a series of type-bars, a platen, means for raising said platen, movable means for retaining said platen in raised position, a rockable yoke adapted to be rocked by any of the type-bars, a pivoted arm on said retaining means yieldingly held in the path of said yoke, means including a push bar for moving said arm out of the path of said yoke, said push bar being movable in both directions from normal position, a yielding catch for holding said push bar at one limit of its motion, in which position the pivoted arm is held out of the path of the yoke, and means connected to said push bar for positively releasing the retaining means when the push bar is moved to the other limit of its motion.

9. In a typewriter, a platen, means for shifting said platen, a motor shaft, normally disengaged means for operatively connecting said shifting means to said motor shaft, a shifting lever for causing said connecting means to engage said motor shaft, a pivoted shift-key lever having a pin and slot connection with the end of said shifting lever, and a shift-lock lever pivoted to said shift-key lever having a projection adapted to engage said shift-key lever.

10. In a typewriter having a series of type-bars, a platen, means for raising the platen, movable means for retaining the platen in raised position, a rockable yoke adapted to be rocked by any of the type-bars, a pivoted arm on said retaining means yieldingly held in the path of said yoke, and means for moving said arm out of the path of said yoke including a push bar, a spring pressed shift-lock lever, an arm projecting from said lever, an arm projecting from said push bar, a link connecting said arms, and having a pin and slot connection with each, a spring connecting said link and said push bar, and tending to hold the link in operative contact with said shift-lock lever, a notch in said push bar and a spring pressed pawl adapted to enter said notch, the construction being such that depression of the shift-lock lever will move the push bar longitudinally by means of the bar and

spring, to move the pivoted arm out of the path of the yoke, the pawl dropping into the notch to hold the push bar until the same is pushed back to normal position.

- 5 11. In a typewriter having a series of type-bars, a platen, means for raising the platen, a hook rigid with said platen raising means, a pawl rockable into and out of position to engage said hook when the platen
10 is raised, resilient means for holding said pawl normally in hook engaging position. a rockable yoke adapted to be rocked by any of the type-bars, an arm pivoted to said pawl and normally held in the path of said
15 yoke, and means for moving said arm out of the path of said yoke.

12. A typewriter in accordance with claim 11 in which the pivoted arm is provided with an adjustable stud engaging the yoke
20 when the arm is in normal position.

13. A typewriter according to claim 11 in which the means for moving the arm out of the path of the yoke comprises a slide engageable with said arm, a bell crank lever,
25 one arm of said bell crank lever having a pin and fork engagement with the slide, a crank having a pin engaging the other arm of said bell crank lever, a key lever, and means for connecting the key lever with the
30 crank to oscillate the same.

14. A typewriter in accordance with claim 11 in combination with means for positively releasing the pawl from the hook in addition to the type-bar actuated means, said
35 additional means comprising a crank, a loop pivoted to said crank, a pin on said pawl passing through said loop, a push rod projecting from the front of the machine,

and means for connecting said push rod to said crank to oscillate the same.

15. In a typewriter having a series of type-bars, a platen, means for raising the platen, a hook rigid with said platen raising means, a pawl rockable into and out of position to engage the hook when the platen
40 is raised, resilient means for holding the pawl normally in hook engaging position, a rockable yoke adapted to be rocked by any of the type-bars, an arm pivoted to said pawl and normally held in the path of said
45 yoke, means for moving said arm out of the path of said yoke comprising a slide engageable with said arm, a bell crank lever, one arm of said bell crank lever having a pin and fork connection with said slide, a
50 crank having a pin engaging the other arm of said bell crank lever, a push rod, and means connecting the push rod to the crank for oscillating the same, and means for positively releasing said pawl from said
55 hook comprising a loop pivoted to said crank, and a pin projecting from said pawl through said loop, the construction being such that on moving the push rod to one extreme the arm will be moved from normal
60 position, the loop having no effect on the pin, while on moving the push rod to its other extreme position the arm will be released to its normal position and the loop will engage the pin, thereby releasing the
65 pawl from the hook.

The foregoing specification signed at Zella-Mehlis II in Thüringen this 25 day of April, 1925.

ERNST HUGO KAEMMEL.